

H Knowles
Turley
The Pinnacle
20 Tudor Road
Reading
RG1 1NH

15 March 2023

Our ref: A1143.004_let15032023

Dear Hannah

Henley Road, Caversham

Thank you for asking me to undertake a habitat value calculation for Henley Road, Caversham. The accompanying DEFRA Metric 3.1 has been used to calculate biodiversity losses and gains for terrestrial habitats on the site. To assess predevelopment baseline conditions, I have referred to the Extended Phase 1 Ecological Survey (Crossman Associates, December 2021).

For post development areas I have referred to the proposed site plan Proposed site plan by Bowman Riley (reference 8466) and I am grateful for the areas and measurements that have been provided.

Baseline and post-development habitats and areas are shown in Figure 1 and Figure 2, Appendix I.

Biodiversity Net Gain Assessment

The following section provides a systematic review of the input information, rationalising the habitat categories and their condition chosen from the drop-down menus of the BIA calculator. Condition sheets for baseline conditions are included in Appendix II and post development conditions are in Appendix IV.

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For urban trees, the root protection areas detailed with the arboricultural report (Clever Tree Consultants, February 2023) have been used to calculate the area of existing trees and area of retained trees. The “urban tree helper” within the Defra 3.1 metric has been used to calculate the area of new tree planting, which is detailed within the landscape masterplan (Enplan, reference 06-999-301).

The details of existing and retained tree protection areas are included within Appendix III.

Table 1: Site Habitat Baseline (Pre-development). Site area = 0.6593 ha

Broad habitat	Habitat type		Area (Ha)
Urban	Developed land; sealed surface	Self-explanatory	0.1913
Urban	Vegetated garden	Amenity grassland and areas of introduced shrubs and perennial planting.	0.3674
Sparsely vegetated land	Ruderal/Ephemeral	Areas of	0.02
Urban	Un-vegetated garden	Areas of bare ground underneath evergreen trees. Bare ground caused by heavy shading	0.02
Heathland and shrub	Bramble scrub	Area of bramble vegetation	0.0205
Urban	Urban tree	Trees in an urban setting	0.1629

Table 2: Site Habitat Creation (Post-development). Site area = 0.6593 ha

Broad habitat	Habitat type	Area (Ha)	Area (Ha)
Urban	Developed land; sealed surface	Self-explanatory	0.2672
Urban	Vegetated garden	Areas of amenity grassland and areas of introduced shrub and perennial planting	0.1881
Grassland	Other neutral grassland	Areas of wildflower grassland planting, which is characteristic of species-rich neutral grassland	0.0706
Urban	Biodiverse green roof	Area of green roof planted to Biodiverse Green Roof standards	0.0134

Crossman Associates is a trading name of Alex Crossman Environmental Consulting Ltd.
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Heathland and shrub	Mixed scrub (native shrub planting)	Area of planted mixed scrub including hawthorn, blackthorn.	0.08
Urban	Urban tree		0.0736+1.4375

N.B – urban tree aeras are not included in the total site areas

Table 3: Site Hedgerow Baseline (Post-development)

Hedgerow type	Length (km)
Hedgerow (Ornamental non native)	0.13

Table 4: Site Hedgerows (Post-development)

Hedgerow type	Length (km)
Native (species rich)	0.16

Table 5: results summary

Site baseline	Habitat units	2.16
	Hedgerow units	0.13
Site post development	Habitat units	6.66
	Hedgerow units	1.07
Net % change	Habitat units	+203%
	Hedgerow units	+723%

In summary, the DEFRA 3.1 Biodiversity Impact Assessment Calculator indicates that the development will result in a net gain.

In order to ensure that the net gain will be achieved, it is recommended that a Landscape Ecological Management Plan is conditioned as part of the planning consent.

