
From: John Purcell
Sent: 19 January 2022 12:34
To: h.saunders@northyorkmoors.org.uk
Subject: Pre-construction conditions

Dear Hilary

I attach the following documents with reference to the pre-construction conditions:

1. Arboricultural Impact Assessment and
2. Arboricultural Method Statement, which include the tree protection plan
3. Archaeological watching brief (sent to Nick Mason in September)
4. Badger Survey
5. Habitat Management Plan

I sent these to Mark Antcliff on 19th and 21st December 2021 but didn't know that there was a fee to be paid as well. This is being paid today.

I have been discussing the arboricultural aspects with Mark Antcliff over the last few months and together we concluded that a detailed tree survey wasn't really appropriate in a dense wood and we decided that it is more practical to identify the limited number of trees that will be felled. The submitted report therefore approaches this issue from this angle. I have since met Mark on site and we are working on some additional details together.

We want to carry out some soil moving/mulching of the clear felled area, which is now the nature zone and so would like to part discharge the conditions regarding soil moving and we would also like to clear the tree felling pre-condition. We want to do this as the nesting season starts in March and delaying would add an additional 6 months approximately to the programme. I believe that Mark is happy for us to do the soil and mulching work, he may wish to add some commentary on working practices. I think he is also OK with the felling of the trees that need felling, again we will need to agree working practices, around the removing of the resultant stumps.

I know he plans to follow up on our meeting with some queries and suggestions.

I look forward to hearing from you.

With kind regards

John



NYMNP
19/01/2022

ARBORICULTURAL IMPLICATIONS ASSESSMENT

PROPOSED DEVELOPMENT

AT

CLOUGHTON WOODLAND
CLOUGHTON

Author: C. Salisbury
Date: 17 December 2021
Ref: TRE/CW/Rev A



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1.0 Introduction

- 1.1 Mulberry Tree Management were instructed by Cloughton Wood Lodges Limited, to carry out an arboricultural survey of trees at their site in Cloughton Woods, Cloughton.
- 1.2 This report details the arboricultural implications of developing the site, including:
 - a survey of the trees on and near the development which may impact the proposal from ground level, noting their location, species and all relevant parameters, i.e. stem diameter, height, crown spread, condition etc;
 - providing advice on the removal, retention and management of trees;
 - assessment of the potential effects of the proposal on retained trees and vice versa;
 - assessment of the requirement for tree protection for the duration of the works;
 - preparation of a tree schedule;
 - and report on the above matters.
- 1.3 The survey was carried out on 24 November 2021 by means of inspection from ground level by an experienced and qualified arboriculturalist. The inspection can be restricted in cases where trees were Ivy clad or surrounded by vegetation.
- 1.4 Under *BS5837: 2012 Trees in Relation to Construction - Recommendations*, the assessment of trees is made objectively. The tree categorisation method identifies the quality and value of the existing tree stock, allowing informed decisions to be made concerning development design layout.
- 1.5 The following documents have been made available by the client:
 - Drawing- 472_P01_1.dwg
- 1.6 The supplied drawing included some tree positions plotted. Any dimensions regarding tree positions and protective fencing must be checked on site.
- 1.7 Weather conditions during the survey were dry and still.
- 1.8 The survey was carried out noting the conditions of the trees at the time of inspection. As trees are part of the natural environment, conditions can naturally change; therefore the contents of this report are valid for one year only. After this period, re-inspection may be necessary.

2.0 Survey Methodology

- 2.1 The trees were surveyed (prefixed T, or G for group) and recorded in the tree schedule in appendix one. Where groups are recorded, average height and diameter at breast height (DBH) of the trees in the group are reported. Where access to the base of any trees was limited, stem size was estimated.
- 2.2 All the trees were assessed using: a grading A to C (retention) and U (removal); condition and age class as defined in appendix two.
- 2.3 Where appropriate, canopy spread for each tree was recorded at four cardinal points in order to reproduce an accurate representation of the crown shape of the tree on the tree plan in appendix three.
- 2.4 The survey included all trees within the proposal area and trees near to the proposal.
- 2.5 Sight lines were difficult to establish during the survey due to the dense vegetation hence trees were grouped appropriately.

3.0 Development Proposals

- 3.1 Due to the proposed development and its associated infrastructure there are a number of locations where the proposals are in close proximity to the trees surveyed. The Site Layout Plan within appendix three identifies the trees in relation to the proposed development.
- 3.2 In order to fully assess the impact of the proposals an Impact Table has been created detailing each tree, which shows the proximity of the associated works to the tree.
- 3.3 This can then be assessed in accordance with BS 5837:2012 to determine whether the development will have a detrimental impact on the health of each tree. Once this has been determined remedial measures can be detailed to reduce the impact the proposals will have on the treescape.

3.4 Impact Table:-

Tree No.	Root Protection Area identified in Table 2 of BS 5837:2012	Distance to Proposed Hard Standing (m)	Distance to Proposed Development (m)	Can the Tree/s be Successfully Retained
T1	Not Assessed as the Tree Requires Removal Due to its Condition			
T2	59m ²	N/A	49.40	Yes
T3	168m ²	3.40	49.30	Yes
W1	100m ²	1.50	1.00	Yes as outlined in section 5.0 with the loss of 13 trees (2 of which are Cat U)
W2	92m ²	1.50	1.00	Yes as outlined in section 5.0 with the loss of 7 trees
W3	76m ²	1.50	1.00	Yes as outlined in section 5.0 with the loss of 3 trees (1 of which is Cat U)

4.0 Impact Assessment

4.1 To assess the implications of the Impact Table each tree can be categorised in the following way: -

Tree No.	Trees to be retained		Trees to be removed	
	With No Impact	With detailed construction	Due to Condition	Due to Development
	T2, T3, W1, W2 & W3	N/A	T1, W1(2 trees) & W3(1tree)	W1(11 trees), W2(7 trees) & W3(2 trees)

5.0 Mitigation Proposals

5.1 Installation of the Cabins

5.1.1 The location of the cabins has been chosen to require the minimal amount of tree loss and where loss is identified these specimens are poor-quality and offer little in the way of amenity value.

5.1.2 To further reduce impacts on the existing woodland and therefore securing greater tree retention the cabins are to be installed on foundation pads with the drainage hung under the cabins. This will reduce the need for excavation works.

6.0 Conclusions and Arboricultural Recommendations

- 6.1 The tree categorisation method identifies the quality and value of the existing tree stock but it is not meant to be interpreted rigidly and is presented in order to form a balanced judgement on tree retention and removal.
- 6.2 A precautionary method of working near trees is detailed in the accompanying Arboricultural Method Statement.
- 6.3 Following site development, regular (annual or biannual) inspections of all retained trees should be undertaken by a qualified Arboricultural Consultant.
- 6.4 It is considered that in following the advice in this document, any negative factors affecting trees on the site will be minimised.

Appendix One

Tree Survey Schedule

TREE SURVEY SCHEDULE

Arboricultural Data Sheet:		Date of Survey: 24/11/21				Surveyor: C. Salisbury							
Tree No.	Species	DBH (mm)	Height (m)	Age	Crown Spread (m)				Crown clearance	Condition rating	Comments and preliminary management recommendations	Estimated remaining contribution	Tree quality category rating
					N	E	S	W					
T1	Beech	750	13.80	FM	6.0	6.0	7.5	5.5	3.00	C	A co-dominant multi-stemmed specimen displaying evidence of decline within its upper canopy.	0 – 10	U
T2	Alder	360	8.60	M	4.5	4.5	4.5	4.5	2.50	B	A poor-quality individual multi-stemmed specimen with included unions at its base.	40 – 60	C2
T3	Oak	610	18.60	M	5.0	5.0	5.0	4.0	1.50	B	A co-dominant specimen with reasonable form.	80+	B2
W1	Larch, Pine, Birch & Oak	470 avg.	18.60	EM	-	-	-	-	3.50	B/C	A mixed species woodland compartment.	80+	A2
W2	Spruce, Birch, Maple & Beech	450 avg.	19.20	SM/M	-	-	-	-	2.50	B/C	A mixed species woodland compartment.	80+	A2
W3	Beech, Oak, Larch & Spruce	410 avg.	21.60	EM/M	-	-	-	-	3.00	B/C	A mixed species woodland compartment.	80+	A2

Appendix Two

Tree Survey Key

Trees for removal			
Category and definition		Criteria	
Category U Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management		Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other R category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality Note – Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of bat box in nearby tree).	
Trees to be considered for retention			
Category and definition		Criteria - Subcategories	
		1 Arboriculture values	2 Landscape values
			3 Conservation values
Category A Those of high quality and value: in such a condition as to be able to make a substantial contribution (a minimum 40 years is suggested)		Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboriculture features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups)
Category B Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)		Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)	Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboriculture features (e.g. trees of moderate quality within avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little impact on the wider locality
Category C Those of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150 mm		Trees not qualifying in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit
		Note - Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150 mm should be considered for relocation	

Age Class






Y	Young	Trees that have not yet established
SM	Semi-Mature	Established trees up to 1/3 of expected height and crown
EM	Early mature	Between 1/3 and 2/3 expected height and crown
M	Mature	Between 2/3 and full expected height and crown
FM	Fully Mature	Full expected height and crown
OM	Over-Mature	Crown beginning to break up and decrease in size
S	Senescent	Crown in advanced stage of break-up

