ARBOR VITAE

ECOLOGY • FORESTRY • LAND USE

PRELIMINARY ECOLOGICAL APPRAISAL

LAUREL FARM

Arbor Vitae Environment Ltd, Lower Betton Farm, Cross Houses, Shrewsbury, Shropshire, SY5 6JD

Project name: **Laurel Farm, Pilning Street, Pilning, BS35 4HN**

Grid Reference: ST57488536

Date: 31/01/2024

Prepared by: Phillipa Stirling BSc MSc ACIEEM

Reviewed by: William Prestwood BSc Director

Requested by: The Rural Planning Co.

Contents

1 INTRODUCTION

1.1 BACKGROUND TO DEVELOPMENT

Planning permission will be sought for "Prior notification of a change of use from Agricultural Building to 1 no. residential dwelling (Class C3) as defined in the Town and Country Planning (Use Classes) Order 1987 (as amended). (P23/03420/PNGR)".

Arbor Vitae were commissioned by The Rural Planning Co. to undertake a Preliminary Ecological Appraisal in order to assess the impact of the development on habitats and protected species.

1.2 SCOPE OF SURVEY

The survey is primarily designed to:

- Identify and record habitats and important ecological features on site;
- Evaluate the potential of the proposed development site to provide opportunities for protected species;
- Determine any likely impact which the development and landscape proposals may have on these.
- Identify opportunities for the enhancement of habitats and biodiversity features on site.

1.3 KEY PRINCIPLES

All ecological surveys conducted by Arbor Vitae Environment Ltd are underpinned by the following key principles, as outlined by CIEEM (2018):

Avoidance - Seek options that avoid harm to ecological features (for example, by locating on an alternative site).

Mitigation - Adverse effects should be avoided or minimized through mitigation measures, either through the design of the project or subsequent measures that can be guaranteed – for example, through a condition or planning obligation.

Compensation - Where there are significant residual adverse ecological effects despite the mitigation proposed, these should be offset by appropriate compensatory measures.

Enhancements - Seek to provide net benefits for biodiversity over and above requirements for avoidance, mitigation or compensation.

2 SITE DESCRIPTION

2.1 LOCATION, LANDSCAPE, AND BACKGROUND

Laurel Farm is located along Pilning Street, between Almondsbury and Pilning, south Gloucestershire. The M4 lies 1.2km north and the M5 5km east. The landscape surrounding the site is largely agricultural, with an extensive system of Rhines in place including Bunsham, Gumhurn and Pilning New Rhines within 250m of Laurel Farm.

The proposals will include the conversion of an existing agricultural building to form a new residential dwelling.

3 SURVEY METHODOLOGY

3.1 DESK STUDY

An initial desk study was composed to gain background information regarding any protected species or designations within the area. The main sources of information were Magic Map and NBN Atlas.

3.2 SITE SURVEY

A site visit was made on 25/01/2024. The survey was carried out in accordance with CIEEM (2017) best practice guidelines. The objective of the survey was to find and record any signs of use by protected species and to note the habitat features present.

An assessment of the available habitats both on and adjacent to the site led to consideration of the potential of the site for the following protected species:

[redacted]

- Bats
- Breeding birds
- Great Crested Newt
- Hedgehog
- Otters
- Reptiles
- Water vole

The survey methodology was tailored to evaluate the area for these species in the following ways:

[redacted]

[redacted]

Bats

The objective of the survey was to find and record any signs of use by bats, for example:

- Droppings, sometimes in concentrations below roost sites
- Feeding signs such as butterfly and moth wings
- Staining of timber, brickwork around access points

The general structure of the building was assessed for its potential to provide bats with roosting opportunities. The site was assessed in terms of its suitability to support bat species. Hedgerow habitat and nearby potential habitat were assessed and recorded and potential impacts from the proposals considered.

Breeding birds

The site was assessed in terms of its suitability to support breeding bird populations. Hedgerow habitat and nearby potential habitat were assessed and recorded.

