



Biodiversity Net Gain Assessment

Elmfield House, Salisbury

Ecosupport Ltd
K4 Keppel,
Daedalus Park,
Lee-on-the-Solent
PO13 9FX

info@ecosupport.co.uk

VAT: 228 4314 18



Report	Biodiversity Net Gain Assessment
Site Name	Elmfield House, Salisbury
Author(s)	Amy Johnston BSc (Hons)
Checked By	Lyndsey Barratt BSc (Hons) PGCert ACIEEM
Client	Dr Rodger
Date of Issue	19/01/24
Status	<i>Ready for submission</i>

Table of Contents

1.0 INTRODUCTION.....	3
1.1 BACKGROUND	3
1.2 SITE LOCATION AND DESCRIPTION	3
1.3 DEVELOPMENT PROPOSALS.....	4
2.0 METHODOLOGY	5
2.1 HABITAT ASSESSMENT	5
2.2 HABITAT DISTINCTIVENESS.....	5
2.3 HABITAT CONDITION	5
2.4 LIMITATIONS	5
3.0 EXISTING HABITATS AND DEVELOPMENT PROPOSALS	6
3.1 NON-LINEAR HABITATS	6
3.2 LINEAR HABITATS	15
4.0 PROPOSED CREATED HABITATS & NET GAIN ASSESSMENT	19
4.1 PROPOSALS.....	19
4.1.1 Condition Assessment Tables	27
4.1.2 Metric Calculation Conclusion	38
5.0 CONCLUSION.....	39
6.0 REFERENCES.....	40
APPENDIX 1 – MAPS	41
APPENDIX II – SITE PHOTOS	42

1.0 INTRODUCTION

1.1 Background

Ecosupport Ltd. were commissioned by Dr Rodger to undertake a Biodiversity Net Gain Assessment at the site known as Elmfield House, Salisbury.

The purpose of this assessment is to quantify the biodiversity value of the site prior to its development, and the predicted value post development. This is measured in biodiversity units, calculated according to the habitats present based on their size, distinctiveness and condition. This enables the quantitative calculation of the predicted change in biodiversity value as a result of the proposed development, with the objective of achieving a net gain in biodiversity.

This report has been prepared by Assistant Project Ecologist Amy Johnston BSc (Hons) and reviewed by Senior Ecologist Lyndsey Barratt BSc (Hons) PGCert ACIEEM.

This report should be read in conjunction with the submitted PEA report (Daniel Ahern 2023).

1.2 Site Location and Description

The site comprises of two residential dwellings, a barn, a large garden and area that was previously used as horse paddocks located at Elmfield House, Petersfinger Rd, Petersfinger, Salisbury, SP5 3BZ (centred on OS grid reference SU 16261 29190) (**Fig 1**). The site is bound by residential dwellings to the north, the A36 to the east and south and the Petersfinger park and ride to the west. The wider environ is largely rural, situated on the outskirts of the city of Salisbury. The River Avon runs approximately 0.6km south of the site.

Figure 1. Redline location plan of the site (Google satellite 2023).



1.3 Development Proposals

It is understood that the proposals are for full planning application for residential development including landscaping, drainage and other associated infrastructure as well as the conversion of buildings currently present on site.

2.0 METHODOLOGY

The methodology for the assessment follows the Natural England Statutory Biodiversity Metric habitat condition assessment protocols and uses the Biodiversity Metric calculation tool to calculate biodiversity losses and gains (Natural England, 2023).

2.1 Habitat Assessment

Habitats on site pre-development were identified in accordance with the categories specified for a UK Habitats survey using Habitat Definitions Version 2.0 (UKHab Ltd., 2023). This was chosen as an appropriate habitat categorisation system as it fits within the Biodiversity Metric calculation. The PEA (Daniel Ahern 2023) should be referred to for information on JNCC Phase I habitat classifications on site and plant species recorded.

A condition assessment, in line with the Biodiversity Metric Technical Supplement, was carried out on site on the 5th December 2023. The area of identified habitats is calculated in hectares (ha), ignoring linear features or ditches (the area is measured to the centre line of such features). The length of linear features is measured separately in kilometres (km). The dominant habitat type was selected, according to those defined by UKHab Ltd (2023). Where there was disparity between the UK classification for habitat type and those present within the Biodiversity Metric calculator tool, this was noted within the condition assessment tables.

2.2 Habitat Distinctiveness

Each habitat was assigned a score for distinctiveness, according to the Biodiversity Metric calculator tool and Technical Supplement (Natural England, 2023). This ranged from Poor - High for most habitats, or Not Applicable (e.g. Developed Land – Sealed Surface). Using the tool, habitats were assigned a score based on their distinctiveness.

2.3 Habitat Condition

The condition of each habitat was assessed following criteria set out in the Biodiversity Metric Technical Supplement (Natural England, 2023), which includes detailed assessment criteria for different habitats. Full results of the condition assessments can be found within **Section 3.0**. The condition of each habitat was assessed individually on site, but in some cases, was found to be the same for each type across the site. Therefore, the results of the habitat condition for each habitat are grouped together for each habitat.

2.4 Limitations

The walkover conducted by Ecosupport was carried out outside of the optimum time of year for vascular flowering plants. Given the nature of the habitat types present and the species recorded, plus the additional Phase 1 survey completed by Daniel Ahern earlier in the year, this is not considered to have affected the accuracy of the site's valuation.

3.0 EXISTING HABITATS AND DEVELOPMENT PROPOSALS

The following habitats were found within the site itself during the PEA carried out by Daniel Ahern (according to JNCC Phase I Habitat categorisations):

- Mixed Woodland – semi natural
- Scrub – dense/continuous
- Neutral grassland – semi improved
- Other tall herb and fern – ruderal
- Running water – eutrophic
- Cultivated/disturbed ground – amenity grassland
- Introduced shrub
- Buildings
- Bare ground
- Wall

During the walkover completed by Ecosupport in December 2023, these habitats were re-classified using the UKHab methodology. This found the following habitats present on site (photos of the habitats can be found in **Appendix II**):

- W1h5 other woodland; mixed, mainly broadleaved – with line of trees (33) and ditch (50)
- H2b non-native and ornamental hedgerows
- G4 modified grassland – with tall forbs (16)
- R1 standing open water and canals – with ornamental pond (46)
- U1 built up areas and gardens – with vegetated garden (828) and scattered trees (32)
- U1c artificially unvegetated, unsealed surface
- U1b5 buildings

Sections 3.1 provides a table outlining the condition assessment undertaken with reference to the Biodiversity Metric 4.0 Technical Supplement (Natural England, 2023).

3.1 Non-linear Habitats

The following habitats were found on site, as shown in **Appendix I**:

- W1h5 other woodland; mixed, mainly broadleaved
- G4 modified grassland
- 828 vegetated garden
- Individual trees
- 46 Ornamental pond
- U1c artificially unvegetated, unsealed surface

The following tables outline the condition assessments undertaken on the 5th December 2023. Areas of the same habitat but different conditions have been summarised in the same table. Due to the number of individual trees present on site, the assessments have been summarised in **Tables 3 and 4**

below. **Figure 2** below outlines the locations of these trees which have been labelled using the numbers from the Arboricultural report (Bourne VIP Ltd).

Table 1. Condition assessment for other woodland; mixed, mainly broadleaved.

Condition Assessment Criteria						
Indicator		Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicator	Notes (such as justification)
A	Age distribution of trees	Three age-classes ¹ present.	Two age-classes ¹ present.	One age-class ¹ present.	2	Two age classes present
B	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland ² .	Evidence of significant browsing pressure is present in 40% or less of whole woodland ² .	Evidence of significant browsing pressure is present in 40% or more of whole woodland ² .	3	No evidence of browsing evident
C	Invasive plant species	No invasive species ³ present in woodland.	Rhododendron <i>Rhododendron ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, other invasive species ³ <10% cover.	Rhododendron or cherry laurel present, or other invasive species ³ >10% cover.	3	No invasives noted
D	Number of native tree species	Five or more native tree or shrub species ⁴ found across woodland parcel.	Three to four native tree or shrub species ⁴ found across woodland parcel.	Two or less native tree or shrub species ⁴ across woodland parcel.	2	On average there were 3-4 native species.
E	Cover of native tree and shrub species	>80% of canopy trees and >80% of understory shrubs are native ⁵ .	50 - 80% of canopy trees and 50 - 80% of understory shrubs are native ⁵ .	<50% of canopy trees and <50% of understory shrubs are native ⁵ .	2	50-80% native

