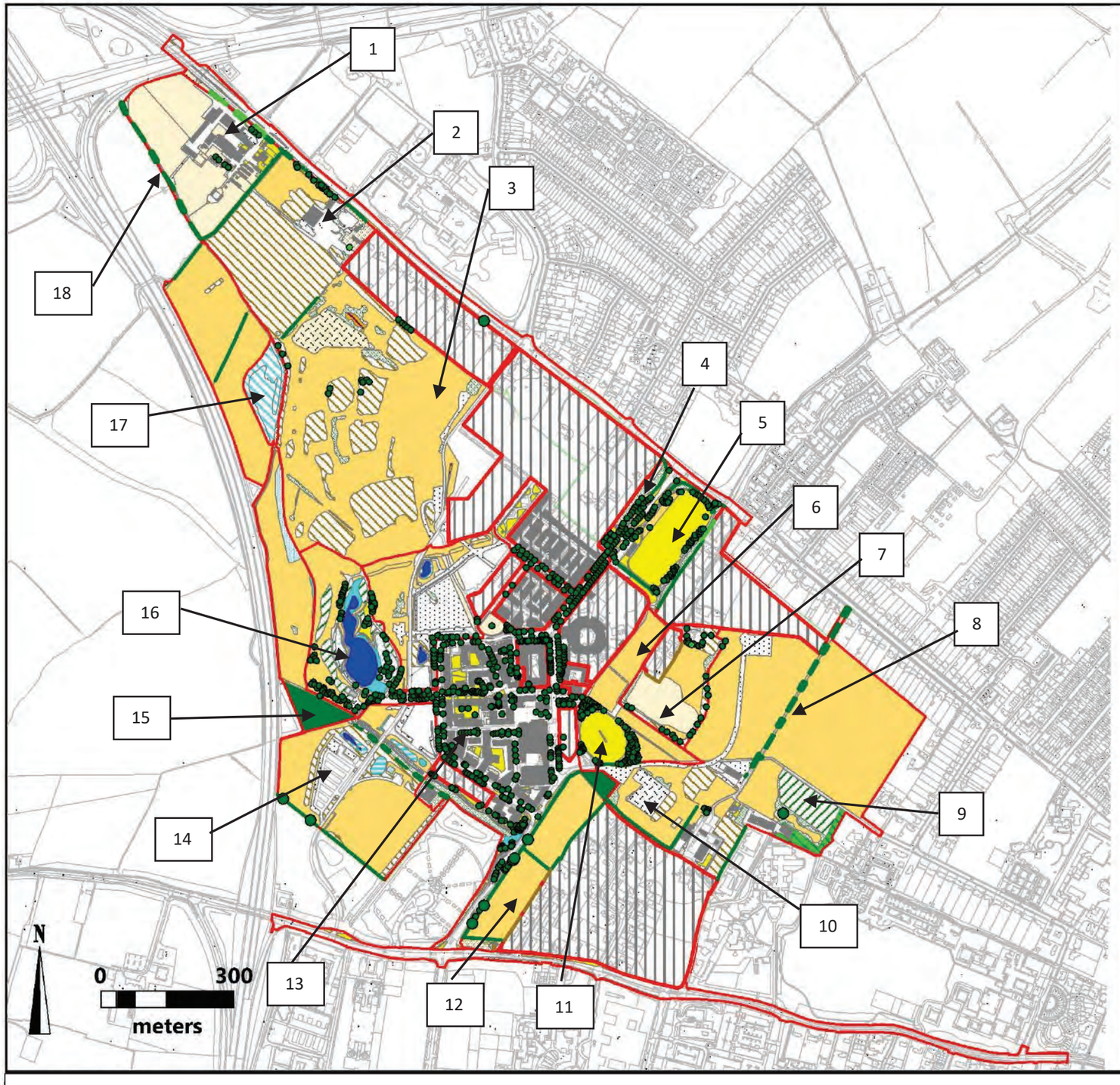


Key

- Ornamental lake / pond (362)
- Margins of lake / pond (f2d / f2f)
- Reedbed (f2e)
- Bioswale (f2f 849)
- Floodplain wetland mosaic (f2f 55)
- Modified grassland (g4)
- Modified grassland - amenity (g4)
- Other neutral grassland (ONG) (g3c)
- ONG - Holcus-Juncus grassland (g3c8)
- Tall forbs (g3c 16)
- Ruderal / ephemeral - ruderal (g3c 81)
- Ruderal / ephemeral - ephemeral (u1f 81)
- Scrub (h3a, d, h, j)
- Developed land; sealed surface - Buildings (u1b5)
- Developed land; sealed surface - Hardstanding (u1b6)
- Artificial; unsealed surface (u1c)
- Urban; vegetated garden / introduced shrubs (u1b6 828 / 845)
- Lowland mixed deciduous woodland (w1f7)
- Other woodland; broadleaved (w1g)
- Other woodland; mixed (w1h/6)
- Watercourse footprint
- Study area
- Not surveyed
- Treeline - broadleaf
- Treeline - conifer
- Native hedgerow
- Species-rich hedge
- Non-native hedge
- Trees - Broadleaf / Conifer

Project

Eddington

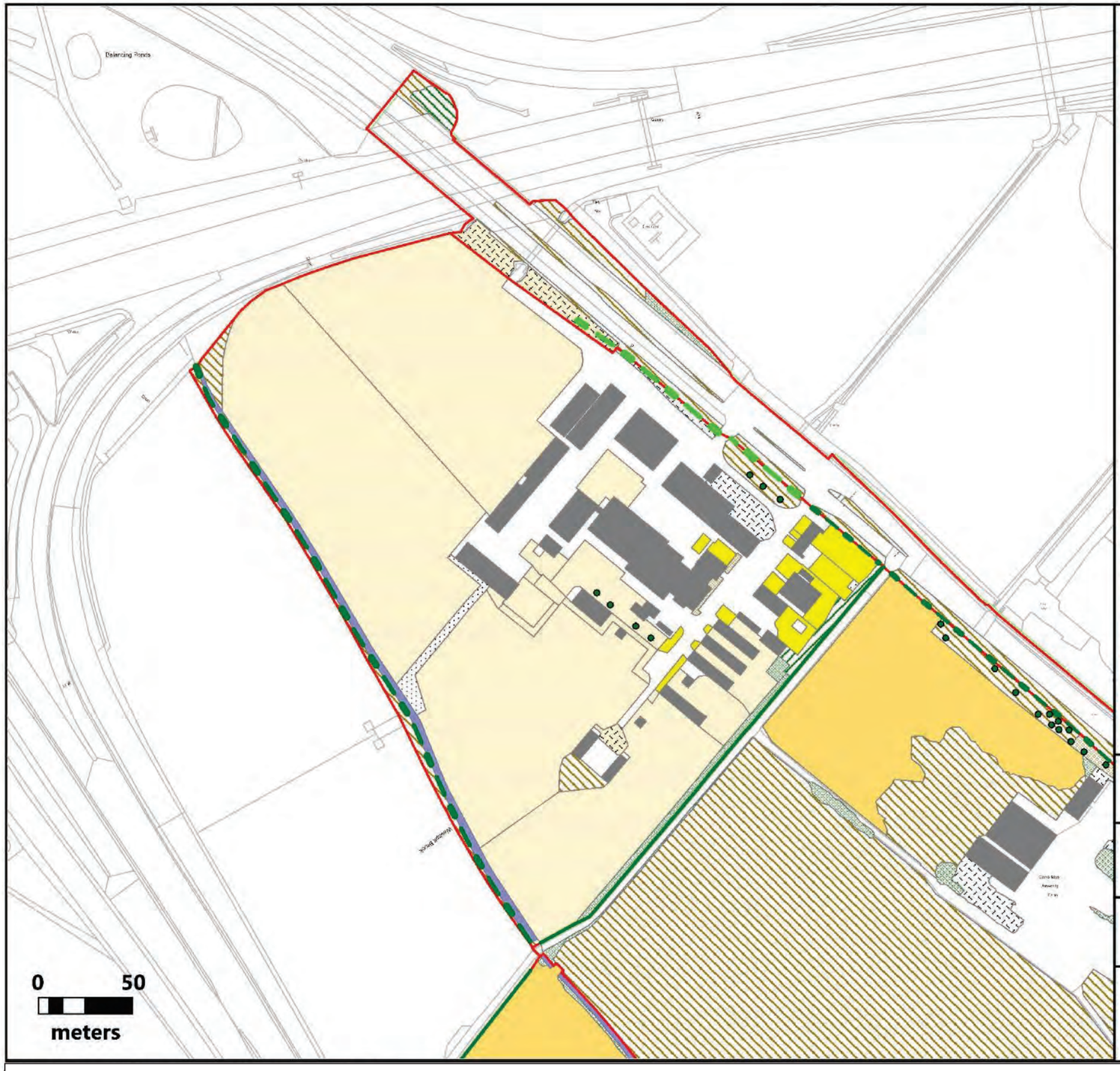
Title

Habitat map

Figure

Figure 3

MD Ecology Ltd



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- Other woodland; mixed (w1h/6)
- Watercourse footprint
- Study area
- Not surveyed
- Treeline - broadleaf
- Treeline - conifer
- Native hedgerow
- Species-rich hedge
- Non-native hedge
- Trees - Broadleaf / Conifer

Project

Eddington

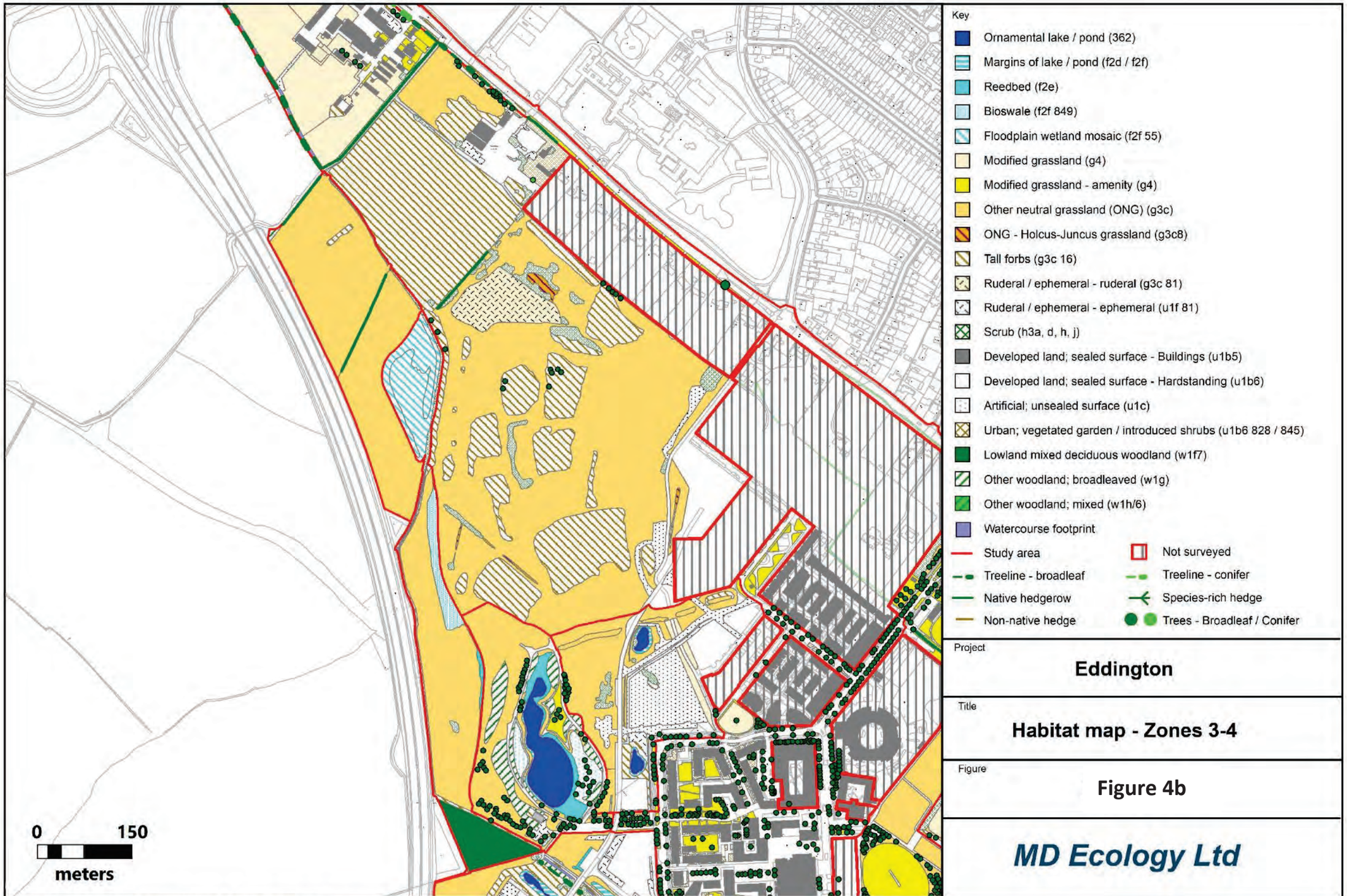
Title

Habitat map - Zone 2

Figure

Figure 4a

MD Ecology Ltd



Project

Eddington

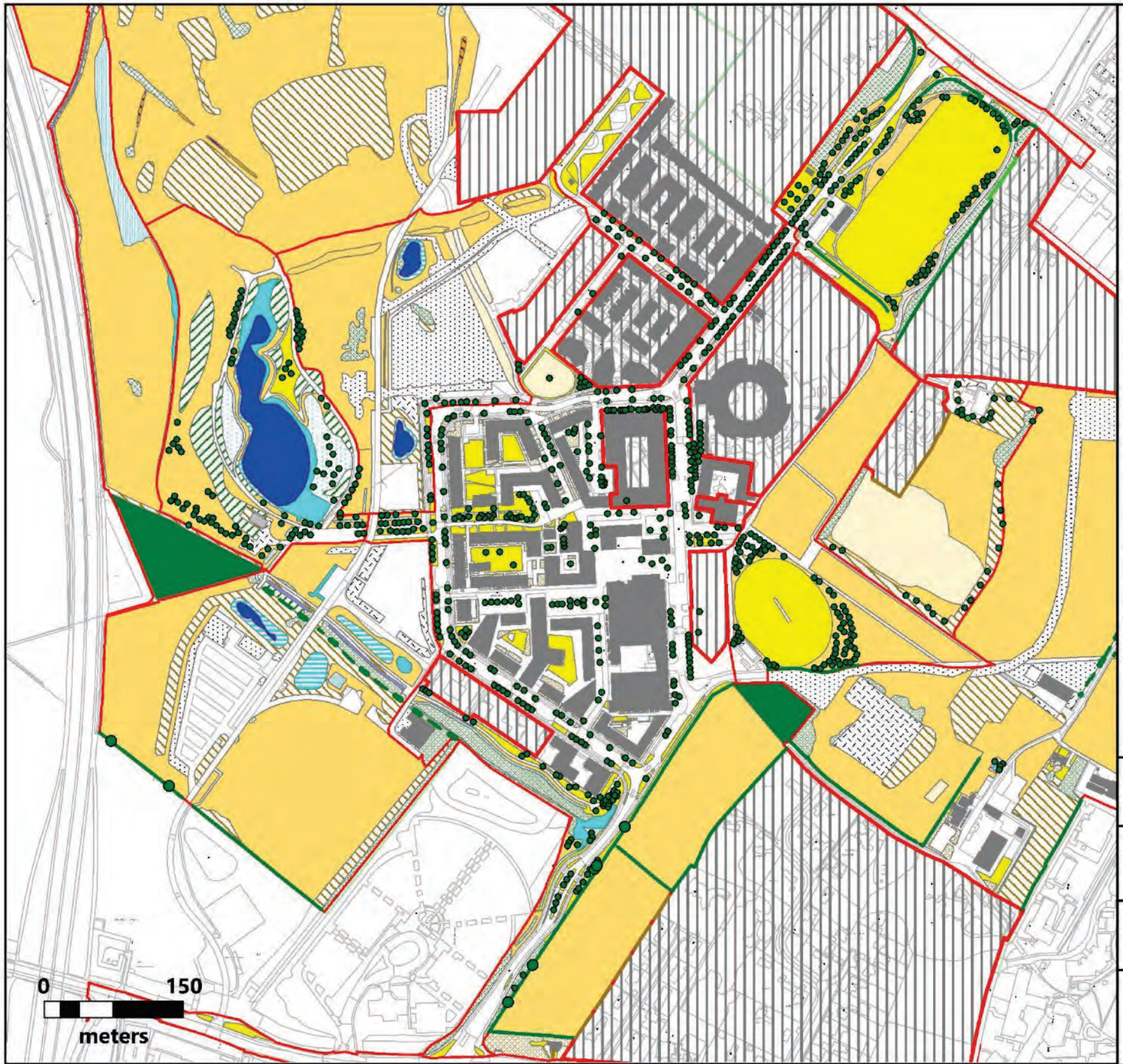
Title

Habitat map - Zones 3-4

Figure

Figure 4b

MD Ecology Ltd



Key

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- Scrub (h3a, d, h, j)
- Developed land; sealed surface - Buildings (u1b5)
- Developed land; sealed surface - Hardstanding (u1b6)
- Artificial; unsealed surface (u1c)
- Urban; vegetated garden / introduced shrubs (u1b6 828 / 845)
- Lowland mixed deciduous woodland (w1f7)
- Other woodland; broadleaved (w1g)
- Other woodland; mixed (w1h/6)
- Watercourse footprint
- Study area
- Not surveyed
- Treeline - broadleaf
- Treeline - conifer
- Native hedgerow
- Species-rich hedge
- Non-native hedge
- Trees - Broadleaf / Conifer

Project

Eddington

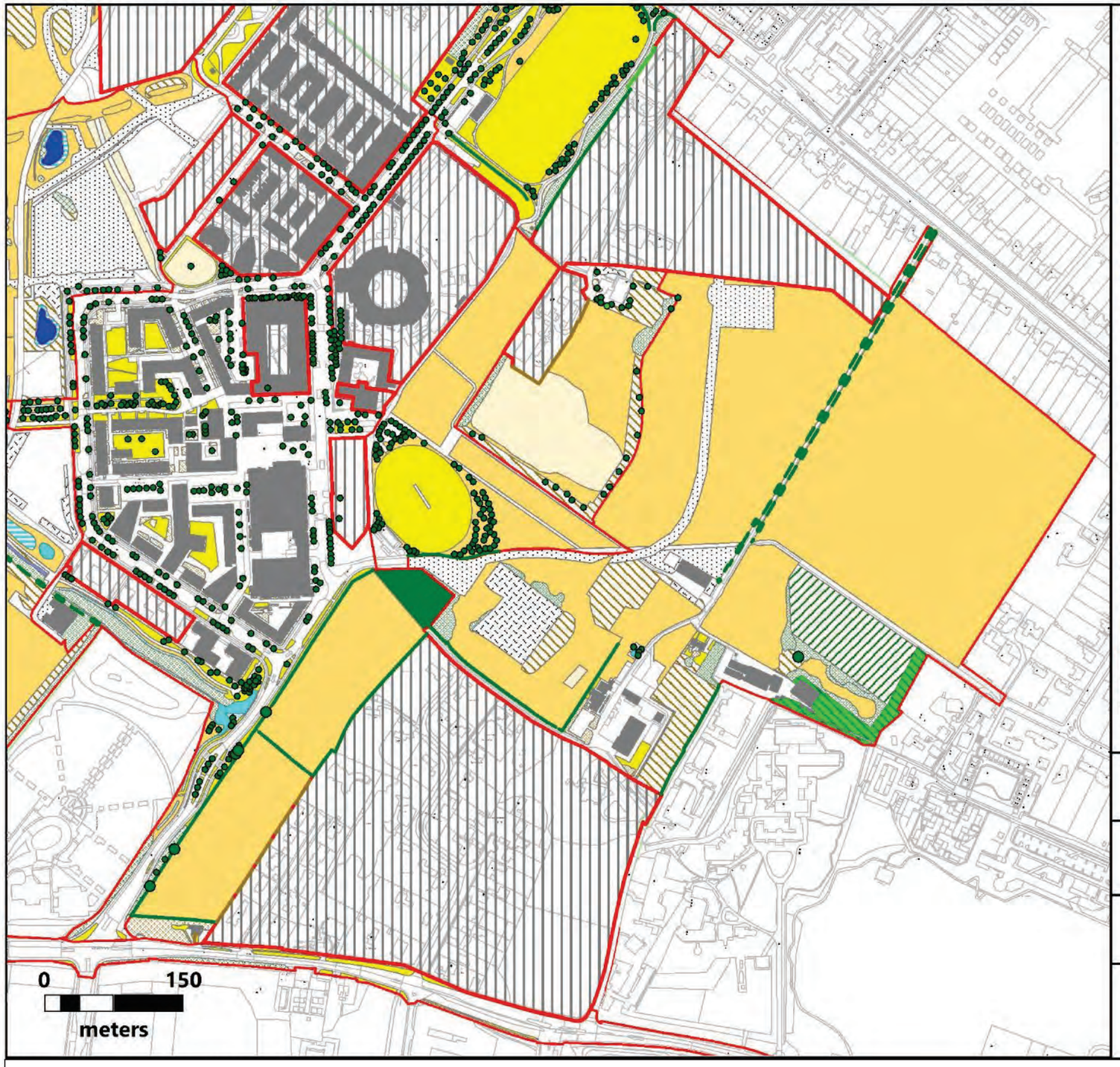
Title

Habitat map - Zones 5

Figure

Figure 4c

MD Ecology Ltd



Key

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- Ruderal / ephemeral - ruderal (g3c 81)
- Ruderal / ephemeral - ephemeral (u1f 81)
- Scrub (h3a, d, h, j)
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- Developed land; sealed surface - Hardstanding (u1b6)
- Artificial; unsealed surface (u1c)
- Urban; vegetated garden / introduced shrubs (u1b6 828 / 845)
- Lowland mixed deciduous woodland (w1f7)
- Other woodland; broadleaved (w1g)
- Other woodland; mixed (w1h/6)
- Watercourse footprint
- Study area
- Not surveyed
- Treeline - broadleaf
- Treeline - conifer
- Native hedgerow
- Species-rich hedge
- Non-native hedge
- Trees - Broadleaf / Conifer

Project

Eddington

Title

Habitat map - Zones 6

Figure

Figure 4d

MD Ecology Ltd

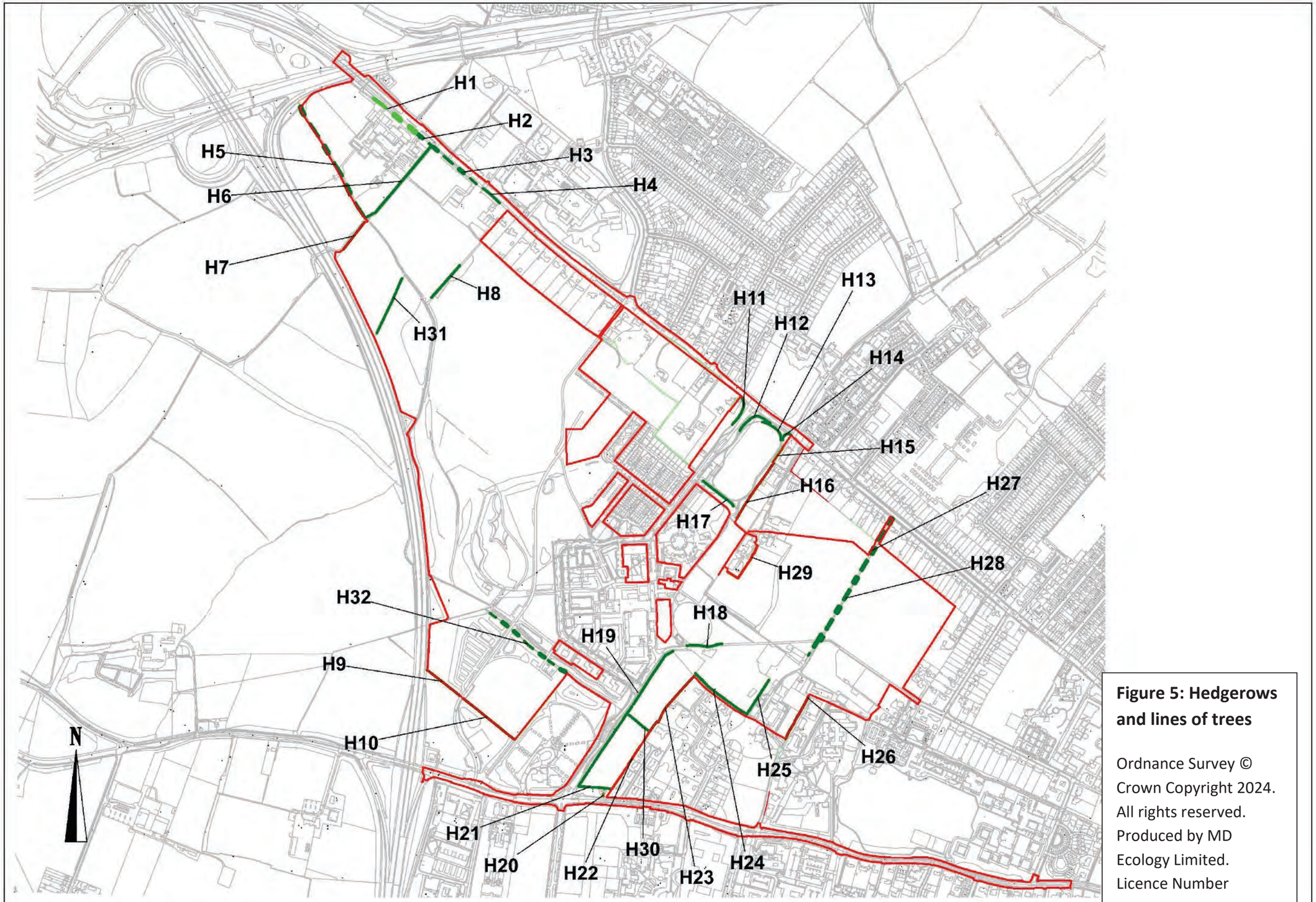

Figure 5: Hedgerows and lines of trees

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Appendix 1: Target Notes

Target Note (TN)	Description
1	Barcroft Centre, 307 Huntingdon Road. Active buildings with agricultural land grazed by livestock.
2	Derelict buildings (which have subsequently been demolished) and areas of hardstanding with opportunistic ruderals at Howe Farm. Unmanaged agricultural land associated with the survey area supported rank grassland and ruderals. A non-native invasive plant (INNS), Giant Hogweed (*Heracleum mantegazzianum*), was known to occur in the vicinity of buildings although herbicide treatment appears to have removed the infestation.
3	Disturbed land. Soil stripping and earth moving within former arable fields followed by temporary abandonment have created areas of rank neutral grassland interspersed by soil bunds dominated by ruderals.
4	Entrance to Eddington. Planted mixed scrub habitat and tree-lined avenues with mown amenity and wildflower grasslands.
5	Sports pitch. Mown amenity grassland with peripheral areas of wildflower planting and ornamental trees.
6	Grassland. Other neutral grassland seeded with a wildflower meadow mix.
7	Traveller's Rest Pit Site of Special Scientific Interest (SSSI). Gravel extraction had formed a rectangular sunken depression with sides of rank grassland and scrub. Recent flooding at the southern end of the feature had created an area of bare ground with rank species-poor grassland to the north.
8	Horse Chestnut Avenue between Huntingdon Road and Gravel Hill Farm.
9	Storey's Way Wood. Plantation woodland, largely dominated by broadleaf trees with conifers to the east.
10	Construction compound. Bare ground colonised by opportunistic ephemerals and short perennial vegetation in an abandoned construction compound otherwise surrounded by species-poor rank grassland. A healthy population of Birthwort (*Aristolochia clematitis*) was noted growing at the western side of a hedgerow to the south-east near Gravel Hill Farm.
11	Cricket pitch. Common Cudweed was noted from grassland at the periphery of the pitch and wildflower planting on surrounding banks included Spiny Restharrow, Clustered Bellflower and Spiked Speedwell.
12	Ridge and Furrow Fields. Intermittent management has led to development of a relatively species-poor other neutral grassland sward. A small stand of lowland mixed deciduous woodland sits at the northern end of the two fields (Cricket Pitch Wood).
13	Urbanisation. The Eddington development included blocks of residential buildings and shops connected by footpaths and roadways. Planting beds supported flowers, introduced shrubs and ornamental trees. Surface water run-off is directed into swales that temporarily attenuate flow. The swales generally supported mown grassland and trees.
14	Construction compound. An active construction compound surrounded by Nettle-covered bunds was noted at the southern end of the survey area. Attenuation ponds to the north and north-east were generally choked by Reedmace.

Target Note (TN)	Description
15	Pheasant Plantation – lowland mixed deciduous woodland dominated by Ash and Elm. Deadwood resources were present due to die-off caused by Dutch Elm disease as well as waterlogging at the western side of the woodland.
16	Waterbody. A large artificial lake and landscaped surroundings known as Brook Leys formed a significant biodiversity resource. Bays at the northern and southern end of the lake had been planted as reedbeds.
17	Wetland. A wetland creation area beside the Washpit Brook was surrounded by a low willow-lined ditch (with a few planted native Black Poplar) and supported a mix of Common Spike-rush, sedges and rushes as well as patches of Common Reed and Reedmace.
18	Tree-lined watercourse. A line of White willows lined the Washpit Brook to the south of buildings and fields at the Barcroft Centre.

Appendix 2: Condition Assessment Sheets (summary)

Modified grassland

	Habitat parcel						
Criteria	**Z1 g4**	**Z2 g4**	**Z3 g4**	**Z5 g4**	**Z6 g4**	**Z6 r1f6**	**Z7 g4**
A	Y	Y	Y	Y	Y	N	Y
B	N	N	N	N	N	N	N
C	Y	Y	Y	Y	Y	Y	Y
D	N	N	N	N	N	N	N
E	Y	Y	Y	Y	Y	N	Y
F	Y	Y	Y	Y	Y	Y	Y
G	Y	Y	Y	Y	Y	Y	Y
Essential criterion achieved?	Y	Y	Y	Y	Y	N	Y
Number of criteria passed	5	5	5	5	5	3	5
Condition	Moderate	Moderate	Moderate	Moderate	Moderate	Poor	Moderate

Other neutral grassland

	Habitat parcel					
Criteria	**Z3 g3c**	**Z3 g3c**	**Z4 g3c8**	**Z4 g3c 81**	**Z4 g3c 81**	**Z4 g3c 82**
A	N	N	Y	N	Y	N
B	Y	Y	N	Y	Y	N
C	N	N	Y	N	N	Y
D	Y	Y	Y	Y	Y	Y
E	N	N	Y	N	Y	Y
F	N	N	N	N	N	N
Essential criterion achieved?	N	N	Y	N	N	N
Number of criteria passed	2	2	4	2	4	3
Condition	Poor	Poor	Moderate	Poor	Moderate	Poor

Other neutral grassland (continued)

	Habitat parcel					
Criteria	**Z4 g3c5 82**	**Z5 g3c8**	**Z5 g3c**	**Z5 g3c 131**	**Z6 g3c5**	
A	Y	Y	N	Y	N	
B	N	Y	N	N	N	
C	N	Y	Y	Y	Y	
D	Y	Y	Y	Y	Y	
E	N	Y	N	Y	N	
F	N	N	N	Y	N	
Essential criterion achieved?	Y	N	N	Y	N	
Number of criteria passed	2	5	2	5	2	
Condition	Poor	Moderate	Poor	Good	Poor	

Hedgerow

	Habitat parcel										
Criteria	**H4**	**H6**	**H7**	**H8**	**H9**	**H10**	**H11-14**	**H16**	**H17**	**H18**	
A1	N	Y	Y	Y	Y	Y	N	Y	N	Y	
A2	N	Y	Y	Y	Y	Y	N	Y	N	Y	
B1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
B2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
C1	Y	Y	Y	Y	Y	Y	N	Y	N	N	
C2	N	N	N	N	Y	Y	Y	Y	Y	Y	
D1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
D2	Y	Y	Y	Y	Y	Y	N	Y	N	N	
E1		N			N						
E2		N			Y						
Condition	Mod	Mod	Good	Good	Good	Good	Poor	Good	Poor	Mod	

Hedgerow (continued)

	Habitat parcel										
Criteria	**H19**	**H21**	**H22**	**H23**	**H24**	**H25**	**H26**	**H30**	**H31**	**H32**	
A1	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	
A2	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	
B1	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	
B2	Y	Y	N	Y	Y	Y	Y	Y	Y	N	
C1	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
C2	N	Y	Y	Y	Y	Y	N	N	N	N	
D1	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	
D2	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	
E1	N			N						N	
E2	Y			Y						Y	
Condition	Good	Good	Poor	Good	Good	Good	Good	Good	Good	Mod	

Line of trees

	Habitat parcel					
Criteria	**H1**	**H2**	**H3**	**H5**	**H27-28**	
A	N	N	N	Y	N	
B	Y	Y	Y	Y	Y	
C	N	N	N	Y	Y	
D	N	N	N	N	Y	
E	Y	Y	Y	Y	N	
Number of criteria passed	2	2	2	4	3	
Condition	Poor	Poor	Poor	Moderate	Moderate	

Pond

	Habitat parcel					
Criteria	**Z5 362**					
A	Y					
B	N					
C	N					
D	N					
E	Y					
F	Y					
G	Y					
H	Y					
I	Y					
Number of criteria passed	6					
Condition	Moderate					

Scrub

	Habitat parcel					
Criteria	**Z1 h3h**	**Z2 h3h**	**Z3 h3a6**	**Z3 h3h**	**Z4 h3a6**	**Z4 h3d**
A	Y	Y	N	Y	N	N
B	N	N	N	Y	N	N
C	Y	Y	Y	Y	Y	Y
D	Y	N	Y	Y	Y	Y
E	N	N	N	Y	N	N
Number of criteria passed	3	2	2	5	2	2
Condition	Moderate	Poor	Poor	Good	Poor	Poor

Scrub (continued)

	Habitat parcel					
Criteria	**Z4 h3h**	**Z4 h3j**	**Z5 h3h**	**Z5h3j**	**Z6 h3h**	**Z7 h3h**
A	Y	N	Y	N	Y	Y
B	Y	Y	N	Y	N	Y
C	Y	Y	Y	Y	Y	Y
D	Y	Y	Y	Y	Y	N
E	N	N	N	N	N	N
Number of criteria passed	4	3	3	3	3	2
Condition	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate

Urban

	Habitat parcel					
Criteria	**Z1 g3c 16**	**Z1 g3c 81**	**Z2 g3c 16**	**Z2 u1f 81**	**Z3 f2f 849**	**Z3 g3c 16**
A	N	Y	N	N	Y	N
B	N	Y	N	N	Y	N
C	Y	Y	Y	Y	Y	Y
D	N	Y	N	N		N
E1					Y	
E2					Y	
Essential criterion achieved?	N	Y	N	N	Y	N
Number of criteria passed	1	3	1	1	5	1
Condition	Poor	Good	Poor	Poor	Good	Poor

Urban (continued)

	Habitat parcel						
Criteria	**Z4 g3c 16**	**Z4 u1f 81**	**Z5 f2f 849**	**Z5 g3c 16**	**Z5 u1f 81**	**Z6 g3c 16**	**Z6 u1f 81**
A	N	Y	N	N	Y	N	Y
B	N	Y	Y	N	Y	N	Y
C	Y	Y	Y	Y	Y	Y	Y
D	N	N	N	N	Y	N	Y
E1			Y				
E2			Y				
Essential criterion achieved?	N	Y	Y	N	Y	N	Y
Number of criteria passed	1	3	4	1	4	1	4
Condition	Poor	Good	Moderate	Poor	Good	Poor	Good

Wetland

	Habitat parcel					
Criteria	**Z3 f2f 55**	**Z3 f2e**	**Z5 f2e**			
A	Y	Y	Y			
B	Y	N	N			
C	Y	Y	Y			
D	Y	Y	Y			
E	Y	Y	Y			
F	Y	Y	Y			
G						
H						
I		N	N			
J	N					
Essential criterion achieved (A, plus G, H, I or J)?	N	N	N			
Number of criteria passed	6	5	5			
Condition	Moderate	Moderate	Moderate			

Woodland

	Habitat parcel							
Criteria	**Z1 w1h**	**Z2 w1g**	**Z3 w1g**	**Z3 w1f7**	**Z5 w1g**	**Z6 w1f7**	**Z6 w1g**	**Z6 w1h6**
A	1	1	2	3	1	3	3	3
B	3	3	3	3	3	3	3	3
C	3	3	3	3	3	3	2	2
D	2	1	2	3	3	3	3	3
E	3	1	3	3	3	3	3	2
F	2	3	2	3	1	3	2	2
G	2	1	2	3	2	3	3	2
H	2	3	3	2	3	2	2	2
I	1	1	2	2	1	2	2	2
J	2	1	2	3	1	2	2	2
K	1	1	1	1	1	2	2	2
L	1	1	1	3	1	3	3	2
M	1	3	1	1	2	2	2	2
Total score (out of 39)	24	23	27	33	25	34	32	28
Condition	Poor	Poor	Moderate	Good	Poor	Good	Moderate	Moderate

Lake

Assessed using the Lake Naturalness Assessment Guidance[10].

Naturalness attribute	**Score**	**Reason**
Physical	2 (fairly good)	Limited modification of shoreline with paths/seating area
Hydrological	3 (moderate)	Water levels are fixed
Chemical	3 (moderate)	Lake substrate visible through water depth of 0.5-1m
Biological	2 (fairly good)	Non-native plants and fish present, minimal extent and impact
Average	2.5 (moderate)	

[10] https://priorityhabitats.org/wp-content/uploads/Lake-Naturalness-Assessment-Guidance-3.pdf

Appendix 3: Hedgerow assessment

Ref no.	Length (m)	Category	Condition	Description	Species	Spp /30m	Hedgerows Regulations
H1	147	Line of trees	Poor	Line of planted conifers along fenceline. 8-10m high.	Cypress sp	<4	Not important
H2	45	Line of trees	Poor	Outgrown hedgerow beside residential property 6-8m high.	Blackthorn, Hawthorn, Sycamore	<4	Not important
H3	157	Line of trees	Poor	Gappy line of trees along fenceline largely dominated by Sycamore. 6-8m high.	Sycamore, Elm, Blackthorn, Hawthorn	<4	Not important
H4	61	Native hedgerow	Moderate	Previously managed section of hedgerow. 2-4m high & 1.5m wide.	Sycamore, Blackthorn, Hawthorn	<4	Not important
H5	351	Ecologically valuable line of trees associated with a bank or ditch	Moderate	Line of mature White Willows and occasional Ash beside Washpit Brook.	White Willow, Ash, Hawthorn	<4	Not important
H6	269	Native hedgerow with trees	Moderate	Relatively unmanaged hedgerow with occasional trees. Hawthorn dominated, 5m high, 4m wide.	Hawthorn, Elder, Oak, Dogrose, Ash, Lime, Sycamore, Blackthorn.	6	Important
H7	94	Native hedgerow	Good	Relatively unmanaged hedgerow with Cherry Plum. 5m high, 4m wide.	Cherry Plum, Hawthorn, Elm, Sycamore, Field Maple, Blackthorn, Elder	5	Important
H8	118	Native hedgerow	Good	Unmanaged hedgerow dominated by Hawthorn, 4-5m high 4m wide.	Hawthorn, Elder, Ash	<4	Not important
H9	113	Native hedgerow with trees	Good	Relatively unmanaged hedgerow with occasional mature Oaks. 3-4m high, 2m wide.	Hawthorn, Blackthorn, Elm, Oak, Elder, Ash	6	Important

Ref no.	Length (m)	Category	Condition	Description	Species	Spp /30m	Hedgerows Regulations
H10	176	Native hedgerow	Good	Relatively unmanaged hedgerow. 3-4m high, 2m wide.	Hawthorn, Blackthorn, Elm, Field Maple, Elder, Ash	6	Important
H11	89	Species-rich native hedgerow	Poor	Recently planted hedgerow. 1-1.5m high, <1m wide.	Hawthorn, Blackthorn, Hazel, Guelder Rose, Field Maple, Dogrose	7	Not important
H12	106	Species-rich native hedgerow	Poor	Recently planted hedgerow. 1-1.5m high, <1m wide.	Hawthorn, Blackthorn, Hazel, Guelder Rose, Field Maple, Dogrose	7	Not important
H13	77	Species-rich native hedgerow	Poor	Recently planted hedgerow. 1-1.5m high, <1m wide.	Hawthorn, Blackthorn, Hazel, Guelder Rose, Field Maple, Dogrose	7	Not important
H14	34	Species-rich native hedgerow	Poor	Recently planted hedgerow. 1-1.5m high, <1m wide.	Hawthorn, Blackthorn, Hazel, Guelder Rose, Field Maple, Dogrose	7	Not important
H15	52	Non-native and ornamental hedgerow	N/A	Outgrown Leyland Cypress.	Leyland Cypress.	<4	Not important
H16	181	Species-rich native hedgerow	Good	Unmanaged leggy hedgerow, 3-4m high. 2-3m wide.	Hawthorn, Blackthorn, Elm, Elder, Field Maple, Dogrose	6	Not important
H17	109	Native hedgerow	Poor	Recently planted hedgerow. 1m high, <1m wide.	Hawthorn, Blackthorn, Hazel, Guelder Rose, Field Maple, Dogrose	7	Not important
H18	99	Native hedgerow	Moderate	Recently planted hedgerow. 1-1.5m high, <1m wide.	Hawthorn, Blackthorn, Guelder Rose, Willow, Field Maple, Dogrose	7	Not important
H19	449	Species-rich native hedgerow with trees	Good	Relatively unmanaged hedgerow with occasional mature trees of Oak and Ash. 4-6m high, 3m wide.	Hawthorn, Blackthorn, Elm, Oak, Ash, Field Maple, Dogrose	6	Important

Ref no.	Length (m)	Category	Condition	Description	Species	Spp /30m	Hedgerows Regulations
H20	7	Non-native and ornamental hedgerow	N/A	Clipped ornamental hedgerow. 1.2m high, 1m wide.		<4	Not important
H21	93	Native hedgerow	Good	Hawthorn dominated hedgerow, 3-4m high, 2-3m wide.	Hawthorn, Crack Willow.	<4	Not important
H22	189	Native hedgerow	Poor	Degraded hedgerow beside residential properties with sections of fenceline. Hedge 2-4m high, 2m wide.	Hawthorn, Blackthorn, Crack Willow, Elder	<4	Not important
H23	201	Native hedgerow	Good	Hedgerow beside gardens of residential properties with non-native trees.	Hawthorn, Horse Chestnut, Cherry Plum, Ash, Elm, Crab Apple, Elder	<4	Not important
H24	180	Native hedgerow	Good	Unmanaged hawthorn dominated hedgerow beside lane.	Hawthorn, Elder, Ash, Blackthorn, Elm	<4	Not important
H25	111	Native hedgerow	Good	Elm dominated hedgerow with Birthwort in ground flora.	Elm, Hawthorn, Ash, Blackthorn	<4	Not important
H26	134	Native hedgerow	Good	Hedgerow with additional planting beside Madingley Rise.	Blackthorn, Hawthorn, Lime, Dogrose, Dogwood, Wayfaring-tree, Birch, Elder	7	Important
H27	442	Ecologically valuable line of trees	Moderate	Avenue of planted Horse Chestnut	Horse Chestnut, Norway Maple, Hawthorn, Elder, Ash, Eucalyptus	<4	Not important
H28	388	Ecologically valuable line of trees	Moderate	Avenue of planted Horse Chestnut	Horse Chestnut, Norway Maple, Hawthorn, Elder, Ash, Eucalyptus	<4	Not important
H29	141	Non-native and ornamental hedgerow	N/A	Ornamental hedgerow, 3m high, 2m wide.		<4	Not important
H30	75	Species-rich native hedgerow	Good	Relatively unmanaged hawthorn dominated, 4m high, 2-3m wide.	Hawthorn, Elder	<4	Not important

Ref no.	Length (m)	Category	Condition	Description	Species	Spp /30m	Hedgerows Regulations
H31	166	Native hedgerow	Good	Relatively unmanaged hawthorn dominated hedgerow, 4m high, 2-3m wide.	Hawthorn, Blackthorn, Oak, Dogrose, Elder	<4	Not important
H32	232	Species-rich native hedgerow with trees	Moderate	Unmanaged hedgerow / line of trees partially dissected by new roads.	Poplar, White Willow, Goat Willow, Hawthorn, Elder, Ash, Oak	6	Important

Appendix 4a: Invertebrate records from the Eddington site

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
Coleoptera	Anobiidae	Anobium punctatum	Common furniture beetle		2011	
Coleoptera		Dorcatoma dresdensis	Dresden beetle	Nationally Scarce	2011	A beetle from the woodworm family apparently associated with oak bracket fungus.
Coleoptera		Ochina ptinoides	Ochina beetle		2011	
Coleoptera	Apionidae	Apion malvae	Mallow weevil		2011	
Coleoptera	Bruchidae	Bruchus atomarius	Pea seed beetle		2011	
Coleoptera	Buprestidae	Agrilus sinuatus	Hawthorn jewel beetle	Nationally Scarce	2011	A wood-boring beetle associated with pear and hawthorn trees.
Coleoptera	Cantharidae	Cantharis lateralis	Soldier beetle		2011	
Coleoptera		Rhagonycha fulva	Common red soldier beetle		2011	
Coleoptera	Carabidae	Calodromius quadrinotatus	Four-spotted ground beetle		2011	
Coleoptera		Demetrias atricapillus	Black-headed ground beetle		2011	
Coleoptera		Dromius quadrimaculatus	Four-spotted dromius		2011	
Coleoptera	Cerambycidae	Phymatodes testaceus	Tanbark borer		2011	
Coleoptera		Pseudovadonia livida	Tawny longhorn beetle		2011	
Coleoptera		Tetrops praeusta	Small longhorn beetle		2011	
Coleoptera	Chrysomelidae	Derocrepis rufipes	Red-legged leaf beetle		2011	
Coleoptera		Oulema melanopus sensu latu	Cereal leaf beetle		2011	
Coleoptera	Ciidae	Cis vestitus	Covered fungus beetle		2011	
Coleoptera	Coccinellidae	Adalia 10-punctata	Ten-spotted ladybird		2011	
Coleoptera		Coccinella 11-punctata	Eleven-spotted ladybird		2011	
Coleoptera		Coccinella 7-punctata	Seven-spotted ladybird		2011	
Coleoptera		Exochomus quadripustulatus	Pine ladybird		2011	

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
Coleoptera		Harmonia axyridis	Harlequin ladybird		2011	
Coleoptera		Propylea 14-punctata	Fourteen-spotted ladybird		2011	
Coleoptera		Rhyzobius litura	Minute two-spotted ladybird		2011	
Coleoptera		Stethorus punctillum	Black ladybird		2011	
Coleoptera		Subcoccinella 24-punctata	Twenty-four-spotted ladybird		2011	
Coleoptera	Curculionidae	Curculio glandium	Nut weevil		2011	
Coleoptera		Euophryum confine	New Zealand weevil		2011	
Coleoptera		Magdalis armigera	Armoured weevil		2011	
Coleoptera		Nedyus quadrimaculatus	Four-spotted weevil		2011	
Coleoptera	Dermestidae	Ctesias serra	Serrated carpet beetle	Nationally Scarce	2011	The larvae of the cobweb beetle is associated with crevices in bark where it feeds on the remains of spider prey items.
Coleoptera	Elateridae	Ischnodes sanguinicollis	Blood-necked beetle	UK BAP	2011	A deadwood invertebrate known to use decaying tree stumps, particularly elm.
Coleoptera	Erotylidae	Dacne bipustulata	Two-spotted fungus beetle		2011	
Coleoptera		Triplax aenea	Shiny fungus beetle		2011	
Coleoptera	Mycetophagidae	Mycetophagus multipunctatus	Many-spotted fungus beetle		2011	
Coleoptera		Mycetophagus quadripustulatus	Four-spotted fungus beetle		2011	
Coleoptera		Pseudotriphyllus suturalis	Sutured fungus beetle	European Red List	2011	A specialist beetle that feeds on bracket fungi including chicken of the woods.
Coleoptera	Nitidulidae	Glischrochilus hortnesis	Garden sap beetle		2011	
Coleoptera	Oedemeridae	Oedemera lurida	Common swollen-thighed beetle		2011	
Coleoptera		Oedemera nobilis	Thick-legged flower beetle		2011	

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
Coleoptera	Salpingidae	Rhinosimus planirostris	Flat-faced beetle		2011	
Coleoptera	Scolytinae	Scolytus mali	Apple bark beetle	Nationally Scarce	2011	A fruit bark boring beetle known from hawthorn, pears, plums and elm.
Coleoptera		Scolytus scolytus	European elm bark beetle		2011	
Coleoptera	Scraptiidae	Anaspis maculata	Spotted flower beetle		2011	
Coleoptera		Anaspis pulicarius	Flea beetle		2011	
Coleoptera		Scraptia testacea	Tawny scraptiid beetle	Red Data Book	2011	A deadwood invertebrate of rotten wood with adults often associated with hawthorn flowers.
Coleoptera	Staphylinidae	Quedius sp	Rove beetle		2011	
Coleoptera	Tenebrionidae	Eledona agricola	Agrarian rove beetle	Nationally Scarce	2011	A specialist beetle that feeds on bracket fungi of broadleaved trees.
Coleoptera		Lagria hirta	Hairy darkling beetle		2011	
Coleoptera		Prionychus ater	Black fungus beetle	Nationally Scarce	2011	A beetle associated with decomposing plant material in soil, leaf litter and other such cover.
Dermaptera	Forficulidae	Forficula auricularia	Common earwig		2011	
Diptera	Dolichopodidae	Medetera truncorum	Long-legged fly		2011	
Diptera		Poecilobothrus nobilitatus	Semaphore fly		2011	
Diptera	Heleomyzidae	Suillia variegata	Variegated dung fly		2011	
Diptera	Stratiomyidae	Chloromyia formosa	Green soldier fly		2011	
Diptera		Chorisops tibialis	Small soldier fly		2011	
Diptera		Microchrysa flavicornis	Yellow-horned soldier fly		2011	
Diptera		Pachygaster atra	Black soldier fly		2011	
Diptera		Pachygaster leachii	Leach's soldier fly		2011	
Diptera	Syrphidae	Episyrphus balteatus	Marmalade hoverfly		2011	

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
Diptera		Syritta pipiens	Thick-legged hoverfly		2011	
Diptera		Syrphus vitripennis or rectus	Common hoverfly		2011	
Diptera		Xylota segnis	Leaf hoverfly		2011	
Diptera	Tephritidae	Terellia tussilaginis	Coltsfoot gall fly		2011	
Hemiptera-Heteroptera	Anthocoridae	Anthocoris confusus	Common flower bug		2011	
		Anthocoris nemorum	Pirate bug		2011	
		Buchananiella contigua	Slender flower bug		2011	
		Orius niger	Black flower bug		2011	
		Orius vicinus	Neighbor flower bug		2011	
Hemiptera-Heteroptera	Lygaeidae	Heterogaster urticae	Nettle bug		2011	
		Scolopostethus thomsoni	Ground bug		2011	
Hemiptera-Heteroptera	Microphysidae	Loricula elegantula	Elegant ground bug		2011	
Hemiptera-Heteroptera	Miridae	Calocoris norvegicus	Potato capsid bug		2011	
		Campyloneura virgula	Campyloneura bug		2011	
		Deraeocoris flavilinea	Flavilinea capsid		2011	
		Deraeocoris rufipes	Rufous capsid		2011	
		Dicyphus epilobii	Epilobium bug		2011	
		Dicyphus globulifer	Globulifer bug		2011	
		Halticus luteicollis	Yellow-necked flea beetle	Very local	2011	A grassland species associated with plants including bedstraws (Galium spp).
		Heterotoma merioptera	Mirid bug		2011	
		Liocoris tripustulatus	Three-spotted bug		2011	

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
		Lygocoris pabulinus	Common green capsid		2011	
		Lygus rugulipennis	Tarnished plant bug		2011	
		Megaloceraea recticornis	Straight-horned bug		2011	
		Orthotylus tenellus	Tenellus plant bug		2011	
		Pinalitus cervinus	Deer capsid bug		2011	
		Plagiognathus arbustorum	Shrub capsid bug		2011	
		Plagiognathus chrysanthemi	Chrysanthemum bug		2011	
		Trigonotylus caelestialium	Meadow bug	Very local	2011	An elongated bug which feeds on grasses.
Hemiptera-Heteroptera	Nabidae	Himacerus apterus	Apterous damsel bug		2011	
Hemiptera-Heteroptera	Pentatomidae	Aelia acuminata	Bishop bug		2011	
		Pentatoma rufipes	Forest bug		2011	
Hemiptera-Heteroptera	Rhopalidae	Corizus hyoscyami	Cinnamon bug		2011	
Hemiptera - Auchenorrhyncha	Cercopidae	Aphrophora alni	Alder spittlebug		2011	
Hemiptera		Philaenus spumarius	Common froghopper		2011	
Hemiptera	Cicadellidae	Idiocerus sp	Leafhopper		2011	
Hemiptera	Cixiidae	Oliarus panzeri	Panzer’s planthopper	Nationally Scarce	2011	A grassland bug with root-feeding nymphs often associated with soils that crack in summer.
Hemiptera - Sternorhyncha	Lachnidae	Lachnus iliciphilus	Holly aphid		2011	
Hymenoptera	Apidae	Apis mellifera	Western honeybee		2011	
Hymenoptera		Bombus lapidarius	Red-tailed bumblebee		2011	
Hymenoptera		Bombus lucorum	White-tailed bumblebee		2011	

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
Hymenoptera		Bombus pascuorum	Common carder bee		2011	
Hymenoptera	Formicidae	Lasius brunneus	Brown tree ant	Nationally Scarce	2011	An ant particularly associated with oak trees with damage.
Hymenoptera		Lasius fuliginosus	Jet ant		2011	
Hymenoptera		Lasius niger	Black garden ant		2011	
Lepidoptera - Moths	Gracillaridae	Cameraria ohridella	Horse-chestnut leaf miner		2011	
Lepidoptera - Butterflies	Hesperidae	Thymelicus sylvestris	Small skipper		2011	
Lepidoptera	Lycaenidae	Aricia agestis	Brown argus	Local	2011	A butterfly of grassland and open water where foodplants (rockrose, stork's-bill and dove's-foot cranesbill) are present.
Lepidoptera		Satyrium w-album	White-letter hairstreak	S41 NERC Act, Local	2011	A butterfly associated with elm trees.
Lepidoptera	Pieridae	Pieris rapae	Small white butterfly		2011	
Lepidoptera	Satyridae	Maniola jurtina	Meadow brown		2011	
Lepidoptera		Pararge aegeria	Speckled wood		2011	
Lepidoptera		Pyronia tithonus	Gatekeeper or hedge brown		2011	
Orthoptera	Tettigoniidae	Leptophyes punctatissima	Speckled bush cricket		2011	
Orthoptera		Meconema thalassinum	Oak bush cricket		2011	
Orthoptera		Pholidoptera griseoaptera	Dark bush cricket		2011	
Psocoptera	Caeciliusidae	Valenzuela flavidus	Yellow barklice		2011	
Psocoptera	Ectopsocidae	Ectopsocus briggsi	Brigg's barklice		2011	
Psocoptera	Elipsocidae	Elipsocus hyalinus	Glassy-winged barklice		2011	
Psocoptera	Philotarsidae	Philotarsus parviceps	Small-headed barklice		2011	
Psocoptera	Psocidae	Loensia pearmani	Pearman's barklice	Rare	2011	A barkfly associated with a variety of broadleaf and conifers.

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
Psocoptera	Stenopsocidae	Graphopsocus cruciatus	Cross-marked barklice		2011	
Araneae		Nuctenea umbratica	Walnut orb-weaver spider		2011	
Oniscidea		Armadillidium vulgare	Common pill bug or roly-poly		2011	
Oniscidea		Platyarthrus hoffmannseggi	Ant woodlouse		2011	
Oniscidea		Porcellio scaber	Common rough woodlouse		2011	
Diplopoda		Polyxenus lagurus	Bristly millipede		2011	
Mollusca		Cepaea nemoralis	Grove snail		2011	
Mollusca		Cernuella virgata	White snail		2011	
Mollusca		Cornu aspersa	Garden snail		2011	
Mollusca		Trichia striolata	Hairy snail		2011	
Lepidoptera	Noctuidae	*Abrostola tripartita*	Spectacle	Common	22-Jul-21	
Heteroptera	Acanthosomatidae	*Acanthosoma haemorrhoidale*	Hawthorn Shieldbug	Common	22-Jul-21	
Lepidoptera	Tortricidae	*Acleris forsskaleana*	a moth	Common	22-Jul-21	
Lepidoptera	Pyralidae	*Acrobasis advenella*	a moth	Common	22-Jul-21	
Lepidoptera	Pyralidae	*Acrobasis marmorea*	a moth	Local	22-Jul-21	
Lepidoptera	Noctuidae	*Acronicta tridens/psi*	Dark Dagger / Grey Dagger	S41 NERC Act	22-Jul-21	
Odonata	Aeshnidae	*Aeshna grandis*	Brown Hawker		23-Jul-21	
Lepidoptera	Tortricidae	*Agapeta hamana*	a moth	Common	23-Jul-21	
Lepidoptera	Nymphalidae	*Aglais io*	Peacock		23-Jul-21	
Lepidoptera	Nymphalidae	*Aglais io*	Peacock		23-Jul-21	
Lepidoptera	Depressariidae	*Agonopterix alstromeriana*	a moth	Common	22-Jul-21	
Lepidoptera	Crambidae	*Agriphila straminella*	a moth	Common	22-Jul-21	
Lepidoptera	Noctuidae	*Amphipoea oculea agg.*	Ear Moth agg.	S41 NERC Act	22-Jul-21	
Lepidoptera	Crambidae	*Anania hortulata*	Small Magpie	Common	22-Jul-21	

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
Odonata	Aeshnidae	*Anax imperator*	Emperor Dragonfly		23-Jul-21	
Lepidoptera	Tortricidae	*Ancylis achatana*	a moth	Common	22-Jul-21	
Lepidoptera	Noctuidae	*Apamea monoglypha*	Dark Arches	Common	22-Jul-21	
Hymenoptera	Apidae	*Apis mellifera*	Western Honey Bee		23-Jul-21	
Lepidoptera	Tortricidae	*Archips crataegana*	Brown Oak Tortrix	Local	22-Jul-21	
Lepidoptera	Tortricidae	*Archips podana*	Large Fruit-tree Tortrix	Common	22-Jul-21	
Lepidoptera	Argyresthiidae	*Argyresthia goedartella*	a moth	Common	22-Jul-21	
Lepidoptera	Argyresthiidae	*Argyresthia pruniella*	Cherry Fruit Moth	Common	22-Jul-21	
Isopoda	Armadillidiidae	*Armadillidium vulgare*	Common Pill Woodlouse		22-Jul-21	
Lepidoptera	Pyralidae	*Assara terebrella*	a moth	Nationally Scarce A	22-Jul-21	A moth species associated with Norway Spruce.
Lepidoptera	Noctuidae	*Autographa gamma*	Silver Y	Migrant	23-Jul-21	
Lepidoptera	Oecophoridae	*Batia lunaris*	a moth	Common	22-Jul-21	
Lepidoptera	Geometridae	*Biston betularia*	Peppered Moth	Common	22-Jul-21	
Lepidoptera	Blastobasidae	*Blastobasis adustella*	a moth	Common	22-Jul-21	
Lepidoptera	Blastobasidae	*Blastobasis lacticolella*	a moth	Common	22-Jul-21	
Hymenoptera	Apidae	*Bombus lapidarius*	Red-tailed Bumblebee		23-Jul-21	
Hymenoptera	Apidae	*Bombus pascuorum*	Common Carder Bee		23-Jul-21	
Hymenoptera	Apidae	*Bombus terrestris*	Buff-tailed Bumblebee		23-Jul-21	
Hymenoptera	Apidae	*Bombus vestalis*	Vestal Cuckoo Bee		23-Jul-21	
Lepidoptera	Gelechiidae	*Bryotropha terrella*	a moth	Common	22-Jul-21	
Lepidoptera	Gracillariidae	*Cameraria ohridella*	a moth	Common	22-Jul-21	
Lepidoptera	Geometridae	*Camptogramma bilineata*	Yellow Shell	Common	23-Jul-21	
Lepidoptera	Noctuidae	*Caradrina morpheus*	Mottled Rustic	Common	22-Jul-21	
Lepidoptera	Crambidae	*Catoptria pinella*	a moth	Common	22-Jul-21	

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
Lepidoptera	Geometridae	*Chiasmia clathrata clathrata*	Latticed Heath	Common	22-Jul-21	
Orthoptera	Acrididae	*Chorthippus brunneus*	Common Field Grasshopper		23-Jul-21	
Lepidoptera	Crambidae	*Chrysoteuchia culmella*	Garden Grass-veneer	Common	22-Jul-21	
Lepidoptera	Drepanidae	*Cilix glaucata*	Chinese Character	Common	22-Jul-21	
Lepidoptera	Tortricidae	*Cnephasia sp.*	Cnephasia species		22-Jul-21	
Lepidoptera	Tortricidae	*Cnephasia stephensiana*	Grey Tortrix	Common	22-Jul-21	
Lepidoptera	Tortricidae	*Cochylis atricapitana*	a moth	Common	22-Jul-21	
Lepidoptera	Tortricidae	*Cochylis dubitana*	a moth	Common	22-Jul-21	
Lepidoptera	Tortricidae	*Cochylis hybridella*	a moth	Local	22-Jul-21	
Odonata	Coenagriidae	*Coenagrion puella*	Azure Damselfly		23-Jul-21	
Lepidoptera	Coleophoridae	*Coleophora alcyonipennella/frischella*	a moth		22-Jul-21	
Lepidoptera	Coleophoridae	*Coleophora sp.*	Coleophora species		22-Jul-21	
Lepidoptera	Noctuidae	*Colocasia coryli*	Nut-tree Tussock	Common	22-Jul-21	
Coleoptera	Dytiscidae	*Colymbetes fuscus*			22-Jul-21	
Lepidoptera	Noctuidae	*Cosmia pyralina*	Lunar-spotted Pinion	Local	22-Jul-21	
Lepidoptera	Noctuidae	*Cosmia trapezina*	Dun-bar	Common	22-Jul-21	
Lepidoptera	Crambidae	*Crambus pascuella*	a moth	Common	22-Jul-21	
Lepidoptera	Crambidae	*Crambus perlella*	a moth	Common	22-Jul-21	
Lepidoptera	Oecophoridae	*Crassa unitella*	a moth	Common	22-Jul-21	
Lepidoptera	Geometridae	*Crocallis elinguaria*	Scalloped Oak	Common	22-Jul-21	
Lepidoptera	Noctuidae	*Cryphia algae*	Tree-lichen Beauty	Local	22-Jul-21	
Lepidoptera	Crambidae	*Cydalima perspectalis*	Box-tree Moth	Adventive	22-Jul-21	
Lepidoptera	Tortricidae	*Cydia pomonella*	Codling Moth	Common	22-Jul-21	
Lepidoptera	Tortricidae	*Cydia splendana*	a moth	Common	22-Jul-21	

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
Lepidoptera	Sphingidae	*Deilephila elpenor*	Elephant Hawk-moth	Common	22-Jul-21	
Lepidoptera	Sphingidae	*Deilephila porcellus*	Small Elephant Hawk-moth	Local	22-Jul-21	
Lepidoptera	Pyralidae	*Dioryctria abietella*	a moth	Common	22-Jul-21	
Lepidoptera	Tortricidae	*Ditula angustiorana*	Red-barred Tortrix	Common	22-Jul-21	
Lepidoptera	Crambidae	*Donacaula forficella*	a moth	Local	22-Jul-21	
Lepidoptera	Erebidae	*Eilema complana*	Scarce Footman	Local	22-Jul-21	
Lepidoptera	Erebidae	*Eilema depressa*	Buff Footman	Local	22-Jul-21	
Lepidoptera	Erebidae	*Eilema griseola*	Dingy Footman	Common	22-Jul-21	
Lepidoptera	Erebidae	*Eilema lurideola*	Common Footman	Common	22-Jul-21	
Lepidoptera	Pterophoridae	*Emmelina monodactyla*	Common Plume	Common	22-Jul-21	
Lepidoptera	Tortricidae	*Endothenia gentianaeana*	a moth	Common	22-Jul-21	
Lepidoptera	Tortricidae	*Endothenia marginana*	a moth	Common	22-Jul-21	
Lepidoptera	Pyralidae	*Endotricha flammealis*	a moth	Common	22-Jul-21	
Lepidoptera	Geometridae	*Ennomos alniaria*	Canary-shouldered Thorn	Common	22-Jul-21	
Lepidoptera	Geometridae	*Epirrhoe alternata*	Common Carpet	Common	22-Jul-21	
Lepidoptera	Geometridae	*Epirrhoe rivata*	Wood Carpet	Local	22-Jul-21	
Lepidoptera	Noctuidae	*Eremobia ochroleuca*	Dusky Sallow	Common	22-Jul-21	
Lepidoptera	Tortricidae	*Eucosma campoliliana*	a moth	Common	22-Jul-21	
Lepidoptera	Tortricidae	*Eucosma cana*	a moth	Common	22-Jul-21	
Lepidoptera	Tortricidae	*Eucosma hohenwartiana*	a moth	Common	22-Jul-21	
Lepidoptera	Crambidae	*Eudonia lacustrata*	a moth	Common	22-Jul-21	
Lepidoptera	Crambidae	*Eudonia mercurella*	a moth	Common	22-Jul-21	
Lepidoptera	Geometridae	*Eulithis prunata*	Phoenix	Common	22-Jul-21	
Lepidoptera	Geometridae	*Eupithecia haworthiata*	Haworth's Pug	Local	22-Jul-21	
Lepidoptera	Tortricidae	*Eupoecilia angustana*	a moth	Common	22-Jul-21	

