

Conservation Management Strategy

Templecombe House, Henley on Thames

Report Reference: BG21.142.13

December 2023



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www.brindlegreen.co.uk

Head Office

Brindle & Green Limited
Unit 3 Silverhill Court, Radbourne, Derby, DE6 4LY

Tel: 0800 222 9105

Sheffield Office

Brindle & Green Limited
Horizon House
Whiting Street
Sheffield S8 9QR

Barnsley Office

Brindle & Green Limited
Sergeants House
36 Edderthorpe Lane
Barnsley S73 9AT

London Office

Brindle & Green Limited
Nutter Lane
Wanstead
London E11 2HZ

Kent Office

Brindle & Green Limited
Sandy Lane
Sevenoaks
Kent TN13 3TP

Document Control

Report	Name	Signature	Date
Prepared by	Kerry Baker Senior Ecologist		26/05/2023
1 st Check by	Dr Lucinda Sweet MCIEEM Director		25/08/2023
2 nd Check by	Kinzie Watts Ecology Team Leader		30/10/2023
Issued by (PDF)	Dr Lucinda Sweet MCIEEM Director		19/12/2023



Project Details

Project carried out by:

Brindle and Green

Unit 3, Silverhill Court

Radbourne

Derby.

DE6 4LY

Head Office: 01332 825771

Email: info@brindlegreen.co.uk

Website: www.brindlegreen.co.uk

Project carried out for:

J and J Corden

C/O Atlantic Swiss Agency LLP

6th Floor

10 – 16 Elm Street

London

WC1X 0BJ

Project site:

Templecombe House

Wargrave Road

Henley-on-Thames

RG9 3HU

Grid reference: SU 78054 81478

W3W: [regrowth.city/cassettes](https://www.regrowth.city/cassettes)

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1 Conservation Management Strategy

- 1.1.1 The content of the Conservation Management Strategy (CMS) is defined within the section 106 Agreement dated 4th August 2023.

“Conservation Management Strategy means a detailed conservation management strategy for biodiversity for the restoration of the registered park and garden, local wildlife site and protected species populations within the Estate based on the synopsis provided in Schedule 2 and that is consistent with the intent of the existing Park Place and Templecombe Conservation Plan Edition 1 prepared for Park Place Estates and Aspect Park Ltd by Land Use Consultants dated 22 February 2005 and the Integrated Estate Management Plan prepared on behalf of Hill Spink Ltd re: Park Place, Remenham, Berkshire dated June 2008”

- 1.1.2 The first Schedule to the agreement defines the scope and process of the CMS.

“1.1 Not to Commence Development until such time as it has submitted to the Council for approval the Conservation Management Strategy and the Council has confirmed in writing it’s approval of the same.

1.2 The Conservation Management Strategy will incorporate (inter alia) the requirements detailed in the synopsis in the Second Schedule and shall provide for a review at five-yearly intervals by the Conservation Management Liaison Group and the Owner shall produce a new Conservation Management Strategy every succeeding five years for a period of thirty years from implementation of the first Conservation Management Strategy pursuant to this Agreement.

1.3 That the provisions of the Conservation Management Strategy approved by the Council shall be carried out in the period of five years following Commencement of Development pursuant to the Planning Permission and in every succeeding period of five years in accordance with the review referred to in paragraph 1.2 above.

1.4 Following Commencement of Development to establish a Conservation Management Liaison Group which shall be set up within one year from the date of Commencement of Development and meet annually in April of each year.

1.5 On Commencement of Development to implement the Conservation Management Strategy and thereafter to comply with the Conservation Management Strategy for it’s duration for a minimum of 30 years from Commencement of Development.

1.6 Not to deviate from complying with any part of the Conservation Management Strategy unless it has beforehand obtained written approval for the change from the Conservation Management Liaison Group.

1.7 Not to allow nor permit nor suffer to permit Occupation of the Development other than in accordance with the terms of the Conservation Management Strategy”.

- 1.1.3 The second schedule outlines the CMS synopsis and requirements.

*“1. **Introduction (2)***

*1.1 **The Development Proposal and Impacts (2.3)***

Summary of ecological, landscape / historic impacts as a result of the proposed Development. This will include a recalculated baseline of habitat units and loss using the DEFRA biodiversity calculation metric.

*1.2 **Context and Aims of Management Strategy (2.4)***

In addition to vision and objectives, ongoing management, monitoring quantifiable measurable indicators of success will be identified for notable habitats and protected species.

2. Grassland

As a result of habitat loss and a recorded lack of management of habitat parcels onsite, habitat restoration, creation, compensation (in terms of area and quality) and enhancement form the key elements of the strategy

- 2.1 **Grassland (3)**
 - 2.1.1 **Enhancement and Management of Retained Habitats (3)**
 - 2.1.2 **Grassland restoration (3)**
 - 2.1.3 **Grassland Monitoring targets (4.1)**
 - 2.1.3.1 *Calcareous and Neutral Grassland that will be damaged or impacted by the development or flagged for restoration will be monitored during Year 1, 2, 3, 4 and 5 post construction and then a management review will be undertaken.*
 - 2.1.3.2 *Established Calcareous grassland will be monitored every 5 years*
 - 2.2 **Woodland (4.1)**
 - The majority of woodland prescriptions are provided in the Woodland Management Plan, the measurable monitoring targets for woodland parcels will be included in the Conservation Management Strategy*
 - 2.3 **Orchard Creation and Management Targets (4.1)**
 - The traditional orchard proposed to the north east will be managed in a traditional manner allowing for diversification of the understory*
 - 2.4.1 **Parkland Trees (4.1)**
 - 3 **Faunal Population Monitoring (4.3)**
 - 3.1 **Population Assessments of Target Ecological Receptors as Indicators of Success (4.3)**
 - 3.1.1 **Notable Plants including but not limited to White Helleborine (0)**
 - 3.1.2 **Reptiles (4.3)**
 - 3.1.3 **Notable Invertebrates including but not limited to Chalk Hill Blue, Dingy Skipper, Grizzled Skipper and Striped Lychnis Lepidoptera (4.3)**
 - 3.1.4 **Foraging and commuting bats (4.3)**
 - 4 **Management Plan Review (5)**
 - The Conservation Management Strategy should be reviewed on a 5-year rotation unless flagged during a site visit that further remedial actions could be required*
 - 5 **Responsibility for implementation (6)**
 - 6 **Appendices including work and action timings, plans and figures (Appendix 1 – 7)**
- 1.1.4 The CMS has been prepared with reference to the specific requirements of the legal agreement as outlined above with reference to the relevant sections within this report (In green). The titles, order and content of the above sections have evolved during compiling the CMS, as such some of the references are not in the same order.

2 Introduction

2.1 Background Information

- 2.1.1 Brindle and Green Environmental Consultants Ltd were commissioned by J and J Corden to provide a Conservation Management Strategy (CMS) of the site known as Templecombe House, Henley on Thames. This document sets out a framework of management and monitoring to safeguard the ecological value identified during the Arboricultural and ecological survey work provided to support the planning application as defined within the Section 106 (Outlined in Section 1)
- 2.1.2 The parkland was formally part of the larger Park Place Estate comprising a grade II* registered park and garden. The Templecombe Estate lies to the south of Park Place and Templecombe Woods occupying a plateau above the Thames Valley. The site has received planning approval (Planning Permission 223108 which was granted on the 11/08/2023) for the demolition of the existing residential property and pool house to facilitate a replacement dwelling, vehicle parking and associated landscaping to form a walled garden and formal lawns within the land surrounding the building footprint.
- 2.1.3 The 17ha of parkland within the curtilage of ownership of Templecombe House, which comprises calcareous grassland, neutral grassland, lowland beech and yew woodland and mature standard parkland trees, will be introduced to a regime of regular management of which the site has lacked for several years to ensure that the ecological impacts highlighted during the planning application can be offset and the quality of the habitats recorded can be secured.
- 2.1.4 The long-term management of the woodland is detailed within a separate woodland management plan (BG21.142.5 Woodland Management Plan, July 2023 FINAL). The WMP has management objectives and condition targets outlined for the first 10 years of implementation, with the aim to review at 5-year intervals to ensure the plan is prescriptive and relevant to the woodland. This Document has been submitted to Discharge Condition 6 of the Planning Permission 223108.

2.2 Connectivity to the Conservation Plan

- 2.2.1 The CMS has been compiled with review against the existing Park Place Conservation Plan Edition 1 (2005) and the subsequent Integrated Estate Management Plan (2008) to ensure that conservation aims and objectives across the site remain consistent.

- 2.2.2 The Park Place Conservation plan describes the historical evolution of the entire estate and specifically some of the changes to the layout of the Templecombe House Estate and acknowledges that the extent of grassland to woodland ratio has been maintained, although the density of the woodland has increased reducing views of the Thames to North, and details general degradation to the woodland habitat through overshadowing and self-sown saplings.
- 2.2.3 The Ecological Impact Assessment (October 2023) and Arboricultural Impact Assessment (December 2022 REV1) document a continued decline in the woodland habitat condition on site resulting in the management objectives for the site remaining consistent with those outlined in the Park Place Conservation Plan Edition 1 (2005). A notable change from the Conservation Plan is that an area of lowland calcareous grassland is recorded within the site in addition to species poor neutral grassland. Management priorities have been adjusted within this CMS to target maintenance of calcareous grassland, and where possible the increase of a calcareous sward within areas of mapped neutral grassland showing signs of regeneration potential.

Habitat value - Application Site (Planning Red Line Boundary)

- 2.2.4 The entire estate lies within the Templecombe Wood Local Wildlife Site, and Chilterns Escarpment Biodiversity Opportunity Area because of the lowland mixed deciduous woodland bounding the site, and the underlying chalk geology and calcareous soils. As such the grassland and woodland areas within the red line application boundary fall within these non-statutory designated sites.
- 2.2.5 The woodland within the red line boundary lies on the southern edge of Templecombe Wood which lies predominately within Park Place to the north, extending south through Templecombe Estate to the riparian corridor associated within the river Thames 70m south-east from the estate boundary.
- 2.2.6 The informal gardens associated with Templecombe House are undefined due to the absence of management. As such, ornamental shrubs have encroached within woodland to the west of Templecombe House and line the edges of the driveway and existing infrastructure reducing the ecological value of some notable habitats on site.

Habitat Value - Wider Estate (Blue line boundary)

- 2.2.7 The woodland to the west of the site has encroached around a collection of native and exotic species which formed the pleasure gardens adjacent to the Druid Temple. The notable standing deadwood of a giant sequoia (*Sequoiadendron giganteum*), mature copper beech (*Fagus*

sylvatica f. purpurea) and mature common beech (*Fagus sylvatica*) are the only remaining statement trees within the parkland.