Great crested newt

A desk study and a ground search were conducted to search for any areas of open water within 250 metres. Waterbodies were then assessed based on the Habitat Suitability Index for great crested newts (Oldham et al., 2000 and ARG UK, 2010).

Hedgehog

The site was assessed in terms of its suitability for hedgehog e.g. areas of rough vegetation, built structures with cavities beneath, availability of feeding areas.

Otter

Any water courses within the area and appropriate terrestrial land were searched for the following field signs:

- Spraint,
- Footprints,

- Feeding remains.

Reptiles

The site was assessed based on its suitability to support reptile populations including connections to terrestrial land from water and suitable resting habitat nearby.

Water vole

The watercourse was searched for suitable habitat which may be used by water vole and field signs, including:

- Wide swathes of vegetation growing along the banks and within a watercourse,
- Sandy/silty banks for burrowing,
- Slow-flowing watercourses of varying depths,
- Latrines, burrow entrances and 'runs',
- Discarded vegetation, cut at a 45 degree angle.

3.3 PERSONNEL

The survey was carried out by Phillipa Stirling MSc ACIEEM: Ecologist. Natural England bat licence number: 2021-52205-CLS-CLS and GCN licence number: 2019-42631-CLS-CLS.

3.4 CONSTRAINTS

Breeding birds would not have been present at the time of the survey but previous nesting and appropriate nesting sites would have been apparent.

4 SURVEY RESULTS

4.1 DESK STUDY

The desk study found that there are no statutory designations within 1km of the site. The search included Ramsar, SSSI, SAC, SPA, LWS, NNR and LNR. [1]

Results from the desk study revealed that within a 1km radius of the proposed development site the following protected species have been recorded:

Species	Distance	Protection
Mammals		

[1] **SSSI**: Site of Special Scientific Interest, **SAC**: Special Area of Conservation, **SPA**: Special Protection Area, **LWS:** Local Wildlife Site **NNR:** National Nature Reserve, **LNR**: Local Nature Reserve.

[redacted]

Birds		
Kingfisher Kestrel Redwing Fieldfare Whimbrel	0.1-1km	Wildlife and Countryside Act 1981.
Amphibians		
Great crested newt	0.9km	Wildlife and Countryside Act 1981.

4.2 HABITATS ON SITE

All habitats are classified using JNCC's Phase 1 Habitat Survey Handbook (JNCC, 2010).

Buildings

A survey of a group of agricultural building was completed whilst on site:

Building 1: The barn to be converted is a steel framed structure, open at the north elevation. The west, south and east elevations are clad with a single layer of corrugated tin, with a single course of blockwork at the base. The roof over the main structure is pitched, and covered with corrugated fibre cement. There is a lean-to section at the east gable which is also covered with corrugated fibre cement.