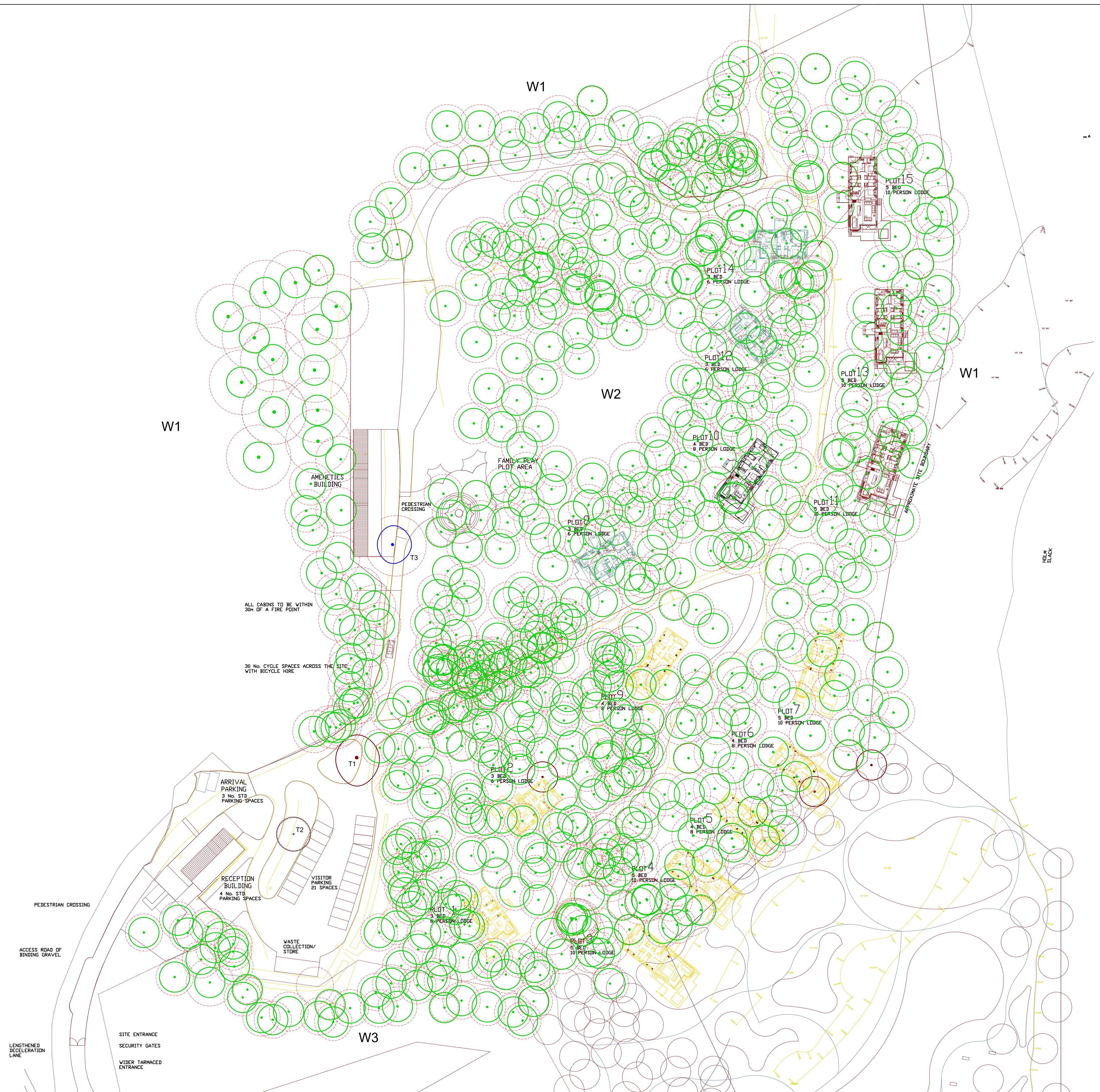
Condition

A	Good
B	Fair
C	Poor
D	Dead

Appendix Three

Plans

-  Category A Trees
-  Category B Trees
-  Category C Trees
-  Category U Trees
-  Root protection area



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Site Address:
 Cloughton Woods
 Filey

Drawing Title:
 AIS Plan
 Drawing No:
 CWF/AIS/01 Rev. A
 Date: 17/12/2021 Scale: 1:500@A1 Drawn by: CS

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NYMNPA

19/01/2022

ARBORICULTURAL METHOD STATEMENT

PROPOSED DEVELOPMENT

AT

CLOUGHTON WOODLAND
CLOUGHTON

Author: C. Salisbury
Date: 17 December 2021
Ref: TRE/CW/Rev A



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1.0 Discussion

- 1.1 The majority of the root system, of a tree, is in the surface 600mm of the soil, extending radially for distances frequently in excess of the trees height. Beyond the main structural roots (close to the base of the trunk), the root system rapidly sub-divides into smaller diameter roots: off this main system, a mass of fine roots develops.
- 1.2 The shape of the main structural roots develops in response to the need for the tree to have physical stability. Beyond these major roots, root growth and development is influenced by the availability of water and nutrients. Unless conditions are uniform around the tree, which would be unusual, the extent of the root system will be very irregular and difficult to predict. It will not generally show the symmetry seen in the branch system.
- 1.3 The parts of the root system, which are active in water and nutrient uptake, are very fine, typically less than 0.5mm diameter. They are short lived, developing in response to the needs of the tree, with the majority dying each winter. It is *essential* that conditions in the soil remain conducive to the healthy growth of these fine roots so that the water and nutrients necessary for healthy tree growth can be absorbed.
- 1.4 All parts of the root system, but especially the fine roots, are vulnerable to damage. Once they are damaged, water and nutrient uptake will be restricted until new roots have regenerated. Vigorous young trees will be capable of rapid regeneration but over mature trees will respond slowly, *if at all*.
- 1.5 In order to live and grow, roots need oxygen from the soil. Respiration by the roots and other soil organisms depletes this oxygen and increases carbon dioxide levels in the soil; a correct balance of these gases is normally maintained by diffusion between the soil and the atmosphere. Anything, which disturbs this balance, will affect the condition of the root system.
- 1.6 The factors that most commonly affect this diffusion adversely, and therefore damage roots, are the following: -
 - a) Compaction of the ground, which reduces the space between soil particles. This is particularly important on clay soils. A single passage by heavy equipment on clay soils or storage of heavy materials can cause significant damage.
 - b) Changing soil levels, even for a few weeks.
 - c) Covering the root area with impervious surfaces.
 - d) A rise in the level of the water table. Roots can tolerate submersion for short periods. But a permanent rise will deplete the soil of oxygen.
- 1.7 Serious damage is often caused during preliminary site works by stripping the topsoil. For this reason, such works should be avoided until protective fencing has been erected.

- 1.8 Excavations in the rooting area can sever roots. As the majority of roots are in the surface 600mm, even shallow excavations can cause damage.
- 1.9 Excavations for foundations, landscaping or service trenches are usually sufficiently deep to sever most of the roots, and it should therefore be assumed that all parts of the root system beyond the excavation would no longer serve the tree.
- 1.10 Excavation or soil stripping which severs or damages the roots may impair the stability of the tree and make it dangerous.

2.0 Method Statement

Before any form of development commences on the site the following works should be undertaken: -

2.1 Tree Works

Tree No.	Proposed Works
W1	Fell approximately 13 trees as identified on the enclosed plan
W2	Fell approximately 7 trees as identified on the enclosed plan
W3	Fell approximately 3 trees as identified on the enclosed plan

2.2 Protective Fencing

All fencing used on the site should fully comply with BS 5837:2012 (Trees in Relation to Construction – Recommendations).

- 2.2.1 The fencing should be strong and suitable for local conditions. It should also take into account the degree of construction activity on the site.
- 2.2.2 The fencing should be at least 2.3m in height and should be erected with both a vertical and horizontal scaffolding framework capable of withstanding impact, with vertical tubes spaced at a maximum of 3 m. This should support either weldmesh panels which should be securely fixed with wire or scaffold clamps.
- 2.2.3 Notices should also be erected on the fencing stating 'Protected Area - No operations within fenced area'.
- 2.2.4 The positioning of the protective fencing is also very important and should be erected in the proposed location identified in Appendix One. Once the fence has been erected it should never be crossed and particular care should be taken not to store any materials or soil within the protected area.

2.3 Additional Precautions Outside Fenced Areas

- 2.3.1 Oil, bitumen, cement or other material likely to cause damage to the tree will not be stacked or discharged within 10m of the trees stem or within the protective area. Also materials in general will not be stacked or discharged within the exclusion zone.
- 2.3.2 Concrete mixing and washing will not be carried out within 10m of any retained trees.
- 2.3.3 Fires will not be lit beneath the foliage or in a position where the flames could extend to within 5m of the foliage, branches or trunk. If the fire is large then this may necessitate a distance of at least 20m.
- 2.3.4 Trees that are to be retained will not be used as anchorage for equipment.
- 2.3.5 Notice boards, telephone cables, or other services will not be attached to any part of the retained tree.
- 2.3.6 Care should be taken when using cranes or other equipment near the canopy of the retained trees. Also any trees to be felled in proximity to the retained trees should be done so with particular care.

2.4 Installation of the Cabins and Hard Standing

- 2.4.1 To facilitate the development and prevent significant damage to any tree roots within the RPA of the tree. Supervision of the excavation and root pruning should be undertaken by the arboricultural consultant.
- 2.4.2 If the following points are adhered to then the long-term health and retention of W1, W2 & W3 will not be adversely affected:
 - Exposed roots will be wrapped in dry, clean Hessian to prevent the roots from drying out. In hot or dry weather, the hessian should be kept moist. The hessian must be removed before backfilling.
 - Roots less than 25mm diameter may be pruned back, preferably to a growing point. A sharp cutting tool such as bypass secateurs or a handsaw should be used to leave the smallest wound possible. Roots greater than 25mm in diameter should be retained wherever possible.
 - Root pruning should be carried out under the supervision of the Arboricultural Consultant.
 - Backfilling of any excavation must be carried out by hand to avoid direct root damage or compaction, where possible. Builder sand must not be used in the backfill material.

2.5 Arboricultural Supervision

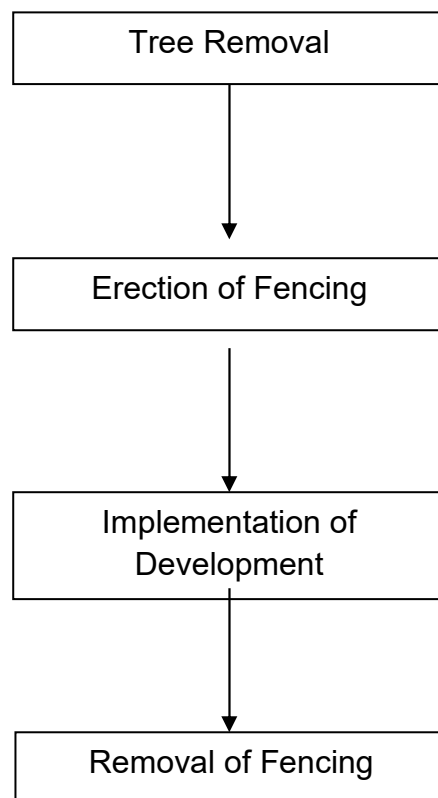
2.5.1 The following phases of work should be undertaken with qualified arboricultural supervision.

- Identification of trees to be removed
- Installation of tree protection
- Excavation works within the root protection area of W1, W2 & W3

2.5.2 The consulting Tree Consultants contact details are as follows: Carl Salisbury –

2.5.3 Monthly visits should be undertaken to ensure works are being implemented in full accordance with the method statement. Any issues identified should be rectified immediately.