- 2.2.8 The grassland to the south-west and rear of Templecombe House have been denoted as informal lawns for the site, delineated by fence boundaries from areas of pasture in the wider estate. As a result of the sites geology and topography, the sward within these areas hold notable assemblages of calcareous grassland extending into neutral and degraded habitat to the north and south of the plateau which show potential for regeneration and improvement.
- 2.2.9 The majority of woodland within the estate pertains to notable lowland beech and yew woodland however, the woodland is in poor condition due to a lack of management; a continued decline from the condition noted during the production of the Conservation Plan (2005). The woodland supports dense self-seed regeneration, a lack of structure and open space reducing the quality of trees and the availability of light to the ground layer. Dense stands of non-native ornamentals are recorded within the woodland compartment adjacent to Templecombe House which negatively impacts the woodland habitat in this area.

2.3 The Development Proposals and associated Impacts

- 2.3.1 The Templecombe Estate is the subject of an approved application for the demolition of the existing residential dwelling and pool house (Planning Permission 223108 granted on the 11/08/2023), to facilitate ground level changes for the construction of a replacement dwelling, walled garden, and associated landscaping. Amendments to the existing access driveway are proposed including widening, resurfacing, and diversion through an existing track in the woodland to the east to facilitate parking and garages to the rear of the property allowing further landscaping to the front of the property (Appendix 4 and 5).
- 2.3.2 Significant changes are proposed to the habitats immediately adjacent to the building footprint with impacts also recorded along the access road and within woodland parcels to facilitate the movement of machinery and vehicles around the site.
- 2.3.3 There will be a quantity of extracted soil from digging the foundations of the replacement building and roadworks totalling approx. 3600m³. It is proposed that this soil will be used for releveling works within the former access road to the front of the property, for landscaping with any residual soil spread on the northern field parcel during enhancement of the species poor neutral

grassland. The full details are not yet available and will be reviewed following extraction and assessment of soil condition to ensure that habitat quality is not affected.

- 2.3.4 This document secures reinstatement and management of habitats within the areas of impact and the wider estate to mitigate the short- and long-term impacts associated with the construction and long-term ecological gains for biodiversity.
- 2.3.5 All retained habitats and protected species recorded within the site will be safeguarded through the development through the implementation of the Construction Environmental Management Plan (Biodiversity) (BG21.142.7, October 2023) which is a conditional requirement of Planning permission 223108.

Biodiversity Impacts

- 2.3.6 The proposals will result in the loss of 0.18ha of calcareous grassland to create the walled garden to the north of the residential dwelling, and an area of formal lawn created following ground levelling to the south of Templecombe House.
- 2.3.7 Woodland supporting encroaching ornamental shrubs adjacent to the western elevation of the existing dwelling will undergo clearance to allow the demolition and construction of the replacement dwelling. The loss of woodland area is negated by the fact that the majority of Woodland Compartment 1 (Appendix 6) is mature cherry laurel (*Prunus laurocerasus*) with other dominating ornamental shrubs such as Holme Oak (*Quercus ilex*) and *Cotoneaster*. The clearance of these species will facilitate the removal of these non-native species from the woodland edge rather than a loss of native woodland area resulting in an improvement in condition despite a reduction in total compartment area.
- 2.3.8 Native trees within the impact zone and wider estate will be retained where possible, however, it should be noted that at least one mature beech will require removal from Woodland Compartment 1 due to the presence of *Kretzschmaria deusta* at the base of the tree which could result in sudden tree failure (The presence of this fungus species within other trees will be monitored as part of the 4 year tree health inspection to prevent unexpected tree failure). Furthermore, Ash trees (*Fraxinus excelsior*) within Woodland Compartment 2 and 3 have the potential to be affected by ash dieback and maybe removed if signs of infection are recorded to prevent spread within the locality (Ash trees will be subjected to further surveys to monitor signs of disease as part of the 4-year tree health inspection).

2.3.9 Shrub box (*Buxus sempervirens*) and yew (*Taxus baccata*) have been managed into dense bushes along the woodland edge bordering the access road. To facilitate widening of the existing access road to create passing places, these dense shrubs will be removed. Although initially deemed as a loss of vegetation, the existing management is not in keeping with native woodland and restricts light into the adjacent woodland parcels. As such, their removal will expose the woodland understory and facilitate natural regeneration in keeping with the native woodland structure.

2.3.10 The proposed development will result in a loss of biodiversity units when compared to the baseline scores (Table 1). Losses in biodiversity units, as calculated using the DEFRA 3.1 Metric cannot be resolved within the redline boundary as trading rules cannot be satisfied due to the loss of high value grassland. Enhancing grassland within the wider curtilage of the estate, referred to as "Offsite" results in a notable gain in habitat units against the baseline (Table 1).

Table 1: Summary of Biodiversity Impact Assessment Results for Templecombe House, Henley-on-Thames as per the submitted Ecological Impact Assessment

On-site Baseline	On-site Post Intervention	On-site net % Change	Off-site Baseline	Off-site Post intervention	Total net change
13.58	16.92	+3.34 units +24.63% *	11.04	14.61	+6.92 units (+50.95%)

*Trading rules not satisfied

Remedial actions to prevent Biodiversity Net Loss

2.3.11 To achieve a biodiversity net-gain with trading rules satisfied, remedial actions within the wider estate are required. The loss of calcareous grassland needs to be remediated like for like in terms of distinctiveness, as such an area of the deteriorated front pasture field is proposed for management to increase the cover of calcareous grassland. Currently, this area supports low coverage of calcareous grassland indicator species however dominant false oat grass (*Arrhenatherum elatius*) suppresses the quality and distinctiveness of the grassland, and therefore requires management.

2.3.12 To satisfy trading rules within the DEFRA metric 3.1, an area of at least 1.6ha of additional lowland calcareous grassland is required to achieve good condition. This will be facilitated by a green hay application from other areas of the site and/or translocation of calcareous grassland turfs which are proposed for loss. Soil analysis of the receptor sites will be required to determine the baseline PH and assess their suitability to support the target calcareous species. The retained

areas of grassland will be subjected to improvement where for example tor grass (*Brachypodium pinnatum*) has become dominant, or *Cotoneaster* and scrub is encroaching.

2.3.13 The creation of a Traditional Orchard to the northeast of application site provides an additional 2.02 habitat units to offset grassland loss from creation of the walled garden. The creation of this 'high distinctiveness' habitat within poor neutral grassland will also facilitate the improvement of degraded neutral grassland by implementing traditional management practices within the grassland sward and planting traditional fruit and nut varieties.

2.3.14 The woodland within the application boundary and the wider estate has been entered into a Woodland Management Plan (BG21.142.5, July 2023 FINAL). This WMP has been submitted to the Council for approval pursuant to Condition 6 of the Planning Permission 223108, as such enhancements are anticipated within woodland compartments over the life of the 10-year plan (Appendix 3, Table 13). The plan targets the entire woodland encompassing the estate, not just the areas affected within the red line boundary.

Impacts to Ecological Receptors

2.3.15 The key ecological receptors surveyed and assessed during the Ecological Impact Assessment (BG21.142.2 October 2022 FINAL) and the proposed mitigation measures to secure a neutral impact have been summarised within Table 2. All mitigation measures to be implemented during construction to safeguard habitats and protected species are outlined within the Construction and Environmental Management Plan (CEMP) (BG21.142.7, September 2023 FINAL) which has been submitted to discharge Condition 4 of the planning Approval.

Landscape Impacts

2.3.16 The site comprises a formal residence within a parkland setting, therefore proposed formal landscaping is minimal relating to a walled garden to the rear of the property and lawns to the front of the property. The vision for the client is to emphasise the value of the parkland habitats within the estate and manage them to secure longevity while enjoying formal gardens within the immediate proximity of the residential dwelling.

2.3.17 Where native habitat has been lost to facilitate these proposals, compensatory measures have been included within this Conservation Management Strategy to maintain and enhance biodiversity within the red line boundary and the wider estate. As such no remedial actions are required as part of the long-term management of the site in terms of landscape design.

Historic impacts

- 2.3.18 The proposals seek to preserve the parkland setting of the Grade II listed Druid's Temple (a collection of 45 megalithic stones) positioned to the southwest of the redline boundary. The Local Planning Authority specifically requested that the setting, and the associated sight lines of the Druid Temple were not altered as a result of the planning application as such the feature remains unaffected by the proposals.
- 2.3.19 A mature standing dead Sequioa (*Sequoiadendron giganteum*) forms part of the temple setting. This tree is proposed for removal and a suitable alternative parkland tree will be planted as a replacement to maintain the standing feature.

Table 2: Ecological Receptors, the impact associated to the development and the proposed mitigation / Enhancements.

Receptor	Source of Impact	Un-mitigated Impact	Proposed Working Method	Risk with Mitigation	Timing of Works
Designated Sites / Habitats	Loss of calcareous grassland to facilitate development.	Certain Negative (Significant)	Translocation of calcareous grassland proposed for loss and enhancement of grassland within wider estate under management plan	Neutral (Not Significant)	Spring 2024
	Damage to grassland & woodland through construction, ground levelling works and post construction landscaping		Enhancement of Woodland parcels from poor / moderate to at least moderate / Good		
			Protect retained habitats following MS		
Notable Plants	Loss of white Helleborine	Certain Negative (Not Significant)	Translocation and replanting of spikes and soil core. Distribution monitoring.	Neutral (Not Significant)	Spring 2024
Breeding birds	Disturbance, or harm to nesting birds, their nests, eggs and young	Certain Negative (Not significant)	Vegetation and site clearance following CEMP to safeguard breeding birds	Neutral (Not Significant)	Winter 2023
	Loss of nesting habitat		Habitat creation and artificial refugia		Autumn 2024
Bats	Disturbance of bats through light pollution	Certain Negative (Significant)	Sensitive lighting Scheme around access road and buildings	Neutral (Not Significant)	NA
	Destruction of 5 x low conservation value day roosts within Building 1		Mitigation and compensation secured under licence from Natural England		Winter 2023
	Loss of trees with potential roosting features		Post construction enhancements and artificial refugia		Winter 2023 – 2024
Badgers	Injury to individuals, potential for Sett damage and disturbance during construction activities	Likely Negative (Not Significant)	Site set up undertaken following CEMP. Sett closure under Natural England licence	Neutral (Not Significant)	Autumn 2023
Herptiles	Disturbance or injury to individuals during construction and vegetation clearance	Likely Negative (Not Significant)	Works undertaken following CEMP, with exclusion fencing to protect reptiles	Neutral (Not Significant)	Spring 2023
Invertebrates	Habitat loss for notable species	Certain Negative (Significant)	Works undertaken following CEMP	Neutral (Not Significant)	Spring 2023
			Post construction Enhancements and habitat management. Retention of habitat where possible		

2.4 Context and Aims of Management Strategy

2.4.1 The strategy seeks to continue works highlighted within the Conservation Plan (2005) (Section 2.2) and monitor the outcome of management intervention through the use of measurable outcomes, outlined in Section 4.1. The UK Biodiversity Action Plan (UKBAP) for each priority habitat type sets out targets which influence the objectives for the management strategy of each habitat type (Table 3) which will fulfil the vision for the site.