Please let me know if you need any additional information

Yours faithfully



Alex Crossman BSc (Hons) MCIEEM
Managing Director

Appendix I – Site Figures



Refer to approved
planning application
Ref:190835

-  Site boundary
-  Vegetated garden (0.3675)
-  Urban trees (root protection 0.1629 ha)
-  Ruderals/ephemeral 0.02 ha
-  Bramble scrub (0.0205 ha)
-  Developed; sealed (0.1913 ha)
-  Unvegetated garden (0.02 ha)
-  Non-native hedgerow (0.13 km)

Client L Anthony
Title Site habitat baseline
Site 205-219 Henley Road
Figure 1
Date 15 March 2023
Scale Indicative



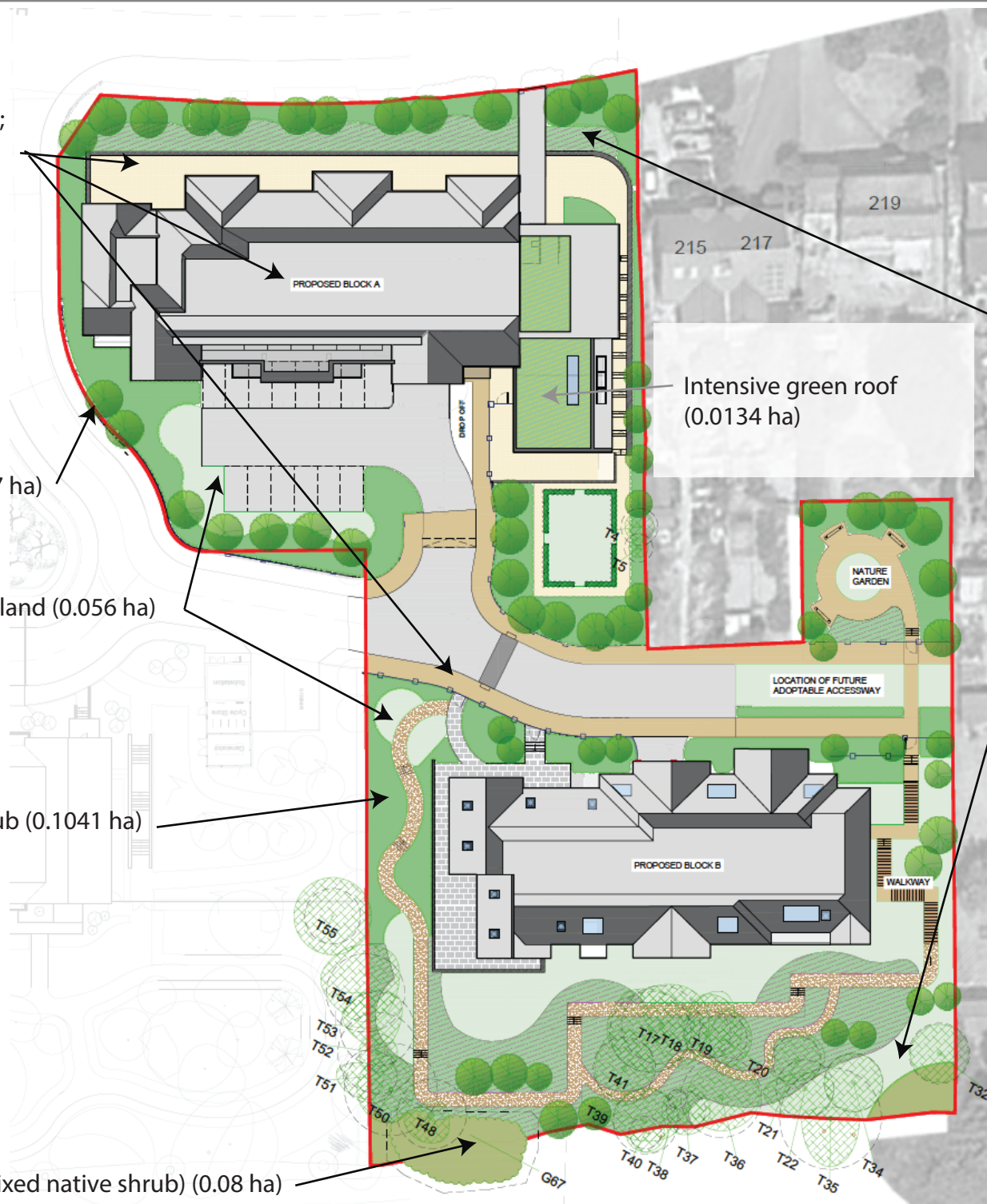
Developed land;
Sealed surfaces
(0.2632 ha)

Urban tree (0.07 ha)

Modified grassland (0.056 ha)

Introduced shrub (0.1041 ha)

Mixed scrub (mixed native shrub) (0.08 ha)



Intensive green roof
(0.0134 ha)

Neutral grassland (0.0726 ha)