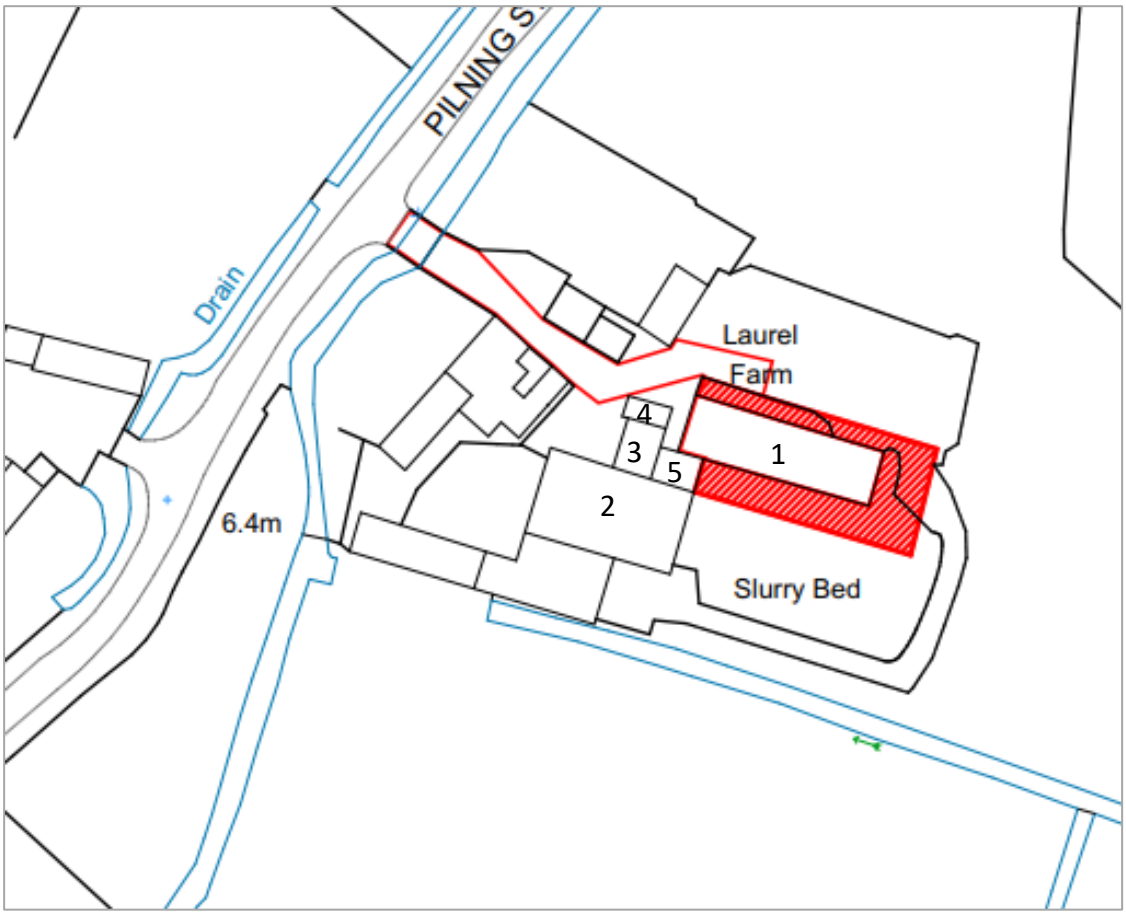
The floor within the barn is part concrete and part bare ground. There are no enclosed sections or cavities present within the barn.

Building 2: A large steel framed cow shed, adjacent to the barn for conversion. The roof is pitched and covered with fibre cement sheets and there are numerous transparent skylight sections. The flooring is concrete throughout and the elevations are clad with corrugated fibre cement and vertical Yorkshire boarding, atop single course blockwork walls.

Building 3: Adjoining B2 at its north elevation, this structure is a small blockwork building with a corrugated tin roof with numerous transparent skylights. The floor is concrete and around half of the roof structure is half-rounded.

Building 4: Another small blockwork structure with a half-pitch corrugated tin roof, adjoining B3 at its northern elevation. Concrete floors extend throughout.

Building 5: A third small blockwork structure with a half-pitched roof covered with corrugated fibre cement. The bottom 2/3 of the walls are blockwork, with corrugated fibre cement cladding at the top third.



Hardstanding

The farmyard is currently concrete. This habitat type surrounds Building 1 along the north, east and west sides.

There is a concrete road which runs around the east side of building 1 and extends around the old slurry bed, before re-joining the farm yard.

The existing drive access is all concrete yard.

Bare ground

The area marked as 'slurry bed' is now an area of bare earth.

4.3 ADJACENT HABITATS

Watercourse

There are a number of Rhines located within 100m of the site including:

Bunsham Rhine 27m south

Gumhurn Rhine 45m west

Improved grassland

Land to the north of the site is currently in down to agricultural grassland. The species present within the sward include: perennial ryegrass, annual meadow grass, cock's foot, germander speedwell, common nettle, broadleaved dock, cleavers, white clover and creeping buttercup.

