

# KNELLER HALL, TWICKENHAM

## Ecology Survey Report

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Ecology Survey Report  
Kneller Hall Twickenham  
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## REPORT

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Prepared by:

**RPS**

Prepared for:

**DWD**

## EXECUTIVE SUMMARY

- RPS Ecology was commissioned by DWD to undertake Phase 2 ecology surveys of land within the Kneller Hall, Twickenham TW2 7DN (OS Grid Reference TQ 14692 74194).
- A Preliminary Ecological Appraisal (PEA) undertaken by RPS in February 2022, identified habitats present on site to support roosting bats; as well as recommending more detailed botanical survey work be undertaken.
- The results of the botanical survey indicated that there were some areas of semi-improved acid grassland on the site, which, would not be classified as being Biodiversity Action Plan (BAP) habitats. Notwithstanding this, it is recognised that this habitat is likely to be scarce within the local area, and so it is considered that it would be beneficial to seek to conserve this habitat on the site, where possible.
- The bat emergence surveys did not record any bats roosting within the buildings on site, and therefore, there are no constraints to the demolition of these buildings. However, recommendations have been made to ensure that the site is enhanced for roosting bats, post-development.

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# 1 INTRODUCTION

## 1.1 Background to the Study

- 1.1.1 RPS Ecology was commissioned by DWD to undertake ecology surveys of land within the Kneller Hall, Twickenham, TW2 7DN (OS Grid Reference TQ 14692 74194).
- 1.1.2 The proposals involve the demolition of a number of the existing buildings on site, and the creation of a new school and multi-use open space for students and community groups.
- 1.1.3 A Preliminary Ecological Appraisal (PEA) and background data search of the site was undertaken in February 2022 (RPS, 2022). This survey found the site to comprise a number of low quality habitats (including grasslands, hardstanding, buildings, ornamental shrub planting and scattered trees).
- 1.1.4 Based on these results, further surveys were recommended, including an NVC botanical survey, and bat emergence / re-entry surveys of the buildings to be demolished (which were identified as having roosting features).
- 1.1.5 The bat emergence surveys were undertaken between May – August 2022, with the botanical survey undertaken in June 2022. This report presents the results of these surveys.

## 1.2 Site Description

- 1.2.1 The site is located at Kneller Road, Twickenham, TW2 7DN. The National Grid coordinates for the centre of the site are TQ146741.
- 1.2.2 The site comprises largely hardstanding and school buildings that are no longer in use, with areas of amenity grassland surrounding most buildings, and an area of scattered trees on improved grassland along the northern site boundary. In the centre of the site there was some ornamental planting and introduced shrub beds surrounding a small pond.
- 1.2.3 The site is located in a predominantly suburban area, comprised of rows of semi-detached and terraced 1930's housing. Murray Park and Gainsborough Gardens recreation ground offer open green space nearby, and further afield, the area is characterised by Twickenham stadium and the River Thames.

## 1.3 Aims and Objectives

### NVC botanical survey

- 1.3.1 The objective of the NVC botanical survey was identify the habitats currently present within and around the site (to NVC standard) in order to obtain baseline ecological information for the site. It also aimed to establish whether any of the habitats on site should be classified as being Biodiversity Action Plan (BAP) habitats, in line with the relevant guidance.

### Bat surveys

- 1.3.2 The objective of the study was to determine the current use of the site by bats, to inform the future development of the site. The study aimed to determine the potential impacts (if any) of the development by establishing:
- Whether any bats were roosting on site.
  - The general level of bat activity on the site.
  - The range of species using the site.
  - The best course of action to minimise the impacts of the development on the local bat population.

- 1.3.3 All British bat species are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981, as amended. All bat species are also included on Schedule 2 of the Conservation of Species and Habitats Regulations 2017. Taken together, these pieces of legislation make it an offence to:
- Intentionally or recklessly kill, injure or capture bats.
  - Deliberately or recklessly disturb bats (whether in a roost or not).
  - Damage, destroy or obstruct access to bat roosts.
- 1.3.4 A roost is defined as 'any structure or place which [a bat] uses for shelter or protection'. As bats tend to reuse the same roosts, it is considered within the legal opinion that a roost is protected whether or not bats are present at the time of the survey.
- 1.3.5 Barbastelle bats *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteinii*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, greater horseshoe bat *Rhinolophus ferrumequinum* and lesser horseshoe bat *Rhinolophus hipposideros* are also listed as being species of principle importance to the conservation of biodiversity in England under Section 41 of the Natural Environment and Rural Communities Act 2006.
- 1.3.6 Barbastelle, Bechstein's, greater horseshoe and lesser horseshoe bats are also listed on Annex II of the Habitats Directive. As such a site may be designated a Special Area of Conservation (SAC) due to the presence of these species.