2.6 Summary of Methodology for the Protection of the Trees



Appendix One

Tree Plan

- Existing Trees Retained
- Existing Trees Removed
- Root Protection Area
- Tree protection fencing



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Site Address:
 Cloughton Woods
 Filey

Drawing Title:
 Method Statement Plan

Drawing No:
 CWF/MS/01 Rev. A

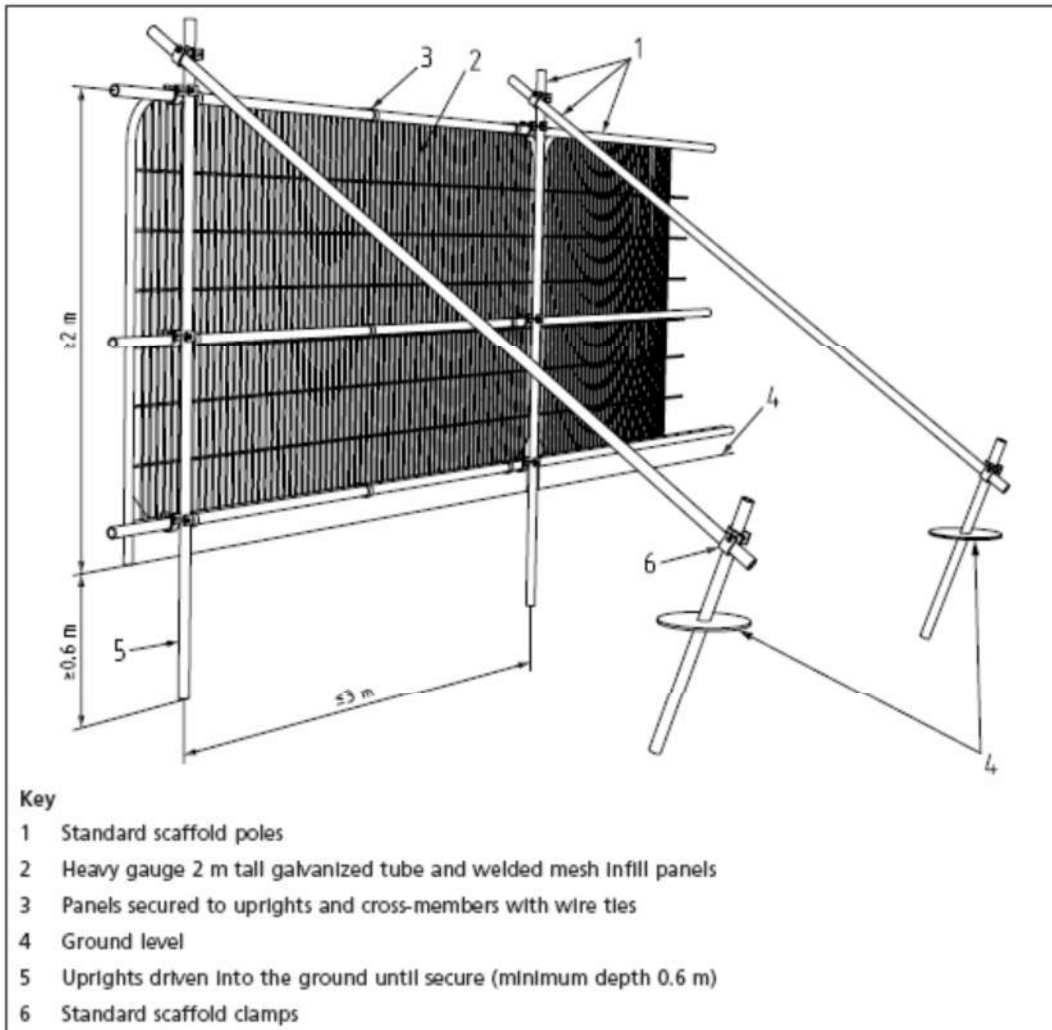
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Appendix Two

Tree Protection Fencing

Tree Protection Fencing (BS5837: 2012)





NYMNP

19/01/2022

Habitat Management Plan

Land at Cloughton Woods, Cloughton, Scarborough, North Yorkshire YO13 0AW

Cloughton Wood Lodges Ltd

Arbtech Consultant's Contact details:
Craig Williams BSc (Hons) MSc GradCIEEM
Senior Consultant

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<https://arbtech.co.uk>

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Guidelines

This assessment has been designed to meet:

- British Standard 42020 (2013) 'Biodiversity – Code of Practice for Planning and Development'.

Proportionality

The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.

This approach is enshrined in Government planning guidance, for example, paragraph 193 of the National Planning Policy Framework for England.

The desk studies and field surveys undertaken to provide a preliminary ecological appraisal (PEA) might in some cases be all that is necessary.

(BS 42020, 2013)

In consequence of the scale and intensity of the proposed development, this plan-led report is considered adequate and proportionate. It communicates all relevant information necessary to determine a planning application or support the recommendations for further surveys.

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1.0 Introduction and Context

1.1 Background

Arbtech Consulting Ltd was commissioned by Cloughton Wood Lodges Ltd to produce a Habitat Management Plan (HMP) for the site of Land at Cloughton Woods, Cloughton, Scarborough, North Yorkshire YO13 0AW.

A Preliminary Ecological Assessment and bat survey was undertaken by INCA in June 2016.

A badger survey was undertaken by Arbtech Consulting in July 2021.

The assessment is informed by evidence gathered during these previous surveys. This report should be read in conjunction with them.

The purpose of this HMP is to provide detailed guidance for the long-term protection, enhancement and management of the ecological features of the site by the site owners, most notably the coniferous and deciduous woodland, and planned nature zone.

1.2 Site location

The development site is mainly centred on National Grid Reference TA 002 955 and measures ~3.852ha. The proposed nature zone is located adjacent to the south-east and measures ~0.968ha

2.0 Introduction and Context

2.1 Existing site character

Adapted from the previous ecology survey:

The application site consists largely of commercial conifer plantation woodland. This is distributed across several compartments (4c, 4g, 5a and 5b) which vary in the conifer species composition and to some extent the age of the trees but mainly consists of larch, spruce (a monoculture within 5a), pine with occasional self-seeded silver birch. One small compartment (4a) comprises mainly relatively mature beech. At the entrance to the site there are two buildings with a third building approximately 100m further north. There are areas of cleared ground around each of the buildings, which have had some stone dressing to create areas of hard standing relating to the operation of the former sawmill. Part of parcel 5b has been cleared to create the proposed nature zone (see map in Figure 1 below).

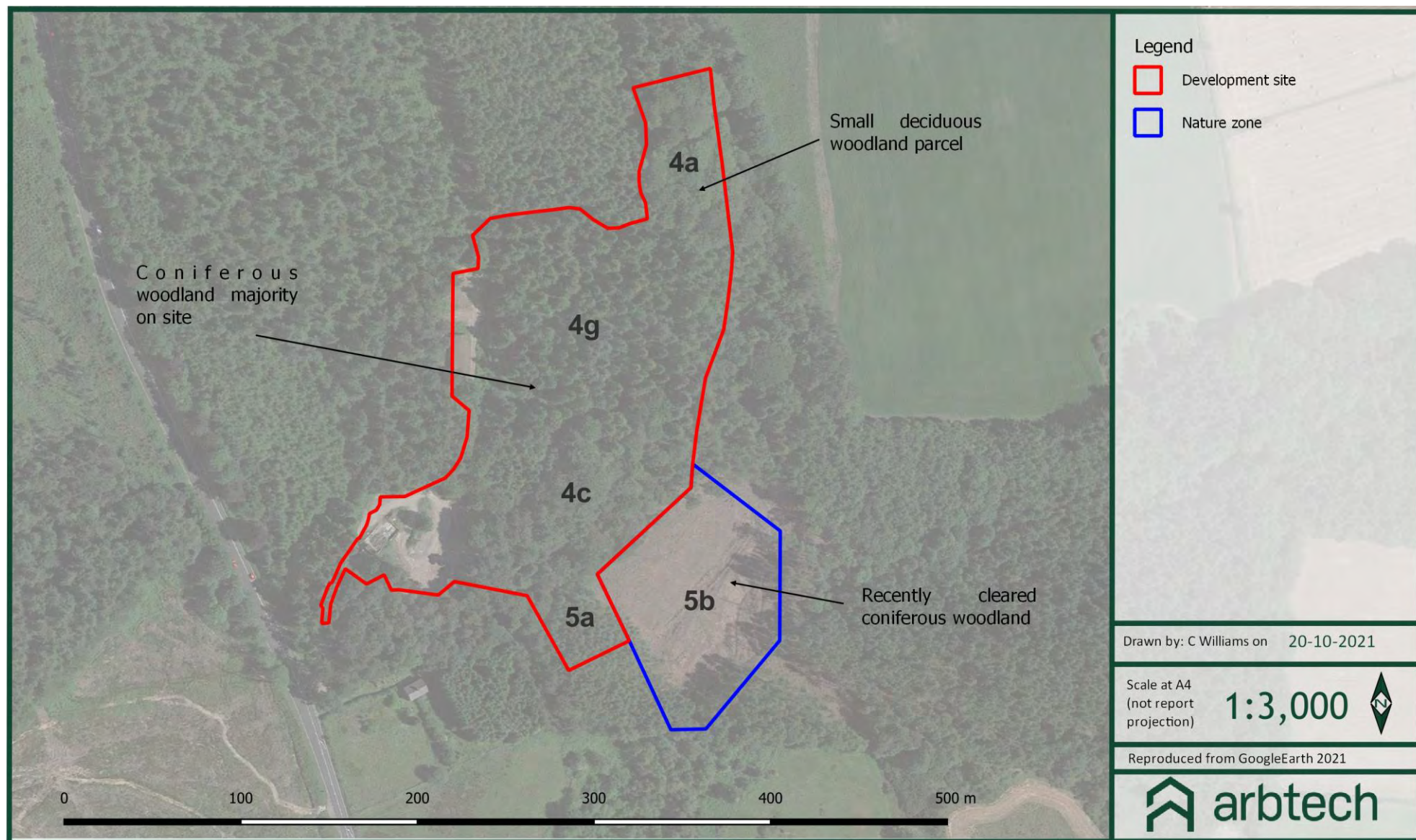


Figure 1: Phase 1 Habitat Map taken from the Preliminary Ecological Appraisal, updated with recent woodland clearance in 5b.

2.2 Project Description

- This management plan is prepared to support a planning application with North York Moors National Park Authority. The proposal is described from this below:

[NYM/2020/0327/FL]

- *Erection of 15 no. holiday lodges with external decking, alterations to access, proposed internal access road, parking and linkage paths together with recreation space and landscaping works*
- Specifically, this report aims to discharge a condition of the approved planning application, which is outlined below:

[22]

Prior to the commencement of the development a Habitat Management Plan for areas including but not limited to, the development site boundary, the 'nature zone' and any other land within 100m of a proposed promoted path or other route, shall be submitted to and approved in writing by the Local Planning Authority. The work shall not be carried out otherwise than in accordance with the details so approved.

- The proposed site plan is included below as figure 2 below:



Figure 2: Proposed site

2.3 Scope of this report

- The scope of this report is to provide a dedicated habitat management plan (HMP) for the ecological parcels on site, as well as outline the recommended enhancements for the site's ecology in general from the previous ecology survey work. It aims to maintain and improve the site's intrinsic biodiversity value within the framework of the site's occupancy after construction works.
- This strategy provides
 - Site Information: A description of the and evaluation of the features to be managed following completion of the development.
 - Management Aims and Objectives: The broad conservation management objectives for the site to which all subsequent instruction and actions relate are set out
 - Management works: The specific measures to be conducted on site to reach the aims and objectives
 - Management timings: The timings of the management works.
- To satisfy the condition, the measures covered in this mitigation and enhancement plan will ensure there is a net gain in biodiversity interest on site.
- This is an iterative document and may be superseded by any further findings on site, especially in relation to any taxa found during the development that require a European Protected Species Mitigation Licence (ESPML) due to disturbance (e.g. if great crested newts or bats are found during the development).