Areas along the south side of the field have been subject to some ground disturbance and additional species recorded here include: pineapple weed, red dead nettle, spear thistle, bristly ox tongue and colt's foot.

Hedgerow

There are a number of hedges present throughout the surrounding land including:

An ornamental cherry laurel hedge within the garden of the adjacent farmhouse and a double-row hawthorn hedge to the north and west.

4.4 PROTECTED SPECIES

Bats

Building 1: The structure is very light and open, with modern construction materials being the only features present. There are no enclosed loft spaces or cavities, and no potential roosting features were identified. No evidence of bats was identified whilst on site.

Building 2: There are no suitable roosting features present and no evidence of bats was found during the survey.

Building 3: No suitable potential roosting features were identified and no evidence of bats was found.

Building 4: No suitable potential roosting features were identified and no evidence of bats was found.

Building 5: No suitable potential roosting features were identified and no evidence of bats was found.

Breeding birds

Two swallow nests were found in Building 4. One of these has been adopted by a wren.

No other previous nesting evidence was found during the inspection.

Great Crested Newt

There are no pond features present within 250m of the site area. There is a system of Rhines present throughout the local landscape, all of which are at least slow-flowing. The Rhines contain fish and records for stickleback exist within 1km of the site.

These drainage ditches are not suitable for use by breeding GCN as the features associated with a pond are not present in these ditches.

There is one record of GCN at 900m, from a garden pond in 1996. No other records are present within 1km of the site.

The proposed development site does not offer any suitable terrestrial habitat for GCN or other amphibians.

Hedgehog

The site offers very limited opportunities for hedgehog and there is no suitable nesting or feeding areas within the red line boundary.

Otter

The site itself does not offer suitable terrestrial opportunities for otter. The surrounding Rhines were surveyed during the visit and no evidence of otter was found although this does not mean that the species is not active in the surrounding landscape.

No evidence of otter was found on or adjacent to the site.

Reptiles

The site does not offer suitable terrestrial habitat for reptile species.

Water vole

The site does not offer suitable habitat for water voles but the surrounding Rhines offer good quality habitat for this species. No confirmed evidence of water voles was identified in the Rhines surrounding the property but it is possible that some burrow entrances and runs exist in the south bank of Bunsham Rhine, some 50m from the site. Water vole activity between December-February is reduced, rarely venturing out of their burrows. Evidence is therefore scarce.

5 POTENTIAL ECOLOGICAL IMPACT

5.1 HABITAT ASSESSMENT

Buildings

None of the buildings on site provide ecologically valuable habitat and the conversion of Building 1 will be of no wider ecological consequence.

Hardstanding

The site consists of extensive hardstanding, with limited ecological value. Alteration to this habitat type will have no impact upon ecologically sensitive habitats.

An existing access point exists from Pilning St, extending through the concrete farmyard.

Bare ground

The former slurry pit is now an area of bare earth. Alteration to this will have no impact upon ecologically significant features.

5.2 PROTECTED SPECIES ASSESSMENT

[redacted]

Bats

None of the buildings surveyed on site provide suitable roosting features for bat species. In particular, Building 1 to be converted provides 'negligible' potential, with no evidence of bats found during the site inspection.

The proposals are unlikely to have any impact upon bat species and no further survey work is required. Given the rural position of the project, a Wildlife Sensitive Lighting Plan will be adopted in order to limit the impact of artificial illumination on the surrounding landscape.

Breeding birds

One swallow nest and one wren's nest were found in Building 4. Mitigation measures and replacement nesting features will be required.

Great crested newt

The surrounding watercourses do not offer suitable habitat for breeding GCN. This is mainly due to the fact that the water is flowing, and fish are present. Furthermore, the habitats on site offer poor terrestrial habitat opportunities for GCN. There are no records of GCN within 500m of the site, the closest one being 900m away and dating to 1996.