## 2 METHODS

### 2.1 Botanical Survey

- 2.1.1 A full botanical survey has been undertaken of the grassland on site. The survey was completed on 9<sup>th</sup> June, 2022, by a suitably qualified botanist, P.A. Budd, BSc, MCIEEM. An attempt was made to establish whether any or all the grassland here is Lowland Dry Acidic Grassland as defined by DEFRA (2022).
- 2.1.2 The site was initially separated into homogenous stands, within with the species distribution and composition was relatively uniform. The surveyor then assessed each stand for the species present and their level of dominance.
- 2.1.3 Computer analysis of the data recorded was subsequently carried out using a Modular Analysis of Vegetation Information System (MAVIS) to assess the species composition for each stand and suggest likely NVC classifications for the floristic communities present.
- 2.1.4 These suggestions were reviewed by the surveyor and the most appropriate classification was attributed to each stand as per Rodwell (1992 & 2000).

### 2.2 Bat Surveys

#### Emergence / Re-entry Surveys

- 2.2.1 Twelve buildings with suitable roosting features are to be potentially impacted by the development. Therefore, these buildings was subject to emergence / re-entry surveys. In order to comply with best practice guidelines (Collins, 2016) three emergence surveys were carried out on buildings considered to have high suitability, two emergence surveys for buildings considered to have moderate suitability and one emergence survey for buildings considered to have low suitability. Surveys were / will be completed between May – August 2022.
- 2.2.2 The aim of these surveys was to determine the use of the buildings (if any) by roosting bats, the species assemblage on site and the egress locations of any bats emerging from the buildings.
- 2.2.3 Observations were made outside the buildings from where it was considered bats might emerge. The dusk survey commenced 15 minutes before sunset, and lasted for approximately 120 minutes, to record any bats that may emerge from the buildings.
- 2.2.4 Time-expansion bat detectors (Pettersson D 240x, EM3+ and Elkon Batlogger) and frequency division bat detectors (Batbox Duet) were used to record bat echolocation calls of any emerging bats and identify species where possible. Recordings were made using Edirol recording devices (R-09HR and R-05) and built-in recorders within the detectors, which were later analysed using the computer software 'Kaleidoscope'.
- 2.2.5 Figure 2.1 shows the location of the buildings.

### 2.3 Constraints

- 2.3.1 There were no perceived constraints to either the botanical or the bat emergence surveys, and so, the results are considered valid to support the planning application.

## 3 RESULTS

### 3.1 Botanical Surveys

#### Semi-improved acid grassland (Area A)

- 3.1.1 A large area of grassland to the east of Kneller Hall appeared to be regularly used for recreation/amenity/sports uses. There are rugby posts on the grassland and we understand from our client that this grassland was used for many years as the previous site occupier's playing fields, the Royal Military School of Music.
- 3.1.2 This area (see Table 1, below) was found to comprise 42 species of vascular plant, of which creeping bent-grass *Agrostis stolonifera* and red fescue *Festuca rubra agg.*, were co-dominant and three species (lawn daisy *Bellis perennis*, yorkshire fog *Holcus lanatus* and cat's-ear *Hypochaeris radicata*) were abundant.
- 3.1.3 This vegetation type corresponds to an NVC community of mesotrophic grassland and was noted to be closest to MG5 *Cynosurus cristatus* – *Centaurea nigra* grassland. Since most lowland dry acidic grassland Priority Habitat is of NVC community U (Acid Grassland) this would not fit such a category, based on the species composition.
- 3.1.4 This is further evidenced by the lack of *Agrostis* species other than *A. stolonifera* and the scarcity of sheep's sorrel *Rumex acetosella* and the absence of both heath bedstraw *Galium saxatile* and tormentil *Potentilla erecta*.
- 3.1.5 Target note (TN) 1 on Figure 3.1 illustrates the areas which were slightly more species rich, in their composition.
- 3.1.6 Nevertheless, Area A, although previously classified as amenity grassland could convincingly be described as semi-improved acid grassland.