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
Lepidoptera	Pyralidae	*Galleria mellonella*	Wax Moth	Common	22-Jul-21	
Lepidoptera	Pterophoridae	*Gillmeria pallidactyla*	Yarrow Plume	Common	22-Jul-21	
Lepidoptera	Pieridae	*Gonepteryx rhamni*	Brimstone		23-Jul-21	
Lepidoptera	Tortricidae	*Grapholita tenebrosana*	a moth	Local	22-Jul-21	
Lepidoptera	Geometridae	*Gymnoscelis rufifasciata*	Double-striped Pug	Common	22-Jul-21	
Lepidoptera	Geometridae	*Hemithea aestivaria*	Common Emerald	Common	22-Jul-21	
Lepidoptera	Erebidae	*Herminia tarsipennalis*	Fan-foot	Common	22-Jul-21	
Lepidoptera	Noctuidae	*Hoplodrina blanda*	Rustic	S41 NERC Act, Common	22-Jul-21	
Lepidoptera	Noctuidae	*Hoplodrina octogenaria*	Uncertain	Common	22-Jul-21	
Lepidoptera	Erebidae	*Hypena proboscidalis*	Snout	Common	22-Jul-21	
Lepidoptera	Pyralidae	*Hypsopygia costalis*	Gold Triangle	Common	22-Jul-21	
Auchenorrhyncha	Cicadellidae	*Iassus lanio*	a leafhopper	Common	22-Jul-21	
Lepidoptera	Geometridae	*Idaea aversata*	Riband Wave	Common	22-Jul-21	
Lepidoptera	Geometridae	*Idaea biselata*	Small Fan-footed Wave	Common	22-Jul-21	
Lepidoptera	Geometridae	*Idaea dimidiata*	Single-dotted Wave	Common	22-Jul-21	
Lepidoptera	Geometridae	*Idaea fuscovenosa*	Dwarf Cream Wave	Local	22-Jul-21	
Lepidoptera	Geometridae	*Idaea rusticata*	Least Carpet	Local	22-Jul-21	
Odonata	Coenagriidae	*Ischnura elegans*	Blue-tailed Damselfly		23-Jul-21	
Lepidoptera	Noctuidae	*Lacanobia oleracea*	Bright-line Brown-eye	Common	22-Jul-21	
Coleoptera	Tenebrionidae	*Lagria hirta*			22-Jul-21	
Lepidoptera	Sphingidae	*Laothoe populi*	Poplar Hawk-moth	Common	22-Jul-21	
Hymenoptera	Formicidae	*Lasius flavus*	an ant		23-Jul-21	
Lepidoptera	Erebidae	*Laspeyria flexula*	Beautiful Hook-tip	Local	22-Jul-21	
Lepidoptera	Erebidae	*Leucoma salicis*	White Satin	Local	22-Jul-21	

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
Lepidoptera	Geometridae	*Ligdia adustata*	Scorched Carpet	Local	22-Jul-21	
Lepidoptera	Geometridae	*Lomaspilis marginata*	Clouded Border	Common	22-Jul-21	
Lepidoptera	Geometridae	*Lomographa temerata*	Clouded Silver	Common	22-Jul-21	
Lepidoptera	Lycaenidae	*Lycaena phlaeas*	Small Copper		23-Jul-21	
Heteroptera	Miridae	*Lygus pratensis*		Red Data Book3 [now widespread in south]	22-Jul-21	A polyphagous plant bug associated with weedy places.
Lepidoptera	Lyonetiidae	*Lyonetia clerkella*	Apple Leaf Miner	Common	22-Jul-21	
Lepidoptera	Nymphalidae	*Maniola jurtina*	Meadow Brown		23-Jul-21	
Lepidoptera	Nymphalidae	*Melanargia galathea*	Marbled White		23-Jul-21	
Lepidoptera	Noctuidae	*Mesapamea secalis agg.*	Common Rustic agg.		22-Jul-21	
Lepidoptera	Noctuidae	*Mesoligia furuncula*	Cloaked Minor	Common	22-Jul-21	
Orthoptera	Tettigoniidae	*Metrioptera roeselii*	Roesel's Bush Cricket	Nb [now widespread]	23-Jul-21	A cricket associated with grassland (meadow) habitat.
Lepidoptera	Gelechiidae	*Metzneria lappella*	a moth	Local	22-Jul-21	
Lepidoptera	Gelechiidae	*Monochroa cytisella*	a moth	Local	22-Jul-21	
Lepidoptera	Tineidae	*Monopis laevigella*	Skin Moth	Common	22-Jul-21	
Trichoptera	Leptoceridae	*Mystacides longicornis*	a caddisfly		22-Jul-21	
Lepidoptera	Noctuidae	*Mythimna conigera*	Brown-line Bright-eye	Common	22-Jul-21	
Lepidoptera	Noctuidae	*Mythimna ferrago*	Clay	Common	22-Jul-21	
Lepidoptera	Noctuidae	*Mythimna impura*	Smoky Wainscot	Common	22-Jul-21	
Lepidoptera	Noctuidae	*Mythimna straminea*	Southern Wainscot	Local	22-Jul-21	
Lepidoptera	Noctuidae	*Noctua comes*	Lesser Yellow Underwing	Common	22-Jul-21	
Lepidoptera	Noctuidae	*Noctua janthe*	Lesser Broad-bordered Yellow Underwing	Common	22-Jul-21	
Lepidoptera	Noctuidae	*Noctua pronuba*	Large Yellow Underwing	Common	22-Jul-21	

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
Lepidoptera	Nolidae	*Nola cucullatella*	Short-cloaked Moth	Common	22-Jul-21	
Lepidoptera	Notodontidae	*Notodonta dromedarius*	Iron Prominent	Common	22-Jul-21	
Lepidoptera	Noctuidae	*Oligia strigilis agg.*	Marbled Minor agg.		22-Jul-21	
Odonata	Libellulidae	*Orthetrum cancellatum*	Black-tailed Skimmer		23-Jul-21	
Lepidoptera	Crambidae	*Ostrinia nubilalis*	European Corn-borer	Local	22-Jul-21	
Lepidoptera	Geometridae	*Ourapteryx sambucaria*	Swallow-tailed Moth	Common	22-Jul-21	
Lepidoptera	Pterophoridae	*Oxyptilus cf. distans*	cf. Breckland Plume	Nationally Scarce B	22-Jul-21	A plume moth associated with hawbeards, hawkweeds and sow-thistles.
Diptera	Stratiomyidae	*Pachygaster leachii*			22-Jul-21	
Lepidoptera	Tortricidae	*Pandemis cerasana*	Barred Fruit-tree Tortrix	Common	22-Jul-21	
Lepidoptera	Tortricidae	*Pandemis heparana*	Dark Fruit-tree Tortrix	Common	22-Jul-21	
Lepidoptera	Crambidae	*Parapoynx stratiotata*	Ringed China-mark	Common	22-Jul-21	
Lepidoptera	Yponomeutidae	*Paraswammerdamia nebulella*	a moth	Common	22-Jul-21	
Lepidoptera	Gracillariidae	*Parornix sp.*	Parornix species agg.		22-Jul-21	
Lepidoptera	Crambidae	*Patania ruralis*	Mother of Pearl	Common	22-Jul-21	
Lepidoptera	Crambidae	*Pediasia contaminella*	a moth	Nationally Scarce B	22-Jul-21	A micro-moth of dry grassy habitats.
Heteroptera	Pentatomidae	*Pentatoma rufipes*	Red-legged Shieldbug	Common	22-Jul-21	
Lepidoptera	Geometridae	*Peribatodes rhomboidaria*	Willow Beauty	Common	22-Jul-21	
Lepidoptera	Tortricidae	*Phiaris micana*	a moth	Nationally Scarce B	22-Jul-21	A widespread but locally distributed moth associated with bryophytes and herbaceous vegetation.
Lepidoptera	Noctuidae	*Photedes minima*	Small Dotted Buff	Common	22-Jul-21	
Lepidoptera	Erebidae	*Phragmatobia fuliginosa*	Ruby Tiger	Common	22-Jul-21	
Lepidoptera	Pyralidae	*Phycita roborella*	a moth	Common	22-Jul-21	
Lepidoptera	Pieridae	*Pieris rapae*	Small White		23-Jul-21	

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
Lepidoptera	Plutellidae	*Plutella xylostella*	Diamond-back Moth	Migrant	22-Jul-21	
Lepidoptera	Nymphalidae	*Polygonia c-album*	Comma	None	23-Jul-21	
Lepidoptera	Lycaenidae	*Polyommatus icarus*	Common Blue	None	23-Jul-21	
Lepidoptera	Notodontidae	*Pterostoma palpina*	Pale Prominent	Common	22-Jul-21	
Lepidoptera	Nymphalidae	*Pyronia tithonus*	Gatekeeper		23-Jul-21	
Lepidoptera	Gelechiidae	*Recurvaria nanella*	a moth	Nationally Scarce B	22-Jul-21	A leaf-mining moth associated with fruit trees including apple, pear and cherry.
Lepidoptera	Tortricidae	*Rhopobota naevana*	Holly Tortrix	Common	22-Jul-21	
Lepidoptera	Crambidae	*Scoparia ambigualis*	a moth	Common	22-Jul-21	
Lepidoptera	Crambidae	*Scoparia basistrigalis*	a moth	Local	22-Jul-21	
Lepidoptera	Geometridae	*Scopula imitaria*	Small Blood-vein	Common	22-Jul-21	
Lepidoptera	Noctuidae	*Sideridis rivularis*	Campion	Common	22-Jul-21	
Lepidoptera	Sphingidae	*Sphinx pinastri*	Pine Hawk-moth	Local	22-Jul-21	
Lepidoptera	Tortricidae	*Spilonota ocellana*	Bud Moth	Common	22-Jul-21	
Odonata	Libellulidae	*Sympetrum striolatum*	Common Darter		23-Jul-21	
Lepidoptera	Gelechiidae	*Teleiodes vulgella*	a moth	Common	22-Jul-21	
Lepidoptera	Hesperiidae	*Thymelicus sylvestris*	Small Skipper		23-Jul-21	
Lepidoptera	Erebidae	*Tyria jacobaeae*	Cinnabar	S41 NERC Act, Common	23-Jul-21	
Lepidoptera	Nymphalidae	*Vanessa atalanta*	Red Admiral	Migrant	23-Jul-21	
Hymenoptera	Vespidae	*Vespa crabro*	The Hornet		22-Jul-21	
Lepidoptera	Noctuidae	*Xestia triangulum*	Double Square-spot	Common	22-Jul-21	
Lepidoptera	Yponomeutidae	*Yponomeuta cagnagella*	Spindle Ermine	Common	22-Jul-21	
Lepidoptera	Yponomeutidae	*Yponomeuta evonymella*	Bird-cherry Ermine	Common	22-Jul-21	
Lepidoptera	Yponomeutidae	*Yponomeuta*	Yponomeuta		22-Jul-21	

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
		malinellus/cagnagella	malinellus/cagnagella sp.			
Lepidoptera	Yponomeutidae	*Yponomeuta rorrella*	Willow Ermine	Local	22-Jul-21	
Lepidoptera	Zygaenidae	*Zygaena filipendulae*	Six-spot Burnet	Common	23-Jul-21	
Coleoptera	Curculionidae	Gymnetron veronicae		Nationally Scarce B	27Jun-24	A gall weevil associated with brooklime as well as pink water-speedwell.
Diptera	Syrphidae	Eristalis intricaria	a hoverfly		27Jun-24	
Hymenoptera	Apidae	*Apis mellifera*	Western Honey Bee		27Jun-24	
Hymenoptera	Apidae	*Bombus hortorum*	Small Garden Bumblebee		27Jun-24	
Hymenoptera	Apidae	*Bombus terrestris*	Buff-tailed Bumblebee		26Jun-24	
Lepidoptera	Crambidae	Agriphila straminella	a moth	Common	26Jun-24	
Lepidoptera	Crambidae	Chrysoteuchia culmella	Garden Grass-veneer	Common	27Jun-24	
Lepidoptera	Erebidae	Tyria jacobaeae	Cinnabar	Common	26Jun-24	
Lepidoptera	Geometridae	Camptogramma bilineata	Yellow Shell	Common	27Jun-24	
Lepidoptera	Hesperiidae	Ochlodes sylvanus	Large Skipper		26Jun-24	
Lepidoptera	Hesperiidae	Thymelicus sylvestris	Small Skipper		26Jun-24	
Lepidoptera	Noctuidae	Cucullia verbasci	Mullein	Common	27Jun-24	
Lepidoptera	Nymphalidae	Aphantopus hyperantus	Ringlet		26Jun-24	
Lepidoptera	Nymphalidae	Coenonympha pamphilus	Small Heath		2-Jun-24	
Lepidoptera	Nymphalidae	Maniola jurtina	Meadow Brown		26Jun-24	
Lepidoptera	Nymphalidae	Melanargia galathea	Marbled White		26Jun-24	
Lepidoptera	Nymphalidae	Polygonia c-album	Comma		27Jun-24	
Lepidoptera	Pieridae	Pieris rapae	Small White		27Jun-24	
Odonata	Aeshnidae	Aeshna cyanea	Southern Hawker		27Jun-24	

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
Odonata	Aeshnidae	Anax imperator	Emperor Dragonfly		26Jun-24	
Odonata	Calopterygidae	Calopteryx splendens	Banded Demoiselle		27Jun-24	
Odonata	Coenagriidae	Ischnura elegans	Blue-tailed Damselfly		27Jun-24	
Odonata	Libellulidae	Orthetrum cancellatum	Black-tailed Skimmer		27Jun-24	
Orthoptera	Acrididae	Chorthippus brunneus	Common Field Grasshopper		26Jun-24	

Appendix 4b: Review of habitat associations of notable CPERC invertebrate records

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
Coleoptera	Cerambycidae	Anaglyptus mysticus	Musk Beetle	Nb	2014	Deciduous woodlands; larvae develop in dead wood.
Coleoptera	Cerambycidae	Aromia moschata	Musk Beetle	Nb	1996	Wetlands and riparian zones; larvae develop in willow trees.
Coleoptera	Elateridae	Athous campyloides	Click Beetle	Nb	2014	Grasslands and open woodlands; larvae inhabit soil.
Coleoptera	Anthribidae	Choragus sheppardi	Fungus Weevil	Na	1996	Woodlands; associated with bracket fungi on dead wood.
Coleoptera	Curculionidae	Cossonus linearis	Weevil	Na	2014	Deciduous forests; found under bark of dead trees.
Coleoptera	Curculionidae	Cossonus parallelepipedus	Weevil	Nb	1990	Deciduous forests; inhabits decaying wood.
Coleoptera	Curculionidae	Dorytomus ictor	Weevil	Nb	2014	Wetlands; associated with willow trees.
Coleoptera	Latridiidae	Enicmus brevicornis	Minute Brown Scavenger Beetle	N	1996	Woodlands; found under bark and in decaying organic matter.
Coleoptera	Cerambycidae	Glaphyra umbellatarum	Longhorn Beetle	Na	2019	Woodlands and hedgerows; larvae develop in dead wood of various trees.
Coleoptera	Curculionidae	Kissophagus vicinus	Bark Beetle	Nb	2014	Coniferous forests; under bark of dead conifer trees.
Coleoptera	Staphylinidae	Medon apicalis	Rove Beetle	N	2014	Various habitats; often found in leaf litter and under stones.
Coleoptera	Silphidae	Nicrophorus interruptus	Interrupted Burying Beetle	Nb	2019	Grasslands and woodlands; associated with carrion.

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
Coleoptera	Curculionidae	Notaris scirpi	Weevil	Nb	2014	Wetlands; associated with sedges and other aquatic plants.
Coleoptera	Corylophidae	Orthoperus nigrescens	Minute Hooded Beetle	Nb	1996	Woodlands; found under bark and in decaying plant material.
Coleoptera	Staphylinidae	Philonthus fumarius	Rove Beetle	Nb	2014	Various habitats; commonly found in decaying organic matter.
Coleoptera	Cerambycidae	Phytoecia cylindrica	Longhorn Beetle	Nb	2020	Grasslands and woodland edges; larvae develop in stems of herbaceous plants.
Coleoptera	Staphylinidae	Platystethus nodifrons	Rove Beetle	N	2014	Wetlands; often found in muddy substrates near water bodies.
Coleoptera	Curculionidae	Polydrusus formosus	Green Immigrant Leaf Weevil	Na	2014	Deciduous woodlands and gardens; feeds on leaves of various trees and shrubs.
Coleoptera	Staphylinidae	Scaphisoma boleti	Fungus Beetle	Nb	1990	Woodlands; associated with bracket fungi on dead wood.
Coleoptera	Coccinellidae	Scymnus limbatus	Ladybird Beetle	Nb	1990	Various habitats; predatory on aphids and other small insects.
Coleoptera	Staphylinidae	Sepedophilus testaceus	Rove Beetle	N	2014	Woodlands; found in decaying organic matter and under bark.
Coleoptera	Sphindidae	Sphindus dubius	Fungus Beetle	Nb	2014	Woodlands; associated with slime molds and decaying wood.
Coleoptera	Staphylinidae	Stenus pusillus	Rove Beetle	Nb	2014	Wetlands and moist habitats; often near water bodies.
Coleoptera	Ciidae	Strigocis bicornis	Minute Tree-fungus Beetle	Nb	1995	Woodlands; associated with fungi on dead wood.
Coleoptera	Staphylinidae	Sunius melanocephalus	Rove Beetle	N	2014	Various habitats; commonly found in leaf litter and under stones.

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
Hymenoptera	Apidae	Bombus rupestris	Hill Cuckoo Bumblebee	Nb	2011	Grasslands and heathlands; parasitic on nests of other bumblebee species.
Hymenoptera	Vespidae	Dolichovespula media	Median Wasp	Na	1999	Woodlands and gardens; nests in trees and shrubs.
Lepidoptera	Crambidae	Calamotropha paludella	Bulrush Veneer	Nb	1998	Wetlands and marshes; larvae feed on reeds and grasses.
Lepidoptera	Pyralidae	Nephopterix angustella	Spindle Knot-horn	Nb	2005	Coniferous forests; larvae feed on pine shoots.
Lepidoptera	Crambidae	Sitochroa palealis	Sulphur Pearl	N	2004	Grasslands and meadows; larvae feed on herbaceous plants.
Orthoptera	Acrididae	Myrmeleotettix maculatus	Mottled Grasshopper	CPASI	1977	Heathlands and dry grasslands; prefers sandy soils.
Hemiptera	Miridae	Agnocoris reclairei	Plant Bug	Nb	2014	Woodlands and hedgerows; associated with various deciduous trees.
Hemiptera	Delphacidae	Asiraca clavicornis	Planthopper	Nb	2014	Wetlands and damp meadows; feeds on grasses and sedges.
Hemiptera	Delphacidae	Chloriona vasconica	Planthopper	Nb	2014	Wetlands; associated with reed beds and other aquatic vegetation.
Hemiptera	Rhyparochromidae	Raglius alboacuminatus	Ground Bug	Nb	2019	Dry grasslands and sandy areas; found on herbaceous plants.
Diptera	Limoniidae	Atypophthalmus inustus	Limonid Crane Fly	N	2014	Woodlands and wetlands; larvae develop in moist soil and decaying vegetation.
Diptera	Sciomyzidae	Colobaea bifasciella	Marsh Fly	N	2014	Wetlands; larvae develop in aquatic or semi-aquatic environments.
Diptera	Limoniidae	Gnophomyia viridipennis	Limonid Crane Fly	N	2014	Woodlands; larvae develop in decaying wood and leaf litter.

Order	Family	Species – Latin name	Common name	Conservation status	Date	Notes
Diptera	Empididae	Hilara lugubris	Dance Fly	NS	2014	Various habitats; adults often found near water bodies.
Diptera	Tachinidae	Mintho rufiventris	Tachinid Fly	N	2019	Woodlands and grasslands; larvae are parasitoids of moth caterpillars.
Diptera	Sciomyzidae	Pherbellia annulipes	Marsh Fly	N	2014	Wetlands; larvae associated with aquatic snails.

Appendix 5: Photos

Photo A5.1: Barcroft Centre, 307 Huntingdon Road, and associated fields used for grazing (Zone 2)

Photo A5.2: Washpit Brook, concrete track with hedgerow H6 adjacent to it, disused barns at Barcroft Centre (Zone 2)

Photo A5.3: Field between Washpit Brook and M11 in the northern part of the survey area (Zone 3a)

Photo A5.4: Washpit Brook, two stage channel (Zone 3b) and field between brook and M11 (Zone 3a) to the right hand side, field containing spoil heaps (Zone 4) to the left hand side

Photo A5.5: Buildings (subsequently demolished) and former farmyard at Howe Farm (Zone 4)

Photo A5.6: Spoil heaps (Zone 4)

Photo A5.7: Spoil heaps and northern boundary of survey area (Zone 4)

Photo A5.8: Pheasant Plantation, grassland adjacent to M11 (Zone 3b), lagoon at Brook Leys (Zone 3c), temporary haul road and construction areas (Zones 5c and 5d), plots under construction and Eddington Phase 1 (Zone 5e)

Photo A5.9: Pheasant Plantation, lagoon at Brook Leys (Zone 3c), temporary haul road and car park construction areas (Zone 5d)

Photo A5.10: Sports pitches (Zone 5a), wildflower meadow (Zone 5b), Traveller's Rest Pit (Zone 6a) with temporary haul road, Horse Chestnut Avenue and former farmland in eastern part of survey area (Zone 6c), with Storey's Way Wood partly shown on right hand side of photo

Photo A5.11: Cricket pitch and wildflower meadow (Zone 5b), Traveller's Rest Pit (Zone 6a) with temporary haul road, Gravel Hill Farm and partly topsoil stripped field (Zone 6c), Cricket Pitch Wood (Zone 6b)

Eddington Avenue, Eddington Phase 1 (Zone 5e), Ridge and Furrow fields with Cricket Pitch Wood at top of photo (Zone 6b)

Appendix: Ecology and Biodiversity

Terrestrial invertebrate survey at Eddington, Cambridge

June 2025

Dr George Tordoff

Tordoff Ecology

July 2025

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Table of Contents

Tordoff Ecology

1. Introduction

1.1 This report has been prepared by George Tordoff on behalf of MD Ecology. It provides the results of a terrestrial invertebrate survey of an area of land at Eddington, Cambridge. The survey was undertaken in June 2025. The survey site is located between Huntingdon Road and Madingley Road and is a former university farm. The site forms part of the wider Eddington development at Cambridge University; some parts of the wider site have already been constructed. The area included within the present survey is shown in Figure 1.

Figure 1: Site survey boundary

Site boundary outlined in yellow. Produced in QGIS using Google Earth imagery

1.2 The purpose of the survey was to inform the baseline in relation invertebrates for the Environmental Impact Assessment (EIA) for the development scheme. This report does not include any assessment of likely impacts or required mitigation measures for loss of invertebrate habitats.

1.3 The survey site comprises former agricultural land which is now tall grassland that is cut at least once annually; these grassland areas are generally ruderal in character with extensive nettle beds. Some grassland areas have been turf stripped and now support sparse, weedy vegetation. Also included within the survey site are former farm buildings (now in use as offices), a small block of deciduous woodland (Storey's Way Wood), a tree-lined green lane and an avenue of Horse Chestnut trees.

1.4 The site has been the subject of previous invertebrate surveys in 2011, 2018, 2021 and 2024. White-letter Hairstreak *Satyrium w-album* and Purple Hairstreak *Favonius quercus* butterflies are known from the site, along with several nationally scarce and

Red Data Book species of beetle, bug, ant and moth (see Dean, 2024). Many of these scarce species are associated with dead wood habitats.

2. Methods

2.1 Terrestrial invertebrate surveys were carried out on 16th, 17th and 18th June 2025 by Dr George Tordoff, who also wrote this report. George Tordoff has been a professional ecologist since 2007, specialising in invertebrates and in particular butterflies and moths (Lepidoptera). He co-authors the annual micro-moth review of the British Isles and is a member of the national verification panel for micro-moth records.

2.2 Invertebrate surveys utilised a combination of survey methods, comprising visual searches, netting of insects in flight, sweep netting of vegetation, light trapping, and use of a beating tray (for sampling trees and bushes) and pheromone lures (for clearwing moths). Light trapping utilised battery-powered actinic and LED traps on both 16th and 17th June, and also a more powerful MV bulb on 16th June. Light trapping was largely targeted at moths, but other invertebrates attracted to the lights were also recorded.

2.3 Weather conditions throughout the survey period were favourable, being dry and warm and with variable amounts of high-level cloud. The nights were also warm and ideal for moth trapping. Insect activity remained high throughout the surveys.

2.4 Invertebrate species were identified in the field where possible, and were otherwise collected for microscopic determination using relevant keys. This sometimes involved dissection to determine critical species.

2.5 The rarity of invertebrate species was assessed by reference to published sources including relevant national Red Data Books (RDBs), National Reviews and distribution atlases.

3. Results

General

3.1 The site supports a range of habitats of value to invertebrates, in particular the woodland block (Storey's Way Wood), the shaded, tree-lined green lane in the south-west of the site, the Horse Chestnut avenue, and several areas of ruderal vegetation where ground disturbance has taken place (see Figure 2). All of these areas were found to support notable invertebrate species.

3.2 In contrast, the fields themselves generally support rank, tall grassland with extensive Nettle *Urtica dioica* beds. While these habitats were found to support an abundance of common insect species, for example mirid bugs and nettle-feeding butterflies, they are of relatively low conservation value and did not produce any notable species records during the survey.

Tordoff Ecology

Figure 2: Features of invertebrate interest

Produced in QGIS using Google Earth imagery

Notable Species

3.3 In total 245 invertebrate species were recorded during the survey (see Appendix 1). These comprised mainly widespread and common species of grassland, woodland and scrub habitats. Nevertheless, several notable species were recorded; these are discussed below. A selection of site and species photos is included in Appendix 2.

3.4 The timberworm beetle *Lymexylon navale* was found in numbers around the pile of oak *Quercus* trunks (see Figure 2). This Nationally Scarce species is associated with decaying oak and Sweet Chestnut *Castanea sativa* trunks and branches and is very likely breeding within the log pile.

3.5 The tenebrionid beetle *Pseudocistela ceramboides* was recorded at a light trap in the western field. This Nationally Scarce species is associated with wood mould in tree cavities and is likely to be breeding within the site's woodland and hedgerows.

3.6 The Tree Snipefly *Chrysopilus laetus* was recorded on foliage along the wooded lane in the south-west of the site. This is another Nationally Scarce saproxylic (deadwood) species and is particularly associated with water-filled rot holes. It is considered likely to be breeding close to the area where the record was made.

3.7 The hoverfly *Mallota cimbiciformis* was found visiting a sap run on a mature Horse Chestnut *Aesculus hippocastanum* tree within the chestnut avenue. This Nationally Scarce fly breeds in moist wood mould in tree hollows.

3.8 The Nationally Scarce leaf beetle *Podagrica fuscipes* was swept from its host plant Common Mallow *Malva sylvestris* at the southern end of the Horse Chestnut avenue. Three weevil species that are restricted to mallows were also swept from the same stand of the plant.

3.9 The butterflies White-letter Hairstreak *Satyrium w-album* and Small Heath *Coenonympha pamphilus* were recorded in the western part of the site. White-letter Hairstreak was recorded flying over a line of Wych Elm *Ulmus glabra* on two occasions. Small Heath was present in a nearby grassland area. Both species are relatively widespread in south-eastern England but are in steep decline and are classed as Vulnerable in the latest IUCN Red List assessment, as well as being listed as Priority Species on Section 41 of the NERC act.

3.10 In total 138 moth species were recorded across nocturnal and daytime surveys. No especially scarce species were recorded, though species that are regarded as localised include the micro-moths *Eidophasia messingiella*, *Coleophora binderella*, *Sitochroa verticalis* and *Scoparia basistrigalis*. Two species classed as Nationally Scarce, *Nemapogon koenigi* and *Ectoedemia heringella*, are now known to be widespread in southern England. Four species of clearwing moth were recorded, comprising Orange-tailed Clearwing *Synanthedon andrenaeformis*, Red-belted Clearwing *Synanthedon myopaeformis*, Lunar Hornet Moth *Sesia bembeciformis* and Hornet Moth *Sesia apiformis*. Numerous emergence holes of the latter species were noted in poplar *Populus* trunks in Storey's Way Wood.

4. Assessment of invertebrate value

4.1 Most of the notable species of invertebrate recorded during the current survey are saproxylic species associated with various dead and decaying wood habitats, such as rot holes, leaf mould and decaying heartwood. The most important areas of the site for these species are the Horse Chestnut avenue, the woodland at Storey's Way, the wooded lane and the oak trunk pile. Horse Chestnuts acquire 'veteran' features, such as decaying heartwood and sap runs, at a relatively young age, and are thus of particular value to invertebrates that utilise such features.

4.2 The majority of notable invertebrate species recorded on previous surveys across the wider Eddington site are also associated with wood decay, highlighting the value of this habitat for the site's invertebrate fauna.

4.3 A smaller number of notable species recorded in this and previous invertebrate surveys are associated with ruderal (weedy) vegetation, such as stands of Black Horehound *Ballota nigra* and Common Mallow *Malva sylvestris*. These habitats are likely to be widespread in the wider site area and elsewhere in and around Cambridge, and species using such habitats tend to be mobile and will readily colonise new patches of habitats, in contrast to deadwood invertebrates. As such, these habitats are considered of lower importance than the deadwood habitats described above.

4.4. The grassland areas are rank and tall with generally low plant diversity, and are considered of relatively low value for invertebrates.

Tordoff Ecology

5. References

Dean M.J. (2024). Eddington, Cambridge. Habitat, Plant and Invertebrate Survey. Report ref: NWC-MP2024-MDE-SW-SU-00007-HPIS, December 2024. MD Ecology ref: C205/R7/v1.

Appendix 1. Invertebrate species recorded in June 2025

Order	Family	Scientific name	Common name	Conservation status
Coleoptera	Apionidae	*Aspidapion radiolus*	a weevil	
Coleoptera	Apionidae	*Malvapion malvae*	a weevil	
Coleoptera	Apionidae	*Pseudapion rufirostre*	a weevil	
Coleoptera	Cantharidae	*Cantharis cryptica*	a soldier beetle	
Coleoptera	Cantharidae	*Rhagonycha fulva*	a soldier beetle	
Coleoptera	Carabidae	*Amara ovata*	a ground beetle	
Coleoptera	Carabidae	*Harpalus rufipes*	a ground beetle	
Coleoptera	Cerambycidae	*Agapanthia villosoviridescens*	a longhorn beetle	
Coleoptera	Cerambycidae	*Pseudovadonia livida*	a longhorn beetle	
Coleoptera	Chrysomelidae	*Chrysolina banksii*	a leaf beetle	
Coleoptera	Chrysomelidae	*Podagrica fuscipes*	a leaf beetle	Nationally Scarce
Coleoptera	Coccinellidae	*Coccinella septempunctata*	7-spot Ladybird	
Coleoptera	Coccinellidae	*Harmonia axyridis*	Harlequin Ladybird	
Coleoptera	Coccinellidae	*Propylea quattuordecimpunctata*	14-spot Ladybird	
Coleoptera	Coccinellidae	*Psyllobora vigintiduopunctata*	22-spot Ladybird	
Coleoptera	Coccinellidae	*Subcoccinella vigintiquattuorpunctata*	24-spot Ladybird	
Coleoptera	Coccinellidae	*Tytthaspis sedecimpunctata*	16-spot Ladybird	
Coleoptera	Curculionidae	*Nedyus quadrimaculatus*	Small Nettle Weevil	
Coleoptera	Curculionidae	*Phyllobius virideaeris*	Green Nettle Weevil	
Coleoptera	Elateridae	*Melanotus castanipes/villosus agg.*	a click beetle	
Coleoptera	Lucanidae	*Dorcus parallelipipedus*	Lesser Stag Beetle	
Coleoptera	Lymexylidae	*Lymexylon navale*	a timberworm beetle	Nationally Scarce
Coleoptera	Malachiidae	*Cordylepherus viridis*	a soft-winged flower beetle	
Coleoptera	Melolonthidae	*Amphimallon solstitiale*	Summer Chafer	
Coleoptera	Oedemeridae	*Oedemera lurida*	a false blister beetle	
Coleoptera	Oedemeridae	*Oedemera nobilis*	Swollen-thighed Beetle	

Order	Family	Scientific name	Common name	Conservation status
Coleoptera	Ptinidae	*Anobium inexspectatum*	a wood-borer beetle	Nationally Notable
Coleoptera	Ptinidae	*Ochina ptinoides*	Ivy Boring Beetle	
Coleoptera	Staphylinidae	*Ocypus olens*	Devil's Coach-horse	
Coleoptera	Tenebrionidae	*Pseudocistela ceramboides*	a darkling beetle	Nationally Scarce
Diptera	Asilidae	*Leptogaster cylindrica*	Striped Slender Robberfly	
Diptera	Rhagionidae	*Chrysopilus laetus*	Tree Snipefly	Nationally Scarce; IUCN Near Threatened
Diptera	Stratiomyidae	*Pachygaster atra*	a soldierfly	
Diptera	Syrphidae	*Episyrphus balteatus*	a hoverfly	
Diptera	Syrphidae	*Eristalis tenax*	a hoverfly	
Diptera	Syrphidae	*Mallota cimbiciformis*	a hoverfly	Nationally Scarce
Diptera	Syrphidae	*Myathropa florea*	a hoverfly	
Diptera	Syrphidae	*Platycheirus albimanus*	a hoverfly	
Diptera	Syrphidae	*Sphaerophoria scripta*	a hoverfly	
Diptera	Tephritidae	*Urophora cardui*	a picture-winged fly	
Diptera	Tephritidae	*Urophora stylata*	a picture-winged fly	
Diptera	Tipulidae	*Nephrotoma flavescens*	a tiger cranefly	
Diptera	Tipulidae	*Nephrotoma quadrifaria*	a tiger cranefly	
Hemiptera	Aphididae	*Tetraneura ulmi*	Elm Fig Gall aphid	
Hemiptera	Cicadellidae	*Allygus mixtus*	a leafhopper	
Hemiptera	Coreidae	*Coreus marginatus*	Dock Bug	
Hemiptera	Lygaeidae	*Heterogaster urticae*	Nettle Groundbug	
Hemiptera	Lygaeidae	*Scolopostethus thomsoni*	a groundbug	
Hemiptera	Miridae	*Adelphocoris lineolatus*	a mirid bug	
Hemiptera	Miridae	*Amblytylus nasutus*	a mirid bug	
Hemiptera	Miridae	*Capsus ater*	a mirid bug	
Hemiptera	Miridae	*Closterotomus norwegicus*	a mirid bug	
Hemiptera	Miridae	*Closterotomus trivialis*	a mirid bug	
Hemiptera	Miridae	*Deraeocoris flavilinea*	a mirid bug	

Order	Family	Scientific name	Common name	Conservation status
Hemiptera	Miridae	*Deraeocoris ruber*	a mirid bug	
Hemiptera	Miridae	*Grypocoris stysi*	a mirid bug	
Hemiptera	Miridae	*Leptopterna dolabrata*	a mirid bug	
Hemiptera	Miridae	*Liocoris tripustulatus*	a mirid bug	
Hemiptera	Miridae	*Notostira elongata*	a mirid bug	
Hemiptera	Miridae	*Plagiognathus arbustorum*	a mirid bug	
Hemiptera	Nabidae	*Himacerus mirmicoides*	a mirid bug	
Hemiptera	Pentatomidae	*Dolycoris baccarum*	Hairy Shieldbug	
Hemiptera	Pentatomidae	*Pentatoma rufipes*	Red-legged Shieldbug	
Hemiptera	Scutelleridae	*Eurygaster testudinaria*	Tortoise Shieldbug	
Hymenoptera	Apidae	*Apis mellifera*	Honey Bee	
Hymenoptera	Apidae	*Bombus pascuorum*	Common Carder Bee	
Hymenoptera	Melittidae	*Melitta leporina*	a mining bee	
Hymenoptera	Tenthredinidae	*Euura proxima*	a sawfly	
Hymenoptera	Tenthredinidae	*Fenusa pumila*	a sawfly	
Hymenoptera	Vespidae	*Vespula vulgaris*	Common Wasp	
Lepidoptera	Blastobasidae	*Blastobasis lacticolella*	a micro-moth	
Lepidoptera	Chimabachidae	*Diurnea fagella*	a micro-moth	
Lepidoptera	Choreutidae	*Anthophila fabriciana*	a micro-moth	
Lepidoptera	Coleophoridae	*Coleophora binderella*	a micro-moth	Local
Lepidoptera	Crambidae	*Acentria ephemerella*	Water Veneer	
Lepidoptera	Crambidae	*Anania hortulata*	Small Magpie	
Lepidoptera	Crambidae	*Chrysoteuchia culmella*	Garden Grass-veneer	
Lepidoptera	Crambidae	*Crambus lathoniellus*	a micro-moth	
Lepidoptera	Crambidae	*Eudonia lacustrata*	a micro-moth	
Lepidoptera	Crambidae	*Eudonia pallida*	a micro-moth	Local
Lepidoptera	Crambidae	*Pyrausta purpuralis*	a micro-moth	
Lepidoptera	Crambidae	*Scoparia basistrigalis*	a micro-moth	Local
Lepidoptera	Crambidae	*Sitochroa verticalis*	a micro-moth	Local

Order	Family	Scientific name	Common name	Conservation status
Lepidoptera	Crambidae	*Udea olivalis*	a micro-moth	
Lepidoptera	Depressariidae	*Agonopterix arenella*	a micro-moth	
Lepidoptera	Drepanidae	*Cilix glaucata*	Chinese Character	
Lepidoptera	Erebidae	*Callimorpha dominula*	Scarlet Tiger	
Lepidoptera	Erebidae	*Eilema lurideola*	Common Footman	
Lepidoptera	Erebidae	*Herminia tarsipennalis*	Fan-foot	
Lepidoptera	Erebidae	*Hypena proboscidalis*	Snout	
Lepidoptera	Erebidae	*Lymantria dispar*	Gypsy Moth	
Lepidoptera	Erebidae	*Orgyia antiqua*	Vapourer	
Lepidoptera	Erebidae	*Phragmatobia fuliginosa*	Ruby Tiger	
Lepidoptera	Erebidae	*Rivula sericealis*	Straw Dot	
Lepidoptera	Erebidae	*Spilosoma lubricipeda*	White Ermine	
Lepidoptera	Erebidae	*Spilosoma lutea*	Buff Ermine	
Lepidoptera	Erebidae	*Tyria jacobaeae*	Cinnabar	
Lepidoptera	Gelechiidae	*Bryotropha domestica*	a micro-moth	
Lepidoptera	Gelechiidae	*Teleiodes vulgella*	a micro-moth	
Lepidoptera	Geometridae	*Biston betularia*	Peppered Moth	
Lepidoptera	Geometridae	*Camptogramma bilineata*	Yellow Shell	
Lepidoptera	Geometridae	*Cidaria fulvata*	Barred Yellow	
Lepidoptera	Geometridae	*Dysstroma truncata*	Common Marbled Carpet	
Lepidoptera	Geometridae	*Epirrhoe alternata*	Common Carpet	
Lepidoptera	Geometridae	*Eupithecia absinthiata*	Wormwood Pug	
Lepidoptera	Geometridae	*Eupithecia exiguata*	Mottled Pug	
Lepidoptera	Geometridae	*Eupithecia vulgata*	Common Pug	
Lepidoptera	Geometridae	*Gymnoscelis rufifasciata*	Double-striped Pug	
Lepidoptera	Geometridae	*Hemithea aestivaria*	Common Emerald	
Lepidoptera	Geometridae	*Idaea aversata*	Riband Wave	
Lepidoptera	Geometridae	*Idaea dimidiata*	Single-dotted Wave	
Lepidoptera	Geometridae	*Idaea fuscovenosa*	Dwarf Cream Wave	

Order	Family	Scientific name	Common name	Conservation status
Lepidoptera	Geometridae	*Idaea seriata*	Small Dusty Wave	
Lepidoptera	Geometridae	*Opisthograptis luteolata*	Brimstone Moth	
Lepidoptera	Geometridae	*Ourapteryx sambucaria*	Swallow-tailed Moth	
Lepidoptera	Geometridae	*Pasiphila rectangulata*	Green Pug	
Lepidoptera	Geometridae	*Peribatodes rhomboidaria*	Willow Beauty	
Lepidoptera	Geometridae	*Perizoma albulata*	Grass Rivulet	
Lepidoptera	Geometridae	*Philereme transversata*	Dark Umber	
Lepidoptera	Geometridae	*Scopula imitaria*	Small Blood-vein	
Lepidoptera	Geometridae	*Xanthorhoe designata*	Flame Carpet	
Lepidoptera	Gracillariidae	*Cameraria ohridella*	a micro-moth	
Lepidoptera	Gracillariidae	*Gracillaria syringella*	a micro-moth	
Lepidoptera	Gracillariidae	*Parornix anglicella*	a micro-moth	
Lepidoptera	Gracillariidae	*Phyllonorycter coryli*	Nut Leaf Blister Moth	
Lepidoptera	Gracillariidae	*Phyllonorycter corylifoliella*	a micro-moth	
Lepidoptera	Gracillariidae	*Phyllonorycter esperella*	a micro-moth	
Lepidoptera	Gracillariidae	*Phyllonorycter nicellii*	a micro-moth	
Lepidoptera	Gracillariidae	*Phyllonorycter oxyacanthae*	a micro-moth	
Lepidoptera	Gracillariidae	*Phyllonorycter pastorella*	a micro-moth	
Lepidoptera	Gracillariidae	*Phyllonorycter tristrigella*	a micro-moth	
Lepidoptera	Hepialidae	*Korscheltellus lupulina*	Common Swift	
Lepidoptera	Hesperiidae	*Ochlodes sylvanus*	Large Skipper	
Lepidoptera	Hesperiidae	*Thymelicus sylvestris*	Small Skipper	
Lepidoptera	Lycaenidae	*Satyrium w-album*	White-letter Hairstreak	S41 NERC act; IUCN Vulnerable
Lepidoptera	Lyonetiidae	*Lyonetia clerkella*	Apple Leaf Miner	
Lepidoptera	Momphidae	*Mompha epilobiella*	a micro-moth	
Lepidoptera	Nepticulidae	*Ectoedemia heringella*	a micro-moth	Nationally Scarce (now more widespread)
Lepidoptera	Nepticulidae	*Stigmella aurella*	a micro-moth	
Lepidoptera	Nepticulidae	*Stigmella hybnerella*	a micro-moth	

Order	Family	Scientific name	Common name	Conservation status
Lepidoptera	Nepticulidae	*Stigmella lemniscella*	a micro-moth	
Lepidoptera	Nepticulidae	*Stigmella perpygmaeella*	a micro-moth	
Lepidoptera	Nepticulidae	*Stigmella plagicolella*	a micro-moth	
Lepidoptera	Noctuidae	*Acronicta psi*	Grey Dagger	
Lepidoptera	Noctuidae	*Agrotis clavis*	Heart and Club	
Lepidoptera	Noctuidae	*Agrotis exclamationis*	Heart and Dart	
Lepidoptera	Noctuidae	*Apamea lithoxylaea*	Light Arches	
Lepidoptera	Noctuidae	*Apamea monoglypha*	Dark Arches	
Lepidoptera	Noctuidae	*Autographa pulchrina*	Beautiful Golden Y	
Lepidoptera	Noctuidae	*Craniophora ligustri*	Coronet	
Lepidoptera	Noctuidae	*Cucullia verbasci*	Mullein	
Lepidoptera	Noctuidae	*Diachrysia chrysitis*	Burnished Brass	
Lepidoptera	Noctuidae	*Hoplodrina blanda*	Rustic	
Lepidoptera	Noctuidae	*Hoplodrina octogenaria*	Uncertain	
Lepidoptera	Noctuidae	*Mythimna albipuncta*	White-point	
Lepidoptera	Noctuidae	*Mythimna ferrago*	Clay	
Lepidoptera	Noctuidae	*Mythimna impura*	Smoky Wainscot	
Lepidoptera	Noctuidae	*Noctua pronuba*	Large Yellow Underwing	
Lepidoptera	Noctuidae	*Ochropleura plecta*	Flame Shoulder	
Lepidoptera	Noctuidae	*Oligia latruncula*	Tawny Marbled Minor	
Lepidoptera	Noctuidae	*Oligia strigilis*	Marbled Minor	
Lepidoptera	Noctuidae	*Orthosia cerasi*	Common Quaker	
Lepidoptera	Noctuidae	*Rusina ferruginea*	Brown Rustic	
Lepidoptera	Noctuidae	*Subacronicta megacephala*	Poplar Grey	
Lepidoptera	Noctuidae	*Xestia c-nigrum*	Setaceous Hebrew Character	
Lepidoptera	Noctuidae	*Xestia triangulum*	Double Square-spot	
Lepidoptera	Nolidae	*Nola cucullatella*	Short-cloaked Moth	
Lepidoptera	Nolidae	*Nycteola revayana*	Oak Nycteoline	
Lepidoptera	Notodontidae	*Phalera bucephala*	Buff-tip	

Order	Family	Scientific name	Common name	Conservation status
Lepidoptera	Nymphalidae	*Aglais io*	Peacock	
Lepidoptera	Nymphalidae	*Aglais urticae*	Small Tortoiseshell	
Lepidoptera	Nymphalidae	*Aphantopus hyperantus*	Ringlet	
Lepidoptera	Nymphalidae	*Coenonympha pamphilus*	Small Heath	S41 NERC act; IUCN Vulnerable
Lepidoptera	Nymphalidae	*Maniola jurtina*	Meadow Brown	
Lepidoptera	Nymphalidae	*Melanargia galathea*	Marbled White	
Lepidoptera	Nymphalidae	*Polygonia c-album*	Comma	
Lepidoptera	Nymphalidae	*Vanessa atalanta*	Red Admiral	
Lepidoptera	Oecophoridae	*Crassa unitella*	a micro-moth	
Lepidoptera	Oecophoridae	*Endrosis sarcitrella*	White-shouldered House-moth	
Lepidoptera	Oecophoridae	*Tachystola acroxantha*	a micro-moth	
Lepidoptera	Pieridae	*Pieris brassicae*	Large White	
Lepidoptera	Pieridae	*Pieris napi*	Green-veined White	
Lepidoptera	Pieridae	*Pieris rapae*	Small White	
Lepidoptera	Plutellidae	*Eidophasia messingiella*	a micro-moth	Local
Lepidoptera	Plutellidae	*Plutella xylostella*	Diamond-back Moth	
Lepidoptera	Psychidae	*Psyche casta*	a micro-moth	
Lepidoptera	Pterophoridae	*Emmelina monodactyla*	Common Plume	
Lepidoptera	Pyralidae	*Ephestia woodiella*	a micro-moth	
Lepidoptera	Pyralidae	*Homoeosoma sinuella*	a micro-moth	
Lepidoptera	Pyralidae	*Hypsopygia glaucinalis*	a micro-moth	
Lepidoptera	Pyralidae	*Myelois circumvoluta*	Thistle Ermine	
Lepidoptera	Sesiidae	*Sesia apiformis*	Hornet Moth	
Lepidoptera	Sesiidae	*Sesia bembeciformis*	Lunar Hornet Moth	
Lepidoptera	Sesiidae	*Synanthedon andrenaeformis*	Orange-tailed Clearwing	
Lepidoptera	Sesiidae	*Synanthedon myopaeformis*	Red-belted Clearwing	
Lepidoptera	Sphingidae	*Deilephila elpenor*	Elephant Hawk-moth	
Lepidoptera	Sphingidae	*Deilephila porcellus*	Small Elephant Hawk-moth	

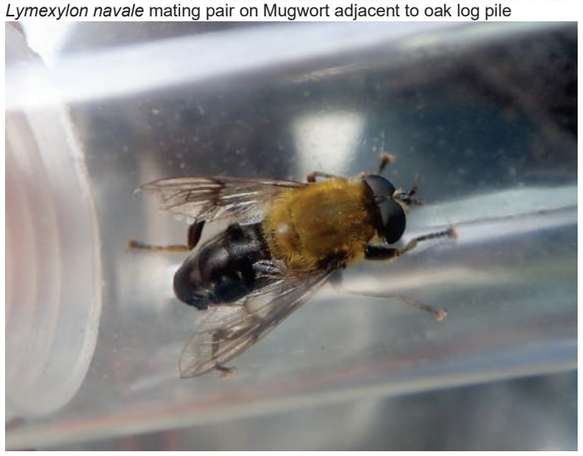
Order	Family	Scientific name	Common name	Conservation status
Lepidoptera	Sphingidae	*Mimas tiliae*	Lime Hawk-moth	
Lepidoptera	Sphingidae	*Sphinx ligustri*	Privet Hawk-moth	
Lepidoptera	Tineidae	*Monopis obviella*	a micro-moth	Local
Lepidoptera	Tineidae	*Nemapogon cloacella*	Cork Moth	
Lepidoptera	Tineidae	*Nemapogon koenigi*	a micro-moth	Nationally Scarce (now more widespread)
Lepidoptera	Tineidae	*Tinea semifulvella*	a micro-moth	
Lepidoptera	Tortricidae	*Acleris hastiana*	a micro-moth	
Lepidoptera	Tortricidae	*Acleris schalleriana*	a micro-moth	Local
Lepidoptera	Tortricidae	*Aethes beatricella*	a micro-moth	Local
Lepidoptera	Tortricidae	*Aethes tesserana*	a micro-moth	Local
Lepidoptera	Tortricidae	*Agapeta hamana*	a micro-moth	
Lepidoptera	Tortricidae	*Aleimma loeflingiana*	a micro-moth	
Lepidoptera	Tortricidae	*Ancylis achatana*	a micro-moth	
Lepidoptera	Tortricidae	*Archips podana*	Large Fruit-tree Tortrix	
Lepidoptera	Tortricidae	*Archips xylosteana*	Variegated Golden Tortrix	
Lepidoptera	Tortricidae	*Celypha lacunana*	a micro-moth	
Lepidoptera	Tortricidae	*Celypha striana*	a micro-moth	
Lepidoptera	Tortricidae	*Clepsis consimilana*	a micro-moth	
Lepidoptera	Tortricidae	*Cnephasia stephensiana*	Grey Tortrix	
Lepidoptera	Tortricidae	*Ditula angustiorana*	Red-barred Tortrix	
Lepidoptera	Tortricidae	*Eucosma cana*	a micro-moth	
Lepidoptera	Tortricidae	*Eucosma hohenwartiana*	a micro-moth	
Lepidoptera	Tortricidae	*Gypsonoma dealbana*	a micro-moth	
Lepidoptera	Tortricidae	*Hedya nubiferana*	Marbled Orchard Tortrix	
Lepidoptera	Tortricidae	*Hedya pruniana*	Plum Tortrix	
Lepidoptera	Tortricidae	*Lobesia abscisana*	a micro-moth	
Lepidoptera	Tortricidae	*Neocochylis hybridella*	a micro-moth	Local
Lepidoptera	Tortricidae	*Neocochylis molliculana*	a micro-moth	Local

Order	Family	Scientific name	Common name	Conservation status
Lepidoptera	Tortricidae	*Notocelia trimaculana*	a micro-moth	
Lepidoptera	Tortricidae	*Pandemis cerasana*	Barred Fruit-tree Tortrix	
Lepidoptera	Tortricidae	*Pseudargyrotoza conwagana*	a micro-moth	
Lepidoptera	Tortricidae	*Tortrix viridana*	Green Oak Tortrix	
Lepidoptera	Yponomeutidae	*Paraswammerdamia nebulella*	a micro-moth	
Lepidoptera	Yponomeutidae	*Yponomeuta cagnagella*	Spindle Ermine	
Lepidoptera	Yponomeutidae	*Yponomeuta evonymella*	Bird-cherry Ermine	
Lepidoptera	Yponomeutidae	*Yponomeuta malinellus*	Apple Ermine	Local
Orthoptera	Acrididae	*Chorthippus brunneus*	Common Field Grasshopper	
Orthoptera	Acrididae	*Pseudochorthippus parallelus*	Meadow Grasshopper	
Orthoptera	Phaneropteridae	*Leptophyes punctatissima*	Speckled Bush Cricket	
Orthoptera	Tettigoniidae	*Roeseliana roeselii*	Roesel's Bush Cricket	Nationally Notable (now widespread)
Trichoptera	Leptoceridae	*Mystacides longicornis*	a caddisfly	
Araneae	Thomisidae	*Diaea dorsata*	a spider	
Trombidiformes	Eriophyidae	*Aceria erinea*	a mite	
Trombidiformes	Eriophyidae	*Phyllocoptes goniothorax*	a mite	
Isopoda	Armadillidiidae	*Armadillidium vulgare*	Common Pill Woodlouse	
Isopoda	Philosciidae	*Philoscia muscorum*	Common Striped Woodlouse	
Isopoda	Porcellionidae	*Porcellio scaber*	Common Rough Woodlouse	
Lithobiomorpha	Lithobiidae	*Lithobius forficatus*	a centipede	

Appendix 2. Site and species photos

Lymexylon navale mating pair on Mugwort adjacent to oak log pile

Oak log pile habitat



Hoverfly *Mallota cimbiciformis*

Horse Chestnut with sap run utilised by *Mallota cimbiciformis*

Tree Snipefly *Chrysopilus laetus*

The darkling beetle *Pseudocistela ceramboides*

Poplar trunk with Hornet Moth exit holes (Storey's Way Wood)

Scoparia basistrigalis

Appendix: Ecology and Biodiversity

Annex 1: Letter from Guy Belcher, Cambridge City Council Biodiversity Officer, dated 19 September 2024, relating to Habitat Regulations Assessment Screening

Annex 2: Summary of the Results of a Data Search Using MAGIC.GOV.UK

Annex 3: Results of a Data Search with CPER

Annex 4: Washpit Brook River Condition Assessment Baseline Report

Annex 5: GCN Survey Report

Annex 6: Habitat, Plant and Invertebrate Survey Report

Annex 7: Invertebrate Survey Report

Annex 8: Additional Amphibian Surveys Report

Annex 9: Reptile Survey Report

Annex 10: Breeding Bird Survey Report

Annex 11: Winter Bird Survey Report

Annex 12: Bat Roost Survey Report

Annex 13: Bat Activity Survey Report

Annex 14: Water Vole and Otter Survey Report

Annex 15: Badger Survey Report

Annex 16: Harvest Mouse Survey Report

North West Cambridge Masterplan

Additional Amphibian Surveys

Report ref: NWC-MP2024-MDE-SW-SU-00012-amphibian survey June 2025

MD Ecology ref: C205/R12/v1

Date: June 2025

This report has been prepared on behalf of:

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Table of Contents

1. Introduction

Scope and purpose

1.1 This report has been prepared by Mike Dean of MD Ecology Limited, on behalf of the University of Cambridge. It provides the results of additional amphibian surveys of the Eddington site, also known as North West Cambridge. The surveys were undertaken between February and June 2025. The site is located between Huntingdon Road, Madingley Road and the M11 Motorway and is a former university farm. Phase 1 of the Eddington development has been constructed and future development areas are located to the east and west of Eddington. The location of the site is shown in Figure 1. The surveys comprised (see Figure 2):

- Great crested newt population size class assessment for Ponds P1, P6, PA1 and PA2, which were confirmed as positive for great crested newts (*Triturus cristatus*) through an eDNA survey undertaken in 2024 (see MD Ecology's June 2024 Great Crested Newt Survey Report); and
- A common toad (*Bufo bufo*) survey of Ponds P1, P4, P6 and the lagoon at Brook Leys.

1.2 The purposes of the survey were to allow an assessment of the population size class of great crested newts present in different parts of the site, and to confirm the presence or likely absence, and approximate numbers, of common toads within the site. This information will be used to inform the baseline in relation to both great crested newts and common toads for the Environmental Impact Assessment (EIA) for the renewal of the scheme's outline planning consent. This report does not include any assessment of likely impacts or required mitigation measures for Eddington.

Background data on great crested newts

1.3 Ponds P1, P6, PA1 and PA2 have been surveyed for great crested newts on multiple occasions since 2005, most recently in 2022.

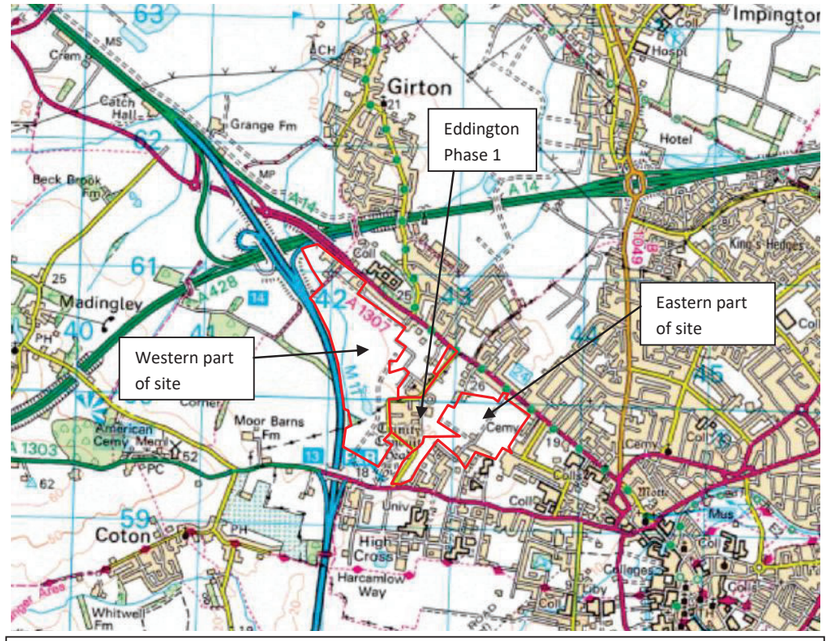
1.4 No great crested newts were recorded in Pond P1 during 2022. In 2016 and 2019 this pond was found to support a 'medium' population of great crested newts, based on the size class estimates provided in the Great Crested Newt Mitigation Guidelines (English Nature 2001[1]), with a maximum count of 78 individual animals on a single visit in 2016 and 12 individuals in 2019. Prior to 2016 the number of great crested newts recorded had been much lower (none in 2004/2005, 2007 and 2011, and a maximum count of two adults in 2009).

1.5 No great crested newts were recorded in Pond P6 in 2022. This pond was found to support a 'small' population of great crested newts in 2019 (maximum count of four individual animals on a single visit) and a 'medium' population in 2016 (maximum count of 38 individuals).

[1] English Nature (2001). *Great crested newt mitigation guidelines. Version: August 2001.* English Nature. Peterborough.

1.6 No great crested newts were recorded in Ponds PA1 or PA2 during previous surveys in 2019 and 2022.

Figure 1: Site Location Plan



Background data on common toads

1.7 Common toad surveys were undertaken to inform the EIA for the original outline planning application for the project using torchlight survey, in March 2011. There was a maximum count of 100 animals in Pond P4 in 2011, and 200 animals in Pond P1 in 2011. Significant numbers of toads were not recorded in Pond P6 in 2011. The lagoon at Brook Leys has not previously been surveyed for this species.

Personnel

1.8 The 2025 surveys were undertaken by Mike Dean. Mike has more than 25 years experience as an ecological consultant. He is a Fellow member of the Chartered Institute of Ecology and Environmental Management (CIEEM), a Chartered Ecologist and a Chartered Environmentalist. He is the Project Ecologist for Eddington and is the named ecologist on the Natural England great crested newt mitigation licence for the project (2014-926-EPS-MIT-7) and is registered to use Natural England's Class Licence to survey for great crested newts.

2. Methods

Great crested newt population size class assessment

2.1 In accordance with the Great Crested Newt Mitigation Guidelines, six visits were made to each of Ponds P1, P6 and PA2, between March and June 2025. The dates, times and weather conditions of each visit are provided in Table 1, below. Pond PA1 was not surveyed as it was completely dry throughout the survey period.

2.2 Ponds P1 and PA2 were surveyed by bottle-trapping. Traps were set overnight and checked early the following morning. Any newts found in traps were identified and sexed and then released immediately. A total of 100 traps were set around the edge of the pond, which equates to approximately one trap per 2m of pond perimeter. The traps were set in 10 clusters of 10 traps, distributed around the pond, to allow them to be found easily and to minimise the number of access points into the pond and therefore any disturbance of nesting birds.

2.3 Pond P6 was surveyed by torchlight survey at night. The survey was undertaken by walking around the edge of each of the ponds, searching for animals at the margins, using a Clulite Clubman torch, with 1 million Candle Power brightness.

Table 1: Great crested newt survey visits

Visit no.	Date	Temperature		Weather conditions
		During torchlight survey	Minimum overnight	
1	24/3/2025	6°C	5°C	Dry, mild, still.
2	7/4/2025	7°C	5°C	Dry, mild, still.
3	28/4/2025	14°C	8°C	Dry, mild, still.
4	12/5/2025	16°C	11°C	Dry, mild, still.
5	13/5/2025	12°C	7°C	Dry, mild, still.
6	3/6/2025	13°C	11°C	Dry, mild, still.

Common toad survey

2.4 Three visits were made to each of Ponds P1, P4, P6 and the lagoon at Brook Leys, between late-February and late-March 2025. The dates, times and weather conditions of each visit are provided in Table 2, below. All of the waterbodies were surveyed by torchlight survey at night. The survey was undertaken by walking around the edge of each of the waterbodies, searching for animals at the margins, using a Clulite Clubman torch, with 1 million Candle Power brightness.

Table 2: Common toad survey visits

Visit no.	Date	Temperature	Weather conditions
1	25/2/2025	6°C	Dry, mild, still.
2	9/3/2025	7°C	Dry, mild, still.
3	24/3/2025	6°C	Dry, mild, still.

Limitations

2.5 The surveys were conducted during the appropriate season, at an appropriate time of day and in suitable weather conditions, with the recommended level of survey effort.

2.6 The effectiveness of torchlight surveys was reduced due to the density of marginal vegetation in Pond 1 and the lagoon at Brook Leys, and the high turbidity of the water and presence of surface weed in Pond P6. It is likely that a proportion of the animals that would have been visible in the other ponds (i.e. P4) would have been missed in Ponds P1 and P6, and the lagoon. The numbers recorded in these waterbodies should therefore be treated as an under-estimate.

3. Results

Great crested newt population size class assessment

3.1 A maximum count of 23 great crested newts (GCN) were recorded in Pond P1 indicating the continued presence of a 'medium' population of great crested newts.

3.2 No great crested newts were recorded in Pond PA2, and Pond PA1 could not be surveyed as it was dry between March and June 2025. These ponds are sufficiently close to Pond P1 to be used by the same population of great crested newts. Given the small size of these ponds it is unlikely that they would be used by more than 10 newts. The overall population size class estimate for Ponds P1, PA2 and PA1 collectively is therefore 'medium'.

3.3 No great crested newts were recorded in Pond P6 although this is a large complex of multiple ponds and the water was either turbid or covered with weed across a significant proportion. It is therefore assumed that a 'small' population of great crested newts is still present.

3.4 Detailed survey results are provided in Table 3, below.

Table 3: Great crested newt survey results

Visit no.	Date	Pond P1	Pond P6	Pond PA2
1	24/3/2025	No amphibians	6 common toad, 8 common frog, 1 female smooth/palmate newt	No amphibians
2	7/4/2025	19 male, 4 female GCN, 1 female smooth newt, 1 common frog	1 female smooth/palmate newt	No amphibians
3	28/4/2025	5 male, 2 female GCN, 1 female smooth newt	1 female smooth/palmate newt	No amphibians
4	12/5/2025	2 male, 1 female GCN	1 female smooth/palmate newt	No amphibians
5	13/5/2025	2 female GCN, 2 male smooth newts	No amphibians	No amphibians
6	3/6/2025	No amphibians	No amphibians	No amphibians

Common toad survey

3.5 A maximum count of 61 common toads was recorded in Pond P4. The maximum counts from other ponds were significantly lower: 6 toads in Pond P6; 1 toad in Pond P1; and 2 toads in the lagoon at Brook Leys. Detailed survey results are provided in Table 4, below.