2.4.2 Habitat loss because of the proposed development, and a recorded lack of management causing decline in habitat quality on site are the drivers for the management strategy. The vision and objectives are focused on habitat restoration, creation, compensation (in terms of area and quality) and enhancement.

Table 3: Objectives of key habitat types as outlined by the JNCC (UK BAP / Habitats of Principle Importance)

UK BAP Habitat	Objective	Measures to Achieve Objective
Lowland Beech and Yew Woodland	a) Maintain current extent and distribution of lowland beech and yew woodland.	Long term management maintain and enhance woodland habitat.
	b) Encourage balance of appropriate management regime	Monitoring of habitat condition at five-year intervals
Lowland Calcareous Grassland	a) Arrest depletion of unimproved lowland calcareous grassland	Long-term management to maintain and extend coverage of calcareous grassland.
	b) Secure favourable condition over 30% of available resource	Restoration of unmanaged calcareous grassland.
	c) Re-establish lowland calcareous grassland of wildlife value at carefully targeted sites	Monitoring of habitat condition at five-year intervals. Areas undergoing restoration will be assessed during establishment
Traditional Orchard	a) No net loss of traditional orchards across the UK. The aim of this target is to ensure there is no loss of traditional orchards of high nature quality, but the HAP Group acknowledges there will be some losses and gains in space and time	Creation of traditional orchard within northern field which increases the extent of Traditional orchards in the region. Long term management set out within a Conservation Management Strategy
	b) Improve the condition of traditional orchards across the UK.	Monitoring establishment and habitat condition at a minimum of five-year intervals
	c) Increase the extent of traditional orchards across the UK	

Vision

- 2.4.3 To introduce a long-term management regime which focuses on restoring and enhancing native woodland, grassland, and parkland habitats within the estate to secure the long-term viability and extent of Habitats of Principle Importance on site, while creating defined amenity areas for recreational use in proximity to the house. Recreational areas will include a woodland garden walk to the southwest of the dwelling, a walled garden to the rear of the dwelling and formal lawns to the south of the dwelling, while the wider estate is managed for the benefit of the notable species and habitats it supports.

Management Strategy Objectives

Objective 1: Enhance and protect existing conservation value of retained habitats.

- 2.4.4 Retained calcareous grassland and woodland is to be protected during construction works via implementation of Biodiversity Protection Zones (BPZ) outlined within the CEMP (BG21.142.7, September 2023), and reinstated where damage or loss of extent occurs. Management of Habitat types outlined within Table 4. Woodland on site to be managed under a Woodland Management Plan (Table 13)
- 2.4.5 Enhancement measures to be implemented to restore existing calcareous grassland of poorer quality, control invasive and non-native species within native habitats. Areas of high value calcareous grassland proposed for loss will be harvested for green hay and where possible turfs translocated into receptor areas in the wider estate to aid enhancement.
- 2.4.6 Maintain the population of white helleborine on site, through retention or translocation of white helleborine from areas to be lost into retained receptor areas within the root protection area of existing host tree (T1) (Section 4.2.1).

Objective 2: Creation of new habitats to safeguard local biodiversity.

- 2.4.7 Creation of a traditional orchard within northern field upon existing low value grassland managed as a traditional orchard to extend and diversify habitat for protected species.
- 2.4.8 Planting of native trees within grassland which will be managed as parkland trees.
- 2.4.9 Bird and Bat boxes, herptile hibernacula, hedgehog brash piles to be installed across the site to provide faunal habitat enhancements.

- 2.4.10 Where tree felling is proposed, all dead wood will be retained in situ, and felled logs will be used to create piles and refugia around the site. Any Potential roosting features for Bats and Birds lost during tree felling work will be replaced with boxes to suit comparable species and roost / nest types.
- 2.4.11 The number, type and location of boxes installed in addition to those specified within the Enhancements section of the Ecological Impact Assessment (BG21.142.2, October 2022 FINAL) will be mapped and submitted as part of the management review.

3 Enhancement and Management of Retained and Created Habitats

To facilitate enhancement, and achieve Objectives 1 and 2, Table 4 outlines specific habitat management measures relating to each habitat parcel.

As the site is residential, the management of grassland will be undertaken with a mowing regime. It is likely that low level (extensive) grazing would be the most effective management method for the grassland, but at present pasture is not suitable for grazing due to the condition of the fencing, and areas such as the informal lawns, do not present this as an option at the time of writing. Grazing may become an option through the life of the plan and may be added at one of the reviews with the Conservation Management Liaison Group.

Table 4: Management Prescriptions to achieve Conservation Management Targets (Habitat parcel as described within Appendix 6) Compartments Numbers relate to the WMP (BG21.142.5, July 2023 FINAL)

Management Objective	Target Habitat Parcels	Proposed Management
Objective 1: Enhance and protect existing conservation value of retained habitats		
Retained Calcareous Grassland in 'Good' condition	Parcel A	Grassland areas will be managed to maintain the current botanical assemblage and ensure there is no loss of species richness or extent from the baseline assessment. Calcareous grassland will be subjected to a single hay cut post flowering and seed fall. Arisings will be removed from grassland following the cut. During restorative works within other parcels collected hay will be used to seed other areas on site. Cutting dates will vary but usually will range from late June to late July. Cutting will not occur before breeding birds have hatched and should not occur before 'desirable' plant species (reliant on seed production for regeneration) have set seed. Where possible, allow a late hay cut (late August/September) at least once every five years to support late flowering species. Small bales and light machinery will be used. Following the late cut (to approx. 3cm) monthly mowing will be undertaken to replicate grazing pressures between September and March) Rank grass species including bearded couch (<i>Elymus caninus</i>), tor grass (<i>Brachypodium pinnatum</i>) and false oatgrass (<i>Arrhenatherum elatius</i>) require targeted management to prevent encroachment of over 10% cover within the sward.

Management Objective	Target Habitat Parcels	Proposed Management
		During initial restoration of grassland patches (Years 1-5) rotational cutting of dense rank grassland patches will be undertaken in April prior to the growing season, followed by the late summer cut with the remainder of the sward. Note: this only applies to rank grassland areas as an early cut has been shown to reduce species richness in meadows and as such this method will not be implemented once dominant areas of rank grass are controlled. During April, remedial chain harrowing of the grassland is recommended in the absence of grazing to break up dense litter and open the sward to allow regeneration of seedlings. Machinery must be lightweight and works timed to prevent irreversible damage to notable habitats. Avoid disturbance / damage to anthills within the grassland during management activities. Removal of non-native invasive plant within the sward including cotoneaster and variegated yellow archangel will be undertaken as outlined within the CEMP (BG21.142.7, September 2023) Scrub cover within areas denoted as grassland will be controlled and maintained under 5% of the total grassland area. The edge of grassland with scrub and woodland will be managed on a three-year rotation to provide a transitional habitat between the woodland and grassland and provide cover for protected species over winter. Note the woodland and scrub should not be allowed to encroach into the grassland area, and the management should be undertaken along the woodland edge- Works to the woodland edge will be undertaken by handheld brush cutters during winter when reptiles will be hibernating away from grassland habitats. Fertilisers and herbicides will not be used within grassland habitats on site. If herbicides are required to spot treat pernicious / noxious weeds the works should be undertaken by a specialist contractor with experience in the conservation management of sensitive species rich grasslands.
Retained calcareous grassland in 'Poor' condition	Parcel B and C	The grassland towards the north-western corner (Parcel B) has fallen out of management due to the vacant estate therefore some remedial work may be required to establish routine maintenance, which will be monitored over the duration of the plan, with amendments when required.

Management Objective	Target Habitat Parcels	Proposed Management
		The grassland will be entered into a regime to control the dominance of Tor grass (Parcel B) false oat grass (Parcel C) within the area. As a result of long-term neglect, this area will be divided into sections to prevent impacts to flora and fauna within the grassland parcels. The grassland will be subjected to a two-cut method mowing regime as described above to reduce the rank grass dominance and increase the diversity of herb and grass species within the sward. The area will be left to regenerate from the seedbank, if this is not successful and the diversity does not increase then a green hay application will be undertaken. The southern field (Parcel C) supports <i>Verbascum nigrum</i> the food plant for notable invertebrates, as such management must ensure that all life stages are not affected by works, and an increase of this plant species within the Parcel and the wider estate is encouraged. During April, Remedial chain harrowing of the grassland is recommended in the absence of grazing to break up dense litter and open the sward to allow regeneration of seedlings. Avoid disturbance / damage to anthills within the grassland during management activities, and the use of light machinery is required. Scrub cover within areas denoted as grassland will be controlled and maintained under 5% of the total grassland area. The parcels will be incorporated into the same management regime as outlined above for Parcel A, once the remediation works are successful (Years 1-5). Fertilisers and herbicides will not be used within grassland habitats on site
Restored Neutral Grassland	Parcel D	The northern field will be subjected to soil testing to inform the choice of seed mixes / green hay to diversify the grassland sward. The area will be subject to a hard cut to remove the rank grasses from the site in spring. The sward will be regularly maintained to a height of 10mm and will be subjected to scarification to establish 50% bare ground patches to allow germination following seeding, subject to soil analysis. During year 1 minimal maintenance is required to allow successful germination, a single cut will be taken post flowering in Late Summer / Autumn.