**Table 1: DAFOR Table for Area A**

Taxon	Vernacular	DAFOR rating
<i>Agrostis stolonifera</i>	Creeping Bent-grass	D
<i>Festuca rubra agg.</i>	Red Fescue	D
<i>Bellis perennis</i>	Lawn Daisy	A
<i>Holcus lanatus</i>	Yorkshire Fog	A
<i>Hypochaeris radicata</i>	Cat's-ear	A
<i>Achillea millefolium</i>	Yarrow	F
<i>Lolium perenne</i>	Perennial Rye Grass	F
<i>Poa pratensis</i>	Smooth Meadow-grass	F
<i>Ranunculus repens</i>	Creeping Buttercup	F
<i>Stellaria graminea</i>	Lesser Stitchwort	F
<i>Trifolium repens</i>	White Clover	F
<i>Cerastium fontanum</i>	Common Mouse-ear	O
<i>Geranium molle</i>	Dove's-foot Cranesbill	O
<i>Lotus corniculatus</i>	Bird's-foot Trefoil	O
<i>Luzula campestris</i>	Field Wood-rush	O
<i>Plantago coronopus</i>	Buck's-horn Plantain	O
<i>Plantago lanceolata</i>	Ribwort Plantain	O
<i>Plantago major</i>	Rat's-tail Plantain	O
<i>Rumex acetosella</i>	Sheep's Sorrel	O
<i>Scorzonerooides autumnalis</i>	Autumn Hawkbit	O



Taxon	Vernacular	DAFOR rating
<i>Trifolium dubium</i>	Lesser Trefoil	O
<i>Veronica arvensis</i>	Wall Speedwell	O*
<i>Veronica chamaedrys</i>	Germander Speedwell	O
<i>Anthoxanthum odoratum</i>	Sweet Vernal Grass	R
<i>Centaurea nigra</i>	Knapweed	R
<i>Cerastium glomeratum</i>	Sticky Mouse-ear	R*
<i>Conyza sp.</i>	Fleabane sp.	R*
<i>Crepis vesicaria</i>	Beaked Hawksbeard	R*
<i>Erodium cicutarium</i>	Common Stork's-bill	R*
<i>Geranium dissectum</i>	Cut-leaved Cranesbill	R
<i>Hordeum murinum</i>	Wall Barley	R
<i>Lotus pedunculatus</i>	Greater Bird's-foot Trefoil	R
<i>Medicago lupulina</i>	Black Medick	R
<i>Pilosella officinarum</i>	Mouse-ear Hawkweed	R
<i>Potentilla repens</i>	Creeping Cinquefoil	R
<i>Prunella vulgaris</i>	Self-heal	R
<i>Rumex acetosa</i>	Common Sorrel	R
<i>Senecio jacobaea</i>	Common Ragwort	R
<i>Sonchus oleraceus</i>	Smooth Sow-thistle	R
<i>Spergularia rubra</i>	Sand Spurrey	R
<i>Taraxacum sp.</i>	Dandelion	R
<i>Veronica serpyllifolia</i>	Thyme-leaved Speedwell	R
<i>Vicia hirsuta</i>	Hairy Tare	R

DAFOR: D: Dominant; A: Abundant; F: Frequent; O: Occasional; R: Rare.

## Semi-improved acid grassland (Area B)

- 3.1.7 As with the semi-improved grassland in Area A, creeping bent-grass *Agrostis stolonifera* and red fescue *Festuca rubra agg.*, were co-dominant. Cat's-ear *Hypochaeris radicata* was abundant here but Yorkshire fog *Holcus lanatus* was less frequent and lesser stitchwort *Stellaria graminea* and germander speedwell *Veronica chamaedrys* were abundant instead.
- 3.1.8 As for Area A, this area was mesotrophic grassland and is closest to MG5 *Cynosurus cristatus* – *Centaurea nigra* grassland, even though both knapweed *Centaurea nigra* and crested dog's-tail grass *Cynosurus cristatus* were absent.
- 3.1.9 For the same reasons, Area B is also not classified as lowland dry acidic grassland priority habitat.

**Table 2 – DAFOR Table for Area B**

Taxon	Vernacular	DAFOR rating
<i>Agrostis stolonifera</i>	Creeping Bent-grass	D
<i>Festuca rubra agg.</i>	Red Fescue	D
<i>Hypochaeris radicata</i>	Cat's-ear	A
<i>Stellaria graminea</i>	Lesser Stitchwort	A
<i>Veronica chamaedrys</i>	Germander Speedwell	A
<i>Achillea millefolium</i>	Yarrow	F
<i>Carex divulsa</i>	Grey Sedge	F
<i>Cerastium fontanum</i>	Common Mouse-ear	F
<i>Holcus lanatus</i>	Yorkshire Fog	F