Table 2: Common toad survey results

Visit no.	Date	Pond P1	Pond P4	Pond P6	Lagoon
1	25/2/2025	No amphibians	1 toad, 1 male smooth newt, 5 female smooth/palmate newts	No amphibians	No amphibians
2	9/3/2025	No amphibians	1 toad, 5 male smooth newts, 4 female smooth/palmate newts	2 common frogs	No amphibians
3	24/3/2025	No amphibians	61 toads, 3 female smooth/palmate newts	6 toads, 8 frogs, 1 female smooth/palmate newt	2 toads

Appendix: Ecology and Biodiversity

Annex 1: Letter from Guy Belcher, Cambridge City Council Biodiversity Officer, dated 19 September 2024, relating to Habitat Regulations Assessment Screening

Annex 2: Summary of the Results of a Data Search Using MAGIC.GOV.UK

Annex 3: Results of a Data Search with CPER

Annex 4: Washpit Brook River Condition Assessment Baseline Report

Annex 5: GCN Survey Report

Annex 6: Habitat, Plant and Invertebrate Survey Report

Annex 7: Invertebrate Survey Report

Annex 8: Additional Amphibian Surveys Report

Annex 9: Reptile Survey Report

Annex 10: Breeding Bird Survey Report

Annex 11: Winter Bird Survey Report

Annex 12: Bat Roost Survey Report

Annex 13: Bat Activity Survey Report

Annex 14: Water Vole and Otter Survey Report

Annex 15: Badger Survey Report

Annex 16: Harvest Mouse Survey Report

North West Cambridge Masterplan

Reptile Survey

Report ref: NWC-MP2024-MDE-SW-SU-00011-reptile survey June 2025

MD Ecology ref: C205/R11/v1

Date: June 2025

This report has been prepared on behalf of:

University of Cambridge

By:

Mike Dean

MD Ecology Limited
(7545616)

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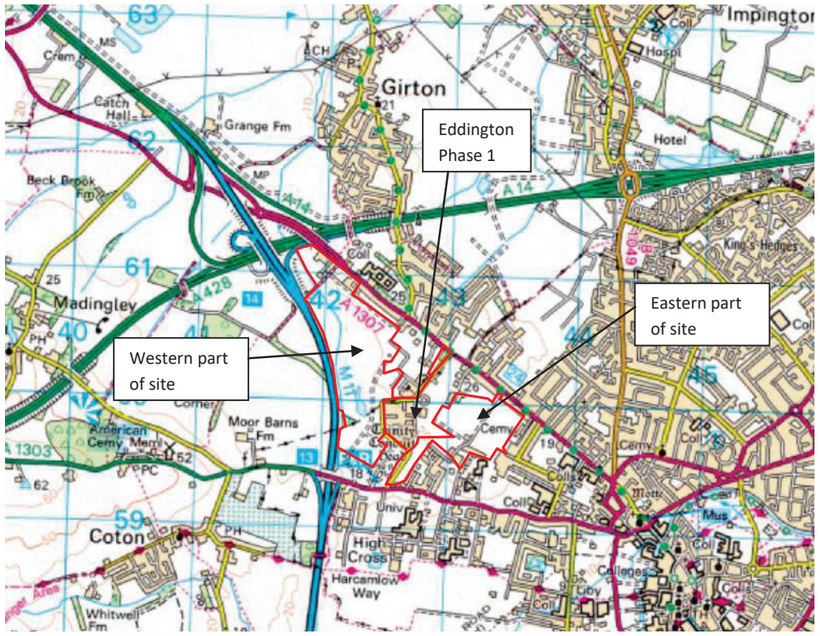
Table of Contents

1. Introduction

1.1 This report has been prepared by Mike Dean of MD Ecology Limited, on behalf of the University of Cambridge. It provides the results of a reptile survey of the Eddington site, also known as North West Cambridge Masterplan. The survey was undertaken between February and June 2025. The site is located between Huntingdon Road, Madingley Road and the M11 Motorway and is a former university farm. Phase 1 of the Eddington development has been constructed and future development areas are located to the east and west of Eddington. The location of the site is shown in Figure 1. The survey focused on specific areas of land within the site boundary that provided potentially suitable habitat for reptiles and would be affected by the construction of future phases. See Figure 2.

1.2 The purposes of the survey were to confirm the presence or likely absence of reptiles from the site, and to inform the baseline in relation to reptiles for the Environmental Impact Assessment (EIA) for the renewal of the scheme's outline planning consent. This report does not include any assessment of likely impacts or required mitigation measures for Eddington.

Figure 1: Site Location Plan



1.3 A reptile survey of the site was previously undertaken in 2005, during which no reptiles were recorded. The habitats present at the site have changed significantly since the 2005 survey was undertaken and the results of that survey are therefore not considered to be of relevance to the current study.

1.4 A reptile survey of the site was also undertaken in August/September 2017; no reptiles were recorded. The habitats present in 2017 were broadly similar to those currently present. Given this, and that the site is surrounded by barriers to the movement of reptiles, it is considered unlikely that species such as adder (*Vipera berus*), slow-worm (*Anguis fragilis*) or common lizard (*Zootoca vivipara*) would have colonised the site. Nevertheless, the previous survey was undertaken 8 years ago and it was therefore considered appropriate to update it. In addition, grass snake (*Natrix natrix*) are a more mobile species and are therefore more likely to have colonised from the surrounding area.

1.5 The 2025 survey was undertaken by Mike Dean. Mike has more than 25 years experience as an ecological consultant. He is a Fellow member of the Chartered Institute of Ecology and Environmental Management (CIEEM), a Chartered Ecologist and a Chartered Environmentalist. He is the Project Ecologist for Eddington and undertook the ecological impact assessment in the 2012 ES for the current outline planning permission.

2. Methods

2.1 Areas of suitable habitat for reptiles, such as slow-worms and grass snakes, that would be directly affected by the proposed development, were identified within the site during a walkover survey undertaken in April 2024. These areas were targeted for the reptile survey (see Figure 2):

Area A A small area of land adjacent to the entrance to Howe Farm off Huntingdon Road, which was overgrown former grassland, dominated by weeds and bramble (*Rubus fruticosus* agg.) scrub, encompassing soft areas amongst hard standing and the back gardens of properties.

Area B An area used for spoil storage to the south of Howe Farm, including an earth bund along the site's northern boundary, log piles from trees felled during Phase 1 of the development, which is dominated by grasses and ruderal vegetation with encroaching willow and bramble scrub.

Area C A strip of unmanaged grassland in the southern part of the site, along the southern edge of Pheasant Plantation and immediately adjacent to the M11, which is dominated by weeds and bramble scrub.

Area D A former arable field in the eastern part of the site that has been topsoil stripped, with bunds of topsoil that have become vegetated with weeds including nettle (*Urtica dioica*), teasel (*Dipsacus fullonum*), thistles, bramble and buddleia (*Buddleja davidii*), and areas of relatively bare ground or with sparse grassy vegetation.

Area E A small triangular shaped area in the eastern part of the site, to the south of the ridgeway cycle route and west of the Horse Chestnut Avenue, that has become overgrown with weeds and is unmanaged.

2.2 Artificial refuges, comprising sheets of roofing felt cut to approximately 0.5m^2 were installed within each area on 25th February 2025 and were checked on eight occasions for basking reptiles during the period April to June 2025, at an appropriate time of day, and during suitable weather conditions (see Table 1 below). The number of refuges in each area is stated on Figure 2.

2.3 A transect route was walked between the refuges on each visit; this was searched for reptiles basking in the open away from the refuges.

2.4 This exceeds the minimum level of survey effort, of at least seven visits, recommended in the most recent good practice guidelines (Froglife 1999[1]). The dates, times and weather conditions of the survey visit accord with those recommended in the guidelines.

[1] Froglife (1999). *Reptile survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation.* Froglife Advice Sheet 10. Froglife, Halesworth.

Table 1: Reptile survey dates, times and weather conditions

Visit	Date	Time	Temperature	Weather conditions
1	7/4/25	17.15-18.30	16-15°C	Dry, still, sunny, no cloud
2	8/4/25	10.05-11.10	12-13°C	Dry, still, sunny, no cloud
3	28/4/25	19.20-20.25	19-16°C	Dry, still, sunny, no cloud
4	29/4/25	08.55-10.05	16-19°C	Dry, still, sunny, no cloud
5	13/5/25	08.15-09.20	14-16°C	Dry, still, sunny, no cloud
6	14/5/25	09.20-10.30	15-17°C	Dry, still, sunny, no cloud
7	30/5/25	8.50-10.05	16-18°C	Dry, sunny spells, slight breeze
8	4/6/25	09.10-10.20	14-15°C	Dry, partly cloudy, slight breeze

Limitations

2.5 The surveys were conducted during the appropriate season, at an appropriate time of day and in suitable weather conditions, with more than the minimum level of survey effort. There are therefore no specific limitations to the survey.

2.6 It should be noted, however, that the survey targeted parts of the site that provide suitable habitat and that are likely to be affected by the proposed development. The banks of the Washpit Brook and lagoon at Brook Leys, and the two stage channel adjacent to the M11, created during Phase 1 of the development, provide suitable habitat for grass snake, but these areas will not be directly affected during construction, and were therefore not surveyed.

3. Results

3.1 No reptiles were recorded during any of the survey visits.

3.2 Common shrew (*Sorex araneus*) was regularly recorded dunder the refuges in all parts of the site. Common toad (*Bufo bufo*) was recorded under the refuges adjacent to Pheasant Plantation.

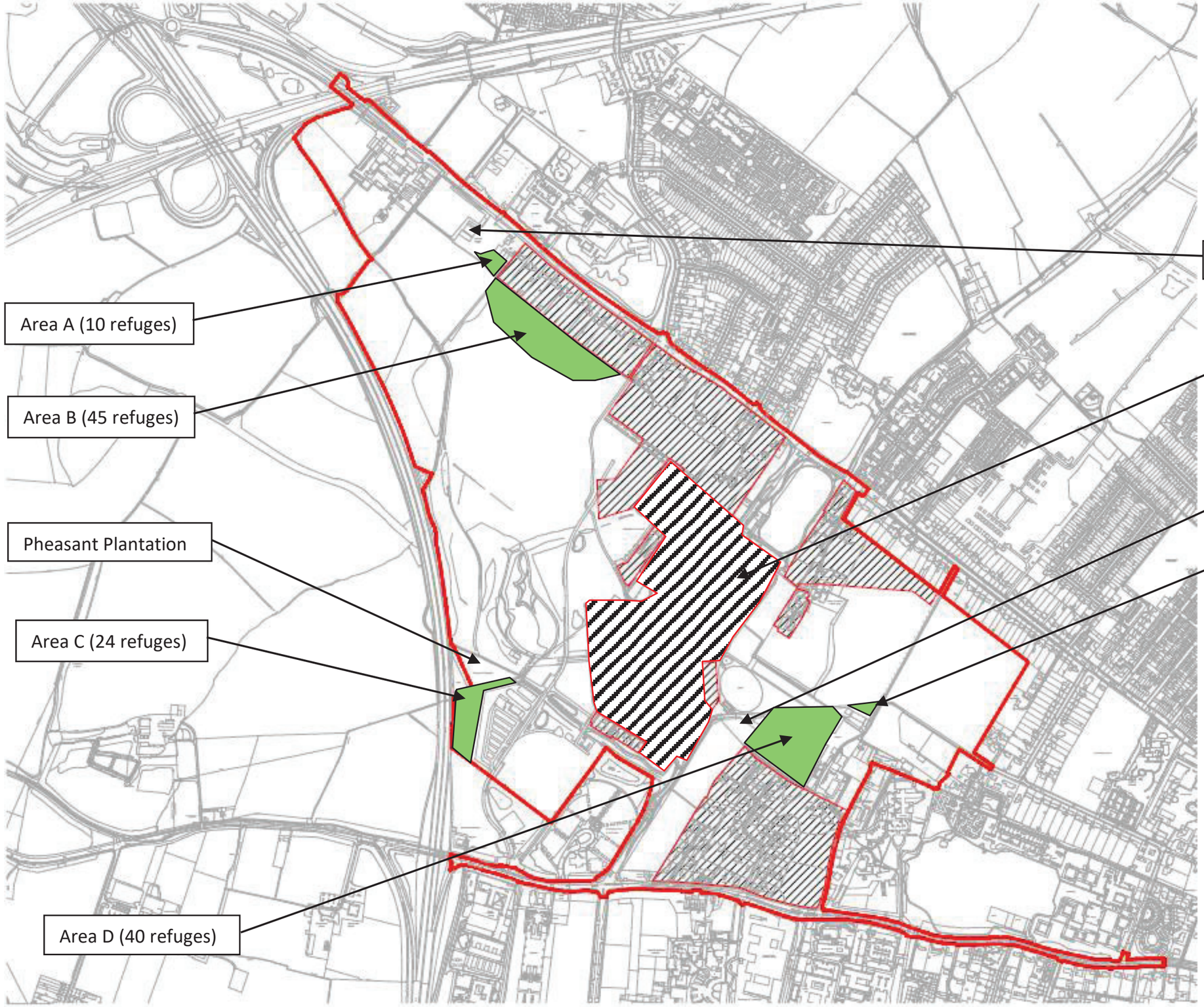


Figure 2: Survey Area

Areas of suitable habitat for reptiles, targeted for survey

Areas excluded from the survey area

Appendix 1: Photos

Area A

Area B

Area B

Area C

Area D

Area D

Area E

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North West Cambridge Masterplan

Winter Bird Survey

Report ref: NWC-MP2024-MDE-SW-SU-00010-winter bird survey May 2025

MD Ecology ref: C205/R10/v1

Date: May 2025

This report has been prepared on behalf of:

University of Cambridge

By:

Mike Dean

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(7545616)

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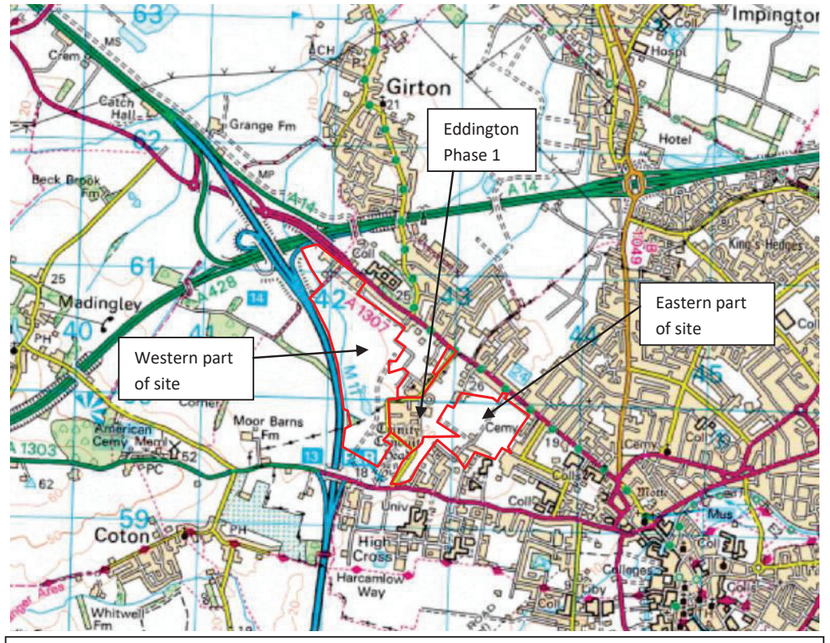
1. Introduction

1.1 This report has been prepared by Mike Dean of MD Ecology Limited, on behalf of the University of Cambridge. It provides the results of a winter bird survey of the Eddington site, also known as North West Cambridge Masterplan. The survey was undertaken between September 2024 and March 2025. The site is located between Huntingdon Road, Madingley Road and the M11 Motorway and is a former university farm. Phase 1 of the Eddington development has been constructed and future development areas are located to the east and west of Eddington. The location of the site is shown in Figure 1. The survey area included all land within the site boundary as well as additional areas outside of the site within Phase 1 of the Eddington development. See Figure 2.

1.2 The purposes of the survey were to identify the bird species wintering on site or using it for passage, determine numbers of birds and locations of species considered to be priorities for conservation, and to inform the baseline in relation to birds for the Environmental Impact Assessment (EIA) for the renewal of the scheme's outline planning consent. This report does not include any assessment of likely impacts or required mitigation measures for Eddington.

Figure 1: Site Location Plan



1.3 A winter bird survey of the site was previously undertaken in March 2011. The habitats present at the site have changed significantly since the previous survey was undertaken; the results of the previous survey are therefore not considered to be of relevance to the current study.

1.4 The 2024/25 survey was undertaken by James Latham, a skilled ornithological surveyor with over 22 years of professional experience. He has a strong track record in designing and carrying out bird surveys across a range of habitats within the UK, including lowland farmland, woodland and wetlands, coasts and estuaries, upland farmland and forestry, and moorlands. He has a comprehensive working understanding of best practice bird survey techniques and methodologies, including those set out in the '*Bird Survey Guidelines*' (Bird Survey and Assessment Steering Group, 2023[1]). James possesses excellent visual and aural bird identification skills and has previously held field ornithologist roles with the British Trust for Ornithology and the Royal Society for the Protection of Birds. He is a Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

1.5 This report has been compiled by Mike Dean using information on survey methods and results provided by James. Mike is a Fellow member of the Chartered Institute of Ecology and Environmental Management (CIEEM), a Chartered Ecologist and a Chartered Environmentalist. He is the Project Ecologist for Eddington.

[1] Bird Survey & Assessment Steering Group. (2023). Bird Survey Guidelines for assessing ecological impacts, v.1.1.1. https://birdsurveyguidelines.org *[date accessed: 21st February 2024].*

2. Methods

2.1 A suite of winter bird surveys was undertaken between September 2024 and March 2025 (inclusive) by James Latham, an experienced ornithologist. The surveys were based upon the non-breeding bird survey methodology set out within the '*Bird Survey Guidelines*' (Bird Survey and Assessment Steering Group, 2023), which represent best practice guidance for this type of survey.

2.2 A total of seven survey visits were carried out from September 2024 to March 2025 (inclusive), to ensure the survey effort covered the autumn and spring passage periods, as well as the core winter months.

2.3 Each monthly survey visit comprised two elements:

a) A day-time transect survey to detect birds within the survey area.

On each daytime transect survey, the surveyor walked a transect route that ensured that all parts of the survey area (see Figure 2) were approached to within approximately 50 metres. The direction in which the transect route was walked was varied between survey visits to minimise any potential survey bias.

b) A series of crepuscular surveys during dusk and/or dawn periods to detect any large flocks of birds (e.g. wildfowl, waders, wintering thrushes, etc) using roost sites. The crepuscular surveys were carried out in parallel with the daytime survey (see below) and targeted the following habitats/features, which were considered to represent the best quality habitats for roosting birds within the survey area:

i. the grassland/ wetland habitats in the north-western part of the survey area (including the stage 2 channel);

ii. the Lagoon and Pheasant Plantation; and

iii. Traveller's Rest Site of Special Scientific Interest (SSSI), Cricket Pitch Wood and Storey's Way Wood.

The crepuscular watches were undertaken using a combination of transects and vantage point watches around the dawn and dusk periods. A thermal imaging scope (Pulsar Helion XP50) was used to maximise the chances of detecting birds in low-light levels.

2.4 Given the size of the site, and the need to undertake surveys for roosting birds at dusk and dawn, each survey visit was undertaken over two consecutive sessions – at dusk on day 1, and at dawn, during the day and at dusk on day 2.

2.5 In addition, nocturnal surveys were undertaken during the February and March visits for feeding woodcock within areas of suitable habitat, after several roosting birds were recorded during the day-time survey in late-January.

2.6 Each survey visit was scheduled to coincide with suitable weather conditions (i.e. avoiding heavy rain, strong winds (Beaufort force greater than 5) and fog). Further details regarding the survey timings and associated weather conditions are provided in Table 1.

2.7 All birds seen or heard within the survey area during each survey visit were mapped using the British Trust for Ornithology's (BTO) standard symbology. Particular emphasis was placed on recording 'priority species':

- Species listed on Schedule 1 of the Wildlife & Countryside Act (1981);
- Species of Principal Importance for the Conservation of Biodiversity (under Section 41 of the Natural Environment & Rural Communities Act (2006));
- Species listed on either the Red or Amber Lists within 'Birds of Conservation Concern 5' (Stanbury *et al*, 2021[2]); and
- Species identified as priorities in the University of Cambridge's Biodiversity Action Plan.

2.8 Other species were also recorded, considered as 'secondary species' for the purposes of the survey.

2.9 Upon completion of the survey visits, registrations of priority species were transposed onto species-specific maps and notes made on numbers and activity.

Limitations

2.10 Access into the two out of four fields at 307 Huntingdon Road (see Figure 2) was not available during Visits A to C (September to November, inclusive) due to livestock-related issues. However, these fields were closely grazed and could easily be 'scanned' with binoculars to record any birds present. It is therefore considered that this slight limitation would not have affected the overall survey results.

[2] Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. 2021. The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. British Birds 114: 723-747.

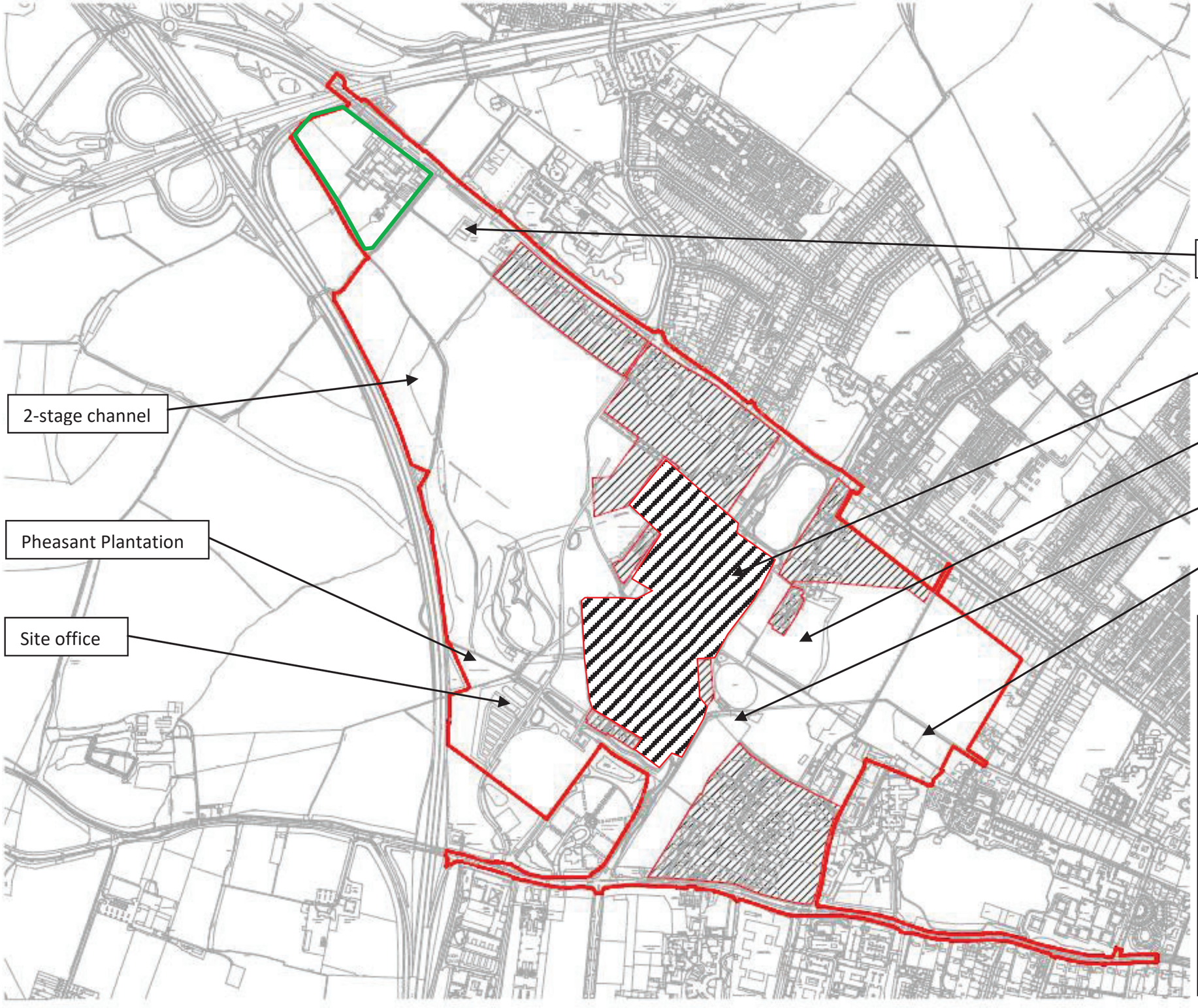


Figure 2: Survey Area

307 Huntingdon Road

Areas excluded from the bird survey

3. Survey Results

3.1 The results of the survey for all priority species are provided in Table 2, with locations of registrations shown on a series of accompanying maps. The results of the survey for secondary species are provided in Table 3.

Table 2: Priority Species Survey Results

Common name	Scientific name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Greylag Goose	*Anser anser*	Sch 1							Y	A single bird was recorded commuting over Traveller's Rest Pit SSSI at dusk during the March survey visit. No further field recordings of this species were made.
Mute Swan	*Cygnus olor*	Notable, Green		Y	Y					A male bird loafing at the Lagoon was recorded during the October survey visit, and also a bird roosting on this waterbody around dawn during the November survey visit.

Common name	Scientific name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Mallard	*Anas platyrhynchos*	Amber	Y	Y	Y	Y	Y	Y	Y	Relatively small numbers of mallard were recorded across the survey area, with most records associated with wetland features. A peak count of approximately 35 birds was recorded from the reedbed in the north-western part of the site around dawn during the February survey visit. These birds were considered likely to have roosted at this location. Counts of up to 18 birds were recorded around dusk/dawn at the Lagoon over the course of the survey visits. Nine birds were also recorded around dusk/dawn at Traveller's Rest Pit SSSI during the February and March survey visits; however, counts of up to four birds were recorded elsewhere within the survey area on most survey visits (e.g., construction area drainage pools, swales, small areas of standing water, etc).

Common name	Scientific name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Teal	*Anas crecca*	Amber				Y	Y			Small numbers of teal were recorded at wetland habitats in the western half of the survey area during the December and January survey visits. In December, three flocks, each comprising between three and six birds, were recorded in flight over the lagoon around dusk. A flock of five birds appeared to land on a construction drainage pond to the south of the lagoon (and potentially departed shortly thereafter). In January, a total of 11 birds were flushed from a section of swale in the north-western part of the site. Small numbers of teal were also heard calling from the pond within the Park & Ride site, just outside the southern site boundary, during the December and January survey visits.
Pochard	*Aythya ferina*	Red					Y			A female bird was recorded on the Lagoon during the January survey visit. No further field recordings of this species were made.
Stock Dove	*Columba oenas*	Amber, Notable	Y	Y	Y	Y			Y	Small numbers of stock dove were present on most of the survey visits, particularly in the vicinity of Pheasant Plantation and Storey's Way Wood, with a peak flock count of four birds at Storey's Way Wood recorded during the December survey visit. No large roosts or feeding flocks of this species were recorded during the surveys.

Common name	Scientific name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Woodpigeon	*Columba palumbus*	Amber	Y	Y	Y	Y	Y	Y	Y	Woodpigeon was present throughout the survey area on all survey visits, with birds recorded within woodlands, hedgerows/scrub, mature trees, back gardens and areas of open grassland. In general, flocks did not exceed 10 birds; however, peak flock counts of approximately 70 birds and 28 birds were recorded during the September and December survey visits, respectively. No large roosting or feeding flocks were encountered. Peak roost counts were: six birds in Storey's Way Wood at dawn on the December survey visit; 12 birds in Cricket Pitch Wood at dawn on the January survey visit; and approximately 10 birds in Cricket Pitch Wood at dusk on the March survey visit. A movement of birds flying over the site compound was recorded on the November survey visit; however, these birds did not appear to be directly associated with the site itself.
Moorhen	*Gallinula chloropus*	Amber	Y	Y	Y	Y	Y	Y	Y	Small numbers of moorhen were present at the Lagoon and/or nearby construction area drainage ponds on all survey visits. Typically, up to three birds were recorded at any waterbody with a peak count of five birds recorded at the Lagoon on the March survey visit.

Common name	Scientific name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Woodcock	*Scolopax rusticola*	Red					Y		Y	Woodcock was recorded within the survey area from January to March, inclusive. A roosting bird was flushed from an area of grassland in the north-western part of the site during each of these months. Up to two birds were also flushed from day-time roost sites in Storey's Way Wood during each of the survey visits over this period. Given the presence of several day-time roosting woodcock within the survey area, targeted nocturnal surveys for this species were undertaken using thermal imaging optical equipment (Pulsar Helion XP50), which identified birds feeding in a damp grass field within the construction area. This field was found to support a peak count of eight feeding birds in late-February, with counts of four feeding birds also recorded in early-February and early-March, respectively. The nocturnal surveys did not identify woodcock feeding in any other grassland areas within the site.

Common name	Scientific name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Snipe	*Gallinago gallinago*	Amber			Y	Y	Y	Y	Y	Snipe was considered to have over-wintered within the survey area, having been recorded within grassland and wetland habitats in the western half of the site from the November survey visit onwards. Peak counts of 10 birds (November), 47 birds (December), 39 birds (January), 41 birds (February) and 18 birds (March) were recorded within the reedbed in the north-west part of the site, with smaller numbers of birds also recorded in patches of marshy ground in nearby grassland areas. Two birds were also flushed from an area of reedbed/wet grassland on the eastern side of the Lagoon during the February survey visit.
Black-headed Gull	*Chroicocephalus ridibundus*	Amber, Notable		Y	Y	Y	Y	Y	Y	Counts of up to 40 and 32 black-headed gulls foraging/loafing at the Lagoon were recorded during the November and December survey visits, respectively. However, on both occasions these birds quickly departed, and the wetland did not appear to be particularly well used by this species. All other recordings related to birds overflying the survey area in flocks of up to nine individuals.

Common name	Scientific name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Herring Gull	*Larus argentatus*	S41, Red					Y		Y	A flock of 34 birds was recorded commuting over the Lagoon around dusk during the March survey visit, and two birds commuting over the north-eastern site boundary on the January survey visit. No large aggregations or roosts of herring gull were recorded within the survey area.
Lesser Black-backed Gull	*Larus fuscus*	Amber			Y					Single birds commuting over Pheasant Plantation were recorded on two occasions during the November survey visit. No further field recordings of this species were made.
Sparrowhawk	*Accipiter nisus*	Amber		Y						A female bird commuting/hunting over the grasslands to the west of the Lagoon and Pheasant Plantation was recorded during the October survey visit. No further field recordings of this species were made.
Red Kite	*Milvus milvus*	Sch 1, Green		Y						A single red kite circling/foraging over the M11 motorway and grasslands to the west of the Lagoon was recorded during the October survey visit. No further field recordings of this species were made.
Barn Owl	*Tyto alba*	Sch1, Notable, Green	Y	Y	Y				Y	At least one barn owl was recorded hunting over grassland in the north-western part of the site during the September, October, November and March survey visits.

Common name	Scientific name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Kestrel	*Falco tinnunculus*	Amber, Notable	Y	Y	Y	Y	Y	Y	Y	At least two (and possibly more) kestrel were recorded hunting/commuting over the areas of grassland in the western half of the survey area on all survey visits. A bird was also present around the grassland areas in the eastern half of the site on most survey visits.
Rook	*Corvus frugilegus*	Amber	Y			Y	Y		Y	Small numbers of rook were recorded in the eastern half of the survey area throughout the surveys. Peak counts of nine birds foraging in the large grassland field to the north of Storey's Way were recorded during the September and January survey visits. Movements of rook flying over the north-western part of the survey area were recorded during the March survey visit, which could indicate the presence of a rookery in the vicinity of Huntingdon Road. No evidence of a rookery within the site was recorded.
Skylark	*Alauda arvensis*	S41, Red, Notable		Y	Y			Y	Y	Skylark was recorded infrequently and in small numbers until the latter survey visits. Three birds were recorded flying over Pheasant Plantation during the October survey visit, and a single bird was recorded in grassland in the western half of the site during the November survey visit. Numbers increased in the February and March survey visits, with a peak count of at least six birds recorded in grassland in the western half of the site during the March survey visit.

Common name	Scientific name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Wren	*Troglodytes troglodytes*	Amber		Y	Y	Y	Y	Y	Y	Wren was found to be widespread and abundant during the survey visits, having been recorded within woodlands, hedgerows/scrub, mature trees and back gardens across the survey area.
Starling	*Sturnus vulgaris*	S41, Red	Y	Y	Y	Y			Y	Starling was recorded in small numbers within the grassland areas across the site, and flying over the survey area on most of the survey visits. The peak count related to a flock of 19 birds flying over the north-western part of the site during the October survey visit. No large feeding or roosting flocks were recorded during the surveys.
Song Thrush	*Turdus philomelos*	S41, Amber, Notable	Y	Y	Y	Y	Y	Y	Y	Song thrush was found to be widespread and abundant, having been recorded on all survey visits within woodlands, hedgerows/scrub, mature trees and back gardens across the survey area.
Mistle Thrush	*Turdus viscivorus*	Red	Y			Y		Y		Single birds were recorded in hedgerows in the eastern half of the survey area during the September, December and February survey visits.

Common name	Scientific name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Redwing	*Turdus iliacus*	Sch1, Amber		Y	Y	Y	Y	Y	Y	Redwing was recorded from the October survey visit onwards. This species' distribution was associated with hedgerows (particularly in the north-west of the survey area) and woodlands, which appeared to provide good foraging opportunities. Flocks of up to 18 birds were recorded within these habitats. A peak in activity appeared to occur during the October survey visit, with a noticeable movement through the site in flocks of up to 45 birds. These observations were considered likely to involve birds on autumn passage, with most birds recorded flying over the site. A flock of approximately 60 birds was also recorded flying over the south-western part of the site during the November survey visit. No large roosts were encountered during the crepuscular surveys.
Fieldfare	*Turdus pilaris*	Sch1, Red							Y	At least two birds calling from Cricket Pitch Wood were recorded during the March survey visit. No further field recordings of this species were made.
Dunnock	*Prunella modularis*	S41, Amber	Y	Y	Y	Y	Y	Y	Y	Dunnock was found to be widespread and abundant during the survey visits, having been recorded within woodlands, hedgerows/scrub, mature trees and back gardens across the survey area.

Common name	Scientific name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Meadow Pipit	*Anthus pratensis*	Amber, Notable		Y	Y	Y	Y	Y	Y	Meadow pipit was recorded from the October survey visit onwards, primarily within the grassland and adjacent construction areas in the western half of the site. Peak flock sizes of at least 20 birds and 22 birds were recorded during the December and January survey visits.
Bullfinch	*Pyrrhula pyrrhula*	S41, Amber, Notable			Y				Y	Two birds calling from Cricket Pitch Wood were recorded during the November survey visit. No further field recordings of this species were made.
Greenfinch	*Chloris chloris*	Red	Y		Y		Y	Y	Y	Greenfinch was recorded in small numbers throughout the survey area on most survey visits, with a peak count of five birds flying over the western part of the site during the February survey visit.
Linnet	*Linaria cannabina*	S41, Red, Notable						Y	Y	The only recording of linnet occurred during the March survey visit, when a flock of approximately 25 birds were observed within the area of grassland in the north-western part of the site.
Reed Bunting	*Emberiza schoeniclus*	S41, Amber, Notable		Y	Y	Y	Y	Y	Y	Reed bunting was recorded in small numbers at the Lagoon, swales, reedbed and areas of grassland in the western half of the site from the October survey visit onwards.

Table 3: Secondary Species Survey Results

Common name	Scientific Name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Tufted Duck	*Aythya fuligula*	Green	Y				Y	Y	Y	Small numbers of tufted duck were recorded at the Lagoon during the September, January, February and March survey visits, with a peak count of seven birds recoded at dusk during the January survey visit. Two birds were also recorded on a small construction drainage pond (adjacent to the Lagoon) during the January survey visit.
Pheasant	*Phasianus colchicus*	Green	Y	Y		Y	Y	Y	Y	Small numbers of birds were recorded throughout the survey area on most survey visits.
Red-legged Partridge	*Alectoris rufa*	Green	Y		Y					Two birds were recorded within the grassland area in the north-western part of the survey area during the September and November survey visits.

Common name	Scientific Name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Feral Pigeon	*Columba livia*	Green	Y			Y	Y	Y	Y	Flocks of up to 23 birds recorded around 307 Huntingdon Road and Eddington Phase 1.
Water Rail	*Rallus aquaticus*	Green			Y		Y			Single birds were seen/heard calling at the Lagoon at dawn and dusk during the November and January survey visits, respectively.
Coot	*Fulica atra*	Green	Y	Y	Y	Y	Y	Y	Y	Up to five birds were present at the Lagoon and/or adjacent construction area ponds on all survey visits, with a peak count of five birds recorded at the Lagoon at dusk during the February survey visit.
Little Grebe	*Tachybaptus ruficollis*	Green	Y						Y	A single bird was recorded at the Lagoon during the September survey visit.
Cormorant	*Phalacrocorax carbo*	Green		Y		Y			Y	Single birds were recorded at the Lagoon during the October, December and March survey visits.

Common name	Scientific Name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Grey Heron	*Ardea cinerea*	Green	Y	Y	Y	Y	Y	Y	Y	Grey heron was recorded on all survey visits with up to two birds recorded loafing at the Lagoon, foraging in areas of grassland in the west of the survey area, within the construction site and near Gravel Hill Farm, and flying over the survey area.
Little Egret	*Egretta garzetta*	Green						Y		A single bird was recorded flying over grassland in the north-western part of the survey area during the February survey visit. No further field recordings of this species were made.
Buzzard	*Buteo buteo*	Green	Y	Y	Y		Y	Y	Y	Up to two birds were recorded foraging, circling or commuting over the survey area on most survey visits.

Common name	Scientific Name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Great Spotted Woodpecker	*Dendrocopos major*	Green		Y	Y			Y		Small numbers of birds were recorded within the woodlands, hedgerows and areas of mature trees during the October, November and February survey visits.
Green Woodpecker	*Picus viridis*	Green	Y	Y		Y	Y	Y	Y	Green woodpecker was recorded on most survey visits, with up to two birds recorded at various locations, including the grasslands in the western part of the survey area, the Lagoon, grasslands near Gravel Hill Farm and Storey's Way Wood.
Jay	*Garrulus glandarius*	Green	Y	Y			Y	Y	Y	Small numbers of birds were recorded within the woodlands, hedgerows and areas of mature trees during most survey visits.

Common name	Scientific Name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Magpie	*Pica pica*	Green	Y	Y	Y	Y	Y	Y	Y	Magpie was found to be widespread and abundant during the survey visits, having been recorded within woodlands, hedgerows/scrub, mature trees and back gardens across the survey area.

Common name	Scientific Name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Jackdaw	*Coloeus monedula*	Green	Y	Y	Y	Y	Y	Y	Y	Jackdaw was found to be widespread and abundant during the survey visits, having been recorded within woodlands, hedgerows/scrub, mature trees and back gardens across the survey area. Peak flock counts within the survey area were 33 birds (December), 36 birds (November) and 21 birds (March). In addition, a total of approximately 240 birds was recorded flying over (commuting) the Lagoon and Eddington Phase 1 around dawn during the November survey visit. These birds did not appear to be associated with the habitats within the survey area.

Common name	Scientific Name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Carrion Crow	*Corvus corone*	Green	Y		Y	Y	Y	Y	Y	Carrion crow was found to be widespread within the survey area, having been recorded regularly within woodlands, hedgerows/scrub, mature trees and back gardens across the survey area.
Coal Tit	*Periparus ater*	Green				Y	Y			Single birds singing in Storey's Way Wood and from nearby back gardens during the December and January survey visits.
Blue Tit	*Cyanistes caeruleus*	Green	Y	Y	Y	Y	Y	Y	Y	Blue tit was found to be widespread and abundant during the survey visits, having been recorded within woodlands, hedgerows/scrub, mature trees and back gardens across the survey area.

Common name	Scientific Name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Great Tit	*Parus major*	Green	Y		Y	Y	Y	Y	Y	Great tit was found to be widespread and abundant during the survey visits, having been recorded within woodlands, hedgerows/scrub, mature trees and back gardens across the survey area.
Swallow	*Hirundo rustica*	Green	Y							The only recording of swallow occurred during the September survey visit and involved a flock of approximately 25 birds that were observed commuting over the Lagoon around dusk.
Long-tailed Tit	*Aegithalos caudatus*	Green	Y	Y	Y	Y	Y	Y	Y	Long-tailed tit was found to be widespread within the survey area, having been recorded regularly within woodlands, hedgerows/scrub, mature trees and back gardens across the survey area.

Common name	Scientific Name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Chiffchaff	*Phylloscopus collybita*	Green	Y							Small numbers of chiffchaff were recorded during the September and March survey visits. These birds may have been summer migrants.
Blackcap	*Sylvia atricapilla*	Green	Y		Y					Single birds were recorded in Storey's Way Wood and within a section of hedgerow in the ridge and furrow fields during the September and November survey visits, respectively.
Goldcrest	*Regulus regulus*	Green				Y	Y	Y		At least two birds were recorded calling in Storey's Way Wood from the December to February survey visits (inclusive).
Blackbird	*Turdus merula*	Green	Y	Y	Y	Y	Y	Y	Y	Blackbird was found to be widespread and abundant during the survey visits, having been recorded within woodlands, hedgerows/scrub, mature trees and back gardens across the survey area.

Common name	Scientific Name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Robin	*Erithacus rubecula*	Green	Y	Y	Y	Y	Y	Y	Y	Robin was found to be widespread and abundant during the survey visits, having been recorded within woodlands, hedgerows/scrub, mature trees and back gardens across the survey area.
Stonechat	*Saxicola rubicola*	Green				Y				A single stonechat was recorded in the reedbed within the north-western part of the survey area during the December survey visit.

Common name	Scientific Name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Pied Wagtail	*Motacilla alba*	Green	Y	Y	Y	Y	Y	Y	Y	Pied wagtail was recorded in small numbers on all survey visits and was primarily associated with the urban areas (such as Eddington Phase 1 and 307 Huntingdon Road), as well as the construction area and Lagoon. A peak count of 17 birds was recorded flying over grasslands in the north-western part of the survey around dusk during the December survey visit (likely commuting to a roost site).
Chaffinch	*Fringilla coelebs*	Green				Y	Y		Y	Small numbers of birds were recorded at a variety of locations across the site on several survey visits.

Common name	Scientific Name	Conservation status	Presence/absence per visit							Notes
			A	B	C	D	E	F	G	
Goldfinch	*Carduelis carduelis*	Green	Y	Y	Y	Y	Y	Y	Y	Goldfinch was found to be widespread and abundant during the survey visits, having been recorded within woodlands, hedgerows/scrub, mature trees and back gardens across the survey area. A peak flock count of at least 55 birds was recorded within the area of grassland in the western part of the survey area during the February survey visit.

Key:

Y : recorded during survey visit.
Sch 1 : Species listed on Schedule 1 of the Wildlife & Countryside Act, 1981 (as amended).
S41 : Species listed on Section 41 of the Natural Environment and Rural Communities Act, 2006.
Red : Species included on the Red List within '*The Birds of Conservation Concern 5*' (Stanbury et al, 2021).
Amber : Species included on the Amber List within '*The Birds of Conservation Concern 5*' (Stanbury et al, 2021).
Green : Species included on the Green List within '*The Birds of Conservation Concern 5*' (Stanbury et al, 2021).
Notable: Species listed as 'Notable' within the University of Cambridge's '*Biodiversity Baseline Summary Report*'. (biodiversity_summary_baseline14112019_report_0.pdf (cam.ac.uk)

Appendix: Ecology and Biodiversity

Note: This report contains sensitive information relating to protected species and should be kept confidential.

Eddington, Cambridge

Bat Roost Assessment

Report ref: NWC-MP2024-MDE-SW-SU-00014-BRA August 2025

MD Ecology ref: C205/R14/v2

Date: August 2025

This report has been prepared on behalf of:

University of Cambridge

By:

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Table of Contents

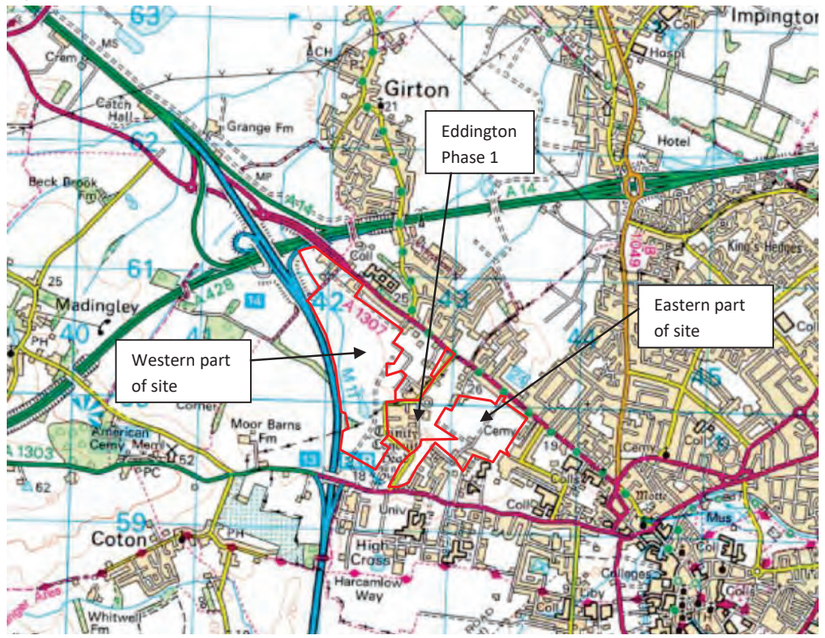
1. Introduction

1.1 This report has been prepared by Mike Dean of MD Ecology Limited, on behalf of the University of Cambridge. It provides the results of a Bat Roost Assessment of buildings within the Eddington site, also known as North West Cambridge, that would need to demolished as part of any future development of the site. This report incorporates the results of a Preliminary Roost Assessment (PRA), undertaken in 2024, as well as follow up dusk emergence surveys undertaken in 2025. The report also provides the results of bat roost surveys of trees within the site.

1.2 The site is located between Huntingdon Road, Madingley Road and the M11 Motorway and is a former university farm. Phase 1 of the Eddington development has been constructed and future development areas are located to the east and west of Eddington. The location of the site is shown in Figure 1.

1.3 The purpose of the survey was to inform the baseline in relation to bats for the Environmental Impact Assessment (EIA) for the renewal of the scheme's outline planning consent. This report does not include any assessment of likely impacts or required mitigation measures for Eddington.

Figure 1: Site Location Plan



1.4 Buildings constructed as part of Phase 1 of the development were not included as they are outside of the site boundaries and considered unlikely to be changed by future phases of the project.

1.5 The buildings included in this study were (see Figure 2):

Gravel Hill Farm complex

- Original farmhouse
- New modular office
- Converted outbuildings as offices/artists studios
- Brick barn
- Cattle Yard Barn
- Timber clad modular office outbuilding and community centre
- Potato shed
- Gravel Hill Cottages

CASP building

301/303/307 Huntingdon Road farm complex

- Semi-detached properties at 301/303 Huntingdon Road
- Modern offices and stables
- Agricultural barns and timber animal shelters
- Disused outbuildings, barns and sheds

1.6 Other buildings within the site at 181A Huntingdon Road and at Howe Farm at the time of the PRA in 2024 were excluded from this study. These buildings were surveyed separately for bats and were demolished in 2024 under the Outline Planning Consent for the scheme. They are therefore no longer present and do not form part of the baseline for the EIA.

1.7 A brown long-eared bat (*Plecotus auritus*) roost has previously been identified in the roofspace of Gravel Hill Farmhouse. The roost has been present within the roofspace above the farmhouse since it was initially surveyed in 2011 to inform the EIA for the original outline planning application. Access points used by bats were maintained during the conversion of the building for office use in 2013. Monitoring of the roofspace at that time confirmed low levels of use by brown long-eared bats.

1.8 Prior to the current study, Gravel Hill Farmhouse was last surveyed for bats in 2018. A Preliminary Bat Roost Assessment was undertaken as well as follow up dusk and dawn surveys (three visits, on 15 May, 14 June and 27 June 2018). A single brown long-eared bat was recorded emerging from and re-entering the building using an access point to the rear at the apex of the west-facing gable (southernmost of the three west-facing gables). This level of use (by a single bat) was considered consistent with the low number of droppings recorded within the roofspace in 2018.

1.9 A common pipistrelle (*Pipistrellus pipistrellus*) roost was also identified within the structure of the roof of the farmhouse in 2018, on the southern gable end (above the point at which the adjacent new modular building is attached to the farmhouse). A single common pipistrelle was recorded swarming around this location at dawn during both dawn surveys, and was considered likely to have entered the roof.

1.10 The other buildings within the Gravel Hill Farm complex were previously surveyed for bats in 2011 and 2018; no evidence of use by bats of any of the other buildings was recorded.

1.11 The buildings within the 301/303/307 Huntingdon Road farm complex and the CASP building were previously surveyed in 2011; no evidence of use by bats was recorded. None of these buildings have been surveyed since.

1.12 All mature trees within the site were assessed in terms of their potential to support bat roosts on 25 February 2025, with the exception of trees located within one of the three woodlands within the site, which will not be affected by the proposed development; trees on the edge of the woodlands, facing areas proposed for development were included as they may be impacted by light spill. Trees identified with roosting potential were then the subject of further surveys (ladder-top inspections, Aerial Tree Inspections and/or dusk emergence surveys). No bat roosts in trees have been identified during previous surveys of the site.

1.13 The 2024 PRA of building and 2025 assessment of trees and ladder-top inspections were undertaken by Mike Dean. Mike is a Fellow member of the Chartered Institute of Ecology and Environmental Management (CIEEM), a Chartered Ecologist and a Chartered Environmentalist. He is the Project Ecologist for Eddington and holds a current Natural England licence to survey for bats (Class licence CL17 Registration number 2015-11729-CLS-CLS).

1.14 The 2025 dusk emergence surveys of buildings and trees, and an initial Aerial Tree Inspection of selected trees, were undertaken by staff from MKA Ecology, as detailed in the methods section of this report.

2. Methods

Preliminary Roost Assessment of buildings

2.1 The survey was undertaken by Mike Dean. The majority of the buildings were surveyed on 3 and 4 June 2024. Gravel Hill Farmhouse and the Brick Barn at Gravel Hill were surveyed on 13 August 2024. 303 Huntingdon Road was surveyed on 20 August 2024. Weather conditions were dry and sunny during each of the surveys.

2.2 Each building was assessed in terms of its suitability for use by roosting bats. The assessment took account of the structure of the building, the nature of the materials used, any areas of damage to the external fabric of the building, and the nature and level of current (human) use.

2.3 Possible access routes for bats into the buildings, or into potentially suitable roost sites associated with the structure of the buildings, were searched for. Any features considered to provide suitable roost sites were viewed from ground level using binoculars and were examined using a bright torch where accessible.

2.4 A search was made for bats and any evidence of current or recent use by bats (droppings, feeding remains, etc) within buildings and their roofspaces, where accessible.

2.5 The approach set out above follows the methods for Preliminary Roost Assessment (PRA) recommended by the Bat Conservation Trust (BCT) in their survey guidelines (Collins 2023)[1].

2.6 Where bat droppings were recorded, a sample was collected and sent to Surescreen Scientifics for analysis to determine the species present. Analysis involves DNA extraction, amplification and sequencing.

Dusk emergence surveys of buildings

2.7 Dusk emergence surveys were undertaken of buildings identified as having bat roost potential during the PRA. The emergence surveys were undertaken during May and June 2025 by surveyors using bat detectors and infrared cameras to record emerging bats. Surveys commenced 15 minutes before sunset and continued for 90 minutes after sunset.

2.8 The farmhouse at Gravel Hill Farm was surveyed on three occasions due to it being a known roost. The other buildings were surveyed on one occasion each due to their relatively low suitability for bats, which accords with the level of effort recommended in Collins (2023).

2.9 Details of the dates, times, weather conditions, surveyors and equipment for the dusk emergence surveys are provided in Table 1, below.

[1] Collins, J. (ed.) (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn).* The Bat Conservation Trust, London.

Table 1: Dates, times, weather conditions, surveyors and equipment for dusk emergence surveys of buildings

Building	Date of survey	Times			Surveyors	Equipment	Weather conditions
		Sunset	Start	Finish			
Gravel Hill Farmhouse	07/05/25	20.35	20.20	22.05	India Wedge ACIEEM (Senior Ecologist), Robin Pickett (Graduate Ecologist)	5 bat detectors* 5 IR cameras+	12-10°C, dry, wind 3, cloud cover 3/8
	28/05/25	21.06	20.51	22.36	Tom McGuire, (Ecologist), Robin Pickett		14-13°C, dry, wind 1, cloud cover 6/8
	18/06/25	21.23	21.08	22.53	India Wedge ACIEEM, Robin Pickett		22-20°C, dry, wind 1, cloud cover 1/8
Modular office building^	28/05/25	21.06	20.51	22.36	Tom McGuire, Robin Pickett	5 bat detectors* 5 IR cameras+	14-13°C, dry, wind 1, cloud cover 6/8
Brick Barn^							
301-303 Huntingdon Road	08/05/25	20.37	20.22	22.07	Suzanne Dry ACIEEM (Consultant Ecologist), Hannah Wallace (Ecologist), Kyle Marshall (Graduate Ecologist)	10 bat detectors* 10 IR cameras+	12-10°C, dry, wind 3, cloud cover 1/8
Outbuilding B#							
Shed 1#	21/05/25	20.57	20.42	22.27	India Wedge ACIEEM, Tom McGuire	8 bat detectors* 8 IR cameras+	17-16°C, dry, wind 1, cloud cover 2/8
Shed 2#							
Disused Barn 1#							

*Song Meter Mini Bat 2
+Sony FDR AX53 Infrared video recorders with Nightfox infrared torches
^At Gravel Hill Farm
#Within the 301/303/307 Huntingdon Road farm complex

Assessment of trees

2.10 All mature trees within the site were assessed from ground level using binoculars, searching for features potentially suitable as roost sites for bats, such as those listed in Table 6.6 of the BCT survey guidelines (Collins 2023). Trees located on the edge of woodlands, adjacent to areas that will be developed, were included in the assessment; trees located on other edges of woodlands, or within the centre of woodlands, were not assessed, as there would be no direct or indirect impact (e.g. from lighting) on such trees.

2.11 The survey was undertaken by Mike Dean on 25 February 2025. Trees are referred to by the numbers assigned in Tree Frontiers' tree schedule and associated maps.

Ladder-top inspection

2.12 A follow up inspection of features in trees that could be accessed from the top of a ladder was undertaken on 28 April 2025, with repeat inspections on 22 July and 18 August 2025 (trees T098, T139, T191, T220 and T236). Suitable features were investigated for evidence of use by bats using mirrors and torches, and then a fibrescope, where necessary to explore the feature. The inspections were undertaken by Mike Dean.

Climbing survey

2.13 An initial Aerial Tree Inspection was undertaken by India Wedge and Sam Cook of MKA Ecology on 24 June 2025. Three trees were climbed (trees T261, T603 and T630) and suitable features were assessed and investigated for evidence of use by bats using mirrors and torches, and then a fibrescope, where necessary to explore the feature.

2.14 Follow up Aerial Tree Inspections of tree T630 were undertaken by Mike Dean on 22 July and 18 August 2025.

Dusk emergence surveys

2.15 Dusk emergence surveys were undertaken of tree T062, as this tree could not be climbed for safety reasons. Three emergence surveys were undertaken, on 8 July, 29 July and 19 August 2025 by surveyors using bat detectors and infrared cameras to record emerging bats. Surveys commenced 15 minutes before sunset and continued for 90 minutes after sunset.

Table 2: Dates, times, weather conditions, surveyors and equipment for dusk emergence surveys of tree T062

Date of survey	Times			Surveyors	Equipment	Weather conditions
	Sunset	Start	Finish			
08/07/25	21.19	21.04	22.49	Robin Pickett and Caroline Fakas (Graduate Ecologist)	1 bat detector* 1 IR camera+	18-15°C, dry, wind 1, cloud cover 1/8
29/07/25	20.56	20.41	22.26	Robin Pickett and Caroline Fakas	1 bat detector* 1 IR camera+	19-17°C, dry, wind 1, cloud cover 7/8
19/08/25	20.15	20.00	21.45	Robin Pickett and Caroline Fakas	1 bat detector* 1 IR camera+	18-16°C, dry, wind 2, cloud cover 2/8

Limitations

2.16 It was not possible to access all potential roosting locations within all of the buildings during the PRA; limitations relating to the survey of each building are described in Appendix 1, where relevant to the study.

2.17 The time of year and weather conditions during which the surveys were carried out were suitable.

3. Survey Results and Assessment

Buildings

3.1 The detailed results of the assessment for each building, along with photos, are provided in Appendix 1. A summary of the results for the buildings assessed as potentially suitable for use by roosting bats is provided in Table 3 below. All other buildings were assessed as having negligible potential for bats, no evidence of use was recorded and no dusk emergence surveys were undertaken of such buildings.

Table 3: Summary of results of assessment of suitability of buildings for bats

	Building	Likely suitability for bats /known presence	Results of dusk emergence surveys
Gravel Hill Farm	Gravel Hill Farmhouse	Confirmed brown long-eared bat roost. 2018 – use confirmed by 1 brown long-eared and 1 common pipistrelle	No bats recorded emerging during any of the 3 visits. Bat detectors recorded low levels of activity from noctule, soprano pipistrelle and common pipistrelle.
	New modular office	Low	No bats recorded emerging during the survey visit. Bat detectors recorded low levels of activity from noctule and common pipistrelle.
	Brick barn	Low	
	Offices/artists studios	Low, but current use ruled out	N/a
301/303/307 Huntingdon Road	Semi-detached properties (301/303 Huntingdon Road)	Low	No bats recorded emerging during the survey visit. Bat detectors recorded low levels of activity from noctule, soprano pipistrelle and common pipistrelle.
	Disused outbuilding B	Low	
	Modern offices and stables	Negligible, except bat boxes (current use ruled out)	N/a
	Sheds 1 and 2	Low	No bats recorded emerging during the survey visit. Bat detectors recorded low levels of activity from noctule and common pipistrelle.

3.2 The results of the surveys confirmed that Gravel Hill Farmhouse is used as an occasional roost by small numbers of brown long-eared bats. None of the other buildings included in the survey were identified as bat roosts. Given the relatively low suitability of these buildings their status is considered unlikely to change within the next 1-2 years.

Trees

3.3 The trees identified from the ground level inspection as potentially suitable for use by roosting bats are listed in Table 4 below. The results of the follow-up ladder-top inspection, climbing inspections and/or dusk emergence surveys are also provided in Table 4. No bat roosts were identified in any of the trees surveyed.

Table 4: Results of surveys of trees

Tree number	Description	Results of follow-up surveys
T062	Ash tree with large split on east side. Extensive rot at base of tree so not climbable and feature cannot be accessed from a ladder.	Dusk emergence surveys (3 visits) – no bats recorded emerging
T098	Horse chestnut tree with a knot hole on the south-west side at 7-8m.	Ladder-top inspection – features are suitable, no evidence of use by bats
T139	Horse chestnut tree with two cavities on the east side at 5m.	Ladder-top inspection – features are suitable, no evidence of use by bats
T191	Horse chestnut tree with numerous cracks and cavities.	Ladder-top inspection – most features are unsuitable, but low likelihood of use of two features, no evidence of use by bats
T220	Horse chestnut tree with cavity at ground level on west side.	Ground level inspection – feature is suitable but low likelihood of use due to height, no evidence of use by bats
T236	Horse chestnut tree with two knot holes (one on each of east and west sides).	Ladder-top inspection – features are suitable, no evidence of use by bats
T261	Willow tree with a large cavity at 15m. See Photos in Appendix 2.	Aerial Tree Inspection x 1 visit. Low suitability. No signs of use by bats.
T592	Oak tree with a small number of potentially suitable features on the north side of the tree.	No follow-up survey undertaken as this tree will be retained in an area where no lighting is proposed.
T603	Poplar tree with a large woodpecker hole and a small cavity on the east side. See Photos in Appendix 2.	Aerial Tree Inspection x 3 visits. No signs of use by bats on any visit.
T630	Oak tree with a large tear out. See Photos in Appendix 2.	Aerial Tree Inspection x 1 visit. No signs of use by bats.
n/a	Mature oak tree adjacent to Eddington Avenue.	No follow-up survey undertaken as this tree will be retained in an area where no additional lighting is proposed.

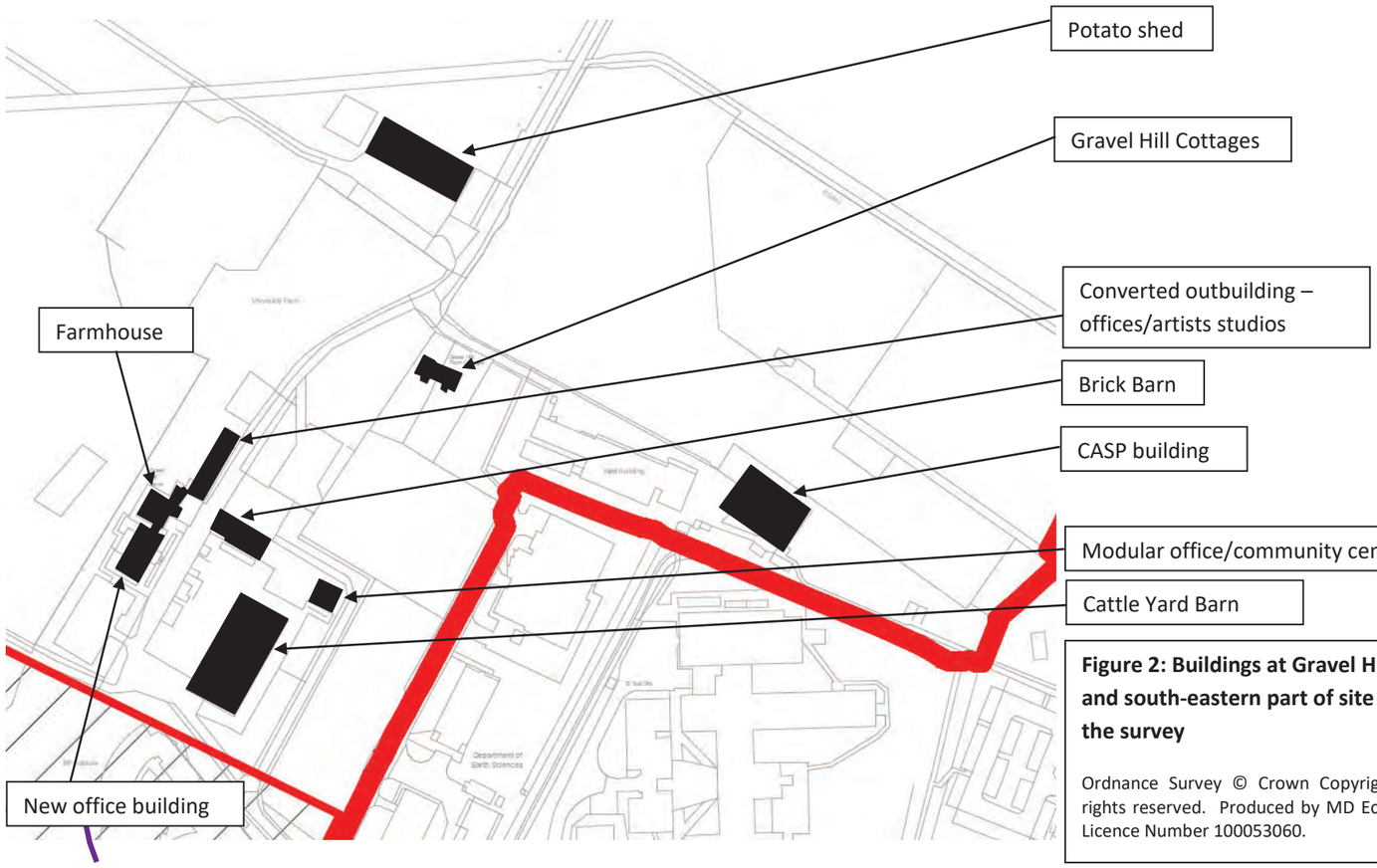


Figure 2: Buildings at Gravel Hill Farm and south-eastern part of site included in the survey

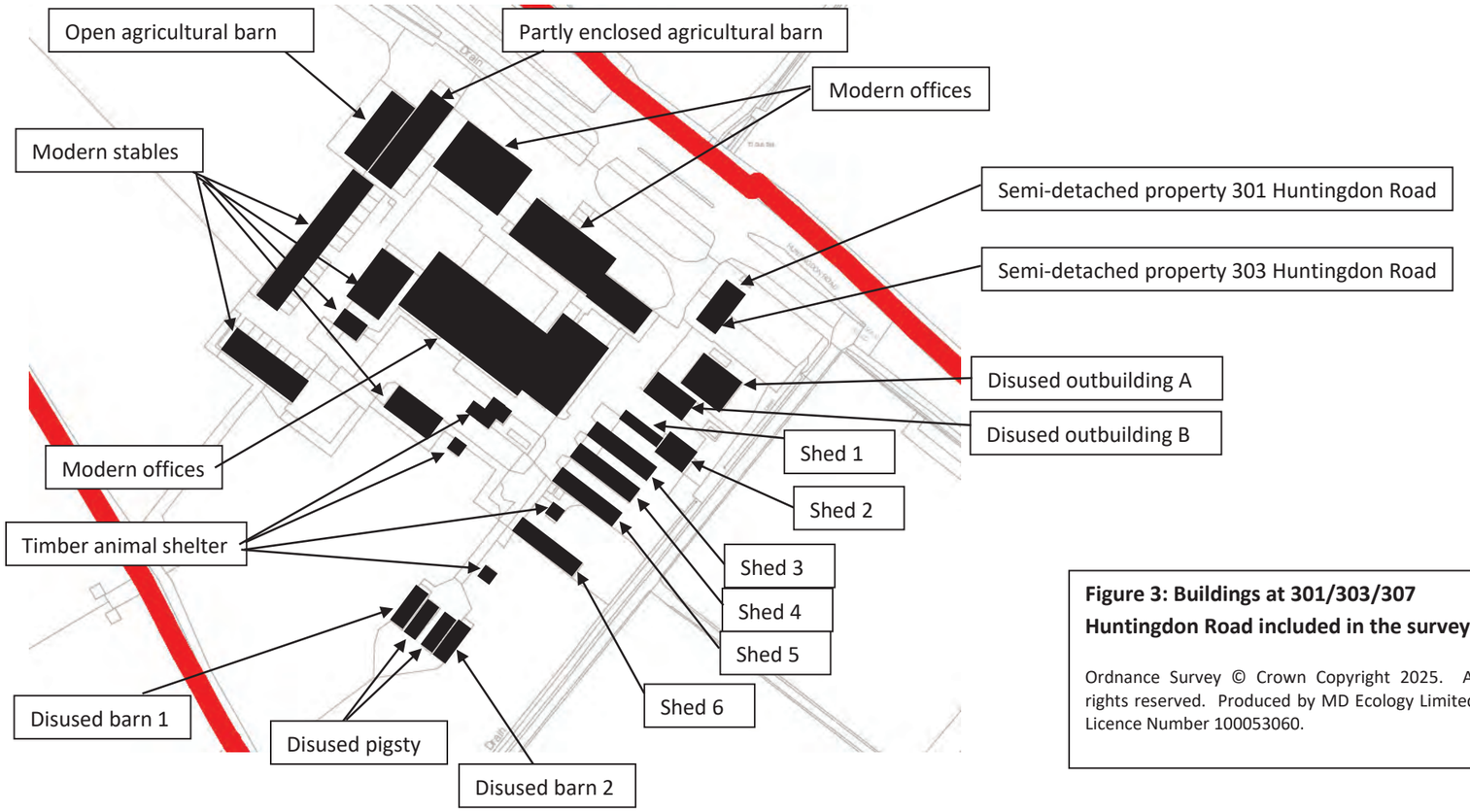


Figure 3: Buildings at 301/303/307 Huntingdon Road included in the survey

Appendix 1: Detailed results of Preliminary Roost Assessment

Gravel Hill Farm complex – Original farmhouse

Brick building with a tiled roof in current use as offices. There are multiple inter-connected roofspaces. The roof is generally in good condition but there are access points for bats at the wall tops. To the rear of the building are a garden, hedgerow, overgrown field and woodland, providing valuable foraging habitats. However, the building is lit at night with security lighting.