Management Objective	Target Habitat Parcels	Proposed Management
		During the 2nd Year the coverage and diversity of species will be assessed to determine success of seeding and will determine the follow up intervention. Once established, grassland will be subjected to a single annual cut during late summer after species have flourished and set seed. The grassland will be cut in phases to allow the dispersal of reptiles and other protected species which could be within the sward. The cover of false oat grass within the sward will ideally be maintained at a total coverage of less than 10% of the sward. Scrub cover within areas denoted as grassland will be controlled and maintained under 5% of the total grassland area Fertilisers and herbicides will not be used within grassland habitats on site
Lowland Beech and Yew Woodland	All woodland Compartments	The net gain targets related to two smaller sections of woodland within Compartments 1 and 2) whereby the focus of the work seeks to reduce the cover of non-native species, develop the storeys within the woodland through selective clearance of young stock, and the promotion of regeneration, and light penetration to the ground layer to improve the target condition. As these sections fall within the wider management plan for the site, the overarching aims for woodland are detailed within Table 13, extracted from the Woodland Management Plan. Compartments 2 and 3 will be focal points for ash dieback monitoring as detailed within the WMP due to composition of young ash trees recorded. The extend of non-natives will be recorded and monitored as part of the scheme. The extent of deer browsing pressure will be monitored in all compartments, specifically in relation to young or planted trees. Where needed additional control measures such as fencing, and guards will be installed. All mature trees will be assessed for health and safety reasons on a 4-year cycle to include checks for diseases and pests.

Management Objective	Target Habitat Parcels	Proposed Management
Objective 2: Creation of new habitats to safeguard local biodiversity		
Proposed Traditional Orchard	Parcel E	Trees and whips of native varieties of fruiting trees (such as traditional apple varieties including Edward V11, Greensleeves, Egremont Russet) and cobnut trees will be planted in a square pattern with trees located 10m apart to allow root space and access to the understory. Trees will be formative pruned to shape the vegetative growth. To prevent browsing from deer, trees will have protective guards for the first 10 years or until suitably established. In the first year of establishment, from May until September, young trees will be watered with 5-10L of water per sapling, supplied once per week. In periods of dry weather (No rain for a period of over 10 days) this effort will be increased to twice per week. To avoid competition within the first 3 years of establishment, a 1m diameter circle will be kept clear of vegetation to prevent competition of water and nutrients. Once trees are established, the sward will be allowed to establish right up to the trunk. Any dead or dying plants will be removed and replaced during the next available planting season for the lifespan of the management plan. Dead and decaying branches on trees will be retained and not removed from the tree unless they interfere with management practices, are diseased or are unsafe. Fallen branches will be stacked into log piles insitu at the base of the fruit trees. Once the trees are approximately 10 years old, maintenance pruning will be required to promote fruit production. The Orchard is primarily planted as a high distinctiveness habitat to enhance the site; therefore, fruit production is not the primary consideration and excessive chemical treatment, or pruning is not prescribed. <i>Understory</i> The understory is to be managed as a species rich hay meadow which is currently neutral grassland in poor condition. The understory will be managed as outlined for Parcel D Restored Neutral Grassland. Scrub and pernicious weeds within the orchard area will be managed through spot checks and removal.

Management Objective	Target Habitat Parcels	Proposed Management
		Fertilisers and herbicides will not be used within grassland habitats on site
Parkland Trees	Parcel D	A mixture of native large growing tree varieties (namely beech) will be planted and protected guards for the first 10 years or until suitably established to protect from browsing pressure. Trees will be established following the details above for fruiting trees. Formative prune during winter where necessary to establish a strong central leader on trees. Trees will be assessed annually during years 3 – 5 removing and reducing side shoots. This work will be ongoing until the tree is established. All mature parkland trees will be assessed for health and safety reasons on a 4-year cycle.

4 Habitat and protected species monitoring and reporting.

The following ecological receptors will be monitored as indicators of success of the management strategy. If populations have found to be reduced when compared against the baseline reported within the EcIA (BG21.142.2, October 2022) the information will be presented to the Conservation Management liaison Group for review and discussion on potential amendments to the CMS.

4.1 Indicators of success - Biodiversity net gain targets

- 4.1.1 The habitats which have been created and enhanced as part of the scheme have a proposed target condition outlined within the metric. To determine the success of any creation and enhancement the habitats will be assessed against the baseline results, the definitions of the priority habitat as defined by JNCC, and the Local wildlife sites selection criteria. It should be noted that the areas relating to the BNG targets are small in comparison to the extent of grassland and woodland which will be managed as part of the CMS.

Assessments of habitat parcels which have been created will be undertaken in Year 1, 2, 3, 4, 5, (7), 10, 15, 20, 25 and 30 years. Assessment at Year 7 will be undertaken if deemed necessary to monitor any corrective measures or highlight issues within the management plan.

Established habitats retained and enhanced as part of the scheme will be monitored at 5-year intervals.

Calcareous grassland

- 4.1.2 The habitat condition assessment will involve a single walkover during the optimal botanical season (May – August) by a suitably qualified ecologist to determine the condition score by assessing the criteria in Table 5.
- 4.1.3 The extent and quality of the calcareous grassland will be mapped in addition to the location of notable assemblages being recorded.
- 4.1.4 The percentage cover of species within grassland habitat will be recorded to allow long term monitoring in comparison to the baseline.

- 4.1.5 An assessment against Local Wildlife Site Selection Criteria will be undertaken at 5-year intervals.

Retained Parcels

- 4.1.6 The walkover will report any changes in the extent or condition of these parcels. All retained Grassland will seek to maintain a good condition whereby all 6 criteria are achieved and will be monitored at 5-year intervals.

Restored and Enhanced Parcels

- 4.1.7 An updated habitat condition assessment will be undertaken within the areas of restored calcareous and neutral grasslands to achieve good condition (Table 5) and compared against the baseline. Good condition is achieved whereby when all target criteria within Table 5 are achieved.
- 4.1.8 Restored and enhanced parcels will be monitored as created habitats at Year 1, 2, 3, 4 and 5 during establishment. At Year 5 the condition will be reported, and any management intervention documented to inform the Management plan Review (Section 5).

Table 5: Grassland Condition Assessment Criteria for Biodiversity Metric 3.1 – Calcareous and Neutral Grassland

Condition Assessment Criteria	
1*	The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type. Wildflowers, sedges and indicator species for the specific grassland habitat type are very clearly and easily visible throughout the sward. NB - This criterion is essential for achieving moderate condition
2*	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20 per cent is more than 7 cm) creating microclimates which provide opportunities for wildlife.
3*	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens.
4*	Cover of bracken less than 20% and cover of scrub (including bramble) less than 5%.
5*	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981). Combined cover of species indicative of sub-optimal condition and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area.
6*	There are greater than 9 species per metre squared. NB - This criterion is essential for achieving good condition

*Indicates target criteria to be achieved through management set out within this management strategy.

Traditional orchard

- 4.1.9 The Traditional orchard will be established following the guidelines above within a target condition of moderate, as the entire orchard will be newly created. The strategy will aim to achieve targets 2, 3, 5, 6, 7, and 8 of the criteria listed within Table 6. Ultimately the plan will aim to achieve criteria 1 and 4, but these targets may extend past the 30-year management outlined within the CMS.

Table 6: Orchard Condition assessment Criteria for Biodiversity Metric 3.1

Condition Assessment Criteria	
1	Presence of ancient and / or veteran trees. NB - this criterion is essential for achieving good condition.
2*	Less than 5% of fruit trees are smothered by scrub. Small patches of dense scrub and/or scattered scrub growing between trees can be beneficial to biodiversity, however these should occupy less than 10% of ground cover.
3*	There is evidence of formative and/or restorative pruning to maintain longevity of trees.
4	Presence of standing and/or fallen dead wood: all mature trees have standing or fallen branches, stems and stumps greater than 10 cm diameter associated with them.
5*	At least 95% of the trees are free from damage caused by humans or animals e.g. browsing, bark stripping or rubbing on non-adjusted ties.
6*	Sward height is varied (between 5 cm and 30 cm) and small patches of bare ground are present creating structural diversity. Up to 10% cover of patches of tall herb vegetation may be present.
7*	Species richness of the grassland is equivalent to a medium, high, or very high distinctiveness grassland.
8*	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and species of sub-optimal condition ³ make up less than 10% of ground cover.

*Indicates target criteria to be achieved through management set out within this management strategy.

Woodland

- 4.1.10 The area of woodland within the redline boundary was assessed as poor during the baseline assessment.
- 4.1.11 In terms of biodiversity net gain, each woodland compartment within the wider estate will also be assessed against Table 7 to determine the baseline to monitor changes following implementation of the WMP (BG21.142.5, July 2023 FINAL).
- 4.1.12 The management plan aims to achieve to moderate / good condition, targeting areas such as those presented in green shading within Table 7.
- 4.1.13 The objectives and management targets within the WMP (Table 13) will be undertaken and monitored as outlined with a review at 5-year intervals and reported within the management plan review.

Table 7: Condition Assessment criteria for Woodland habitat (Green shaded areas are target conditions to achieve over 32 points).

Condition Assessment Criteria				
		Good (3 points)	Moderate (2 points)	Poor (1 point)
1	Age distribution of trees	Three age-classes present.	Two age-classes present.	One age-class present.
2	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland.	Evidence of significant browsing pressure is present in 40% or less of whole woodland.	Evidence of significant browsing pressure is present in 40% or more of whole woodland
3	Invasive plant species	No invasive species present in woodland.	<i>R. ponticum</i> or <i>Prunus laurocerasus</i> not present; other invasive species <10% cover.	Rhododendron or cherry laurel present; or other invasive species >10% cover.
4	Number of native tree species	Five or more native tree or shrub species found across woodland parcel.	Three to four native tree or shrub species found across woodland parcel.	Two or less native tree or shrub species across woodland parcel.
5	Cover of native tree and shrub species	>80% of canopy trees and >80% of understorey shrubs are native.	50 - 80% of canopy trees and 50 - 80% of understorey shrubs are native.	<50% of canopy trees and <50% of understorey shrubs are native.
6	Open space within woodland	10 - 20% of woodland has areas of temporary open space Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted.	21 - 40% of woodland has areas of temporary open space. Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted.	<10% or >40% of woodland has areas of temporary open space. But if woodland <10ha has <10% temporary open space,
7	Woodland regeneration	All three classes present in woodland: trees 4 - 7 cm DBH, saplings and seedlings	One or two classes only present in woodland.	No classes or coppice regrowth present in woodland.
8	Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback.	11% to 25% mortality and/or crown dieback or low-risk pest or disease present.	25% tree mortality and/or any high-risk pest or disease present
9	Vegetation and ground flora	Recognisable NVC plant community at ground layer, characterised by ancient woodland flora	Recognisable woodland NVC plant community at ground layer present.	No recognisable woodland NVC plant community at ground layer present.
10	Woodland vertical structure	Three or more storeys across all survey plots or a complex woodland.	Two storeys across all survey plots.	One or less storey across all survey plots.
11	Veteran trees	Two or more veteran trees per ha	One veteran tree per ha.	No veteran trees present
12	Amount of deadwood	50% of all survey plots within the woodland have standing deadwood, large dead branches /stems, branch stubs, or stumps	Between 25% and 50% of all survey plots within the woodland parcel have deadwood	Less than 25% of all survey plots within the woodland parcel have deadwood
13	Woodland disturbance	No nutrient enrichment or damaged ground evident.	<1 ha in total of nutrient enrichment across woodland area and or less than 20% of woodland has damaged ground.	>1 ha of nutrient enrichment and or more than 20% of woodland has damaged ground.