Taxon	Vernacular	DAFOR rating
<i>Potentilla repens</i>	Creeping Cinquefoil	F
<i>Tragopogon pratensis</i>	Goatsbeard	F
<i>Arrhenatherum elatior</i>	False Oat-grass	O
<i>Bellis perennis</i>	Lawn Daisy	O
<i>Dactylis glomerata</i>	Cock's-foot Grass	O
<i>Elytrigia repens</i>	Common Couch-grass	O
<i>Geranium molle</i>	Dove's-foot Cranesbill	O
<i>Lolium perenne</i>	Perennial Rye Grass	O
<i>Luzula campestris</i>	Field Wood-rush	O
<i>Medicago lupulina</i>	Black Medick	O
<i>Ranunculus bulbosus</i>	Bulbous Buttercup	O
<i>Senecio jacobaea</i>	Common Ragwort	O
<i>Taraxacum sp.</i>	Dandelion	O
<i>Bromus hordeaceus</i>	Soft Brome	R
<i>Cirsium arvense</i>	Creeping Thistle	R
<i>Cirsium vulgare</i>	Spear Thistle	R
<i>Galium aparine</i>	Goosegrass (Cleavers)	R
<i>Geranium dissectum</i>	Cut-leaved Cranesbill	R
<i>Glechoma hederacea</i>	Ground Ivy	R
<i>Lamium album</i>	White Deadnettle	R*
<i>Phleum bertelonii</i>	Small Timothy Grass	R
<i>Plantago lanceolata</i>	Ribwort Plantain	R
<i>Poa trivialis</i>	Rough Meadow-grass	R
<i>Sonchus asper</i>	Prickly Sow-thistle	R*
<i>Sonchus oleraceus</i>	Smooth Sow-thistle	R*

DAFOR: D: Dominant; A: Abundant; F: Frequent; O: Occasional; R: Rare. (\*): Plants associated with bare ground so no grassland plants

## Target Notes 2 to 8

- 3.1.10 **2:** These three pockets of grassland in the centre of the Kneller Hall site were regularly mown and comprised a similar species composition to Areas A & B with a dominant *Agrostis stolonifera* – *Festuca rubra* agg., community and frequent *Stellaria graminea* and *Veronica chamaedrys*.
- 3.1.11 Four interesting species of clover were locally abundant in these areas, namely burrowing clover *Trifolium subterraneum*, clustered clover *T. glomeratum*, and knotted clover *T. striatum*. *T. glomeratum*, which are known to be scarce in the London area.
- 3.1.12 Although these areas are cannot be classified as lowland dry acidic grassland priority habitat, for the same reasons as described above, their value as habitat was enhanced by the presence of these clovers and should be described, as semi-improved grassland.
- 3.1.13 **2B:** A continuation of the above, but with field madder *Sherardia arvensis* present, which indicated that this corner of grassland may be less acidic than elsewhere.
- 3.1.14 **3:** Again, similar grassland to that described under target note 2 but with little or no *Agrostis* and therefore dominated by *Festuca rubra*. There was some field woodrush *Luzula campestris* and lady's bedstraw *Galium verum* which were not recorded elsewhere on the site. The grassland still probably best fits the MG5 community and is again not a priority habitat.

- 3.1.15 **4:** These pockets of grassland cover significant areas of the west and centre of the site and are regularly cut. These areas were more improved with few forbs and dominated by *Agrostis stolonifera*, *Festuca rubra agg.*, and *Holcus lanatus*. This area is best described as improved grassland and again, would not classify as a priority habitat.
- 3.1.16 **5:** These two small areas of regularly cut grass towards the west of the site are also classified as improved grassland, but comprise a different composition of grass species, indicating a different history to the other areas on the site. *Agrostis stolonifera* and *Holcus lanatus* were still present here, but no *Festuca sp.*. Instead, there was abundant cock's-foot *Dactylis glomerata*, perennial rye grass *Lolium perenne* and smooth meadow-grass *Poa pratensis*. A few common forbs were present, especially yarrow *Achillea millefolium*.
- 3.1.17 **6:** The grassland here was very similar to that described under target note 5.
- 3.1.18 **7:** This area was very similar to that described under Area B, it is open to the sun and has not been cut recently. This patch was dominated with cat's-ear *Hypochaeris radicata*.
- 3.1.19 **8:** Very similar to the area described under target note 4, but with several species of grass and fewer forbs present. It can be best classified as improved grassland, and so not a priority habitat.

## 3.2 Bat Emergence / Re-entry surveys

3.2.1 Bat activity can be strongly dependent on weather conditions. Surveys were therefore only carried out in favourable conditions when bat activity was deemed to be likely (dry, little to no wind and Temperatures greater than 10°C). Table 3 summarises the weather during each survey.