Studies have demonstrated that 95% of all summer refuges of GCN fall within 63m of their summer breeding pond (Jehle, 2000). Subsequent studies also found that capture rates of GCN were at their highest within 50m of a breeding site with a significant reduction in capture rates beyond 100m (Cresswell and Whitworth, 2004).

The proposals will have no impact upon GCN and no further survey work is required.

Hedgehog

The site provides limited opportunities for hedgehog and it is unlikely that they would be present on site. No further survey work is required.

Otter

No evidence of otter was found in association with the surrounding Rhines and the habitats on site do not offer suitable terrestrial habitat which may be in use by otter. The proposals will have no impact upon this species and no further survey work is required.

Reptiles

The site does not provide suitable habitat for reptiles, the land surrounding does not appear to offer suitable opportunities for reptile species. The proposals will have no impact upon habitats which are likely to be in use by reptile species and no further survey work is required.

Water vole

The site does not provide any suitable terrestrial habitat for water vole, and no evidence of water vole was found on the northern bank of Bunsham Rhine (e.g. runs, droppings, cut vegetation, burrow entrances).

The site itself does not provide any suitable habitat for water vole and the plans are not expected to have any impact upon this species. Precautionary measures will be adopted to remove any residual risk.

6 AVOIDANCE, MITIGATION AND ENHANCEMENT

6.1 HABITAT MITIGATION

The habitats are of no intrinsic interest ecologically, other than for the species they support. Further mitigation measures for breeding birds is provided below.

6.2 PROTECTED SPECIES MITIGATION

Bats

The following measures will be included in any plans for lighting at the site:

- Hedgerows and key habitat features including mature trees on the site will not be illuminated in order to retain dark movement corridors for nocturnal wildlife.
- Any exterior security or decorative lights to be installed on the development site will be less than 3 m from the ground and fitted with hoods to direct the light below the horizontal plane, at an angle of less than seventy degrees from vertical, and shall not be fixed to, or directed at, bat boxes or gables or eaves.
- Security lighting will be set on motion sensors with short timers (<1 minute) and will be LED with a passive infrared trigger.

- External lights will be hooded and directed toward the ground to reduce upward light spill.
- A warm white spectrum will be adopted throughout the scheme to reduce blue light component (<2700Kelvin).
- Internal luminaires will be recessed where installed in proximity to windows to reduce glare and light spill. LED luminaires will be used internally where possible due to their sharp cut-off, lower intensity, and dimming capability.
- Luminaires will always be mounted horizontally with an upward light ratio of 0%.

Breeding birds

Works to Building 4 need to be carefully timed so as to not disturb breeding birds. If the building will be altered or replaced, this will need to be done outside the breeding bird season i.e. September – February.

Replacement nesting sites for swallow and wren will be required in another building on site, to be retained. One Woodcrete swallow nest and one roundhouse Wren's nest will be installed into the building identified as 'bike shed' on plans. These will be in place before removal of the existing nest site.

Water vole

Whilst there is no risk of the proposed work having an impact upon water vole, the following measures will be adopted as a precaution:

- No work will take place within 10m from Bunsham Rhine. This is approximately the north edge of the concrete track which in place.
- No materials will be stored along the banks of the Rhine.

General Avoidance Measures

The following measures should be implemented to decrease the likelihood of killing/injuring small animals which might be present locally:

- If piles of rubble, logs, bricks, other loose materials or other potential refuges are to be disturbed, this should be done by hand and carried out during the active season (March to October) when the weather is warm to allow animals to disperse naturally.
- The grassland areas should be kept short prior to and during construction to avoid creating attractive habitats for wildlife.

- All building materials, rubble, bricks and soil must be stored on raised platform (e.g. wooden pallets) to prevent their use as refuges by wildlife.
- Where possible, trenches should be opened and closed in the same day to prevent any wildlife becoming trapped. If it is necessary to leave a trench open overnight then it should be provided with a means of escape in the form of a shallow ramp.
- Any open pipework should be capped overnight. All open trenches and pipework should be inspected at the start of each working day to ensure no animal is trapped.