F	Open space within woodland	10 - 20% of woodland has areas of temporary open space ⁶ . Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted ⁷ .	21 - 40% of woodland has areas of temporary open space ⁶ .	<10% or >40% of woodland has areas of temporary open space ⁶ . But if woodland <10ha has <10% temporary open space, please see Good category ⁷ .	1	Lack of open space
G	Woodland regeneration	All three classes present in woodland ⁸ ; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth.	One or two classes only present in woodland ⁸ .	No classes or coppice regrowth present in woodland ⁸ .	1	No classes or coppicing
H	Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback ⁹ .	11% to 25% mortality and/or crown dieback or low-risk pest or disease present ⁹ .	Greater than 25% tree mortality and or any high-risk pest or disease present ⁹ .	2	Some mortality noted
I	Vegetation and ground flora	Recognisable NVC plant community ¹⁰ at ground layer present, strongly characterised by ancient woodland flora specialists.	Recognisable woodland NVC plant community ¹⁰ at ground layer present.	No recognisable woodland NVC plant community ¹⁰ at ground layer present.	1	No recognisable NVC community
J	Woodland vertical structure	Three or more storeys across all survey plots or a complex woodland ¹¹ .	Two storeys across all survey plots ¹¹ .	One or less storey across all survey plots ¹¹ .	2	Two storeys present

K	Veteran trees	Two or more veteran trees ¹² per hectare.	One veteran tree ¹² per hectare.	No veteran trees ¹² present in woodland.	3	A number of veteran/mature trees present
L	Amount of deadwood	50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, branch stubs and stumps, or an abundance of small cavities ¹³ .	Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ .	Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ .	1	Lack of deadwood
M	Woodland disturbance	No nutrient enrichment or damaged ground evident ¹⁴ .	Less than 1 hectare in total of nutrient enrichment across woodland area and or less than 20% of woodland area has damaged ground ¹⁴ .	More than 1 hectare of nutrient enrichment and or more than 20% of woodland area has damaged ground ¹⁴ .	2	Generally fairly undamaged, only small areas of nutrient enrichment.
Total Score (out of a possible 39)					25	
Condition Assessment Result				Condition Assessment Score	Result Achieved	
Total score >32 (33 to 39)				Good (3)	Poor	
Total score 26 to 32				Moderate (2)		
Total score <26 (13 to 25)				Poor (1)		

Table 2. Condition Assessment for modified grassland.

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	There are 6-8 vascular plant species per m² present, including at least 2 forbs (this may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition. Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m² (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet.	N	Less than 6 species present
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	N	Sward height largely unvaried
C	Some scattered scrub (including bramble <i>Rubus fruticosus</i> agg.) may be present, but scrub accounts for less than 20% of total grassland area. Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Y	Scattered scrub present but classified as scrub habitat.
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	Y	Some damage present where draining test holes have been dug, but less than 5%
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens) ² .	Y	Some bare ground present but less than 10%
F	Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.	Y	No bracken noted
G	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴).	Y	No invasives noted

Essential criterion achieved (Yes or No)			N
Number of criteria passed			5
Condition Assessment Result (out of 7 criteria)	Condition Assessment Score	Score Achieved x/✓	
Passes 6 or 7 criteria including passing essential criterion A	Good (3)		
Passes 4 or 5 criteria including passing essential criterion A	Moderate (2)		
Passes 3 or fewer criteria; OR Passes 4 - 6 criteria (excluding criterion A)	Poor (1)	✓	

Table 3. Condition criteria for the assessment for individual trees

Condition Assessment Criteria	
A	The tree is a native species (or at least 70% within the block are native species).
B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).
C	The tree is mature (or more than 50% within the block are mature).

D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.
F	More than 20% of the tree canopy area is oversailing vegetation beneath.

Table 4. Results of the condition assessments for individual trees.

Tree number	Condition	Criteria passed
3	m	a, b, c, f
4	m	a, b, c, f
6	g	a, b, c, d, e, f
8	g	a, b, c, d, f
10	g	a, b, c, d, f
11	g	a, b, c, d, f
12	g	a, b, c, d, f
13	g	a, b, c, d, f
15	g	a, b, c, d, f
16	m	b, c, d, f
17	m	b, d, f
20	g	a, b, c, d, f
23	g	a, b, c, d, f
25	g	a, b, c, d, f
32	g	a, b, c, d, f
53	g	a, b, c, d, f
54	g	b, c, d, e, f
62	g	a, b, c, e, f
63	g	a, b, c, e, f
73	g	a, b, c, d, f
75	m	a, b, c, f
77	g	a, b, c, d, f
91	g	a, b, c, d, f
92	g	a, b, c, d, f
93	g	a, b, c, d, e, f
94	g	a, b, c, d, f

An aerial photograph of a study area with 32 sampling locations marked by green dots and labeled T1 through T32. The locations are distributed across a landscape featuring a road network, a railway line, and various land use types including forests, residential areas, and a large open field. The locations are clustered in several areas: a group in the upper left (T77, T73, T62, T63, T54, T53), a group in the upper right (T75, T8, T4, T6, T17, T16, T12, T13, T11, T25, T20, T23, T15), a group in the lower left (T91, T92, T93, T94, T32), and a group in the lower right (T3, T1, T2, T5, T7, T9, T10, T14, T18, T19, T21, T22, T24, T26, T27, T28, T29, T30, T31, T33, T34, T35, T36, T37, T38, T39, T40, T41, T42, T43, T44, T45, T46, T47, T48, T49, T50, T51, T52, T53, T54, T55, T56, T57, T58, T59, T60, T61, T62, T63, T64, T65, T66, T67, T68, T69, T70, T71, T72, T73, T74, T75, T76, T77, T78, T79, T80, T81, T82, T83, T84, T85, T86, T87, T88, T89, T90, T91, T92, T93, T94, T95, T96, T97, T98, T99, T100, T101, T102, T103, T104, T105, T106, T107, T108, T109, T110, T111, T112, T113, T114, T115, T116, T117, T118, T119, T120, T121, T122, T123, T124, T125, T126, T127, T128, T129, T130, T131, T132, T133, T134, T135, T136, T137, T138, T139, T140, T141, T142, T143, T144, T145, T146, T147, T148, T149, T150, T151, T152, T153, T154, T155, T156, T157, T158, T159, T160, T161, T162, T163, T164, T165, T166, T167, T168, T169, T170, T171, T172, T173, T174, T175, T176, T177, T178, T179, T180, T181, T182, T183, T184, T185, T186, T187, T188, T189, T190, T191, T192, T193, T194, T195, T196, T197, T198, T199, T200, T201, T202, T203, T204, T205, T206, T207, T208, T209, T210, T211, T212, T213, T214, T215, T216, T217, T218, T219, T220, T221, T222, T223, T224, T225, T226, T227, T228, T229, T230, T231, T232, T233, T234, T235, T236, T237, T238, T239, T240, T241, T242, T243, T244, T245, T246, T247, T248, T249, T250, T251, T252, T253, T254, T255, T256, T257, T258, T259, T260, T261, T262, T263, T264, T265, T266, T267, T268, T269, T270, T271, T272, T273, T274, T275, T276, T277, T278, T279, T280, T281, T282, T283, T284, T285, T286, T287, T288, T289, T290, T291, T292, T293, T294, T295, T296, T297, T298, T299, T300, T301, T302, T303, T304, T305, T306, T307, T308, T309, T310, T311, T312, T313, T314, T315, T316, T317, T318, T319, T320, T321, T322, T323, T324, T325, T326, T327, T328, T329, T330, T331, T332, T333, T334, T335, T336, T337, T338, T339, T340, T341, T342, T343, T344, T345, T346, T347, T348, T349, T350, T351, T352, T353, T354, T355, T356, T357, T358, T359, T360, T361, T362, T363, T364, T365, T366, T367, T368, T369, T370, T371, T372, T373, T374, T375, T376, T377, T378, T379, T380, T381, T382, T383, T384, T385, T386, T387, T388, T389, T390, T391, T392, T393, T394, T395, T396, T397, T398, T399, T400, T401, T402, T403, T404, T405, T406, T407, T408, T409, T410, T411, T412, T413, T414, T415, T416, T417, T418, T419, T420, T421, T422, T423, T424, T425, T426, T427, T428, T429, T430, T431, T432, T433, T434, T435, T436, T437, T438, T439, T440, T441, T442, T443, T444, T445, T446, T447, T448, T449, T450, T451, T452, T453, T454, T455, T456, T457, T458, T459, T460, T461, T462, T463, T464, T465, T466, T467, T468, T469, T470, T471, T472, T473, T474, T475, T476, T477, T478, T479, T480, T481, T482, T483, T484, T485, T486, T487, T488, T489, T490, T491, T492, T493, T494, T495, T496, T497, T498, T499, T500, T501, T502, T503, T504, T505, T506, T507, T508, T509, T510, T511, T512, T513, T514, T515, T516, T517, T518, T519, T520, T521, T522, T523, T524, T525, T526, T527, T528, T529, T530, T531, T532, T533, T534, T535, T536, T537, T538, T539, T540, T541, T542, T543, T544, T545, T546, T547, T548, T549, T550, T551, T552, T553, T554, T555, T556, T557, T558, T559, T560, T561, T562, T563, T564, T565, T566, T567, T568, T569, T570, T571, T572, T573, T574, T575, T576, T577, T578, T579, T580, T581, T582, T583, T584, T585, T586, T587, T588, T589, T590, T591, T592, T593, T594, T595, T596, T597, T598, T599, T600, T601, T602, T603, T604, T605, T606, T607, T608, T609, T610, T611, T612, T613, T614, T615, T616, T617, T618, T619, T620, T621, T622, T623, T624, T625, T626, T627, T628, T629, T630, T631, T632, T633, T634, T635, T636, T637, T638, T639, T640, T641, T642, T643, T644, T645, T646, T647, T648, T649, T650, T651, T652, T653, T654, T655, T656, T657, T658, T659, T660, T661, T662, T663, T664, T665, T666, T667, T668, T669, T670, T671, T672, T673, T674, T675, T676, T677, T678, T679, T680, T681, T682, T683, T684, T685, T686, T687, T688, T689, T690, T691, T692, T693, T694, T695, T696, T697, T698, T699, T700, T701, T702, T703, T704, T705, T706, T707, T708, T709, T710, T711, T712, T713, T714, T715, T716, T717, T718, T719, T720, T721, T722, T723, T724, T725, T726, T727, T728, T729, T730, T731, T732, T733, T734, T735, T736, T737, T738, T739, T740, T741, T742, T743, T744, T745, T746, T747, T748, T749, T750, T751, T752, T753, T754, T755, T756, T757, T758, T759, T760, T761, T762, T763, T764, T765, T766, T767, T768, T769, T770, T771, T772, T773, T774, T775, T776, T777, T778, T779, T780, T781, T782, T783, T784, T785, T786, T787, T788, T789, T790, T791, T792, T793, T794, T795, T796, T797, T798, T799, T800, T801, T802, T803, T804