**Table 3 - Weather conditions during bat emergence surveys at Kneller Hall, Twickenham, TW2 7DN.**

Survey date	Building	Dusk / dawn	Temp°C	Sunset / Sunrise Time	Weather
23/05/2022	<b>B13</b>	Dusk	14	20:58	No rain, wind 1/8, cloud 7/8
23/05/2022	<b>B8</b>	Dusk	14	20:58	No rain, wind 1/8, cloud 7/8
30/05/2022	<b>B15</b>	Dusk	14	21:05	No rail, wind 0/8, cloud 7/8
30/05/2022	<b>B16</b>	Dusk	14	21:05	No rain, wind 0/8, cloud 7/8
08/06/2022	<b>B1</b>	Dusk	17	21:15	No rain, wind 0/8, cloud 7/8
13/06/2022	<b>B8</b>	Dusk	19	21:13	No rain, wind 0/8, cloud 0/8
13/06/2022	<b>B9</b>	Dusk	19	21:13	No rain, wind 0/8, cloud 0/8
14/06/2022	<b>B4</b>	Dusk	21	21:19	No rain, wind 0/8, cloud 0/8
29/06/2022	<b>B10</b>	Dusk	17	21:21	Light drizzle towards end, wind 2/8, cloud 8/8

Survey date	Building	Dusk / dawn	Temp°C	Sunset / Sunrise Time	Weather
11/07/2022	<b>B0</b>	Dusk	26	21:15	No rain, wind 0/8, cloud 5/8
11/07/2022	<b>B6</b>	Dusk	26	21:15	No rain, wind 0/8, cloud 5/8
11/07/2022	<b>B8</b>	Dusk	26	21:15	No rain, wind 0/8, cloud 5/8
11/07/2022	<b>B11</b>	Dusk	26	21:15	No rain, wind 0/8, cloud 5/8
22/07/2022	<b>B13</b>	Dawn	19	05:08	No rain, wind 1/8, cloud 8/8
02/08/2022	<b>B4</b>	Dawn	19	05:23	No rain, wind 1/8, cloud 6/8
16/08/2022	<b>B4</b>	Dusk	21	20:22	No rain, wind 0/8, cloud 6/8
17/08/2022	<b>B8</b>	Dawn	20	05:47	No rain, wind 0/8, cloud 1/8
17/08/2022	<b>B6</b>	Dusk	18	20:20	No rain, wind 1/8, cloud 0/8
17/08/2022	<b>B13</b>	Dusk	18	20:20	No rain, wind 1/8, cloud 0/8

### Bat emergence survey, 23<sup>rd</sup> May 2022

- 3.2.2 The survey began at 20:45 and finished at 22:30. Two surveyors observed building B13 and two surveyors observed B8.
- 3.2.3 No bats were recorded emerging from either of the buildings. However, a number of bat species (mostly common and soprano pipistrelles) were recorded commuting and foraging across the site, with activity mostly focused along the treelines around the site.

### Bat emergence survey, 30<sup>th</sup> May 2022

- 3.2.4 The survey began at 21:00 and finished at 22:45. Two surveyors observed building B15, and four surveyors observed B16.
- 3.2.5 No bats were recorded emerging from either of the buildings. However, a number of bat species (mostly common and soprano pipistrelles) were recorded commuting and foraging across the site, with activity mostly focused along the treelines around the site.

### Bat emergence survey, 8<sup>th</sup> June 2022

- 3.2.6 The survey began at 21:00 and finished at 22:45. Two surveyors observed the buildings (B0 and B1).

- 3.2.7 No bats were recorded emerging from the building; however, as with previous surveys, a number of bats were recorded commuting and foraging across the site, with activity dominated by common pipistrelles.

### **Bat emergence survey, 13<sup>th</sup> June 2022**

- 3.2.8 The survey began at 20:43 and finished at 20:28. One surveyor observed B8 and another surveyor observed B9.
- 3.2.9 No bats were recorded emerging from either of the buildings on site. However, as with previous surveys, a number of bats were recorded commuting and foraging across the site, with activity dominated by common pipistrelles.

### **Bat emergence survey, 14<sup>th</sup> June 2022**

- 3.2.10 The survey began at 21:03 and finished at 22:48. Two surveyors observed B4.
- 3.2.11 No bats were recorded emerging from the building. However, as with previous surveys, a number of bats were recorded commuting and foraging across the site, with activity dominated by common pipistrelles.

### **Bat emergence survey, 29<sup>th</sup> June 2022**

- 3.2.12 The survey began at 21:06 and finished at 22:51. Two surveyors observed B10.
- 3.2.13 No bats were recorded emerging from the building. However, as with previous surveys, a number of noctule and common pipistrelle bats were recorded commuting and foraging across the site

### **Bat emergence survey, 11<sup>th</sup> July 2022**

- 3.2.14 The survey began at 21:00 and finished at 22:45. One surveyor observed B0, one surveyor observed B6, one surveyor observed B8, and a final surveyor observed B11.
- 3.2.15 No bats were recorded emerging from the building. However, as with previous surveys, a number of bats were recorded commuting and foraging across the site, with activity dominated by common pipistrelles.