The roofspaces provide suitable roosting locations. Bats may also roost in the soffit or under tiles.

Bat droppings were recorded during the August 2024 internal inspection within the main roofspace, in three basic locations under the ridge. There were approximately 500 droppings in total. The droppings were considered likely to be from brown long-eared bats but have been sent for DNA analysis for confirmation. None of the droppings were particularly fresh and no bats were observed within the roofspace at the time of the survey; this suggested that a bat (or bats) had used the roofspace earlier in the year, but were not present at the time of the survey visit. The number and location of the droppings was consistent with use by small numbers of bats (or possibly one individual), as was found to be the case in previous years of survey.

It was not possible to access two sections of roofspace, either side of the chimney at the northern end of the building – that associated with the gable end on the front aspect and that within the third of the three separate roofspaces on the rear aspect. There may therefore be additional use of the roofspaces by bats which could not be determined during the survey.

Bats may also roost within the roof structure, leaving no field signs.

Overall the building is a confirmed roost and has likely suitability for bats is 'High'. There are multiple possible roosting locations and use by significant numbers of bats or as a maternity roost cannot be ruled out without further survey.

The building is not suitable for use by barn owls.

Further bat surveys at dusk are recommended (3 visits). Completed in May and June 2025.

Gravel Hill Farm complex – new modular office

Timber clad two storey structure with a flat roof in current use as an office. There is no separate roofspace. There are some gaps behind the fascia board around the roof providing potentially suitable roost features.

Overall likely suitability for bats is 'Low'.

The building is not suitable for use by barn owls.

A further bat survey at dusk (one visit only, in parallel with surveys of the farmhouse) is recommended. Completed in May 2025.

Gravel Hill Farm complex – converted outbuildings as offices/artists studios

Single storey brick building which was originally open fronted; part is still open (which was surveyed internally for bats) and part has been converted for offices/artist studios. The original roof has been replaced with a metal roof. No evidence of bats recorded during internal inspection. The open section has bird netting in place to prevent pigeons from nesting.

The timber fascia to the rear of the building has a gap between it and the wall, which could be used by bats. However, this was found to be heavily cobwebbed with no evidence of use by bats.

Overall likely suitability for bats is 'Low'. The presence of a roost at the time of the survey could be ruled out.

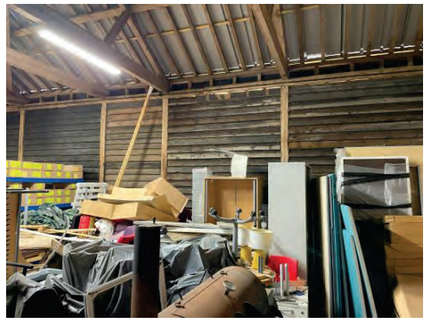
The building is not suitable for use by barn owls.

No further surveys are required.

Gravel Hill Farm complex – Brick barn

Brick building with timber cladding in places and a recently fitted metal roof. Some of the timber cladding has started to warp providing access points into the barn and potentially suitable roost features.

No evidence of bats was recorded within the barn during the August 2024 survey visit; none has been recorded during previous surveys. It is therefore considered unlikely that bats are accessing the internal parts of the building. However, it is possible that bats may access the area behind the cladding on either the eastern or southern aspects. There is also a timber fascia on the northern aspect which bats could roost behind.



Overall likely suitability for bats is 'Low'.

The building is not suitable for use by barn owls.

A further bat survey at dusk (one visit only, in parallel with surveys of the farmhouse) is recommended. Completed in May 2025.

Gravel Hill Farm complex – Cattle Yard Barn

Large concrete block and timber building on a steel frame with an asbestos-type roof covering. Open access throughout, with bird netting in place to prevent pigeons from nesting. No suitable features for bats. No evidence of bats recorded during internal inspection.

Overall likely suitability for bats is 'Negligible'.

No evidence of use by barn owls was recorded and the building is unlikely to be used as it is netted to prevent pigeons roosting within it.

No further surveys are required.

Gravel Hill Farm complex – Timber clad modular office outbuilding and community centre

Timber clad single storey structure with a flat roof. No roofspace and no gaps in cladding. No suitable features for bats.

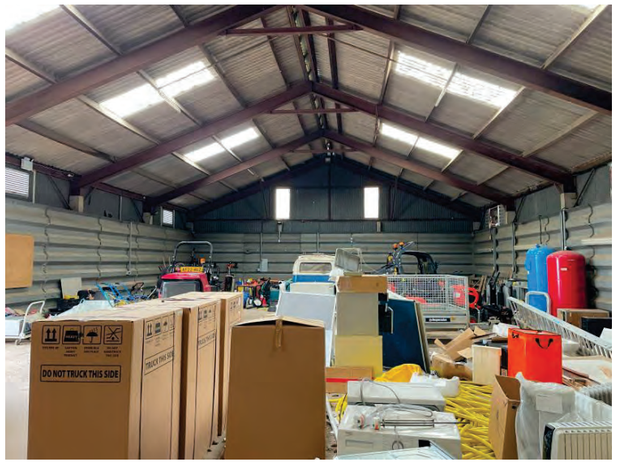
Overall likely suitability for bats is 'Negligible'.

The building is not suitable for use by barn owls.

No further surveys are required.

Gravel Hill Farm complex – potato shed

Agricultural barn in current use for storage. Steel frame with corrugated metal sides and asbestos-type roof. No suitable features for bats. No evidence of bats recorded during internal inspection.



Overall likely suitability for bats is 'Negligible'.

The building is not suitable for use by barn owls.

No further surveys are required.

Gravel Hill Farm complex – Gravel Hill Cottages

Two-storey semi-detached brick building with a tiled roof. The building is in current use as residential accommodation. The roof is generally in good condition and the plastic soffit fits snugly to the wall meaning that there is no access to the roofspace or structure of the roof for bats. Separate roofspaces were inspected above each of the properties. No evidence of bats recorded during internal inspection; extensive use by mice and rats was confirmed.

Overall likely suitability for bats is 'Negligible'.

The building is not suitable for use by barn owls.

No further surveys are required.

CASP building

Singley-storey split-level brick building with a pitched metal roof in current use as an office. The soffit fits snugly to the walls meaning that there is virtually no possible access for bats into the roofspaces. The two small roofspaces on the southern side of the building could be accessed via loft hatches; both were inspected. The roofspaces on the northern half of the building could not be accessed due to the presence of a suspended ceiling. No evidence of bats recorded during internal inspection; use by mice and rats was confirmed.

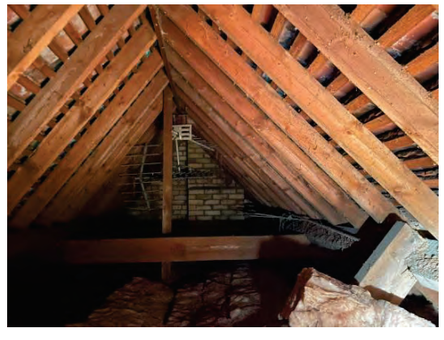
Overall likely suitability for bats is 'Negligible'.

The building is not suitable for use by barn owls.

No further surveys are required.

301/303/307 Huntingdon Road farm complex – semi-detached properties at 301/303

Two-storey semi-detached brick building with a tiled roof. The building is in current use as residential accommodation. The roof is generally in good condition and there is no felt on the inside. The soffit fits snugly to the wall around much of the building and there is therefore limited access to the roofspace or structure of the roof for bats, but there are gaps at the gable ends. Separate roofspaces were inspected above each of the properties. No evidence of bats recorded during internal inspection; extensive use by mice and rats was confirmed.



Overall likely suitability for bats is 'Low'.

The building is not suitable for use by barn owls.

A further bat survey at dusk (one visit only) is recommended. Completed in May 2025.

301/303/307 Huntingdon Road farm complex – modern offices and stables

Modern timber and brick buildings with metal roofs, in use as offices or stables. The buildings are in good condition and do not provide suitable roosting features for bats within the structure of the buildings. Internal inspections were not undertaken.

The only exceptions are three bat boxes installed high up on the walls of the stables. These were inspected from a ladder; no evidence of use by bats was recorded.

Overall likely suitability for bats is 'Negligible', with the exception of the bat boxes.

The buildings are not suitable for use by barn owls.

No further surveys are required.

301/303/307 Huntingdon Road farm complex – disused outbuilding A

Single-storey building with a corrugated metal roof, which is disused. The exterior is rendered and there is no access to survey inside the building. There are no suitable access points for bats and no features associated with the exterior that provide suitable roost sites.

Overall likely suitability for bats is 'Negligible'.

The building is not suitable for use by barn owls.

No further surveys are required.

301/303/307 Huntingdon Road farm complex – disused outbuilding B

Single-storey brick building with a mezzanine level in the rear half of the building and an asbestos-type roof. The building is disused and considered unsafe to enter. There does not appear to be a separate roofspace. However, there is access to the roof structure for bats and bats may roost within the interior of the building given that it is disused and could not be accessed to survey it.

Overall likely suitability for bats is 'Low'.

The building is not suitable for use by barn owls.

A further bat survey at dusk (one visit only) is recommended. Completed in May 2025.

301/303/307 Huntingdon Road farm complex – Sheds 1 and 2

Two adjoining timber sheds. Shed 1 is an enclosed structure; Shed 2 is open-fronted with an enclosed section to the rear. A barn owl was roosting on the roof timbers in Shed 2 at the time of the survey, although there were no pellets present to suggest a nest in this structure. It was not possible to access the enclosed section to the rear due to the presence of stored materials and to minimise disturbance to the barn owl. Shed 1 was accessed. No evidence of bats was recorded.

Shed 1

Shed 2

Overall likely suitability for bats is 'Low'.

Both sheds are suitable for use by barn owls; Shed 2 appears to be used as a barn owl roost.

A further bat survey at dusk (one visit only) is recommended. Completed in May 2025.

301/303/307 Huntingdon Road farm complex – Sheds 3, 4, 5 and 6

Timber sheds in a very poor state of disrepair. Roofing timbers have split and the roofs are sagging. The sheds are boarded up and doors closed; they are no longer in use. No evidence of bats was recorded in any of the sheds.

Overall likely suitability for bats is 'Negligible'.

The buildings are not suitable for use by barn owls.

No further surveys are required.

301/303/307 Huntingdon Road farm complex – open agricultural barn and partly enclosed agricultural barn

Open agricultural barn on a steel frame, with an asbestos-type roof. In use for storage of hay. No features suitable for use by bats.

Partly enclosed agricultural barn to rear, with corrugated metal walls and an asbestos-type roof. In use for housing animals. No features suitable for use by bats.

Overall likely suitability for bats is 'Negligible'.

The open agricultural barn is not suitable for use by barn owls, although they may use the hay on a temporary basis.

The partly enclosed agricultural barn is not suitable for use by barn owls given the structure of the building and that it is in use by animals.

No further surveys are required.

301/303/307 Huntingdon Road farm complex – disused Barn 1

Disused timber barn in a poor state with an asbestos-type roof. The building is separated internally into rooms using OSB board. It was not possible to survey the 'roofspace' as it would have been unsafe to access. No evidence of bats was recorded.

Overall likely suitability for bats is 'Low'.

The barn is suitable for use by barn owls.

A further bat survey at dusk (one visit only) is recommended. Completed in May 2025.

301/303/307 Huntingdon Road farm complex – disused Barn 2

Disused timber barn in a poor state with an asbestos-type roof. The building is very draughty and open, and unlikely to be used by bats. There are no spaces behind timber cladding. No evidence of bats was recorded. However, a significant collection of barn owl pellets was present indicating likely use as a barn owl nesting site. This was confirmed through discussions with staff at the farm.

Overall likely suitability for bats is 'Negligible'.

The building appears to be used as a nesting site by barn owls.

No further surveys are required.

301/303/307 Huntingdon Road farm complex – disused pigsty

Disused concrete pigsty with multiple sections for individual animals, and asbestos-type roofs. No features suitable for use by roosting bats. A detailed survey was not undertaken due to the confined spaces within each sty, and the presence of an asbestos-type roof.

Overall likely suitability for bats is 'Negligible'.

The buildings are not suitable for use by barn owls.

No further surveys are required.

301/303/307 Huntingdon Road farm complex – timber animal shelters

Small timber structures with no suitable bat roosting features, in current use as animal shelters.

Overall likely suitability for bats is 'Negligible'.

The structures are not suitable for use by barn owls.

No further surveys are required.

Appendix 2: Photos of features in trees subject to an Aerial Tree Inspection

Tree T261 – open cavity with the feature circled having the potential to support one bat only.

Tree T630 – the large tearout has loose bark at the top and some rams-horning. The wound measures approximately 120cm vertically. This feature has potential to support multiple bats.

Tree T603 – the woodpecker hole is very large and may be used by squirrels. The internal cavity extends c.60cm upwards and c.30cm downwards, which has the potential to support multiple bats. There is a small gap behind the heartwood in the tearout of an adjacent branch with the potential to support a single individual bat.

Appendix: Ecology and Biodiversity

North West Cambridge Masterplan

Bat Activity Survey

Report ref: NWC-MP2024-MDE-SW-SU-00007-bat activity survey July 2025

MD Ecology ref: C205/R8/v3

Date: July 2025

This report has been prepared on behalf of:

University of Cambridge

By:

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Table of Contents

1. Introduction

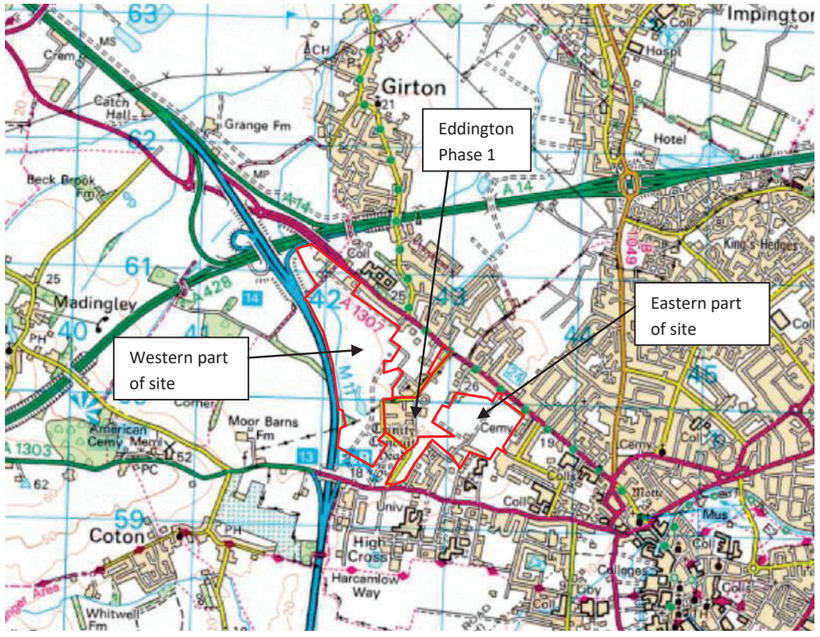
Scope and purpose

1.1 This report has been prepared by Mike Dean of MD Ecology Limited, on behalf of the University of Cambridge. It provides the interim results of bat activity surveys of the Eddington site, also known as North West Cambridge Masterplan. The surveys were undertaken in August, September and October 2024, and April, May, June and July 2025.

1.2 The site is located between Huntingdon Road, Madingley Road and the M11 Motorway and is a former university farm. Phase 1 of the Eddington development has been constructed and future development areas are located to the east and west of Eddington. The location of the site is shown in Figure 1.

1.3 The purpose of the survey was to inform the baseline in relation to bats for the Environmental Impact Assessment (EIA) for the renewal of the scheme's outline planning consent. This report does not include any assessment of likely impacts or required mitigation measures for Eddington.

Figure 1: Site Location Plan



Background information relating to bats at the site

1.4 Bat activity surveys of the site, as well as Eddington Phase 1, were undertaken in 2009 and 2011 to inform the 2012 Environmental Statement (ES) for the current outline planning permission. These comprised manual transect surveys along the stream corridor and boundary features, carried out once per month in May, June and July 2009, and repeated in May and June 2011. The surveys were undertaken in accordance with the version of the Bat Conservation Trust's (BCT) survey guidelines that were current at that time (BCT 2007[1]). No automated detectors were used.

1.5 The site has changed in terms of its suitability for bats since the construction of Phase 1. There has been a significant increase in the number of possible roosting locations, with the construction of new buildings, creation of specific 'bat loft' or integrated bat boxes in some of the buildings, and the installation of 50 bat boxes within the site's woodlands (Pheasant Plantation, Cricket Pitch Wood and Storey's Way Wood; see Figure 2).

1.6 There have also been changes to the foraging habitat and commuting routes present. There has been an increase in the amount of wetland habitat, which is likely to attract particular species, such as Daubenton's bat and Nathusisus' pipistrelle. Hedgerows in the central part of the site have been removed, although these were intensively managed and of limited value for bats. Retained hedgerows have been improved through a relaxation in the frequency of cutting the hedgerow and the edges of fields adjacent to the hedgerows. Furthermore, areas of grassland that were frequently mown or intensively grazed have had a reduced frequency of mowing, and extensive areas of former arable farmland have been abandoned and left to develop into areas of unmanaged grassland with extensive areas of weeds.

1.7 Post-construction monitoring of bats at the site has been undertaken since Phase 1 of the development using two automated bat detectors (SM2+), one installed at Pheasant Plantation and one at Cricket Pitch Wood in June 2018 and again in June 2021. At least nine different species of bat have been recorded within the site (MD Ecology 2021[2]):

- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*P. pygmaeus*)
- Nathusius' pipistrelle (*P. nathusii*)
- Noctule (*Nyctalus noctula*)
- Serotine (*Eptesicus serotinus*)
- Barbastelle (*Barbastella barbastellus*)
- Brown long-eared (*Plecotus auritus*)
- Daubenton's (*Myotis daubentonii*) and
- at least one other bat of the genus Myotis, likely to be whiskered bat (*M. mystacinus*).

[1] Bat Conservation Trust (2007). *Bat Surveys – Good Practice Guidelines*.
[2] MD Ecology (2021). *North West Cambridge: Biodiversity Monitoring Report*. Report ref: C033/BMR5/v1.

1.8 Brown long-eared bats have been recorded roosting on site using buildings at Gravel Hill Farm and Howe Farm. The building at Howe Farm was demolished in 2024 under a Natural England licence. Common pipistrelle bats have also been recorded roosting on site using buildings in the same locations, and have also been recorded roosting in bat boxes in woodlands. The remaining species have not been confirmed as roosting but have been recorded on automated bat detectors. A high number of noctule passes were recorded in June 2021 at Pheasant Plantation, with many of these shortly after sunset or before sunrise, suggesting the possible presence of a maternity roost in this woodland.

1.9 There have been other subsequent bat activity surveys in specific parts of the site to inform an assessment of the likely impacts of lighting the temporary haul roads and the ridgeway cycleway, in 2023 and 2024.

Bats and lighting

1.10 One of the likely sources of an impact on bats of the Eddington development is associated with the introduction of artificial lighting. Artificial lighting has a negative impact on bats of any species, where the roost is directly lit. It also has a negative impact on certain species where the foraging habitat or commuting routes are lit, but has no effect on other species. Based on Guidance Note 08/23 on bats and artificial lighting (BCT and ILP 2023[3]), the general effect of lighting on the species recorded at Eddington is set out in Table 1 below.

Table 1: Effects of artificial lighting on different bat species recorded at Eddington

Species	Effect of artificial lighting	
	Commuting routes	**Foraging habitat**
Common pipistrelle	No effect	No effect
Soprano pipistrelle	No effect	No effect
Nathusius' pipistrelle	Unknown – no data	Unknown – no data
Noctule	No effect	Varies between positive and negative
Leisler's	Unknown – no data	Unknown – no data
Serotine	Unknown – no data	Unknown – no data
Daubenton's	No effect	Negative
Whiskered	Unknown – no data	Unknown – no data
Natterer's	Unknown – no data	Unknown – no data
Brown long-eared	Negative	Negative
Barbastelle	Negative	Negative

[3] Bat Conservation Trust and the Institution of Lighting Professionals (2023). *Guidance Note GN08/23: Bats and Artificial Lighting at Night.* ILP, Warwickshire.

Legislation and conservation status

1.11 All bats receive legal protection under the Conservation of Habitats and Species Regulations 2017 (as amended).

1.12 Of the species known to be present at the site or in the local area, barbastelle, brown long-eared, noctule and soprano pipistrelle are those listed as national priorities for conservation (Species of Principal Importance for the Conservation of Biodiversity in England).

Personnel

1.13 The surveys were undertaken by Mike Dean. Mike is a Fellow member of the Chartered Institute of Ecology and Environmental Management (CIEEM), a Chartered Ecologist and a Chartered Environmentalist. He is the Project Ecologist for Eddington.

2. Methods

Desk study

2.1 Existing records of bats within 10km of the site were obtained from the Cambridgeshire and Peterborough Environmental Records Centre (CPERC) in April 2024.

2.2 The results of previous bat activity surveys of the site undertaken since Phase 1 of the development commenced were reviewed. These included:

- The results of post-construction monitoring of bat activity using two automated bat detectors (SM2+), one installed at Pheasant Plantation and one at Cricket Pitch Wood in June 2018 and June 2021 (MD Ecology 2021);
- Bat activity surveys of the temporary haul road and car park to inform an application for the installation of temporary lighting, using two automated bat detectors (SM2+) in September and October 2023 (MD Ecology 2023a)[4];
- Bat activity surveys of the ridgeway cycle route, between Bunker's Hill and Eddington, and between Eddington and Storey's Way, undertaken automated detectors during August, September and October 2023 (MD Ecology 2023b)[5]; and
- Bat activity surveys of the ridgeway cycle route, between Eddington and Storey's Way undertaken using automated detectors during April, May, June and July 2024 (MD Ecology 2024)[6].

2.3 The results of these surveys are provided in Appendix 4.

Field survey – general approach

2.4 The bat activity surveys comprised a combination of manual transect surveys, undertaken at dusk, and the deployment of automated bat detectors. The level of survey effort and timing of surveys followed that set out in Table 8.3 of current good practice guidelines for such surveys at sites of 'moderate' or 'high' suitability for bats, published by the Bat Conservation Trust (BCT) (Collins 2023)[7].

2.5 The site was divided into two for the purposes of the bat activity surveys (see Figure 2): the 'Eastern Survey Area' and the 'Western Survey Area'.

[4] MD Ecology (2023a). *North West Cambridge Temporary Haul Road: Bat Activity Survey Report.* Report ref: C136/BAS1/v1.
[5] MD Ecology (2023b). *North West Cambridge Cycleway: Bat Activity Survey Report*. Report ref: C136/BAS2/v1.
[6] MD Ecology (2024). *North West Cambridge Cycleway, between Storey's Field Centre and Storey's Way: Bat Activity Survey Report.* Report ref: C136/BAS3/v1
[7] Collins, J. (ed.) (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition).* The Bat Conservation Trust, London.

2.6 The Eastern Survey Area comprised:

- Eddington Phase 1 (completed development), including the lagoon at Brook Leys and the swale between Pheasant Plantation and Eddington Avenue; and
- Land within the site to the east of Eddington Phase 1, including the Horse Chestnut Avenue, sports pitch and cricket pitch, former arable fields around Gravel Hill Farm, Ridge and Furrow fields and woodlands (Storey's Way Wood and Cricket Pitch Wood).

2.7 The Western Survey Area comprised all land within the site to the west of Eddington Phase 1, excluding the temporary haul road and construction car park. This included Pheasant Plantation, the spoil heaps between Howe Farm and Eddington Phase 1, the Washpit Brook and associated wetland and grassland habitats, and the grazed fields at 307 Huntingdon Road.

Field survey – manual transects

2.8 The BCT Guidelines recommend one manual transect survey per season, i.e. one in spring (April/May), one in summer (June/July/August) and one in autumn (September/October).

2.9 Four transect survey visits have been undertaken to date in each of the Eastern and Western Survey Areas, which exceeds the minimum recommended level of effort:

- August 2024 (summer)
- September 2024 (autumn)
- May 2025 (spring)
- June 2025 (summer)

2.10 The transect routes are shown on Figures 3a (Eastern transect route) and 3b (Western transect route). During each survey visit the transect route was walked by Mike Dean, monitoring bat activity using a Pettersson D240X (heterodyne and time-expansion) bat detector. The surveyor waited at a series of 'wait points' for 5 minutes, before continuing the transect (also shown on Figures 3a and 3b). Each transect survey commenced at sunset and continued until at least 2 hours after sunset.

2.11 Bat calls recorded were identified to species level (where possible) using batsound software and with reference to the call characteristics for each species, as described in Russ (2012)[8].

2.12 Dates, times and weather conditions for each of the transect survey visits are provided in Table 2.

[8] Russ, J. (2012). *British Bat Calls. A Guide to Species Identification.* Pelagic Publishing, Exeter.

Table 2: Dates, times and weather conditions of manual transect surveys

Survey Area	Date	Time			Temp (°C)	Weather
		Sunset	Start	Finish		
Eastern	12/8/24	20.29	20.25	22.55	29-25	Dry, slight breeze, 50%cloud
Western	19/8/24	20.15	20.00	22.15	19-18	Dry, moderate breeze, 100% cloud
Eastern	2/9/24	19.43	19.43	22.06	21-19	Dry, still-slight breeze, 20% cloud
Western	17/9/24	19.08	19.08	21.31	16-13	Dry, slight breeze, no cloud
Eastern	13/5/25	20.44	20.44	22.44	15-12	Dry, still, no cloud
Western	28/5/25	21.06	21.06	23.10	15-13	Dry, still, 100% cloud
Eastern	2/6/25	21.12	21.08	23.17	15-13	Dry, still, no cloud
Western	16/6/25	21.23	21.15	23.17	20-17	Dry, still, no cloud

Field Survey – automated detectors

2.13 The BCT Guidelines recommend that automated bat detectors are deployed for a minimum of five consecutive nights per month, between April and October inclusive. To date, automated bat detectors have been installed for at least five consecutive nights in each of August, September and October 2024, and April, May, June and July 2025.

2.14 Bat activity data was recorded from six separate locations each month, three locations in the Eastern Survey Area and three in the Western Survey Area.

2.15 The locations selected for the automated detectors were selected to allow the various habitat types to be sampled, and for likely commuting routes to be identified. The following six locations were chosen (see Figure 2):

- Location A – Horse Chestnut Avenue. Ordnance Survey Grid Reference (OSGR) TL4324059827, on west side of avenue. Microphone set facing west.
- Location B – between Cricket Pitch Wood and Traveller's Rest Pit SSSI. OSGR TL4292559705. Microphone facing south towards Cricket Pitch Wood.
- Location C – adjacent to the swale between Eddington Avenue and Kendrew Place. OSGR TL4261259592. Microphone facing east.
- Location D – on the edge of Pheasant Plantation. OSGR TL4222359794. Microphone facing south-west.
- Location E – within the spoil mounds OSGR TL4221660556. Microphone facing north north-west.
- Location F – on the Washpit Brook. OSGR TL4205260705. Microphone facing north-west.

2.16 In the majority of months of survey, all three of the locations in the Eastern Survey Area were monitored over the same period (i.e. three automated detectors were recording at the same time). The locations in the Western Survey Area were also monitored over the same period, but this was a different period each month to the monitoring within the Eastern Survey Area.

2.17 During July 2025 two locations were monitored concurrently, due to one of the detectors developing a fault.

2.18 In addition to the monthly monitoring of bat activity at six locations, automated bat detectors were also deployed as follows (see Figure 2):

- Two detectors were deployed for five consecutive nights on the edge of Storey's Way Wood in each of May and June 2025 (SWW South and SWW West); and
- Detectors were deployed for five consecutive nights on the hedgelines linking the Washpit Brook with Huntingdon Road (Hedgerows H6 and H8)

2.19 The automated bat detectors were set to record bat activity from approximately 30 minutes before sunset until approximately 15-30 minutes after sunrise. Dates, times and weather conditions of monitoring using automated detectors are provided in Appendix 1.

2.20 Bat calls recorded were analysed using Kaleidoscope Pro software developed by Wildlife Acoustics. The automatic identification function was used and found to be reasonably accurate at assigning calls to certain species. However, all calls were manually reviewed with reference to the call characteristics for each species, as described in Russ (2012), due to:

- The relatively high proportion of calls that the automatic identification software could not identify; and
- Clear mistakes being made by the software with the identification of some species, particularly barbastelle and brown long-eared bats.

2.21 The species assigned to a call by the automatic identification software was generally accepted for:

- Pipistrelle species – identified by the software as common, soprano or Nathusius' pipistrelle;
- Nyctalus species – identified by the software as either noctule or Leisler's bat; and
- Myotis species – where the call was reviewed and confirmed to be from a Myotis bat, the suggested automatic identification was normally accepted.

2.22 In some cases it was considered impossible to distinguish between one or more species and the call was assigned to one of the multi-species categories accordingly:

- Pipistrelle X – either a common or soprano pipistrelle;
- Myotis X – an unknown species of Myotis bat; and
- Noctule/serotine – given the similarity between certain calls it is not always possible to distinguish between these species.

Limitations

2.23 There are inherent uncertainties in the identification of bat species both using automatic identification software and through manually reviewing the calls to compare call characteristics to reference sources. Certain species are more easily identifiable than others.

2.24 The calls recorded are also a sample of activity across the site and across the survey period.

2.25 The weather conditions were not ideal during the monitoring period 7 to 12 October inclusive; it was not possible to obtain five consecutive nights of data during good conditions. As a result, data were collected over six consecutive nights, with conditions being less favourable during this period.

2.26 The automated detectors at Locations A and F only recorded data for three consecutive nights in August as the detectors were regularly triggered by sounds other than bats, resulting in the capacity of memory cards being reached after three nights in each case.

2.27 The automated detector at Location C only recorded data for one night in June 2025. Eight consecutive nights of data were recorded in July 2025 to supplement the June data.

2.28 The automated detector at Location E failed to record in June 2025. Ten consecutive nights of data were recorded in July 2025 to supplement the June data.

2.29 There were no other specific limitations to the survey beyond the general limitations for all bat surveys. The time of year and weather conditions during which the surveys were carried out were suitable, with the exception described in paragraph 2.25 above.

3. Results and Discussion

Desk study

3.1 In addition to the species previously recorded at Eddington (see paragraph 1.7), CPERC also hold records of the following bat species within 10km of the site:

- Leisler's (*Nyctalus leisleri*)
- Natterer's (*Myotis nattereri*)
- Possible Brandt's (*M. brandtii*), although this was not distinguished from whiskered
- Parti-coloured (*Vespertilio murinus*)

3.2 There are a significant number of bat records within 10km of the site. A summary for each species is provided in Table 3, below.

Table 3: Summary of CPERC desk study records within 10km of the site

Species	Summary of relevant information from desk study records
Common / soprano pipistrelle	Recorded throughout the study area; roosts likely to be present in suburban areas immediately surrounding the site.
Nathusius' pipistrelle	No known roosts. Recorded across Cambridge, with the closest records being from Peterhouse College, 2-3km from the site.
Noctule	Several roosts known within 10km of the site although none of these are in very close proximity (and therefore of limited relevance given the likely presence of roosts in the vicinity based on field survey results).
Leisler's	No known roosts. Recorded in Cambridge and to the south and west of the city.
Serotine	Nearest known roosts are more than 4km from the site (the Core Sustenance Zone for this species*).
Daubenton's	Only known roost is at Wandlebury Country Park, on the opposite side of Cambridge.
Whiskered/ Brandt's	No known roosts. Recorded in central Cambridge approximately 2km from the site.
Natterer's	Nearest known roosts are more than 4km from the site (the Core Sustenance Zone for this species*).
Brown long-eared	Numerous known roosts across Cambridge. The closest records are from a house on Huntingdon Road immediately adjacent to the site, and at Girton College.
Barbastelle	Nearest known roosts are at Madingley Wood, approximately 2km to the west of the site and on the opposite side of the M11 Motorway. Links between Madingley Wood and the site are along Madingley Road or through the underpass at the northern end of the site.
Parti-coloured	Only two records, both from Cambridge Airport in 1985.

*Taken from Collins (2023)

3.3 The previous bat surveys undertaken at Eddington suggest the presence of common pipistrelle, soprano pipistrelle and noctule bat roosts on site or in very close proximity.

Field survey – manual transects

3.4 Relatively low levels of bat activity were recorded during the manual transect surveys, as has been the case with other bat surveys undertaken at the site since Phase 1 of the Eddington development. Common pipistrelle, soprano pipistrelle and noctule bat were all recorded. Brown long-eared bats were recorded only twice on manual transect surveys; both occasions were during the eastern transect in June 2025. No other bat species were recorded during the manual transect surveys.

Field survey – automated detectors

1.14 At least nine and possibly 10 or more different species of bat were recorded on the automated detectors:

- Common pipistrelle
- Soprano pipistrelle
- Nathusius' pipistrelle
- Noctule
- Leisler's
- Serotine
- Barbastelle
- Brown long-eared
- Daubenton's
- Possibly Natterer's or other species of genus Myotis

3.5 This reflects the results of previous surveys, with the following minor exceptions:

- Leisler's bat had not been recorded previously, although distinguishing this species from noctule is very difficult and it may therefore have been present previously but identified as noctule; it is also possible that the calls identified as Leisler's on the automated detectors in 2024 were actually from noctule bats.
- Calls characteristic of Natterer's bat were recorded in 2024, whereas calls characteristic of whiskered bats were recorded on site in previous surveys; distinguishing these species from each other and from other species of the genus Myotis (including Daubenton's bat) is very difficult and is it possible that either or both species are present, but also that the Myotis calls recorded were actually from Daubenton's bat.

3.6 Full details of the survey results are provided in Appendix 3. A summary of the average number of passes per night recorded at locations A to F, over the period August to October 2024 and April to July 2025 inclusive, by each species at each location, is provided in Table 4, below.

Table 4: Average number of passes per night at each location, by each species

Species	Average number of passes per night at each location						
	A	B	C	D	E	F	All
Common pipistrelle	265	23	197	33	25	70	102
Soprano pipistrelle	85	7	111	100	7	36	58
Pipistrelle X	13	4	9	14	0.1	0.6	7
Nathusius' pipistrelle	0.1	0.5	0.7	0.8	0	0.2	0.4
Noctule	11	40	111	104	12	14	49
Leisler's	0.1	0.5	0.4	0.7	0.1	0.1	0.3
Daubenton's	0.2	0.4	0.8	6	0.6	0.4	1
Natterer's	0	0	<0.1	0	0	0	<0.1
Myotis X	0.1	0.4	0.7	3	0.6	0.7	0.9
Barbastelle	0.8	0.5	0.9	2	0.2	5	2
Brown long-eared	0.6	3	0.7	2	1.3	0.9	1
Serotine	0.3	0.3	0.8	3	0.2	0.4	0.8
Noctule/serotine	0.1	0.4	0.6	1	0.1	0.2	0.4

3.7 The earliest recorded time of each species was noted at each location, relative to sunset, to provide an indication of the likelihood of roosts being present on site. This information was only recorded where the first pass by a given species occurred within two hours of sunset. The results are summarised in Table 5, below.

Table 5: Earliest time on site, relative to sunset at each location, by each species

Species	Average dusk emergence time relative to sunset*	Earliest and (average[+]) first record, relative to sunset					
		A	B	C	D	E	F
Common pipistrelle	25 mins after	4(24)	-8(44)	18(34)	20(42)	12(53)	13(39)
Soprano pipistrelle	27-35 mins after	10(32)	-13(40)	-4(25)	-3(39)	-4(52)	22(33)
Nathusisus' pipistrelle	30 mins after	n/a	n/a	24(60)	51(70)	n/a	55(n/a)
Noctule	1 min before to 11 mins after	-9(26)	-9(17)	-5(20)	-15(13)	-1(30)	1(26)
Leisler's	18-19 mins after	-9(n/a)	-6(1)	32(n/a)	n/a	110(n/a)	109(n/a)
Daubenton's	43-59 mins after	76(n/a)	96(104)	58(59)	43(65)	118(n/a)	88(100)
Natterer's	31-75 mins after	n/a	n/a	n/a	n/a	n/a	n/a
Barbastelle	24 mins after	59(85)	46(69)	45(72)	60(88)	n/a	48(75)
Brown long-eared	54-62 mins after	73(75)	88(101)	62(n/a)	24(76)	58(99)	57(73)
Serotine	11-12 mins after	56(n/a)	87(n/a)	18(48)	2(35)	54(n/a)	37(87)

*Taken from Collins (2023)

[+]Average of first records that are within 2 hours of sunset

Common and soprano pipistrelle

3.8 Both common and soprano pipistrelle bats were recorded at all locations. Particularly high levels of activity were recorded at Locations A (Horse Chestnut Avenue), C (adjacent to the swale between Eddington Avenue and Kendrew Place), with an average number of passes per night, for both species combined, of more than 300. Significantly lower levels of activity by these species were recorded at Location E (Spoil mounds) with only 32 passes per night on average, for both species combined.

3.9 The times relative to sunset when common pipistrelles were first recorded on the automated detectors suggest that there are roosts nearby to all monitored locations, and that there is likely to be a roost (or more than one roost) in the Eastern Survey Area, particularly close to Locations A (Horse Chestnut Avenue) and B (between Cricket Pitch Wood and Traveller's Rest Pit SSSI). Common pipistrelles have previously been recorded roosting at Gravel Hill Farm (farmhouse) and within bat boxes in Storey's Way Wood, Cricket Pitch Wood and Pheasant Plantation. They are also likely to roost in off-site buildings.

3.10 The times relative to sunset when soprano pipistrelles were first recorded on the automated detectors suggest that there are likely to be roosts within the site in both the Eastern and Western Survey Areas. Soprano pipistrelles are also likely to be roosting within bat boxes in Storey's Way Wood, Cricket Pitch Wood and Pheasant Plantation as well as within off-site buildings.

Nathusius' pipistrelle

3.11 Nathusius' pipistrelle bat was recorded at all locations except Location E (Spoil mounds). At locations where this species was recorded, levels of activity were generally low, averaging fewer than one pass per night. Highest recorded levels of activity by this species were at Locations C (adjacent to the swale between Eddington Avenue and Kendrew Place) and D (Pheasant Plantation). This is unsurprising given the proximity of this location to the species' preferred foraging habitats of woodland, tree-lined river corridors and ponds (Collins 2023).

3.12 The times relative to sunset when Nathusius' pipistrelles were first recorded on the automated detectors provide no evidence of a roost on site.

Noctule

3.13 Noctule bats were recorded at all locations, although noticeably higher numbers were recorded at Locations C (adjacent to the swale between Eddington Avenue and Kendrew Place) and D (Pheasant Plantation). Noctules were recorded in the western parts of the site but appear to use these areas less frequently, presumably due to the habitats present being of lower quality for foraging and/or the distance from the nearest roost.

3.14 Noctules were regularly recorded either before or shortly after sunset at all locations. This suggests that there are noctule roosts within the site, most likely within Pheasant Plantation and Storey's Way Wood.

Myotis bats

3.15 Myotis bats, including those considered likely to be Daubenton's, were recorded at all locations. Significantly higher levels of activity were recorded at Location D (Pheasant Plantation). This is unsurprising as Daubenton's bats forage over waterbodies and are likely to be attracted to the lagoon at Brook Leys, increasing the chances of this species flying past the detector at Pheasant Plantation.

3.16 The times relative to sunset when Daubenton's bats were first recorded on the automated detectors suggest the possible presence of a roost in the southern part of the site, close to Locations C and D. This may be within Pheasant Plantation.

3.17 There was insufficient data on other species of Myotis bat to draw any meaningful conclusions about the possible presence of a roost.

Barbastelle

3.18 Barbastelle bats were also recorded at all locations. Generally, they were recorded in low numbers, averaging approximately one or two passes per night with the exceptions of:

- Location E (Spoil mounds) – very low levels of activity, averaging 0.2 passes per night; and
- Location F (Washpit Brook) – much higher numbers than the average were recorded, at an average of five passes per night.

3.19 This suggests that the brook is disproportionately important as a commuting route and/or a foraging habitat.

3.20 The data also suggest that, whilst barbastelle bats occur across the entire site, they use the woodlands, hedgerows and tree-lined Washpit Brook in the western part of the site more frequently than similar habitats in the eastern part of the site. The additional monitoring at Storey's Way Wood in May and June 2025 recorded no barbastelle passes from the southern edge of the woodland and an average of 0.4 passes per night from the western edge. In contrast the automated detectors on hedgerows H6 and H8 (in the western part of the site) recorded an average of 2 and 3 barbastelle passes per night in June 2025.

3.21 The data from previous bat surveys of the site (between 2018 and 2024) show a similar trend, with barbastelle being recorded very infrequently on detectors located to the east of Phase 1. Highest levels of barbastelle activity were recorded along the swale between Pheasant Plantation and Kendrew Place.

3.22 The times relative to sunset when barbastelle bats were first recorded on the automated detectors provide no evidence of a roost on site.

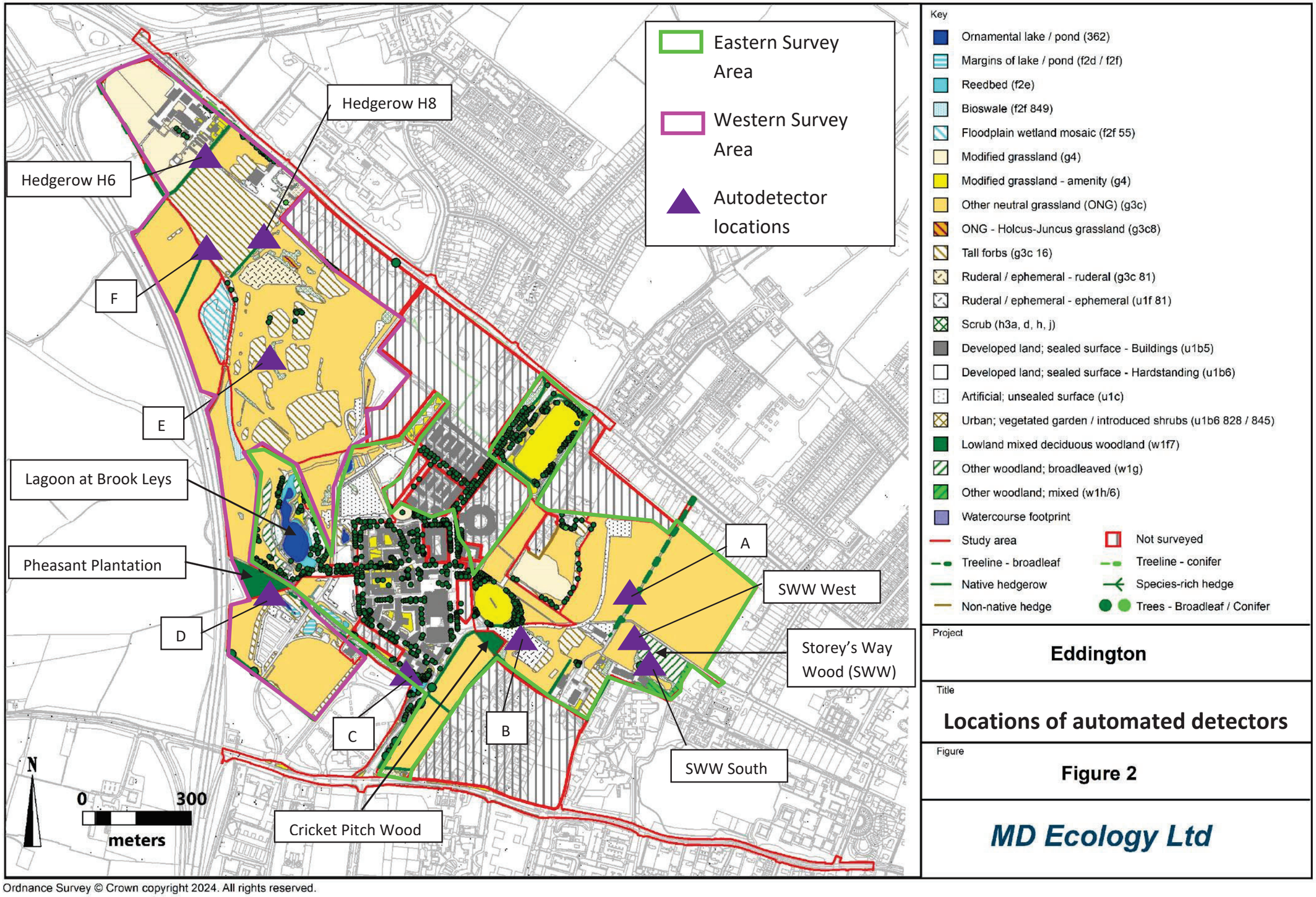
Other species

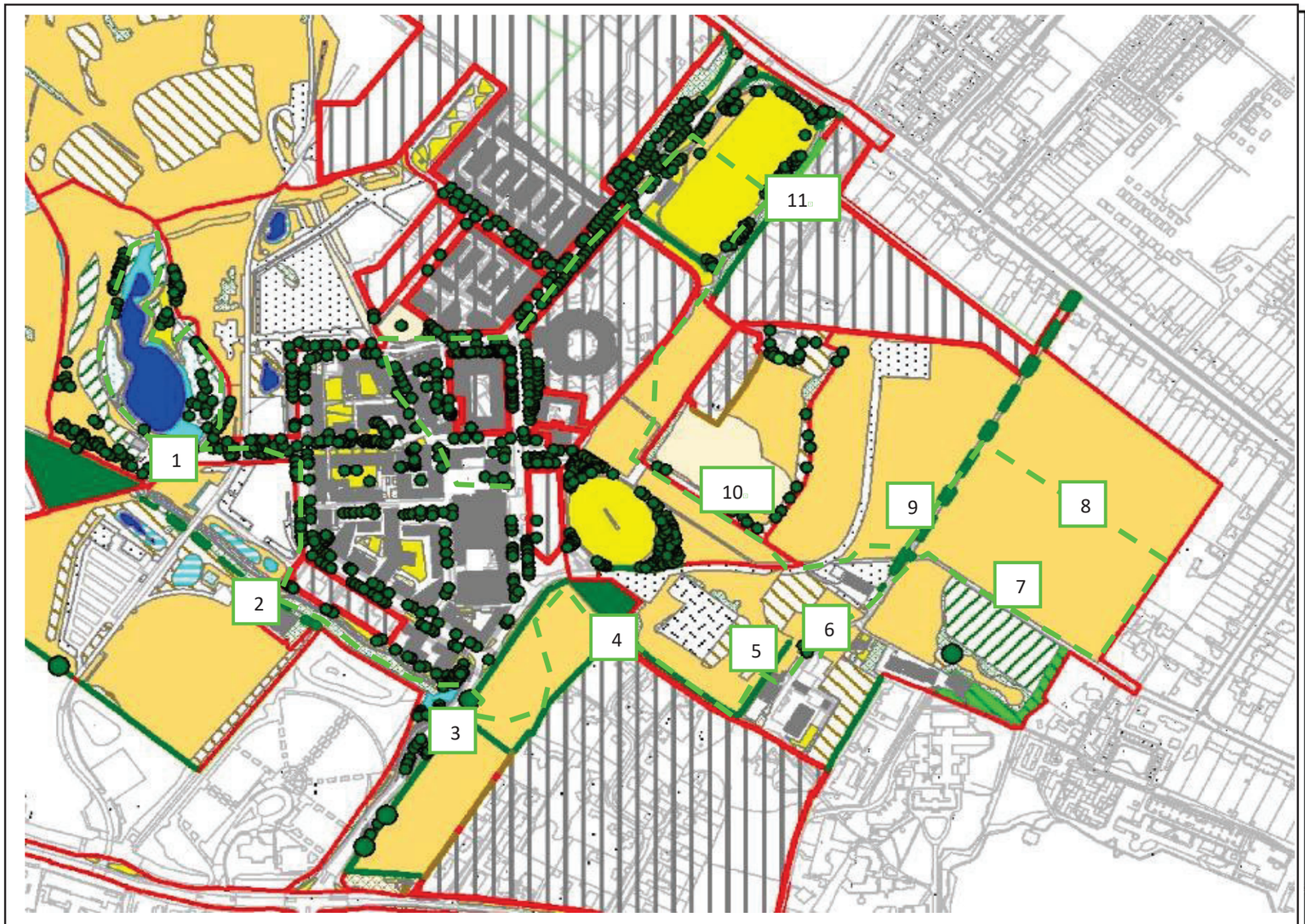
3.23 Brown long-eared, serotine and Leisler's bats were also all recorded at all locations and generally in low numbers (one or fewer passes per night in most cases), although Leisler's bat may be more regularly occurring than the data suggest give the difficulty of distinguishing this species from noctule bat.

3.24 There were noticeably higher than average levels of activity by brown long-eared bat at Location B (between Cricket Pitch Wood and Traveller's Rest Pit SSSI) and D (Pheasant Plantation), which may indicate the presence of a roost in these areas. Brown long-eared bat roosts have previously been recorded at Gravel Hill Farm (farmhouse) and at Madingley Rise House (off-site immediately to the south of Gravel Hill Farm).

3.25 There were noticeably higher than average levels of activity by serotine at Location D (Pheasant Plantation). This may indicate that the southern part of the site is of particular importance for this species.

3.26 It is possible that Leisler's bat is also roosting on site, although this is difficult to determine with any certainty, given the difficulty in distinguishing this species from noctule.





Transect route

1 Wait point

Key

- Ornamental lake / pond (362)
- Margins of lake / pond (f2d / f2f)
- Reedbed (f2e)
- Bioswale (f2f 849)
- Floodplain wetland mosaic (f2f 55)
- Modified grassland (g4)
- Modified grassland - amenity (g4)
- Other neutral grassland (ONG) (g3c)
- ONG - Holcus-Juncus grassland (g3c8)
- Tall forbs (g3c 16)
- Ruderal / ephemeral - ruderal (g3c 81)
- Ruderal / ephemeral - ephemeral (u1f 81)
- Scrub (h3a, d, h, j)
- Developed land; sealed surface - Buildings (u1b5)
- Developed land; sealed surface - Hardstanding (u1b6)
- Artificial; unsealed surface (u1c)
- Urban; vegetated garden / introduced shrubs (u1b6 828 / 845)
- Lowland mixed deciduous woodland (w1f7)
- Other woodland; broadleaved (w1g)
- Other woodland; mixed (w1h/6)
- Watercourse footprint
- Study area
- Not surveyed
- Treeline - broadleaf
- Treeline - conifer
- Native hedgerow
- Species-rich hedge
- Non-native hedge
- Trees - Broadleaf / Conifer

Project

Eddington

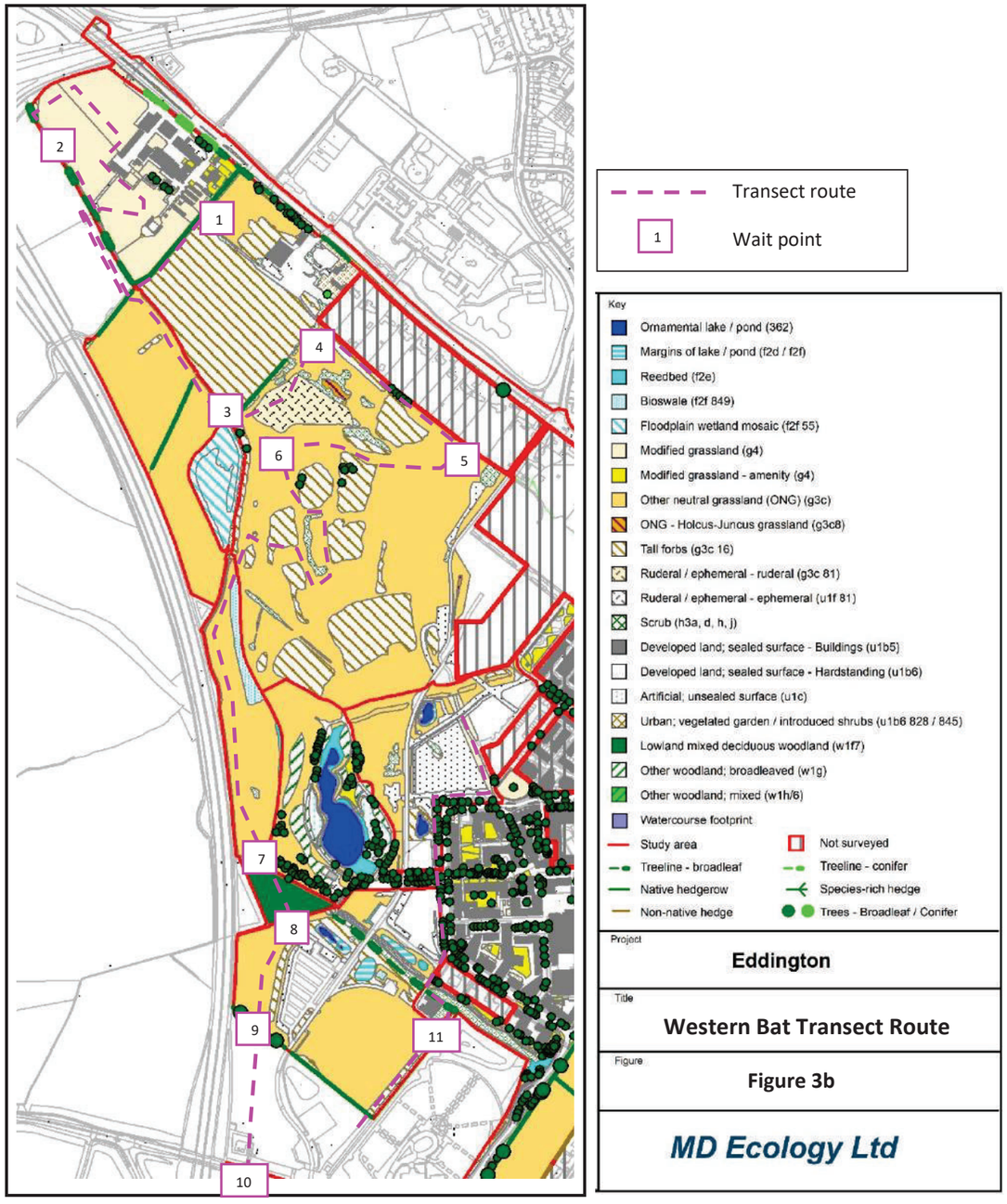
Title

Eastern Bat Transect Route

Figure

Figure 3a

MD Ecology Ltd



Appendix 1: Dates, times and weather conditions of monitoring using automated detectors

Eastern Survey Area (Locations A, B and C)

Date	Time				Temp (°C)	Weather	Locations monitored
	Sunset	Sunrise	Start	Finish			
12/8/24	20.29	05.41	19.51	06.01	26-15	Dry, clear, still	A, B, C
13/8/24	20.27	05.42	19.51	06.01	22-17	Dry, clear, still	A, B, C
14/8/24	20.25	05.44	19.51	06.01	20-14	Dry, clear, still	A, B, C
15/8/24	20.23	05.46	19.51	06.01	22-17	Light rain, slight breeze	B, C
16/8/24	20.21	05.47	19.51	06.01	20-11	Dry, clear, slight breeze	B, C
2/9/24	19.43	06.15	19.04	06.52	21-16	Mainly dry, cloudy, still, occasional shower	A, B, C
3/9/24	19.41	06.17	19.04	06.52	18-14	Dry, cloudy, still	A, B, C
4/9/24	19.39	06.18	19.04	06.52	16-14	Mainly dry, cloudy, slight breeze	A, B, C
5/9/24	19.37	06.20	19.04	06.52	19-17	Dry, clear, still	A, B, C
6/9/24	19.34	06.22	19.04	06.52	22-16	Dry, cloudy, still	A, B, C
7/10/24	18.22	07.13	17.34	07.57	14-13	Light rain, cloudy, slight breeze	A, B, C
8/10/24	18.19	07.15	17.34	07.57	14-13	Light rain, cloudy, slight breeze	A, B, C
9/10/24	18.17	07.17	17.34	07.57	16-14	Rain showers, cloudy, moderate breeze	A, B, C
10/10/24	18.15	07.19	17.34	07.57	8-3	Dry, clear, still	A, B, C
11/10/24	18.13	07.20	17.34	07.57	8-6	Dry, cloudy, still	A, B, C
12/10/24	18.10	07.22	17.34	07.57	11-6	Dry, clear sky, moderate breeze	A, B, C
7/4/25	19.43	06.19	19.13	06.49	10-1	Dry, clear, still	A, B, C
8/4/25	19.45	06.17	19.13	06.49	11-1	Dry, clear, still	A, B, C
9/4/25	19.47	06.15	19.13	06.49	8-5	Dry, cloudy, still	A, B, C
10/4/25	19.48	06.12	19.13	06.49	12-5	Dry, clear, still	A, B, C
11/4/25	19.50	06.10	19.13	06.49	15-5	Dry, clear, still	A, B, C
1/5/25	20.24	05.28	19.51	06.02	20-13	Dry, clear, still	A, B, C
2/5/25	20.26	05.26	19.51	06.02	17-9	Dry, clear, slight breeze	A, B, C
3/5/25	20.28	05.24	19.51	06.02	11-6	Dry, cloudy, slight breeze	A, B, C
4/5/25	20.30	05.22	19.51	06.02	9-5	Dry, cloudy, slight breeze	A, B, C
5/5/25	20.31	05.20	19.51	06.02	10-5	Dry, cloudy, still	A, B, C
2/6/25	21.12	04.43	20.42	05.13	16-11	Dry, clear, slight breeze	A, B, C
3/6/25	21.13	04.42	20.42	05.13	16-9	Dry, clear, slight breeze	A, B
4/6/25	21.14	04.42	20.42	05.13	15-12	Dry, cloudy, slight breeze	A, B
5/6/25	21.15	04.41	20.42	05.13	15-10	Dry, cloudy, slight breeze	A, B
6/6/25	21.16	04.40	20.42	05.13	14-11	Showers at sunset, otherwise dry, cloudy, slight breeze	A, B
1/7/25	21.24	04.43	20.52	05.16	20-16	Dry, clear sky, still	A, B
2/7/25	21.24	04.44	20.52	05.16	17-11	Dry, clear sky, still	A, B
3/7/25	21.23	04.45	20.52	05.16	19-12	Dry, clear sky, still	A, B
4/7/25	21.23	04.45	20.52	05.16	21-16	Mainly dry, cloudy, slight breeze	A, B
5/7/25	21.22	04.46	20.52	05.16	21-15	Dry, clear sky, slight breeze	A, B

Date	Time				Temp (°C)	Weather	Locations monitored
	Sunset	Sunrise	Start	Finish			
22/7/25	21.06	05.06	20.26	05.47	19-14	Dry, cloudy, still	C
23/7/25	21.05	05.08	20.26	05.47	19-15	Dry, cloudy, slight breeze	C
24/7/25	21.03	05.09	20.26	05.47	18-14	Dry, cloudy, still	C
25/7/25	21.02	05.11	20.26	05.47	22-16	Dry, clear, still	C
26/7/25	21.01	05.12	20.26	05.47	20-13	Dry, clear, still	C
27/7/25	20.59	05.14	20.26	05.47	19-12	Dry, cloudy, slight breeze	C
28/7/25	20.58	05.15	20.26	05.47	19-11	Dry, cloudy, slight breeze	C
29/7/25	20.56	05.17	20.26	05.47	19-15	Dry, cloudy, still	C

Note: 6 consecutive nights in October 2024 due to weather conditions, which were relatively wet at the start of the survey period and with low temperatures towards the end.