Parkland Trees

- 4.1.14 Due to the aim of the management plan to preserve the parkland value, newly planted trees will be considered as regeneration to the parkland setting and will be assessed against the parkland assessment criteria rather than urban trees due to the overarching aims to enhance the site and promote longevity of the habitat rather than an individual entity.
- 4.1.15 The management of parkland trees across the site will aim for moderate / good condition (Table 8). There are existing mature / veteran trees within the park, and the planting will help facilitate regeneration of this habitat type.
- 4.1.16 The health of individual trees will be undertaken on a 4-year rotation, and each tree will be assessed to determine its suitability as a habitat for protected species such as bats and invertebrates.

Table 8: Parkland Condition assessment Criteria for Biodiversity Metric (This integrated guidance from technical guidance 4.0 which includes additional indicators compared to technical guidance 3.1).

Condition Assessment Criteria	
1	Presence of ancient and or veteran trees NB - this criterion is essential for achieving good condition.
2	Three different life-stages (for example young, mature or veteran) of open grown or pollarded trees are present, to ensure replacement and continuity of tree cohort, veteran characteristics and habitat.
3	Native scrub is present with a variety of heights, widths, shapes and species compositions - as planted or naturally established individual plants, or clumps of trees or shrubs.
4	Frequent presence of decaying wood providing ecological niches – such as standing, attached and fallen deadwood (for example, dead stems, branches and branch stubs), trees with heart-rot, or hollowing in the trunk or major limbs. Decay features might be revealed by certain types of fungal fruiting bodies.
5	There is no evidence of recent adverse impact on tree health by human activities, livestock, wild animals, pests or diseases (this excludes veteran features valuable for wildlife). For example, no evidence of poaching, damage from machinery use or storage, ground compaction, grazing damage to bark and roots, competition or shading from surrounding trees.
6	Ground cover comprises open habitats, for example grassland or heathland, which are unimproved or semi-improved (medium distinctiveness or higher).
7	Ground cover is subject to an appropriate management regime providing structural diversity for vertebrates and invertebrates, which is not being or threatened by infill of trees and scrub by natural establishment or forestry plantation, native or non-native.
8	There is an absence of invasive non-native plant species and species indicative of sub-optimal condition? make up less than 5% cover (this excludes ancient and veteran trees).

4.2 Indicators of success –Ecological Receptor (Notable Plants) Monitoring

White Helleborine

- 4.2.1 The extent of White Helleborine will be confirmed prior to the start of works within the grassland and woodland areas during May 2024. Any additional stands within woodland or grassland compartments will be recorded to allow monitoring.
- 4.2.2 The presence of White helleborine will be monitored at Year 1 following construction a) to determine extent in the wider estate, and b) to quantify the effects to the pre-existing population. During the application phase it was assumed the area supporting the Helleborine spikes would be lost through level changes and the creation of an amenity grassland area to the south of the main house. However, the fate of the helleborines are not yet established and where possible will be safeguarded in situ. If this is not viable, spikes, turf and soil substrate will be translocated to a comparable area within the calcareous grassland within the RPA of the host Beech tree (T1).
- 4.2.3 If spikes are translocated their success will be monitored at the following intervals following establishment within the receptor area; 1 week, a fortnight and then 1 month after works. The spikes will be flagged, and the location will be secured within the BPZ. The condition and health of the plant will be recorded at each interval (e.g wilting or damage to stems). Remedial action will be undertaken where necessary. The spikes will be monitored in year 2, and if considered established will enter monitoring at a 5-year interval.
- 4.2.4 Helleborines which have not been translocated will be monitored at five-year intervals to confirm continued presence and increase in numbers compared against the baseline.
- 4.2.5 The survey will comprise a single walkover of suitable areas of woodland and grassland, notably shady areas with little ground cover during May, the flowering season for this species. Any new spikes will be recorded during May 2024.

Table 9 : Assessment criteria for white helleborine on site

Assessment Criteria	
1	Presence and number of spikes recorded
2	Mapping of extent of helleborine

4.3 Indicators of success – Ecological Receptor (Faunal) Monitoring

Reptiles

- 4.3.1 A reptile monitoring survey will be undertaken to determine continued presence of slow worm (*Anguis fragilis*) and grass snake (*Natrix helvetica*) within the estate and gauge population numbers to determine any changes from the baseline peak count of 38 slow worm and 2 grass snakes.
- 4.3.2 Surveys will comprise four visits undertaken in favourable weather conditions from March to June to determine adult presence. To establish successful breeding a further 4 visits will be undertaken September / October to search for neonates and immature specimens (Totalling a 8 visits).
- 4.3.3 Monitoring will be undertaken through direct observation, searching targeted permanent refuge points such as deadwood piles, and the created hibernacula. In addition, artificial refugia will be placed within key locations two weeks prior to the first survey. Upon completion the refugia will be collected and re-dispersed for the following survey.
- 4.3.4 A habitat condition assessment will be undertaken at each interval to ensure that habitat management is favourable to reptile species and ensure that the area of suitability is not reduced post construction.
- 4.3.5 Locations and numbers of reptiles will be mapped and recorded for the duration of the management plan, within assessments undertaken every 3 years for 30 years. Should notable changes in population occur additional surveys and/or remedial action may be required.

Table 10 : Assessment criteria for reptiles

Assessment Criteria	
1	Presence, species and number of adults, juveniles recorded (March to June and September–evidence of successful breeding (Survey Sept)
2	Extent and quality of habitat recorded (egg laying habitat present, suitable hibernation habitat maintained)

Notable Invertebrates

- 4.3.6 The site will be subject to a full invertebrate survey whereby direct and indirect features will be assessed. The aim of the invertebrate survey is to ascertain continued presence of notable invertebrates, including glow worm (*Lampyrus noctiluca*), chalk hill blue (*Polyommatus coridon*),

dingy skipper (*Erynnis tages*), striped lychnis (*Shargacucullia lychnitis*). The Invertebrate surveys will comprise 4 visits across the survey season for each notable species (Table 14).

- 4.3.7 During direct surveys the number of individuals will be recorded during a sweep net transect survey conducted at the optimal time of year for activity of the adult or immature life stage. The surveys will be undertaken every year for the first 5 years then every three years to year 15, then every 5 years until the 30-year plan is completed (Table 14)
- 4.3.8 Indirect surveys relating to the availability and extent of suitable habitat including deadwood and grassland and the locations and extent of food plants. It should be noted that a number of trees with a DBH of over 60cm are proposed for removal (either due to health and safety or to facilitate the development). The extent of notable trees for invertebrates and standing deadwood will be recorded year one post construction and any notable tree failures recorded.
- 4.3.9 Individuals of each target species and extent of suitable habitat and food sources will be mapped.

Table 11: Assessment criteria for notable invertebrates

Assessment Criteria	
A	Presence of adult individuals
B	Presence of eggs, immature individuals to confirm breeding status
C	% Cover of food / host plants for each species to ensure no loss of extent, and the extent of suitable habitat is maintained
D	Deadwood survey of woodland to monitor extent of habitat for Saproxyllic invertebrates

Foraging and commuting bats

- 4.3.10 Static automated bat detectors will be placed in four locations at three year intervals for a period of five nights during April/May, June/ July and August/Sept to record number and species of bat utilizing woodland edge within the site. The species and number of passes will be reported against the baseline values.

4.4 Reporting strategy

- 4.4.1 Following each year of proposed monitoring of habitats and indicators of success a report and corresponding map will be issued to the client and the Conservation Management Liaison Group for annual review during April as outlined within section 1.4 of the first schedule of the Section 106 agreement.

- 4.4.2 At five-year intervals the reports will be collated to form part of the management plan review and subsequent reissue of the CMS following revision every succeeding five years for a period of thirty years from implementation as outlined within 1.2 of the first schedule of the S106 agreement (Section 5).

5 Management period and review

- 5.1.1 Due to the evolution of estate character and changing parameters, the Conservation Management Strategy needs to be a dynamic document to allow for aesthetical changes by the client, changes to management as a result of disease, or a change in constraints / pressures, climatic conditions or storm events.
- 5.1.2 The management period of this plan is 30 years. In order to ensure that the plan continues to remain appropriate, applicable and effective, a review will be undertaken by both the Conservation Management Liaison Group (CMLG), to ensure that all information contained within the document remains relevant. This review of the management plan will be every 5 years and will follow analysis and recommendations flagged during reports submitted after each monitoring survey for habitats and protected species. Should it be determined that the conservation aims of the management plan are not being met, remedial action will then be identified, agreed, and implemented so that the development still delivers the fully functioning biodiversity objectives of the approved scheme.

6 Responsibility and Implementation

- 6.1.1 The client's construction management team will be responsible for implementing the management associated with this strategy up to the point of occupation whereby the client is responsible for the continued delivery of the Management Strategy.
- 6.1.2 Any transference of responsibility of this plan will be undertaken with the appropriate appointment of a competent organisation capable of delivering the detailed measures within this document.
- 6.1.3 Habitat management of the woodland, orchard and grassland must comply with best practice standards and all relevant health and safety procedures, protection of the environment. Avoidance of pollution and protection of notable species and habitats must be adhered to.

- 6.1.4 Any deviation from the plan or changes as a result of monitoring results will be reported following consultation and approval by the Conservation Management Liaison Group (CMLG) which is an obligation on the Client to establish within one year of development as outlined within the first Schedule of the S106 Agreement.