Client A Lloyd

Title Site Habitat Creation

Site Henley Road, Caversham

Figure 1

Date 14 October 2020

Scale Indicative

Appendix II – Pre-development habitat conditions

Sparsely vegetated land - ruderals and ephemerals

Condition Assessment Criteria			
Condition Assessment Criteria		Condition Achieved (Y/N)	Notes/Justification
CORE CRITERIA - applicable to all urban habitat types:			
1	Vegetation structure is varied, providing opportunities for insects, birds and bats to live and breed. A single ecotone (i.e. scrub, grassland, herbs) should not account for more than 80% of the total habitat area.	N	
2	There is a diverse range of flowering plant species, providing nectar sources for insects. These species may be either native, or non-native but beneficial to wildlife. NB - To achieve GOOD condition, criterion 2 must be satisfied by native species only (rather than non-natives beneficial to wildlife). Note that Biodiverse green roofs are exempt from this requirement, and can	N	
3	Invasive non-native species (Schedule 9 of WCA) cover less than 5% of total vegetated area. NB - To achieve GOOD condition, criterion 3 must be satisfied by a complete absence of invasive non-	Y	
ADDITIONAL CRITERION - only applicable to Open mosaic on previously developed land habitat type:			
4a	The site shows spatial variation, forming a mosaic of at least four early successional communities (a) to (h) PLUS bare substrate AND pools. (a) annuals; (b) mosses/liverworts; (c) lichens; (d) ruderals; (e) inundation species; (f) open grassland; (g) flower-rich grassland; (h) heathland		
ADDITIONAL CRITERION - only applicable to Bioswale and SUDS habitat types:			
4b	The water table is at or near the surface throughout the year. This could be open water or saturation of soil at the surface		
ADDITIONAL CRITERION - only applicable to green roof habitat types (select as necessary):			
4c1	Intensive green roofs – have a minimum of 50% native and non-native wildflowers - 70% of the roof area is soil and vegetation (including water features)		

4c2	Biodiverse green roofs - have a varied depth of 80 - 150mm at least 50% is at 150mm and is planted and seeded with wildflowers and sedums or is pre-prepared with sedums and wildflowers. To achieve Good condition some additional habitat, such as sand piles, logs etc should be	
Essential criterion 2&3 achieved? (must be achieved to score a good condition for non biodiverse green roofs) (Y/N)		
Number of criteria passed		
Condition Assessment Result	Condition Assessment Score	Score Achieved x/✓
If 3 criteria assessed:		
• Passes 3 of 3 core criteria; AND • Meets the requirements for good condition within criteria 2 and 3	Good (3)	
• Passes 2 of 3 core criteria; OR • Passes 3 of 3 core criteria but does not meet the requirements for good condition within criteria 2 and 3	Moderate (2)	
• Passes 0 or 1 of 3 core criteria	Poor (1)	Yes
If 4 criteria assessed:		
• Passes 3 of 3 core criteria; AND • Meets the requirements for good condition within criteria 2 and 3; AND • Passes additional criterion 4a or 4b	Good (3)	
• Passes 2 of 3 of 4 criteria; OR • Passes 4 of 4 criteria but does not meet the requirements for good condition within criteria 2 and 3	Moderate (2)	
• Passes 0 or 1 of 4 criteria	Poor (1)	

Urban Trees (Trees treated as block)

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Covers the following topographical formations most commonly found in urban areas ¹ :			
Individual Trees: Young trees over 75mm in diameter measured at 1.5m from ground level and individual semi-mature and mature trees of significant stature and size that dominate their surroundings whose canopies are not touching but that are in close proximity to other trees.			
Perimeter Blocks: Groups or stands of trees within and around boundaries of land, former field boundary trees incorporated into developments, individual trees in gardens whose canopies overlap continuously			
Linear Blocks: Lines of trees along streets, highways, railways and canals whose			
Condition Assessment Criteria		Condition Achieved (Y/N)	Notes/Justification
1	The tree is a native species(or more than 70% within the block are native species).	N	
2	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	
3	The tree is mature ² or veteran ³ (or more than 50% within the block are mature ² or veteran ³)	N	
4	There is little or no evidence of an adverse impact on tree health by anthropogenic activities such as vandalism or herbicide use. There is no current regular pruning regime so the trees retain >75% of expected canopy for their age range and height	Y	
5	Micro-habitats for birds, mammals and insects are present e.g. presence of deadwood, cavities, ivy or loose bark	Y	
6	More than 20% of the tree canopy area is overhanging vegetation beneath.	N	
Number of criteria passed			
Condition Assessment Factor	Condition Assessment Score	Score Achieved x/✓	
Passes 5 or 6 of 6 criteria	Good (3)		
Passes 3 or 4 of 6 criteria	Moderate (2)	Yes	
Passes 0, 1 or 2 of 6 criteria	Poor (1)		
Suggested enhancement interventions to improve condition score			