Western Survey Area (Locations D, E and F)

Date	Time				Temp (°C)	Weather	Locations monitored
	Sunset	Sunrise	Start	Finish			
19/8/24	20.15	05.52	19.36	06.14	19-17	Dry until midnight then light rain, cloudy, moderate breeze	D, E, F
20/8/24	20.12	05.54	19.36	06.14	18-11	Dry, clear, slight breeze	D, E, F
21/8/24	20.10	05.55	19.36	06.14	19-14	Dry, clear, slight breeze	D, E, F
22/8/24	20.08	05.57	19.36	06.14	20-15	Mostly dry, cloudy, slight breeze	D, E,
23/8/24	20.06	05.59	19.36	06.14	19-14	Mostly dry, cloudy, slight breeze	D, E,
17/9/24	19.08	06.40	18.29	07.01	17-12	Dry, cloudy, slight breeze	D, E, F
18/9/24	19.06	06.41	18.29	07.01	18-14	Dry, cloudy, slight breeze	D, E, F
19/9/24	19.04	06.43	18.29	07.01	19-15	Dry, cloudy, slight breeze	D, E, F
20/9/24	19.01	06.45	18.29	07.01	19-14	Dry, clear, slight breeze	D, E, F
21/9/24	18.59	06.46	18.29	07.01	20-15	Mostly dry with occasional showers, cloudy, slight breeze	D, E, F
1/10/24	18.36	07.03	17.56	07.40	14-13	Mostly dry, cloudy, moderate breeze	D, E, F
2/10/24	18.33	07.05	17.56	07.40	13-8	Dry, clear sky, slight breeze	D, E, F
3/10/24	18.31	07.07	17.56	07.40	13-7	Dry, cloudy, still	D, E, F
4/10/24	18.29	07.08	17.56	07.40	13-8	Dry, clear sky, still	D, E, F
5/10/24	18.26	07.10	17.56	07.40	13-12	Mostly dry cloudy, moderate breeze	D, E, F
13/4/25	19.54	06.06	19.24	06.36	12-4	Mostly dry (except showers at sunset), clear, slight breeze	D, E, F
14/4/25	19.55	06.03	19.24	06.36	13-9	Rain from midnight onwards, slight breeze	D, E, F
15/4/25	19.57	06.01	19.24	06.36	12-6	Mostly dry (except showers at sunset), cloudy, moderate breeze	D, E, F
16/4/25	19.59	05.59	19.24	06.36	10-3	Dry, clear, still	D, E, F
17/4/25	20.01	05.57	19.24	06.36	11-6	Dry, cloudy, slight breeze	D, E, F
13/5/25	20.44	05.07	20.14	05.37	16-7	Dry, clear, still	D, E, F
14/5/25	20.46	05.05	20.14	05.37	12-8	Dry, cloudy, slight breeze	D, E, F
15/5/25	20.47	05.04	20.14	05.37	12-6	Dry, clear, still	D, E, F
16/5/25	20.49	05.02	20.14	05.37	11-9	Dry, cloudy, slight breeze	D, E, F
17/5/25	20.50	05.01	20.14	05.37	11-8	Dry, cloudy, slight breeze	D, E, F
9/6/25	21.18	04.39	20.48	05.09	17-13	Dry, cloudy, slight breeze (D and F only)	D, F
10/6/25	21.19	04.39	20.48	05.09	17-10	Dry, clear, still (D and F only)	D, F
11/6/25	21.20	04.38	20.48	05.09	17-13	Dry, clear, slight breeze (D and F only)	D, F
12/6/25	21.21	04.38	20.48	05.09	21-15	Dry, clear, still (D and F only)	D, F
13/6/25	21.21	04.38	20.48	05.09	23-16	Showers from midnight to 2am, cloudy, still (D and F only)	D, F
10/7/25	21.19	04.51	20.38	05.35	23-16	Dry, clear, still	E, F
11/7/25	21.18	04.52	20.38	05.35	24-15	Dry, clear, still	E, F
12/7/25	21.17	04.54	20.38	05.35	23-15	Dry, clear, still	E, F
13/7/25	21.16	04.55	20.38	05.35	23-17	Dry, clear, still	E, F
14/7/25	21.15	04.56	20.38	05.35	20-13	Dry, clear, slight breeze	E, F

Date	Time				Temp (ºC)	Weather	Locations monitored
	Sunset	Sunrise	Start	Finish			
15/7/25	21.14	04.57	20.38	05.35	17-14	Dry, clear, slight breeze	E
16/7/25	21.13	04.58	20.38	05.35	20-14	Dry, clear, still	E
17/7/25	21.12	05.00	20.38	05.35	22-18	Dry, clear, still	E
18/7/25	21.11	05.01	20.38	05.35	24-18	Mostly dry, slight breeze	E
19/7/25	21.10	05.02	20.38	05.35	20-16	Dry, clear, slight breeze	E
22/7/25	21.06	05.06	20.26	05.47	19-14	Dry, cloudy, still	D
23/7/25	21.05	05.08	20.26	05.47	19-15	Dry, cloudy, slight breeze	D
24/7/25	21.03	05.09	20.26	05.47	18-14	Dry, cloudy, still	D
25/7/25	21.02	05.11	20.26	05.47	22-16	Dry, clear, still	D
26/7/25	21.01	05.12	20.26	05.47	20-13	Dry, clear, still	D

Additional automated bat detectors

Date	Time				Temp (ºC)	Weather	Locations monitored
	Sunset	Sunrise	Start	Finish			
28/5/25	21.06	04.47	20.36	05.17	15-12	Mostly dry, cloudy, still	SW South, SW West
29/5/25	21.07	04.46	20.36	05.17	19-14	Dry, cloudy, slight breeze	SW South, SW West
30/5/25	21.08	04.45	20.36	05.17	19-13	Dry, clear, still	SW South, SW West
31/5/25	21.09	04.45	20.36	05.17	21-12	Dry, clear, slight breeze	SW South, SW West
1/6/25	21.11	04.44	20.36	05.17	17-10	Dry, clear, slight breeze	SW South, SW West
25/6/25	21.25	04.40	20.55	05.12	24-18	Mostly dry, cloudy, still	H6, H8
26/6/25	21.25	04.40	20.55	05.12	19-14	Mostly dry, cloudy, slight breeze	H6, H8
27/6/25	21.25	04.41	20.55	05.12	24-19	Dry, clear, slight breeze	H6, H8
28/6/25	21.25	04.41	20.55	05.12	24-16	Dry, clear, still	H6, H8
29/6/25	21.25	04.42	20.55	05.12	23-18	Dry, clear, slight breeze	H6, H8
30/6/25	21.24	04.42	20.55	05.12	25-20	Dry, clear, still	H6, H8
17/6/25	21.23	04.38	20.53	05.08	21-14	Dry, clear, still	SW South, SW West
18/6/25	21.24	04.38	20.53	05.08	21-13	Dry, clear, still	SW South, SW West
19/6/25	21.24	04.38	20.53	05.08	21-15	Dry, clear, still	SW South, SW West
20/6/25	21.24	04.38	20.53	05.08	20-17	Dry, clear, still	SW South, SW West
21/6/25	21.25	04.38	20.53	05.08	25-19	Dry, clear, slight breeze	SW South, SW West

Appendix 2: Manual transect survey results

Eastern transect – August 2024

Time	Species recorded	Location	Description of activity
20.52	Nn	1	Bat seen flying from Pheasant Plantation towards the P&R
20.10	SP	1-2	Foraging along Pheasant Drive swale/trees – 3 passes
21.13	SP	1-2	Foraging along Turing Way within area lit by streetlights
21.19	SP	2	Multiple bats foraging unseen
21.21	SP	2	Brief pass unseen
21.29	CP	2-3	Multiple bats foraging along swale adjacent to S3
21.29	CP	3	Multiple bats foraging in Ridge and Furrow fields
21.32	SP	3	Unseen
21.32	CP and Nn	3	Unseen
21.33	SP	3-4	Bat recorded in Ridge and Furrow fields immediately south of Cricket Pitch Wood
21.45	CP	4-5	Foraging along lane to rear of Conduit Head Road properties (2 bats)
21.47	SP	5	Bat foraging unseen
21.55	CP	6	Bat foraging unseen
21.58	CP and Nn	6	Bat foraging unseen
22.06	CP	7	Foraging along edge of woodland
22.09	CP and Nn	7	Bat foraging unseen
22.11	CP	7-8	Unseen
22.14	CP	7-8	Bat foraging along site boundary or in gardens associated with Storey's Way
22.25	CP	9	Bat foraging – 5 passes
22.35	CP	10	Foraging
22.55	CP	-	Brief pass – bat flying along Eddington Avenue

Species Codes:
CP Common pipistrelle bat
Nn Noctule bat
SP Soprano pipistrelle bat

Eastern transect – September 2024

Time	Species recorded	Location	Description of activity
20.08	SP	1	Foraging unseen – 1 pass
20.10	CP	1	Foraging unseen – 1 pass
20.14	SP	1-2	Foraging around lagoon (western edge) – 4 passes
20.20	Nn	1-2	Foraging around lagoon (eastern edge) – 4 passes
20.22	SP	1-2	Foraging around lagoon (eastern edge) – 3 passes
20.22	CP	1-2	Foraging around lagoon (eastern edge) – 5 passes
20.28	SP and Nn	1-2	Brief pass unseen
20.28	SP	1-2	Foraging along Pheasant Drive
20.30	CP	2	Brief pass unseen
20.32	Nn	2	Brief pass unseen
20.38	Nn	2-3	2 passes, unseen
20.38	CP	2-3	Foraging at eastern end of S3
20.39	CP	3	Foraging – 3 passes
20.42	Nn	3	1 pass
21.03	CP	6	Bat foraging unseen
21.15	SP	7	2 passes
21.19	CP	7-8	Bat foraging along site boundary or in gardens associated with Storey's Way
21.21	SP	7-8	Bat flying across middle of field
21.32	CP	9	Bat foraging along Horse Chestnut Avenue – 5 passes
21.44	CP	10	Foraging, faint pass

Species Codes:
CP Common pipistrelle bat
Nn Noctule bat
SP Soprano pipistrelle bat

Western transect – August 2024

Time	Species recorded	Location	Description of activity
20.48	CP	3	Two bats foraging along Washpit Brook near flow control structure
20.48	SP	3	Unseen, brief pass
20.57	CP	4	3 passes
21.06	CP	4-5	Brief pass foraging
21.39	CP	7	Bat foraging unseen, 1 pass
21.39	SP	7	Bat foraging unseen, 2 passes
21.59	SP	9	Constant foraging for 5 minutes by at least 2 bats along hedgerow
22.09	CP	10	Foraging constantly (5 minutes) around mobile phone mast

Western transect – September 2024

Time	Species recorded	Location	Description of activity
19.20	Nn	1	Foraging over field at Howe Farm and then flew along hedge towards Huntingdon Road
19.27	Nn	1	Foraging over field at Howe Farm and then flew along hedge towards Huntingdon Road
19.42	CP	2	Unseen, 1 pass
19.47	CP	2	Unseen, 2 passes
19.55	SP	2-3	Foraging along Washpit brook, 2 passes
19.58	SP	2-3	Foraging along Washpit brook, 1 pass
20.02	CP	3	Foraging along Washpit brook, 1 pass
20.14	CP	4-5	Foraging around scrub below spoil mound, unseen
20.35	CP	5-6	Unseen, 1 pass
20.42	CP	6	Unseen, 1 pass
20.58	SP	7	Unseen, 1 pass
21.03	Pip	7-8	Unseen, 1 pass
21.06	CP	7-8	Unseen, 1 pass
21.08	SP	8	Foraging unseen, 5 passes
21.09	Nn	8	1 pass

Species Codes:
CP Common pipistrelle bat
Nn Noctule bat
SP Soprano pipistrelle bat

Eastern transect – May 2025

Time	Species recorded	Location	Description of activity
21.05	Nn	1	Foraging overhead – 3 passes
21.08	Nn	1-2	Foraging unseen – 2 passes
21.28	SP	2-3	Foraging along swale – 3 passes
21.30	SP	3	Flew across Eddington Avenue towards the swale adjacent to lot S3
21.37	CP	4	Foraging unseen – 3 passes
21.44	CP	4-5	Foraging along hedgerow by Gravel Hill Farm
21.56	CP	6	Foraging along Horse Chestnut Avenue – 2 passes
22.11	CP	9	Foraging unseen – 14 passes
22.17	CP	9-10	Foraging along Horse Chestnut Avenue – 1 pass

Western transect – May 2025

Time	Species recorded	Location	Description of activity
21.06	Nn	1	Foraging unseen – 5 passes
21.15	CP	1	Foraging along hedgerow – 2 passes
21.22	Nn	2	Unseen – 1 pass
21.30	Nn	2-3	Unseen by track under Motorway, close to brook – 1 pass
21.35	CP	3	Foraging unseen along brook – 3 passes
21.35	SP	3	Foraging unseen along brook – 4 passes
21.45	SP	4	Foraging – 2 passes
21.52	CP	4-5	Foraging along track at rear of houses – 5 passes
21.55	CP	4-5	Foraging along track at rear of houses – 3 passes, multiple bats
21.57	CP and SP	5	Foraging along track at rear of houses – constant activity, multiple bats
22.11	SP	6	Foraging unseen – 2 passes
22.19	CP	6-7	Foraging along brook, unseen – 2 passes
22.19	Nn	6-7	Foraging along brook, unseen – 1 pass
22.26	Nn	7	Unseen – 1 pass
22.43	CP	9	Foraging along hedgerow, unseen – 1 pass
22.52	CP	10	Foraging along woodland strip at Madingley Road – 6 passes

Species Codes:
CP Common pipistrelle bat
Nn Noctule bat
SP Soprano pipistrelle bat

Eastern transect – June 2025

Time	Species recorded	Location	Description of activity
21.36	Nn	1-2	Foraging overhead, norther end of Brook Leys – 7 passes
21.44	CP	1-2	Foraging along Pheasant Drive – 1 pass
21.46	Nn	2	Foraging along swale/hedge – 9 passes
21.46	CP	2	Foraging along swale/hedge – 3 passes
21.55	CP	3	Flew across Eddington Avenue towards Lansdowne, 1 other foraging pass
22.04	CP	3-4	Bats x 2 foraging along hedgerow on site's southern boundary
22.05	CP	4	4 passes
22.09	BLE	4	2 bats flew along track on site's southern boundary, 1 echolocating quietly the other not echolocating
22.13	CP	5	Foraging along hedgerow – 5 passes
22.20	CP	5-6	Flying from Horse Chestnut Avenue towards Gravel Hill Farm – 1 pass
22.22	CP	6	Foraging unseen – 2 passes
22.26	CP	6	Foraging along HCA – 1 pass
22.33	BLE	7	Flying along woodland edge, not echolocating
22.46	CP	9	Foraging along HCA – 1 pass
22.51	CP	9-10	Foraging along HCA – 1 pass

Western transect – June 2025

Time	Species recorded	Location	Description of activity
22.03	SP	3	Foraging unseen – 1 pass
22.11	Nn	4	Foraging – 1 pass
22.13	CP	4	Foraging – 2 passes
22.16	CP	4-5	Foraging along track on northern edge of site – 5 passes, multiple bats
22.19	SP	4-5	Flying along track
22.21	SP	5	Same bat as seen previously, flying from spoil mound/tip towards track
22.23	CP	5	Flying from soil heap towards track – 2 bats, 5 passes
22.26	SP	5	2 bats flying from spoil mound/tip towards track
22.38	CP	6	Unseen – 1 pass
22.42	CP	6-7	Unseen – 1 pass
22.47	Nn	7	Foraging unseen at Pheasant Plantation – 4 passes

Appendix 3: Automated bat detector survey results 2024-2025

Species Codes:

Bb	Barbastelle bat
BLE	Brown long-eared bat
CP	Common pipistrelle bat
Es	Serotine bat
My	Bat of the genus Myotis
MyD	Daubenton's bat
Nl	Leisler's bat
Nn	Noctule bat
NP	Nathusius' pipistrelle bat
SP	Soprano pipistrelle bat

Location A: Horse Chestnut Avenue

Date	Number of passes per species										Time after sunset of first bats recorded (within first 2 hours)
	CP	SP	CP/SP	NP	Nn	MyD	My	Bb	BLE	Other	
12/8/24	103	66	0	0	2	0	1	1	0	1^	CP 31mins, SP 35mins
13/8/24	92	84	2	0	4	0	0	0	3	0	CP 29mins, SP 23mins, Nn 24mins
14/8/24	147	64	1	0	2	0	0	0	0	1^	CP 18mins, SP 13mins
2/9/24	596	181	7	1	2	0	0	2	3	0	CP 20mins, SP 28mins, Nn 59mins, Bb 59mins, BLE 85mins
3/9/24	58	10	2	0	1	1	0	0	1	0	CP 22mins, SP 20mins, Nn 20mins, BLE 73mins
4/9/24	115	7	2	0	2	0	0	0	0	1#	CP 19mins, SP 76mins
5/9/24	108	24	1	0	2	1	0	0	0	0	CP 4mins, SP 13mins, Nn 24mins
6/9/24	1,256	237	18	0	17	1	0	1	7	2^,1~	CP 10mins, SP 20mins, Nn -9mins, MyD 76mins, L -9mins, BLE 77mins
7/10/24	446	52	2	0	1	0	0	6	0	1#	CP 13mins, SP 23mins
8/10/24	123	14	1	0	1	1	0	1	0	0	CP 42mins, SP 54mins
9/10/24	2	0	0	0	0	0	0	0	0	1#	CP 20mins
10/10/24	1	0	0	0	0	0	0	0	0	0	CP 26mins
11/10/24	31	2	0	0	0	1	0	0	0	0	CP 20mins
12/10/24	0	0	0	0	0	0	0	0	0	0	
7/4/25	47	3	0	0	0	0	0	0	0	0	CP 10mins, SP 39mins
8/4/25	55	40	0	0	5	0	0	0	2	0	CP 35mins, SP 21mins, Nn 6mins, BLE 72mins
9/4/25	0	0	0	0	0	0	0	0	0	0	
10/4/25	4	3	0	0	2	0	0	0	0	0	CP 34mins, SP 26mins, Nn 7 mins
11/4/25	106	62	2	0	4	2	0	3	0	1#	CP 27mins, SP 23mins, Nn 62mins
1/5/25	416	57	15	0	0	0	0	1	0	0	CP 21mins, SP 55mins, Bb 106mins
2/5/25	2326	348	65	0	0	0	0	0	0	0	CP 18mins, SP 20mins
3/5/25	86	29	4	0	0	0	0	0	0	0	CP 30mins, SP 31mins
4/5/25	0	1	0	0	0	0	0	0	0	0	SP 40mins
5/5/25	2	24	0	0	0	0	0	0	0	0	SP 30mins
2/6/25	670	257	64	0	100	0	0	2	2	4^	CP 23mins, SP 28mins, Nn 31mins
3/6/25	337	211	47	0	38	0	0	0	0	0	CP 31mins, SP 24mins, Nn 43mins
4/6/25	790	226	101	0	27	0	2	3	1	2^	CP 23mins, SP 20mins, Nn 39mins, ES 56mins, Bb 69mins
5/6/25	369	150	55	0	66	0	0	0	0	1#	CP 18mins, SP 17mins
6/6/25	466	222	63	0	36	0	0	1	0	0	CP 18mins, SP 10mins

Date	Number of passes per species										Time after sunset of first bats recorded (within first 2 hours)
	CP	SP	CP/SP	NP	Nn	MyD	My	Bb	BLE	Other	
1/7/25	98	98	0	0	23	0	0	5	1	0	CP 30mins, SP 29mins, Nn 23mins, Bb 89mins
2/7/25	37	209	0	0	14	0	0	0	0	0	CP 32mins, SP 38mins, Nn 14mins
3/7/25	43	106	0	0	5	0	0	0	0	0	CP 39mins, SP 33mins, Nn 25mins
4/7/25	15	35	0	0	0	0	0	1	0	0	
5/7/25	60	51	0	0	5	0	0	0	0	0	CP 42mins, Nn 25mins
Total (34 nights)	**9,005**	**2,873**	**452**	**1**	**359**	**7**	**3**	**27**	**20**	10^, 5#, 1~	
Average per night	**265**	**85**	**13**	**0.1**	**11**	**0.2**	**0.1**	**0.8**	**0.6**	0.3^, 0.1#, 0.1~	

^Call characteristic of serotine bat
~Call characteristic of Leisler's bat
#Call characteristic of serotine or noctule bat

Location B: Between Cricket Pitch Wood and Traveller's Rest Pit SSSI

Date	Number of passes per species										Time after sunset of first bats recorded (within first 2 hours)
	CP	SP	CP/SP	NP	Nn	MyD	My	Bb	BLE	Other	
12/8/24	61	13	41	0	45	0	0	4	3	2#, 3^	CP -8mins, SP -13mins, Nn 17mins
13/8/24	192	16	5	0	80	0	1	1	7	1#, 6~	CP 31mins, SP 38mins, Nn -6mins, Nl -6mins, Bb 46mins
14/8/24	158	15	5	1	90	2	0	4	10	1#, 1^	CP 38mins, SP 29mins, Nn -1min, NP 105mins
15/8/24	37	9	20	0	59	3	0	0	9	1#, 7~	CP 36mins, Nn 4mins, Nl 7mins, BLE 112mins
16/8/24	76	15	6	0	41	3	1	3	13	2^, 3~	CP 48mins, SP 35mins, Nn 23mins
2/9/24	15	20	15	2	18	0	1	0	0	0	CP 40mins, SP 32mins, Nn 4mins
3/9/24	23	6	7	0	38	0	0	1	10	0	CP 30mins, SP 35mins, Nn 14mins
4/9/24	16	9	1	0	34	0	1	0	6	0	CP 32mins, SP 37mins, Nn 21mins
5/9/24	17	15	4	0	52	0	1	0	2	0	CP 34mins, SP 30mins, Nn -3mins
6/9/24	22	14	17	2	71	0	0	1	8	1~	CP 43mins, SP 37mins, Nn -9mins
7/10/24	18	0	1	0	12	0	0	1	0	1~	CP 36mins, Nn 9mins, Bb 74mins
8/10/24	2	2	0	0	0	0	0	0	0	0	CP 58mins, SP 59mins
9/10/24	0	6	0	0	0	0	0	0	0	0	SP 28mins
10/10/24	0	1	0	2	0	0	0	0	0	0	SP 48mins
11/10/24	0	0	0	0	0	1	1	0	1	0	
12/10/24	4	4	0	0	0	0	0	0	0	0	
7/4/25	0	0	0	0	0	0	0	0	0	0	
8/4/25	2	0	0	0	6	0	0	0	2	0	
9/4/25	0	1	0	0	0	0	0	0	0	0	
10/4/25	4	4	1	0	2	0	0	0	0	0	CP 32mins, SP 59mins, Nn 35 mins
11/4/25	7	11	1	2	0	0	0	0	1	0	CP 31mins, SP 47mins, BLE 112mins
1/5/25	25	6	0	2	26	1	0	0	0	0	CP 39mins, SP 39mins, Nn 8mins
2/5/25	7	5	0	0	1	1	0	0	1	0	CP 40mins, SP 36mins, MyD 96mins
3/5/25	2	0	0	0	3	0	2	0	0	0	Nn 23mins
4/5/25	0	0	0	0	0	0	2	0	0	0	
5/5/25	0	0	0	0	0	0	2	2	0	0	SP 30mins
2/6/25	2	14	1	0	36	0	0	0	1	2^, 1#	CP 86mins, SP 49mins, Nn 30mins, Bb 86mins
3/6/25	9	4	1	1	32	1	0	0	5	0	CP 45mins, Nn 22mins
4/6/25	47	6	0	4	57	0	0	0	0	2#	CP 47mins, SP 40mins, Nn 39mins, NP 54mins
5/6/25	8	4	0	1	64	0	1	0	1	0	CP 38mins, SP 38mins, Nn 29mins
6/6/25	6	14	0	0	377	1	0	0	2	0	CP 49mins, SP 38mins, Nn 12mins, BLE 91mins

Date	Number of passes per species										Time after sunset of first bats recorded (within first 2 hours)
	CP	SP	CP/SP	NP	Nn	MyD	My	Bb	BLE	Other	
1/7/25	14	2	0	2	37	0	0	0	1	1#	CP 68mins, Nn 17mins, NP 106mins
2/7/25	10	9	0	0	40	0	0	1	0	0	CP 70mins, SP 44mins, Nn 26mins
3/7/25	17	7	0	0	63	0	0	0	2	0	CP 68mins, SP 61mins, Nn 11mins
4/7/25	10	2	0	0	145	1	0	0	4	0	CP 50mins, SP 74mins, Nn 8mins, MyD 112mins
5/7/25	25	10	0	0	20	0	0	0	12	3^, 4#	CP 61mins, SP 56mins, Nn 69mins, ES 87mins, BLE 88mins
Total (36 nights)	836	244	126	19	1449	14	13	18	101	13#, 10^, 18~	
Average per night	23	7	4	0.5	40	0.4	0.4	0.5	3	0.4#, 0.3^, 0.5~	

^Call characteristic of serotine bat
~Call characteristic of Leisler's bat
#Call characteristic of serotine or noctule bat

Location C: Between swale at S3 and Park and Ride

Date	Number of passes per species										Time after sunset of first bats recorded (within first 2 hours)
	CP	SP	CP/SP	NP	Nn	MyD	My	Bb	BLE	Other	
12/8/24	0	0	0	0	0	0	0	0	0	0	
13/8/24	66	123	6	0	119	0	1	0	0	2^,1~	
14/8/24	181	139	27	0	80	1	0	1	0	2^	
15/8/24	355	212	12	0	83	0	0	3	1	6^,1#	CP 27mins, SP15mins, Nn 3mins, Es 18mins, Bb 108mins
16/8/24	74	134	3	0	98	0	0	5	1	0	CP 37mins, SP 25mins, Nn 17mins, Bb 66mins
2/9/24	708	227	8	1	427	2	3	6	1	2#6~	CP 23mins, SP 19mins, Nn 8mins
3/9/24	486	176	10	2	174	5	3	1	1	1#,2~	CP 20mins, SP 17mins, Nn 18mins, Nl 32mins
4/9/24	189	211	0	0	57	2	3	1	1	0	CP 26mins, SP 15mins, Nn 26mins, MyD 58mins
5/9/24	123	169	11	0	297	0	2	1	1	1^, 1# 2~,	CP 26mins, SP 1mins, Nn 18mins
6/9/24	133	288	14	1	409	6	4	4	1	2~	CP 24mins, SP 16mins, Nn 31mins, MyD 59mins, Bb 45mins
7/10/24	520	126	9	1	7	0	1	3	1	1^, 1”	CP 19mins, SP 15mins, Nn 37mins, Es 62mins
8/10/24	93	53	3	0	2	1	1	3	0	0	CP 50mins, SP 12mins, Nn 51mins, Bb 83mins
9/10/24	51	23	4	0	4	0	0	1	1	0	CP 41mins, SP 16mins, Nn 87mins, Bb 60mins
10/10/24	34	40	0	0	0	1	2	1	1	1^	CP 49mins, SP 16mins, Es 38mins
11/10/24	16	17	1	0	0	2	0	0	0	0	CP 29mins, SP 15mins
12/10/24	29	338	0	0	0	0	1	1	1	0	CP 23mins, SP 21mins
7/4/25	697	179	12	0	0	1	0	0	0	0	CP 23mins, SP 21mins
8/4/25	381	69	6	4	7	0	0	0	2	0	CP 18mins, SP 17mins, NP 24mins, Nn 37mins, BLE 43mins
9/4/25	158	30	2	1	2	2	0	0	0	0	CP 22mins, SP -4mins, NP 26mins
10/4/25	256	71	0	0	37	0	0	0	4	0	CP 20mins, SP 22mins, Nn 12 mins
11/4/25	493	99	6	6	20	1	4	1	2	3#	CP 22mins, SP 23mins, Nn 17mins, BLE 62mins
1/5/25	524	315	71	6	278	1	0	0	0	2^, 12#	CP 31mins, SP 34mins, NP 94mins, Nn 8mins, Es 97mins
2/5/25	776	422	81	1	66	2	0	0	0	1#	CP 27mins, SP 20mins, NP 95mins, Nn 9mins
3/5/25	239	48	2	0	5	0	0	0	0	0	CP 26mins, SP 27mins, Nn 55mins
4/5/25	19	43	0	0	0	0	0	1	1	0	CP 29mins, SP 27mins, Bb 88mins
5/5/25	100	67	2	0	7	0	0	0	0	0	CP 29mins, SP 28mins, Nn 34mins
2/6/25	1	156	19	1	452	0	0	0	0	3^	CP 26mins, SP 25mins, Nn 16mins, ES 43mins

Date	Number of passes per species										Time after sunset of first bats recorded (within first 2 hours)
	CP	SP	CP/SP	NP	Nn	MyD	My	Bb	BLE	Other	
22/7/25	93	52	0	0	457	0	0	0	1	9^	CP 35mins, SP 24mins, Nn -5mins, Es 31mins
23/7/25	55	11	0	0	142	0	0	0	2	0	CP 42mins, SP 48mins, Nn 6mins
24/7/25	2	3	0	0	128	0	0	0	0	0	CP 65mins, SP 13mins, Nn 11mins
25/7/25	18	17	0	0	146	0	0	0	0	0	CP 93mins, SP 83mins, Nn 8mins
26/7/25	5	1	0	0	82	0	0	0	0	0	CP 31mins, Nn 2mins
27/7/25	8	3	0	0	71	0	0	0	0	0	CP 49mins, SP 67mins, Nn 6mins
28/7/25	7	3	0	0	36	0	0	0	0	0	CP 50mins, SP 99mins, Nn 9mins
29/7/25	9	6	0	0	183	0	0	0	0	0	CP 50mins, SP 42mins, Nn -4mins
Total (35 nights)	6899	3871	309	24	3876	27	25	33	23	27^,13~, 21#,1”	
Average per night	197	111	9	0.7	111	0.8	0.7	0.9	0.7	0.8^,0.4~, 0.6#, 0.1”	

^Call characteristic of serotine bat
~Call characteristic of Leisler’s bat
#Call characteristic of serotine or noctule bat
“Call characteristic of Natterer’s bat

Location D: Pheasant Plantation

Date	Number of passes per species										Time after sunset of first bats recorded (within first 2 hours)
	CP	SP	CP/SP	NP	Nn	MyD	My	Bb	BLE	Other	
19/8/24	4	26	0	0	42	1	0	1	0	1^, 1#,2~	CP 37mins, SP 31mins, Nn 14mins
20/8/24	52	124	0	1	96	2	5	2	0	12^, 8#,3~	CP 47mins, SP 22mins, Nn 14mins, Es 49mins, NP 52mins, MyD 63mins
21/8/24	5	29	0	0	8	1	2	0	0	3^	CP 53mins, SP 22mins, Nn 52mins
22/8/24	3	35	0	0	12	2	1	1	0	1^, 2#	CP 71mins, SP 38mins, Nn 3mins
23/8/24	18	73	0	1	26	4	4	0	0	1^	CP 39mins, SP 19mins, Nn 9mins, My 48mins, MyD 53mins, NP 77mins
17/9/24	48	382	41	7	276	9	2	3	0	3~	CP 59mins, SP 25mins, Nn 4mins, MyD 71mins
18/9/24	64	228	23	1	360	16	7	2	1	3~, 1#	CP 45mins, SP 25mins, Nn 4mins, MyD 53mins, NP 83mins
19/9/24	114	381	62	1	21	19	8	6	1	1^	CP 35mins, SP 25mins, Nn 53mins, MyD 50mins
20/9/24	36	125	22	0	102	25	7	2	6	5~, 1^	CP 33mins, SP 31mins, Nn 0mins, MyD 51mins, Bb 118mins
21/9/24	23	392	41	2	48	24	17	3	4	2~,1^,1#	CP 43mins, SP 29mins, Nn 49mins, MyD 51mins, Bb 108mins
1/10/24	242	198	214	3	3	14	5	0	4	0	CP 43mins, SP 18mins, Nn 39mins, My 61mins, BLE 79mins
2/10/24	20	127	60	0	3	9	7	0	2	0	CP 34mins, SP 38mins, Nn 46mins, My 74mins, BLE 89mins
3/10/24	9	54	16	0	7	3	3	1	0	0	CP 42mins, SP 23mins, Nn 5mins, My 55mins
4/10/24	2	57	9	0	12	3	2	0	0	0	CP 30mins, SP 33mins, Nn 6mins, My 43mins
5/10/24	2	14	0	0	0	8	0	0	0	0	CP 1 hour 32mins, SP 51mins, My 52mins
13/4/25	115	191	0	0	0	2	2	0	1	0	CP 20mins, SP 25mins, MyD 89mins, BLE 59mins
14/4/25	1	22	0	0	1	6	4	0	0	0	CP 20mins, MyD 39mins
15/4/25	3	208	0	1	0	4	5	0	1	0	CP 36mins, SP 25mins, NP 90mins, MyD 73mins, BLE 64mins
16/4/25	2	13	0	0	0	4	6	0	1	0	CP 39mins, SP 24mins, MyD 80 mins
17/4/25	4	87	0	2	32	3	2	0	0	1#	CP 39mins, SP -3mins, NP 79mins, Nn 3mins, MyD 60mins
13/5/25	35	60	0	0	23	6	0	4	5	1^, 3#	CP 34mins, SP 35mins, Nn 19mins, MyD 65mins, Bb 80mins, BLE 85mins
14/5/25	14	13	0	0	82	9	1	4	4	3#	CP 40mins, SP 49mins, Nn 23mins, MyD 73mins, Bb 60mins, ES 92mins
15/5/25	10	23	0	0	90	7	1	7	4	1^, 3#	CP 50mins, SP 42mins, Nn 12mins, Bb 52mins, MyD 68mins, BLE 87mins
16/5/25	45	87	0	2	109	3	1	6	9	1^, 6#	CP 28mins, SP 38mins, NP 45mins, Nn 17mins, MyD 68mins, Bb 97mins, BLE 48mins
17/5/25	72	126	1	0	125	5	0	3	1	6#	CP 38mins, SP 38mins, Nn 16mins, MyD 81 mins, Bb 60mins, BLE 96mins, Es 85mins

Date	Number of passes per species										Time after sunset of first bats recorded (within first 2 hours)
	CP	SP	CP/SP	NP	Nn	MyD	My	Bb	BLE	Other	
9/6/25	2	17	0	0	87	1	3	0	1	3^	CP 72mins, SP 24mins, Nn 2mins, ES 5mins, MyD 59mins, BLE 89mins
10/6/25	7	17	0	0	439	1	0	0	1	4^	CP 57mins, SP 39mins, Nn 5mins
11/6/25	10	31	0	0	142	6	1	1	0	2^	CP 30mins, SP 24mins, Nn 11mins, MyD 82mins, ES 70mins
12/6/25	9	75	1	0	348	2	2	1	2	8^	CP 53mins, SP 33mins, Nn 1min, ES 33mins, MyD 70mins
13/6/25	7	28	1	0	419	4	0	0	4	22^	CP 34mins, SP 5mins, Nn -3mins, ES 47mins
22/7/25	25	33	0	0	200	4	0	3	5	14^, 3~	CP 33mins, SP 25mins, Nn 1min, ES 4mins
23/7/25	68	56	1	1	182	6	0	2	8	20^, 2~	CP 21mins, SP 24mins, NP 59mins, Nn -10mins, MyD 68mins, ES 87mins, Bb 91mins
24/7/25	18	52	0	4	70	3	1	7	3	5^, 3~	CP 41mins, SP 40mins, NP 51mins, Nn -15mins, MyD 51mins, ES 2mins, Bb 105mins, BLE 24mins
25/7/25	16	73	0	1	181	1	1	1	6	27^, 3~	CP 49mins, SP 39mins, NP 71mins, Nn 5mins
26/7/25	56	46	0	0	78	2	1	5	5	13^	CP 27mins, SP 36mins, Nn 16mins, ES 16mins, BLE 97mins, MyD 46mins, Bb 71mins
Total (35 nights)	**1161**	**3503**	**492**	**27**	**3624**	**219**	**101**	**65**	**79**	103^,35#, 29~	
Average per night	**33**	**100**	**14**	**0.8**	**104**	**6**	**3**	**2**	**2**	3^, 1#, 0.8~	

^Call characteristic of serotine bat
~Call characteristic of Leisler's bat
#Call characteristic of serotine or noctule bat

Location E: Spoil mounds

Date	Number of passes per species										Time after sunset of first bats recorded (within first 2 hours)
	CP	SP	CP/SP	NP	Nn	MyD	My	Bb	BLE	Other	
19/8/24	2	7	0	0	15	2	1	0	0	4^, 1~	CP 36mins, SP 60mins, Nn 25mins, Es 54mins, Nl 110mins
20/8/24	10	3	0	0	3	0	0	0	1	0	CP 49mins, SP 45mins, Nn 88mins, BLE 113mins
21/8/24	13	11	0	0	23	6	1	0	0	1^	CP 49mins, SP 50mins
22/8/24	3	5	0	0	0	1	1	1	0	0	CP 55mins
23/8/24	31	16	0	0	4	0	1,1”	1	5	0	CP 38mins, SP 40mins, Nn 14mins, BLE 113mins
17/9/24	38	32	2	0	27	0	1	0	1	0	CP 48mins, SP 55mins, Nn 13mins, BLE 76mins
18/9/24	7	14	0	0	31	1	0	0	0	0	CP 45mins, SP 43mins, Nn 0mins
19/9/24	5	8	1	0	22	0	0	0	0	0	CP 37mins, SP 29mins, Nn 0mins
20/9/24	28	5	0	0	6	1	4	0	1	1^	CP 44mins, SP 33mins, Nn 76mins, My 71mins
21/9/24	241	30	1	0	1	2	1	1	1	0	CP 29mins, SP 50mins, Nn 18mins
1/10/24	0	3	0	0	4	0	0	0	0	0	SP -4mins, Nn -1mins
2/10/24	12	19	0	0	8	0	0	0	0	0	CP 40mins, SP 61mins, Nn 16mins
3/10/24	16	7	0	0	3	0	5	0	0	0	CP 39mins, SP 21mins, Nn 30mins
4/10/24	4	19	0	0	3	0	1	0	2	0	CP 33mins, SP 95mins, Nn 10mins
5/10/24	11	0	0	0	13	0	5	0	0	0	CP 46mins, Nn 14mins
13/4/25	0	0	0	0	0	0	0	0	4	0	BLE 58mins
14/4/25	3	2	0	0	6	0	0	0	2	0	CP 32mins, SP 30mins, Nn 18mins
15/4/25	3	0	0	0	0	1	0	0	0	0	CP 102mins
16/4/25	1	2	0	0	8	1	0	0	1	0	CP 28mins, SP 39mins, Nn 25mins, BLE 85 mins
17/4/25	13	5	1	0	13	0	0	0	2	0	CP 12mins, SP 40mins, Nn 2mins
13/5/25	7	5	0	0	24	2	0	0	3	0	CP 85mins, SP 56mins, Nn 9mins, BLE 58mins
14/5/25	3	0	0	0	1	1	0	0	1	0	CP 61mins, BLE 96mins
15/5/25	8	0	0	0	5	1	0	0	0	0	CP 57mins, Nn 38mins
16/5/25	11	1	0	0	43	0	0	0	6	0	CP 40mins, Nn 20mins
17/5/25	8	0	0	0	4	0	0	0	3	0	CP 52mins, Nn 81mins
10/7/25	27	2	0	0	14	1	0	0	4	1^	CP 64mins, SP 54mins, Nn 111mins, MyD 118mins, BLE 107mins
11/7/25	13	16	0	0	11	0	0	0	1	1^, 1#	CP 61mins, SP 66mins, Nn 94mins, BLE 81mins
12/7/25	74	3	0	0	19	0	0	0	2	0	CP 67mins, SP 67mins, Nn 42mins
13/7/25	121	9	0	0	1	0	0	1	0	0	CP 85mins, SP 58mins, Nn 104mins
14/7/25	11	1	0	0	1	1	1	0	1	0	CP 67mins, Nn 21mins

Date	Number of passes per species										Time after sunset of first bats recorded (within first 2 hours)
	CP	SP	CP/SP	NP	Nn	MyD	My	Bb	BLE	Other	
15/7/25	3	1	0	0	69	0	0	1	1	0	CP 66mins, SP 57mins, Nn 13mins
16/7/25	15	3	0	0	20	0	1	1	1	1#	CP 43mins, SP 74mins, Nn 48mins, My 110mins
17/7/25	37	5	0	0	3	0	1	0	0	0	CP 70mins
18/7/25	19	3	0	0	4	0	0	0	0	0	CP 92mins, SP 108mins
19/7/25	86	3	0	0	7	0	0	0	2	0	CP 66mins, SP 69mins
Total (35 nights)	**884**	**240**	**5**	**0**	**416**	**21**	**20**	**6**	**45**	**8^, 1~, 2#**	
Average per night	**25**	**7**	**0.1**	**0**	**12**	**0.6**	**0.6**	**0.2**	**1.3**	**0.2^, 0.1~, 0.1#**	

^Call characteristic of serotine bat
~Call characteristic of Leisler's bat
#Call characteristic of serotine or noctule bat
"Call characteristic of Natterer's bat

Location F: Washpit Brook

Date	Number of passes per species										Time after sunset of first bats recorded (within first 2 hours)
	CP	SP	CP/SP	NP	Nn	MyD	My	Bb	BLE	Other	
19/8/24	104	35	0	0	9	0	0	2	0	2^, 1#	CP 33mins, SP 26mins, Nn 22mins, Bb 82mins, Es 108mins
20/8/24	33	42	0	0	0	0	0	20	1	1~	CP 40mins, SP 37mins, Bb 65mins, Nl 109mins
21/8/24	47	26	0	0	2	2	1	21	0	1^	CP 40mins, SP 31mins, Nn 34mins, Es 37mins, Bb 57mins, MyD 88mins
17/9/24	28	18	3	0	39	0	0	8	3	0	CP 53mins, SP 32mins, Nn 12mins, BLE 91mins
18/9/24	4	10	1	0	40	1	0	0	1	0	CP 57mins, SP 28mins, Nn 2mins, BLE 76mins, MyD 105mins
19/9/24	16	13	2	0	32	0	0	9	1	0	CP 26mins, SP 22mins, Nn 1min, Bb 106mins
20/9/24	10	11	0	1	7	1	1	3	1	0	CP 37mins, SP 27mins, Nn 15mins
21/9/24	41	3	0	0	6	2	1	1	2	0	CP 25mins, SP 23mins, Nn 1min
1/10/24	0	1	0	0	9	0	0	0	0	0	Nn 22mins
2/10/24	155	8	1	0	5	0	0	5	0	0	CP 38mins, SP 43mins, Nn 17mins, Bb 64mins
3/10/24	109	8	2	0	2	0	1	2	0	0	CP 34mins, SP 31mins, Nn 22mins, Bb 54mins
4/10/24	37	7	0	0	1	1	1*	19	0	0	CP 26mins, SP 27mins, Nn 6mins, Bb 48mins
5/10/24	27	9	2	0	11	0	6	5	1	0	CP 30mins, SP 27mins, Nn 8mins, Bb 50mins, My 116mins
13/4/25	87	11	1	0	0	0	0	0	0	0	CP 34mins, SP 45mins
14/4/25	3	3	0	0	5	0	0	8	1	0	CP 43mins, SP 32mins, Nn 18mins
15/4/25	0	0	0	0	0	0	0	0	0	0	
16/4/25	49	47	0	0	7	1	0	1	2	0	CP 31mins, SP 41mins, Nn 24mins, BLE 51 mins, MyD 95mins, Bb 74mins
17/4/25	36	15	1	0	11	1	1	10	1	0	CP 26mins, SP 27mins, Nn 1mins, BLE 57mins
13/5/25	45	19	0	0	0	1	6	1	1	0	CP 13mins, SP 44mins, Bb 58mins, MyD 104mins
14/5/25	18	9	0	0	5	1	0	0	0	0	CP 38mins, SP 34mins, Nn 95mins, MyD 90mins
15/5/25	16	9	0	0	10	1	2	2	0	0	CP 40mins, SP 45mins, Nn 15mins, Bb 72mins
16/5/25	42	15	1	0	19	0	2	4	0	0	CP 28mins, SP 37mins, Nn 24mins, Bb 66mins
17/5/25	36	15	0	0	15	1	2	6	3	0	CP 37mins, SP 46mins, Nn 19mins, Bb 99mins, BLE 99mins
9/6/25	689	703	1	0	42	0	1	3	3	1^	CP 29mins, SP 26mins, Nn 5mins, My 33mins, BLE 57mins, Bb 58mins
10/6/25	100	22	1	1	16	0	1	1	2	0	CP 40mins, SP 42mins, Nn 23mins, Bb 111mins
11/6/25	42	16	2	1	16	0	0	1	0	1^	CP 38mins, SP 40mins, Nn 18mins, NP 55mins, Bb 104mins, ES 116mins
12/6/25	68	23	2	1	22	0	1	5	1	1^	CP 33mins, SP 32mins, Nn 41mins, BLE 60mins, Bb 82mins
13/6/25	108	5	0	2	50	1	0	0	0	0	CP 31mins, SP 34mins, Nn 33mins

Date	Number of passes per species										Time after sunset of first bats recorded (within first 2 hours)
	CP	SP	CP/SP	NP	Nn	MyD	My	Bb	BLE	Other	
10/7/25	29	13	0	0	23	0	0	0	4	1#	CP 66mins, SP 59mins, Nn 25mins
11/7/25	39	11	0	0	17	0	0	1	1	3^, 1#	CP 61mins, SP 70mins, Nn 98mins, Bb 84mins
12/7/25	22	4	0	0	19	0	0	1	0	0	CP 62mins, SP 40mins, Nn 30mins
13/7/25	28	13	0	0	6	0	0	1	0	3^, 1#	CP 58mins, SP 30mins, Nn 60mins, Bb 68mins, ES 88mins
14/7/25	259	35	0	0	6	0	0	20	2	1#	CP 55mins, SP 42mins, Nn 53mins, Bb 94mins
Total passes (33 nights)	**2327**	**1179**	**20**	**6**	**452**	**14**	**22**	**160**	**31**	12^, 5#, 1~	
Average per night	**70**	**36**	**0.6**	**0.2**	**14**	**0.4**	**0.7**	**5**	**0.9**	0.4^, 0.2#, 0.1~	

^Call characteristic of serotine bat
~Call characteristic of Leisler's bat
#Call characteristic of serotine or noctule bat

Additional Location: Southern Edge of Storey's Way Wood

Date	Number of passes per species										Time after sunset of first bats recorded (within first 2 hours)
	CP	SP	CP/SP	NP	Nn	MyD	My	Bb	BLE	Other	
28/5/25	32	21	0	0	7	0	0	0	4	0	CP 20mins, SP 21mins, Nn 2mins
29/5/25	53	13	0	0	16	0	1	0	6	2#	CP 45mins, SP 36mins, Nn 21mins
30/5/25	33	20	0	0	16	0	0	0	1	0	CP 45mins, SP 44mins, Nn 15mins
31/5/25	12	21	0	0	7	0	0	0	0	0	CP 38mins, SP 38mins, Nn 15mins
1/6/25	25	11	0	1	2	0	0	0	0	0	CP 30mins, SP 37mins, Nn 78mins
17/6/25	10	2	0	0	34	0	0	0	4	2^	CP 58mins, Nn 1min
18/6/25	3	2	0	0	29	0	0	0	3	1#	CP 54mins, SP 53mins, Nn 6mins, BLE 111mins
19/6/25	22	7	0	1	64	0	0	0	2	0	CP 59mins, SP 40mins, Nn 18mins
20/6/25	24	9	0	0	36	0	0	0	13	0	CP 58mins, Nn 12mins, BLE 83mins
21/6/25	13	1	0	0	6	0	0	0	12	1#	CP 62mins, SP 29mins, Nn 16mins, BLE 76mins
Total passes (10 nights)	**227**	**107**	**0**	**2**	**217**	**0**	**1**	**0**	**45**	2^, 4#	
Average per night	**23**	**11**	**0**	**0.2**	**22**	**0**	**0.1**	**0**	**5**	0.2^, 0.4#	

^Call characteristic of serotine bat
#Call characteristic of serotine or noctule bat

Additional Location: Western Edge of Storey's Way Wood

Date	Number of passes per species										Time after sunset of first bats recorded (within first 2 hours)
	CP	SP	CP/SP	NP	Nn	MyD	My	Bb	BLE	Other	
28/5/25	19	24	1	0	7	0	0	0	0	0	CP 19mins, SP 24mins, Nn 2mins
29/5/25	5	9	1	0	36	0	0	0	2	0	CP 41mins, SP 42mins, Nn 18mins
30/5/25	36	14	1	0	33	0	0	0	1	0	CP 43mins, SP 37mins, Nn 15mins
31/5/25	9	5	0	0	28	0	0	0	1	0	CP 37mins, SP 43mins, Nn 14mins
1/6/25	21	21	0	0	9	0	0	0	1	0	CP 29mins, SP 55mins, Nn 23mins
17/6/25	6	6	0	0	23	0	0	2	1	0	CP 49mins, SP 55mins, Nn 7mins
18/6/25	25	8	0	0	51	0	0	2	1	0	CP 61mins, SP 47mins, Nn 5mins
19/6/25	13	11	0	0	42	0	0	0	0	0	CP 53mins, SP 58mins, Nn 17mins
20/6/25	28	13	0	0	46	0	0	0	2	0	CP 53mins, SP 39mins, Nn 6mins, BLE 45mins
21/6/25	10	3	0	0	6	0	0	0	1	0	CP 33mins, SP 59mins, Nn 17mins
Total passes (10 nights)	**172**	**114**	**3**	**0**	**281**	**0**	**0**	**4**	**10**	0	
Average per night	**17**	**11**	**0.3**	**0**	**28**	**0**	**0**	**0.4**	**1**	0	

Additional Location: Hedgerow H6

Date	Number of passes per species										Time after sunset of first bats recorded (within first 2 hours)
	CP	SP	CP/SP	NP	Nn	MyD	My	Bb	BLE	Other	
25/6/25	56	2	0	0	65	0	0	1	1	0	CP 41mins, SP 58mins, Nn 28mins, BLE 87mins
26/6/25	48	1	0	0	18	0	0	5	0	0	CP 57mins, Nn 33mins
27/6/25	81	0	0	0	20	0	0	0	0	1#	CP 45mins
28/6/25	41	0	0	0	16	0	0	8	0	0	CP 34mins, Nn 51mins, Bb 101mins
29/6/25	30	0	0	0	10	0	0	0	0	0	CP 70mins, Nn 73mins
30/6/25	11	1	0	0	7	0	0	0	0	0	CP 60mins, SP 72mins, Nn 91mins
Total passes (6 nights)	267	4	0	0	136	0	0	14	1	1#	
Average per night	45	0.7	0	0	23	0	0	2	0.2	0.2#	

Additional Location: Hedgerow H8

Date	Number of passes per species										Time after sunset of first bats recorded (within first 2 hours)
	CP	SP	CP/SP	NP	Nn	MyD	My	Bb	BLE	Other	
25/6/25	62	0	0	0	87	0	1	5	1	1^, 1#	CP 47mins, Nn 36mins, Bb 105mins
26/6/25	61	4	0	0	14	0	0	1	0	0	CP 64mins, SP 64mins, Nn 67mins
27/6/25	19	3	0	0	23	0	0	4	0	0	CP 69mins, Bb 105mins
28/6/25	28	4	0	0	27	0	0	2	0	1^, 3#	CP 86mins, Nn 54mins, ES 98mins
29/6/25	10	6	0	2	43	0	0	5	6	2#	CP 81mins, SP 102mins, Nn 26mins, NP 90mins, Bb 109mins
30/6/25	37	6	0	0	6	0	1	3	3	1#	CP 93mins, SP 115mins, Nn 49mins, My 116mins
Total passes (6 nights)	217	23	0	2	200	0	2	20	10	7#, 2^	
Average per night	36	4	0	0.3	33	0	0.3	3	2	1#, 0.3^	

^Call characteristic of serotine bat

#Call characteristic of serotine or noctule bat

Appendix 4: Results of previous automated bat detector surveys at Eddington (2018, 2021, 2023 and 2024)

Automated detector at eastern corner of Pheasant Plantation, facing east onto swale/Washpit Brook June 2018

Date	Sunset/rise times	Start/finish times	Weather conditions	Number of bat passes					
				Common pipistrelle	Soprano pipistrelle	Noctule	Serotine	Myotis	Total
26/6/18	2124/0440	2100/0445	19-12°C. Dry, clear sky, still	9	14	9	0	0	32
27/6/18	2124/0440	2100/0445	17-13°C. Dry, clear sky, still	434	16	27	2	1*	480
28/6/18	2124/0441	2100/0445	18-11°C. Dry, clear sky, still	633	5	18	0	0	656
29/6/18	2124/0442	2100/0445	19-16°C. Dry, clear sky, still	1101	88	78	0	0	1167
30/6/18	2124/0442	2100/0445	21-15°C. Dry, clear sky, still	670	6	61	0	0	737
1/7/18	2123/0443	2100/0445	18-17°C. Dry, clear sky, still	199	9	46	0	0	254
Total				3046	138	239	2	1	3326
Average (per night)				435	20	34	0.3	0.1	457

*Probably Natterer's

Automated detector at eastern corner of Cricket Pitch Wood, facing east onto track on site's southern boundary June 2018

Date	Sunset/rise times	Start/finish times	Weather conditions	Number of bat passes					
				Common pipistrelle	Soprano pipistrelle	Noctule	Serotine	Myotis	Total
26/6/18	2124/0440	2100/0445	19-12°C. Dry, clear sky, still	28	1	0	0	1*	30
27/6/18	2124/0440	2100/0445	17-13°C. Dry, clear sky, still	54	2	8	0	0	64
Total				82	3	8	0	1	94
Average (per night)				41	1.5	4	0	0.3	47

*Probably Natterer's

Automated detector at eastern corner of Pheasant Plantation, facing east onto swale/Washpit Brook June 2021

Date	Sunset/rise times	Start/finish times	Weather conditions	Number of bat passes									
				CP	SP	NP	Nn	Es	BLE	MyD	My	Bb	Total
10/6/21	2118/0440	2100/0440	20-15°C. Dry, cloudy, still	170	113	33	405	4	6	8	0	2	741
11/6/21	2119/0439	2100/0440	20-16°C. Dry, cloudy, slight breeze	135	64	17	379	6	5	8	1	0	615
12/6/21	2120/0438	2100/0440	19-13°C. Dry, cloudy, still	80	72	12	138	3	6	6	0	1	318
13/6/21	2121/0438	2100/0440	23-16°C. Dry, cloudy, still	72	28	3	272	4	12	5	0	1	397
14/6/21	2122/0438	2100/0440	20-13°C. Dry, cloudy, slight breeze	128	49	1	276	2	0	8	0	1	465
Total				585	326	66	1470	19	29	35	1	5	2536
Average (per night)				117	65.2	13.2	294	3.8	5.8	7	0.2	1	507

Automated detector at eastern corner of Cricket Pitch Wood, facing east onto track on site's southern boundary June 2021

Date	Sunset/rise times	Start/finish times	Weather conditions	Number of bat passes									
				CP	SP	NP	Nn	Es	BLE	MyD	My	Bb	Total
10/6/21	2118/0440	2100/0440	20-15°C. Dry, cloudy, still	17	9	1	3	0	0	0	0	0	30
11/6/21	2119/0439	2100/0440	20-16°C. Dry, cloudy, slight breeze	25	17	0	1	0	0	0	0	0	30
12/6/21	2120/0438	2100/0440	19-13°C. Dry, cloudy, still	63	29	0	0	0	0	0	0	0	60
13/6/21	2121/0438	2100/0440	23-16°C. Dry, cloudy, still	7	10	0	1	0	0	0	2*	0	20
14/6/21	2122/0438	2100/0440	20-13°C. Dry, cloudy, slight breeze	67	19	0	1	0	0	0	1*	0	88
Total				179	84	1	6	0	0	0	3	0	540
Average (per night)				35.8	16.8	0.2	1.2	0	0	0	0.6	0	108

*likely to be whiskered bat

Species Codes:

CP Common pipistrelle
SP Soprano pipistrelle
Nn Noctule
Es Serotine
My Bat of the genus Myotis
Bb Barbastelle

Automated detector on northern edge of Storey's Way Wood (facing east along cyclepath) August, September, October 2023

Date	Number of passes per species							First bats recorded, relative to sunset
	CP	SP	Nn	Es	My	Bb	Other	
23/8/23	11	15	9	1	0	0	0	SP 23mins after sunset, CP 29mins
24/8/23	8	3	6	0	0	0	0	SP 23mins after sunset, CP 24mins
25/8/23	72	58	2	0	0	0	0	SP 54mins after sunset, CP 34mins, Nn 16mins
26/8/23	17	10	8	0	0	1	0	SP 14mins after sunset, CP 20mins, Nn 38mins
27/8/23	20	44	5	1	0	0	1^	SP 39mins after sunset, CP 42 mins
5/9/23	15	14	15	1	0	0	0	SP 30mins after sunset, CP 18mins, Nn 15mins before
6/9/23	4	18	6	0	0	0	0	CP 23mins after sunset, Nn 18mins before
7/9/23	13	5	10	0	0	0	0	CP 45mins after sunset
4/10/23	31	107	1	0	1	0	0	CP 30mins after sunset
5/10/23	22	43	2	0	0	0	0	SP 30mins after sunset, CP 35mins
6/10/23	116	27	1	0	0	0	0	CP 41mins after sunset, SP 49mins
7/10/23	95	34	1	0	0	0	0	CP 33mins after sunset, SP 36mins, Nn 28mins before
8/10/23	113	26	2	0	0	1	0	CP 38mins after sunset, Bb 55mins, Nn 30mins
Total passes	**537**	**404**	**68**	**3**	**1**	**2**	**1^**	
Average per night	**41.3**	**31.1**	**5.2**	**0.2**	**0.1**	**0.2**	**0.1^**	

^Possible brown long-eared bat

Automated detector on southern boundary hedgerow, to the west of the Madingley Road Park & Ride September and October 2023

Date	Number of passes per species							First bats recorded, relative to sunset
	CP	SP	Nn	Es	My	Bb	Other	
18/9/23	1	22	0	0	0	0	0	SP 30mins after sunset, CP 69 mins
19/9/23	3	2	1	0	0	0	0	Nn 37mins after sunset, SP 41 mins
20/9/23	0	0	0	0	0	0	0	No bats recorded
21/9/23	0	3	0	0	0	0	0	SP 51mins after sunset
22/9/23	1	1	0	0	0	0	0	CP 44mins after sunset
23/9/23	11	76	0	0	2*	0	0	SP 24mins after sunset, CP 46mins, My 34mins
24/9/23	8	51	0	0	0	0	0	SP 25mins after sunset, CP 45mins
9/10/23	0	0	0	0	0	0	0	No bats recorded
10/10/23	0	0	0	0	0	0	0	No bats recorded
11/10/23	0	0	0	0	0	0	0	No bats recorded
12/10/23	0	0	0	0	0	0	0	No bats recorded
13/10/23	0	0	0	0	0	0	0	No bats recorded
14/10/23	0	0	0	0	0	0	0	No bats recorded
15/10/23	0	0	0	0	0	0	0	No bats recorded
16/10/23	0	0	0	0	0	0	0	No bats recorded
Total passes	**24**	**155**	**1**	**0**	**2**	**0**	**0**	
Average per night	**1.6**	**10.3**	**<0.1**	**0**	**0.1**	**0**	**0**	

*Calls are characteristic of Daubenton's bat

Automated detector on swale between Pheasant Plantation and Kendrew Place

Date	Number of passes per species							First bats recorded, relative to sunset
	CP	SP	Nn	Es	My	Bb	Other	
18/9/23	40	53	7	4	7*	7	1^	SP 29mins after sunset, CP 41 mins, Nn 50 mins, My 53mins
19/9/23	14	401	0	1	3*	2	1^	SP 28mins after sunset, CP 39 mins
20/9/23	1	45	0	0	0	0	0	No bats before 11pm
21/9/23	12	22	3	0	3*	0	3^	SP 20mins after sunset, CP 37mins
22/9/23	12	68	9	1	7*	1	4^ & 1+	Nn 11mins after sunset, SP 27mins, CP 39mins, My 66mins
23/9/23	86	43	6	1	6*	3	1^	SP 19mins after sunset, Nn 27mins, CP 32mins, BLE 53mins
24/9/23[1]	17	50	3	1	2*	2	0	SP 29mins after sunset, CP 35mins
9/10/23	25	3	0	0	0	0	0	CP 32mins after sunset
10/10/23	2	2	0	0	0	0	0	No bats before midnight
11/10/23	3	2	0	0	0	0	0	CP 84mins after sunset
12/10/23	0	0	0	0	0	0	0	No bats recorded
13/10/23	0	0	0	0	0	0	0	No bats recorded
14/10/23	0	1	0	0	1*	0	0	My 78mins after sunset, SP 107mins
15/10/23	0	1	0	0	0	0	0	SP 39mins after sunset
16/10/23	29	76	0	0	0	0	0	SP 23mins after sunset, CP 68mins
Total passes	**241**	**747**	**28**	**8**	**29**	**15**	**10^ 1+**	
Average per night	**16.1**	**49.8**	**1.9**	**0.5**	**1.9**	**1**	**0.7^ <0.1+**	

*Calls are characteristic of Daubenton's bat
^Possible brown long-eared bats
+Possible Nathusius' pipistrelle
[1]Note that the detector stopped working shortly after midnight on 24/9/23

Automated detector between Cricket Pitch Wood and Traveller's Rest Pit SSSI (Location B) April, May, June and July 2024

Date	Number of passes per species							First bats recorded, relative to sunset
	CP	SP	Nn	Es	My	Bb	Other	
13/4/24	7	19	1	0	0	0	0	CP 39 mins after sunset, SP 55mins, Nn 54 mins
14/4/24	5	11	1	0	0	0	0	SP 31mins after sunset, CP 40mins, Nn 46 mins
15/4/24	0	0	0	0	0	0	0	n/a
16/4/24	1	2	1	0	1*	0	0	SP 42mins after sunset, CP 51mins, Nn 2 hours 11mins, My 1 hr 25mins
17/4/24	0	1	0	0	0	0	0	SP 39mins after sunset
8/5/24	27	21	0	0	0	0	0	SP 38mins after sunset, CP 40mins
9/5/24	17	23	9	0	0	0	1^	SP 45mins after sunset, Nn 21mins, CP 44mins, BLE 1 hour 54mins
10/5/24	20	37	9	0	3*	0	0	SP 50mins after sunset, CP 46mins, Nn 31mins, My 3 hours 29mins
11/5/24	53	24	6	0	8*	0	0	CP 49mins after sunset, SP 56mins, Nn 38mins, My 3 hours 16mins
12/5/24	65	20	6	0	1*	0	0	CP 36mins after sunset, SP 47mins, Nn 35mins, My 3 hours 30mins
3/6/24	61	23	10	0	1	0	2+	CP and SP both 47mins after sunset, poss NP 1 hour 15mins, Nn 1 hour 27mins, My 5 hours
4/6/24	34	15	0	0	0	0	0	CP 41mins after sunset, SP 51mins
5/6/24	28	31	1	0	0	0	0	CP 46mins after sunset, SP 37mins, Nn 57mins
6/6/24	37	27	0	0	0	0	0	CP 58mins after sunset, SP 52mins
7/6/24	18	20	1	0	2@	0	0	CP 1 hour 5mins after sunset, SP 41mins, Nn 21mins, My >5 hours
9/7/24	9	12	11	0	0	0	0	Nn 1 min before sunset, CP 53mins after, SP 44mins
10/7/24	8	8	10	0	0	0	0	Nn 16mins after sunset, CP51mins, SP 44mins
11/7/24	23	13	103	0	2*	0	0	Nn 1min after sunset, CP 37 mins, SP 36mins, My 1hr 24mins
12/7/24	9	21	35	0	1*	0	0	Nn 2mins after sunset, CP 33mins, SP 39mins, My 1hr 54mins before sunrise
13/7/24	3	7	27	0	2*	0	0	Nn 7mins after sunset, CP 50mins, SP 52mins, My >2hours
Total passes	**425**	**335**	**231**	**0**	**21**	**0**	**3**	
Average per night	**21**	**17**	**12**	**0**	**1**	**0**	**<1**	

*Calls are characteristic of whiskered bat
^Possible brown long-eared bat
+Possible Nathusius' pipistrelle
@Calls are characteristic of Daubenton's bat

Automated detector on west side of Horse Chestnut Avenue (Location A) April, May, June and July 2024

Date	Number of passes per species							First bats recorded, relative to sunset
	CP	SP	Nn	Es	My	Bb	Other	
13/4/24	0	0	0	0	0	0	0	n/a
14/4/24	0	0	0	0	0	0	0	n/a
15/4/24	0	0	0	0	0	0	0	n/a
16/4/24	0	0	0	0	0	0	0	n/a
17/4/24	0	0	0	0	0	0	0	n/a
8/5/24	4	1	0	0	0	0	1^	CP 3 hours 26mins after sunset, SP 4 hours 38mins, Possible BLE 56mins
9/5/24	0	0	1	0	0	0	0	Nn 24mins after sunset
10/5/24	9	0	8	0	0	0	0	CP 4 hours 3mins after sunset, Nn 29mins
11/5/24	2	0	4	0	0	0	0	CP 4 hours 1min after sunset, Nn 51mins
12/5/24	1	0	3	0	0	0	0	CP 4 hours 1min after sunset, Nn 38mins
3/6/24	0	0	33	0	0	0	0	Nn 39mins after sunset
4/6/24	0	0	0	0	0	0	0	n/a
5/6/24	3	0	2	0	0	0	0	Nn 35mins after sunset, CP >4 hours
6/6/24	1	0	7	1	0	0	0	ES 50mins after sunset, Nn 53mins, CP >4 hours
7/6/24	1	0	0	0	0	0	0	CP > 3 hours after sunset
9/7/24	0	0	1	0	0	0	0	Nn 1hr 13mins after sunset
10/7/24	0	0	7	0	0	0	0	Nn 35mins after sunset
11/7/24	0	0	4	0	0	0	0	Nn 1 min after sunset
12/7/24	0	0	4	0	0	0	0	Nn 3mins after sunset
13/7/24	0	0	4	0	0	0	0	Nn 22mins after sunset
Total passes	**21**	**1**	**78**	**1**	**0**	**0**	**1**	
Average per night	**1**	**<0.1**	**4**	**<0.1**	**0**	**0**	**<0.1**	

^Possible brown long-eared bat

Automated detector on eastern boundary of site, at junction of cycleway with Storey's Way April, May, June and July 2024

Date	Number of passes per species							First bats recorded, relative to sunset
	CP	SP	Nn	Es	My	Bb	Other	
13/4/24	3	1	0	0	0	0	0	CP 2 hours 20mins after sunset, SP 5 hours 28mins
14/4/24	1	0	0	0	0	0	0	CP 21 mins after sunset
15/4/24	0	0	0	0	0	0	0	n/a
16/4/24	0	0	0	0	0	0	0	n/a
17/4/24	0	0	0	0	0	0	0	n/a
8/5/24	0	0	0	0	0	0	0	n/a
9/5/24	2	0	0	0	0	0	0	CP 25mins after sunset
10/5/24	0	0	0	0	0	0	0	n/a
11/5/24	0	0	0	0	0	0	0	n/a
12/5/24	0	0	0	0	0	0	0	n/a
3/6/24	0	0	0	0	0	0	0	n/a
4/6/24	0	0	0	0	0	0	0	n/a
5/6/24	0	0	0	0	0	0	0	n/a
6/6/24	0	0	0	0	0	0	0	n/a
7/6/24	0	0	0	0	0	0	0	n/a
9/7/24	0	0	2	0	0	0	0	Nn 10mins after sunset
10/7/24	0	0	27	0	0	0	0	Nn 35mins after sunset
11/7/24	4	0	1	0	0	0	0	Nn 11mins after sunset, CP >3hours
12/7/24	0	0	0	0	0	0	0	n/a
13/7/24	0	0	6	0	0	0	0	Nn 40mins after sunset
Total passes	**10**	**1**	**36**	**0**	**0**	**0**	**0**	
Average per night	**0.5**	**<0.1**	**4**	**0**	**0**	**0**	**0**	

Appendix: Ecology and Biodiversity

Annex 1: Letter from Guy Belcher, Cambridge City Council Biodiversity Officer, dated 19 September 2024, relating to Habitat Regulations Assessment Screening

Annex 2: Summary of the Results of a Data Search Using MAGIC.GOV.UK

Annex 3: Results of a Data Search with CPER

Annex 4: Washpit Brook River Condition Assessment Baseline Report

Annex 5: GCN Survey Report

Annex 6: Habitat, Plant and Invertebrate Survey Report

Annex 7: Invertebrate Survey Report

Annex 8: Additional Amphibian Surveys Report

Annex 9: Reptile Survey Report

Annex 10: Breeding Bird Survey Report

Annex 11: Winter Bird Survey Report

Annex 12: Bat Roost Survey Report

Annex 13: Bat Activity Survey Report

Annex 14: Water Vole and Otter Survey Report

Annex 15: Badger Survey Report

Annex 16: Harvest Mouse Survey Report

Version	Date of issue	Amendments made
v1	May 2024	n/a
v2	September 2024	Results of late season water vole survey added
v3	November 2024	Results of autumn otter survey added
v4	June 2024	Amendment of Figure Site location plan

North West Cambridge Masterplan

Water Vole and Otter Survey

Report ref: NWC-MP2024-MDE-SW-SU-00001-Water vole and otter survey June 2025

MD Ecology ref: C205/R1/v4

Date: June 2025

This report has been prepared on behalf of:

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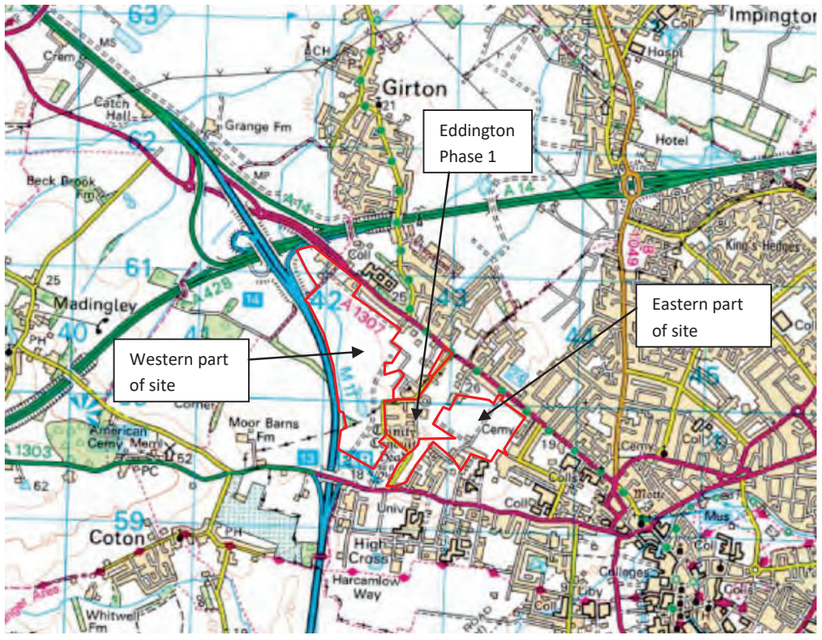
Table of Contents

1. Introduction

1.1 This report has been prepared by Mike Dean of MD Ecology Limited, on behalf of the University of Cambridge. It provides the results of water vole (*Arvicola amphibius*) and otter (*Lutra lutra*) surveys across the Eddington site (also referred to as North West Cambridge Masterplan), undertaken in 2024. The site is located between Huntingdon Road, Madingley Road and the M11 Motorway and is a former university farm. Phase 1 of the Eddington development has been constructed and future development areas are located to the east and west of Eddington. The location of the site is shown in Figure 1.