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
Core Criteria - applicable to all ponds (woodland¹ and non-woodland):			
A	The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.	N	Low quality, turbid water
B	There is semi-natural habitat (moderate distinctiveness or above) completely surrounding the pond, for at least 10 m from the pond edge for its entire perimeter.	N	Pond within a garden
C	Less than 10% of the water surface is covered with duckweed <i>Lemna</i> spp. or filamentous algae.	N	Large cover of duckweed and algae
D	The pond is not artificially connected to other waterbodies, e.g. agricultural ditches or artificial pipework.	Y	None noted

E	Pond water levels can fluctuate naturally throughout the year. No obvious artificial dams ² , pumps or pipework.	Y	None noted
F	There is an absence of listed non-native plant and animal species ³ .	Y	No invasives noted
G	The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.	Y	No fish noted
Additional Criteria - must be assessed for all non-woodland ponds:			
H	Emergent, submerged or floating plants (excluding duckweed) ⁴ cover at least 50% of the pond area which is less than 3 m deep.	N	Limited plants present
I	The pond surface is no more than 50% shaded by adjacent trees and scrub.	Y	Pond is shaded but not 50%
Number of criteria passed		5	
Condition Assessment Result	Condition Assessment Score	Score Achieved x/✓	
Results for non-woodland ponds which require assessment of 9 criteria			
Passes 9 criteria	Good (3)		
Passes 6 to 8 criteria	Moderate (2)	✓	
Passes 5 or fewer criteria	Poor (1)		

3.2 Linear Habitats

The following linear habitats were found on site:

- h2b – non-native or ornamental hedgerows
- Line of trees
- Ditch

The following table outlines the condition assessment undertaken. Hedgerows or tree lines that achieved the same condition/criteria passed have been combined. As hedgerows are ornamental, non-native hedgerows, the condition is automatically poor.

Figure 3. Locations of hedgerows on site (Google satellite 2023).

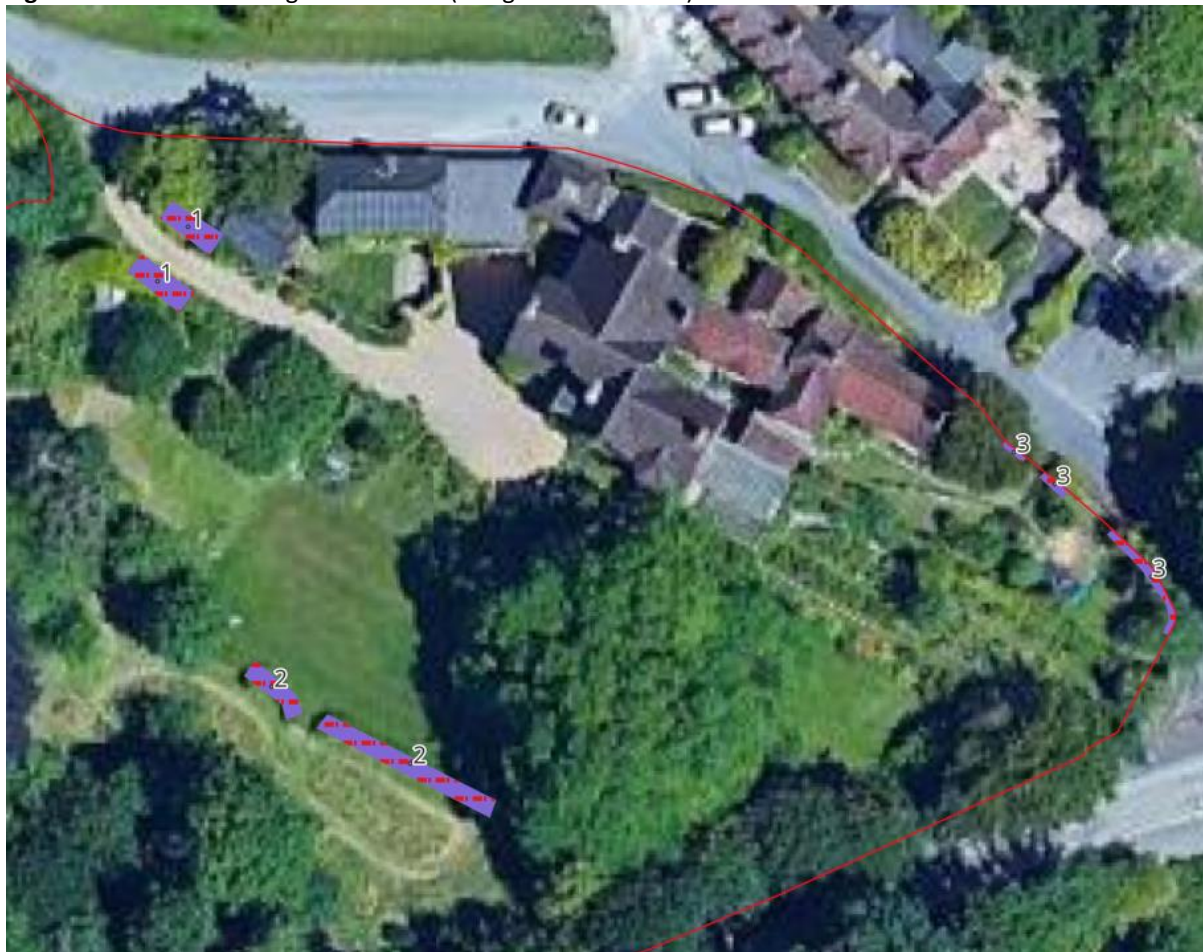


Table 6. Condition Assessment of Line of trees.

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	At least 70% of trees are native species.	1 - Y 2 - Y 3 - Y 4 - Y	Predominantly native species.
B	Tree canopy is predominantly continuous with gaps in canopy cover making up <10% of total	1 - Y 2 - N 3 - Y 4 - Y	Tree canopy largely continuous for 1, 3 and 4. Treeline 2 had large gaps.

	area and no individual gap being >5 m wide.		
C	One or more trees has veteran features and or natural ecological niches for vertebrates and invertebrates, such as presence of standing and attached deadwood, cavities, ivy or loose bark.	1 - Y 2 - Y 3 - N 4 - N	Some veteran features present along tree lines 1 and 2.
D	There is an undisturbed naturally-vegetated strip of at least 6 m on both sides to protect the line of trees from farming and other human activities (excluding grazing). Where veteran trees are present, root protection areas should follow standing advice ² .	1 - N 2 - N 3 - N 4 - N	Trees largely adjacent to garden / roads and therefore, disturbed by human activity
E	At least 95% of the trees are in a healthy condition (deadwood or veteran features valuable for wildlife are excluded from this). There is little or no evidence of an adverse impact on tree health by damage from livestock or wild animals, pests or diseases, or human activity.	1 - Y 2 - Y 3 - Y 4 - Y	Trees largely in healthy condition
Number of criteria passed			1 - 4 2 - 4 3 - 3 4 - 3
Condition Assessment Result (out of 5 criteria)	Condition Assessment Score	Score Achieved x/✓	
Passes 5 criteria	Good (3)		
Passes 3 or 4 criteria	Moderate (2)	1, 2, 3, 4	
Passes 2 or fewer criteria	Poor (1)		

Figure 4. Locations of the line of trees on site (Google satellite 2023).**Table 7.** Condition assessment for ditch.