Scrub - Bramble scrub

Habitat Description
See UKHab For sea buckthorn scrub see: Habitats Directive Annex 1 definition

Condition Assessment Criteria		Condition Achieved (Y/N)	Notes/Justification
1	Habitat is representative of UKHab description (where in its natural range). There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be up to 100% cover)	N	
2	There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs	N	
3	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and species indicative of sub-optimal condition make up less than 5% of ground cover	Y	
4	The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s)	N	
5	There are clearings, glades or rides present within the scrub, providing sheltered edges.	N	
Number of criteria passed			
Condition Assessment F	Condition Assessment Score	Score Achieved x/✓	
Passes 5 of 5 criteria	Good (3)		
Passes 3 or 4 of 5 criteria	Moderate (2)		
Passes 0, 1 or 2 of 5 criteria	Poor (1)	Yes	
Suggested enhancement interventions to improve condition score			
Notes			
Footnote 1 - Species indicative of sub-optimal condition for this habitat type include: tree-of-heaven <i>Alianthus altissima</i> , holm oak <i>Quercus ilex</i> , turkey oak <i>Quercus cerris</i> , creeping thistle <i>Cirsium arvense</i> , common nettle <i>Urtica dioica</i> , cherry laurel <i>Prunus laurocerasus</i> , snowberry <i>Symphoricarpos</i> spp., buddleia <i>Buddleja</i> spp., cotoneaster <i>Cotoneaster</i> spp., Spanish bluebell <i>Hyacinthoides hispanica</i> (or hybrids)			

Appendix III – Urban tree areas

Tree number	RPA	Status		
1	13.1	Fell		
2	2.2	Fell	Total area felled	893.7 m2
3	2.2	Fell	Total area retained	736.1 m2
6	13.7	Fell		
7	8.9	Fell		
8	4.5	Fell		
9	10.2	Fell		
11	9	Fell		
12	23.2	Fell		
12	21.9	Fell		
13	16.3	Fell		
14	72.4	Fell		
15	5.5	Fell		
16	2.9	Fell		
19	2.2	Fell		
23	72.4	Fell		
24	4.5	Fell		
25	21.9	Fell		
26	82.6	Fell		
27	14.7	Fell		
28	2.9	Fell		
30	11.6	Fell		
31	6.7	Fell		
32	2.7	Fell		
33	136.8	Fell		
42	20	Fell		
43	33	Fell		
44	33	Fell		
45	28.3	Fell		
46	33	Fell		
47	91.6	Fell		
56	16.3	Fell		
57	16.3	Fell		
58	18.1	Fell		
59	2.9	Fell		
60	26.6	Fell		
61	2.2	Fell		
62	2.9	Fell		
63	1.6	Fell		
64	2.9	Fell		
4	11.6			
5	6.8			
17	55.4			
18	52.3			
19	18.1			
20	20			
21	20			
22	28.3			
34	28.3			
35	87.6			
37	31.1			
38	2.9			
39	35.5			
40	8.9			
41	32.6			
48	40.7			
49	3.7			
50	72.4			
52	55.4			
53	46.3			
54	52.1			
55	26.1			

Appendix IV – Post development site conditions

Biodiverse Green Roof

Condition Assessment Criteria		Condition Achieved (Y/N)	Notes/Justification
CORE CRITERIA - applicable to all urban habitat types :			
1	Vegetation structure is varied, providing	N	
2	There is a diverse range of flowering plant	Y	
3	Invasive non-native species (Schedule 9 of	Y	
ADDITIONAL CRITERION - only applicable to Open mosaic on previously			
4a	The site shows spatial variation, forming a		
ADDITIONAL CRITERION - only applicable to Bioswale and SUDS habitat types:			
4b	The water table is at or near the surface		
ADDITIONAL CRITERION - only applicable to green roof habitat types (select as			
4c1	Intensive green roofs – have a minimum of		
4c2	Biodiverse green roofs - have a varied depth	Y	
Essential criterion 2&3 achieved? (must be achieved to score a			
Number of criteria passed			
Condition Assessment Result	Condition Assessment Score	Score Achieved x/✓	
If 3 criteria assessed:			
• Passes 3 of 3 core	Good (3)		
• Passes 2 of 3 core	Moderate (2)		
• Passes 0 or 1 of 3 core	Poor (1)		
If 4 criteria assessed:			
• Passes 3 of 3 core	Good (3)		
• Passes 2 of 3 of 4	Moderate (2)		
• Passes 0 or 1 of 4	Poor (1)		
Suggested enhancement interventions to improve condition score			
Notes			
Footnote 1 : For Biodiverse green roofs only - experience has shown that a range of			