6.3 ECOLOGICAL ENHANCEMENT

Bunsham Rhine along the south side of the farmyard is currently partly fenced, and open. It is recommended that a new, native species-rich hedge is planted along the south boundary of the yard to shelter the Rhine from all on-site activity. Planting will take place no less than 1m from the top of the bank, and include a mixture of native woody species. This could be: hawthorn, hazel, holly, field maple, oak, elder, dogwood, Guelder rose, dog rose.

7 SUMMARY

Planning permission will be sought for "Prior notification of a change of use from Agricultural Building to 1 no. residential dwelling (Class C3) as defined in the Town and Country Planning (Use Classes) Order 1987 (as amended). (P23/03420/PNGR)". Arbor Vitae were commissioned by The Rural Planning Co. to undertake a Preliminary Ecological Appraisal in order to assess the impact of the development on habitats and protected species. The key findings can be summarised below:

- None of the buildings on site provide ecologically valuable habitat and the conversion of Building 1 will be of no wider ecological consequence.
- The site consists of extensive hardstanding, with limited ecological value. Alteration to this habitat type will have no impact upon ecologically sensitive habitats. An existing access point exists from Pilning St, extending through the concrete farmyard.
- The former slurry pit is now an area of bare earth. Alteration to this will have no impact upon ecologically significant features.
- The proposals will have no impact upon badger, their setts or foraging/commuting routes. No further survey work is required but general avoidance measures will be adopted, given the presence of badger approximately 75m from the site.
- None of the buildings surveyed on site provide suitable roosting features for bat species. In particular, Building 1 to be converted provides 'negligible' potential, with no evidence of bats found during the site inspection. The proposals are unlikely to have any impact upon bat species and no further survey work is required. Given the rural position of the project, a Wildlife Sensitive Lighting Plan will be adopted in order to limit the impact of artificial illumination on the surrounding landscape.
- One swallow nest and one wren's nest were found in Building 4. Mitigation measures and replacement nesting features will be required.
- The surrounding watercourses do not offer suitable habitat for breeding GCN. This is mainly due to the fact that the water is flowing, and fish are present. The proposals will have no impact upon GCN and no further survey work is required.
- The site provides limited opportunities for hedgehog and it is unlikely that they would be present on site. No further survey work is required.
- No evidence of otter was found in association with the surrounding Rhines and the habitats on site do not offer suitable terrestrial habitat which may be in use by otter. The proposals will have no impact upon this species and no further survey work is required.
- The site does not provide suitable habitat for reptiles, the land surrounding does not appear to offer suitable opportunities for reptile species. The proposals will have no

impact upon habitats which are likely to be in use by reptile species and no further survey work is required.

- The site does not provide any suitable terrestrial habitat for water vole, and no evidence of water vole was found on the northern bank of Bunsham Rhine (e.g. runs, droppings, cut vegetation, burrow entrances). The site itself does not provide any suitable habitat for water vole and the plans are not expected to have any impact upon this species. Precautionary measures will be adopted to remove any residual risk.
- Bunsham Rhine along the south side of the farmyard is currently partly fenced, and open. It is recommended that a new, native species-rich hedge is planted along the south boundary of the yard to shelter the Rhine from all on-site activity.