This HMP has been produced in accordance with BS 42020:2013 Biodiversity – Code of Practice for Planning and Development Section 11.1 in addition to the Chartered Institute for Ecology and Environmental Management (CIEEM) Guidelines for Ecological Report Writing.

The client shall be responsible for safeguarding the environment and for mitigating the effects of the works and development by implementing the general environmental requirements outlined in the specific requirements of the HMP.

3.0 Habitat management plan details

3.1 *Informative and EPSL statement*

The following section details the mitigation, management and enhancement measures of the site for long-term ecology interest.

The management aims will include a range of site-specific, suitable and achievable gains. Best practice management regimes will be implemented to further increase the ecological interest of the site. These are detailed below and should be undertaken in the correct year of the management plan.

- An application for an EPSM Licence from Natural England **is not necessary** for this development to comply with statutory legislation, based on the current plans and known ecological receptors.

3.2 *Description and evaluation of the features to be managed*

The areas subject to this management plan are designated in the ecology walkover in 2016, and outlined again below:

- Retained coniferous woodland (4c, 4g,, 5a and 5b)
- Deciduous woodland (4a)
- Nature zone (previously part of 5b, now its own parcel).
- Promoted pathways (throughout wood)

Mitigation and enhancement measures for the following protected species will be also be implemented:

- Bat commuting (known presence on site, mitigation and enhancement included)
- Breeding birds (likely on site, mitigation and enhancement included)
- Reptiles (possible on site, mitigation and enhancement included)
- Amphibians (unlikely on site, enhancement included)
- Invertebrates (enhancement included)

3.3 Aims and objectives of management

The following management aims are recommended to minimise the potential impacts on wildlife from the development, and to sustain long-term biodiversity interest:

- *Nature zone management*
- *Woodland management (veteran selection, thinning etc) – in accordance with the site's 10-year forestry plan – to be finalised.*
- *Minor damming*
- *Habitat boxes*
- *Log/stone piles*

The local BAP has been consulted to ensure that the objectives of the HMP are in line with the local biodiversity aims. The main objective of this HMP is to promote the conservation, protection and enhancement of biological diversity of woodland, one of the components of the BMP through a habitat action plan (HMP). The plan included targets for maintenance, restoration, expansion or creation for the conservation of the habitats. In this instance the aims of the BAP are being met through the following:

- Protect and maximise the biodiversity value of retained and newly created habitats.
- Maintain and enhance ecological diversity on the Site.
- installation of certain features on site for species which are within specific SAPs

These management objectives meet these criteria.

The objectives will be achieved by completing the management detailed in the HMP.

3.4 Management actions

This section details the instructions for the site to ensure that the management aims can be achieved. It is broken into compartment specific steps in 3.4.1, and then general site-wide measures are provided afterwards in section 3.4.2.

3.4.1 Compartment management measures and work schedule

Coniferous woodland (parcels 4c, 4g, 5a and 5b) and pathways

Although the majority of the existing woodland is coniferous and of relatively low habitat value, there are some steps that can be take to slowly improve it over time.

Closely spaced conifer trees should be thinned around existing small clearings or other planned features e.g.: the family play area to enable more sunlight, and less conifer needles to fall at ground level. Any other gaps that arise naturally can be planted with deciduous natives to slowly convert the coniferous woodland parcels to mixed woodland. These will need to be protected from herbivore browsing during establishment. Regrowing non-native conifers in the same area should be removed to prevent competition for light.

Wood sorrel (*Oxalis acetosella*) and ferns should be retained where they grow. Understorey shrub plants such as scrub should be managed rather than removed.

Deadwood should be allowed to rot on the woodland floor rather than removed to provide habitat for fungi and invertebrates.

Social use of the woodland will be kept to the planned small groups to help avoid any negative impacts such as soil erosion, plant picking or trampling, fires, littering etc. It is the landowner's duty to ensure this (this applies to all habitat on site).

Retain ivy on trees where possible as this provides nesting habitat and cover for invertebrates, as well as late forage for pollinating insects. Ivy can be removed from selected trees by severing at the base where required.

Management of the existing deciduous woodland on site (parcel 4a)

Parcel 4a (Existing beech stand)

The existing semi-mature beech trees in this compartment will be retained and managed for biodiversity interest. A low number may need to be felled to install the cabins in the parcel, although these will be replanted at a greater rate elsewhere in the parcel or site.

Conserving deadwood and veteran trees

Veteran trees and dead wood in the canopy and fallen limbs will be left in situ to provide habitat value. Smaller pieces of fallen wood left in piles will provide habitat for invertebrates such as saprophytic beetles and fungi. The most important principle is not to fell any dead or dying trees unless necessary (located in the cabin development area for example). Once wood has fallen, or been felled, it should generally be left lying somewhere convenient under the tree canopy for invertebrate use. Trees with potential to become the veteran trees of the future should be identified by an experienced forestry consultant and conserved in situ. Some tree surgery or even pollarding can be desirable to help develop appropriate crowns. This allows associated flora and fauna to move between trees, and also reduces the risks of drought or storm affecting all the trees.

Replanting

Elsewhere, new whips could be planted after carefully deciding on appropriate species for the location and habitat value in the future

The maintenance of the nature zone (nature zone parcel)

New meadow areas

This area will also be scattered with neutral meadow wildflower seeds (of local provenance and suitable for the soil type and pH) after cutting and removing arisings; every 3 years per section, to 'top up' species richness. This area is ~2480m² in size, at a sowing rate of 2g/m² around 4.96kg of seed is required. Ideally, some wildflowers will begin to colonise the area naturally in the future. Remove ruderal weeds and bramble before sowing wildflower seeds, and continue to do so for management but avoid using pesticides as these kill insects indiscriminately including beneficial ones. This reduction in insect life impacts other animals like bats and birds further along the food chain.

To ensure grasses do not dominate the sward after planting, the area needs to be managed through mowing annually in mid-July. All arisings are removed to enable seeds to germinate and to prevent the build-up of is undertaken in early spring to remove winter regrowth. Avoid adding any fertilisers to the grassland.

Mowing a few centimetres above the ground to protect the forbs will be beneficial. Leave an area uncut to provide sites for insects like ladybirds to overwinter. Many insects hibernate in hollow stems. Areas of tall grass are excellent habitats for insects and small mammals. Some species, including the larvae of the butterflies meadow brown and speckled wood, prefer coarse grasses such as bents, cock's-foot, fescues, downy oat-grass and false brome as their larval foodplants.

The mown paths in the area would also provide edge habitats for butterflies, areas for grassland fungi and hunting ground for owls.

In addition to this rotation, certain rules should be strictly adhered to by everybody while in the nature zone:

- *No digging activities.*
- *No fertiliser or other nutrient improvement used on the grassland.*
- *No fires.*
- *No dumping of spoil or pollutants.*
- *No picking of flowers.*

Damming outflow

As outlined in the ecology survey, the water course known as the Holm Slack that runs along the south-east of the proposed nature zone could be subject to a dam to slow the water flow down and enlarge the existing waterlogged area to create a shallow pond to be colonised by native marginal plants to create a new reedbed off-site to the north-east. This would be at the outflow east of 5a. This will benefit amphibians, reptiles and invertebrates and by extension, other taxa such as birds and bats.

3.4.2 General site-wide measures

Management of recommended ecological enhancements.

Bird and bat boxes are to be installed across the site as per the ecology survey i.e. between 4 and 5m in height on trees, on the south or south-west sides and with clear flight paths. This could be within or on the boundaries of the woodland. Or on suitable trees in hedges with linear commuting routes. All boxes will need to be out of the spill of artificial lighting.

Bats

The following bat boxes are designed to provide summer roosts for a range of bat species, both crevice dwelling and void dwelling in the active season.

10x woodcrete cavity bat boxes

10x woodcrete crevice bat boxes.

Birds

6x 25mm hole nest box

6x 28mm hole nest box

6x 32mm hole nest box

These boxes will need to be replaced if they are dislodged or damaged during storms etc.

Reptiles

The long and short grass of the nature zone will be of most benefit to reptiles. A reptile hibernaculum of log and stone piles is also recommended for installation in the grassland area to increase reptile habitat value for foraging, cover and hibernating areas. One such hibernaculum is proposed on site (see figure 3 below and map in figure 4), to be situated in a sunny location for basking.

1 x hibernacula

Points to consider when creating a hibernaculum include:

- a sunny position
- a well-drained site, not prone to flooding,
- orientation so that one of the long banks faces south,
- access to reptiles through openings of some sort,
- location in a patch of habitat favourable for dispersal, such as tussocky grassland,
- minimal public disturbance,
- size at least 4 m long, by 2 m wide, by 1 m high and ideally much larger.