Neutral Grassland

Condition Assessment Criteria		Condition Achieved (Y/N)	Notes/Justification
1	The appearance and composition of the vegetation closely matches characteristics of the specific grassland habitat type (see UKHab definition). 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 for non-acid grassland types only	Y	

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 insects, birds and ~~small mammals to live and breed~~	N	
3	Cover of bare ground between 1% and 5%, including localised areas, for example, rabbit warrens	Y	
4	Cover of bracken less than 20% and cover of ~~scrub (including bramble) less than 5%.~~	Y	
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 ¹ and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities)	Y	
Additional Group (Non-acid types only)			
6	There are greater than 9 species per metre squared. NB - This criterion is essential for achieving good condition (non-acid grassland types only).	Y	
Achieved (Essential for good condition for non-acid grassland) (Y/N)			
Number of criteria passed			
Condition Assessment F	Condition Assessment Score	Score Achieved x/✓	
Acid Grassland Types			
Passes 5 of 5 criteria	Good (3)		
Passes 3 or 4 of 5 criteria	Moderate (2)		
Passes 0, 1 or 2 of 5 criteria	Poor (1)		
Non-acid grassland Types			
Passes 5 of 6 criteria, including essential criterion 1 and 6	Good (3)		
Passes 3 or 4 of 6 criteria, including essential criterion 1	Moderate (2)		
Passes 0, 1, 2 criteria of 6 criteria; OR Passes 3 or 4 criteria excluding criterion 1 and 6	Poor (1)		
Suggested enhancement interventions to improve condition score			
Notes			
Footnote 1 - Species indicative of sub-optimal condition for this habitat type include: Creeping thistle <i>Cirsium arvense</i> , spear thistle <i>Cirsium vulgare</i> , curled dock <i>Rumex crispus</i> , broad-leaved dock <i>Rumex obtusifolius</i> , common nettle <i>Urtica dioica</i> , creeping buttercup <i>Ranunculus repens</i> , greater plantain <i>Plantago major</i> , white clover <i>Trifolium repens</i> , cow parsley <i>Anthriscus sylvestris</i>			

Mixed Scrub

Habitat Description			
See UKHab For sea buckthorn scrub see: Habitats Directive Annex 1 definition			
Condition Assessment Criteria		Condition Achieved (Y/N)	Notes/Justification
1	Habitat is representative of UKHab description (where in its natural range). There are at least three woody species, with no one species comprising more than 75% of the cover (except common juniper, sea buckthorn or box, which can be up to 100% cover)	Y	
2	There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs	N	
3	There is an absence of invasive non-native species (as listed on Schedule 9 of WCA, 1981) and species indicative of sub-optimal condition make up less than 5% of ground cover	Y	
4	The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s)	N	
5	There are clearings, glades or rides present within the scrub, providing sheltered edges.	Y	
Number of criteria passed			
Condition Assessment F	Condition Assessment Score	Score Achieved x/✓	
Passes 5 of 5 criteria	Good (3)		
Passes 3 or 4 of 5 criteria	Moderate (2)		
Passes 0, 1 or 2 of 5 criteria	Poor (1)		
Suggested enhancement interventions to improve condition score			
Notes			
Footnote 1 - Species indicative of sub-optimal condition for this habitat type include: tree-of-heaven <i>Alianthus altissima</i> , holm oak <i>Quercus ilex</i> , turkey oak <i>Quercus cerris</i> , creeping thistle <i>Cirsium arvense</i> , common nettle <i>Urtica dioica</i> , cherry laurel <i>Prunus laurocerasus</i> , snowberry <i>Symphoricarpos</i> spp., buddleia <i>Buddleja</i> spp., cotoneaster <i>Cotoneaster</i> spp., Spanish bluebell <i>Hyacinthoides hispanica</i> (or hybrids)			