1.2 The purpose of the survey was to provide a baseline in relation to water voles and otters for the Environmental Impact Assessment (EIA) for the renewal of the scheme's outline planning consent. This report does not include any assessment of likely impacts or required mitigation measures for Eddington.

Figure 1: Site Location Plan



1.3 Water vole and otter surveys were undertaken to inform the EIA for the original outline planning application for the project. No evidence of otters was recorded during any of the surveys undertaken up to and including 2012. Water voles surveys between 2004 and 2009 identified a small population of water voles in the section of the Washpit Brook immediately downstream of the M11 culvert (see Figures 2a and 2b), although no evidence of the presence of water voles was recorded during surveys in 2011 and 2012 and they were considered likely to be absent from the site at that time. Water voles were not recorded in any of the ponds surveyed in 2011, the locations of which are shown on Figure 2 (Ponds P1 to P6). A further pond (Pond 7) is a small attenuation pond adjacent to the M11 motorway; it has not previously been surveyed. Pond P3 has been in-filled; all other ponds are still present.

1.4 The Washpit Brook has been reprofiled since 2012 and a significant amount of new wetland habitat has been created since the Eddington development commenced, including the two stage channel and low flow channel of the brook, the attenuation lagoon at Brook Leys, several swales within Phase 1 of the development and ten new ponds:

- Four new permanent ponds created as part of the drainage for Phase 1 and identified as compensatory ponds in the Natural England great crested newt mitigation licence for the scheme (Ponds A1, A2, B and C).
- Six temporary ponds created as part of the drainage and attenuation scheme for the haul road accessing Phase 1 of the development from Madingley Road (Ponds TP1, TP2, TP3, TP4, TP5, TP6). These ponds are in future development plots and will be in-filled as the development progresses.

1.5 The surveys were undertaken by Mike Dean. Mike is a Fellow member of the Chartered Institute of Ecology and Environmental Management (CIEEM), a Chartered Ecologist and a Chartered Environmentalist. He is the Project Ecologist for Eddington and is a recognised authority on water voles and otters. Mike is the lead author of the current good practice guidelines for surveying for, and mitigating impacts on, water voles in development scenarios (Dean, *et al.* 2016) and the author of a field guide on the assessment of habitat for water voles and the identification of their field signs (Dean 2021). He is also currently drafting good practice guidelines for surveying for, and mitigating impacts on, otters.

2. Methods

Desk study

2.1 Existing records of water voles and otters within 2km of the site were obtained from the Cambridgeshire and Peterborough Environmental Records Centre (CPERC) in April 2024. In addition, the previous survey information for the site was reviewed, as set out in the Environmental Statement that accompanied the Outline Planning Application and the Site-wide Biodiversity Strategy for North West Cambridge.

Field survey

2.2 All areas of suitable wetland habitat were surveyed for water voles and otters on 8th and 9th May 2024 by Mike Dean. The specific features surveyed are shown on Figures 2a and 2b.

2.3 The water vole survey was repeated on 2nd and 3rd September 2024, in accordance with current good practice guidance for undertaking water vole surveys, which recommends two survey visits, one during the early season (mid-April to end-June) and one during the late season (July to end-September) (Dean, *et al.* 2016).

2.4 Each length of watercourse or waterbody within the survey area was assessed in terms of its suitability for water voles, following Table 2.1 in Dean (2021). The habitat was assigned to one of the following categories:

Optimal – generally where there was a suitable earth bank for burrowing, tall (infrequently mown) bankside vegetation, and a substantial fringe of emergent vegetation throughout (at least 1m wide but ideally more).

Good – generally where there was a suitable earth bank for burrowing, tall (infrequently mown) bankside vegetation and either a narrow fringe of emergent vegetation, or emergent vegetation only present in patches rather than throughout.

Poor – generally where there was a suitable earth bank for burrowing, but a lack of tall bankside and emergent vegetation due to heavy shading.

Negligible – generally where there was evidence that the habitat was dry for prolonged periods or the banks were not suitable for burrowing, and normally lacking in bankside or emergent vegetation.

2.5 A detailed search for field signs of water voles (latrines, feeding remains, burrows and footprints) was undertaken during both the May and September 2024 survey visits. The survey was primarily undertaken from the banks of watercourses and waterbodies as the level of silt and density of vegetation precluded a survey from within the channel (either from a boat or whilst wading in the channel).

2.6 Where field signs of water voles were recorded, the density of latrines was estimated to allow classification of the relative density of the water vole population, based on paragraph 3.3.16 of the Water Vole Mitigation Handbook (Dean, *et al.* 2016).

2.7 A detailed search for field signs of otter (specifically spraint, latrines and footprints) was undertaken during May 2024. Features suitable for use as resting sites were also searched for and examined to determine whether they were sufficiently large, flat and dry inside and had a sufficiently large entrance, and whether there was any evidence indicating use by otters (latrines and bedding). The otter survey was repeated on 19th and 20th November 2024. The survey accords with emerging good practice guidance for undertaking otter surveys (not yet published), which is likely to recommend two survey visits: one during spring and one during late autumn or winter.

2.8 Field signs of American mink (*Neovison vison*) were also searched for during all survey visits.

Limitations

2.9 Access was available to all areas of suitable habitat to allow water vole and otters surveys to be reliably undertaken. The time of year and weather conditions during which the survey was carried out were suitable. Weather conditions during the May 2024 survey were dry and there had been a prolonged spell of dry weather prior to the survey being undertaken. The weather was less settled in late August / early September 2024, with occasional spells of heavy rain in the week prior to the survey. However, given the existing knowledge of water vole activity within the site from the May 2024 and previous surveys, the findings of the September 2024 survey were in line with what would have been expected, suggesting that the weather conditions had not affected the results. The November 2024 survey visit was undertaken during dry conditions, and this followed a prolonged spell of relatively dry weather.

2.10 The vegetation in wetland habitats across the site was very dense by the time of the September 2024 survey, which may have resulted in some field signs going undetected, leading to an under-estimate of relative density of water voles. This is to be expected in habitats such as those present at Eddington, and is one of the reasons for current good practice guidance recommending two survey visits. Where this was the case the estimate of relative density has been based on the May 2024 survey visit, rather than the September 2024 visit.

3. Survey Results

Water voles

3.1 There are numerous desk study records of water voles from the areas surrounding the site. These include a record of water voles in the Madingley Road Park and Ride in 2001. There are also records from the Washpit Brook at Girton as well as from the Beck Brook, which joins the Washpit Brook downstream of Girton; in both cases these are downstream of the site and more than 1km to the north of it. Water voles have also been recorded on the Bin Brook in Coton, more than 1km to the south-west of the site and on the opposite side of the M11 Motorway, and a separate section of the Bin Brook in Cambridge, approximately 2km to the south-east of the site. Adams Road Sanctuary, located approximately 1km to the south-east, is associated with the section of the Bin Brook in Cambridge; water voles have previously been recorded in this location also.

3.2 The presence of water voles in the attenuation lagoon at Brook Leys was confirmed during the survey. The lagoon provides optimal habitat for water voles, given its stable water level and dense fringes of marginal vegetation, including common reed (*Phragmites australis*), reed sweet-grass (*Glyceria maxima*) and yellow flag (*Iris pseudacorus*). A total of nine latrines and multiple piles of feeding remains were recorded around the perimeter of the lagoon during May 2024, with signs present throughout. This suggests a 'low' relative density of water voles. Only two latrines were recorded in September 2024 but this was considered likely to be due to the density of the vegetation making it difficult to access the locations where field signs would be present, rather than a reduction in the numbers of animals present.

3.3 The lagoon was constructed as part of Phase 1 of the development and therefore represents new habitat for water voles since the previous EIA was undertaken and the surveys to inform it. Water voles started to colonise the lagoon in 2019.

3.4 The main channel of the Washpit Brook provides relatively poor habitat for water voles as it is heavily shaded along the majority of its length within the site and emergent vegetation is therefore only present in small patches. Water voles were recorded in two locations that were less shaded, had marginal vegetation and supported optimal habitat. See Figures 2a and 2b:

- Immediately upstream and downstream of Eddington Avenue; water voles were only recorded downstream of the culvert in May 2024 (1 latrine), but were recorded both upstream (1 latrine) and downstream (2 latrines) in September 2024, with latrine counts indicating a 'low' relative density of water voles; and
- Immediately downstream of the culvert under the M11 Motorway; no latrines recorded in either May or September 2024 but feeding remains were present, indicating a 'low' relative density of water voles.

3.5 An area of land between the Washpit Brook and the M11 Motorway was lowered to form a two stage channel as part of Phase 1 of the development (See Figure 2a). A 1m wide ditch forms the western edge of this area, which is dominated by emergent vegetation, primarily reed sweet-grass and reedmace (*Typha latifolia*) with sedges (*Carex* sp.) also present. The lowered land between the ditch and the Washpit Brook was wet at the time of the May 2024 survey but is known to dry out during the summer months. The area was considered to provide optimal habitat for water voles at the time of the May 2024 survey when a total of 17 latrines were recorded, although this was considered likely to be an under-estimate as the area was difficult to survey exhaustively. Given the density of field signs recorded, a 'medium' relative density of water voles was considered likely to be present at that time.

3.6 The two stage channel, including the ditch, was completely dry by the time of the September 2024 survey. No signs of water voles were recorded at that time, although small numbers of animals may have remained undetected. The area therefore appears to be of high value to water voles in the early part of the breeding season (spring and early summer) but of limited value towards the end of the breeding season as it dries (late summer and autumn).

3.7 The low flow channel, between the Washpit Brook and the noise bund around the western side of Brook Leys, provides optimal habitat for water voles (See Figures 2a and 2b). It was also constructed as part of Phase 1 of the development. At its northern (downstream) end it is approximately 5m wide and holds water throughout the year; the southern (downstream) end is a little over 1m wide and has dried out in late summer in some years, but was wet at the time of both the May and September 2024 survey visits. The channel supports marginal vegetation throughout, dominated by reedmace. A total of 7 latrines were recorded in May 2024 and five latrines in September 2024, indicating a 'low' relative density of water voles. The low flow channel includes 'Ponds' B and C.

3.8 The pond within the Madingley Road Park and Ride (Pond P1) provides good habitat for water voles (See Figure 2b). There is a significant amount of marginal vegetation present, dominated by common reed, but the bank profile is shallow and the water level drops throughout the summer, reducing the ponds suitability. Feeding signs were recorded during both the May and September 2024 survey visits, confirming the presence of water voles, but no latrines were found, indicating a 'low' relative density of water voles.

3.9 The small attenuation pond adjacent to the M11 Motorway (Pond P7) supports relatively good habitat for water voles (See Figure 2a). The banks are steep and the pond is choked with emergent vegetation. However, it is shallow and likely to dry out in late summer in some years. The presence of water voles at 'low' relative density was confirmed as only one latrine and feeding signs were recorded in May 2024; no field signs of water voles recorded in September 2024 when the pond was almost dry. The water voles using this pond are likely to form part of the same colony as those using the adjacent section of the Washpit Brook, the two stage channel and the low flow channel.

3.10 Water voles were also recorded using Pond PA1, which was constructed as part of Phase 1 of the development (See Figure 2b). It was choked with emergent vegetation at the time of both survey visits, dominated by common reed, and was considered to provide optimal habitat although very small in area. One latrine and several piles of feeding remains were recorded in May 2024, indicating a 'low' relative density of water voles. Feeding remains were recorded in September 2024, but no latrines; this is likely to be due to the density of the vegetation making it difficult to find signs of water voles.

3.11 Pond PA2 (See Figure 2b) provides similar habitat for water voles as Pond PA1 but no signs of water voles were present at the time of either survey visit. This may be due to the reeds having been cut around the perimeter of the pond in spring 2024, and water voles may therefore use the pond once the vegetation has recovered.

3.12 The water voles using Pond PA1 are likely to form part of the same colony as those using the adjacent section of the Washpit Brook and Pond P1.

3.13 Water voles have colonised four of the temporary ponds within the construction site (Ponds TP1, TP2, TP3 and TP4, see Figure 2b). Ponds TP1, TP2 and TP4 are small and shallow and may dry out in late summer in some years; TP1 and TP2 were both dry in September 2024. All four of these ponds were dominated by reedmace.

3.14 Ponds TP1 and TP2 supported water voles at 'high' relative density (7 latrines and 14 latrines respectively) in May 2024. No signs of current use of the ponds was recorded in September 2024 when they were dry, although above ground nests were still visible in the vegetation, suggesting relatively recent use. They were considered to provide optimal habitat for water voles at the time of the May 2024 survey visit, but were of negligible value by September 2024.

3.15 Pond TP3 holds water throughout the year. It had dense marginal vegetation around the entire perimeter of the pond at the time of both survey visits and was also considered to provide optimal habitat for water voles, during both May and September 2024. Pond TP3 supported water voles at 'low' relative density (3 latrines in May 2024, 4 latrines in September 2024).

3.16 Pond TP4 was still wet at the time of the September 2024 survey visit, but has been known to dry out completely in some years. It was considered to provide optimal habitat for water voles at the time of the May 2024 survey visit, but this was reduced to 'good' by September 2024 due to the shallow nature of the pond. No latrines were recorded during wither visit but feeding remains were present indicating the presence of water voles at 'low' relative density.

3.17 Field signs of water voles were not recorded in any of the other ponds (Ponds P2, P4, P5, P6, TP5 and TP6, see Figures 2a and 2b). However, an extensive survey of Pond P6 was not undertaken as this pond is located off-site; field signs of water voles have been noted in this pond previously.

3.18 The swale draining into the lagoon at Brook Leys, and which flows parallel to the Washpit Brook and between it and Turing Way (see Figure 2b) provides suitable habitat for water voles. It is shallow but permanently wet, has steep earth banks and supports emergent vegetation dominated by common reed and was assessed as good habitat at the time of both survey visits. No signs of water voles were recorded during the May 2024 survey visit but water vole feeding remains were recorded in the swale between Eddington Avenue and Kendrew Place in September 2024, indicating that water voles had colonised it by late summer 2024, and were present at 'low' relative density.

Otters

3.19 The are desk study records of otters from the Bin Brook in Cambridge, Adams Road Sanctuary and the River Cam in Cambridge. There is also a record of an otter being killed on the M11 Motorway at the junction close to the site in 2017.

3.20 The presence of otters on the Washpit Brook, the low flow channel and at Brook Leys was confirmed with spraint recorded in these locations during the May 2024 survey visit. Spraint has been recorded previously on the low flow channel and at Brook Leys. No field signs of otters were recorded during the November 2024 survey visit.

3.21 Only two potential otter resting sites were recorded (see Figure 2a):

OT1 – A possible otter holt in a cavity at ground level under a partly fallen crack willow (*Salix fragilis*) tree. The cavity is large enough for an otter. However, there was no evidence of use at the time of either the May 2024 or November 2024 survey visits.

OT2 – A possible otter holt in a cavity off the ground in a large willow pollard. There was no evidence of use at the time of either the May 2024 or November 2024 survey visits.

3.22 No further, more detailed, surveys of either structure are considered necessary at this stage, given the absence of signs indicating use by otters. On the basis of the survey undertaken, it is assumed that there were no otter resting sites within the survey area during 2024. The structures recorded, or other structures that were not identified as suitable for otters at the time of the survey, may be used by otters at some point in the future.

Table 1: Summary of water vole survey results

Location	Habitat assessment	Presence of water voles confirmed	Relative density of water voles
Brook Leys	Optimal	Yes	Low
Washpit Brook	Poor, except in two locations	Only in two locations	Low
Two stage channel	Optimal in spring and early summer, but dries out in late summer	Yes, in spring and early summer	Medium (spring and early summer)
Low flow channel	Optimal	Yes	Low
Pond P1	Good	Yes	Low
Pond P2	Poor	No	n/a
Pond P4	Good	No	n/a
Pond P5	Poor	No	n/a
Pond P6	Good	No, but there are previous records	n/a
Pond P7	Good in May 2024 but almost dry by September 2024	Yes, in spring and early summer	Low (spring and early summer)
Pond A1	Optimal	Yes	Low
Pond A2	Potentially optimal	No	n/a
Pond TP1	Optimal in May 2024 but dry by September 2024	Yes	High (spring and early summer)
Pond TP2	Optimal in May 2024 but dry by September 2024	Yes	High (spring and early summer)
Pond TP3	Optimal	Yes	Low
Pond TP4	Optimal in May 2024; good in September 2024	Yes	Low
Pond TP5	Good	No	n/a
Pond TP6	Good	No	n/a
Swale	Good	Yes, in September 2024 between Eddington Avenue and Kendrew Place	Low

4. References

Dean, M., Strachan, R. Gow, D and Andrews, R. (2016) *The Water Vole Mitigation Handbook (Mammal Society Mitigation Guidance Series).* Eds Fiona Mathews and Paul Chanin. Mammal Society, London.

Dean, M. (2021) *Water Vole Field Signs and Habitat Assessment: A Practical Guide to Water Vole Surveys.* Pelagic Publishing, Exeter.

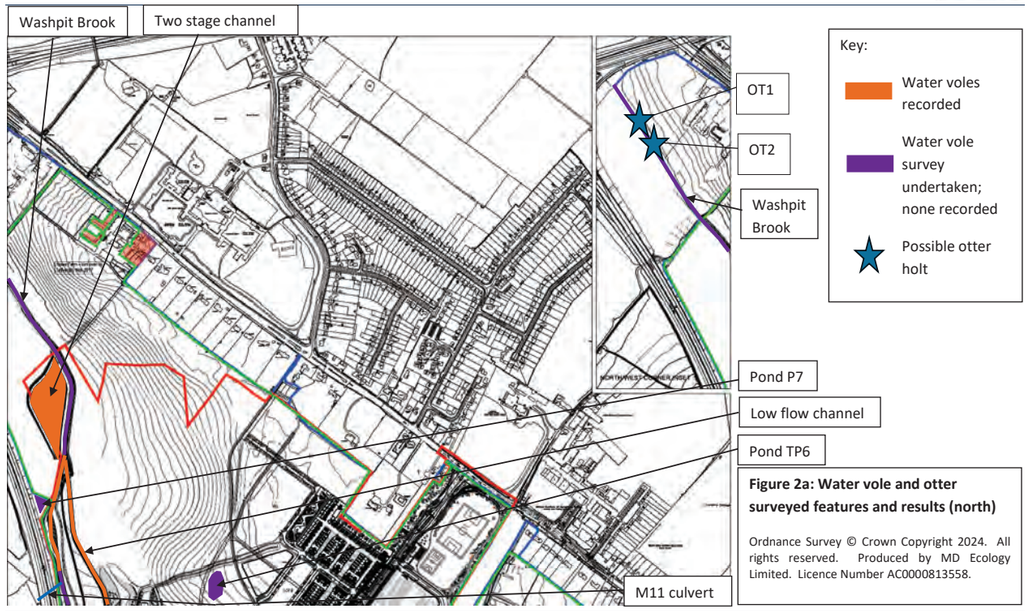


Figure 2a: Water vole and otter surveyed features and results (north)

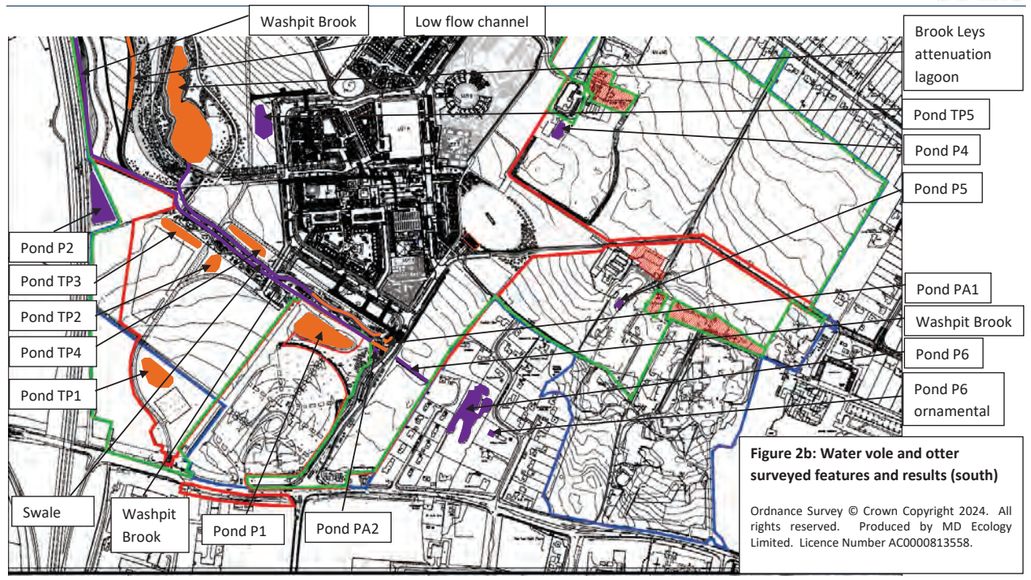
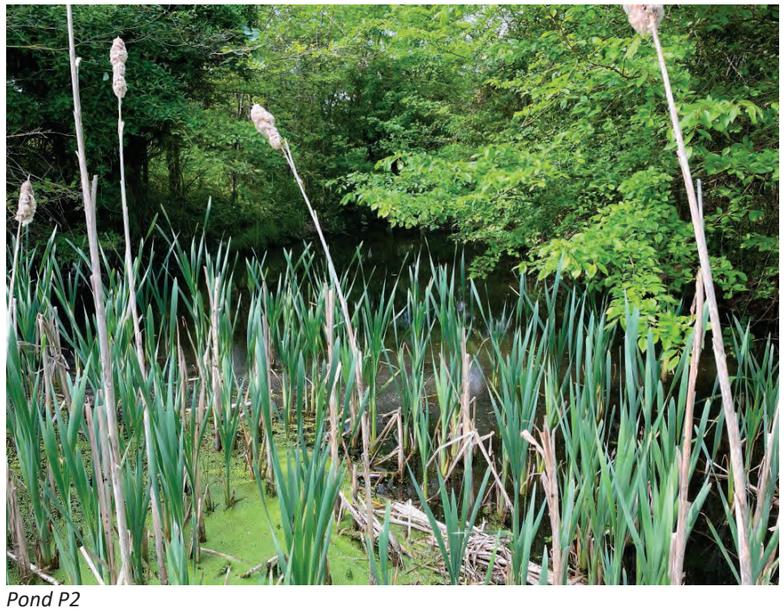


Figure 2b: Water vole and otter surveyed features and results (south)

Appendix 1: Photographs (taken in May 2024)

Pond P1



Pond P2

Pond P5

Pond P6

Pond P6

Pond P6

Pond P6 (ornamental pond)

Pond P7

Pond TP1

Pond TP2

Pond TP3

Pond TP4

Pond TP5

Pond TP6

Pond PA1

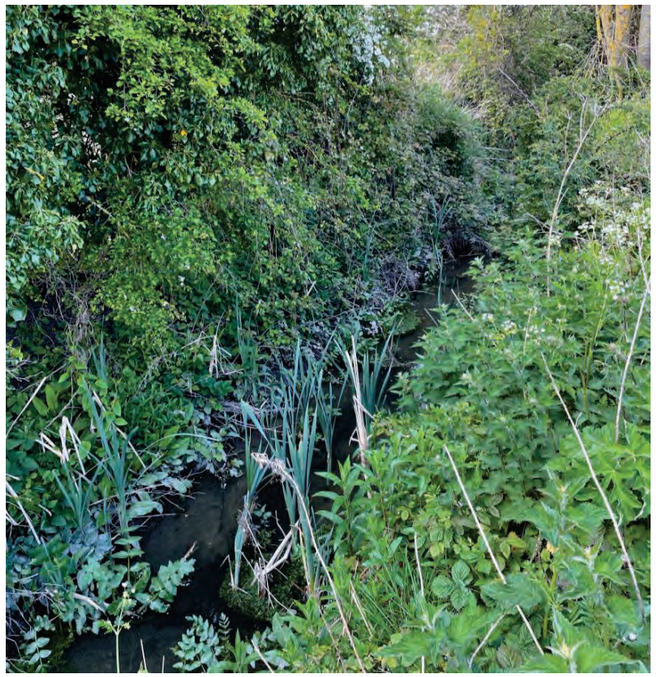
Pond PA2

Pond C

Brook Leys

Two stage channel

Low flow channel



Washpit Brook

Swale

Possible otter holt OT1

Possible otter holt OT2

Appendix: Ecology and Biodiversity

Note: This report contains sensitive information relating to protected species and should be kept confidential.

Eddington, Cambridge

Badger Survey

Report ref: NWC-MP2024-MDE-SW-SU-00004-badger survey June 2025

MD Ecology ref: C205/R4/v2

Date: June 2025

This report has been prepared on behalf of:

University of Cambridge

By:

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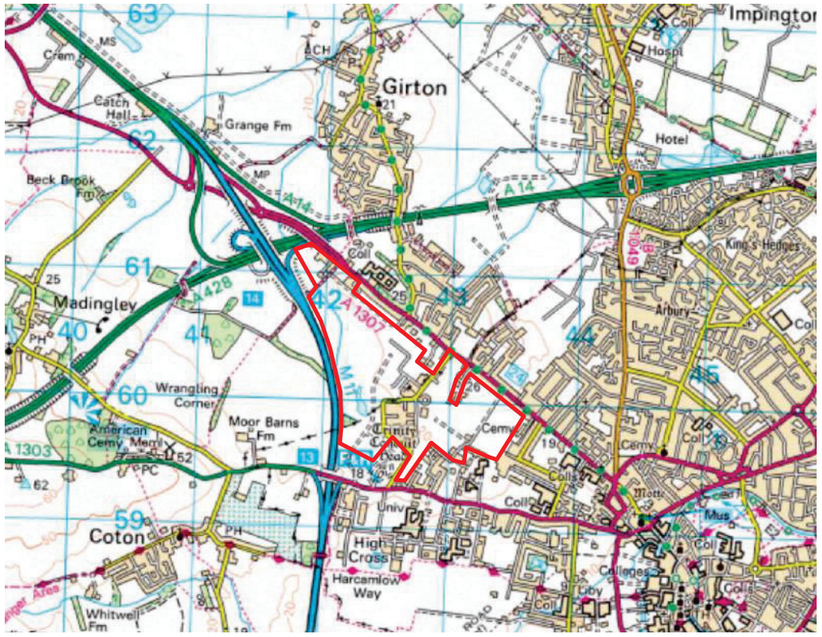
Table of Contents

1. Introduction

1.1 This report has been prepared by Mike Dean of MD Ecology Limited, on behalf of the University of Cambridge. It provides the results of a badger survey of the Eddington site, also known as North West Cambridge. The survey was undertaken in April 2024. The Eddington site is located between Huntingdon Road, Madingley Road and the M11 Motorway and is a former university farm. Phase 1 of the Eddington development has been constructed and future development areas are located to the east and west of Eddington. The survey area is shown in Figure 1.

1.2 The purpose of the survey was to inform the baseline in relation to badgers for the Environmental Impact Assessment (EIA) for the renewal of the scheme's outline planning consent. The survey area includes areas outside of the site boundaries. This report does not include any assessment of likely impacts or required mitigation measures for Eddington.

Figure 1: Site Location Plan



1.3 The area has been surveyed extensively for badgers in the past, with surveys dating back to 2005.

1.4 The 2024 survey was undertaken by Mike Dean. Mike is a Fellow member of the Chartered Institute of Ecology and Environmental Management (CIEEM), a Chartered Ecologist and a Chartered Environmentalist. He is the Project Ecologist for Eddington and has undertaken regular badger surveys of the site since 2011.

2. Methods

2.1 The survey was undertaken by Mike Dean on 10 and 11 April 2024. It comprised a targeted search of the survey area for badger setts and field signs of badgers. The badger survey was extended outside of the area shown on Figure 1 to include adjacent areas up to 50m from the boundaries, where access was available. Any setts recorded were classified as 'main', 'annexe', 'subsidiary' or 'outlier' based on the definitions provided in Harris *et al.* (1989)[1]. The number of entrances at each sett was recorded and the level of use at each entrance was classified as 'well-used', 'partially used' or 'disused', in accordance with Harris *et al.* (1989).

2.2 There were no limitations to the survey. The time of year and weather conditions during which the survey was carried out were suitable.

[1] Harris, S., Cresswell, P. and Jefferies D. (1989). *Surveying Badgers*. Occasional Publication No 9, The Mammal Society, London.

3. Survey Results

3.1 A summary of the results of the badger survey is set out below. The detailed results are provided in Appendix 1 and shown on Figure 1.

3.2 There is a main badger sett present in Storey's Way Wood (Sett N), the woodland located to the south of the cyclepath linking Eddington and Storey's Way, to the east of the Horse Chestnut Avenue. This sett has been excavated since the outline planning application was submitted in 2011, and has had increasing levels of use over the intervening years. It is currently very extensive and there are other badger setts within the same wood, used by the same social group of badgers (Setts O and S).

3.3 There are also several badger setts associated with Traveller's Rest Pit Site of Special Scientific Interest (SSSI) (Setts A, C, H and L), Cricket Pitch Wood (Sett Q) and Gravel Hill Farm (Setts M and T). These are likely to be used by the same social group of badgers that occupy the main sett in Storey's Way Wood, given their proximity to it and the presence of well-used pathways linking several of these setts. Sett R was closed under licence in 2023.

3.4 Badger setts are also present in the western part of the survey area, to the west of Eddington. A previous bait-marking study, undertaken in 2014, confirmed that the badgers in the western part of the survey area formed a separate social group to those in the eastern part. Given the construction works that have been undertaken since that study, this is still considered likely to be the case.

3.5 There is a large sett present on the banks of the Washpit Brook in the western part of the survey area (Sett K1). This is considered likely to be in use as a main sett. There are other setts present in the western part of the survey area but there are fewer setts, and those which are present are generally smaller, than in the eastern part of the survey area. The parts of Setts D1, D2 and G within the survey area have been closed but entrances immediately outside the survey area boundaries may still be active.

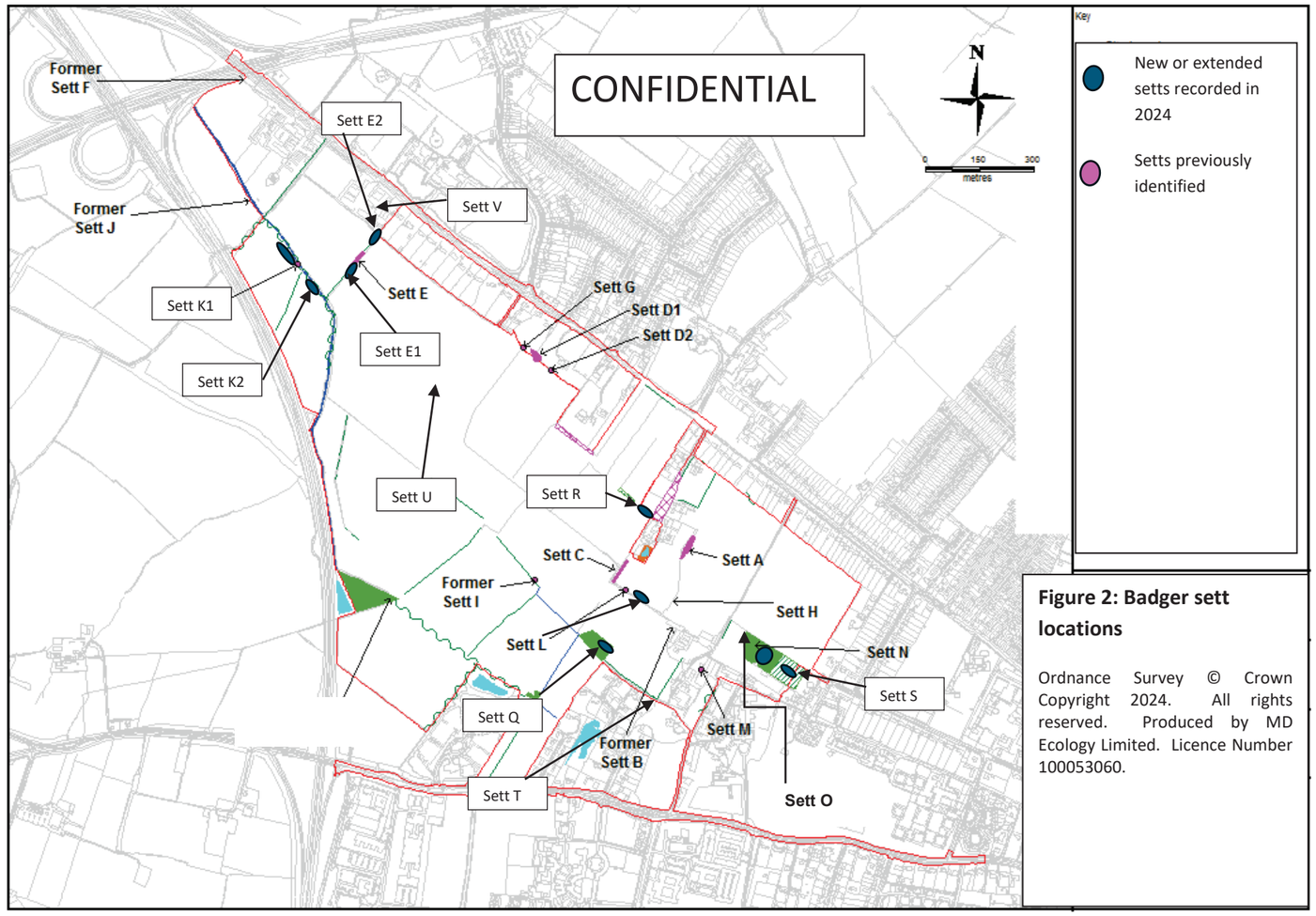


Figure 2: Badger sett locations

Appendix 1: Detailed survey results

Sett	Number of entrances	Likely status of sett	Comments
A	At least 9 well used and 1 partially used	Subsidiary/annex	Entrance holes are in embankment slope and in former arable field (now grass/weeds). Identified as the main sett for the site in mid 2000s. The sett has had a long period of very low levels of use over past 10 years, but was re-occupied by badgers during winter 2023/24. This may have been due to the closure of Sett R at the same time. Sett R was used by cubs. Sett A is linked by a well worn path to Sett N, therefore considered likely to be an annex to that sett.
B	No sett present	n/a	No evidence of a sett at this location at present, nor has there been for more than 10 years.
C	At least 6 well used	Subsidiary	Entrance holes are mainly in embankment slope although some are at top of slope adjacent to footpath. Formerly in use as a main sett but activity levels have been relatively low and use has been sporadic over past 10 years.
D1	Not re-surveyed. Off-site parts of sett active in 2023	Subsidiary	Not re-surveyed in April 2024, as adjacent to land currently being developed (Lots S1 and S2). Surveys in late 2023 found no evidence of use of former entrances within the survey area. Parts of the sett immediately outside the survey area boundaries had low levels of badger activity in late 2023.
D2	Not re-surveyed. No sett present in 2023	n/a	Not re-surveyed in April 2024, as adjacent to land currently being developed (Lots S1 and S2). Surveys in late 2023 found no evidence of use since the sett was closed under licence.
E1	At least 3 well used	Subsidiary	Sett E was closed under licence in 2017. The holes were excavated and the hedgerow removed from the footprint of the original sett. Badgers have since excavated a new sett at the southern end of where the previous sett was located.
E2	3 well used	Subsidiary	New sett only identified in 2024, with holes excavated under the concrete base on which a large water tank is located.
F	No sett present	n/a	No evidence of a sett at this location at present.
G	Not re-surveyed. Single entrance hole (closed) in 2023	Outlying	Not re-surveyed in April 2024, as adjacent to land currently being developed (Lots S1 and S2). The sett was closed under licence in 2022. Surveys in late 2023 found that the sett was still closed at that time.

Sett	Number of entrances	Likely status of sett	Comments
H	1 well used	Outlying	Entrance hole is in embankment slope and on a very well worn path. The sett has had a long period of very low levels of use over past 10 years, but was re-occupied by badgers during winter 2023/24.
I	No sett present	n/a	Sett was closed under licence in 2013 and the land subsequently developed as part of Phase 1, making it unsuitable for a badger sett.
J	No sett present	n/a	No evidence of a sett at this location at present.
K1	At least 10 well used and 1 partially used	Possible main	Sett in this location has been continually occupied by badgers for more than 11 years. Bait-marking study in 2014 suggested that this may be a main sett.
K2	4 partially used	Possible annex	This sett has been excavated in the previous 2 years. It is linked to Sett K1 by a well worn path but has relatively low levels of use and was possibly unoccupied at the time of the survey.
L	4 well used	Subsidiary	Entrance holes are in embankment slope. They are located slightly further east than the previously identified location Sett L, but given that there is no sett currently present at the previous location the same letter code has been used. No signs of current use by badgers at the time of the survey.
M	At least 2 well used	Outlying	Located partly in the overgrown garden of one of the cottages and partly in the adjacent grassland.
N	At least 15 well used and 8 partially used	Main	This sett has expanded significantly over the last 10 years.
O	1 well used	Outlying	Located on edge of Storey's Way Wood.
Q	2 well used and 3 partially used	Subsidiary	Located within Cricket Pitch Wood.
R	2 disused	n/a	This sett was closed under licence in 2023. It was likely to be in use as an annex at that time. The gates have been removed but the entrances have been monitored and there has been no re-occupation by badgers.
S	8 well used	Annex	This sett was only previously identified in 2023

Sett	Number of entrances	Likely status of sett	Comments
T	1 well used	Outlying	This sett had not previously been identified. No signs of current use by badgers at the time of the survey.
U	1 partially used	Outlying	This sett had not previously been identified. There were no signs of current use by badgers at the time of the survey. It may be an enlarged rabbit burrow, but the size and shape of the hole suggest that it was excavated by a badger.
V	2 well used	Outlying	This sett had not previously been identified. There were no signs of current use by badgers at the time of the survey. The structure may be an enlarged rabbit burrow, but the size and shape of the holes suggest that it was excavated by a badger.

Appendix: Ecology and Biodiversity

North West Cambridge Masterplan

Harvest Mouse Survey

Report ref: NWC-MP2024-MDE-SW-SU-00006-harvest mouse survey June 2025

MD Ecology ref: C205/R6/v2

Date: June 2025

This report has been prepared on behalf of:

University of Cambridge

By:

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Table of Contents

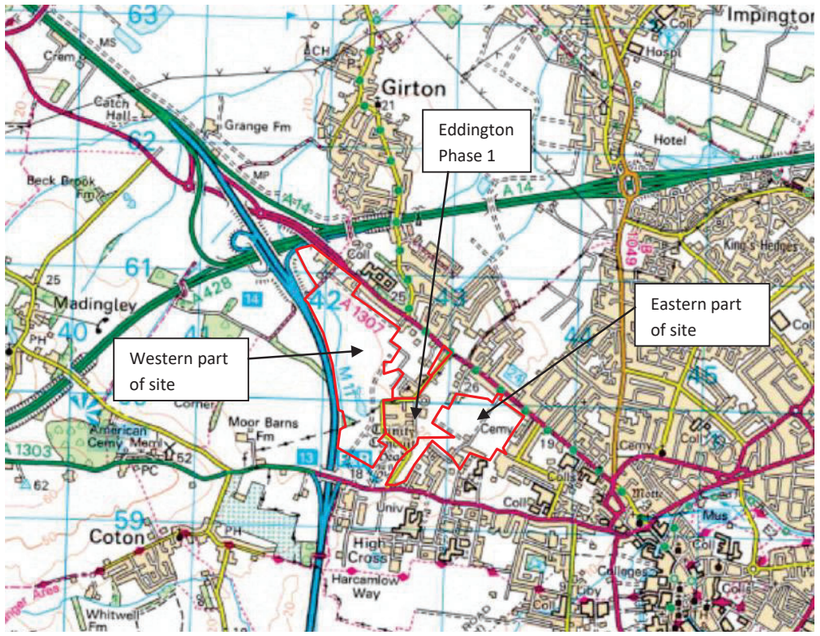
1. Introduction

1.1 This report has been prepared by Mike Dean of MD Ecology Limited, on behalf of the University of Cambridge. It provides the results of a harvest mouse survey of the Eddington site, also known as North West Cambridge Masterplan. The survey was undertaken in November and December 2024. The site is located between Huntingdon Road, Madingley Road and the M11 Motorway and is a former university farm. Phase 1 of the Eddington development has been constructed and future development areas are located to the east and west of Eddington. The location of the site is shown in Figure 1.

1.2 The purpose of the survey was to inform the baseline in relation to harvest mice for the Environmental Impact Assessment (EIA) for the renewal of the scheme's outline planning consent. This report does not include any assessment of likely impacts or required mitigation measures for Eddington.

1.3 Harvest mice are listed as a national priority for conservation (Species of Principal Importance for the Conservation of Biodiversity in England); they are not listed as a protected species.

Figure 1: Site Location Plan



1.4 No surveys of the site for harvest mice have been undertaken previously. A data search with the Cambridgeshire and Peterborough Environmental Records Centre (CPERC) for existing records of protected or priority species with 2km of the site was undertaken in April 2024; CPERC does not hold any records of harvest mice within 2km of the site. In addition, a review of the NBN Atlas website[1] in November 2024 did not identify any known records of harvest mice for the site or the immediately surrounding areas. The nearest records of the species on the NBN Atlas are approximately 4.5km to the south of the site at Grantchester, and approximately 3.5km to the north-west of the site close to Northstowe. However, a local resident reported a sighting of a dead harvest mouse at the site in 2024.

1.5 Harvest mice will use a wide variety of habitats where tall grasses or shrubs are present. They construct woven nests from grass leaves that have been split lengthways and are supported by the vegetation at a height of between 10cm and 1m above ground level. Harvest mice can be found in rough and tussocky grassland, reedbeds, riparian margins, rank grassland associated with young plantation woodland and hedgerows, arable field margins, road verges and ditches[2][3]. The site therefore provides areas of suitable habitat for this species.

1.6 The survey was undertaken by Mike Dean. Mike is a Fellow member of the Chartered Institute of Ecology and Environmental Management (CIEEM), a Chartered Ecologist and a Chartered Environmentalist. He is the Project Ecologist for Eddington.

[1] https://species.nbnatlas.org/species/NHMSYS0000080211

[2] Cresswell, W.J., Birks, J.D.S., Dean, M., Pacheco, M., Trewhella, W.J., Wells, D. and Wray, S. (2012). *UK BAP Mammals: Interim Guidance for Survey Methodologies, Impact Assessment and Mitigation.* The Mammal Society, Southampton.

[3] Mammal Society publication 'The National Harvest Mouse Survey Protocol'. National-Harvest-Mouse-Survey-Protocol-V2.2+-+2022-11-24.pdf

2. Methods

2.1 The survey was undertaken by Mike Dean on 18, 19 and 20 November, and 10 and 11 December 2024. It comprised an assessment of the suitability of the habitat within the site for harvest mice, and a targeted search of areas where harvest mouse nests may be constructed, if the species is present.

2.2 The survey was undertaken during autumn in accordance with the general principles set out in the Mammal Society's national survey protocol[3].

2.3 Areas of tall or infrequently mown grass were included in the survey; areas of short or regularly mown grass (less than 30cm tall) were excluded from the survey as the vegetation was considered unlikely to support nests. Where a margin of unmown grass was present around the boundaries of such areas, these margins were included in the survey.

2.4 Areas of ruderal (weedy) vegetation were included where there were grasses present within the stands.

2.5 Reedbeds and extensive areas of common reed (*Phragmites australis*) within ponds and ditches were also included in the survey.

2.6 The areas targeted for nest searches are shown on Figure 2, and are listed below:

- Abandoned farmland in the northern part of the site – the survey focused on patches of tall vegetation within these fields
- Reedbeds at Brook Leys lagoon, in attenuation features in the Western Edge, in construction site ponds, and in the swale and ponds adjacent to the northern boundary of the Madingley Road Park and Ride (P&R)
- Unmanaged grassland within Traveller's Rest Pit, within a previously sown (since abandoned) meadow, and in parts of the former arable fields to the north and west of Gravel Hill Farm, which included areas immediately adjacent to, but outside of, the site boundary

2.7 The built areas of Eddington in the centre of the site did not provide suitable habitat for harvest mice and therefore no nest searches were undertaken in this part of the site.

2.8 No road verges were included in the survey as all of those within the site were found to be regularly mown.

2.9 The survey comprised careful searching of the vegetation for nests. The vegetation was parted as necessary to enable the surveyor to find any nests.

2.10 There were no limitations to the survey. The time of year and weather conditions during which the survey was carried out were suitable.

3. Survey Results

3.1 The majority of the site did not provide areas of tall grass at the time of the survey in November and December 2024.

3.2 The majority of the fields in the eastern part of the site had been cut during autumn 2024. Areas of tall grass were still present in (see Figure 2):

- Traveller's Rest Pit
- A previously sown (since abandoned) meadow to the east of Gravel Hill Farm
- Parts of the former arable fields to the north and west of Gravel Hill Farm, mainly associated with spoil mounds or field corners that could not be mown

3.3 These areas were considered to provide suitable habitat for harvest mice. The fields that had been cut in the eastern part of the site are also likely to have provided suitable habitat for harvest mice in early/mid summer, before they were mown.

3.4 The reedbeds around the lagoon at Brook Leys and associated with the swale and ponds adjacent to the northern boundary of the Madingley Road Park and Ride (P&R) provided suitable habitat for harvest mice.

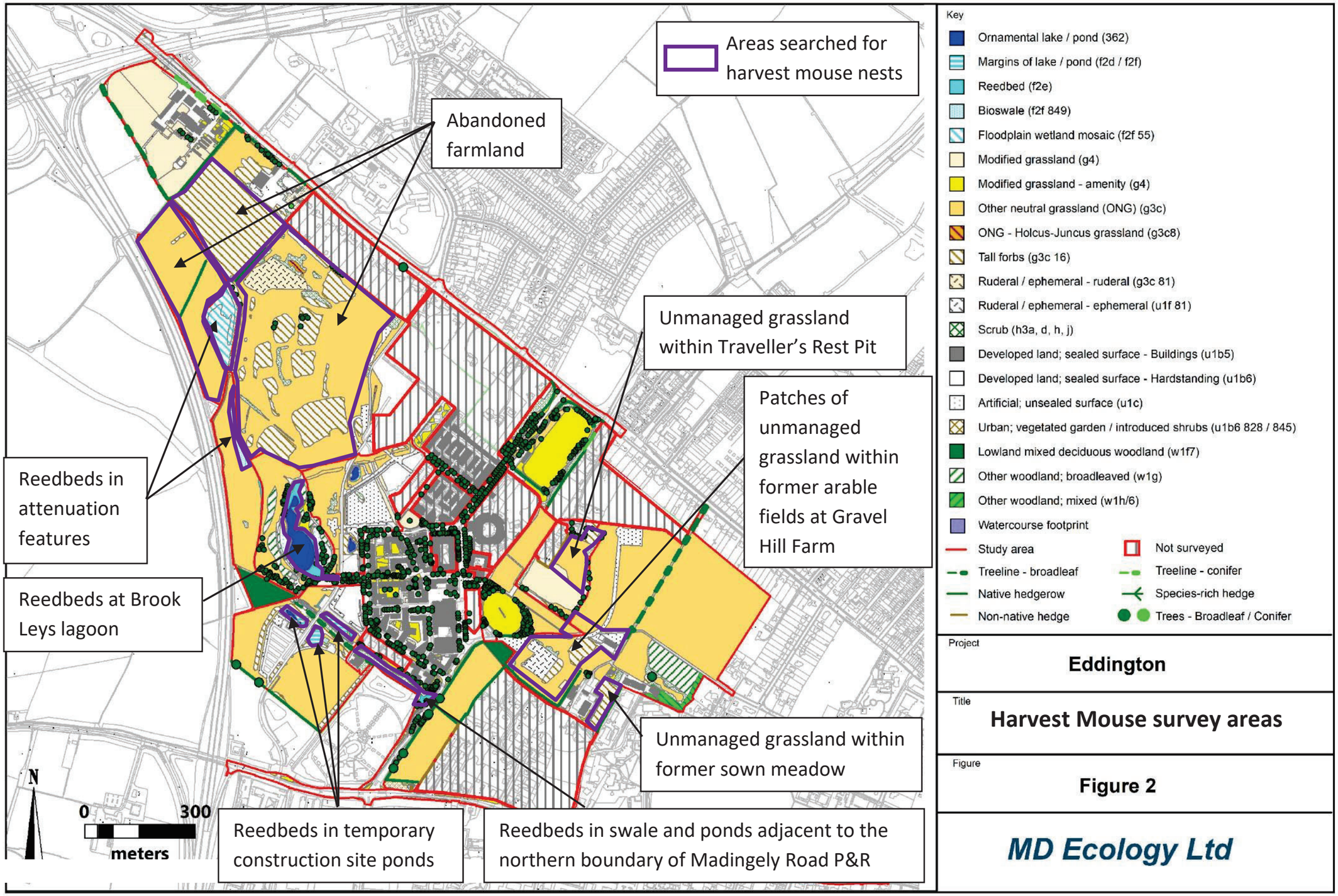
3.5 Wetland habitat associated with attenuation features in the Western Edge and construction site ponds did not provide particularly valuable habitat for harvest mice. These areas were dominated by reedmace (*Typha latifolia*) and the vegetation therefore lacked the structure necessary for the construction of nests.

3.6 The areas of unmanaged vegetation around the ponds in the temporary construction areas also did not provide particularly valuable habitat for harvest mice. These areas were dominated by weeds and bramble (*Rubus fruticosus* agg.) scrub with few grasses present for nest construction.

3.7 The abandoned farmland in the western part of the site comprised extensive areas of short grass with patches of taller ruderal vegetation. The majority of the grassland in this area was considered to be too short to support harvest mouse nests. Small patches of taller grasses were identified which provided more valuable habitat.

3.8 The intensively grazed fields in the far north-western part of the site, associated with the University research facility at 307 Huntingdon Road, were considered unsuitable to support harvest mice.

3.9 No harvest mouse nests were recorded during the survey. It is therefore concluded that harvest mice are likely to be absent from the site, although is possible that the species is present at very low densities.



Appendix: Land Take and Soils (Agriculture)

Annex 1: Agricultural Land Classification and Soil Resources

Appendix: Land Take and Soils (Agriculture)

Annex 1: Agricultural Land Classification and Soil Resources

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PROPOSED DEVELOPMENT ON LAND AT NORTH WEST CAMBRIDGE

On Behalf of
The University of Cambridge

Agricultural Land Classification

1. Introduction

1.1.1 Reading Agricultural Consultants was instructed to investigate the Agricultural Land Classification (ALC) of the North-western Development area between the Bedford and Huntingdon Roads to the northwest of Cambridge. The area is currently part of the Cambridge University Farm and is mostly used for arable agriculture, with some pasture on the lower land alongside Washpit Brook. The perimeter of the survey area encloses 141 ha, but this includes some buildings and about 4 ha of a Site of Special Scientific Interest. The net agricultural area is about 125 ha.

2. Site and Climatic Characteristics

2.1 General features, Land Form and Drainage

2.1.1 The underlying bedrock geology of the farm is moderately calcareous sedimentary Gault Clay of Cretaceous age, though much of the northern and eastern part of the area is covered with Quaternary glacio-fluvial outwash deposits. The younger Cretaceous Chalk appears to underlie the Quaternary drift to the northeast of the area, but it was only encountered as chalky fragments in the drift.

2.1.2 The dominant material in the Quaternary drift is Head, a transported material formed under peri-glacial conditions usually through colluvial action. It is mostly stony, with predominantly flint and other siliceous stones but including chalk and Gault fragments in places. The matrix is medium or coarse, including sharp coarse sands. There is some fine grained alluvium on the floodplain of Washpit Brook, though this is difficult to differentiate from the Gault.

2.1.3 The northern and eastern part of the area lies on a low drift plateau, at elevations of 21 - 23 m aOD. There is a slight break of slope down to the gentle (< 3^{o}) sides of the broad shallow valley of Washpit Brook, the floodplain of which is at about 12-14 m aOD.

2.1.4 The break of slope marks a distinct boundary between the two main soil parent materials in the area, with stony loams and sands on the drift plateau in the north and east and unmantled Gault Clay forming the soils on the slopes to the south and west. In the east the drift shallows out to 40-80 cm, and is underlain by the Gault. Where the clay is moderately permeable, this combination gives small areas of high quality soils, though usually the Gault is poorly-permeable and impedes soil drainage.

2.1.5 The land mostly drains south-westwards down to Washpit Brook, which is a tributary of the Cam. Surface drainage is mostly good on the coarser drift, but there are signs of poaching on the clays on the lower slopes.

2.2 Climatic Factors

2.2.1 Local climatic factors have been interpolated from the Meteorological Office's standard 5 km grid point data set. Climatic factors are given in Table 1. The local climate has rainfall that is typical for much of eastern England and can be considered dry by national standards. Temperatures are moderately warm to warm. The moisture deficits are moderately severe and the field capacity days (FCD) are below the national average and can be considered to be favourable for providing opportunity days for land works. There are no climatic limitations to arable cultivation, or in the ALC grading. Overall the climate is favourable for agriculture though somewhat droughty.

Table 1: Local climatic factors

Average annual rainfall (AAR)	562 mm
Accumulated temperature > ^{0}C (AT0)	1,446 days
Field Capacity Day regime (FCD)	94 days
Average moisture deficit, wheat (MDw)	119 mm
Average moisture deficit, potatoes (MDp)	114 mm

2.3 Existing Soils and ALC data

Previous soil survey data

2.3.1 There was a semi-detailed soil survey of the area in the 1960's (Hodge & Seale, 1966[1]). The boundaries were simplified and the soils given their modern names in the national 1:250,000 soil map (Hodge *et al.* 1984[2]). This shows the drift plateau to be mostly covered by the Milton soil association, and the unmantled Gault slopes by the Evesham 3 association. The map also shows disturbed land in areas that were previously dug for gravel, coprolite and clay. Apart from the sunken area of the coprolite pit on the Traveller's Rest SSSI, the main traces of previous workings are some slight irregularities in the surface topography.

[1] Hodge, C.A.H. & & Seale, R.S. 1966. *Soils of the district around Cambridge.* Record 65, Soil Survey of Great Britain, Harpenden

[2] Hodge, C.A.H., Burton, R.G.O., Corbett, W.M., Evans, R. & Seale, R.S. 1984. *Soils and their use in Eastern England*. Bulletin 13, Soil Survey of England and Wales, Harpenden.

Milton Association

2.3.2 The soils of this association vary considerably in the quantity and type of their stones. The stonier loams which are not calcareous in the upper layers are Milton series. The soils that are calcareous almost to the surface are Badsey series.

Evesham 3 Association

2.3.3 The main soil series in this association is Evesham series, which is a calcareous pelosol, a clayey soil. The topsoil may be slightly silty but otherwise textures are clay throughout. The subsoil is well structured olive clay, often unmottled in the upper part but usually with ochreous mottles below 50 cm. Stone contents are low.

2.3.4 The Evesham clays on Gault are moderately permeable soils, and are calcareous, unmottled in the upper subsoil, and well structured. Their drainage is no worse than wetness class III, which is imperfectly drained. The drift soils are mostly freely drained, with only small areas with subsoil clay layers which were found to be slowly permeable, and which were characterised by tractor ruts with some standing water.

2.3.5 The dry climate and the low moisture-storage capacity in the sandy and stony drift soils means that moisture deficits can be significantly high.

2.4 Previous ALC data

2.4.1 A search for existing ALC data was conducted by Natural England, who hold the MAFF archives of ALC data. No previous ALC surveys of the area were found.

3. Agricultural Land Quality

3.1 Soil Survey Methods

3.1.1 One hundred and twenty five soil profiles were examined using a 7 cm diameter Edelman (Dutch) auger. The locations of observations are indicated on the map at Figure 1. Observation density is about 1 site per ha of agricultural land. At each observation point the following characteristics were assessed for each soil horizon up to a maximum of 120 cm or any impenetrable layer: texture; stoniness; colour (including local gley and mottle colours); moisture and consistency; free carbonates; and horizon depths.

3.1.2 Soil Wetness Class (WC) was inferred from the presence/absence of, and depth to, greyish and ochreous gley mottling and/or poorly permeable subsoil layers at least 15 cm thick.

3.1.3 Four pits were dug and the profiles described in more detail, with data as for the augerings plus structure, cutans, pores, roots and consistence. The profile descriptions of these pits are given in Appendix 1. The results of analysis of five topsoil and three subsoil samples taken from across the site are given in Appendix 2 and confirm the soil texture, pH, organic matter content and the major nutrients P, K and Mg.

3.2 ALC and Main Limitations on the Agricultural Land

3.2.1 Assessment of quality has been carried out according to the MAFF revised guidelines (1988[3]). Descriptions of the ALC grades and subgrades are given in the glossary.

3.2.2 Most of the soils qualify for ALC Grade 3a, and are potentially productive and allow flexibility of cropping. The bulk of the clay soils are of WCIII, but have calcareous topsoils which give a moderate limitation due to workability to Subgrade 3a. Some of the clays on the lower slopes are more restricted in their periods of workability during wet weather by being non-calcareous, and qualify as Subgrade 3b, as do some small wet and rutted patches on the drift.

3.2.3 Because of their moderate depth, the drift soils with mainly loamy fine earth textures are not downgraded due to droughtiness to grades lower than Subgrade 3a, even where they have relatively high stone contents. The soils with predominantly sand or loamy sand subsoils are more prone to droughtiness and are downgraded to Subgrade 3b.

3.2.4 The limited area of shallow drift over clay in the east qualifies as Grade 2. The areas of each grade or subgrade are shown on the map at Figure 2 and are given in Table 2.

Table 2: ALC Areas

Grade	Description	Area (ha)	Area (% of agric. land)
Grade 2	Very good quality	6.0	5
Subgrade 3a	Good quality	107.0	85
Subgrade 3b	Moderate quality	12.0	10
Total agricultural		125.0	100
	Best and most versatile	113.0	90
Non agricultural		16.0	
Total Area		141.0	

[3] MAFF (1988). Agricultural Land Classification of England and Wales. Revised guidelines and criteria for grading the quality of agricultural land. MAFF Publications.

Appendix 1: Profile Pit Descriptions and analyses

Site: NW Cambridge 1

Grid Reference: TL 42332 60513

Author: John Hazleden

Date: 13.09.2010

Locality: Cambridge University Farm

Elevation: 15m

Land Use: Stubble after wheat

ALC grade: 3a

Weather: Cool September after wet August

Soil Series: Evesham

Soil Subgroup: 412d - Evesham 3

Parent Material: thin drift over Gault Clay

Slope: <1 degree, SW

Wetness Class: III

Depth (cm)

0-33 2.5Y4/3 (dark greyish brown to olive brown) heavy clay loam (>27% clay – near to clay); moist, with common small subrounded flints; moderately developed medium subangular blocky structure with fine fissures and macropores; low packing density; moderately weak ped strength; moderately sticky; very plastic; many very fine and fine fibrous roots; calcareous; abrupt smooth boundary to:

33-43/47 2.5Y5/3 (greyish brown to light olive brown); clay; slightly moist to moist, with common small subrounded flints; moderately to strongly developed medium angular and subangular blocky structure with very fine fissures; medium packing density; moderately strong soil and very strong ped strength; moderately sticky; very plastic; common fine fibrous roots; calcareous; clear wavy boundary to:

43/47-71cm 5Y5/2 (olive grey) and 5Y6/1 (light olive grey) air dry with common distinct clear medium 2.5Y5/4 (light olive brown) mottles; clay; slightly moist; stoneless; strongly developed fine and medium prismatic structure breaking to angular blocky; fine fissures and fine and very fine macropores (1%); high packing density; very firm ped strength; very sticky; very plastic; few very fine and fine fibrous roots; calcareous with few soft secondary $CaCO_3$ concretions; gradual wavy boundary to:

71-120+cm 5Y5/1 (olive grey) and 5Y6/2 (light olive grey) air dry with common distinct clear fine and medium 2.5Y4/4-6 (olive brown) mottles; clay; slightly moist to dry; stoneless; strongly developed medium prismatic structure (coarser with depth) breaking to angular blocky; fine and very fine fissures and macropores (1%); high packing density; very strong soil and rigid ped strength; very sticky; very plastic; few very fine and fine fibrous roots; calcareous with few soft secondary $CaCO_3$ concretions

Site: NW Cambridge 2

Grid Reference: TL 42618 59764

Author: John Hazleden

Date: 13.09.2010

Locality: Cambridge University Farm

Elevation: 15m

Land Use: Stubble after wheat

ALC grade: 3a

Weather: Cool September after wet August

Soil Series: Evesham

Soil Subgroup: 412d - Evesham 3

Parent Material: thin drift over Gault Clay

Slope: > 1 degree WNW

Wetness Class: III

Depth (cm)

0-31cm 2.5Y4/3 (dark greyish brown to olive brown) heavy clay loam (>27% clay – near to clay); moist, with few medium subrounded flints; moderately developed medium subangular blocky structure with fine fissures and macropores; low packing density; moderately weak soil and ped strength; moderately sticky; very plastic; many very fine and fine fibrous roots; slightly calcareous; abrupt smooth boundary to:

31-43/53cm 2.5Y4/4 (olive brown) with 5Y4/3 (olive) ped faces and few faint 2.5Y5/3 (greyish brown to light olive brown) mottles; clay; slightly moist to moist, with few small and medium subrounded flints; moderately developed medium and coarse subangular blocky structure (slight compaction) with fine and very fine fissures and macropores; medium packing density; moderately firm soil and ped strength; moderately sticky; very plastic; common very fine and fine fibrous roots; calcareous; clear wavy boundary. to:

43/53-72cm 5Y5/2 (olive grey) with 5Y5/1 (grey) ped faces and many distinct clear fine and medium 2.5Y5/4 (light olive brown) mottles; clay; slightly moist to moist; stoneless; strongly developed medium prismatic structure breaking to angular blocky; fine and very fine fissures and macropores (1%); high packing density; very firm soil and very strong ped strength; very sticky; very plastic; common very fine and fine fibrous roots; calcareous with common soft secondary $CaCO_3$ concretions; gradual wavy boundary. to:

72-120+cm 2.5Y5/2 (greyish brown) with 2.5Y5/2-1 (greyish brown to grey) ped faces and common distinct clear fine and medium 2.5Y5/4 (light olive brown) mottles; clay; slightly moist to moist; stoneless; strongly developed medium prismatic structure (coarser with depth) breaking to angular blocky; fine and very fine fissures and macropores (0.5%); high packing density; very

firm soil and very strong ped strength; very sticky; very plastic; few very fine and fine fibrous roots; calcareous with few soft secondary $CaCO_3$ concretions.

Site: NW Cambridge 3

Grid Reference: TL 43212 60052

	Weather: Cool September after wet August very wet the previous day
Author: John Hazleden	Soil Series: Badsey
Date: 13.09.2010	Soil Subgroup: 512f Milton Association - Milton
Locality: Cambridge University Farm	Parent Material: Head gravels
Elevation: 15m	Slope: > 1 degree NE
Land Use: Stubble after wheat	Wetness Class: II
ALC grade: 2	

Depth (cm)

0-29cm	10YR3/4 (dark yellowish brown) heavy clay loam (~27% clay); moist, with common small and medium subrounded flints; weakly developed medium subangular blocky structure with fine fissures and macropores; low packing density; moderately weak soil and moderately firm ped strength; slightly sticky; moderately plastic; many very fine and fine fibrous roots; slightly calcareous; sharp smooth boundary to:
29-41/50cm	10YR4/4-5/4 (dark yellowish brown to yellowish brown) with some patches of 7.5YR5/6 (strong brown); sandy clay loam, moist, with many very small and small subrounded and subangular flints and rounded chalk stones; weakly developed fine and medium subangular blocky structure; medium packing density; moderately weak soil and moderately firm ped strength; slightly sticky; slightly plastic; common very fine and fine fibrous roots; very-calcareous; sharp irregular boundary to:
41/50-49/58cm (discontinuous inclusions of this material elsewhere in pit)	5Y7/1 (light grey); clay loam; slightly moist, with common very small and small rounded chalk stones; moderately developed fine angular blocky; very fine fissures and fine pores (2%); high packing density; moderately firm soil and ped strength; slightly sticky; slightly plastic; common very fine and fine fibrous roots; very calcareous; sharp irregular boundary to:
	10YR4/4 (dark yellowish brown); sandy clay loam to sandy loam, moist, with common very small and small subrounded and subangular flints and

49/58-68cm	rounded chalk stones, and inclusions of the same pale material as horizon 3; weakly developed medium subangular blocky structure; medium packing density; moderately weak soil and ped strength; slightly sticky; slightly plastic; common very fine and fine fibrous roots; very calcareous; clear wavy boundary to:
68-120+cm	10YR5/6 (yellowish brown); sandy loam; moist, with abundant very small and small subrounded and subangular flints and chalk stones, and inclusions of the same pale material as horizon 3; very weakly developed medium subangular blocky; medium packing density; very weak soil and ped strength; non-sticky; non-plastic; few very fine and fine fibrous roots; very calcareous.