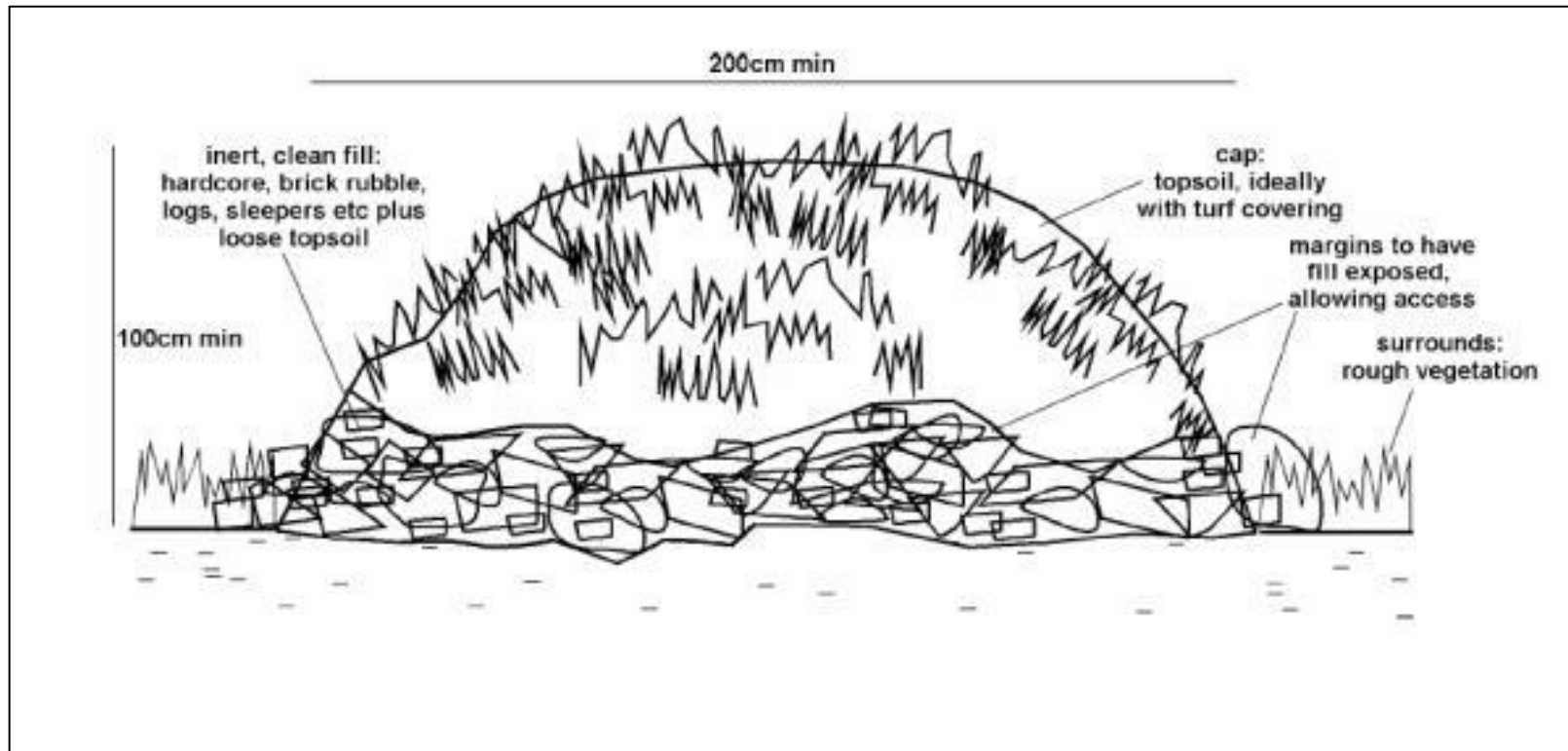


Figure 3: Hibernacula specification

Invertebrates

The site sites within a corridor of land designated under the buglife charity's 'B-Lines' enhancement scheme of improving habitats for pollinating insects. The wildflower meadow and wetland area planned will help strengthen the habitat corridor for these species.

10x Beetle loggeries of several semi-sunken vertical logs would provide habitat benefit.

Hedgehog

3x Hedgehog houses will be incorporated within a shady around the site.

Compost

A site compost heap will encourage reptiles and invertebrates.

Wildlife friendly lighting implementation.

No new lighting should be installed in the new or existing deciduous woodland, nature area, or along the water course to avoid disrupting commuting bats or roosting birds:

- Lighting will be controlled across the developed site. Research into the effects of artificial lighting on bats has shown that it can impact upon bat emergence times and lead to a reduced foraging time. As bats are faithful to their roost sites, often returning to the same site for many years, the impact of lighting on emergence times and in turn reduced foraging times can ultimately result in the roosts being abandoned.
- Key areas of the site which are sensitive to artificial lighting are the woodland interior and new nature area, providing foraging and commuting routes for bats. The main garden area at the rear of the site also provides a key dark area for foraging and commuting.
- The mitigated lighting on the developed site will be limited to the new buildings, parking area and paths between them only.
- Low impact lighting strategies will be adopted from the guidance outlined in the new Bats and Lighting Publication produced by the Institution of Lighting Professionals and the Bat Conservation Trust "Guidance Note 08/18 Bats and artificial lighting in the UK Bats and the Built Environment series" publication:

http://www.bats.org.uk/news.php/406/new_guidance_on_bats_and_lighting

- The lighting on the site will:
 - Use narrow spectrum light sources to lower the range of species affected by lighting
 - Use light sources that emit minimal ultra-violet light
 - Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the blue short wave length content they should be of a warm / neutral colour temperature <4,200 kelvin.
 - Not use bare bulbs and any light pointing upwards. The spread of light will be kept in line with or below the horizontal.
- Light spill will be reduced via the use of low-level lighting used in conjunction with hoods, cowls, louvers and shields. Lights will also be directional to ensure that light is directed to the intended areas only.
- External lighting will be positioned below the eaves, be on PIR sensors that are sensitive to large objects only (so that they are not triggered by passing bats), and will be set to the shortest time duration to reduce the amount of time the lights are on.
- Wall lights and security lights will be 'dimmable' and set to the lowest light intensity settings. There are several products on the market that allow the control of the light intensity and the duration that the lights are on. All lighting on the developed site will make use of the most up to date technology available.

Access road, the parking area and the areas around the reception building and the amenities building

The land of the road leading into the site, existing reception structures and parking consists of hard standing and will remain unaffected by the proposals.

3.5 Condensed works schedule

All management will be undertaken by the client or an appropriately qualified landscape management company, appointed by the client. Full information can be found in section 3.4.

Table 1 - Post Development Monitoring, Management and Maintenance

Activity	Year 1	Annually or other time scale
<i>Coniferous woodland</i>	<input type="checkbox"/> Manage understory for woodland plants, replace selected fallen conifers with deciduous trees. Water well and protect from herbivores <input type="checkbox"/> Retain fallen deadwood in situ.	<input type="checkbox"/> Manage understory for woodland plants, replace selected fallen conifers with deciduous trees. <input type="checkbox"/> Retain fallen deadwood in situ.
<i>Retained deciduous woodland.</i>	<input type="checkbox"/> Follow the advice in the woodland management plan for conserving deadwood and planting. <input type="checkbox"/> Retain deadwood in situ.	<input type="checkbox"/> Every 5 years, a tree survey should be carried out and the management plan updated for biodiversity interests, including any new tree planting, thinning, glades, scalloped edges, replanting, grazing, deadwood management etc. <input type="checkbox"/> Retain deadwood in situ.
<i>New deciduous woodland</i>	<input type="checkbox"/> Water well during establishment phase, protect from herbivores. <input type="checkbox"/> Replace failures.	<input type="checkbox"/> As retained deciduous wood.
<i>Meadow grass nature zone</i>	<input type="checkbox"/> Establish grass through bramble and ruderal herb removal (outside March-September nesting bird season), ground rotovation and seeding <input type="checkbox"/> Prevent ruderal and scrub encroachment during establishment	<input type="checkbox"/> Cut the entire grassland area annually in mid-July after the flower seeds have sown, and again in early spring to remove winter growth. <input type="checkbox"/> Top up area with wildflower seeds of local provenance every 3 years after cutting, at a density of 2g/m ² .

	<input type="checkbox"/> Mow the grass in mid-July and remove arisings. Cut paths into the area.	
<i>Wetland area and reedbed</i>	<input type="checkbox"/> Dam the wetland area and plant with marginals of native origin. <input type="checkbox"/> Plant reedbeds	<input type="checkbox"/> Maintain wetland and reedbeds, clear excessive vegetation and leaves in summer with a net to avoid disturbing amphibians that may be hibernating.
<i>Species enhancement features</i>	<input type="checkbox"/> Install habitat boxes/other species recommendations as per recommendations in the ecology survey.	<input type="checkbox"/> Replace any habitat boxes that fall during storms etc.
<i>Lighting</i>	<input type="checkbox"/> Install lighting with mitigation as per ecology survey.	<input type="checkbox"/> Review lighting on site with regard to the lighting information in the ecology survey, so that it does not shine into the hedges, ecology area or on any habitat features

3.6 Personnel responsible

The Client shall consult with a dedicated environmental specialist team and any other relevant specialist whom the Client deems to be necessary in discharging the HMP obligations. The roles and responsibilities may be amalgamated with those of others (such as the Project Manager), provided that the individual's experience and qualifications meet the cumulative requirements of both roles and responsibilities.

Management will be undertaken by an appropriate management agent, appointed by the owner when necessary. An experienced ecologist may also be consulted with, where necessary.

3.7 Monitoring

The HMP covers a period of 5-years following completion of construction. Management instructions are presented with regard to the methodology and timing of specified instructions. After 5 years it is recommended that the plan be fully evaluated, and revised if necessary, in order to take into account relevant changes to the ecology of the site. Should it be necessary the plan

can also be amended during the first 5 years to take into account any changes to the site. This is a working document that can be amended and updated as necessary to ensure that any remedial measures can be installed.

If a European Protected Species Mitigation Licence is found to be required based on unknown receptors (e.g. if bats or great crested newts are found), then the 'Report of Actions Taken Under Licence' will be returned to Natural England within 14 days of the expiration date of the EPSM Licence in accordance with the terms and conditions of the licence.

- A site visit will be undertaken in the year after the completion of the development to check the management of existing compartments, the creation of new habitats, planting, lighting on site, habitat boxes, herptile refugia, the wetland area and other enhancements. A report will then be produced stating the measures meet the measures outlined in this plan or not. The plan shall be carried out as approved, unless otherwise approved in writing by the local planning authority, for the lifetime of the development. All environmental incidents shall be reported to the client so that remedial works can be implemented where necessary. Where required an ecologist should be consulted for advice.

Regular monitoring of the ecological effects of the management prescriptions will be crucial in assessing whether the management regime is delivering the desired outcomes. Accordingly, this document will be used for five years at the end of which the condition and appropriateness of the management measures for the site will be reassessed and the plan updated, where necessary.

Table 2 outlines the type(s) of monitoring required for each feature and the appropriate timing.

Feature	Assessment Method(s)	Timing
Monitoring of the habitats by an ecologist	<p>The site should be inspected after five years to ascertain the continued biodiversity of the habitats. If considered necessary by the ecologist, potential management options may include pruning and trimming of trees and shrubs, additional or replacement planting, and potentially reseeded in selected areas etc.</p> <p>This will also help determine if the prescribed management strategies are having the desired effects. The monitoring results will inform the evaluation of the Habitat Management Plan and help to identify whether a review of the Plan is required.</p>	Every 5 years

3.8 Timings of management plan reviews

The habitat management plan will be reviewed every 5 years or as required if the use of the site changes.