7 Defining the Conservation Management Liaison Group

Background

- 7.1.1 Under the terms of a Deed of Agreement (hereinafter referred to as 'The Agreement') to Provide Planning Obligations pursuant to Section 106 of the Town and Country Planning Act 1990 and Section 111 Local Government Act 1972 in relation to the proposed development on land at Templecombe, Wangrave Road, Remenham, RG9 3HU (Planning Reference Number 223108) the Owner is responsible for establishing a Conservation Management Liaison Group (hereinafter referred to as 'CMLG').
- 7.1.2 The Agreement requires:
- 7.1.3 "A group to be established by and under the chairmanship of the Owner (or their representative) which shall include representatives from the Owner and the Council (including the Council's Ecologist / Biodiversity Officer and any other relevant officers) and may include specialist advisers invited by the Conservation Management Liaison Group to join the group."
- 7.1.4 "Following Commencement of Development to establish a Conservation Management Liaison Group which shall be set up no later than one year from the date of Commencement of Development and the Conservation Management Liaison Group shall meet within one month of being set up and then annually thereafter in the April of each year."
- 7.1.5 The Conservation Management Strategy (CMS) means "a detailed conservation management strategy for biodiversity conservation and enhancements for the restoration of the registered park and garden, local wildlife site and protected species populations within the Estate based on the synopsis provided in the Second Schedule 2 and that is consistent with the intent of the existing Park Place and Templecombe Conservation Plan Edition 1 prepared for Park Place Estates and Aspect Park Ltd by Land Use Consultants dated 22 February 2005 and the

Integrated Estate Management Plan prepared on behalf of Hill Spink Ltd re: Park Place, Remenham, Berkshire dated June 2008".

7.1.6 The Approved CMS is that approved by Wokingham Borough Council on the [insert date]

Terms of Reference and Constitution Purpose

- (a) To monitor progress in implementing the approved Conservation Management Strategy (CMS).
- (b) To carry out an extensive review of the CMS at five yearly intervals for a period of 30 years following the implementation of the first CMS.
- (c) To consider and approve (in writing) any deviations from the approved CMS.

Members of the CMLG

7.1.7 The members of the CMLG will comprise:

- The Owner (and/or their representative)
- The Project Manager (or their representative) responsible for the construction phase of the development)
- The Owner's Estate Manager (or their representative) responsible for the day-to-day management of the Estate
- The Council's Senior Ecology Officer (or their representative)

7.1.8 A Chair of the CMLG will be appointed by the Owner. Other members may be co-opted on to the CMLG at the discretion and agreement of the Group.

7.1.9 The Chair shall have the following roles:

- To direct and control the meetings of the CMLG.
- To cast a further vote if necessary to resolve any tied decision(s).
- To represent the CMLG at other meetings and function as necessary.

7.1.10 A Secretary will be elected by the CMLG at the first meeting and will have the following role;

- To compile and maintain minutes of all meetings.
- To compile and issue agendas for meetings in a timely fashion.
- To take care of all communications to and from the CMLG.

Operation

- (a) The CMLG will convene at least once per annum in April.
- (b) The first meeting of the CMLG will be held no later than 12 months following the commencement of development.
- (c) Commencement of development shall be as defined in The Agreement.

Reporting

- (a) Minutes of meetings of the CMLG will be maintained.
- (b) A revision of the CMS will be issued every five years for the thirty-year life of the plan.

Proposed Structure of the CMLG

Chair	Neil Crofts – MD of Brindle and Green
Secretary	TBA
The Owner (and/or their representative)	Brindle and Green Senior Ecologist or above and Senior Arborist
The Project Manager (or their representative) responsible for the construction phase of the development)	Ed Molloy
The Owner's Estate Manager (or their representative) responsible for the day-to-day management of the Estate	TBC
The Council's Senior Ecology Officer (or their representative)	TBC

Appendix 1. References

- Blakesley, D. and Buckley, P., (2016). Grassland restoration and management. Pelagic Publishing Ltd.
- Edgar, P., Foster, J. and Baker, J. (2010) Reptile Habitat Management Handbook, Amphibian and Reptile Conservation: Bournemouth
- Froglife (1999), Reptile survey: an introduction to planning, conducting and interpreting surveys for snakes and lizard conservation, Froglife advice sheet 10.
- Hursey S, Stanhope K (2017) Practicalities and Problem Solving: Orchid Translocation in Oxfordshire, In Practice Issue 98, pg3437, CIEEM Publications
- Joint Nature Conservation Committee, (2004). Common standards Monitoring Guidance for Reptiles and Amphibians. Joint Nature Conservation Committee.
- Joint Nature Conservation Committee, (2004). Common standards Monitoring Guidance for Woodland Habitats. Joint Nature Conservation Committee.
- Joint Nature Conservation Committee, (2008) UK BAP Priority Habitat Descriptions: Lowland beech and Yew Woodland. Joint Nature Conservation Committee.
- Joint Nature Conservation Committee, (2008) UK BAP Priority Habitat Descriptions: Lowland Calcareous Grassland. Joint Nature Conservation Committee.
- Land Use Consultants (2005) Park place and Templecombe Conservation Plan Edition 1
- Magnificent Meadows. (2022). Restoring species-rich grassland by natural regeneration and colonisation. [Online]. Magnificent Meadows. Last Updated: 2022. Available at: http://www.magnificentmeadows.org.uk/assets/pdfs/Restoration_using_natural_regeneration.pdf [Accessed 19 December 2022].
- Magnificent Meadows. (2022). Restoring species-rich grassland using green hay. [Online]. Magnificent Meadows. Last Updated: 2022. Available at: http://www.magnificentmeadows.org.uk/assets/pdfs/Restoration_using_green_hay.pdf [Accessed 19 December 2022].
- Natural England (2010). Natural England Technical Information Note TIN013 Traditional Orchards: Site and Tree Selection. Natural England Publications.
- Natural England (2010). Natural England Technical Information Note TIN014 Traditional Orchards Planting and Establishing Fruit Trees. Natural England Publications.
- Natural England (2010). Natural England Technical Information Note TIN017 Traditional Orchards: Maintenance Pruning. Natural England Publications.

Natural England (2010). Higher Level Stewardship Farm Environment Plan (FEP) Manual. Third Edition. Natural England Publications.

Panks S, White N, Newsome A, Nash M, Potter J, Heydon H, Mayhew E, Alvarez M, Russell T, Cashon C, Goddard F, Scott S, Heaven M, Scott S, Treweek D, Butcher B and Stone D 2022. Biodiversity metric 3.1: Auditing and accounting for biodiversity – Technical Supplement. Natural England.

Reading Agricultural Consultants (2008) Integrated Estate Management Plan, Park place, Remenham, Berkshire

Rodwell, J.S., 1998. British plant communities (Vol. 1,3). Cambridge University Press

Sutherland, W.J. and Hill, D.A. eds., (1995). Managing habitats for conservation. Cambridge University Press.

Thames Valley Environmental Records Centre (TVERC) (2018), Local Wildlife Sites Selection Criteria Berkshire, Buckinghamshire and Oxfordshire

Wokingham Borough Council (2014). Biodiversity Action Plan 2012-2024. Wokingham Borough Council

Appendix 2. Management Sub-programme

Please note that management prescriptions are from year 2 onwards, as created habitats will be planted and managed for establishment as recorded within the Soft Landscaping scheme and establishment guidance. This table relates to specific management practices to achieve the proposed BNG scores within the assessment and related target conditions Timings relating to monitoring indicators of success are outlined within Table 14

Table 12: Management schedule in relation to proposed and retaining habitats (Excluding woodland which is detailed in Table 13) Where ticks are in grey, the exact point of established cannot be determined at the time of writing and therefore grey suggests an element of unknown which will be confirmed within management plan revisions.

Management Prescriptions	Timing of Works	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11-15	Year 16- 20	Year 21-25	Year 26 - 30
Established Parkland Trees															
Safety checks and tree condition assessment undertaken on a 4-year rotation.	Year Round				✓				✓		✓	✓	✓	✓	✓
Assessment of standing deadwood within notable trees	Year Round				✓				✓		✓	✓	✓	✓	✓
Where tree or limb removal is identified the suitability for inverts and bats requires consideration and survey. Consult ecologist	Year Round	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Newly planted Orchard and Parkland Trees															
Check guards and tree supports until established	Unrestricted	✓	✓	✓	✓	✓	✓	✓	✓	✓					
Remove stakes and tree guards once establishment is deemed complete.	Unrestricted									✓					
Weed by hand around tree base leaving 1m diameter of bare soil	Apr/May	✓	✓	✓	✓	✓	✓								
Formative prune where necessary to establish a strong central leader on trees. Trees will be assessed, removing, and reducing side shoots. This work will be on going until the tree is established.	Prior to growing season		✓	✓	✓	✓	✓	✓	✓	✓					
Introduce and maintain management pruning, specific to orchard trees to promote fruiting.	Prior to growing season						✓	✓	✓	✓	✓	✓	✓	✓	✓
Safety checks and tree condition assessment undertaken on a 4-year rotation from establishment.	Unrestricted				✓				✓		✓	✓	✓	✓	✓

Management Prescriptions	Timing of Works	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11-15	Year 16-20	Year 21-25	Year 26-30
Any fallen deadwood within the orchard will be retained within the understory. The sections will be retained as large as possible, log piles created where necessary	Unrestricted						✓			✓	✓	✓	✓	✓	✓
Neutral Grassland enhancement and Traditional Orchard understory															
Hard cut to 10m in Spring in dense areas of rank grasses with arisings removed. Maintain s short sward for 1 st growth season and scarify to establish 50% bare ground to facilitate seed bank germination or to facilitate a seed mix / green hay application	Spring (April)	✓	✓	✓	✓										
Remove by hand any Undesirable weeds (e.g., Agricultural weeds including common ragwort, creeping thistle) non-native species and encroaching scrub saplings	Mar - Apr	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Annual hay cut post flowering and setting seed with arisings removed	Late summer / Autumn	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Following the late cut (to approx. 3cm) monthly mowing will be undertaken to replicate grazing pressures (Arising removed)	September - March	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Reseed if required to establish desired native understory	Spring	✓	✓	✓	✓										
Control encroaching scrub within areas defined as Grassland (Namely Parcel F). Established dense patches will be retained but should not increase in area over the life of the plan. Scrub within areas denoted in areas demarked as grassland should not exceed 5% scrub cover.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Grassland (established calcareous grassland)															
Remove by hand any Undesirable weeds (e.g., Agricultural weeds including common ragwort, creeping thistle) non-native species and encroaching scrub	Mar - Apr	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓
Annual hay cut post flowering and setting seed with arisings removed	Aug	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Following the late cut (to approx. 3cm) monthly mowing will be undertaken to replicate grazing pressures (Arising removed)	September - March	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Management Prescriptions	Timing of Works	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11-15	Year 16-20	Year 21-25	Year 26-30
Check and repair damaged areas as required. Rotovate to 150mm, 100mm topsoil and reseed	May-Sept	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Grassland (enhancement of calcareous grassland)															
Check and repair damaged areas as required following construction	May-Sept	✓	✓												
Hard cut to 10m in Spring in dense areas of rank grasses with arisings removed – use of light machinery only	Spring (April)	✓	✓	✓	✓										
Remove by hand any noxious weeds within grassland areas	Mar - Apr	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Control and removal of non-native invasive species	Autumn	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Annual hay cut post flowering and setting seed with arisings removed	Late summer / Autumn	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Following the late cut (to approx. 3cm) monthly mowing will be undertaken to replicate grazing pressures (Arising removed)	September - March	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 13: Woodland Management objectives and targets as extracted from the WMP (BG21.142.5, July 2023 FINAL)