Notes:

This appears to be a Head deposit with inclusions of the pale chalky material (horizon 3) throughout. This material may be from the Chalky Boulder Clay which occurs to the west of the site but it is more likely derived from the Lower Chalk which apparently underlies the Head here and outcrops in the field just south east of this pit.

Site: NW Cambridge 4

Grid Reference: TL 42586 60430

Weather: Cool September after wet August very wet the previous day

Author: John Hazleden

Soil Series: Hall

Date: 13.09.2010

Soil Subgroup: 512f Milton Association

Locality: Cambridge University Farm

Parent Material: Head gravels

Elevation: 15m

Slope: > 1 degree NE

Land Use: Potato trail plots

Wetness Class: II

ALC grade: 3a

0-41cm	10YR4/3-3/3 (dark brown to brown) sandy loam (near to sandy clay loam ~18% clay); very moist, with many small subrounded flints; moderately to weakly developed medium subangular blocky structure with fine fissures and macropores; low packing density; moderately weak soil and moderately firm ped strength; slightly sticky; slightly plastic; common very fine and fine fibrous roots; non-calcareous; abrupt smooth boundary to:
41-88cm	7.5YR4/4 (brown to dark brown) with some patches of 7.5YR4/6-5/6 (strong brown); loamy sand, very moist, with abundant very small and small subrounded and subangular flints; very weakly developed medium subangular blocky structure; low packing density; very weak soil and ped strength; non-sticky; non-plastic; few very fine and fine fibrous roots; non-calcareous; clear wavy boundary. This might be a weak Bt or Bw horizon to:
88-110cm	10YR5/6 (yellowish brown); sandy loam; very moist, with abundant very small and small subrounded and subangular flints; weakly developed fine and medium subangular blocky; low high packing density; very weak soil and ped strength; slightly sticky; non-plastic; few very fine and fine fibrous roots; non-calcareous; gradual wavy boundary. To:
110-120+cm	10YR5/6 (yellowish brown); sandy loam to sand clay loam; very moist (wet at base), with abundant very small and small subrounded and subangular flints; weakly developed fine and medium subangular blocky; medium packing density; very weak soil and moderately weak ped strength; slightly sticky; slightly plastic; few very fine and fine fibrous roots; non-calcareous.

Appendix 2: Laboratory Data

Determinand	L17 topsoil	L17 subsoil	R9 topsoil	B 50 topsoil	Units
Sand 2.00-0.063mm	14	14	51	60	% w/w
Silt 0.063-0.002mm	22	23	20	20	% w/w
Clay <0.002mm	64	63	29	20	% w/w
Organic Matter WB	4.1	1.5	4.0	2.3	% w/w
Texture	Clay	Clay	Sandy clay loam	Sandy clay loam	

Determinand	L17 topsoil	L17 subsoil	R9 topsoil	B 50 topsoil	Units
Soil pH	7.6	8.1	8.1	7.9	
Phosphorus (P)	10	11	15	17	mg/l (av)
Potassium (K)	331	242	177	147	mg/l (av)
Magnesium (Mg)	323	417	95	116	mg/l (av)

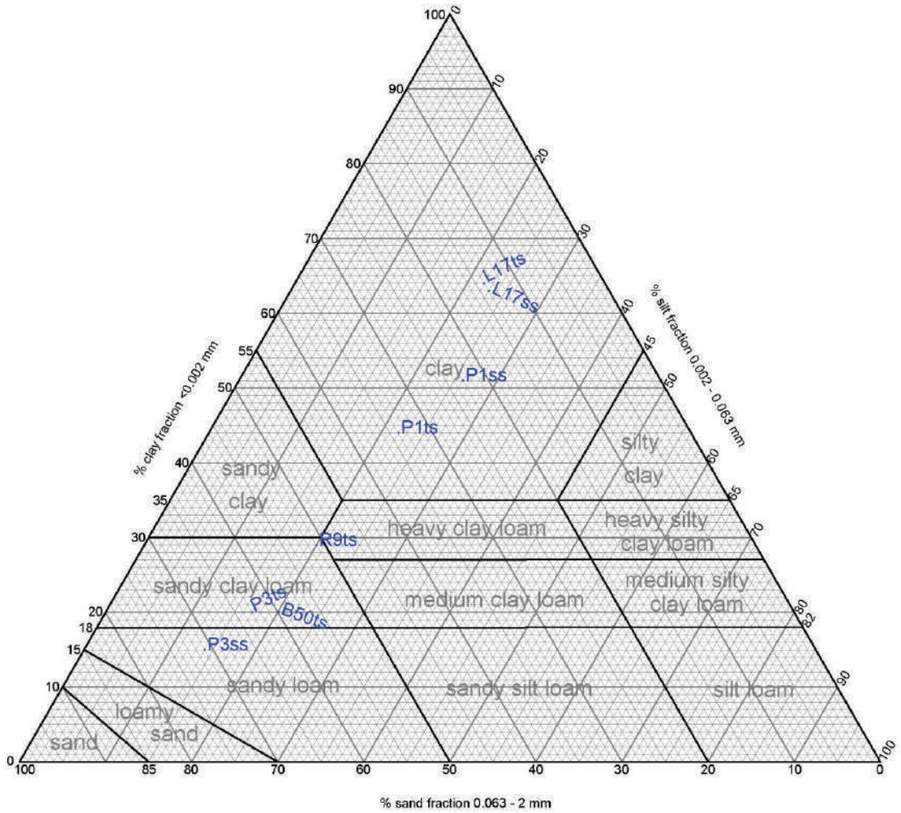
Determinand	L17 topsoil	L17 subsoil	R9 topsoil	B 50 topsoil	Units
Phosphorus (P)	1	1	1	2	ADAS Index
Potassium (K)	3	3	2-	2-	ADAS Index
Magnesium (Mg)	5	6	2	3	ADAS Index

Determinand	P1 Topsoil	P1 Subsoil	P3 Topsoil	P3 Subsoil	Units
Sand 2.00-0.063mm	34	23	63	71	% w/w
Silt 0.063-0.002mm	22	26	17	14	% w/w
Clay <0.002mm	44	51	20	15	% w/w
Organic Matter WB	3.5	1.5	3.0	0.6	% w/w
Texture	Clay	Clay	Sandy clay loam	Sandy loam	

Determinand	P1 Topsoil	P1 Subsoil	P3 Topsoil	P3 Subsoil	Units
Soil pH	8.0	8.6	8.2	8.5	
Phosphorus (P)	5	3	14	5	mg/l (av)
Potassium (K)	214	176	399	178	mg/l (av)
Magnesium (Mg)	111	164	62	46	mg/l (av)

Determinand	P1 Topsoil	P1 Subsoil	P3 Topsoil	P3 Subsoil	Units
Phosphorus (P)	0	0	1	0	ADAS Index
Potassium (K)	2+	2-	3	2-	ADAS Index
Magnesium (Mg)	3	3	2	1	ADAS Index

Texture Class by Particle Size Distribution



.B5 Auger Observation

.P1 Pit Observation

All information other than that identified as being for approval is shown for contextual purposes only.

Figure 1

North West Cambridge

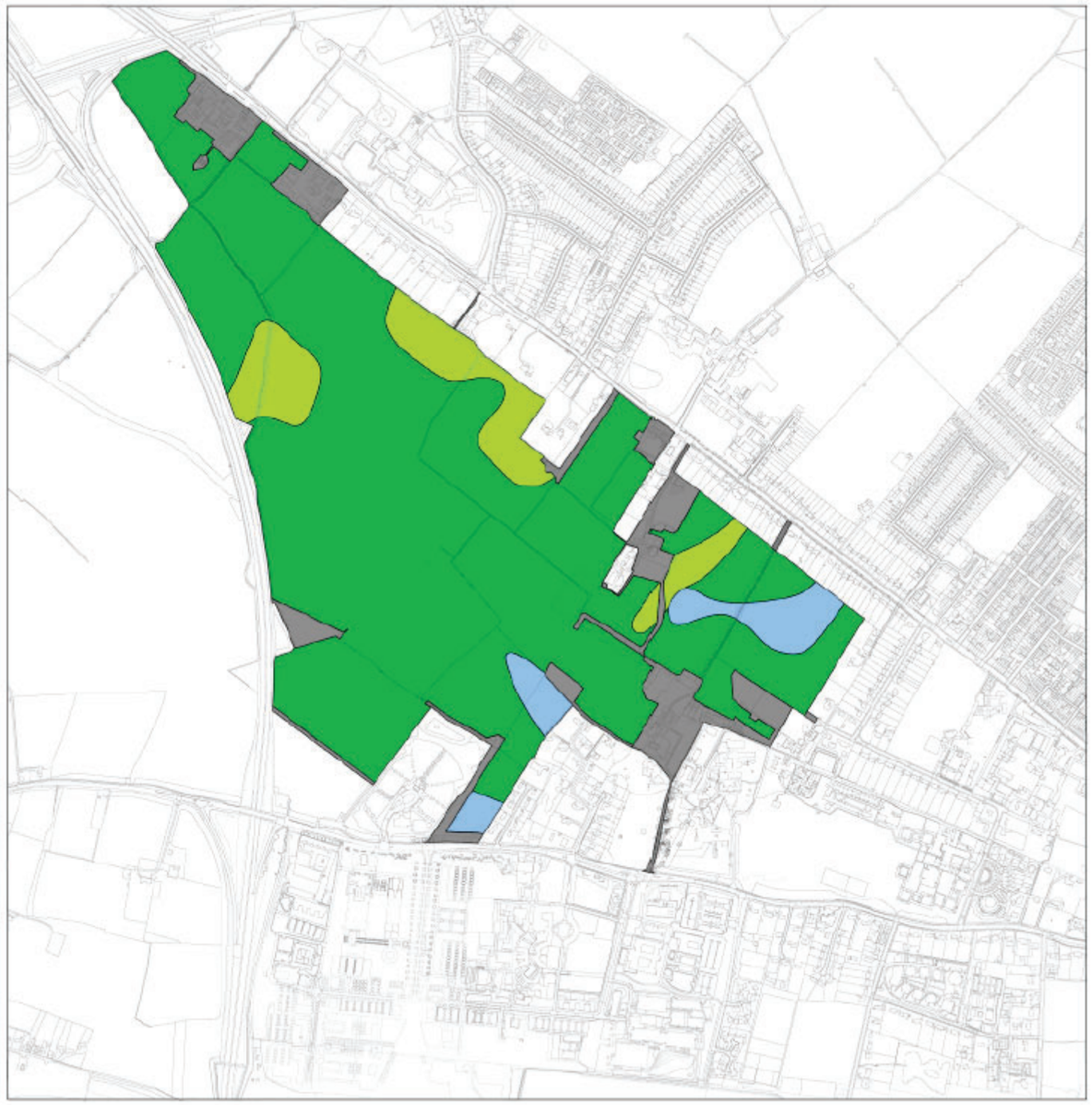
Observations

December 2010

UNIVERSITY OF CAMBRIDGE AE

0 10 50 100m

Scale 1:5000@A1



	Grade 1 - excellent quality
6·0 ha	Grade 2 - very good quality
107·0 ha	Subgrade 3a - good quality
12·0 ha	Subgrade 3b - moderate quality
	Grade 4 - poor quality
	Grade 5 - very poor quality
15·7 ha	Non-agricultural
	Not Present

Best and most versatile land

All information other than that identified as being for approval is shown for contextual purposes only.

Figure 2

North West Cambridge

Agricultural Land Classification

December 2010

UNIVERSITY OF CAMBRIDGE

0 1/4 50 100m

Scale 1:5000@A1

Appendix: Ground Condition and Land Contamination

Annex 1: Land Contamination Preliminary Risk Assessment (PRA)

TRIUM

Appendix: Ground Condition and Land Contamination

Annex 1: Land Contamination Preliminary Risk Assessment (PRA)

TRIUM

North West Cambridge Masterplan

Land Contamination Preliminary Risk Assessment

University of Cambridge

Project number: 60732815
NWC-MP2024-ACM-SW-RP-00008

December 2024

Delivering a better world

Quality information

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Revision	Revision date	Details	Authorized	Name	Position
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The site reconnaissance consisted of a general external inspection of the site aimed at identifying any obvious signs of geotechnical hazards and potential sources of ground contamination affecting the site. An environmental compliance audit and/or detailed structural inspection of existing buildings were outside the project brief. Similarly, the site visit excluded detailed consideration of the ecological or archaeological aspects of the site, and if such are believed to be of potential significance then it is recommended that specialist advice is sought.

Any risks identified in this report are perceived risks, based on the information reviewed during the desk study and therefore partially based on conjecture from available information. The study is limited by the non-intrusive nature of the work and actual risks can only be assessed following a physical investigation of the site.]

The opinions expressed in this report and the comments and recommendations given are based on a desk assessment of readily available information and an initial site reconnaissance by an AECOM Engineer. At this stage intrusive investigations have yet to be undertaken at site to establish actual ground and groundwater conditions and to provide data for an assessment of the geo-environmental status of the site.]

Reference to historical Ordnance Survey (OS) maps and/or data provides invaluable information regarding the land use history of a site. However, it should be noted that historical evidence will be incomplete for the period pre-dating the first edition and between the release of successive maps and/or data.

Table of Contents

Appendices

Figures

Tables

Executive Summary

AECOM Limited (AECOM) was commissioned by the University of Cambridge (the Client), to undertake Land Contamination Preliminary Risk Assessment (PRA) for the Proposed Development at North West Cambridge. The Proposed Development is a phased mixed used development including the demolition of existing buildings and structures. The PRA was carried out to support the planning application for the development and to identify potential contamination risks and provide recommendations for further investigation and mitigation.

The site, covering approximately 114 hectares, is located adjacent to Eddington, northwest of Cambridge City Centre. Historically, the site has been used for agricultural, educational, and residential purposes. Currently, the features on the site include commercial buildings, residential properties, open spaces, University of Cambridge buildings, a small forested area (Pheasant Plantation), and a surface water lake. Surrounding the site are Girton College and the A14 to the north, the School of Veterinary Medicine and residential buildings to the south, Churchill College to the east, and the M11 with adjacent agricultural land to the west.

Aerial imagery and the site walkover identified stockpiles of soil materials onsite, understood to have been generated during the first phase of the North West Cambridge development and intended for reuse in the subsequent development phase. Given the amount of time the stockpiles have been present on site it is likely that associated regulatory approvals may need to be checked and confirmed prior to reuse.

The majority of the site is underlain by the Gault Formation, with a small area in the southeast underlain by West Melbury Marl Chalk Formation. Where present the superficial deposits comprise Head Deposits (clay, silt, sand, and gravel). The superficial aquifer beneath the site is classified as a Secondary Undifferentiated Aquifer. The Gault Formation bedrock is classified as unproductive aquifer, while the West Melbury Marl Chalk Formation bedrock is classified as a Principal Aquifer. Surface water features include Washpit Brook, Brook Leys, surface water drainage swales and several lakes and ponds.

TheUK Radon map suggests that the site lies within a region where less than 1% of properties are estimated to be above the radon action level. As a result, no radon protection measures are likely to be required.

A Pre-Desk Study Unexploded Ordnance (UXO) Assessment was obtained from Zetica. The UXO report indicated that the during World War II, two British bomber aircraft crashed on site and available records indicate that several high explosive bombs fell in close proximity to the site. Therefore, the report recommended that a detailed desk study is commissioned to assess, and potentially zone, the Unexploded Ordnance (UXO) hazard level on the site.

Potential sources of contamination identified onsite and in surrounding areas include Made Ground associated with historical and current land uses such as former gravel pits, agricultural activities, and industrial features like petrol stations and electrical substations. Contaminants of potential concern include heavy metals, solvents, hydrocarbons, organic contaminants and asbestos.

A preliminary risk assessment (PRA) was carried out in accordance with Environment Agency's Land Contamination Risk Management (LCRM) guidance. The PRA concluded that the potential risks from land contamination to the identified receptors range from 'Very Low' to 'Moderate / Low'.

Recommendation for further work includes additional ground investigation at the detail design stage to allow a refined risk assessment to be produced for the Proposed Development that will allow for detailed design to mitigate risks that have been identified. Additionally, a detailed UXO desk study is recommended due to the potential UXO risk at the site. Regarding the stockpiled materials on site, the suitability for use should be assessed, and if applicable under the CL:AIRE Construction Industry Definition of Waste: Code of Practice (DoW:CoP), a Materials Management Plan should be implemented to ensure their proper reuse and compliance with regulatory requirements.

1. Introduction

1.1 Terms of Appointment

AECOM Limited (AECOM) was commissioned by University of Cambridge ("the Client") to carry out a Tier 1, Stage 1 Land Contamination Preliminary Risk Assessment (PRA) for the Proposed Development at North West Cambridge ("the site"). A site location map is provided as Figure 1 (Appendix A).

1.2 Background and Proposed Development

This report has been produced on the assumption that the site will be redeveloped as a mixed living residential development. A full description of the development is provided below.

The Proposed Development comprises an outline planning application (all matters reserved except for means of access to the public highway) for a phased mixed use development, including demolition of existing buildings and structures, such development comprising:

- Living Uses, comprising residential floorspace (Class C3/C4, up to 3,800 dwellings), student accommodation (Sui Generis), Co-living (Sui Generis) and Senior Living (Class C2);
- Flexible Employment Floorspace (Class E(g) / Sui Generis research uses);
- Academic Floorspace (Class F1); and
- Floorspace for supporting retail, nursery, health and indoor sports and recreation uses (Class E (a) – E (f)).
- Public open space, public realm, sports facilities, amenity space, outdoor play, allotments and hard and soft landscaping works alongside supporting facilities;
- Car and cycle parking, formation of new pedestrian, cyclist and vehicular accesses and means of access and circulation routes within the site;
- Highway works;
- Site clearance, preparation and enabling works;
- Supporting infrastructure, plant, drainage, utility, earthworks and engineering works.

it is anticipated that the works will be carried out in three main development phases over a 10 year period. As the project progresses, occupants of the earlier completed phases will be considered as sensitive receptors during subsequent construction phases, where applicable.

1.3 Report Objectives

The primary objectives of this report are to:

- determine whether potentially contaminative uses have taken place within, or in close proximity to, the site which could have led to the contamination of underlying soils or groundwater; and
- to understand the effects of the geological conditions and site activities on the properties for site redevelopment.

This PRA report has been prepared to support a planning application under the requirements of Town and Country Planning Act 1990 (as amended), and it considers the potential implications of Part 2A of the Environmental Protection Act 1990 (Part 2A) and the associated Contaminated Land (England) Regulations 2006 and Contaminated Land Statutory Guidance (2012).

This report has been prepared in general accordance with the technical guidance and procedures described in the Environment Agency (2023) guidance Land Contamination: Risk Management, British Standard (BS) 5930:2015 (as amended) Code of Practice for Site Investigations (BSI), BS:EN 1997 Eurocode 7 – Geotechnical Design (BSI) and BS 10175:2011 (as amended) Investigation of Potentially Contaminated Sites – Code of Practice (BSI), to:

- Describe the environmental setting/ sensitivity and current/ historical land use of the site and surrounding area;

- Describe the findings of a site reconnaissance visit;
- Summarise the history of the site;
- Summarise the underlying geology and hydrogeology;
- Summarise the findings of any historical ground investigation work;
- Provide an initial Conceptual Site Model (CSM) for the prevailing ground conditions;
- Use the source-pathway-receptor model to present a preliminary qualitative risk assessment of potential land contamination risks to human (chronic), environmental, or controlled water receptors from contamination sources on or in the vicinity of the site, via transport pathways;

The report concludes with a series of recommendations for undertaking further investigative work, where necessary. The purpose of such is to substantiate the findings of the preliminary risk assessment and thereby refine the CSM.

1.4 Sources of Information

This report has been prepared using a combination of published records (e.g. British Geological Survey (BGS), Environment Agency, Defra), information provided by the Client and other sources such as the Local Authority Environmental Health/Contaminated Land Officer. These include statutory records and historical mapping supplied within a Groundsure Report, published geological and hydrogeological mapping, historical borehole records and observations made during the site reconnaissance.

It should be noted that the Groundsure report was sourced as part of the Masterplan development process. The site extent shown on Groundsure figures reflect the requested data search area, not the planning application boundary. The Groundsure site extents are marginally greater than the planning application boundary, specifically along Madingley Road. Whilst differences are minimal and not considered material the Groundsure information and related commentary therefore presents the more conservative position.

Specific information sources are referenced throughout the document and a bibliography is included in **Appendix A** of this report

2. Site Setting

2.1 Location

The site is located adjacent to the developing settlement of Eddington, in the northwest of Cambridge. It is centred on National Grid Reference 542100, 260700 and located approximately 2km northwest of the Cambridge City Centre. A site location plan is provided as Figure 1 (Appendix A).

2.2 Description and Setting

The site covers an area of approximately 114 hectares, with a roughly triangular shape and is defined by the red line boundary shown in Figure 2 (Appendix A). The topography of the site broadly rises to the east with elevations of approximately 14m Above Ordnance Datum (AOD) in the west and 28m AOD in the far east of the site.

The site comprises the following features:

- Northwestern portion of the site: Commercial buildings associated with Quality Data House off Huntingdon Road surrounded by agricultural land;
- Central and western portion of the site: Residential properties associated with Ridgeway Village and Swirles Court. Commercial building associated with Sainsburys supermarket. Buildings associated with the University of Cambridge Primary School and Girton College. Small forested area labelled Pheasant Plantation and surface water lake feature in far western portion of the site; and
- Southern and eastern portion of the site: residential properties located along Lansdowne Road and Conduit Head Road. Buildings and playing fields associated with the University of Cambridge. Land along A1303 Madingley Road.

Relevant features immediately surrounding the site are summarised in Table 2-1.

Table 2-1. Features Surrounding the Site

Direction	Summary
North	Girton College with associated residential buildings located beyond Huntingdon Road. The A14 is located beyond this.
South	Beyond the A1303 Madingley Road is the School of Veterinary Medicine and residential buildings.
East	Buildings associated with the School of Veterinary Medicine and Churchill College.
West	The M11 is located directly west of the site with agricultural land beyond.

2.3 Site Reconnaissance

An external inspection of the Site was completed by a suitably qualified and experienced AECOM Environmental Consultant on 16$_{th}$ September 2024. The AECOM Environmental Consultant was unescorted, and no site representative was present to answer questions. The aim of the visit was to identify the range of activities carried out on and adjacent to the Site and any obvious potential sources, pathways, or receptors for land contamination.

The following observations were noted during the site visit:

North – Huntingdon Road (A1307) and the A428 road mark the northern boundary of the Site. In the northern-most extent of the site, the University of Cambridge Biomedical Department is located, comprising an electrical substation, biomedical research laboratories and farm buildings. To the north, off Huntingdon Road, a compound comprising disused buildings associated with the former Howe Farm is located. A large area of grassland with several man-made mounds, understood to be spoil heaps from the first phase of the Eddington Development is located south of the farm buildings described earlier.

West – Surface water features located in the grassland to the west of the site include Washpit Brook which runs largely north-south though the Site and a lake in Brook Leys designated open space.

Washpit Brook could not be observed at its northern extent within the site boundary as the area was not accessible during the site walkover. The lake at Brook Leys was observed to have a flow direction towards the south and comprised relatively clear water with abundant vegetation and wildlife. It is understood that this lake is a manmade surface water drainage feature designed to hold both flood water and act as a non-potable water source for the Eddington Development.

Central Site Section - The central section of the site comprises the Eddington Development of mixed-use inhabited residential and commercial budlings, construction sites and green spaces. The AECOM engineer was informed by a site representative that the Bennett construction site offices, in the west, were erected on the site of a former mound and that the mound material was reworked and used to resurface the site. A large disused goods storage yard surrounded by metal fencing previously used for storing construction materials is located to the west of the central Eddington Development. The goods yard ground surface comprises a mixture of gravel, tarmac and made ground with a concrete former building foundation observed in the centre. Features observed at the Hill construction site in this area include a goods storage yard, a series of soil mounds of material removed from a small excavation.

East – The eastern section of the site comprises grassland, a C. Jackson & Sons construction site and Gravel Hill Farm, accessible via public footpath from the north and via the University of Cambridge Madingley Rise Site from the South. The Gravel Hill Farm is no longer a working farm, and it is now an administration building for the University. Features of note at Gravel Hill Farm include storage of construction materials and plant machinery, electric vehicle charging points, a small allotment, a corn store, and a man-made deep-water pond.

South – The southern section of the site comprises a large contractor's car park in the west and a field and goods storage yard in the east, split by a haul road, oriented northeast – southwest, which provides access to the construction sites located in the central section of the site. Features of note in this area include the Wilson James site office located to the north of the contractor's car park, two man-made ponds, a wheel wash, an underground water storage tank, commercial waste bins, and a storage drum of unknown use.

Adjacent to site there are several potential contaminative land uses that could affect the site:

North – A fuel station owned by BP is located north of the site, along Huntingdon Road (A1307). The AECOM engineer consulted with the station operator on site, however no additional information was obtained regarding historical contamination events such as fuel spills.

South – Madingley Road Park and Ride, a public car park is located south of the site, due west of the Wilson James-owned contractors car park. The car park comprises a macadam surface with parking spaces, a bus terminal and electric vehicle charging points.

The following additional features and potential sources of contamination were observed within or adjacent to the site boundary during the site walkover (refer to the Photolog within Appendix H):

- Washpit Brook runs directly through the Site, in a N-S direction in the north and E-W direction in the south. The brook also appears to be connected to a lake within Brook Leys open space via a piped connection under the earth bund. However, there is no positive flow route from the brook to the lake.
- Fly tipping and demolition waste were observed on-site, which could contain potential for hazardous materials such as Asbestos-Containing Materials (ACM).
- Farm vehicles, bulk fuels and agrichemical storage were observed onsite. Potential leaks could impact the ground, groundwater and nearby drainage systems.
- Electrical sub-station/transformers were identified on and adjacent to the Site.
- Numerous services across the Site, including storm water systems, sewage, mains water systems, telecoms, electricity, and mains gas.
- Chemical storage locations linked to adjacent business uses including construction sites, biochemical laboratories, and small scale commercial and residential stores. Above ground and below ground tanks were also observed on site, including one underground water storage tank and one storage drum of unknown use located in the southern section of the site, and one water storage tank in both the central and eastern sections of the site.

- Multiple man-made ponds are present on Site, understood to be settlement lagoons associated with cleansing the runoff from the sitewide haul road network.
- Man-made soil mounds, reportedly comprising excavated materials from the first phase of the Eddington Development located within fields in the northern section of the site, adjacent to Washpit Brook and another surface stream. It is understood that the materials have been classified by previous investigation and are separately stockpiled as either topsoil or Gault Clay

3. Geological and Environmental Setting

3.1 Introduction

The environmental setting including the topography, geology, hydrogeology and hydrology are the key factors that influence the way in which contaminants in the soil or groundwater can be transported on or off site, and also the way in which contamination can affect applicable receptors including controlled waters and users of the site.

The environmental setting of the site has been assessed by making reference to the information sources detailed in Section 1.4.

3.2 Geology and Soils

3.2.1 Published Geology & Exploratory Hole Records

AECOM has reviewed the British Geological Survey (BGS) geological map (Sheet 188, "Cambridge – Solid and Drift", 1981, [1]) and BGS Onshore GeoIndex viewer to assess the geology at the site as shown in Figure 3-1. The BGS mapping indicates the site is underlain by the geological succession summarised in Table 3-1.

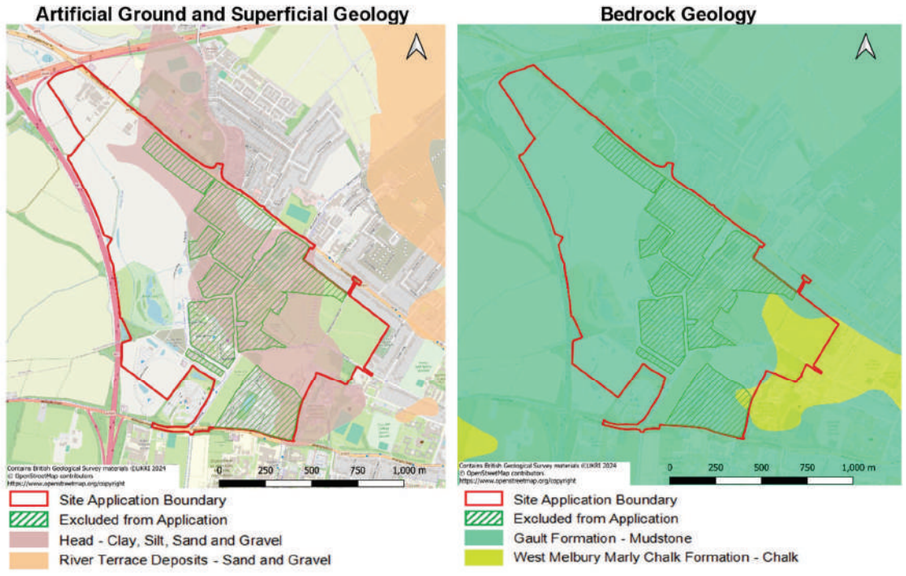


Figure 3-1 Published Geology (Source BGS)

Table 3-1. Geological Succession from Published Mapping

Group	Stratum	BGS Description	Anticipated Thickness (m)
Artificial Deposits	Not mapped within the site boundary		0 – 4
Superficial Deposits	HEAD – Clay, Silt, Sand and Gravel	Poorly sorted and poorly stratified, angular rock debris and/or clayey hill wash and soil creep, mantling a hillslope and deposited by solifluction and gelifluction processes. Polymict deposit comprises gravel, sand and clay depending on upslope source and distance from source. Locally with lenses of silt, clay or peat and organic material.	2 – 8

Group	Stratum	BGS Description	Anticipated Thickness (m)
Bedrock	Gault Formation (Selborne Group)	Pale to dark grey or blue-grey clay or mudstone, glauconitic in part, with a sandy base, Discrete bands of phosphatic nodules (commonly preserving fossils), some pyrite and calcareous nodules. In places thin, variable junction beds at the base include some limestones.	Base not proven
	West Melbury Chalk Formation	Buff, grey and off-white, soft, marly chalk and hard grey limestone arranged in couplets.	Base not proven

Source: BGS

The BGS maintains an archive of historical exploratory hole records throughout the UK. AECOM has searched the database and those which are considered to provide useful information on the ground profile at the site are highlighted as part of the extract below. A total of 11 no. boreholes have been referenced in producing this report. Copies of these exploratory hole records are included as **Appendix E** and an extract of their location is shown in Figure 3-2

Figure 3-2 Screenshot of relevant exploratory hole locations from BGS GeoIndex Viewer

.

Table 3-2 summarises the geology encountered in the surrounding area.

Table 3-2 Historical Exploratory Holes in BGS Archive

Borehole reference NGR Distance from the Site Date	Stratum	Description	Depth to Top of Stratum (m below ground level (bgl))	Thickness (m)
TL46SW61 541800, 261200 On-site (Data Quality House) 1971	Topsoil	-	Ground Level	0.15
	Superficial deposits	Firm to stiff blue/grey mottled fissured silty clay with brown staining on partings	0.15	2.60
		Stiff blue/ grey mottled fissured silty clay	2.75	5.25
		Stiff to very stiff blue-grey fissured silty clay *Groundwater strike at 15.95m bgl*	8.0	10.00
TL46SW248 541928,261185 On-site (Data Quality House) 2008	Made Ground	Dark brown slightly sandy gravelly clay with rare cobbles. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of chert, and fragments of brick, clinker, concrete, 'tarmac' and ceramic tile. Cobbles are subangular of 'tarmac'.	Ground level	0.59
	Superficial Deposits	Stiff fissured orange, brown clay. Fissures are very closely to closely spaced, sub horizontal, randomly orientated, undulating with 2-4mm or dark orange or dark grey discoloration. Rare rootlets.	0.59	0.83
		Stiff fissured light blue grey clay. Fissures are very closely to closely spaced sub horizontal randomly orientated undulating with 2-4mm or dark orange or dark grey discoloration. Rare rootlets.	1.42	4.58
TL46SW210 541970,261150 On-site (Data Quality House) 2005	Made Ground	Reinforced concrete over plastic membrane.	Ground level	0.15
		Dark grey fine-medium gravel sized ash and clinker fragments with coarse gravel-boulder sized concrete fragments.	0.15	0.25
		Brown/ orange brown and light grey silty clay with fine gravel-sized clinker fragments and fine medium flint gravel with roots and rootlets	0.40	0.40
	Superficial Deposits	Firm blue gey silty clay with occasional orange, brown silt pockets and rare subangular fine flint gravel	0.80	1.20
		Firm-stiff blue grey silty clay with occasional white selenite crystals and orange, brown silt pockets. *Groundwater seepage recorded at 1.10m bgl*	2.00	2.00
TL46SW212 541900,261140 On-site (Data Quality House)	Made Ground	Grass over dark brown slightly clayey silty gravelly sand with occasional roots and rootlets	Ground level	0.15
		Soft light grey silty clay with occasional subangular-subrounded fine-coarse flint gravel and rare fine-coarse gravel sized brick fragments	0.15	0.55
	Superficial Deposits	Firm-stiff light grey and orange, brown silty clay	0.70	0.10
TL46SW215 541920,261130 On-site (Data Quality House) 2005	Made Ground	Concrete	Ground level	0.10
		Slightly sandy silty clay with angular-subrounded fine-medium flint gravel and fine-coarse brick fragments	0.10	0.70
	Superficial Deposits	Stiff grey silty clay with occasional brown silt pockets, fine-medium chalk gravel, rare subrounded medium flint gravel and very rare shell fragments	0.80	0.40
		Stiff light grey and orange, brown silty clay with subangular fine flint gravel	1.20	0.60
		Stiff light orange, brown silty clay with rare selenite crystals	1.80	1.20
TL46SW216 541910,261120 On-site (Data Quality House) 2005	Made Ground	Concrete	Ground level	0.07
		Orange, brown silty fine-medium sand with fine-coarse gravel sized concrete fragments	0.07	0.63
	Superficial Deposits	Stiff grey, orange and brown silty clay with white and cream pockets of silt	0.70	1.50
		Stiff brown silty clay with pockets of selenite crystals	2.20	0.80
TL46SW211 541870,261100 On-site (Data Quality House) 2005	Made Ground	Vegetation over brown slightly clayey silty-gravelly sandy topsoil with occasional fine-coarse gravel sized brick fragments and roots and rootlets	Ground level	0.10
		Very soft dark brown slightly sandy silty gravelly clay with occasional fine-coarse gravel sized brick fragments	0.10	0.30
		Soft-firm light grey and orange, brown silty clay with occasional subangular-subrounded fine-coarse flint gravel and rare fine-coarse grave sized brick fragments	0.40	0.35
	Superficial Deposits	Stiff orange brown and light grey silty clay with occasional subrounded siltstone fragments and very rare flint and gravel.	0.75	1.25
		Stiff light brown silty clay with orange, brown pockets of clay	2.00	0.50
		Stiff light brown silty clay with occasional pockets of selenite crystals *Groundwater seepage recorded at 0.70m bgl*	2.50	0.50
TL46SW214 541880,261040 On-site (Data Quality House) 2005	Topsoil	Firm brown slightly sandy silty clayey topsoil with subangular-subrounded fine flint gravel and fine-medium roots and rootlets	Ground level	0.20
	Superficial Deposits	Stiff light brown silty clay with some subangular-subrounded fine-medium flint gravel and occasional fine roots and rootlets	0.20	0.60

		Firm light brown and light grey silty clay with occasional white silt pockets, rare subangular fine flint gravel and rare fine rootlets	0.80	0.30
		Stiff light grey silty clay with orange, brown silt pockets and very rare subangular-subrounded fine gravel sized siltstone	1.10	0.90
		Stiff light grey to very light brown silty clay	2.00	1.00
TL46SW213 541970,260990 On-site (Data Quality House) 2005	Topsoil	Brown slightly sandy silty clayey topsoil with fine-medium roots and rootlets	Ground level	0.20
	Superficial Deposits	Firm light brown silty clay with occasional subangular-subrounded fine white siltstone. Subangular-subrounded fine-medium flint gravel and very rare roots and rootlets	0.20	0.60
		Stiff light grey and orange, brown silty clay with very rare rootlets	0.80	1.20
TL46SW135 542560,260410 On-site (Ridgeway Village)	Topsoil	Greyish brown, stony, sandy, clay loam	Ground level	0.30
	Superficial Deposits	Sandy gravel fine with coarse, angular to subangular, white, yellow and grey flint with fine rounded to well-rounded chalk, with some ironstone, quartz and limestone and occasional sandstone, quartzite and phosphatic nodules.	0.30	2.30
		Firm grey clay	2.60	3.00
		Groundwater struck at 1.8m bgl		
TL45NW115 543080,259530 On-site (School of Veterinary Medicine)	Topsoil	Soil and gravel mixture	Ground level	1.22
	Superficial Deposits	Sandy mixture	1.22	0.15
		Fine sand	1.37	0.31
		Gravel	1.68	0.38
		Sandy marl	2.06	0.23
		Marl	2.29	1.06

Source: BGS

3.2.2 Soils and Soil Chemistry

Information obtained from Soilscapes [2] describes the soils at in the northwestern, western and southern areas of the site as ‘Lime-rich loamy and clayey soils with impeded drainage’ (Soilscapes 9). Soils described as ‘Freely draining lime-rich loamy soils’ (Soilscapes 5) are mapped in the central and southern portions of the site. Soils described as ‘Shallow lime-rich soils over chalk or limestone’ (Soilscapes 3) are mapped in the far eastern portions of the site.

The BGS Soil Chemistry datasets provide indicative information on regional concentrations of five potentially harmful elements (PHEs): arsenic (As), cadmium (Cd), chromium (Cr), nickel (Ni) and lead (Pb) in soil, as presented within the Groundsure Report. Elevated concentrations of these PHEs can exist because of natural geological conditions or possible anthropogenic contamination. The following BGS estimated soil chemistry levels are attributed to the vicinity of the site based on the geometric mean concentrations of available data (presented in Table 3-3).

Table 3-3. Estimated Soil Chemistry

Potentially Harmful Element	Estimated geometric mean concentration (mg/kg)
Arsenic	15
Cadmium	<1.8
Chromium	40 – 90
Lead	<100
Nickel	15 – 60

3.2.3 Ground Stability Records

Table 3-4 shows the variable risk of ground stability hazards across the site, taken from the Groundsure report:

Table 3-4. Ground Stability Records

Hazard Type	Hazard Potential
Collapsible Ground Stability	Very low
Compressible Ground Stability	Negligible
Ground Dissolution Stability	Negligible to very low
Landslide Ground Stability	Negligible to low
Running Sand Ground Stability	Negligible to very low
Shrinking or Swelling Clay Ground Stability	Negligible to moderate

Although the Groundsure report noted that the potential for landslide ranges from negligible to low, the information from BGS [3], indicates that “*Gault Formation has both ancient and recent landslides of shallow translational type with rotational elements at the back scarp and flows at the toe region. Multiple retrogressive rotational failures occur on some slopes”. “The formation is prone to shrink–swell processes due to significant amounts of smectite clay in parts of its sequence.”*

3.2.4 Mining and Mineral Extraction

3.2.4.1 Aggregate/Mineral Quarrying and Mining

Table 3-5 presents the available information on mining and quarrying operations, past and present that have taken place within 250m of the site.

Table 3-5 Recorded Surface Quarrying Activities (<250m)

Distance and Direction	Name	Operator	Dates	Status/ Material Quarried	Comments
On site	Gravel Hill Farm Gravel Pit	Gravel Hill Farm	Ceased	Considered closed by operator – sand and gravel	May be considered to have active, dormant or expired planning permissions by mineral panning authority.
32m N	Bunker’s Hill Gravel Pit	Bunker’s Hill Gravel Pit	Ceased	Considered closed by operator – sand and gravel	May be considered to have active, dormant or expired planning permissions by mineral panning authority.

Distance and Direction	Name	Operator	Dates	Status/ Material Quarried	Comments
100m SE	University Observatory Gravel Pit	University Observatory Gravel Pit	Ceased	Considered closed by operator – sand and gravel	May be considered to have active, dormant or expired planning permissions by mineral panning authority.

Source: Groundsure report

Numerous unspecified pits, ground workings and heaps are noted on site to 123m southeast of the site dating from as early as 1927.

3.2.4.2 Coal Mining

The Groundsure Report and the Coal Authority Interactive Viewer [4] indicate that the site is not located within a Coal Mining Reporting Area, as defined by the Coal Authority.

No underground non-coal mining activities were reported to have occurred within 250m of the site.

3.2.5 Radon

Based on data provided in the Groundsure Report, as well as online mapping by UKRadon [5], the site is located within an area where it is estimated that less than 1% of properties are affected by radon. As a result, no radon protection measures are likely to be required.

3.3 Hydrogeology

3.3.1 Aquifer Classification

The Environment Agency's Groundwater Protection Policy adopts aquifer designations that are consistent with the Water Framework Directive. Definitions of the various aquifer types can be found on the Environment Agency section of the gov.uk website. Extracts of the aquifer designations for both the superficial deposits and bedrock from the Groundsure Report are shown in Figure 3-3.

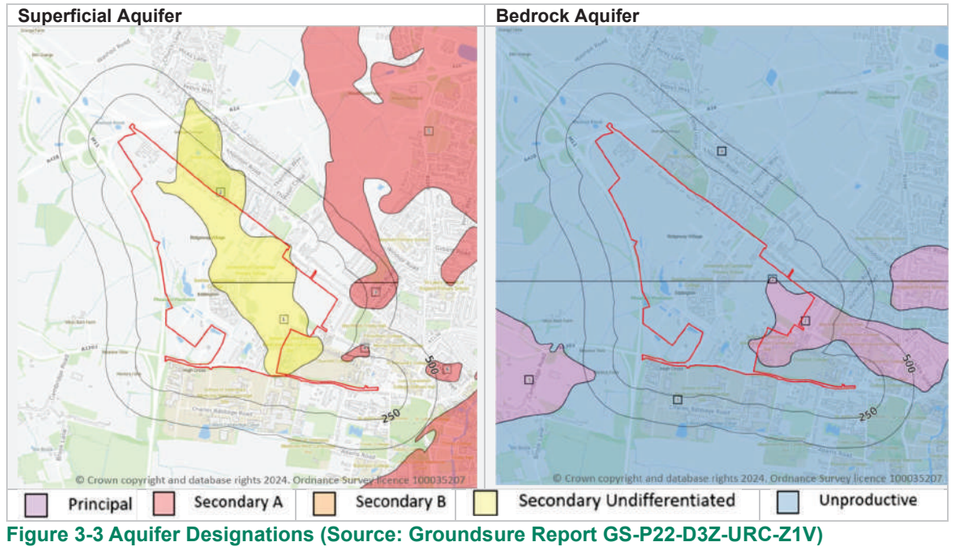


Figure 3-3 Aquifer Designations (Source: Groundsure Report GS-P22-D3Z-URC-Z1V)

(Note: site boundary represents Groundsure data search area, not planning application boundary, see Section 1.4)

The superficial aquifer beneath the site (Head – clay, silt, sand and gravel deposits) is classified as a Secondary Undifferentiated Aquifer, defined as '*assigned where it is not possible to attribute either category A or B to a rock type. In general, these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type'*.

The Gault Formation bedrock located in the northern, western, southern and central portions of the site is classified as unproductive aquifer, defined as '*rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow*. The West Melbury Marl Chalk Formation bedrock located in the south-eastern portion of the site, is classified as a Principal Aquifer, defined as *'layers of rock or drift deposits that have high intergranular and/or fracture permeability, meaning they usually provide a high level of water storage and transmission. They may support water supply and/or river base flow on a strategic scale*'.

3.3.2 Groundwater Vulnerability

The Environment Agency's Combined Groundwater Vulnerability Map of the area [6] and the Groundsure Report (**Appendix D**) show that groundwater vulnerability beneath the site is classified 'high' in relation to both the bedrock aquifer in the far north eastern portion of the site and superficial aquifer eastern and central northern portions of the site. 'High' vulnerability indicates high leaching soils and the absence of low permeability superficial deposits, i.e. areas are able to easily transmit pollution to groundwater. Unproductive aquifers are present in the southwestern and western portions of the site. Extract of the Groundwater Vulnerability map from the Groundsure report is shown in Figure 3-4.

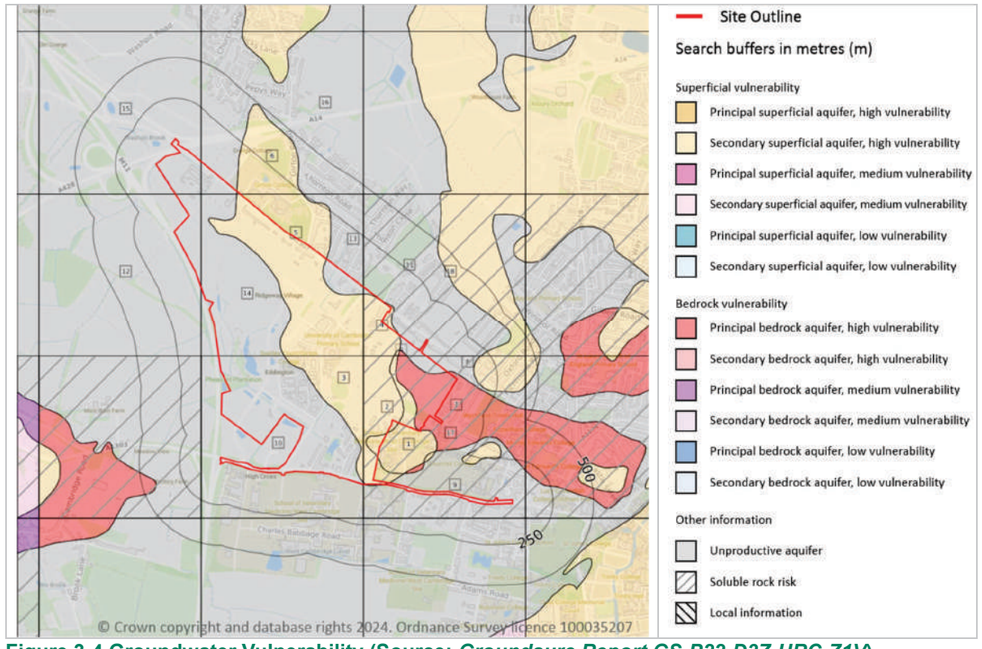


Figure 3-4 Groundwater Vulnerability (Source: *Groundsure Report GS-P22-D3Z-URC-Z1V*)

(Note: site boundary represents Groundsure data search area, not planning application boundary, see Section 1.4)

3.3.3 Source Protection Zones

In terms of identifying the risk of contamination from potential polluting activities in a given area to groundwater sources (wells, boreholes and springs) used for supplying public drinking water, the Environment Agency identifies Source Protection Zones (SPZ). These show the extent of a groundwater source catchment and are divided into three zones; the definitions of which can be found on the Environment Agency section of the gov.uk website.

The site does not lie within a SPZ and there are no SPZ's within 1km of the site.

3.3.4 Licensed Groundwater Abstractions

Three groundwater abstractions have been identified within 1 km of the site. These are listed in Table 3-6. All are assumed to be active unless otherwise stated.

Table 3-6 Environment Agency Licensed Groundwater Abstractions on or Within 1km of Site

Location	Licence Holder	Licence No.	Use	Permitted Abstraction Volume
702m northeast	National Institute of Agricultural Botany	6/33/35/*G/0285 (2 entries)	Spray Irrigation – Direct, Storage	45,440m^3/yr 616.8m^3/day
717m north	Rector of Girton	6/33/35/*G/0261	General Farming and Domestic	-
960m southeast	Gilbert-Ash Limited	AN/033/0033/021	Dewatering	6,000m^3/yr 288m^3/day
999m east	Arundel House Hotels Ltd	6/33/33/*G/0062	Large Garden Watering	- -

Source: Groundsure Report

There is no potable groundwater abstraction within 1km of the site, and the site is not located within any Drinking Water Safeguard Zone with respect to groundwater [7].

3.3.5 Risk of Flooding from Groundwater

According to the Groundsure Report, the risk of flooding from groundwater at the site (i.e. where the water table may rise to be above the ground surface and/or within underground structures such as basements), based on a 1 in 100-year flooding event is as outlined below.

1. **Low risk** identified in the areas within the footprint of the Head superficial deposits (see Figure 3-1).
2. **Negligible risk** identified in the areas where the superficial deposits are absent (see Figure 3-1).

3.3.6 Groundwater Depth and Flow Direction

According to the BGS borehole logs in **Appendix E** and historical reports made available to AECOM, groundwater levels in the surrounding area were recorded as follows:

- Based on BGS exploratory hole records groundwater was encountered near the site between approximately 1.70m bgl (TL46SW211) and 15.95m bgl (TL46SW61) (within the superficial clay, silt, sand and gravel deposits).
- URS (2011) ground investigation: groundwater encountered during drilling within the shallow gravel deposits between 0.90m bgl and 3.80m bgl. Groundwater was encountered within the Gault Clay on one occasion at 19.45m bgl, rising to 17.95m bgl in BH101.
- URS (2013) Phase 1 Desk Study with reference to URS (2010) ground investigation: groundwater was encountered during drilling within the shallow gravel deposits at two locations, WS214 at 0.9m bgl and WS217 at 2.2m bgl.
- URS (2013) Phase 2 ground investigation report: groundwater encountered in boreholes and trial pits ranged from 0.86m bgl to 2.8m bgl.
- AECOM (2019) Phase 2 ground investigation report: groundwater encountered in boreholes and trial pits was 3m bgl.

No information on groundwater flow direction specifically beneath the site is available.

However, based on regional topography and the location of surface water features, shallow groundwater is considered most likely to potentially flow towards the west and southwest across most of the site, towards Washpit Brook.

3.4 Hydrology

3.4.1 Surface Water Courses and Drainage

Based on mapping provided within the Groundsure Report and observation made on the site during the reconnaissance survey (see Section 2.3), the following surface water features are present in the vicinity of the site:

- The most prominent hydrological feature on site is the Washpit Brook, a watercourse which runs from east to west adjacent to the lake north of the Park and Ride and Pheasant Plantation. The brook then runs due north, parallel to the M11 until it leaves the site near the A14 junction onward to Girton;
- Brook Leys, a small lake which is located on site to the east of the Pheasant Plantation and to the west of Swirles Court;
- There are surface water drainage swales associated with the sitewide sustainable urban drainage network; and
- Numerous small lakes and ponds are located in the southern portions of the site to the south of Swirles Court and east of the School of Veterinary Medicine.

Table 3-7 summarises the pertinent surface water quality information available associated with the site.

Table 3-7 Surface Water Quality

Surface Water Feature	GQA (Chemical) (Biological)	Distance (m)	NGR, Direction
Bin Brook	Ecological – Moderate Chemical – Fail	521m	Southeast
Cam	Ecological – Moderate Chemical – Fail	781m	Southeast
Old West River	Ecological – Moderate Chemical – Fail	1209m	Northwest

3.4.2 Licensed Surface Water Abstractions

Based on the Groundsure Report, one active licensed surface water abstraction is located within 1km of the site as detailed in Table 3-8.

Table 3-8 Summary of Active, Licenced Surface Water Abstractions within 1km of the Site

Location	Licence Holder	Licence No.	Use	Water Body	Permitted Abstraction Volume
647m Southeast	Robinson College	AN/033/0033/007	Heat Pump	Bin Brook	300,000m^3/yr 864m^3/day

Source: Groundsure Report

3.4.3 Risk of Flooding from Surface Water

According to the Environment Agency flood maps included within the Groundsure Report, the site is within flood zone 1 except for a small area in the northern of the site, where flood zone 2 associated with the Washpit Brook is present. Flood zone 1 are locations with low probability of flooding, that is there is less than 0.1% chance of flooding from rivers or sea in any year. Flood zone 2 are locations with medium probability of flooding, that there between 1% and 0.1% chance of flooding from rivers in any year.

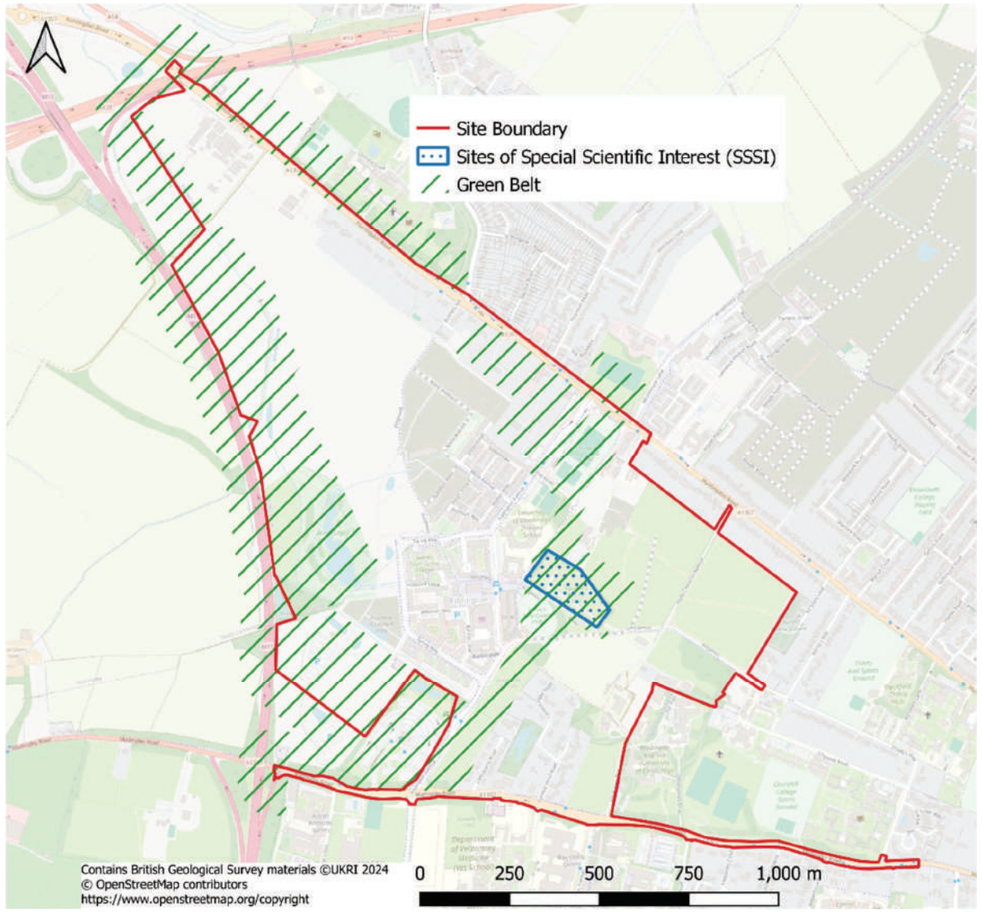
3.5 Sensitive Land Uses

The Groundsure Report (**Appendix D**) identifies adjacent sensitive land use based upon factors such as Sites of Special Scientific Interest (SSSI), Environmentally Sensitive Areas, Areas of Outstanding Natural Beauty, World Heritage Sites, Nature Reserves, National Parks, Nitrate Sensitivity Areas/Vulnerability Zones, Special Areas of Conservation (SAC) and Special Protection Areas (SPA).

The sensitive land uses identified within the site boundary are shown in Figure 2 and summarised here.

- One SSSI is located on site (Traveller's Rest Pit). Traveller's Rest Pit SSSI located in the area south of Huntingdon Road and North of Garrod Street. The indicative boundary of the site is also identified in the North West Cambridge Action Plan (Adopted October 2009). According to the North West Cambridge Action Plan, the Traveller's Rest Pit is a Geological Conservation Review site, which provides a unique exposure of fossiliferous cold stage gravels, sands and silts of a high-level terrace (Observatory Gravels) of the River Cam.
- Two areas of adopted Green Belt Zone are located on site and one located from 223m northeast and 454m southeast of the site.

No other sensitive land uses have been identified within 1 km of the site.



(Note: site boundary represents Groundsure data search area, not planning application boundary, see Section 1.4)

Figure 3-5 Sensitive Land Uses (source: Groundsure Report)

4. Historical & Planned Development

4.1 Historical Ordnance Survey Mapping & Aerial Photographs

Historical Ordnance Survey (OS) maps and aerial photographs of the site and the wider environs were provided in the Groundsure Report (scales 1:1,250, 1:2,500, 1:25,000, 1:500, 1:1,056, 1:10,560, and 1:10,000) and from Google Earth Pro [8] and these are reviewed in this section. Copies of these maps are presented as part of the Groundsure Report in **Appendix B**.

The historical Ordnance Survey (OS) maps obtained with the Groundsure Report date between 1886 and 2024, the aerial photograph from 1999 and 2020 and Google Earth Pro from 2024.

Table 4-1 presents a summary of the main features present on and within approximately 250 m radius of the site boundary. AECOM notes that only indicative map scales are provided, and all distances stated in Table 4-1 are approximate measurements. Where dates are stated, these refer to the dates of maps on which the features are present, have changed use or are no longer annotated, and do not necessarily refer to the exact dates of existence of a particular feature. Development that may have occurred between map editions is recorded as occurring on the latter published map, hence there are some limitations to the accuracy to the date of development unless supplementary evidence is available:

Table 4-1. Summary of Historical Mapping

Date/s	Key Features on-site	Key Features off site
1886 (1:10,560, 1:2,500)	• The site consisted of mostly unused open land and farmland; • Washpit Brook was present in its current configuration in the west of the site; • Road was present along the northern site boundary, present Huntingdon Road; • Howhill Farm is located in the northwest of the site; • Area labelled as 'Man loaded with mischief' is present on the southern site boundary along the present A1303; • Bunker's Hill is located in the north of the site along boundary with Road; • Buildings associated with Girton College were located along northern site boundary; • Gravel Hill Farm was located in southeastern corner of the site; • Area labelled as 'Travellers' Rest' was present in northeastern boundary of the site; and • Pheasant Plantation was located in the west of the site.	• The land surrounding the site mainly consisted of mostly unused open land, farmland and some residential housing; • A gravel pit was located 55m north of the site • Girton College buildings were located directly north of the site; • A small pit feature was located 170m north of the site; • An observatory was located 110m east of the site; • Clunch Hall Farm was located 75m south of the site; • Merton Hall Farm located directly south of the site; • Heatherly Lodge was located 20m south of the site; • Howe House was located directly northeast of the northeastern boundary of the site; • Buildings labelled as 'The Close' and 'Close Farm' were located 150m northeast of the site; and • Residential properties were located along the southeast of the present A1303; and • A cemetery was located directly east of the northeastern boundary of the site.
1901 – 1904 (1:10,560, 1:2,500)	• Expansion to buildings on site associated with Girton College; • Buildings labelled 'Madingley Rise' located in southeast of the site; • Gravel pits was located in the east of the site; and • A Nursery was in the northeastern corner of the site;	• 'New Cottages' housing development directly northwest of northwestern site boundary; • Expansion to Girton College to north of the site; • Expansion to Observatory now labelled 'University Observatory' with Newall Dome and Sheepshanks Telescope; • A gravel pit was located 190m east of the southeastern boundary of the site beyond the University Observatory; • Trinity Hall Cricket Ground was located 150m south of the present A1303 southern boundary; and

		• Residential properties were located 175m northeast of the northeastern boundary of the site.
1924 – 1938 (1:10,560, 1:2,500)	• A small pond feature is located in the northwestern portion of the site; • A tree planation was located in the far northwestern corner of the site; • Expansion of Bunker's Hill and construction of buildings at Thorndyke in north of the site; • Further expansion to Girton College on site; • Gravel Hill Farm now labelled as 'University Farm'; • Construction of Conduit Head Road in the southeast of the site; • Gravel Pits in the east of the site were removed with residential properties in their place; • Another gravel pit is located in the east of the site; • A Meteorological station was located in the east of the site; • Poultry Nutrition Institute Farm was located in the far eastern boundary of the site; and • Expansion to residential properties around Traveller's Rest in east of the site.	• Rectory Farm located 250m southwest of the site; • Area labelled as 'Man loaded with mischief' no longer present with small buildings located in place; • Residential properties constructed along far northern boundary of the site; • Further expansion to Girton College off site; • Expansion to University Observatory with Solar Physics Observatory, Reflector and Spectroheliograph; • Residential properties constructed 220m east of the site; • National Institute of Agricultural Botany located 20m east of the northeast boundary of the site; • Expansion to residential roads and properties around present A1303. This road is now labelled as Madingley Road; • Trinity Hall Cricket Ground now labelled as St. John's Athletic Field; and • Expansion to residential properties along the northeastern and eastern boundary of the site.
1938 – 1966 (1:10,560)	• Construction of residential properties along northern boundary of the site along Huntingdon Road.	• Large buildings associated with university located 90m south of the site beyond Madingley Road; • Expansion to residential developments to the east of Girton College directly along the northern boundary of the site; • Expansion to residential housing development along northeastern boundary of the site; and • National Institute of Agricultural Botany now labelled 'Seed Testing Station'.
1967 - 1978 (1:1,250, 1:2,500, 1:10,000)	• Large tree plantation in the northwestern corner of the site is removed and an Animal Research station is constructed with associated buildings; • Expansion to residential development to the west of Bunker's Hill along Huntingdon Road; • Expansion to University Farm in the northeast of the site; • Removal of original Meteorological Station and construction of new Meteorological Research Station in the northeast of the site; • Construction of Cattle Breeding Centre in the northeast of the site; • Construction of laboratories and associated tanks in the northeast of the site; • Construction of Entomological Field Station and botany School Field Station in the east of the site; • Construction of School of Agriculture Field Station in the far northeastern corner of the site; and	• Laboratory located directly south of Madingley Road; • Blenheim Court residential development located directly southeast of Madingley Road; • Garage located 10m north of the northern boundary of the site beyond Huntingdon Road; • Buildings associated with Churchill College located 15m north of the eastern end of Madingley Road; • Construction of the M11 along the direct western boundary of the site; • Body of water was located next to the M11 along the direct western boundary of the site; • Large junction of the M11 constructed directly western of the western end of Madingley Road; • New Cottages expanded and called Ladysmith Buildings; • Expansion to Girton College directly north of Huntingdon Road; • Expansion to University Observatory and Solar Physics Observatory;

	• Warehouses in the north of the site next to the School of Agriculture Field Station.	• Expansion to Merton Hall Farm directly south of Madingley Road with new roadways constructed; • Expansion of the Nation Institute of Agricultural Botany directly north of the northeastern boundary of the site; • Construction of Pumping Station with electricity substation directly south of Madingley Road; • Construction of School of Veterinary Medicine 180m south of Madingley Road with an electricity substation located 200m south; and • Construction of British Antarctic Survey buildings 25m southwest of Madingley Road.
1979 – 1988 (1:1,1250, 1:2,500, 1:10,000)	• Slight expansion to Huntingdon Road in the north of the site; • Expansion to Huntingdon Road in the far northwest corner of the site with M11 junction; • Land in the east of the site labelled as 'Castle Ward' • Meteorological Research Station has become Department of Applied Biology; and • Department of Genetics Field Station buildings in the northeast of the site.	• Construction of a pond and a Laboratory directly south of Madingley Road next to the British Antarctic Survey buildings; • Removal of Ladysmith Buildings and construction of M11 junction directly northwest of the site; • Expansion to the National Institute of Agricultural Botany; and • Seed testing Station becomes National Institute of Agricultural Botany.
1988 - 1993 (1:1,1250, 1:2,500, 1:10,000)	• Howe Farm in the north of the site becomes Cambridge University Farm with buildings and a silo; and • Tank removed in the laboratories in the northeast of the site.	• Expansion to Girton College off site; • Construction of Clerk Maxwell Road immediately south of Madingley Road; • Expansion to Churchill College; and • Expansion of British Antarctic Survey buildings.
1999 (Aerial Photograph)	• No significant changes.	• No significant changes.
2001 (1:10,000)	• No significant changes.	• Isaac Newton Institute for Mathematical Sciences located 100m southeast of the site; • Construction of the Crescent housing development directly east of Churchill College; and • Construction of BP service station directly north of the site across Huntingdon Road.
2010 (1:10,000)	• Cattle Breeding Centre becomes Agronomy Centre and World Conservation Monitoring Centre; and • Pellews Pond in the northeast of the site.	• Expansion to University of Cambridge School of Veterinary Medicine; • Construction of Park and Ride directly southwest of the site; • Expansion to Isaac Newton Institute for Mathematical Sciences; • Expansion to the Crescent housing development; and • University Observatory becomes Royal Greenwich Observatory.
2013 (Aerial Photograph)	• Clearing of areas for future construction of Eddington Development and Ridgeway Development.	• No significant changes.
2016 (Aerial Photograph)	• Construction of Eddington Avenue leading to the Eddington Development on site with Education facility • Construction of Brook Leys to the west of the Eddington Development;	• No significant changes.

	• Beginning of construction of Ridgeway Development in the northwest of the site; and • Construction of car park in the far southwest corner of the site.	
2020 (Aerial Photograph)	• Continued construction of Eddington Development on site; and • Continued construction of the Ridgeway Village development.	• No significant changes.
2024 (1:10,000)	• Continued construction of Eddington Development on site; • Continued construction of the Ridgeway Village development; and • Removal of University Farm.	• Construction of the Electric Vehicle charging station directly southwest of the site; • Expansion of laboratories directly south of Madingley Road; and • Removal of the National Institute of Agricultural Botany and replaced by housing development.

4.2 Planning Authority Records

The Local Planning Authority records [9] have been searched and identified numerous records relating to the Proposed Development of the North West Cambridge Masterplan site.

This includes the application reference 24/01157/FUL for the '*extension to the temporary use of land to provide a temporary access road into the North West Cambridge site during construction*' (Received 26 March 2024 awaiting decision) and 24/001158/FUL for the '*temporary storage of topsoil, the retention of a temporary security fence and a temporary car parking area for up to 350 vehicles*' (Received 26 March 2024 awaiting decision).