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	N	Water quality was poor and turbid
B	A range of emergent, submerged and floating-leaved plants are present. As a guide >10 species of emergent, floating or submerged plants present in a 20 m ditch length.	N	Lack of plants present
C	There is less than 10% cover of filamentous algae and or duckweed <i>Lemna</i> spp. (these are signs of eutrophication).	N	High cover of duckweed
D	A fringe of aquatic marginal vegetation is present along more than 75% of the ditch.	N	No marginal vegetation present
E	Physical damage is evident along less than 5% of the ditch, with examples of damage including: excessive poaching, damage from machinery use or storage, or any other damaging management activities.	Y	No damage evident
F	Sufficient water levels are maintained - as a guide a minimum summer depth of approximately 50 cm in minor ditches and 1 m in main drains.	N	Ditch was mostly dry

G	Less than 10% of the ditch is heavily shaded.	N	Ditch heavily shaded by woodland, neighbouring trees
H	There is an absence of non-native plant and animal species ¹ .	Y	No invasives noted
Number of criteria passed		2	
Condition Assessment Result (out of 8 criteria)	Condition Assessment Score	Score Achieved x/✓	
Passes 8 criteria	Good (3)		
Passes 6 or 7 criteria	Moderate (2)		
Passes 5 or fewer criteria	Poor (1)	✓	

4.0 PROPOSED CREATED HABITATS & NET GAIN ASSESSMENT

4.1 Proposals

Following consultation with Atlas planning and New Enclosure Landscape Architects and in order to minimise the loss of biodiversity on site, the following habitats are being provided / created:

Other neutral grassland (0.159ha)

Large areas of other neutral grassland will be created across the site. Species planting within these areas will be completed using Emorsgate EM34 Diverse Meadow Mixture which includes 56% grasses and 44% wildflowers typical of neutral grasslands. Species composition includes (but not limited to) Sweet Vernal Grass (*Anthoxanthum odoratum*), False Oat-grass (*Arrhenatherum elatius*), Upright Brome (*Bromopsis erecta*), Crested Dog's-tail (*Cynosurus cristatus*), Red Fescue (*Festuca rubra*), Glaucous Sedge (*Carex flacca*), Birdsfoot Trefoil (*Loyus corniculatus*), Meadow Buttercup (*Ranunculus acris*) and Red Clover (*Trifolium pratense*).

The following is recommended for management.

Wildflower areas do not require any additional watering or fertilizer. Cutting a meadow and removing the clippings retains low nutrient levels in the soil and suppresses coarse grasses which would otherwise out-compete the wildflowers. It is recommended the wildflower grassland undergoes a two annual cuts. The growth should be cut back to a height of 50-75mm. The cut grass should be dried on site. Cuttings should be left in situ for approximately one week, after this the arisings are to be removed from site.

First year management:

Perennial species take at least a full year to establish. For newly sown areas the first summer will be dominated by annual weeds arising from the soil seed bank and by grass growth. This should be controlled by mowing throughout the first year to minimise competition and weed seed production.

Management Once Established:

During the second year the wildflower areas can undergo a spring cut in April to "expedite nutrient depletion and promote wildflower development" however, it is recommended that it is instead left to flower and will be cut in midsummer. However, if a retained buffer area is established, this should not be cut in May or early June due to nesting birds. Mowing in mid-June brings a premature end to the flowers and can compromise nesting birds, which do not fledge until late July, insects and other wildlife. If some mowing has to take place at this time, sections should be cut at different dates to prolong the overall flowering season and give wildlife a chance to move. The second annual cut should be undertaken during late Autumn.

Grassland which is consistently cut late in the season, in August and September, year on year reduces species diversity as late cutting gives more time for coarse grasses and other dominant plants to grow unchecked. To maintain maximum diversity and flowering interest the buffer should be managed in sections at different times from late June to the end of August. Varying the mowing times from year to year is the best way to maintain a diverse balanced sward.

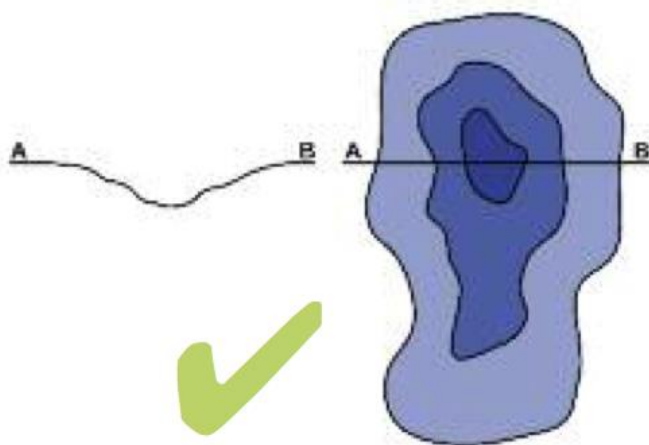
Pond – (0.003ha)

Within the current ditch structure, a pond is proposed. The margins will be seeded with aquatic marginal wildflower planting adjacent to a created pond (shown as other neutral grassland within the metric). It is recommended that this area is planted with the Emorsgate EP1 Pond edge mixture which contains 20% wildflower species and 80% slow growing grasses. This includes species such as: Yarrow (*Achillea millefolium*), Wild Teasel (*Dipsacus fullonum*), Common Sorrel (*Rumex acetosa*), Common Bent (*Agrostis capillaris*) and Crested Dogtail (*Cynosurus cristatus*). The pond will also be plug planted with a range of a range of emergent, submerged and floating-leaved plants. Recommended species includes; Spiked water-milfoil (*Myriophyllum spicatum*), Common water-crowfoot (*Ranunculus aquatilis*), Frogbit (*Hydrocharis morsus-ranae*), Water-forget-me-not (*Myosotis scorpioides*), Watermint (*Mentha aquatica*), and Marsh marigold (*Caltha palustris*).

This habitat will also provide a range of plant species which will encourage invertebrate diversity and enhance foraging and sheltering opportunities for amphibians on site. A maintenance regime will be undertaken to establish a varied structure in vegetation and discourage invasive non-native species cover.

Ideally the margins of the pond should be shallow. The best ecologically valuable ponds have 'gentle shelving edges. Therefore, whilst excavating the pond it will be ensured that the pond has sloping edges to ensure there is a shallow water environment at less than 1:5 (12°) and preferably less than 1:20 (3°) (Freshwater Habitats 2013) (**Fig 5**). It is recommended the pond are an approximate maximum depth of 0.9m, but the depth should vary across the pond. Creating shelves is one option of obtaining different depths.

Figure 5. Design of pond showing varying depths at a gently sloping level (Freshwater Habitats 2013)

**Management**

The pond will be planted up with a suitable grassland seed mix and selective plug planting to encourage establishment of a wetland areas. Planting beyond this is not recommended as per Freshwater Habitats (2013), as the new-pond stage within a pond is relatively short, and they will colonise naturally. Further, the new-pond stage can be important for some species such as certain

species of dragonflies. Therefore, no planting will occur, but management will be required within 2-5 years after establishment.

In the early years, blanket weed can cover waterbodies which includes ponds. This will be controlled if necessary and be pulled out carefully. Once the waterbody has settled blanket weed will usually be kept in check by animals. Any plant that starts to dominate will be thinned out. Only one third of a waterbody should be cleared per year.

Once cleared, plants or debris will be left along the edge for a few days to allow any trapped wildlife to return to the water.

Frog (*Rana temporaria*) spawning is usually the first to take place within freshwater habitats, starting as early as January. From February adult Newts emerge from hibernation and make their way to aquatic habitat where they then breed. Common Toads (*Bufo Bufo*) also congregate in waterbodies in early spring, often shortly after Frogs. All three amphibians then lay eggs in early Spring. Common Toads then move away from waterbodies into terrestrial habitat. In summer metamorphosis takes place.

As a result, the best time for waterbody management is late September and October. Tadpoles would have left the pond and adult amphibians have not yet gone into hibernation at this time. Ponds should not be disturbed in mid-winter as this might expose hibernating amphibians to severe cold, for example Newts will be hibernating in damp areas nearby to the pond and Frogs are known to hibernate at the bottom of waterbodies.