Management Objective	Required Management Operations	Cpt No.	Year(s)	Monitoring
Maintain extent of Woodland	No loss of beech woodland extent recorded within the estate	1-5	10	No loss of beech woodland extent recorded through management. Compare relative to 2022 baseline area of woodland through field survey and aerial photography.
Increase structural diversity within the woodland through the diversification of tree ages, enhancement of the understory and improvement in ground flora richness	Initial thinning to reduce competition and increase light to ground level. Thinning to focus on non-native, young (<150mm diameter), suppressed/poorly formed, dead or declining trees. Objective of particular importance for compartments 3 and 4.	1-5	1	Visual survey of woodland. Continue thinning (if required) on a 5-year cycle to improve overall quality.
	Focus on encouraging natural regeneration (sensitive new planting may be used to support this)	1, 2 and 5	1	Ongoing checks of newly planted trees – remove any dead/declining trees and replace. Carry out formative pruning as needed to establish strong leaders. *New planting recommended after the thinning of non-native, suppressed, declining or dead trees.
	Deer guards (minimum height 120mm, plastic free/biodegradable) to be used for all new planting. Native species appropriate to the W12 NVC woodland type to be used for planting in compartments 1-4, while non-native or no invasive ornamental species may be planted in compartment 5. New planting to be widely spaced and/or grouped, to avoid harsh boundaries between tree ages and structural uniformity.	3-4	*	
	Carry out small-scale thinning of understory (2-5m) to reduce the vast clustering of box. Thinning to focus on poor-quality or suppressed box.	1-4	1+	Ongoing checks. Continue thinning box (if required) on a 5-year cycle to improve overall quality.
	Retain lying deadwood <i>in situ</i> . Stack small diameter deadwood into piles to aid in moisture retention. Larger lying deadwood to be left intact wherever possible to prevent disturbance to invertebrates. Retaining standing deadwood <i>in situ</i> wherever possible. Create new standing deadwood habitat (i.e. 4m monoliths) from trees selected for removal where appropriate. Objective of particular importance for compartments 1-4.	1-5	1	Visual survey of priority areas for new deadwood habitat, i.e. those with limited lying/standing deadwood. Achieve a minimum of 3 fallen lying trees >20 cm diameter per ha and 4 trees per ha allowed to die standing.

Management Objective	Required Management Operations	Cpt No.	Year(s)	Monitoring
	Retain all existing veteran trees marked on Woodland Features Map) and provide favourable conditions to prolong their survival. This may involve the management of land immediately surrounding them (i.e. gradual 'halo' thinning to increase light penetration).	1-4	1-10	Visual survey of veteran trees every 18 months (winter and summer) to inform tree condition and any required management.
Restore the lowland beech and yew woodland compartments to predominantly native species composition and promote regeneration of beech and yew	Thinning focusing on young, non-native trees to encourage and increase regeneration of beech and yew.	3-4	1	Visual surveys of woodland to determine if signs of beech/yew regeneration (saplings, seedlings, young trees) are present at sufficient density to maintain canopy density. Compare to baseline levels of regeneration (minimal).
	Removal (hand pulling) of sapling sycamore	1-5	1+	Ongoing checks to remove sycamore saplings to prevent establishment. No increase in sycamore cover to be recorded within woodland areas.
	Phased removal of semi-mature (150mm-400mm dbh) and mature (>400mm dbh) sycamore. Stumps to be treated with systemic herbicide but left <i>in situ</i> to decay. Herbicide use to be confirmed with ecologist prior to use, to prevent decline of invertebrate communities.	1-4	1	Monitor progress and record % removal per year. There should be a decrease of sycamore cover recorded when compared to the baseline, with the aim of decreasing sycamore cover by at least 70% within the 10 years.
	Replace failing or dead sycamore with species consistent with the W12 NVC woodland type, particularly beech and yew.	5	*	Monitor sycamore in compartment 5 and replace any dead or dying trees with native species, with the ultimate vision of phasing the woodland back to lowland beech and yew. *Replacement planting with native trees on <i>ad hoc</i> basis following the death/failure of existing sycamore.
	New planting with species consistent with the W12 NVC woodland type, particularly beech and yew. As above, all new planting to have deer guards.	1-4	*	Ongoing checks of newly planted trees – remove any dead/declining trees and replace. Carry out formative pruning as needed to establish a strong leader. *As above, new planting recommended after the thinning of non-native, suppressed, declining or dead trees.
To control non-native and invasive species that threaten the woodland ecosystem	Remove cherry laurel. Prioritise removal of mature, seed-bearing bushes. Dig out roots if possible and, if not, immediately treat cut stumps with selective, systemic herbicide.	1	1	Initial clearance in year 1, with follow up clearance in years 2-3. Ongoing checks of woodland with follow up clearance to focus on pulling up any new seedlings and removing treated stumps which were not successfully killed.
	Remove variegated yellow archangel. Stems have a tendency to snap upon hand pulling, so dig out with hand tools and dispose of	1,2 and 5	1	Initial clearance in year 1 with ongoing checks for presence.

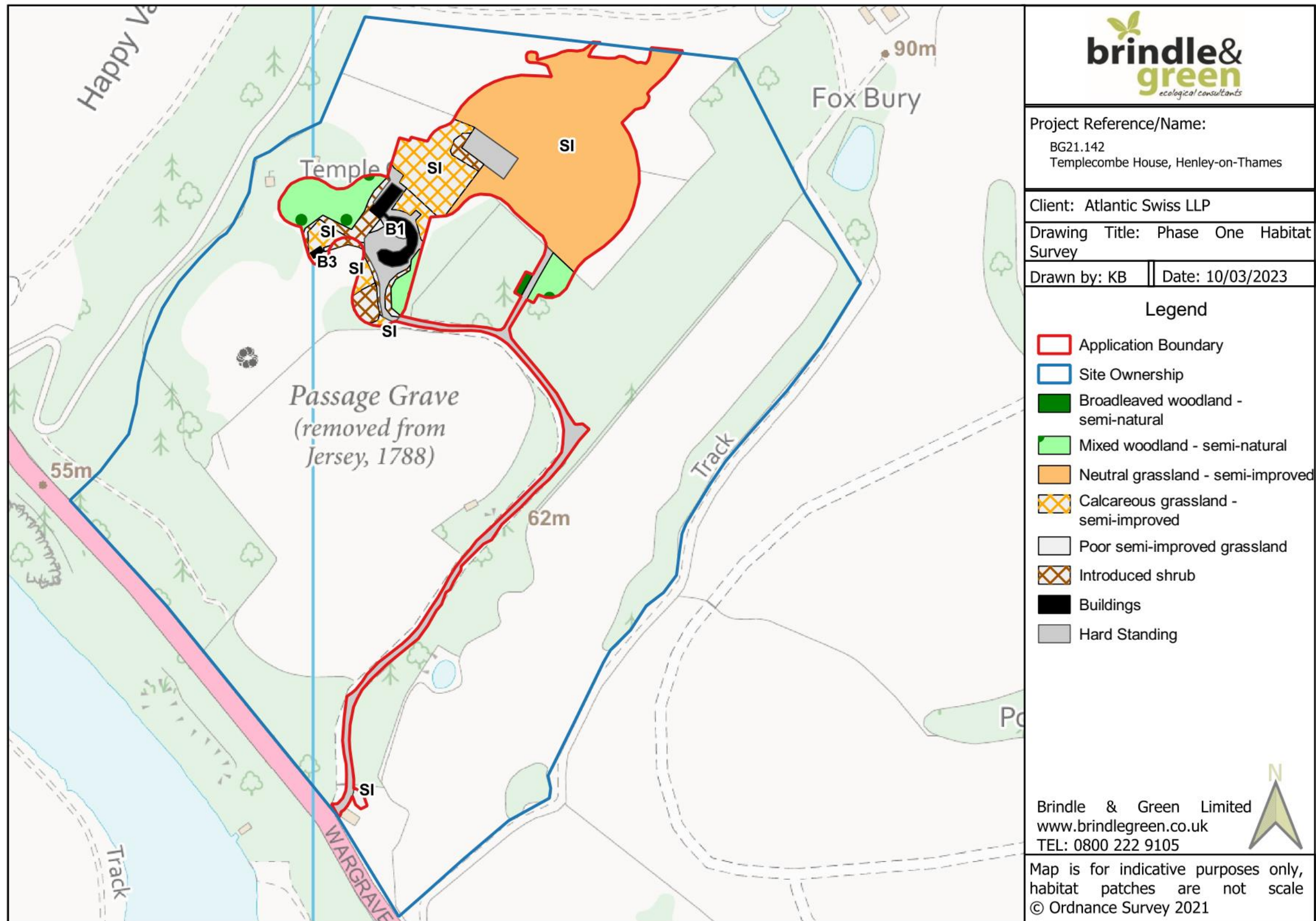
Management Objective	Required Management Operations	Cpt No.	Year(s)	Monitoring
	as contaminated waste to prevent further spread. Plants can also be chemically treated in the growing season with a selective herbicide.			
	Remove <i>Cotoneaster</i> sp. Plants to be dug out with hand tools and disposed of as contaminated waste to prevent further spread. Dig out roots if possible and, if not, immediately treat cut stumps with selective, systemic herbicide.	5	1+	Initial clearance in year 1, with follow up clearance in years 2-3. Ongoing checks of woodland with follow up clearance to focus on pulling up any new seedlings and removing treated stumps which were not successfully killed.
To maintain suitability and extent of habitat for saproxylic invertebrates	Standing and fallen deadwood should remain onsite in close proximity to the original location. Failed trees can be chopped and stored into log piles but the emphasis should be on retaining large pieces of wood which can support a microclimate comparable to the standing tree. Trees with deadwood features should only be removed if they present a significant health and safety issue. Suitable breeding habitat for stag beetle is present in all woodland blocks on site, as larva feed on the roots of a wide range of trees. Should tree removal of trees with a DBH (diameter at breast height) of 0.5m or more be required then a tall stump (at least 0.5m high) should be left in place to ensure suitable breeding habitat remains. If not possible to retain cut stumps in place, then they should be carefully removed by a digger and reburied to a similar height in an adjacent wood margin habitat (semi-shaded by trees). Felled logs will be placed close to retained stumps as possible and partly buried in the soil. Wood mulch (preferably hardwood) can be placed on the shaded side (usually north) of logs and stumps to create additional aboveground habitat; the southern/unshaded side should be left clear to allow warming.	1-5	1-10	Visual survey. No loss in standing or fallen deadwood should be recorded. A minimum of 3 fallen lying trees >20 cm diameter per ha and 4 trees per ha allowed to die standing.