4.3 Unexploded Ordnance Risk

The Zetica bomb risk maps show the site is a low bomb risk area. Based on this AECOM has obtained a Preliminary Desk Study Assessment (PDSA) shown in **Appendix F**.

The findings of the PDSA provided by Zetica (**Appendix F**) dated 4th September 2024 is summarised as follows:

- No Pre-World War I (WWI) or WWI military activity on or affecting the site;
- WWI strategic targets (within 5km of the site) included transport infrastructure and public utilities.
- No WWI bombing identified on site;
- During WWII, 2No. British bomber aircraft crashed on site;
- WWII strategic targets (within 5km of the site) including transport infrastructure and public utilities, industries important to the war effort including aircraft manufacturing, Royal Air Force (RAF) Oakington, military camps and training areas and Anti-Aircraft (AA) and anti-invasion defences;
- 2 No. WWII bombing decoys were located approximately 3km southwest of the site;
- During WWII the site was located on the boundary between the Municipal Borough (MB) of Cambridge and the Rural District (RD) of Chesterton. Cambridge MB officially recorded 123No. High Explosive (HE) bombs with a bombing density of 12.2 bombs per 405 hectares (ha). Chesterton RD officially recorded 539No. HE bombs with a bombing density of 4.8 bombs per 405 ha. Readily available records have been found to indicate that several HE bombs fell in close proximity to the site;
- No post-WWII military activity on or affecting the site is identified; and
- The UXO PDSA report recommended that a detailed desk study is commissioned to assess, and potentially zone, the Unexploded Ordnance (UXO) hazard level on the site.

5. Regulated Activities and Statutory Consultation

5.1 Introduction

The key relevant regulated activities in the vicinity of the site, based on data provided in the Groundsure Report, are summarised in the following sections, along with an indication of the potential risk to land quality at the site. It is considered that regulated activities within 250m of the site could, depending upon their nature, represent potential off-site sources of contamination. Information on groundwater and surface water abstractions is detailed in Sections 3.3.4 and 3.4.2 and is not repeated here.

5.2 Regulated Processes

Table 5-1summarises information on regulated processes within 250m of the site:

Table 5-1 Summary of Regulatory Information

Subject	Distance from Site		Details
	On site	0-250m	
Licenced Pollutant Release	-	1	One entry 1m northeast of the site for BP Girton for unloading of petrol into storage at service station.
Licenced Discharges to Controlled Waters	1	-	One entry on site for North West Cambridge SWIC for sewage discharges into Washpit Brook. Permit number: EPRBB3499WF effective 22/08/2014 revoked 06/10/2023.
Pollutant Release to Public Sewer	1	2	One entry on site for University of Cambridge Veterinary School. Permission reference: SCE0139C2. One entry 70m southeast for University of Cambridge Cavendish Laboratory. Permission reference: BQ2502. One entry 142m south for University of Cambridge Veterinary School. Permission reference: CA4447.
List 1 Dangerous Substances	-	2	One entry 173m south for University of Cambridge Veterinary School for release of mercury. Status active.
List 2 Dangerous Substances	2	5	One entry on site for University Biomedical Support Science and one entry for Wheelie Fresh Bins Limited for pH. Status not active. One entry 12m northeast for Pace Petroleum (Girton) for pH. Status not active. One entry 50m southeast for Alder & Allan Limited for release of Zinc into Ten Mile River. Status active. Two entries 123m southwest for Schlumberger Cambridge Research Ltd for pH. Status one active one not active. One entry 203m east for Niab for pH. Status not active.
Pollution Incidents to Controlled Waters	1	2	One Pollution Incident noted on site from oils and fuel (Category 3 minor incident). Two Pollution Incidents noted within 250 m of the site – 12 m southeast from oils and fuel (Category 3 minor incident) and 224m northwest from oils and fuel (Category 3 minor incident).
Radioactive Substance Authorisations	1	21	One entry on site for University of Cambridge. One entry 3m south for the British Antarctic Survey for the keeping and use of radioactive materials. Five entries 33m southwest for the British Antarctic Survey for the disposal of radioactive waste. One entry 101m southwest for the British Antarctic survey. Two entries 129m southeast for the National Institute of Agricultural Botany Plant Pathology for the keeping and use of radioactive materials. Five entries 130m southwest for the University of Cambridge Waste Store for the disposal of radioactive waste. Six entries 156m south for the University of Cambridge South Sites for the disposal and keeping and use of radioactive wastes and materials.

Source: Groundsure Report

No entries were recorded for the following processes within 250m of the site: Contaminated Land Register Entries and Notices, Discharge Consents, Prosecutions Relating to Controlled Waters, Enforcement and Prohibition Notices, Integrated Pollution Controls, Integrated Pollution Prevention and Control, Local Authority Integrated Pollution Prevention and Control, Local Authority Pollution Prevention and Controls, Local Authority Pollution Prevention and Control Enforcements, Prosecutions Relating to Authorised Processes, Registered Radioactive Substances, Substantiated Pollution Incident Register, Water Industry Act Referrals, Hazardous Substance Storage, Control of Major Accident Hazards Sites (COMAH), Explosive Sites, Notification of Installations Handling Hazardous Substances (NIHHS), Planning Hazardous Substance Consents and Planning Hazardous Substance Enforcements.

5.3 Licensed Waste Management Facilities

Referring to the Groundsure report, an attempt has been made to identify any landfilling operations, past and present that have taken place within 250m of the site.

A historical landfill is present on site at Cambridge University Farm, licence holder: M Dickerson Limited for inert wastes last recorded 30/04/1986.

With reference to the above data there are no recorded licensed waste management facilities within 250m of the site.

5.4 Industrial Land Use

The Groundsure Report records various historical and current features which are indicative of industrial land uses, including contemporary trade directory entries. Features identified within 250m of the site, which are considered to indicate activities with the potential to have caused contamination at the site are summarised in **Table 5-2**. Many of these correspond to features identified in the historical OS map review in Section 4.1 and are cross-referenced where relevant.

Table 5-2: Potentially Contaminative Industrial Land Use on Site and within 250m of the Site

Subject	Location	Details
Contemporary Trade Directory Entries	117m E	NIAB Agricultural Contractors
	28m NE	Haywards of Cambridge Motoring
	17m NE	Girton Service Station Vehicle Cleaning Services
Fuel Station Entries	17m NE	Girton Service Station
	28m NE	BP Service Station
Energy Features	On Site	Electricity Sub Stations 7 No. entries Telephone Exchange Telecommunication Mast
	5m SE – 74m SW	Telecommunication Mast
	6m SW – 235m SE	Electricity Sub Station
Infrastructure and Facilities	95m SW	Polysolar electric vehicle charging station
Industrial Features	On Site	Silo
	On Site	Foul water pumping station
	27m NW	Chimney
	27m NW – 38m SW	Gas Valve Compound
	38m SE	Wind Turbine
	42m SE – 227 NE	Multiple tanks (generic)

Source: Groundsure Report

6. Review of Historical Reports

6.1 URS North West Cambridge Geotechnical Report (August 2011)

A geotechnical report for the North West Cambridge site was prepared by URS for the University of Cambridge.

Ground Investigation

An intrusive ground investigation was designed by Scott Wilson and BSL were commissioned to undertake the works under part time supervision of Scott Wilson. 11no. cable percussion (BH101 – BH110 and BH110A) boreholes and 19no. Window samples (WS201- WS205 and WS207 – WS220) were drilled to provide preliminary information on the geotechnical conditions across the site and to allow assessment of groundwater to be undertaken.

Ground Conditions

Made Ground was encountered locally overlying the natural ground to a maximum depth of 3.4m (WS202). Head gravels and observatory gravels were encountered in the central and northern part of the site to a maximum depth of 5.0m (BH306).

Groundwater

Groundwater was encountered during drilling within the shallow gravel deposits between 0.90m bgl and 3.80m bgl. Groundwater was encountered within the Gault Clay on one occasion at 19.45m bgl, rising to 17.95m bgl in BH101.

6.2 URS North West Cambridge Geological Site Management Plan (May 2012)

A Geological Site Management Plan for the North West Cambridge site was prepared by Scott Wilson for the University of Cambridge to ensure the geology currently conserved at the Traveller's Rest Pit SSSI was not damaged during construction works for the operational phase of the Proposed Development.

Geological Features

Observatory Gravels were present within the Traveller's Rest Pit SSSI containing non-marine cold-water mollusc fossils and ice wedge casts. The gravels also yielded fossil remains of large vertebrates (red deer and horse) and Palaeolithic worked flints.

Work to protect the SSSI during construction

A 10m buffer zone of the Traveller's Rest Pit SSSI was established prior to the commencement of construction works. A biodiversity strategy was put in place to enhance nature conservation within the site and to control and limit disturbance to areas to nature conservation interest. An archaeology and built heritage management plan was put in place as there was a potential for archaeological remains to be found in the observatory gravels.

6.3 URS North West Cambridge Phase 1 Development. Phase 1 Geo-Environmental Desk Study Report (April 2013)

A Phase 1 Desk Study for the North West Cambridge site was prepared by URS for the University of Cambridge, which also includes data from a previous 2010 URS ground investigation.

Ground Conditions

Topsoil was recorded within all boreholes, with no Made Ground was encountered. Drift deposits underlying the topsoil consisted of sand and gravels indicative of shallow head deposits and observatory gravels in the north of the site these were between 1 – 5m thick and less than 1m thick in the southern section of the site. Bedrock consisted of Gault Clay comprising of stiff to very stiff

(becoming hard) grey/brown occasionally mottled orange, brown desiccated clay with occasional calcareous nodules and locally occasional shell fragments.

Groundwater

Groundwater was encountered during drilling within the shallow gravel deposits at two locations, WS214 at 0.9m bgl and WS217 at 2.2m bgl. URS concluded that the inconsistent presence of shallow groundwater and variation in relative levels across the site, suggested that encountered groundwater was largely indicative of perched water above the Gault Clay.

Ground Investigation Results

The ground investigation was undertaken across the Phase 1 development. Soil samples were analysed for a suite of metals, speciated Polycyclic Aromatic Hydrocarbons (PAHs), Total Petroleum Hydrocarbons (TPH) CWG, phenols, pH, sulphur, sulphate, and total organic carbon.

- Soil laboratory results were compared to the Soil Guideline Values (SGV's) for a residential with plant uptake land-use.
- Analytical results for all soil samples tested from within the Phase 1 development site were below adopted assessment criteria. No hydrocarbons, polychlorinated biphenyls (PCBs) or pesticides were identified above laboratory detection limits.
- Groundwater laboratory results were compared to the Environmental Quality Standards (EQS) for freshwaters. Where EQSs were not published Surface Water Abstraction Classification and Drinking Water Standards were used.
- Groundwater assessment within the wider North West Cambridge site identified elevated nitrate, however, URS concluded this was likely to be a result of a high background level since the site was located in a nitrate vulnerable zone. Selenium exceeded the EQS in one sample, but further assessment using Washpit Brook as a receptor, identified a low risk to Controlled Waters.
- Two rounds of ground-gas monitoring of the 10 cable percussion installations and one window sample installation identified a maximum carbon dioxide reading for the wider North West Cambridge site of 1.3%. No methane was detected in any installations and no gas flow was detected.

6.4 URS North West Cambridge Phase 1 Development. Phase 2 Geo-Environmental Interpretive Report (June 2013)

A Phase 2 Geo-environmental Assessment for the North West Cambridge development site was prepared by URS for the University of Cambridge (June 2013). Which provided a summary of the ground investigation works and an interpretation of the results.

Ground Investigation

Brownfield Solutions Ltd (BSL) carried out the intrusive investigation works under the direction of URS. Seven cable percussion (BH401 to BH407) boreholes were drilled to assess groundwater on site and 38no. trial pits (TP401 to TP438) were progressed to assess soil contamination on site.

Ground Conditions

Borehole records show a significant variation in the thickness of strata across the site comprising of Topsoil, Made Ground, Clay, Sand and Gravel. Table 6-1 shows the summary of the strata encountered across the site:

Table 6-1: Summary of Encountered Strata

Strata	Top of Strata range (m bgl)	Depth to Base range (m bgl)	Thickness range (m)
Topsoil	0.00 - 0.00	0.20 - 0.65	0.20 - 0.65
Made Ground	0.00 - 0.00	0.10 - 1.00	0.10 - 1.00
Head Deposits	0.00 - 2.90	0.20 - 5.00	0.20 - 4.60
Gault Clay	0.20 - 3.30	1.00 - 5.00	0.50 - 4.60

Made Ground was encountered at 8 no. locations. In the main part of the Phase 1 development, (TP408, TP410M TP411 and TP429) Made Ground consisted of reworked natural deposits, described as gravelly clay, locally cobbly or silty. In TP433, brick fragments were identified in shallow soils and evidence of scrap vehicle materials were noted at 0.70m. Made Ground was identified in four trial pits (TP43 – TP437) to the east of the main Phase 1 development, including brick, concrete and rare coal fragments.

Groundwater:

Groundwater encountered in boreholes and trial pits ranged from 0.86m bgl to 2.8m bgl.

Ground Investigation Results

URS derived Generic Assessment Criteria (GACs) from various sources including the EA, LQM/CIEH and CLAIRE. Assessment was based on the end use for the site being residential development with plant intake.

Soil Results

- Maximum concentrations for Arsenic (TP434 0.4m bgl) was slightly greater than the corresponding GAC.
- Concentrations for TPH were below the method detection limit.
- TP402 (0.7m bgl) and BH407 (3m bgl) recorded slightly elevated concentrations of benzo(a)pyrene of 0.87 mg/kg and 1.3 mg/kg in comparison to the GAC (0.83 mg/kg).
- 60 no. samples were sent for laboratory screening for asbestos. No asbestos was recorded.

Groundwater Results

- Concentrations of selenium in BH401 and BH404 were greater than the associated screening criterion. Concentrations of calcium in BH404 and BH407 were elevated in comparison to the screening criterion. Potassium in BH403, BH404, BH405 and BH407 were higher than the Freshwater EQS. In BH404 sulphate concentration was higher than the screening criteria.
- In 1999 (noted from a previous investigation that has not been made available to AECOM) a diesel spillage was noted on the concrete hardstanding – a hydrocarbon odour was noted in the vicinity, but no sampling conducted.
- Slightly elevated concentrations of contaminant within the Made Ground only when compared to a commercial end-use screening criteria – TPH exceedances were recorded within the centre of site. The natural soils recorded no exceedances.

Gas Results

Gas concentration and flow rate results for carbon dioxide and methane have been compared to guidance values given in CIRIA Report C665. Findings showed that no gas protection measures are required at the site.

Key Recommendations and Conclusions

URS concluded the following:

- Selected contamination results, while elevated above the screening criteria, are not considered to be indicative of contamination at the site, but rather indicative of the background conditions in general groundwater, as evidenced from the history of the wider development area.
- Further trial pitting could be undertaken in the location of TP433, where evidence of oil and metal scrap was identified.

6.5 AECOM North West Cambridge Phase 2 Development. Phase 2 Ground Investigation Report (August 2019)

A Phase 2 Ground Investigation report for the North West Cambridge development site was prepared by AECOM for the University of Cambridge (August 2019). Which provided a summary of the ground investigation works and an interpretation of the results. AECOM were commissioned to undertake an assessment and characterise the stockpile material with regards to geotechnical properties and their earthworks suitability. The University of Cambridge proposed to reuse the soil stockpiled during the Phase 1 works for earthworks which formed part of the Phase 2 work.

Ground Investigation

Geotechnics carried out the intrusive investigation works under the direction of AECOM. Five cable percussion and 52no. trial pits were drilled during the ground investigation works.

Ground Conditions

Boreholes and trial pits were drilled in stockpiling areas (SP01, SP02, SP23, SP25) and a non-stockpiled area. Within the stockpiled areas ground conditions comprised Made Ground, described as slightly sandy, slightly gravelly clay, with gravel of chalk, flint, clinker, mudstone, concrete, brick, wood, quartzite and coal. The stockpile material overlies the Head Deposits and Gault Clay Formation. In twelve of the trial pits in the non-stockpiling areas, topsoil was encountered but in the remaining six, Made Ground was encountered overlying Head Deposits and Gault Clay Formation.

Groundwater was encountered in boreholes and trial pits around 3m bgl.

Ground Investigation Results

Soil laboratory results were compared against a range of GACs including LQM/CIEH S4ULs, EIC/AGS/CL:AIRE GACs and DEFRA C4SL 12/2014 using a residential with plant uptake end receptor. For assessment of controlled waters GACs have been taken from a range of sources including AECOM Drinking Water Guidance (adopting WHO methodology), SEPA (WAT-SG-53) and UK DWS.

Soil Results

- No human health exceedances were identified in the 45 samples collected from SP01, SP02, S23 and SP25;
- Asbestos was not detected in any of the 121 samples tested;
- TPH exceedances of the DWS GACs were reported in 10 of the 45 samples analysed. These were within 1 order of magnitude and were not considered a risk by AECOM to controlled waters receptors due to the conservatism of the controlled waters GACs;
- Fluoranthene and benzo(a)pyrene in BH503 and SP02 exceeded the EQS GACs by up to 4 orders of magnitude;
- Other PAH compounds which exceeded the controlled waters GACs between 1 and 3 orders of magnitude include naphthalene, anthracene, benzo(g,h,i)perylene, benzo(b)fluoranthene and benzo(k)fluoranthene. Only two samples exceeded the benzo(a)pyrene concentrations for non-urban areas, but none exceeded the urban national concentrations. Therefore, considered unlikely to be a controlled waters risk; and
- Arsenic, cadmium, copper, lead, nickel and zinc exceeded controlled waters GACs by no more than one order of magnitude and are therefore, considered to represent background concentrations.

Key Recommendations and Conclusions

AECOM concluded the following:

- Although a risk to controlled waters from the identified soil exceedances is considered unlikely, assessment based on soil sampling partitioning is very conservative and it is recommended that leachate testing is carried out during the final stockpile validation works in order to confirm this.

7. Initial Conceptual Site Model

7.1 Introduction

This section is aimed at identifying possible risks, if any, arising from substances used or deposited on-site, or from other sources of land contamination. Both past and current potentially contaminative land uses have been considered. As specified in Section 1.2, the aim of the assessment is to better understand the environmental conditions at the site to support future management decisions. This assessment is based on the Proposed Development of the North West Cambridge site, as described in Section1.2.

7.2 Assessment Framework

The site, in terms of potential land contamination, will be regulated by the Local Authority (Cambridge City Council) under the Town and Country Planning Act 1990 (as amended) [10], taking account of the National Planning Policy Framework 2019 [11], with the Environment Agency, Natural England and English Heritage acting as potential statutory consultees.

Environmental liabilities can arise through provisions contained within statutory legislation including Part 2A of the EPA 1990 [12], the Environmental Damage (Prevention and Remediation) Regulations 2009 [13], the Water Resources Act 1991 [14], the Groundwater Regulations 2009 [15] and the Water Act 2003 [16].

Current best practice recommends that the determination of health hazards due to contaminated land is based on the principle of risk assessment, as outlined in the Statutory Guidance to Part 2A (2012) [17] and Land Contamination: Risk Management (LCRM) [18].

The ‘suitable for use’ approach is adopted for the assessment of contaminated land where remedial measures are undertaken where unacceptable risks to human health or the environment are realised taking into account the proposed use of the land in question and the environmental setting. The proposed end-use for the site as a whole is considered to be ’commercial’ (based on the Proposed Development).

The risk assessment process for environmental contaminants is based on a source-pathway-receptor analysis. These terms can be defined as follows:

- **Source:** hazardous substance that has the potential to cause adverse impacts;
- **Pathway:** route whereby a hazardous substance may come into contact with the receptor: examples include ingestion of contaminated soil and leaching of contaminants from soil into watercourses; and
- **Receptor:** target that may be affected by contamination: examples include human occupants/ users of site, water resources (surface waters or groundwater), or structures.

For a risk to be present, there must be a relevant and viable contaminant linkage; i.e. a mechanism whereby a source impacts on a sensitive receptor via a pathway.

The following sections details the initial Conceptual Site Model (iCSM) which has been developed for the site with a view to assessing the potential risks/ liabilities and constraints associated with the site in its current condition, prior to any Proposed Development, as well as post-development.

7.3 Sources of Potential Contamination

Based on the information obtained as part of this desk study assessment, and with reference to Department of Environment Industry Profiles [19], Table 7-1, indicates the potential contaminants that may be associated with the current and previous land use.

Table 7-1 Potential Sources of Contamination

Location	Potential Sources	Associated Contaminants of Potential Concern (CoPC)
On Site	Made Ground associated with historic and current land uses including historic landfill, former gravel pits, previous redevelopment/building platforms, as well as the stockpiles of crushed demolition materials present onsite.	Heavy metals and inorganics including sulphate, pH, total petroleum hydrocarbon (TPH), polycyclic aromatic hydrocarbons (PAHs) semi volatile organic compounds (SVOCs), volatile organic compounds (VOCs), asbestos and asbestos containing materials (ACMs).
On Site and Off Site (6m SW – 235m SE)	Electrical substation.	TPH and polychlorinated biphenyls (PCBs).
Off Site (28m NE)	BP and Girton Petrol Stations	Heavy metals, pH, TPH, PAHs, SVOCs and VOCs
On Site and Off Site (27m NW – 227m NE)	Industrial Features – silo, chimney, gas valve compound, wind turbine and multiple tanks (generic)	Heavy metals and metalloids, SVOCs, VOCs, TPH, PAH, PCBs, organo-lead compounds, pH and ACMs.
Off Site (95m SW)	Polysolar Electric Vehicle Charging Station	Heavy metals and electrolyte and electrode materials
Off Site (10m N)	Husky Motor Repairs	Heavy metals, solvents, SVOCs, VOCs, PAHs, TPH, PCBs, organo-lead compounds, methyl-tert-butyl-ether (MTBE), pH and ACMs.

7.4 Potential Receptors

Potential receptors associated with the potential development are shown on Table 7-2.

Table 7-2. Potential Receptors

Receptor Type	Receptor	Description
Human health	Construction and maintenance workers	Based on the Proposed Development, workers will be involved with the demolition, construction and maintenance works at the site.
	Site visitors	Visitors attending the site residential areas.
	Site users	Current and future – residents of the proposed housing developments
	Adjacent site users	Residential housing noted along the northern, northeastern and southern boundaries of the site, with the potential for trespassers or migration of contaminants affecting users within the vicinity of the site. As well adjacent site users of the light commercial buildings surrounding.
Controlled Waters / Water Environment	Secondary A Aquifer in the Head superficial deposits	Secondary A Aquifer associated with the Head deposits (clay, silt, sand and gravel deposits.
	Principal Aquifer in the Melbury Marl Chalk Formation Bedrock Aquifer	West Melbury Marl Chalk Formation, located in the far south-eastern portion of the site is classified as a Principal Aquifer.
	Surface waters	Washpit Brook, a watercourse on site, which runs from east to west, then north towards Girton. Brook Leys is a small lake which is located on site to the east of the Pheasant Plantation and to the west of Swirles Court.
Geology	SSSI	One SSSI is located on site (Traveller's Rest) in the east of the site.
Property	Buildings & Infrastructure: Concrete	Buildings and infrastructure at the site may be impacted by contamination in the ground. Existing and future concrete foundations if the groundwater has elevated contaminant levels. According to the BGS [3], the underlying Gault Formation may contain aqueous solutions of sulphate and

Receptor Type	Receptor	Description
		sulphuric acid in the ground in sufficient quantity for potential chemical attach on concrete.
	Buildings & Infrastructure: Structures with enclosed spaces	Proposed structures may be impacted by accumulation of ground gases from the Made Ground.
	Buildings & Infrastructure: Services	Potable water supply pipes and other services.
	Buildings & Infrastructure: Gas/ damp membranes	Potential for hydrocarbons in soils and groundwaters may deteriorate membranes.
	Plants in landscaping	If any are present or included in future redevelopment of the site.

7.5 Potential Pathways

Potential pathways associated with the Proposed Development are shown in Table 7-3.

Table 7-3. Potential Pathways

Pathway	Description
Human Health	
Inhalation of dust - indoor and outdoor	Inhalation of soil, contact with perched or groundwater including soil-derived dust (external areas only)
Dermal contact - outdoor	Direct contact/dermal absorption of soil, contact with perched or groundwater including soil-derived dust (external areas only)
Ingestion	Ingestion of soil and soil-derived dust
Gas ingress – inhalation	Migration of hazardous gases/vapours via permeable strata into confined spaces (asphyxiation risk)
Vapour intrusion and inhalation – indoors and outdoors	Inhalation of vapours derived from impacted soils or shallow groundwater (principally internal areas)
Gas ingress – explosive atmosphere	Migration of hazardous gases/vapours via permeable strata into confined spaces (explosion risk)
Controlled Waters	
Leaching and vertical migration through unsaturated zone	Leaching of contaminants from soil in unsurfaced areas into shallow groundwater
Lateral migration in groundwater	Leaching of contaminants from soil in unsurfaced areas into shallow groundwater, followed by lateral migration
Vertical migration in groundwater	Vertical migration of impacted shallow groundwater into deeper groundwater
Baseflow from groundwater to surface water	Migration of contaminants in shallow groundwater to surface water, including along preferential pathways (e.g. granular backfill around buried services)
Geology	
SSSI	Migration of contaminants into SSSI
Property	
Gas intrusion - explosion	Migration of ground gases via permeable strata into confined spaces (explosion risk)

Pathway	Description
Direct contact - corrosion	Direct contact of buried concrete with contaminated soils (i.e. hydrocarbons) and aggressive ground conditions (pH and sulphate)
Direct contact - permeation of water pipe	Direct contact of services and potable water supply pipes with contaminated soils or shallow groundwater
Plant uptake	Uptake via root systems in areas of landscaping if present

8. Preliminary Risk Assessment

AECOM's approach to the preliminary risk assessment follows the guidance outlined in National House Building Council/Environment Agency/Chartered Institute of Environmental Health publication R&D 66 (NHBC/EA/CIEH, 2008) and is described in further detail in Appendix C.

An iCSM illustrating plausible contaminant linkages has been formulated for this site. The qualitative preliminary risk assessment of the possible contaminant linkages of the above sources, exposure and transport pathways and receptors is provided in Table 8-1.

Table 8-1 also includes a risk category based on the Environment Agency Land Contamination Risk Assessment (LCRM) [18] guidance to assess whether the identified risks are acceptable or unacceptable. This is described in further detail in Appendix C.

The level of risk is determined based on the current condition of the site (i.e. the effects of any remediation or mitigation measures are not included).

The preliminary risk assessment undertaken with in this section does not consider acute linkages for construction and maintenance workers. AECOM anticipates that these acute linkages will be managed by appropriate health and safety measures.

Table 8-1 Contaminant Linkage Preliminary Risk Assessment

Source	*Pathway*	*Receptor*	*Potential Severity*	*Likelihood of Occurrence*	*Potential Risk (CIRIA C552)*	*LCRM Risk Category*	*Justification*
On-Site Historical Activities and associated Made Ground; Current and former petrol stations; Electricity Substations; and Industrial features including tanks.	Soil ingestion/ Dermal contact	Construction and Maintenance Workers	Medium	Low	Moderate /Low	Acceptable	Made Ground is locally at the site due to the various phases of construction and demolition on the site. Made Ground was proven up to 3.40 m bgl in general area of the Swirles Court and Ridgeway Village developments. The URS (2013) ground investigation found maximum concentrations for arsenic (TP434 0.4m bgl) and benzo(a)pyrene (TP402 0.7m bgl, BH407 3m bgl) in soil samples were slightly elevated in comparison to the GACs. The URS report concluded that while elevated above the screening criteria, the results are not considered to be indicative of contamination at the site, but rather indicative of the background conditions as evidenced from the history of the wider development area
		Site Visitors and site users	Mild	Low	Low	Acceptable	The Proposed Development, with the exception of soft landscaped areas will be covered by mostly hardstanding, acting as a barrier between receptors and source of contaminants. Therefore, the potential risk to site visitors and site users including residents and workers from direct contact with soil or groundwater from historic land uses on site is considered to be Low. This is based on the site in its current state Further ground investigation is required, including chemical analysis and review, to understand the extent of the contamination noted during previous ground investigations, and the source, whether this be due to present day activities or from former use of the site.
Off-Site Historical Activities and associated Made Ground; Current and former petrol stations; Electricity Substations; Industrial features	Inhalation of dust – indoor and outdoor	Construction and maintenance workers	Medium	Low	Moderate / Low	Acceptable	The risk of inhalation of soil particulates by site visitors, site users (residents and workers) and adjacent site users is considered to be Moderate / Low. The Proposed Development will be undertaken in phases and there potential during demolition and construction activities to generate soil derived dust and impact on the human health receptors including users and visitors of the earlier completed development phase.. This can be mitigated through appropriate health and safety measures during construction of future developments.
		Site Visitors and Site Users	Medium	Low	Moderate / Low	Acceptable	
		Adjacent Site Users	Medium	Low	Moderate / Low	Acceptable	
	Vapour intrusion and inhalation –	Site Visitors and Site Users	Medium	Low	Moderate/Low	Acceptable	The potential risk to site users and visitors from inhalation of vapours derived from soils or groundwater including potential contamination from leaks/spills is

Source	Pathway	Receptor	Potential Severity	Likelihood of Occurrence	Potential Risk (CIRIA C552)	LCRM Risk Category	Justification
including tanks; Current electrical vehicle charging station; and Motor Repairs	indoors and outdoors	Adjacent Site Users	Medium	Unlikely	Low	Acceptable	considered to be Moderate/Low (particularly indoors). This is due to the presence of Made Ground as proven in the historic 2013 ground investigation. The risk to adjacent site users is considered to be Low; as there was no known vapour data recorded for the site, the likelihood of occurrence is considered to be Unlikely. Further site characterisation / assessment may be required to quantify the significance of the risks identified.
	Gas ingress – inhalation	Site Users	Mild	Low	Low	Acceptable	The risk from ground gas to the identified human receptors is considered Low. Although Made Ground is anticipated to be present at the site, the URS 2013 GIR classified the site as a CS1 site. However, there were limited ground gas monitoring during the investigation. Further ground gas monitoring and site-specific risk assessment is required to assess the risk to the Proposed Development and associated human receptors.
		Site Visitors	Mild	Low	Low	Acceptable	
		Adjacent Site Users	Mild	Unlikely	Very Low	Acceptable	
	Gas ingress – explosive atmosphere	Site Users	Medium	Unlikely	Low	Acceptable	The risk from explosive atmospheres has been identified as Low. No elevated levels of Methane are noted on site from historic ground investigations, only carbon dioxide which does not pose an explosion risk. Further site characterisation / assessment may be required to quantify the significance of the risks.
		Site Visitors	Medium	Unlikely	Low	Acceptable	
		Adjacent Site Users	Medium	Unlikely	Low	Acceptable	
	Leaching and vertical migration through unsaturated zone	Principal Aquifer	Medium	Low	Moderate / Low	Acceptable	The nature of the Made Ground is unknown and could represent sources of contaminants, including contaminants associated with the current petrol filling station, electricity substation, and industrial features (including tanks). With respect to the current petrol filing station, main risk is from historic spills/leaks into the underlying Made Ground on site. The site is directly underlain by an Undifferentiated Secondary superficial aquifer. The bedrock aquifer is classified as a Principal Aquifer across the whole site. There are no potable groundwater abstractions identified on site or within 250m, and the site is not within a SPZ. It is considered that there is a potential Low to Moderate/Low risk to the underlying groundwater. Hardstanding limits the potential for leaching and acts as a barrier to a degree to infiltration. However, infrastructure such as service
		Undifferentiated Secondary Aquifer	Mild	Low	Low	Acceptable	
	Lateral migration in groundwater	Principal Aquifer	Medium	Low	Moderate / Low	Acceptable	
		Undifferentiated Secondary Aquifer	Mild	Low	Low	Acceptable	

Source	Pathway	Receptor	Potential Severity	Likelihood of Occurrence	Potential Risk (CIRIA C552)	LCRM Risk Category	Justification
	Vertical migration in groundwater	Principal Aquifer	Medium	Low	Moderate / Low	Acceptable	trenches may provide a preferential pathway for migration of contaminated groundwater through granular fill materials if present on site. Further site characterisation / assessment may be required to confirm the groundwater quality regime at the site and quantify the significance of the risks identified.
		Undifferentiated Secondary Aquifer	Mild	Low	Low	Acceptable	
	Baseflow from groundwater to surface water	Surface Waters	Medium	Unlikely	Low	Acceptable	The closest surface water feature is Washpit Brook located in the west of the site. Considering the distance to the nearest surface water receptor, the risk of contamination to surface waters is considered to be Moderate/Low. Should the risk of hydraulic connection between the groundwater and surface water wish to be quantified, site characterisation / assessment may be required to confirm.
	Gas Intrusion - explosion	Buildings & Infrastructure: Structures with enclosed spaces	Severe	Unlikely	Moderate / Low	Acceptable	Elevated carbon dioxide (ground gas) was recorded on site during the historic URS 2013 ground investigation. The site is also occupied by mostly areas of hardstanding. Further site characterisation / assessment may be required to quantify the significance of the risks identified.
	Direct contact - corrosion	Buildings & Infrastructure: Concrete	Mild	Low	Moderate / Low	Acceptable	Aggressive ground conditions may be encountered at the site due to the underlying geology. An assessment of the aggressive ground conditions undertaken in the AECOM (2011) Geotechnical Report indicated the presence of pyrite within the Gault Formation and the assessment conservatively recommended a DS classification of DS-3 and ACEC classification of AC-3 to account pyrite in the concrete design of structures. From previous investigations there are no identified elevated concentrations of contaminants that could impact in-ground services, and membranes (if used as part of future development). Further site characterisation assessment is recommended to refine the risk and to determine appropriate classification of the ground materials to inform specification of construction materials.
		Buildings & Infrastructure: Services	Mild	Low	Low	Acceptable	
		Buildings & Infrastructure: Gas/ damp membranes	Mild	Low	Low	Acceptable	
	Direct contact - permeation of water pipe	Buildings & Infrastructure: Services	Mild	Low	Low	Acceptable	Complete linkages are considered possible and further site characterisation assessment is recommended to refine the risk.

Source	Pathway	Receptor	Potential Severity	Likelihood of Occurrence	Potential Risk (CIRIA C552)	LCRM Risk Category	Justification
	Potential Contaminant migration	Sensitive Land Uses	Mild	Unlikely	Very Low	Acceptable	SSSI Traveller's Rest Pit is located in the east of the site. Two areas of designated Green Belt are located within and in the vicinity of the site. The risk from potential contaminant migration to the Traveller's Rest Pit and the Green Belt areas is considered to be Very Low

8.1 Discussion of Acute Risk to Future Construction Workers & Off-Site Receptors.

AECOM understands that the Proposed Development works will be undertaken in compliance with Construction Design and Management (CDM) 2015 regulations.

Prior to work commencing, a health and safety risk assessment should be carried out by the appointed Principal Contractor / developed in accordance with current health and safety regulations. This assessment should cover potential risks to construction staff, permanent site staff and the local population. Based on the findings of this risk assessment, appropriate mitigation measures should be implemented during the construction period.

The greatest potential for generation of dust will be during the site works and therefore dust generation should be kept to a minimum in accordance with general best practice, as outlined in, for example, 'Environmental Good Practice on Site', CIRIA Publication C692 to reduce this risk.

The risk to construction workers during the excavation and construction phases in terms of potential exposure to high concentrations of contaminants is considered to be low given the historic and current land uses identified at the site. Should gross contamination be identified during the construction phase, then this may pose a potential acute risk to construction works. It is likely to be able to be effectively managed through good health and safety practices and protocols. Adoption of appropriate dust suppression techniques would also mitigate the degree of potential particulate migration off-site.

8.2 Stockpiled Material

The Waste Framework Directive (WFD) [20] defines waste as 'any substance which the holder discards or intends to discard.' In doing this, there is a requirement to classify waste for disposal, to ensure that it is disposed of in an appropriate location and in an appropriate manner. Any material excavated on site could be classified as waste and it is the responsibility of the producer of a material to determine whether or not it is waste.

Aerial imagery shows the presence of stockpiles of soil materials, which were also observed during the site walkover. It is understood that the materials were generated during Phase 1 of the North West Cambridge development, with the intention of being reused for earthworks as part of Phase 2. The AECOM (2019) Ground Investigation Report (see Section 6.5) describes the stockpiled materials as Made Ground, typically comprising slightly sandy slightly gravelly clay. Gravel generally includes chalk, flint, clinker, mudstone, concrete, brick, wood, quartzite and coal.

Where there is an intention to reuse material, a Materials Management Plan (MMP) should be employed, using the Contaminated Land: Application In Real Environments (CL:AIRE) 'Definition of Waste: Code of Practice' (DoW:CoP) [21]. This code of practice sets out the requirements for the reuse of site-won material within a development, subject to the following factors:

- Factor 1: Protection of human health and protection of the environment.
- Factor 2: Suitability for use, without further treatment.
- Factor 3: Certainty of Use.
- Factor 4: Fixed Quantity of Material.

Where these 4 factors can be met, a MMP can be produced to govern the appropriate reuse of material on the site. The DoW:CoP is a self-regulating scheme, which requires high-level approval from the appropriate regulator (the Environment Agency) for the scheme. A Qualified Person under the DoW:CoP must be engaged to approve the MMP and a verification report should be produced to demonstrate that the MMP has been properly enacted. Where material requires alteration, remediation or improvement prior to reuse, an environmental permit or an exemption may need to be sought prior to the reuse of material.

AECOM does not currently have information regarding the regulatory status of these materials, how long they have been stockpiled or if there is a Material Management Plan in place.

It is important to note that stockpiled materials should be reused under an appropriate protocol, such as the DoWCoP, within 12 months or within a timeframe agreed upon with the regulator. If not used within this period, the materials may be considered abandoned and could potentially become an illegal waste deposit. Given the time the stockpile has been onsite, it is considered that an annual audit will be required in liaison with the regulator to confirm the material is still required.

9. Conclusions and Recommendations

9.1 Conclusions

AECOM has carried out a Land Contamination Preliminary Risk Assessment (PRA) for the Proposed Development for the Northwest Cambridge Masterplan. The Proposed Development is a phased mixed used development including the demolition of existing buildings and structures as described in Section 1.2. It is anticipated that the works will be carried out in three key phases over 10 years.

The underlying bedrock across most of the site is mapped as the Gault Formation, with the West Melbury Marl Chalk Formation present in the southeastern area. Head superficial deposits are shown to be present in parts of the northern, eastern and southern portions of the site, while they are absent in the remaining areas of the site. Although Made Ground is not mapped within the site boundary, Made Ground associated with historic and current land uses was proven by previous investigation and during the site walkover.

The Head superficial deposits at the site is classified as a Secondary Undifferentiated Aquifer and the Gault Formation bedrock aquifer is classified as an Unproductive Aquifer, with the West Melbury Marl Chalk Formation classified as Principal Aquifer. The site is not located within a SPZ, and there are no groundwater abstractions within 250m of the site. The closest surface water feature on site is Washpit Brook in the west of the site. A SSSI site (Traveller's Rest Pit) is present within the site boundary.

The review of historical maps from 1886 to the present indicates that the site has evolved from predominantly farmland and to a partially developed area with residential, agricultural, and educational buildings, many associated with the University of Cambridge. Key developments included the construction of the M11 along the western boundary, various expansions of Girton College, and the establishment of local infrastructure such as a garage, a BP petrol station, and an electric vehicle charging station. The Eddington and Ridgeway developments commenced around 2016, with subsequent expansions leading to the current site configuration.

The PRA concluded that the potential risks from land contamination to the identified receptors range from 'Very Low' to 'Moderate / Low'.

Aerial imagery and the site walkover identified stockpiles of soil materials onsite, understood to have been generated during Phase 1 of the North West Cambridge development and intended for reuse in the subsequent development phase. Given the amount of time the stockpiles have been present on site it is likely that associated regulatory approvals may need to be checked and confirmed prior to reuse.

9.2 Recommendations

Given the existing ground investigation data available for the site, AECOM recommends additional ground investigation (GI) at the detail design stage to confirm the low to moderate / low land contamination risks identified in the Preliminary Risk Assessment. The ground investigation should be designed with due consideration of the requirements of BS 10175:2011 (+A2 2017). In particular, the GI should be designed to target specific areas pertinent to the design of the Proposed Development.

It is recommended that the GI should:

- Investigate the nature, extent and contamination status of Made Ground and natural soils for the purpose of risk assessment to human health, groundwater and for preliminary waste classification;
- Soil sampling for laboratory chemical testing to provide information on potential ground contamination;
- Groundwater monitoring and sampling to establish the groundwater regime at the site and provide information on potential groundwater contamination;
- Ground gas and / or vapour monitoring to establish ground gas regime and assess the potential risk to the human receptors and Proposed Development from ground gas.

Prior to the GI design and preparation of the specifications, it is recommended that statutory utilities information is obtained and should be incorporated into the GI design. In addition, a detailed UXO

desk study should be commissioned to assess, and potentially zone, the hazard level on the site, as recommended in the Zetica PDSA report.

It would be prudent, where feasible, to bring together the geo-environmental and geotechnical requirements into a combined ground investigation.

Following the completion of the GI, it is recommended that an interpretative report comprising human health, controlled waters and ground gas risk assessments be undertaken. This will allow a refined risk assessment and CSM to be developed in accordance with LCRM methodology. The investigation will allow a quantitative assessment as to whether any of the potential risks identified in this study are present and are of material concern.

With regards to the stockpiled materials on site, if they are not currently classified as waste, it is recommended that appropriate documentation from an existing Material Management Plan that states regulatory status, suitability for re-use and certainty of re-use should be provided to the regulator. It is also recommended that an annual audit of the material be carried out in coordination with the regulator to confirm the materials are still required.

Appendix A - References

[1] BGS, “1:50 000 - England and Wales Sheet 188 - Cambridge - Soild and Drift,” 1981.

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[12] Environmental Protection Act, *Part 2A,* 1990.

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[14] Water Resources Act, 1991.

[15] Groundwater Regulations, 2009.

[16] Water Act, 2003.

[17] Contaminated Land (England) Statutory Guidance, 2012.

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[20] European Commission, “Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives,” 2008.

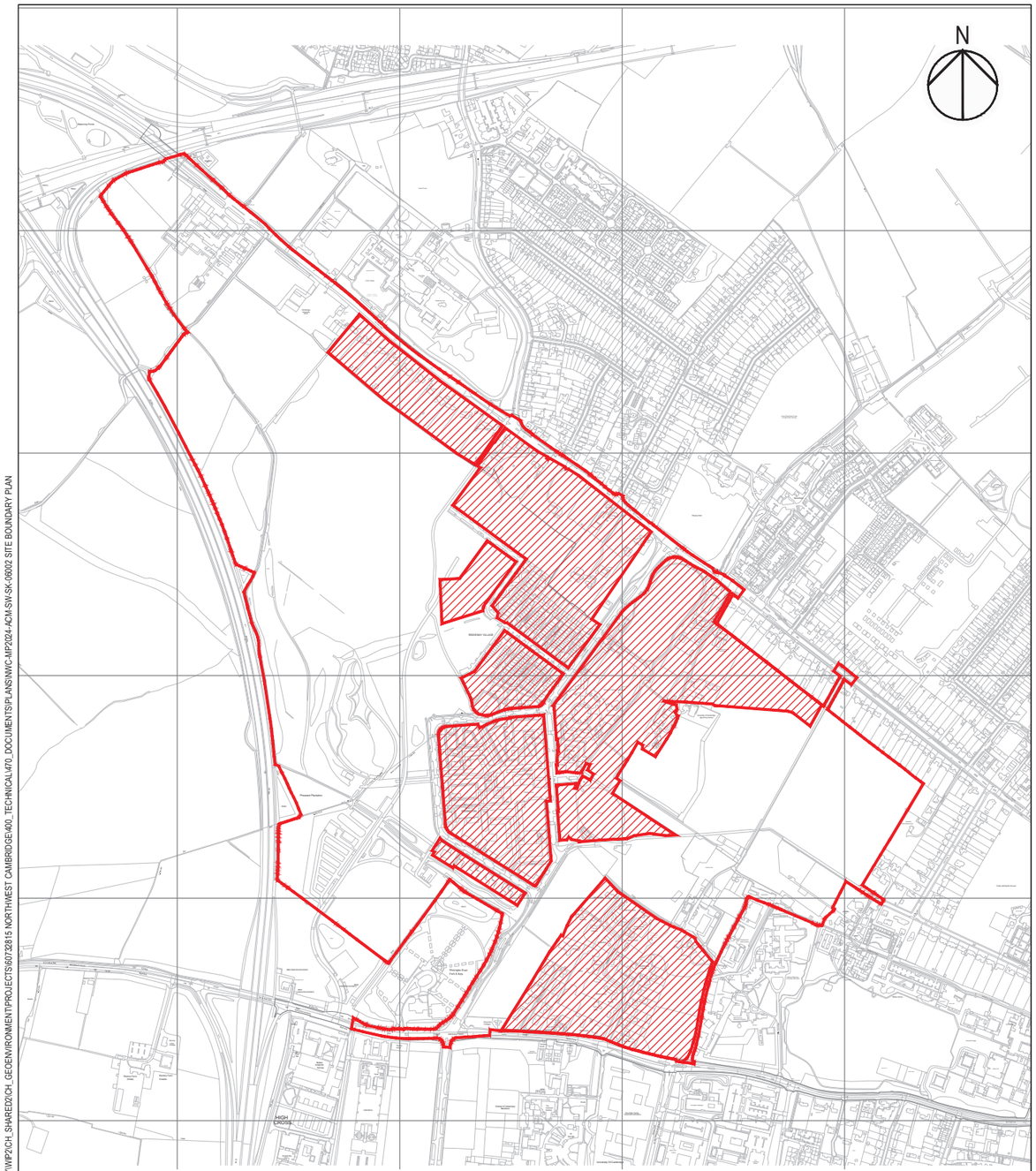
[21] Contaminated Land: Applications in Real Environments (CL:AIRE), “The Definition of Waste: Development Industry Code of Practice. Version 2,” 2011.

Appendix B – Drawings

Drawing Title	Purpose of issue	
NORTH WEST CAMBRIDGE SITE LOCATION	FOR INFORMATION	
	Drawn: AO	Checked: VO / Approved: VO
	Date: 10/24	Scale @ A4: 1:50,000 / Rev: -
	Drawing Number: NWC-MP2024-ACM-SW-SK-06001	

AECOM

Plot Date : 20 August 2025 13:31:49
File Name : \\NA.AECOMNET.COM\LFSIEMEA\CHESTERFIELD-UKDBY1\LEGACY\WIP2\CH_SHARED2\CH_GEOENVIRONMENT\PROJECTS\60732815 NORTHWEST CAMBRIDGE\400_TECHNICAL\470_DOCUMENTS\PLANS\NWC-MP2024-ACM-SW-SK-06001 SITE LOCATION PLAN



Project Title	Figure Title	Purpose of issue			
NORTH WEST CAMBRIDGE	SITE BOUNDARY PLAN	FOR INFORMATION			
Client		Designed: -	Drawn: AO	Checked: VO	Approved: VO / Date: 10/24
UNIVERSITY OF CAMBRIDGE		AECOM Internal Project No.: 60732815			
		Scale @ A3: AS SHOWN			

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Figure Number	Rev
NWC-MP2024-ACM-SW-SK-06002	-

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Appendix C – Risk Assessment Approach

C.1 Risk Assessment Principles

Current best practice recommends that the determination of hazards due to contaminated land is based on the principle of risk assessment, as outlined in the Environment Agency guidance on LCRM.

For a risk to be present, there must be a viable contaminant linkage; i.e. a mechanism whereby a source impacts on a sensitive receptor via a pathway.

Assessments of risks associated with each of these contaminant linkages are discussed in the following sections.

Using criteria broadly based on those presented in the CIRIA C552 guidance ("Contaminated land risk assessment, a guide to good practice"), the magnitude of the risk associated with potential contamination at the Site has been assessed. To do this an estimate is made of:

- The magnitude of the potential consequence (i.e. severity);
- The magnitude of probability (i.e. likelihood).

The severity of the risk is classified according to the criteria in Table 9-1.

C.2 Risk Assessment Framework

Table 9-1 Description of Severity of Risk

Severity	Definition	Examples (as defined by CIRIA C552)
Severe	Short term (acute) risk to human health likely to result in "significant harm" as defined by the Environmental Protection Act 1990, Part IIA. Short-term risk of pollution (note: Water Resources Act contains no scope for considering significance of pollution) of sensitive water resource. Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem, or organism for4ming part of such ecosystem (note: the definitions of eco9logical systems within the Draft Circular on Contaminated Land, DETR, 2000).	• High concentrations of cyanide on the surface of an informal recreation area. • Major spillage of contaminants from site into controlled water • Explosion, causing building collapse (can also equate to a short-term human health risk if buildings are occupied). –
Medium	Chronic damage to human health ("significant harm" as defined in DETR,2000). Pollution of sensitive water resources (note: Water Resources Act contains no scope for considering significanc3 of pollution) a significant change in a particular ecosystem, or organism forming part of such ecosystem (note: the definition of ecological systems system within Draft Circular on Contaminated Land, DTR, 2000)	• Concentration of a contaminant from site exceed the generic, or site-specific assessment criteria • Leaching of contaminants from a site to a major or minor aquifer. – Death of a species within a designated nature reserve
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings , structures and services ("significant harm" as defined in the Draft Circular on Contaminated Land, DETR, 2000). Damage to sensitive buildings/structures/services or the environment.	• Pollution of non-classified groundwater • Damage to building rendering it unsafe to occupy (e.g. foundation damage resulting in instability) –
Minor	Harm, although not necessarily significant harm, which may result in a financial loss, or expensive to resolve. Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc.) easily repairable effects of damage to buildings, structures and services	• The presence of contaminants at such concentrations that protective equipment is required during site works • The loss of plants in a landscaping scheme – Discolouration of concrete

The probability of the risk occurring is classified according to the criteria in Table 9-2.

Table 9-2 Likelihood of Risk Occurrence

Likelihood	Definition
High	There is a pollutant linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur Circumstance are such that an event is not inevitable, but possible in the short term and likely over the long term
Low	There is a pollution linkage and circumstances are possible under which an event could occur.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

An overall evaluation of the level of risk is gained from a comparison of the severity and probability, as shown in Table 9-3.

Table 9-3 Risk based on Comparison of Likelihood and Severity

Likelihood \ Severity	SEVERE	MEDIUM	MILD	MINOR
HIGH	Very High	High	Moderate	Moderate/Low
LIKELY	High	Moderate	Moderate/Low	Low
LOW	Moderate	Moderate/Low	Low	Very Low
UNLIKELY	Moderate/Low	Low	Very Low	Very Low

Further definitions of each risk category as well as potential action that might be required – as described within CIRIA C552 – are as follows:

Very high risk

There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening.

This risk, if realised, is likely to result in a substantial liability.

Urgent investigation (if not undertaken already) and remediation are likely to be required.

High risk

Harm is likely to arise to a designated receptor from an identified hazard.

Realisation of the risk is likely to present a substantial liability.

Urgent investigation (if not undertaken already) is likely to be required and remedial works may be necessary in the short term and are likely over the longer term.

Moderate risk

It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild.

Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability.

Some remediation works may be required in the longer term.

Low risk

It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.

Very low risk

There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

C.3 LCRM Assessment of Risk

In October 2020 (updated July 2023), the UK government issued new guidance on the evaluation and management of contaminated land; LCRM. Current contaminated land guidance LCRM (Environment Agency, 2023) categorises risk at Stage 1 Tier 1 as follows:

- Acceptable; and
- Unacceptable.

However, no framework for assessing the risk has been published to accompany the guidance, so the CIEH & NHBC R&D Publication 66 (2008) assessment framework constitutes best practice in this regard. To align the risk rankings in Section 8 with the LCRM rankings and with the Part 2A definitions, the following matrix has been utilised. This conversion is presented in Table 9-4.

Table 9-4 Conversion of LCRM Risk Categories

	Acceptable	Unacceptable
Very Low		
Low		
Moderate/Low		
Moderate*		
High		
Very High		

**This risk category spans both acceptable and unacceptable. This is intentional as it is this risk band that tends to have the greatest level of uncertainty associated with it. Acceptability will be dependent on site-specific circumstances and level of confidence in the available evidence.*

For a risk to be unacceptable, the contaminant linkage should be associated with at least a "medium" severity as defined in Table A4.3 in Annex 4 of R&D66 (CIEH and NHBC, 2008) and the probability should (in the majority of cases) be at least "likely" as defined in Table A4.4 of R&D66 (CIEH and NHBC, 2008)).

These risk categories represent the level of risk as it is currently understood from the information available at this time.

Appendix D – Groundsure Report

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

North West Cambridge

Order Details

Date: 05/08/2024

Your ref: 60732815

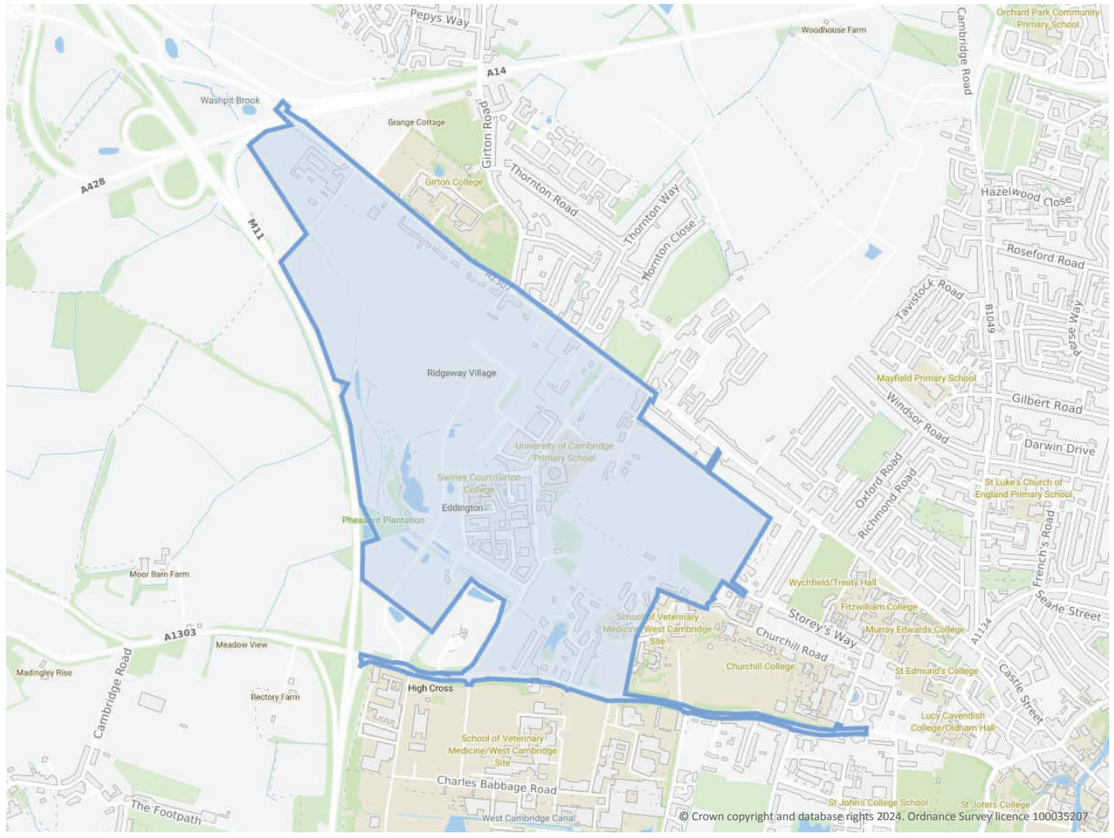
Our Ref: GS-P22-D3Z-URC-Z1V

Site Details

Location: 542605 260122

Area: 174.43 ha

Authority: South Cambridgeshire District Council ↗, Cambridge City Council ↗



Contact us with any questions at:
info@groundsure.com ↗
01273 257 755

Certified B Corporation

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
14 >	1.1 >	Historical industrial land uses >	28	3	18	22	-
17 >	1.2 >	Historical tanks >	3	3	6	11	-
18 >	1.3 >	Historical energy features >	5	5	10	17	-
20	1.4	Historical petrol stations	0	0	0	0	-
20 >	1.5 >	Historical garages >	4	0	0	7	-
21	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
22 >	2.1 >	Historical industrial land uses >	36	3	22	25	-
26 >	2.2 >	Historical tanks >	6	3	6	13	-
27 >	2.3 >	Historical energy features >	7	11	18	30	-
30	2.4	Historical petrol stations	0	0	0	0	-
30 >	2.5 >	Historical garages >	4	0	0	14	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
32	3.1	Active or recent landfill	0	0	0	0	-
32	3.2	Historical landfill (BGS records)	0	0	0	0	-
33	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
33 >	3.4 >	Historical landfill (EA/NRW records) >	1	0	0	0	-
33	3.5	Historical waste sites	0	0	0	0	-
33	3.6	Licensed waste sites	0	0	0	0	-
34 >	3.7 >	Waste exemptions >	8	0	95	25	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
43 >	4.1 >	Recent industrial land uses >	11	20	23	-	-
46 >	4.2 >	Current or recent petrol stations >	1	0	0	1	-
47	4.3	Electricity cables	0	0	0	0	-
47	4.4	Gas pipelines	0	0	0	0	-
47	4.5	Sites determined as Contaminated Land	0	0	0	0	-

47	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
48	4.7	Regulated explosive sites	0	0	0	0	-
48 >	4.8 >	Hazardous substance storage/usage >	0	0	0	1	-
48	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
48	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
49 >	4.11 >	Licensed pollutant release (Part A(2)/B) >	0	1	0	0	-
49 >	4.12 >	Radioactive Substance Authorisations >	1	6	14	1	-
52 >	4.13 >	Licensed Discharges to controlled waters >	1	0	0	3	-
53	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
53 >	4.15 >	Pollutant release to public sewer >	1	0	2	0	-
54 >	4.16 >	List 1 Dangerous Substances >	0	0	1	1	-
54 >	4.17 >	List 2 Dangerous Substances >	2	1	4	1	-
55 >	4.18 >	Pollution Incidents (EA/NRW) >	1	1	2	1	-
55	4.19	Pollution inventory substances	0	0	0	0	-
56	4.20	Pollution inventory waste transfers	0	0	0	0	-
56	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
57 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
59 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
61 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
65 >	5.4 >	Groundwater vulnerability- soluble rock risk >	Identified (within 0m)				
65	5.5	Groundwater vulnerability- local information	None (within 0m)				
66 >	5.6 >	Groundwater abstractions >	0	0	0	0	33
73 >	5.7 >	Surface water abstractions >	0	0	0	0	4
74 >	5.8 >	Potable abstractions >	0	0	0	0	1
75	5.9	Source Protection Zones	0	0	0	0	-
75	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
76 >	6.1 >	Water Network (OS MasterMap) >	118	24	27	-	-

Groundsure LOCATION INTELLIGENCE
North West Cambridge
Ref: GS-P22-D3Z-URC-Z1V
Your ref: 60732815
Grid ref: 542605 260122

90 >	6.2 >	Surface water features >	1	14	11	-	-
90 >	6.3 >	WFD Surface water body catchments >	3	-	-	-	-
90 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
91	6.5	WFD Groundwater bodies	0	-	-	-	-

Page	Section	River and coastal flooding >	On site	0-50m	50-250m	250-500m	500-2000m
92 >	7.1 >	Risk of flooding from rivers and the sea >	High (within 50m)				
93	7.2	Historical Flood Events	0	0	0	-	-
93	7.3	Flood Defences	0	0	0	-	-
93	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
93	7.5	Flood Storage Areas	0	0	0	-	-
94 >	7.6 >	Flood Zone 2 >	Identified (within 50m)				
95	7.7	Flood Zone 3	None (within 50m)				

Page	Section	Surface water flooding >
96 >	8.1 >	Surface water flooding >	1 in 30 year, Greater than 1.0m (within 50m)

Page	Section	Groundwater flooding >
98 >	9.1 >	Groundwater flooding >	High (within 50m)

Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
99 >	10.1 >	Sites of Special Scientific Interest (SSSI) >	1	0	0	0	2
100	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
100	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
100	10.4	Special Protection Areas (SPA)	0	0	0	0	0
100	10.5	National Nature Reserves (NNR)	0	0	0	0	0
101 >	10.6 >	Local Nature Reserves (LNR) >	0	0	0	0	5
101 >	10.7 >	Designated Ancient Woodland >	0	0	0	0	1
102	10.8	Biosphere Reserves	0	0	0	0	0
102	10.9	Forest Parks	0	0	0	0	0
102	10.10	Marine Conservation Zones	0	0	0	0	0
102 >	10.11 >	Green Belt >	2	0	0	1	4
103	10.12	Proposed Ramsar sites	0	0	0	0	0

103	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
103	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
103	10.15	Nitrate Sensitive Areas	0	0	0	0	0
104 >	10.16 >	Nitrate Vulnerable Zones >	1	0	1	0	0
105 >	10.17 >	SSSI Impact Risk Zones >	7	-	-	-	-
107 >	10.18 >	SSSI Units >	2	0	0	0	2
Page	Section	Visual and cultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
109	11.1	World Heritage Sites	0	0	0	-	-
110	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
110	11.3	National Parks	0	0	0	-	-
110 >	11.4 >	Listed Buildings >	5	3	21	-	-
112 >	11.5 >	Conservation Areas >	3	0	1	-	-
112	11.6	Scheduled Ancient Monuments	0	0	0	-	-
112 >	11.7 >	Registered Parks and Gardens >	0	0	2	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
114 >	12.1 >	Agricultural Land Classification >	Grade 2 (within 250m)				
115	12.2	Open Access Land	0	0	0	-	-
116 >	12.3 >	Tree Felling Licences >	9	10	16	-	-
117 >	12.4 >	Environmental Stewardship Schemes >	0	2	1	-	-
118 >	12.5 >	Countryside Stewardship Schemes >	0	0	1	-	-
Page	Section	Habitat designations >	On site	0-50m	50-250m	250-500m	500-2000m
119 >	13.1 >	Priority Habitat Inventory >	20	7	16	-	-
121	13.2	Habitat Networks	0	0	0	-	-
121	13.3	Open Mosaic Habitat	0	0	0	-	-
122	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
123 >	14.1 >	10k Availability >	Identified (within 500m)				
124 >	14.2 >	Artificial and made ground (10k) >	3	1	2	3	-
126 >	14.3 >	Superficial geology (10k) >	2	0	3	1	-

Groundsure LOCATION INTELLIGENCE
North West Cambridge
Ref: GS-P22-D3Z-URC-Z1V
Your ref: 60732815
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127	14.4	Landslip (10k)	0	0	0	0	-
128 >	14.5 >	Bedrock geology (10k) >	4	0	0	1	-
129	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
130 >	15.1 >	50k Availability >	Identified (within 500m)				
131	15.2	Artificial and made ground (50k)	0	0	0	0	-
131	15.3	Artificial ground permeability (50k)	0	0	-	-	-
132 >	15.4 >	Superficial geology (50k) >	1	0	2	1	-
133 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
133	15.6	Landslip (50k)	0	0	0	0	-
133	15.7	Landslip permeability (50k)	None (within 50m)				
134 >	15.8 >	Bedrock geology (50k) >	2	0	0	1	-
135 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
135	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
136 >	16.1 >	BGS Boreholes >	16	21	53	-	-
Page	Section	Natural ground subsidence >					
141 >	17.1 >	Shrink swell clays >	Moderate (within 50m)				
143 >	17.2 >	Running sands >	Very low (within 50m)				
145 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
146 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
147 >	17.5 >	Landslides >	Low (within 50m)				
149 >	17.6 >	Ground dissolution of soluble rocks >	Very low (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
151 >	18.1 >	BritPits >	2	1	1	0	-
152 >	18.2 >	Surface ground workings >	23	3	17	-	-
154	18.3	Underground workings	0	0	0	0	0
154	18.4	Underground mining extents	0	0	0	0	-
155	18.5	Historical Mineral Planning Areas	0	0	0	0	-

155 >	18.6 >	Non-coal mining >	0	0	0	1	0
155	18.7	JPB mining areas	None (within 0m)				
155	18.8	The Coal Authority non-coal mining	0	0	0	0	-
156 >	18.9 >	Researched mining >	2	0	0	1	-
156	18.10	Mining record office plans	0	0	0	0	-
156	18.11	BGS mine plans	0	0	0	0	-
157	18.12	Coal mining	None (within 0m)				
157	18.13	Brine areas	None (within 0m)				
157	18.14	Gypsum areas	None (within 0m)				
157	18.15	Tin mining	None (within 0m)				
157	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes >	On site	0-50m	50-250m	250-500m	500-2000m
158	19.1	Natural cavities	0	0	0	0	-
159 >	19.2 >	Mining cavities >	3	0	0	1	1
159	19.3	Reported recent incidents	0	0	0	0	-
159	19.4	Historical incidents	0	0	0	0	-
160	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
161 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
163 >	21.1 >	BGS Estimated Background Soil Chemistry >	50	0	-	-	-
165	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
165	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
166	22.1	Underground railways (London)	0	0	0	-	-
166	22.2	Underground railways (Non-London)	0	0	0	-	-
166	22.3	Railway tunnels	0	0	0	-	-
166	22.4	Historical railway and tunnel features	0	0	0	-	-
166	22.5	Royal Mail tunnels	0	0	0	-	-

Groundsure LOCATION INTELLIGENCE
North West Cambridge
Ref: GS-P22-D3Z-URC-Z1V
Your ref: 60732815
Grid ref: 542605 260122

167	22.6	Historical railways	0	0	0	-	-
167	22.7	Railways	0	0	0	-	-
167	22.8	Crossrail 1	0	0	0	0	-
167	22.9	Crossrail 2	0	0	0	0	-
167	22.10	HS2	0	0	0	0	-