Whilst a varied vegetation structure is recommended, to prevent overgrowth of possible establishment from scrub around the edges of the pond, further management will also be required. It is recommended this is achieved by manual cutting to keep scrub from overgrowing.

Woodland (0.066ha created, 0.014ha enhanced)

Proposed Planting

It is recommended that the area of woodland planting should comprise of a mix of the following tree and shrub species: Alder (*Alnus glutinosa*), Beech (*Fagus sylvatica*), Blackthorn (*Prunus spinosa*), Hawthorn (*Crataegus monogyna*), Hazel (*Corylus avellana*), Oak (*Quercus robur*), Wild Cherry (*Prunus avium*), Dog Rose (*Rosa canina*), Crab Apple (*Malus sylvestris*), Dog Wood (*Cornus sanguinea*), Elder (*Sambucus nigra*), Field Maple (*Acer campestre*), Guelder Rose (*Viburnum opulus*) and Small-leaved Lime (*Tilia cordata*).

An area of woodland currently present on site has been proposed for enhancement. This will involve planting the species listed above, as well as the following management recommendations.

Initial Management

To ensure a successful establishment of the newly planted woodland, all trees must have a 1-metre exclusion zone whereby weeds are routinely removed for the first 2 – 3 years. Additionally, all trees must have tree guards installed to act as a form of protection from extreme weather or excessive foraging from wildlife. During weed removal, tree guards should also be routinely checked to ensure

they are maintained in good condition and are firmly positioned within the soil. If the guards begin to split, they must be removed and disposed of responsibly.

Coppicing

Any Hazel will be managed on a rotational coppicing scheme. This involves cutting young trees down to ground level to promote new growth and prevent over-shading. This will be rotationally implemented, with only a small portion approximately 30% of Hazel coppiced every 3 years during winter months (November to March), but only once the Hazel has grown to a size that will be beneficial and appropriate.

Coppice management is best carried out on a rotation of approximately every 6-10 years for each tree, with timing staggered for plants to ensure there is continued connectivity at any given time.

Retain some of the dead wood. Include some larger horizontal trunks and limbs as well as log piles and discarded brash. Leave wood piles in shady areas.

Thinning

Woodland will be thinned (i.e. trees removed) to benefit retained trees and promote regeneration. The optimal canopy target is 75% cover, which allows greater development of the understory to create a more diverse woodland. Selective thinning will be carried out every five years to maintain a canopy target of 75% cover.

The target trees to be removed are those showing signs of disease or poor growth; The specific target trees and areas of woodland will be determined by the supervising ecologist or arborist. Please note, all mature trees will need to be surveyed for PRFs that may be suitable for roosting bats. If any trees have PRFs, it is recommended they are retained if possible and alternative trees are selected for thinning.

It is considered likely a botanical survey will identify areas of highest botanical value and this will influence the location of thinning. The recommended botanical survey should be undertaken during the optimum survey season during the first year of woodland management to identify areas of botanical interest. It is recommended this is repeated every five years.

Where practical to do so, as determined by the arborist, some potential selected trees may be cut at 3-5m height and the stumps will be left in situ to rot as habitat for saprophytic invertebrates.

Invasive Species Management

Any invasive species will be removed from the site, as these could have deleterious effects on native species. The removal of such species would open-up ground for restoration of semi-natural woodland. Invasive species will generally be removed by a combination of cutting back and removal of cut material from the site, followed by treatment of stumps, roots or regrowth using an approved systemic herbicide (such as glyphosate). This process may need to be repeated over the course of several years.

Contractors will need to be shown the locations of the species and mark these where needed to help avoid native species being removed accidentally. Areas of bare ground created by this work should be left for regeneration.

Natural Regeneration

Tree and shrub species should be established by natural regeneration where possible e.g., by creating space for new regeneration around existing specimens of the desired trees and shrub species. Ash regeneration could be an important part of the mix, it should not be cut out or destroyed, and would benefit from being protected. Deer management is especially critical for the success of natural regeneration.

Urban trees (0.478ha)

There are 117 trees proposed, categorised as 'small' will be planted across the site. Recommended species planting includes Alder (*Alnus glutinosa*), Beech (*Fagus sylvatica*), Blackthorn, Hawthorn, Hazel, Oak, Wild Cherry (*Prunus avium*), Dog Rose (*Rosa canina*), Crab Apple (*Malus sylvestris*), Dog Wood (*Cornus sanguinea*), Elder (*Sambucus nigra*), Field Maple (*Acer campestre*), Guelder Rose (*Viburnum opulus*) and Small-leaved Lime (*Tilia cordata*).

Management

Mycorrhizal Treatment

To ensure a successful establishment of the newly planted trees, it is recommended that mycorrhizal treatment to the tree roots is conducted **during the planting**, this would reduce the risk of tree mortality and increase the long-term tolerance of these trees to periods of drought or adverse soil conditions thus ensuring a higher chance of successful long-term establishment.

Weed Management

All newly planted trees must have a 1-metre exclusion zone whereby weeds are routinely and pro-actively removed for the **first 2 – 3 years**. Outlined within the section below, bark mulch is recommended around each tree and will act as an effective management method to also suppress weed colonisation.

Tree Protection (Tree Guards & Rabbit Mesh Guards)

All trees must have a form of tree guards installed to act as a form of protection from extreme weather or excessive foraging from wildlife. It is recommended that the mesh is approximately 12.5mm x 12.5mm aperture of 0.61m in height; however, due to the suitability on site and the surrounding habitats, this site may be at risk of Roe Deer. Therefore, it is recommended that the form of tree guards suitable to mitigate excessive foraging from this species is installed at a height above 1.2m and comprised of a guard such as weld mesh tree shelter or a suitable alternative.

During aforementioned weed removal, all aspects of the tree guards should also be routinely checked to ensure they are maintained in good condition and are firmly positioned within the soil. If the guards begin to split, they must be removed and disposed of responsibly and consequently replaced where required.

The trees and newly planted shrubs on site will also be protected through the implementation of mesh rabbit guards, along with bark mulch at the base to suppress any grass and weed colonisation. Monthly inspections on the newly planted trees will be undertaken, with weed removal / tree guard replacement as required. The bark mulch will also be maintained at a minimum level of 50mm for the **first 2 years** of establishment.

Selective Thinning

Once the newly planted trees / shrubs are established, selective thinning of retained or established trees will be conducted to promote regeneration and a vigorous, dense regrowth. Such work must be undertaken during the period October – February to avoid the breeding bird season. It is considered likely a botanical survey will identify areas of highest botanical value and this will influence the location of thinning, conducted by a suitably qualified botanist.

Where practical to do so, as determined by the arborist, some potential selected trees may be cut at 3-5m height and the standing stumps will be left in situ to rot as habitat for saprophytic invertebrates and a resource for woodland birds such as Woodpeckers and Nuthatch.

Rotational Coppicing

Occasional rotational coppicing may be required of the newly planted or retained trees on site to prevent overcrowding and promote natural new growth. All Hazel present on site will be managed on a rotational coppicing scheme. This involves cutting young trees down to a low level to promote new growth and prevent over-shading. This will be rotationally implemented, with only a small portion approximately 30% of Hazel coppiced **every 3 years** during winter months (November to March), but only once the Hazel has grown to a size that will be beneficial and appropriate.

Coppice management is best carried out on a rotation of approximately **every 6-10 years** for each tree, with timing staggered for plants to ensure there is continued connectivity at any given time. Retain some of the dead wood. Include some larger horizontal trunks and limbs as well as log piles and discarded brash. Leave wood piles in shady areas.

Invasive Species

Any invasive species, such as Japanese Knotweed (*Fallopia japonica*) Himalayan Balsam (*Impatiens glandulifera*), Rhododendron (*Rhododendron ponticum*), Giant Hogweed (*Heracleum mantegazzianum*), will be removed from the site, as these could have deleterious effects on native species. The removal of such species would open-up ground for restoration for natural re-generation. Invasive species will generally be removed by a combination of cutting back and removal of cut material from the site, followed by treatment of stumps, roots or regrowth using an approved systemic herbicide (such as glyphosate). This process may need to be repeated over the course of several years.

Contractors will need to be shown the locations of the species and mark these where needed to help avoid native species being removed accidentally. Areas of bare ground created by this work will be left for natural regeneration (described below).

Replacement of Trees, Shrubs and Natural Regeneration

Recommendations may also include that any plants (newly planted or retained) that are removed, die or become seriously damaged or defective during the 30-year monitoring period shall be replaced like for like in the next planting season. If any of the plants fail, they will be replaced like-for-like.

Similarly, scope for tree and shrub species to establish by natural regeneration should be permitted where possible e.g. by creating space for new regeneration around existing specimens of the desired

trees and shrub species. Ash regeneration could be an important part of the mix, it should not be cut out or destroyed unless suffering from Ash Dieback, and would benefit from being protected.

