CHRIST'S HOSPITAL SCHOOL

ECOLOGYSOLUTIONS

Part of the ES Group

BLUECOAT SPORTS CENTRE, CHRIST'S HOSPITAL SCHOOL, HORSHAM

Ecological Assessment Addendum

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1. INTRODUCTION

1.1. Ecology Solutions Limited was commissioned by Christ's Hospital School in June 2021 to undertake an Ecological Assessment of Bluecoat Sports Centre, Christ's Hospital School, Horsham, hereafter referred to as the 'application site'.

1.2. Planning permission is sought for the extension of the existing Bluecoat Sports Centre, in addition to the provision of a new floodlit athletics track and all-weather sports pitch with associated car parking and access to the north and west. The proposals include the development of these areas in addition to infill and reprofiling of two grassland fields situated immediately east of the application site (to facilitate the relocation of generated topsoil). For clarity, the area where development is proposed is hereafter referred to as the 'development site', with the area designated as infill the 'infill site'.

1.3. The planning application was supported by ecological survey and assessment work, as outlined in the Ecological Assessment report, dated June 2021. The Ecological Assessment made reference to further survey work that was being undertaken in Summer 2021, to establish an up to date baseline position.

1.4. This Addendum to the Ecological Assessment has been produced to outline the findings of further protected species surveys which have been undertaken at the application site in respect of bats, reptiles and amphibians in July and August 2021. In light of this further information, an updated assessment is presented in respect of each of these groups, to ensure that the Local Planning Authority has been provided with all information that it requires to reach robust conclusions in relation to ecological matters.

2. SURVEY METHODOLOGY

2.1. As noted in the Ecological Assessment report (June 2021), further survey work has been undertaken in July and August 2021 in respect of bats, amphibians and reptiles. This work was undertaken in accordance with the methodology set out in Section 2 of the Ecological Assessment report, with this reproduced below for clarity.

2.2. Bats

Activity Surveys

2.2.1. As outlined in the Ecological Assessment report, monthly dusk bat activity surveys were previously undertaken at the application site by Babec Ecological Consultants (Babec) in 2018. At the time of submission of the Ecological Assessment, an updated bat activity survey was undertaken by Ecology Solutions in June 2021.

2.2.2. Subsequently, further bat activity surveys have been undertaken by Ecology Solutions in July and August 2021. The methodology of these surveys is consistent with the June 2021 survey.

2.2.3. Evening activity bat surveys (walked transects) were conducted from 15 minutes before sunset to approximately 2 hours after sunset. Surveyors utilised Echo Meter2 (EMT2) bat detectors to aid identification of bats and record data. Surveyors walked transects which encompassed all features of potential value to foraging and commuting bats, including hedgerows, treelines and scrub. All bat data recorded was subsequently analysed using Kaleidoscope bat sound analysis software.

2.2.4. Automated static bat detectors (SM4+) were also deployed in July and August 2021 for a minimum period of five consecutive nights each month in strategic locations to ascertain long term data regarding the use of the application site by foraging and commuting bats. All data was subsequently analysed using Kaleidoscope bat sound analysis software.

Roosting Surveys

2.2.5. A number of trees at the application site were identified to have potential to support roosting bats. Tree climbing survey work was previously undertaken by Babec between June and August 2018 to ascertain the presence or absence of roosting bats, with any potential roosting features noted.

2.2.6. As reported in the Ecological Assessment, updated assessment work undertaken in June 2021 confirmed three trees with moderate potential to support roosting bats located within the footprint of the proposed development, which are therefore scheduled to be removed. Updated survey work has subsequently been undertaken by Ecology Solutions of these trees, in the form of dusk emergence and dawn re-entry surveys.

2.2.7. Additionally, one building (Building B4, as shown on Updated Plan ECO3 [included at Appendix A1 of this Addendum]) situated in close proximity to the application site is considered to have potential to support roosting bats. Whilst this building is located beyond the application site boundary, and as such will not be directly impacted by the emerging proposals, there is potential for this building to be indirectly affected through increased light spill from the proposed development.

2.2.8. Detailed survey work in the form of dusk emergence and dawn re-entry surveys of building B4 was previously undertaken by Babec between June and August 2018. Updated dusk emergence / dawn re-entry surveys of this building were therefore also undertaken by Ecology Solutions to ascertain whether this building continues to support roosting bats.

2.2.9. For dusk emergence and dawn re-entry surveys of building B4 and trees, surveyors were positioned to observe identified roosting features / access points to ascertain whether any bats are entering or leaving the features at dusk and sawn. Echo Meter Touch 2 Pro and Bat Box Duet detectors were utilised to record data, which was subsequently analysed using bat sound analysis software.

2.2.10. In line with the guidelines, dusk emergence surveys commenced 20 minutes prior to sunset and continued for 2 hours after sunset. Dawn re-entry surveys commenced 2 hours prior to sunrise and continued until 15 minutes after sunrise.

2.3. **Amphibians**

2.3.1. As noted in the Ecological Assessment, the application site does not support any waterbodies which offer potential opportunities for breeding amphibians, including Great Crested Newts *Triturus cristatus*. However, a number of off-site waterbodies are present in the local area.

2.3.2. These off-site waterbodies were previously subject to aquatic survey work by Babec in April 2018, including environmental DNA (eDNA) and full aquatic surveys.

2.3.3. To ascertain an up to date baseline, updated eDNA surveys were undertaken of six off-site waterbodies in June 2021. The methodology followed was outlined in detail in the Ecological Assessment (paragraphs 2.4.28 to 2.4.31 inclusive). However, the results had not been returned from the laboratory prior to the production of the Ecological Assessment report.