### **Bat re-entry survey, 20<sup>th</sup> July 2022**

- 3.2.16 The survey began at 03:38 and finished at 05:23. Two surveyors observed B13.
- 3.2.17 No bats were recorded re-entering the building. However, a few bats were recorded commuting across the site, with activity dominated by common pipistrelles.

### **Bat re-entry survey, 2<sup>nd</sup> August 2022**

- 3.2.18 The survey began at 03:53 and finished at 05:38. Two surveyors observed B4.
- 3.2.19 No bats were recorded re-entering the building. However, a few bats were recorded commuting across the site, with activity dominated by common and soprano pipistrelles.

### **Bat emergence survey, 16<sup>th</sup> August 2022**

- 3.2.20 The survey began at 20:07 and finished at 21:52. Two surveyors observed B4.
- 3.2.21 No bats were recorded emerging from the building. However, as with previous surveys, a number of bats were recorded commuting and foraging across the site, with activity dominated by common pipistrelles.

### **Bat re-entry survey, 17<sup>th</sup> August 2022**

- 3.2.22 The survey began at 04:15 and finished at 06:05. Two surveyors observed B8.
- 3.2.23 No bats were recorded re-entering the building. However, as with previous surveys, a few bats were recorded commuting across the site, with activity dominated by noctules.

### **Bat emergence survey, 17<sup>th</sup> August 2022**

- 3.2.24 The survey began at 20:05 and finished at 21:50. Two surveyors observed B6 and two surveyors observed B13.
- 3.2.25 No bats were recorded emerging from the building. However, as with previous surveys, a number of bats were recorded commuting and foraging across the site, with activity dominated by common pipistrelles.

## 4 EVALUATION

### 4.1 Botanical

#### Semi-improved acid grassland

- 4.1.1 The majority of the semi-improved acid grassland across the site does not convincingly correspond to any specific NVC category, though it does have affinities for the NVC MG5 *Cynosurus cristatus* – *Centaurea nigra* grassland. None of these communities are listed in the UK BAP or as a Priority Habitat, and therefore, no mitigation would be strictly required for their loss.
- 4.1.2 Notwithstanding this, it is recognised that this habitat is likely to be scarce within the local area, and so it is considered that it would be beneficial to seek to conserve this habitat on the site. Therefore, Area B will be conserved in its existing location and areas of this habitat located in Area A, which is where the existing and proposed playing fields are located, are to be retained, where possible, particularly around the boundaries of the newly proposed sports fields.

#### Bats

- 4.1.3 No bats were recorded emerging from any of the buildings, and therefore, they are not considered to be a constraint upon the development of the site.
- 4.1.4 Notwithstanding this, recommendations to ensure the site continues to offer suitable habitat for roosting bats are made in Section 5.

## 5 CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Botanical

- 5.1.1 Although the grassland on site was not considered to be a Biodiversity Action Plan (BAP) Habitat, it is considered to be of at least some value.
- 5.1.2 It is recognised that this habitat is likely to be scarce within the local area, and so it is considered that it would be beneficial to seek to conserve this habitat on the site. Therefore, Area B will be conserved in its existing location and areas of this habitat located in Area A, which is where the existing and proposed playing fields are located, are to be retained and enhanced, where possible, particularly around the boundaries of the newly proposed sports fields.
- 5.1.3 For the parts of Area A that it is not possible to retain the acid grassland in its existing location, the enhancement strategy proposes to translocate more species- rich acid grassland, that cannot be retained in its current position, to species- poor areas to enhance these.
- 5.1.4 Details of the on-going and longer term management can be found in the Ecological Enhancement Strategy for the site.

### 5.2 Bats

- 5.2.1 No bats were recorded emerging from the building, and therefore, roosting bats are not considered a constraint upon the re-development of the site.
- 5.2.2 To enhance the wider site with respect to roosting bats, bat boxes should be installed on any of the mature retained trees around the site boundaries.
- 5.2.3 These could include the Schwegler 1FR Bat Tube, and Schwegler 2FN bat boxes. The following guidelines should be followed while siting bat boxes:
- Site at least 4 m above the ground. A box 5-6 metres up from the ground will potentially attract more species;
  - The entrance should face SW to SE;
  - Do not use paint or preservatives on bat boxes. This may discourage or even kill bats if inappropriate substances are used; and
  - Do not place close to artificial lighting as this will deter bats from using the boxes.
- 5.2.4 Further enhancements will include planting a range of night scented flowering plants that would attract night time insects, which in turn the bats would feed on. These will be included within the Ecological Enhancement Strategy.