Monitoring

All the newly planted and retained trees within the site in communal areas (i.e., excluding all trees within privately owned gardens) are to be managed post-development for a period of at least 30 years. As part of the management regime, it is recommended that there are tree inspections done with the frequency determined by a suitably experienced arborist.

These inspections will be carried out by a suitably experienced arborist **during late winter – early spring of each year when required**. These monitoring visits will assess the general health of the trees and determine if any remedial action is required, including noting any presence of disease. As part of these monitoring visits, the arborist will produce a monitoring report which will be sent to the LPA outlining the results and appropriate recommendations (i.e. remedial works, removal /replacement).

NB Please note, all mature trees recommended for removal, remedial works or selective thinning will need to be surveyed for (potential roost features PRFs) that may be suitable for roosting bats. If any trees have PRFs, it is recommended they are retained if possible and alternative trees are selected where possible. This will be conducted by a suitably qualified ecologist.

Hedgerows (0.87km single species, 0.055km mixed species)

A number of new hedgerows are proposed across the site. This consist of a number of mixed native species and a number of single species English yew (*Taxus baccata*) and Hornbeam (*Carpinus Betula*) hedgerows. The native hedgerows will consist of Hornbeam (*Carpinus Betula*), Hazel (*Corylus avellana*), Hawthorn (*Crataegus monogyna*), Holly (*Ilex aquifolium*), Blackthorn (*Prunus spinosa*), Dog-rose (*Rosa canina*), Elder (*Sambucus nigra*), Guelder-rose (*Viburnum opulus*).

Management

To enable a successful outcome, future management of the retained and planted hedgerows will require on going management works. This will include monitoring, prescriptive tasks and implementation of necessary works. Elements of this future management are detailed below. The *Hedgerow Management and Wildlife* (Barr et al., undated) document outlines three important factors in how hedgerows are managed that affect resident mammal population (and have therefore formed the basis of the recommendations in this section):

1. The type and amount of food available within the hedgerow. Favourable conditions being a large invertebrate population or prolific annual seed and berry crop.
2. The vegetation structure and composition of the hedgerow. For instance, a dense, herb- rich basal layer or a continuous line of hedgerow trees is preferred by several species.
3. The continuity and connectivity of the hedge within the landscape. For instance, a hedgerow that connects patches of small farm woodlands will have greater value as a corridor for the dispersal of mammals.

Monitoring

Annual monitoring will take place of the newly planted trees / hedge areas for the first 3 years, with bi-annual monitoring between 4-10 years. The existing hedgerows / tree lines will be monitored during the first, third and fifth year. This will be carried out by a suitably experienced ecologist during late winter – early spring of each year. These monitoring visits will assess the general health of the hedgerows and determine if any remedial action is required (some of which are outlined below such as replacement planting or altering the frequency of cuts).

Replacement

Any plants that are removed, die or become seriously damaged or defective during the 10-year monitoring period of planting shall be replaced like for like in the next planting season.

If hedgerows become very thin, coppicing of selected plants / laying of short lengths of hedgerow may be required and will be beneficial to promote vigorous, dense regrowth. Such works must be undertaken during the period October – February to avoid the breeding bird season.

Hedge Trimming Regime

The more favourable approach to managing hedgerows for the benefits of small mammals is to encourage minimal interference and ensure when there is any cutting, it does so after autumn fruiting (so late winter is preferable). The key points of the management prescriptions will therefore be as follows (adopting recommendations as outlined within Bright and MacPherson 2002):

- Cutting will be done on a 3-year cycle (part of the hedges on site cut during the first year, another part of the hedges cut during second year and no cutting during the third year), to provide sustained foraging opportunities across the site every active season. Hedgerows will be allowed to develop into a tall, dense, bushy structures and maintained at a height of 3 – (preferably 4) meters.
- A proportion of hedges (at least 30%) should be left to grow for at least 7 – 10 years.
- Not all hedgerows should be cut in any one year, so some heavy fruiting hedges are always present.
- Flails should not be used if possible meaning management works will likely involve cutting using hand tools
- Coppicing or laying should be used to manage any of the hedgerows on site which become gappy or spars

If the size of the hedgerow needs to be reduced, avoid cutting the top and cut one side.

Ditch (0.095km)

The ditch present through the centre of the site has been proposed for enhancement from poor to moderate condition. This will be achieved through planting and management as per the following:

The water quality of the ditch will be monitored to ensure the ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. No fertilisers or polluting substances will be used on the habitats in proximity to the ditch.

The ponded section of the ditch will be plug planted with a range of a range of emergent, submerged and floating-leaved plants. Recommended species includes; Spiked water-milfoil (*Myriophyllum spicatum*), Common water-crowfoot (*Ranunculus aquatilis*), Frogbit (*Hydrocharis morsus-ranae*), Water-forget-me-not (*Myosotis scorpioides*), Watermint (*Mentha aquatica*), and Marsh marigold (*Caltha palustris*).

The ditch will be monitored for signs of eutrophication such as filamentous algae or duckweed Lema sp. If present these should be removed and attempts to identify the cause of the eutrophication will occur.

An aquatic seed mix will be used around the margins of the ponded area as per the section above to create a fringe of aquatic vegetation.

To ensure no physical damage to the ditch occurs, it will not be used for storage of materials or machinery, or inappropriately managed resulting in damage.

Any invasive or undesirable species will be removed from the ditch opening up areas for natural regeneration. Invasive species will generally be removed by a combination of cutting back and removal of cut material from the site, followed by treatment of stumps, roots or regrowth using an approved systemic herbicide (such as glyphosate). This process may need to be repeated over the course of several years. The method used to remove the invasives must be suitable for use in a ditch so that any water is not polluted.

Green Roof (0.002ha)

Two small green roofs are proposed for the bin stores. These will incorporate Sedum species.

4.1.1 Condition Assessment Tables

The following tables outline the condition assessments for the habitats to be created on site, post-development.

Table 8. Condition assessment for other neutral grassland.

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	The grassland is a good representation of the habitat type it has been identified as, based on its UKHab description - the appearance and composition of the vegetation closely matches the characteristics of the specific grassland habitat type. Indicator species listed by UKHab for the specific grassland habitat type are consistently present. Note - this criterion is essential for achieving	Y	Meadow mixture contains a total of 21 species (including 14 forbs) and will be evenly seeded. Some neutral grassland indicators are included within the seed mix.

	Moderate or Good condition for non-acid grassland types only.		
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	N	A varied sward height will be encouraged however, as the areas will be managed for communal open space it is unlikely for this criteria to be met.
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens ¹ .	Y	It is not anticipated bare ground will not be created or encouraged.
D	Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus</i> agg.) is less than 5%.	Y	
E	Combined cover of species indicative of sub-optimal condition ² 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. If any invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴) are present, this criterion is automatically failed.	Y	Area not included within the recreational site and the public will be discouraged from using the area.
Additional Criterion - must be assessed for all non-acid grassland types			
F	There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (species referenced in Footnote 2 and 4 cannot contribute towards this count). Note - this criterion is essential for achieving Good condition for non-acid grassland types only.	Y	
Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)		Y	
Number of criteria passed		5	
Condition Assessment Result	Condition Assessment Score	Score Achieved x/✓	

Non-acid grassland Types (Result out of 6 criteria)			
Passes 5 or 6 criteria, including essential criterion A and additional criterion F.	Good (3)	✓	
Passes 3 - 5 criteria, including essential criterion A.	Moderate (2)		
Passes 2 or fewer criteria; OR Passes 3 or 4 criteria excluding criterion A and F.	Poor (1)		

Table 9. Condition assessment for pond.

Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
Core Criteria - applicable to all ponds (woodland¹ and non-woodland):			
A	The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.	Y	Pond water quality will be monitored, any polluting substances will not be used in proximity to the pond or the ditch it is connected to.
B	There is semi-natural habitat (moderate distinctiveness or above) completely surrounding the pond, for at least 10 m from the pond edge for its entire perimeter.	N	Pond is less than 10m from gardens roads etc.
C	Less than 10% of the water surface is covered with duckweed <i>Lemna</i> spp. or filamentous algae.	Y	Duckweed <i>Lemna</i> spp. or filamentous algae will be monitored and removed.
D	The pond is not artificially connected to other waterbodies,	N	Pond is connected to ditch system

	e.g. agricultural ditches or artificial pipework.		
E	Pond water levels can fluctuate naturally throughout the year. No obvious artificial dams ² , pumps or pipework.	Y	No artificial dams, pumps or pipework.
F	There is an absence of listed non-native plant and animal species ³ .	Y	Any Invasives removed or appropriately managed
G	The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.	Y	Will not be stocked with fish
Additional Criteria - must be assessed for all non-woodland ponds:			
H	Emergent, submerged or floating plants (excluding duckweed) ⁴ cover at least 50% of the pond area which is less than 3 m deep.	Y	Pond will be plug planted with a range of Emergent, submerged or floating plants.
I	The pond surface is no more than 50% shaded by adjacent trees and scrub.	N	Pond is shaded by adjacent woodland.
Number of criteria passed		6	
Condition Assessment Result	Condition Assessment Score	Score Achieved x/✓	
Results for non-woodland ponds which require assessment of 9 criteria			
Passes 9 criteria	Good (3)		
Passes 6 to 8 criteria	Moderate (2)	✓	
Passes 5 or fewer criteria	Poor (1)		

Table 10. Condition assessment for woodland.