3.9 Habitat map

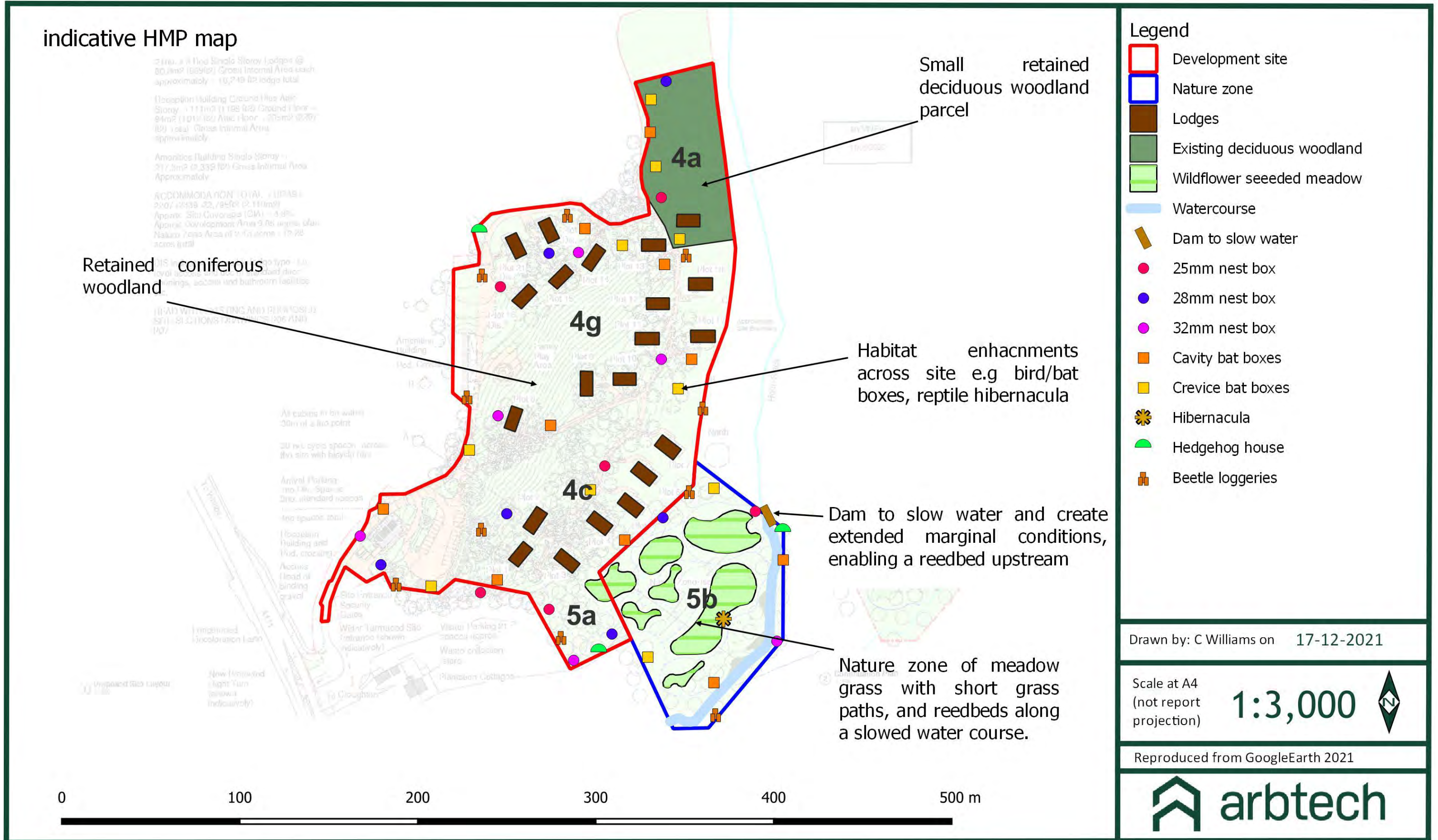


Figure 4: Combined habitat management plan

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Appendix 1: Legislation and Planning Policy

LEGAL PROTECTION

National and European Legislation Afforded to Habitats

International Statutory Designations

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are sites of European importance and are designated under the EC Habitats Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (the Habitats Directive) and the EC Birds Directive 2009/147/EC on the conservation of wild birds respectively. Both form part of the wider Natura 2000 network across Europe.

Under the Habitats Directive the, Article 3 requires the establishment of a network of important conservation sites (SACs) across Europe in order to conserve the 189 habitats and 788 species (non- bird) identified in Annexes I and II of the Directive (as amended).

SPAs are classified under Article 2 of the EC Birds Directive both for rare bird species (as listed on Annex I) and for important migratory species.

SACs and SPAs up to 12 nautical miles (nm) from the coast are afforded protection in the UK under the Conservation of Habitats and Species Regulations 2010 which consolidate all amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994. In Scotland, the requirements of Habitats Directive are implemented through a combination of the 1994 and the 2010 (reserved matters) Regulations. The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a means for designating and protecting SACs in UK offshore waters (from 12- 200 nm).

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention covers all aspects of wetland conservation and recognises the importance of wetland ecosystems in relation to global biodiversity conservation. The Convention refers to wetlands as “areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres” however they may also include riparian and coastal zones. Ramsar sites are statutorily protected under the Wildlife & Countryside Act 1981 (as amended) with further protection provided by the Countryside and Rights of Way (CRoW) Act 2000. Policy statements have been issued by the Government in England and Wales highlighting the special status of Ramsar sites. The Government in England and Wales has issued policy statements which ensure that Ramsar sites are afforded the same protection as areas designated under the EC Birds and Habitats Directives as part of the Natura 2000 network (e.g. SACs & SPAs).

National Statutory Designations

Sites of Special Scientific Interest (SSSI) are designated by nature conservation agencies in order to conserve key flora, fauna, geological or physio-geographical features within the UK. The original designations were under the National Parks and Access to the Countryside Act 1949 but SSSIs were then re-designated under the Wildlife & Countryside Act 1981 (as amended). As well as reinforcing other national designations (including National Nature Reserves), the system also provides statutory protection for terrestrial and coastal sites which are important within the European Natura 2000 network and globally. Further provisions for the protection and management of SSSIs have been introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and the Nature Conservation (Scotland) Act 2004.

Local Statutory Designations

Local authorities in consultation with the relevant nature conservation agency can declare Local Nature Reserves (LNRs) under the National Parks and Access to the Countryside Act 1949. LNRs are designated for flora, fauna or geological interest and are managed locally to retain these features and provide research, education and recreational opportunities.

Non- Statutory Designations

All non-statutorily designated sites are referred to as Local Wildlife Sites (LWS) and can be designated by the local authority for supporting local conservation interest. Combined with statutory designation, these sites are considered within Local Development Frameworks under the Town and Country Planning system and are a material consideration during the determination of planning applications. The protection afforded to these sites varies depending on the local authority involved.

Regionally Important Geological Sites (RIGs) are the most important geological and geomorphological areas outside of statutory designations. These sites are also a material consideration during the determination of planning applications.

The Hedgerow Regulations 1997

The Hedgerow Regulations 1997 are designed to protect 'important' countryside hedgerows. Importance is defined by whether the hedgerow (a) has existed for 30 years or more; or (b) satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

Under the Regulations, it is against the law to remove or destroy hedgerows on or adjacent to common land, village greens, SSSIs (including all terrestrial SACs, NNRs and SPAs), LNRs, land used for agriculture or forestry and land used for the keeping or breeding of horses, ponies or donkeys without the permission of the local authority. Hedgerows 'within or marking the boundary of the curtilage of a dwelling-house' are excluded.

National and European Legislation Afforded to Species

The Habitats Directive

The EC Habitats Directive aims to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore wild species listed on the Annexes to the Directive at a favourable conservation status, introducing robust protection for those species of European importance. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2010 (the Conservation Regulations) and the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended). The following notes are relevant for all species protected under the EC Habitats Directive:

In the Directive, the term 'deliberate' is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.

The Habitats Regulations do not define the act of 'migration' and, therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes are also considered.

In order to obtain a European Protected Species Mitigation (EPSM) licence, the application must demonstrate that it meets all of the following three 'tests':

the action(s) are necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment;

- There is no satisfactory alternative; and
- The action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.
-

The Wildlife and Countryside Act (WCA) 1981 (as amended)

The Wildlife and Countryside Act (WCA) 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection requirements of EC Birds Directive 2009/147/EC on the conservation of wild birds in Great Britain (the birds Directive). The WCA 1981 has been subject to a number of amendments, the most important of which are through the Countryside and Rights of Way (CRoW) Act (2000) and Nature Conservation (Scotland) Act 2004.

Other legislative Acts affording protection to wildlife and their habitats include:

- Deer Act 1991
- Natural Environment & Rural Communities (NERC) Act 2006
- Protection of Badgers Act 1992
- Wild Mammals (Protection) Act 1996

Badgers

Badgers *Meles meles* are protected under The Protection of Badgers Act which makes it an offence to:

- Wilfully kill, injure, take, or attempt to kill, injure or take a badger
- Cruelly ill-treat a badger, including use of tongs and digging
- Possess or control a dead badger or any part thereof
- Intentionally or recklessly damage, destroy or obstruct access to a badger sett or any part thereof
- Intentionally or recklessly disturb a badger when it is occupying a badger sett
- Intentionally or recklessly cause a dog to enter a badger sett
- Sell or offers for sale, possesses or has under his control, a live badger

Effects on development works:

A development licence will be required from the relevant countryside agency for any development works liable to affect an active badger sett, or to disturb badgers whilst they occupy a sett. Guidance has been issued by the countryside agency's to define what would constitute a licensable activity. It is not possible to obtain a licence to translocate badgers.

Birds

With certain exceptions, all birds, their nests and eggs are protected under Sections 1-8 of the WCA. Among other things, this makes it an offence to:

- Intentionally (or recklessly in Scotland) kill, injure or take any wild bird
- Intentionally (or recklessly in Scotland) take, damage or destroy (or, in Scotland, otherwise interfere with) the nest of any wild bird while it is in use or being built
- Intentionally take or destroy an egg of any wild bird
- Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.
- Intentionally or recklessly obstruct or prevent any wild bird from using its nest (Scotland only)

Certain species of bird, for example the barn owl, bittern and kingfisher receive additional protection under Schedule 1 of the WCA and Annex 1 of the European Community Directive on the Conservation of Wild Birds (2009/147/EC) and are commonly referred to as "Schedule 1" birds.

This affords them protection against:

- Intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young
- Intentional or reckless disturbance of dependent young of such a bird
- In Scotland only, intentional or reckless disturbance whilst lekking
- In Scotland only, intentional or reckless harassment

Effects on development works:

Works should be planned to avoid the possibility of killing or injuring any wild bird, or damaging or destroying their nests. The most effective way to reduce the likelihood of nest destruction in particular is to undertake work outside the main bird nesting season which typically runs from March to August. Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests prior to vegetation clearance.

Schedule 1 birds are additionally protected against disturbance during the nesting season. Thus, it will be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not feasible, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

Herpetofauna (Amphibians and reptiles)

The sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca*, natterjack toad *Epidalea calamita*, pool frog *Pelophylax lessonae* and great crested newt *Triturus cristatus* receive full protection under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

With the exception of the pool frog, these species are also listed on Schedule 5 of the WCA and they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of herpetofauna are protected solely under Schedule 5, Section 9(1) & (5) of the WCA, i.e. the adder *Vipera berus*, grass snake *Natrix natrix*, common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis*. It is prohibited to:

- Intentionally or recklessly kill or injure these species.

Effects on development works:

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect the breeding sites or resting places amphibian and reptile species protected under Habitats Regulations. A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation, but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow worm, thus avoiding contravention of the WCA.