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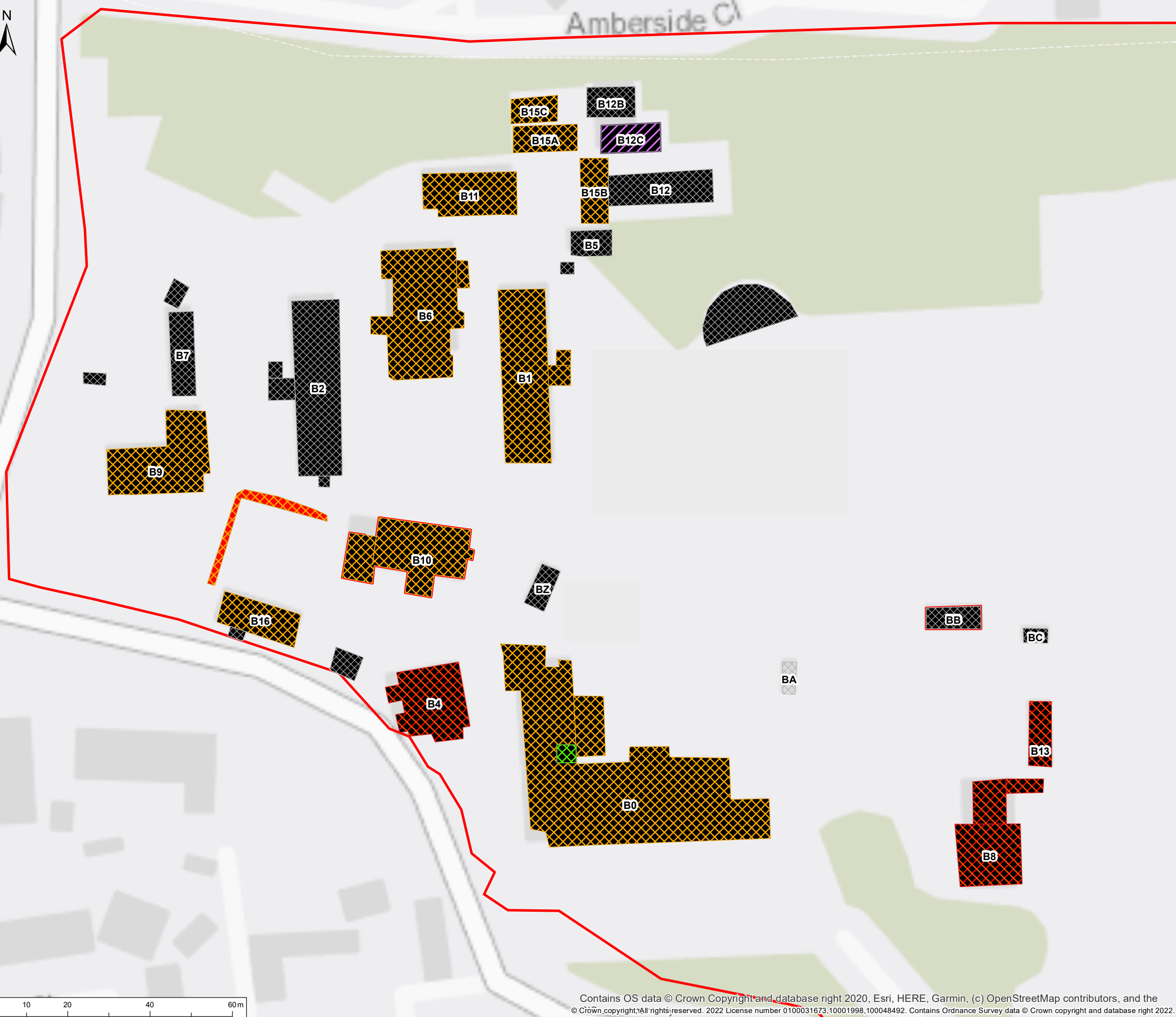
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# FIGURES



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- Legend**
- Red line boundary
  - Brick wall
  - Buildings and structures
- Building Potential for Bat Roosts**
- Confirmed bat roost
  - High potential
  - Low potential
  - Negligible potential
  - Needs further search

Rev	Description	By	CB	Date

**rps** MAKING COMPLEX EASY

Willow Mere House, Compass Point Business Park, Stocks Bridge Way,  
St Ives, Cambridgeshire, PE27 5JL  
T: +44(0)1480 466 335 E: rpscm@rpsgroup.com