Condition Assessment Criteria						
Indicator		Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicator	Notes (such as justification)
A	Age distribution of trees	Three age-classes ¹ present.	Two age-classes ¹ present.	One age-class ¹ present.	3	Woodland will be managed so that all age classes are present
B	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland ² .	Evidence of significant browsing pressure is present in 40% or less of whole woodland ² .	Evidence of significant browsing pressure is present in 40% or more of whole woodland ² .	3	Woodland is largely isolated so unlikely for browsing damage to occur
C	Invasive plant species	No invasive species ³ present in woodland.	<i>Rhododendron ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, other invasive species ³ <10% cover.	<i>Rhododendron</i> or cherry laurel present, or other invasive species ³ >10% cover.	3	Any invasives will be removed or appropriately managed
D	Number of native tree species	Five or more native tree or shrub species ⁴ found across woodland parcel.	Three to four native tree or shrub species ⁴ found across woodland parcel.	Two or less native tree or shrub species ⁴ across woodland parcel.	3	Native species will be planted
E	Cover of native tree and shrub species	>80% of canopy trees and >80% of understory shrubs are native ⁵ .	50 - 80% of canopy trees and 50 - 80% of understory shrubs are native ⁵ .	<50% of canopy trees and <50% of understory shrubs are native ⁵ .	3	Native species will be planted and managed to maintain shrubs

F	Open space within woodland	10 - 20% of woodland has areas of temporary open space ⁶ . Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted ⁷ .	21 - 40% of woodland has areas of temporary open space ⁶ .	<10% or >40% of woodland has areas of temporary open space ⁶ . But if woodland <10ha has <10% temporary open space, please see Good category ⁷ .	1	As woodland areas are small, temporary open space is less likely to occur
G	Woodland regeneration	All three classes present in woodland ⁸ ; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth.	One or two classes only present in woodland ⁸ .	No classes or coppice regrowth present in woodland ⁸ .	2	Woodland will be managed to encourage all ages, however, as the space is limited it is unlikely for all three age classes to occur.
H	Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback ⁹ .	11% to 25% mortality and/or crown dieback or low-risk pest or disease present ⁹ .	Greater than 25% tree mortality and or any high-risk pest or disease present ⁹ .	3	Trees will be monitored so that any disease can be treated/managed.
I	Vegetation and ground flora	Recognisable NVC plant community ¹⁰ at ground layer present, strongly characterised by ancient woodland flora specialists.	Recognisable woodland NVC plant community ¹⁰ at ground layer present.	No recognisable woodland NVC plant community ¹⁰ at ground layer present.	2	Native shrubs will be planted creating a recognisable ground layer.
J	Woodland vertical structure	Three or more storeys across all survey plots or a complex woodland ¹¹ .	Two storeys across all survey plots ¹¹ .	One or less storey across all survey plots ¹¹ .	2	Woodland will be managed to encourage all three storeys however, as space is limited it is unlikely to occur.

K	Veteran trees	Two or more veteran trees ¹² per hectare.	One veteran tree ¹² per hectare.	No veteran trees ¹² present in woodland.	2	Veteran trees will be retained where possible however, as space is limited, one per hectare is more realistic.
L	Amount of deadwood	50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, branch stubs and stumps, or an abundance of small cavities ¹³ .	Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ .	Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ .	2	Any offcuts from management will be left to create log piles and areas of deadwood.
M	Woodland disturbance	No nutrient enrichment or damaged ground evident ¹⁴ .	Less than 1 hectare in total of nutrient enrichment across woodland area and or less than 20% of woodland area has damaged ground ¹⁴ .	More than 1 hectare of nutrient enrichment and or more than 20% of woodland area has damaged ground ¹⁴ .	3	No nutrient enrichment such as use of fertilisers will occur within the woodland areas.
Total Score (out of a possible 39)					32	
Condition Assessment Result				Condition Assessment Score	Result Achieved	
Total score >32 (33 to 39)				Good (3)	Moderate	
Total score 26 to 32				Moderate (2)		
Total score <26 (13 to 25)				Poor (1)		

Table 11. Condition assessment for individual trees.

Condition Assessment Criteria		Criteria on passed (Yes or No)	Notes (such as justification)
A	The tree is a native species (or at least 70% within the block are native species).	N	Some native species will be planted but the majority will be non-native.

B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	Y	-
C	The tree is mature (or more than 50% within the block are mature).	Y	Trees will be managed to reach maturity.
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	Y	Trees will be managed appropriately to ensure no adverse impact to tree health occurs.
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	N	Less likely to occur naturally.
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y	Trees will largely be planted over areas of grassland or shrubs.
Number of criteria passed		5	
Condition Assessment Result (out of 6 criteria)	Condition Assessment Score	Score Achieved x/✓	
Passes 5 or 6 criteria	Good (3)	✓	
Passes 3 or 4 criteria	Moderate (2)		
Passes 2 or fewer criteria	Poor (1)		
Note that 'Fairly Good and Fairly Poor' condition categories are not available for this broad habitat type.			

Table 12. Condition assessment for hedgerows being created.

Hedgerow favourable condition attributes					
Attributes and functional groupings (A, B, C, D and E)		Criteria - the minimum requirements for 'favourable condition'	Description	Criterion passed (Yes or No)	Notes (such as justification)
Core groups - applicable to all hedgerow types					
A1.	Height	>1.5 m average along length	The average height of woody growth estimated from base of stem to the top of the shoots, excluding any bank beneath the hedgerow, any gaps or isolated trees. Newly laid or coppiced hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice). A newly planted hedgerow does not pass this criterion (unless it is >1.5 m height).	Y N	Hedgerows will largely be managed to be over 1.5m tall A number of the English yew hedgerows will be 1.2m (see soft landscaping plan)
A2.	Width	>1.5 m average along length	The average width of woody growth estimated at the widest point of the canopy, excluding gaps and isolated trees. Outgrowths (such as blackthorn <i>Prunus spinosa</i> suckers) are only included in the width estimate when they are >0.5 m in height. Laid, coppiced, cut and newly planted hedgerows are indicative of good management and pass this criterion for up to a maximum of four years (if undertaken according to good practice).	N	Hedgerows are in urban area so unlikely to be more the 1.5m wide
B1.	Gap - hedge base	Gap between ground and base of canopy <0.5 m for >90% of length	This is the vertical 'gappiness' of the woody component of the hedgerow, and its distance from the ground to the lowest leafy growth. Certain exceptions to this criterion are acceptable (see page 65 of the Hedgerow Survey Handbook).	N	

B2.	Gap - hedge canopy continuity	Gaps make up <10% of total length; and No canopy gaps >5 m	This is the horizontal 'gappiness' of the woody component of the hedgerow. Gaps are complete breaks in the woody canopy (no matter how small). Access points and gates contribute to the overall 'gappiness' but are not subject to the >5 m criterion (as this is the typical size of a gate).	Y	Any gaps will be replanted if needed.
C1.	Undisturbed ground and perennial vegetation	>1 m width of undisturbed ground with perennial herbaceous vegetation for >90% of length: · Measured from outer edge of hedgerow; and · Is present on one side of the hedgerow (at least).	This is the level of disturbance (excluding wildlife disturbance) at the base of the hedgerow. Undisturbed ground is present for at least 90% of the hedgerow length, greater than 1 m in width and must be present along at least one side of the hedgerow. This criterion recognises the value of the hedgerow base as a boundary habitat with the capacity to support a wide range of species. Cultivation, heavily trodden footpaths, poached ground etc. can limit available habitat niches.	N	Hedgerows are next to roads, car parking spaces footpaths etc.
C2.	Nutrient-enriched perennial vegetation	Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.	The indicator species used are nettles <i>Urtica</i> spp., cleavers <i>Galium aparine</i> and docks <i>Rumex</i> spp. Their presence, either singly or together, does not exceed the 20% cover threshold.	Y	Any undesirable species will be removed or appropriately managed.
D1.	Invasive and neophyte species	>90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA ³) and recently introduced species.	Recently introduced species refer to plants that have naturalised in the UK since AD 1500 (neophytes). Archaeophytes count as natives. For information on archaeophytes and neophytes see the JNCC website ⁴ , as well as the BSBI website ⁵ where the 'Online Atlas of the British and Irish Flora' ⁶ contains an up-to-date list of the status of species. For information on invasive non-native species see the GB Non-Native Secretariat website ⁷ .	Y	Any invasive species will be removed or appropriately managed.