Water voles

The water vole *Arvicola terrestris* is fully protected under Schedule 5 of the WCA. This makes it an offence to:

- Intentionally kill, injure or take (capture) water voles
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection
- Intentionally or recklessly disturb water voles while they are occupying a structure or place used for shelter or protection

Effects on development works:

If development works are liable to affect habitats known to support water voles, the relevant countryside agency must be consulted. It must be shown that means by which the proposal can be re-designed to avoid contravening the legislation have been fully explored e.g. the use of alternative sites, appropriate timing of works to avoid times of the year in which water voles are most vulnerable, and measures to ensure minimal habitat loss. Conservation licences for the capture and translocation of water voles may be issued by the relevant countryside agency (e.g. Natural England) for the purpose of development activities if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will then only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of works.

Otters

Otters *Lutra lutra* are fully protected under the Conservation Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Otters are also currently protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

An EPSM Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect otter breeding or resting places (often referred to as holts, couches or dens) or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, and rear young). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored

Bats

All species are fully protected by Habitats Regulations 2010 as they are listed on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. All bats)
- Deliberate disturbance of bat species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Bats are afforded the following additional protection through the WCA as they are included on Schedule 5:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
-

Effects on development works:

Works which are liable to affect a bat roost or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSM licence. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Dormice

Dormice *Muscardinus avellanarius* are fully protected under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Dormice are also protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

Works which are liable to affect a dormice habitat or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSM licence. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

White clawed crayfish

The white clawed crayfish *Austropotamobius pallipes* receives partial protection under Schedule 5 of the WCA in respect of Sections 9(1) and 9(5). This makes it an offence to:

- Intentionally take (capture) white-clawed crayfish.

Effects on development works:

The relevant countryside agency will need to be consulted about development which could impact on a watercourse or wetland known to support white clawed crayfish. Conservation licences for the capture and translocation of crayfish can be issued if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of the works.

Wild Mammals (Protection Act) 1996

All wild mammals are protected against intentional acts of cruelty under the above legislation. This makes it an offence to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

To avoid possible contravention, due care and attention should be taken when carrying out works (for example operations near burrows or nests) with the potential to affect any wild mammal in this way, regardless of whether they are legally protected through other conservation legislation or not.

Legislation afforded to Plants

With certain exceptions, all wild plants are protected under the WCA. This makes it an offence for an 'unauthorised' person to intentionally (or recklessly in Scotland) uproot wild plants. An authorised person can be the owner of the land on which the action is taken, or anybody authorised by them.

Certain rare species of plant, for example some species of orchid, are also fully protected under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended). This prohibits any person from:

- Intentionally (or recklessly in Scotland) picking, uprooting or destruction of any wild Schedule 8 species (or seed or spore attached to any such wild plant in Scotland only)
- Selling, offering or exposing for sale, or possessing or transporting for the purpose of sale, any wild live or dead Schedule 8 plant species or part thereof
- In addition to the UK legislation outlined above, several plant species are fully protected under Schedule 5 of The Conservation of Habitats and Species Regulations 2010. These are species of European importance. Regulation 45 makes it an offence to:
 - Deliberately pick, collect, cut, uproot or destroy a wild Schedule 5 species
 - Be in possession of, or control, transport, sell or exchange, or offer for sale or exchange any wild live or dead Schedule 5 species or anything derived from such a plant.

Effects on development works:

An EPSM licence will be required from the relevant countryside agency for works which are liable to affect species of planted listed on Schedule 5 of the Conservation or Habitats and Species Regulations 2010. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Invasive Species

Part II of Schedule 9 of the WCA lists non-native invasive plant species for which it is a criminal offence in England and Wales to plant or cause to grow in the wild due to their impact on native wildlife. Species included (but not limited to):

- Japanese knotweed *Fallopia japonica*
- Giant hogweed *Heracleum mantegazzianum*
- Himalayan balsam *Impatiens glandulifera*

Effects on development works:

It is not an offence for plants listed in Part II of Schedule 9 of the WCA 1981 to be present on the development site however it is an offence to cause them to spread. Therefore, if any of the species are present on site and construction activities may result in further spread (e.g. earthworks, vehicle movements) then it will be necessary to design and implement appropriate mitigation prior to construction commencing.

Injurious weeds

Under the Weeds Act 1959 any land owner or occupier may be required prevent the spread of certain 'injurious weeds' including (but not limited to):

- Spear thistle *Cirsium vulgare*
- Creeping thistle *Cirsium arvense*
- Curled dock *Rumex crispus*
- Broad-leaved dock *Rumex obtusifolius*
- Common ragwort *Senecio jacobaea*

It is a criminal offence to fail to comply with a notice requiring such action to be taken. The Ragwort Control Act 2003 establishes a ragwort control code of practice as common ragwort is poisonous to horses and other livestock. This code provides best practice guidelines and is not legally binding.

NATIONAL PLANNING POLICY (ENGLAND)

National Planning Policy Framework

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as UK Biodiversity Action Plan priority species) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty

Section 40 of the Natural Environment and Rural Communities (NERC) Act, 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act (Section 42 in Wales) requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity.' This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.



maparch

MAP Archaeological Practice

Land at Cloughton Woods
Cloughton
North Yorkshire

MAP 5.22.20
NYM/2020/0327/FL

Written Scheme of Investigation

Archaeological Watching Brief

MAP Archaeological Practice Ltd ©

Land at Cloughton Woods
Cloughton
North Yorkshire

WRITTEN SCHEME OF INVESTIGATION:
Archaeological Watching Brief

MAP 5.22.20
NYM/2020/0327/FL

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Land at Cloughton Woods
Cloughton
North Yorkshire

WRITTEN SCHEME OF INVESTIGATION:
Archaeological Watching Brief

MAP 5.22.20
NYM/2020/0327/FL

1 Summary

1.1 Planning permission has been granted, by North York Moors National Park Authority, for the erection of 15 no. holiday lodges with external decking, alterations to access, proposed internal access road, parking and linkage paths together with recreation space and landscaping works at Cloughton Woods (planning reference NYM/2020/0327/FL).

1.2 It has been recommended by the Archaeology Officer at North York Moors National Park Authority that a Watching Brief is conducted to monitor groundworks associated with the application.

1.3 Condition 18 attached to planning application NYM/2020/0327/FL). states that.

No development shall take place on site until the applicant has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation which has been submitted by the applicant and approved in writing by the Local Planning Authority. This shall include a Watching Brief on vegetation clearance, and groundworks for lodge pads, access roads and drainage and allow for potential reporting and archiving.

The work shall not be carried out otherwise than in accordance with the provided/approved specification.

- 1.4 MAP Archaeological Practice Ltd has been commissioned by Cloughton Wood Lodges Limited, to undertake an archaeological Watching Brief during vegetation clearance and groundworks associated with the development. This document sets out the details of the archaeological watching brief that North York Moors National Park Authority considers to be necessary.

2 Site Description.

- 2.1 The site is located to the north-west of the village of Cloughton, immediately to the east of White Way (A171) approximately 2.5km north of Burniston and 7km north of Scarborough. The site falls within the North York Moors National Park.
- 2.2 The site is currently commercial woodland with a derelict timber yard and single storey saw-mill present. The wider woodland measures some 33.6ha with the Proposed Development Area measuring 4.9ha, of which 0.9ha will be used as a nature zone.
- 2.3 The current proposal is for the creation of 15 single storey holiday lodges with outside decking areas and shared recreational space. An existing building (a former sawmill) would be converted into an amenity building and a reception area would be constructed.

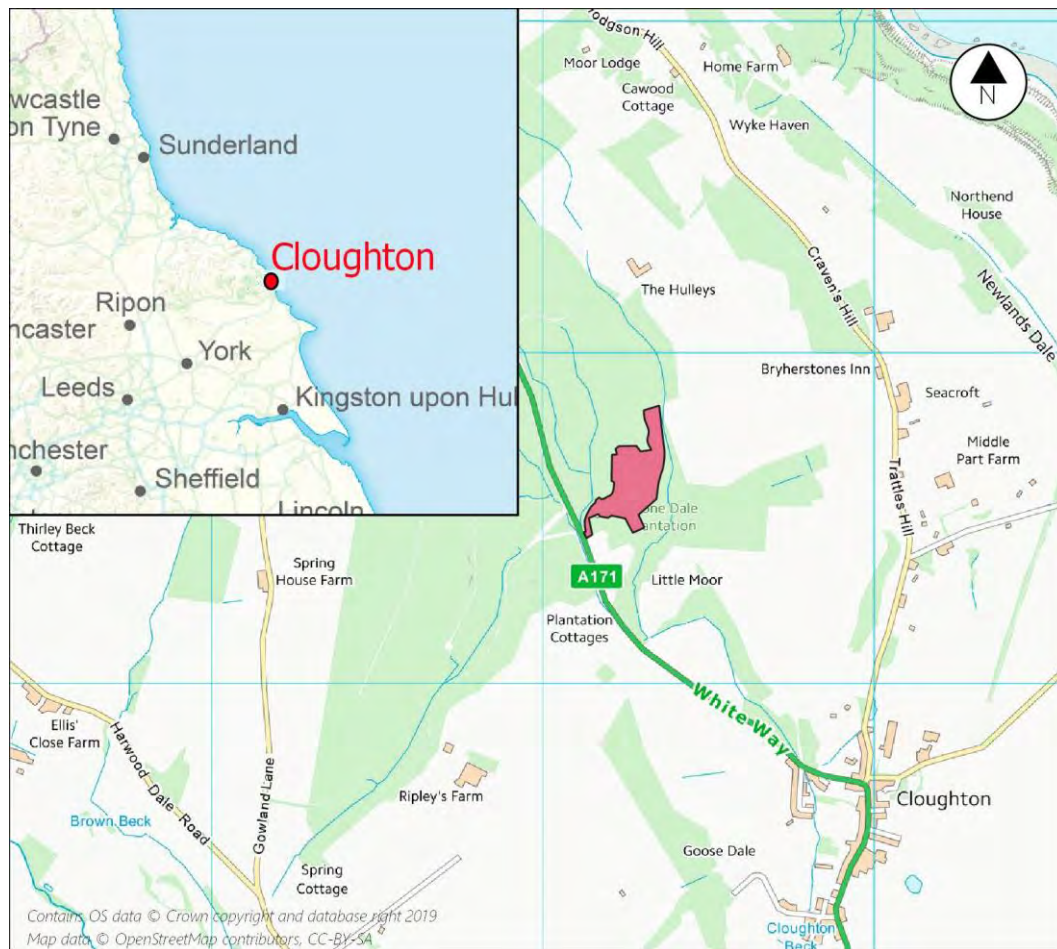


Fig 1. Site Location

3. Archaeological and Historical Background

3.1 The site lies in an archaeologically rich, albeit significantly altered, landscape containing abundant remains including barrows, linear earthworks and settlement dating to the prehistoric periods.