Client DWD

Project Kneller Hall, Twickenham

Title Preliminary Bat Roost Assessment - Buildings

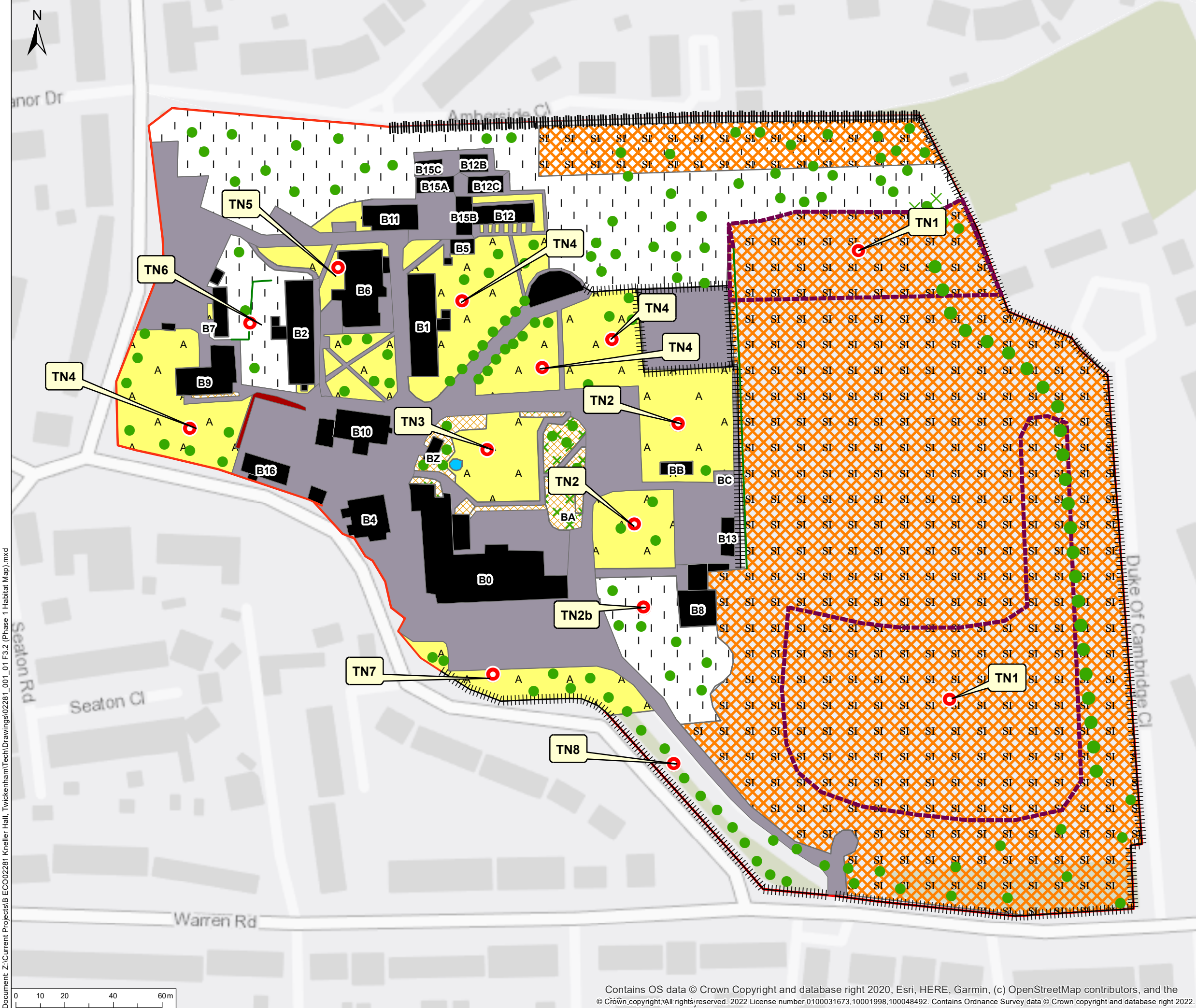
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- Legend**
- Semi-improved acid grassland
  - Red line boundary
  - Amenity grassland
  - Improved grassland
  - Introduced shrub/ Ornamental planting
  - Introduced shrub with native scattered scrub
  - Pond
  - Brick wall
  - Buildings and structures
  - Hard standing
  - Fence
  - Dentoes species-richer grassland
  - Fence
  - Intact hedge - species-poor
  - Wall
  - Scattered tree - broadleaved
  - Scattered tree - coniferous
  - Scattered scrub

Rev	Description	By	CB	Date

**rps** MAKING COMPLEX EASY  
 Willow Mere House, Compass Point Business Park, Stocks Bridge Way,  
 St Ives, Cambridgeshire, PE27 5JL  
 T: +44(0)1480 466 335 E: rpscm@rpsgroup.com

Client **DWD**  
 Project **Kneller Hall, Twickenham**  
 Title **Phase 1 Habitat Map**

Status **Issue** Drawn By **LW** PM/Checked By **HM/HK**  
 Project Number **ECO02281** Scale @ A3 **1:1,500** Date Created **20/09/22**  
 Figure Number **3.1** Rev **01**

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