D2.	Current damage	>90% of the hedgerow or undisturbed ground is free of damage caused by human activities.	This criterion addresses damaging activities that may have led to or lead to deterioration in other attributes. This could include evidence of pollution, piles of manure or rubble, or inappropriate management practices (e.g., excessive hedgerow cutting).	Y	The hedgerows will be appropriately managed to ensure no damage by human activities.
Condition categories for hedgerows without trees					
Category	Category Requirements	Metric Score			
Good	No more than 2 failures in total; AND No more than 1 failure in any functional group.	3			
Moderate	No more than 4 failures in total; AND <u>Does not fail both attributes</u> in more than one functional group (e.g. fails attributes A1, A2, B1 and C2 = Moderate condition).	2			
Poor	Fails a total of more than 4 attributes; OR <u>Fails both attributes</u> in more than one functional group (e.g. fails attributes A1, A2, B1 and B2 = Poor condition).	1			
Score achieved:		2 - Mod			

4.1.2 Metric Calculation Conclusion

Following the incorporation of the above measures into the Defra Statutory metric, **on site there is a net gain of +3.48% (or +0.23 habitat units). There is also a net gain in linear habitats of +1.8% (or +0.02 Hedgerow units) and watercourse units of +21.91% (Or +0.06 units).**

Figure 6. Screenshot of the 'headline results' output from the BNG assessment undertaken for the site using the Defra Statutory metric.

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	0.23
	<i>Hedgerow units</i>	0.02
	<i>Watercourse units</i>	0.06
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	3.48%
	<i>Hedgerow units</i>	1.80%
	<i>Watercourse units</i>	21.91%
Trading rules satisfied?	Yes ✓	

5.0 Conclusion

A Biodiversity Net Gain Assessment was undertaken of the site known as Elmfield House, Salisbury. This concluded that the proposed development will result in a net gain for habitats, hedgerow and watercourse units. Recommendations have been made for the creation and management of the proposed habitats in order to achieve the target conditions.

6.0 REFERENCES

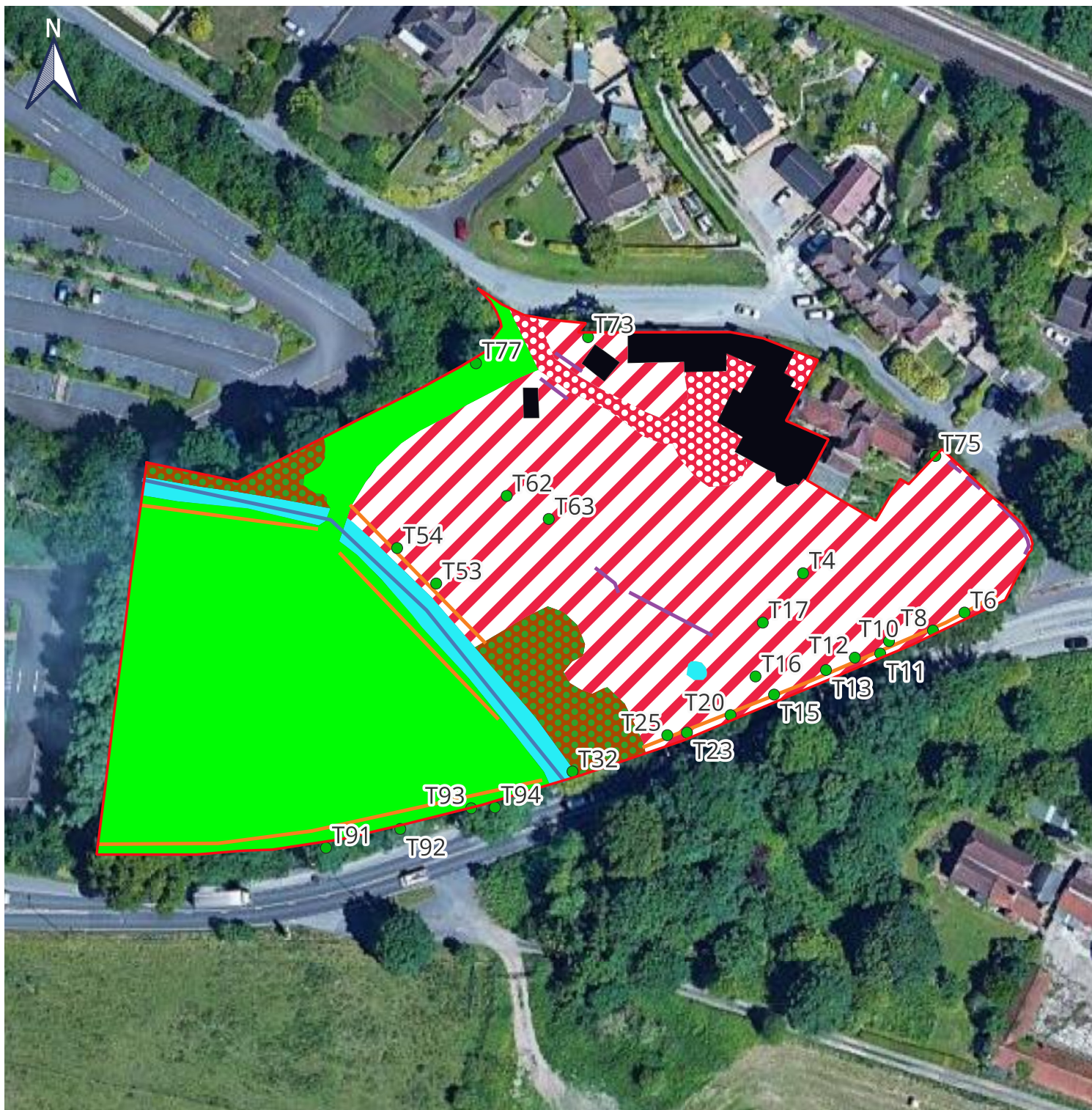
Daniel Ahern (2023). Elmfield House, Salisbury Ecological Appraisal survey report.

Natural England (20213). *The Statutory Biodiversity Metric (JP039)*. Available from:
<http://publications.naturalengland.org.uk/publication/6049804846366720>

DEFRA (2023) Biodiversity Statutory metric: User Guide.

UKHab Ltd. (2023). *UK Habitat Classification – Habitat Definitions Version 2.0*.

APPENDIX 1 – MAPS



Legend

- Site boundary
- Modified grassland (g4)
Secondary code(s):
16 - tall forbs
- Other woodland mixed (w1h)
- Built-up areas and gardens (u1)
Secondary code(s):
828 - vegetated garden
- Developed land. sealed surface (u1b)
- Buildings (u1b5)
- Artificial unvegetated unsealed surface (u1c)
- Pond / watercourse
- Individual trees
- Treeline (33)
- Hedgerow (h2)
- Ditch (50)



K4 Keppel, Daedalus Park
Daedalus Drive
Lee on the Solent, PO13 9FX
E: info@ecosupport.co.uk
T: 01329 832 841

Map	UK Habs Map
Site	Elmfield House
Client	Dr Rodger
Date	19/01/2024

© This map is the copyright of Ecosupport Ltd.
Any unauthorised reproduction or usage by any person is prohibited.



Legend	
	Site boundary
	Proposed hedgerows
	Retained tree lines
	Proposed trees
	Retained trees
	Wildflower grassland / marginal aquatic planting
	Planted woodland
	Retained woodland
	Shrub planting
	Gardens
	Buildings
	Permeable surfaces
	Ditch
	Ponds
	Green roof



K4 Keppel, Daedalus Park
Daedalus Drive
Lee on the Solent, PO13 9FX
E: info@ecosupport.co.uk
T: 01329 832 841

Map	Post-development map
Site	Elmfield house, Salisbury
Client	Dr Rodger
Date	19/01/2024

© This map is the copyright of Ecosupport Ltd.
Any unauthorised reproduction or usage by any person is prohibited.

APPENDIX II – SITE PHOTOS

The following photos are of the habitats identified on site, during the visit in December 2023.

Figure 7. View of the buildings present on site (taken December 2023).



Figure 8. View of the gravel driveway present on site (taken December 2023).



Figure 9. View of the garden present on site (taken December 2023).



Figure 10. View of the pond present on site (taken December 2023).



Figure 11. View of the hedgerows present on site (taken December 2023).



Figure 12. View of the line of trees present on site (taken December 2023).



Figure 13. View of the woodland present on site (taken December 2023).



Figure 14. View of the grassland present on site (taken December 2023).



Figure 15. View of the ditch present on site (taken December 2023).