3.2 Land immediately to the east of the site, known as 'The Hulleys' is known to contain archaeological features dating to the prehistoric periods which have been subject to investigation since at least the 19th century. During the 19th century the area was studied by Robert Knox who produced a map based on his findings. Knox recorded features including several round barrows which have been assigned to the Bronze Age, many of the barrows were

robbed of stone during the 18th century although Knox recovered fragments of urn and bone from the based of a number of examples during the early 19th century. Hollow ways, banks, stone hut circles and enclosed fields were also widely recorded. Features depicted on the 1st edition Ordnance Survey map closely resemble those depicted recorded by Knox.

3.3 The remains of a prehistoric stone hut and iron working site is located approximately 50m north of the northern most boundary of the site During the 19th century the remains were referred to as a 'druid circle' and were depicted as such on Knox's map of 1820 and the 1st edition and 1914 Ordnance Survey maps. The remains, which are designated as a Scheduled Monument (List Entry Number 1019773, HER reference 6690), consist of an oval shaped ring of boulders which have been set into the ground and laid horizontally which would have formed the foundations and lower courses of the huts walls. The hut is likely to have been used for industrial rather than domestic purposes as, during limited excavation during the 1920's, evidence for metalworking was identified, including a possible bowl furnace in the south-eastern corner of the site.

3.4 An archaeological Desk Based Assessment was carried out in support of the planning application in 2020 (MAP. 2020). The Assessment concluded that the potential for unrecorded archaeological remains to be present within the main site is considered to be moderate and of local to regional significance. It was recommended that all groundworks associated with the Proposed Development, including the any clearance of undergrowth and the excavation associated with the lodge pads, access roads and drainage runs, should be monitored by an archaeologist in the form of a

Watching Brief to allow a record to be made of any archaeological remains in the area.

4. Archaeological Programme

4.1 The purpose of the Watching Brief is;

- to allow, within the resources available, the preservation by record of archaeological deposits, the presence and nature of which could not be established (or established with sufficient accuracy) in advance of development or other potentially disruptive works
- to provide an opportunity, if needed, for the watching archaeologist to signal to all interested parties, before the destruction of the material in question, that an archaeological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard.

4.2 The Watching Brief will consist of an archaeologist from MAP Archaeological Practice Ltd observing groundworks associated with vegetation clearance, and groundworks for lodge pads, access roads and drainage. Where it becomes clear during the watching brief that there is no likelihood of archaeological deposits surviving on the site the watching brief may be curtailed with the agreement of the Archaeology Officer at North York Moors National Park.

4.3 The watching brief will be carried out by the archaeologist in a manner that allows the contractor to proceed with their construction programme without unreasonable interference or delay. The contractor must inform the archaeologist of the schedule for any groundwork which falls under the

remit of the Watching Brief and must allow the archaeologist reasonable access and resources to implement this archaeological scheme of investigation.

5 Compliance

- 5.1 MAP will adhere to the general principles of the ClfA Code of Conduct (ClfA 2019) throughout the project and to the ClfA 'Standards and Guidance for An Archaeological Watching Brief' (CIFA 2020).
- 5.2 All work will be carried out in accordance with chapter 16 of the National Planning Policy Framework (2021) on 'Archaeology and Planning'.
- 5.3 The work will be monitored under the auspices of the Archaeology Officer at North York Moors National Park Authority who should be consulted before the commencement of site works.
- 5.4 All maps within this report have been produced from the Ordnance Survey with the permission of the Controller of Her Majesty's Stationery Office, Crown Copyright. License No. AL 50453A and also data derived from Open Street Map (<https://www.openstreetmap.org/copyright>).
- 5.5 If human remains are encountered, they will be excavated, recorded and lifted under the conditions of licences for the removal of human remains (issued by the Ministry of Justice) and in accordance with the Burial Act (1857) and 'Guidelines to the Standards for Recording Human Remains' (Brickley & McKinley. 2004) to ensure that they are treated with due dignity.

5.6 MAP Archaeological Practice is an ISO 9001 accredited organisation (certificate number GB2005425). The award of the ISO 9001 certificate, independently audited by the British Standards Institution (BSI), demonstrates MAP's commitment to providing a quality service to our clients. ISO (the International Organisation for Standardisation) is the most recognised standards body in the world, helping to drive excellence and continuous improvement within businesses.

6 Fieldwork Methodology

6.1 The archaeologist will be in attendance at such times during the excavation and groundworks as he or she considers appropriate and necessary. The archaeologist will record the presence or absence of archaeological features and deposits and make all appropriate written, drawn and photographic records of any archaeological deposits which are revealed; all burials must be recorded and removed by the archaeologist; a Home Office burial licence must be obtained for this procedure.

6.2 Where structures, finds, soil features and layers of archaeological interest are exposed or disturbed by construction works, the archaeologist should be provided with the opportunity to observe, clean, assess, excavate by hand where appropriate, sample and record these features and finds. If the contractors or plant operators notice archaeological remains, they should immediately tell the archaeologist. The sampling of deposits for environmental evidence should be a standard consideration, and arrangements should be made to ensure that specialist advice and analysis are available if appropriate.

- 6.3 Heavy plant should not be operated in the near vicinity of archaeological remains until they have been recorded, and the Archaeologist on site has allowed operations to recommence at that location. Sterile subsoils (C horizons) and parent materials below archaeological deposits may be removed without archaeological supervision. Where reinstatement is required, subsoils should be backfilled first and topsoil last.
- 6.4 Context recording methodologies and systems will be used. All archaeological deposits will be recorded according to principles of stratigraphic excavation on MAP's *pro forma* sheets, which are compatible with the MoLAS recording system. The MoLAS recording manual will be used on site where necessary. The stratigraphy of trenches will be recorded even if no archaeology is found.
- 6.5 A full written, drawn and photographic record will be made of all material revealed during the course of the trial excavation. All plans and sections will be drawn at a scale appropriate to the excavated feature. High resolution digital photographs should form the basis of the photographic archive. As a minimum standard 8-bit TIFF files will be produced for archiving purposes.
- 6.6 All finds (artefacts and ecofacts) visible during the Watching Brief will be collected and processed, unless variations in this principle are agreed with the Local Authority. Finds will be appropriately packaged and stored under optimum conditions, as detailed in the RESCUE/UKIC publication First Aid for Finds. In accordance with the procedures outlined in MoRPHE, all iron objects, a selection of non-ferrous artefacts (including all coins), and a sample of any industrial debris relating to metallurgy will be X-radiographed before assessment.

- 6..7 Health and safety will take priority over archaeological matters. All archaeologists undertaking fieldwork must comply with all Health and Safety Legislation, this includes the preparation of a Risk Assessment.
- 6..8 All archaeological staff and visitors to the site will comply with current government guidance regarding COVID-19. All precautions, including those concerning social distancing will be outlined in MAP's risk and method statement. A remote site visit by the Archaeology Officer may be required.
- 6..9 Necessary precautions should be taken by the client to identify any underground services and overhead lines.
- 6..10 All on site staff hold valid CSCS cards. All Project Officers and Project Managers hold a valid First Aid at Work Certificate and Site Supervisor Safety Training qualifications.
- 6.1.0 MAP will provide evidence of all necessary insurances, including Employer's Liability, Professional Liability and Public Liability Cover.

7. Post Excavation Analysis and reporting

- 7.1 Upon completion of the works, the artefacts, soil samples and stratigraphic information will be assessed as to their potential and significance for further analysis.
- 7.2 On completion of the work, a report will be produced by the archaeologist, and submitted to the developer, the Local Planning Authority and the North York Moors National Park Historic Environment Record office.

The final report will include the following (as appropriate):

- A non-technical summary
- Site code/project number
- Planning reference number and HER casework number
- Dates for fieldwork/visits
- Grid reference
- A location plan, with scale
- A plan of the developer's plan, with scale showing the areas monitored (e.g. the service trenches and any associated landscaping, construction of access routes etc.) and indicating the position of archaeological features in relation to the foundations etc.
- Section and plan drawings (where archaeological deposits are exposed), with ground level, Ordnance Datum and vertical and horizontal scales
- General site photographs. A high-resolution digital archive, including general as well as photographs of significant archaeological deposits or artefacts if encountered
- A written description and analysis of the methods and results of the watching brief, in the context of the known archaeology of the area
- Specialist artefact and environmental reports, as necessary
- The archaeological contractor will also supply a digital copy of the report in PDF format to the North York Moors Historic Environment Record office,
- Where a significant discovery is made, consideration should be given to the preparation of a short note for inclusion in a local journal
- All work will be carried out in accordance with the developer's proposed timetable and shall not cause undue delay to the development unless otherwise agreed.

7.3 Copies of the report will be submitted to the commissioning body, the Local Planning Authority and the North York Moors Environment Record within an agreed timetable and subject to any contractual requirements on confidentiality (see 8.2 below).

7.4 We will provide a digital copy of the report in PDF format to the North York Moors Historic Environment Record Office. The completed report will also be submitted to OASIS.

8. Copyright, Confidentiality and Publicity

8.1 Unless the individual/organisation commissioning the project wishes to state otherwise, the copyright of any written, graphic or photographic records and reports rests with MAP.

9. Archive Preparation and Dissemination

9.1 Where necessary the requirements for archive preparation and deposition should be addressed and undertaken in a manner agreed with the recipient museum: in this instance, the Yorkshire Museum is recommended. The recipient museum was contacted during the production of this document. In the event of a negative Watching Brief, the paper archive will be scanned and submitted to the ADS.

9.2 A site archive should be prepared in accordance with the specification outlined in *Management of Archaeological Projects* (MoRPHE (Lee, E, 2006). See also *Towards an Accessible Archaeological Archive, the Transfer of Archaeological Archives to Museums: Guidelines for use in England*,

Northern Ireland, Scotland and Wales Society of Museum Archaeologists
1995.

- 9.3 The site archive, including finds and environmental material, subject to the permission of the relevant landowners, will be labelled, conserved and stored according to the United Kingdom Institute for Conservation (UKIC)'s. Provision will be made for the stable storage of paper records and their long-term storage on a suitable medium, such as microfilm, a copy of which should be deposited with the NMR (Historic England). An index to the contents of the archive together with details of its date and place of deposition should be lodged with the SMR.
- 9.4 Archive deposition must be arranged in consultation with the recipient museum and the Archaeology Officer at North York Moors National Park Authority and must take account of the requirements of the recipient museum and the relevant guidelines (see above) relating to the preparation and transfer of archives. The timetable for deposition shall be agreed on completion of the site archive and narrative.

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<https://historicengland.org.uk/images-books/publications/waterlogged-organic-artefacts/>

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<https://historicengland.org.uk/images-books/publications/animal-bones-and-archaeology/>

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Geoarchaeology: Using Earth Sciences to Understand the Archaeological Record (2015):
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Guidance for Best Practice for the Treatment of Human Remains Excavated from Christian Burial Grounds in England (Second Edition) (2017) [Advisory Panel on the Archaeology of Burials in England]:
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