8 REFERENCES

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FIGURE 1 LOCATION

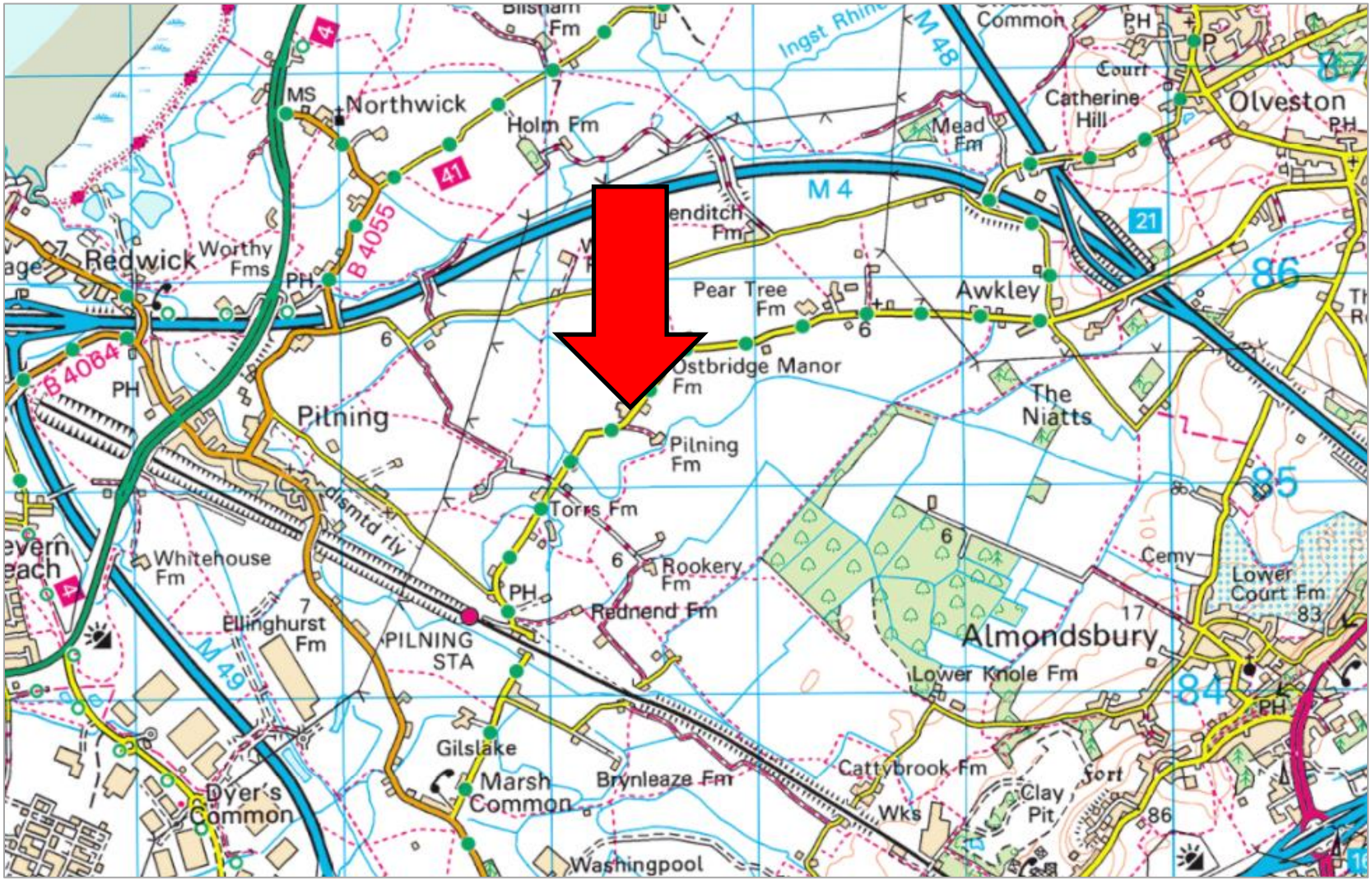

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FIGURE 2 AERIAL PHOTOGRAPH

FIGURE 3 WATERCOURSES AROUND LAUREL FARM

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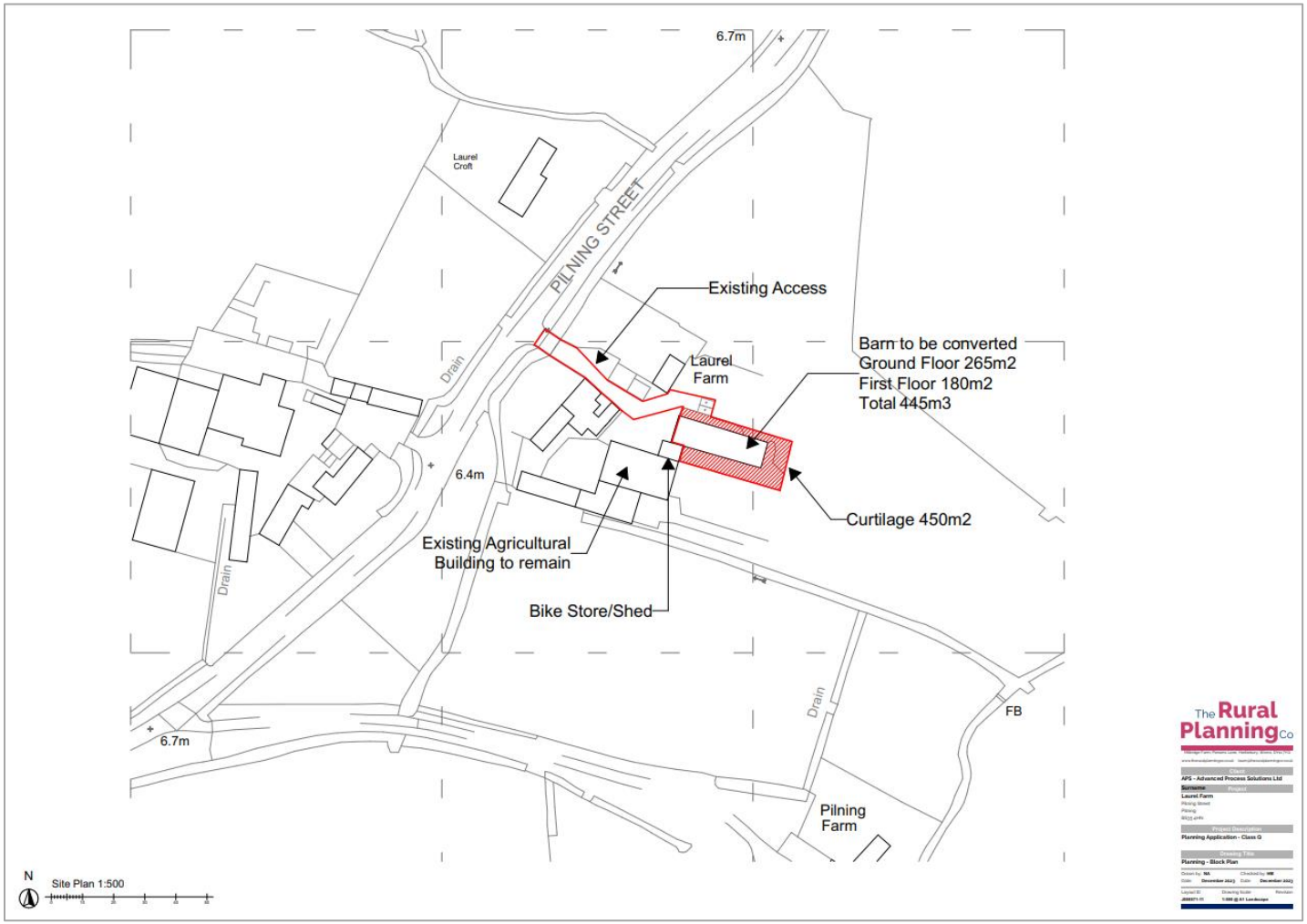
FIGURE 4 SITE PLAN



APPENDIX 1 PHOTOGRAPHS

Building 1

Building 1 south

Former slurry pit

Concrete farm track

Building 2

Building 2 interior

	
Building 3	Building 3 interior
	
Building 4	Building 4
	
Building 5 and concrete yard	Building 4 interior

	
Rhine to the south	Land to the north