Appendix 3. Monitoring Indicators of success

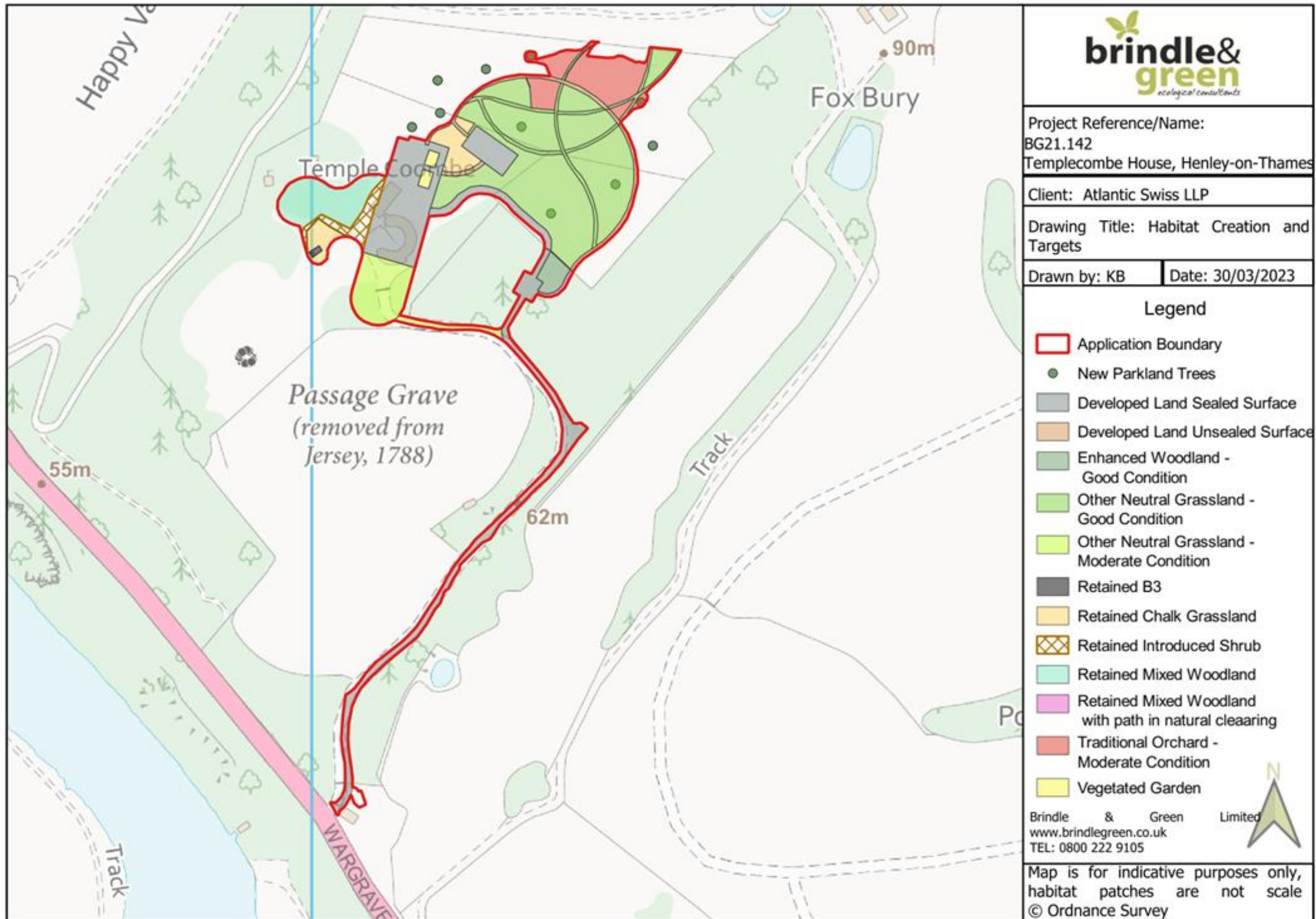
Table 14: Monitoring Sub-programme – Years refer to the number of years post construction.

Ecological Receptor	Timing of Monitoring	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11-15	Year 16-20	Year 21-25	Year 26-30
Habitat condition assessments relating to BNG	May – August	✓	✓	✓	✓	✓		✓			✓	✓	✓	✓	✓
White Helleborine Presence and density assessment	May	✓	✓	✓	✓	✓		✓			✓	✓	✓	✓	✓
Reptiles – Adults Four surveys in suitable weather conditions and Habitat suitability Assessment	March – June	✓			✓			✓			✓	✓	✓	✓	✓
Reptiles Juveniles. Search to confirm continued breeding success (max 4 visits)	September	✓			✓			✓			✓	✓	✓	✓	✓
Artificial refugia checks Installed Bat boxes, bird boxes and hibernacula within the estate (Locations to be mapped once installed)	May - September	✓			✓			✓			✓	✓	✓	✓	✓
Foraging and commuting bats. Four static detector points	April, June/July and Aug/ Sep	✓			✓			✓			✓	✓	✓	✓	✓
Notable Invertebrates															
glow worm (mapped extent) (<i>Lampyrus noctiluca</i>)	June - July	✓	✓	✓	✓	✓			✓			✓	✓	✓	✓
striped lychnis + Notable plants (mapped extent) (<i>Shargacucullia lychnitis</i>)	July - Sept	✓	✓	✓	✓	✓			✓			✓	✓	✓	✓
Dingy skipper + Notable plants (mapped extent) (<i>Erynnis tages</i>)	May – July & August	✓	✓	✓	✓	✓			✓			✓	✓	✓	✓
Grizzled Skipper + Notable plants (mapped extent) (<i>Pyrgus malvae</i>)	May – June & August														
Chalk hill blue + Notable plants (mapped extent) (<i>Polyommatus coridon</i>)	May & July - September	✓	✓	✓	✓	✓			✓			✓	✓	✓	✓
Mapped area of deadwood habitat for inverts, and trees with DBH over 60cm	Winter	✓			✓			✓			✓	✓	✓	✓	✓

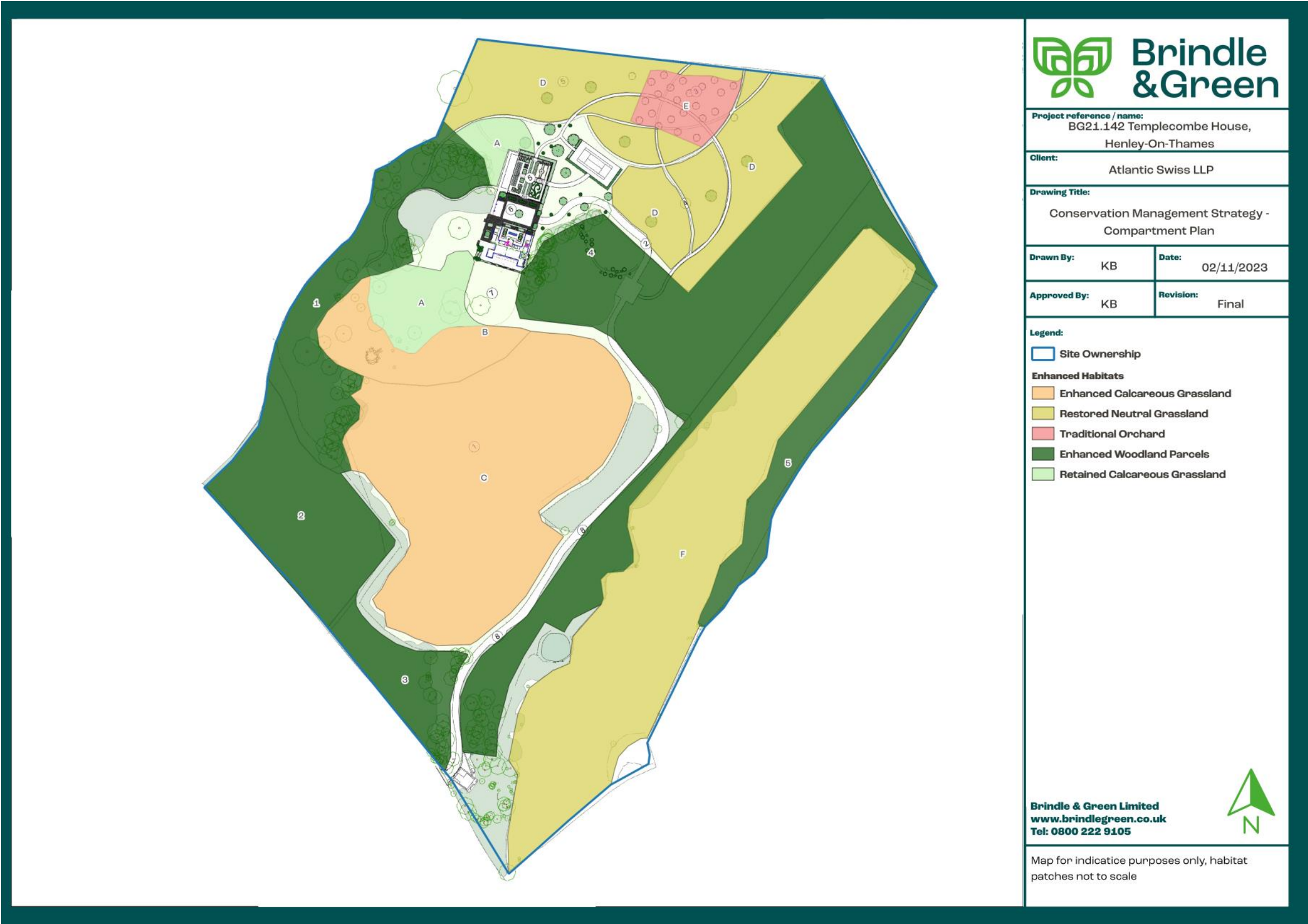
Appendix 4. Baseline Habitats within Red line Boundary



Appendix 5. Habitat Creation and Targets for BNG



Appendix 6. Habitat Management Compartment and Parcel reference map



Appendix 7. Indicators of success monitoring zones