2.4. **Reptiles**

2.4.1. Specific surveys to ascertain the presence or absence of common reptiles were previously undertaken at the application site by Babec in April 2018. Subsequently, updated reptile surveys have been undertaken by Ecology Solutions in July and August 2021 to ascertain whether reptiles are present within the application site.

2.4.2. As outlined in the Ecological Assessment report, survey work has been undertaken with regard to the methodology outlined in the Herpetofauna Workers' Manual[1]. A total of 120 artificial refugia or 'tins' (0.5m x 0.5m squares of roofing felt) were distributed across suitable reptile habitats within the application site. These tins were left in place for a suitable period of time to 'bed in'.

2.4.3. Subsequently, all natural and artificial refugia within the application site were inspected during suitable weather conditions, with details recorded of any reptiles encountered. Any reptiles observed within the site in general (e.g., whilst walking between refugia) were also noted. A total of seven check surveys were completed in suitable weather conditions.

2.4.4. The tins provide shelter and heat up quicker than the surroundings in the morning and can remain warmer than the surroundings in the late afternoon. Being ectothermic (cold blooded), reptiles use them to bask and raise their body temperature which allows them to forage earlier and later in the day.

2.4.5. Suitable weather conditions for carrying out the surveys are when the air temperature is between 9 and 18°C. Heavy rain and windy conditions were avoided.

[1] Gent, T. & Gibson, S. (2003). *Herpetofauna Workers' Manual.* JNCC, Peterborough.

3. SURVEY RESULTS

3.1. Bats

Activity Survey – Walked Transects

3.1.1. As outlined in the Ecological Assessment, the application site offers potential foraging and commuting opportunities for bats in the local area, primarily in the form of woodlands, hedgerows and trees.

3.1.2. The results of the walked transect survey which was undertaken in June 2021 are presented in Table 3 of the Ecological Assessment report and summarised in paragraph 4.2.23 of that document. For completeness, the findings are replicated in Table A1 below.

17/06/2021		
Species	**Number of Registrations**	
	Development Site	**Infill Site**
Common Pipistrelle *Pipistrellus pipistrellus*	3	35
Soprano Pipistrelle *Pipistrellus pygmaeus*	4	21
Myotis sp.	-	4
Nyctalus sp.	-	2
Noctule *Nyctalus noctula*	-	1

Table A1: Bat registrations during June 2021 walked transect survey (Table 3 of Ecological Assessment report)

3.1.3. Table A2 below outlines the date and weather conditions for the walked transect surveys which were undertaken in July and August 2021.

Date	Weather Conditions
05/07/2021*	14ºC, 100% cloud cover, dry, heavy rain throughout second half of survey
23/07/2021	18ºC, 20% cloud cover, dry, light breeze
04/08/2021	16°C, 50% cloud cover, dry, still

Table A2: Summary of dates and weather conditions of walked transect surveys in July and August 2021

3.1.4. Due to poor weather conditions which occurred during the walked transect survey on 5 July 2021, this survey was abandoned, and a second survey was undertaken later in July during optimal weather conditions.

3.1.5. Tables A3 and A4 below summarise the findings of the walked transect surveys in July and August respectively, with the total number of registrations of each species identified during the course of the survey.

23/07/2021		
Species	**Number of Registrations**	
	Development Site	**Infill Site**
Common Pipistrelle	42	86
Soprano Pipistrelle	1	34

Nathusius's Pipistrelle *Pipistrellus nathusii*	2	-
Noctule	1	13
Brown Long-eared *Plecotus auritus*	1	1
Myotis sp.	-	1
Serotine *Eptesicus serotinus*	-	1

Table A3: Bat registrations during July 2021 walked transect survey

04/08/2021		
Species	**Number of Registrations**	
	Development Site	**Infill Site**
Common Pipistrelle	57	63
Soprano Pipistrelle	13	8
Nathusius's Pipistrelle	5	-
Noctule	1	1
Myotis sp.	1	-

Table A4: Bat registrations during August 2021 activity survey

3.1.6. As with the walked transect survey undertaken in June 2021, the further surveys completed in July and August 2021 identified that the application site is utilised by a low number of common and widespread bat species. The vast majority of activity recorded throughout the application site pertains to Pipistrelle bat species, with far fewer registrations of other species. The July survey also found greater activity within the infill site compared to the development site, although the level of activity recorded in the August survey was broadly comparable between the two areas.

Activity Surveys – Static Detectors

3.1.7. As outlined within Section 2 above, updated static monitoring surveys were also undertaken to provide longer term data regarding the use of the site by foraging and commuting bats. Four static bat detectors were deployed at strategic locations within the application site in each of June, July and August 2021.

3.1.8. The locations of where detectors were deployed (marked A to E respectively) are shown on Updated Plan ECO3, a copy of which is included at Appendix A1 of this Addendum report.

3.1.9. The findings of the survey work undertaken in June 2021 were summarised in Table 5 of the Ecological Assessment report. To enable comparison with the July and August surveys (noting that detectors were deployed for different number of nights), the average number of registrations of each species per night are presented in Table A5 below.

Species	**Static Detector Location**			
	A	**B**	**C**	**D**
Common Pipistrelle	22.9	25.1	13.0	144.0
Soprano Pipistrelle	1.7	2.4	7.0	6.3
Nathusius Pipistrelle	0.3	-	-	-
Noctule	0.4	-	0.3	1.3

Nyctalus sp.	-	-	3.4	0.0
Serotine	-	0.3	0.1	1.1
Brown Long-eared	-	0.7	2.4	5.0
Myotis sp.	0.1	0.1	3.1	2.4
Barbastelle *Barbastella barbastellus*	-	-	0.3	0.3

Table A5: Results of June 2021 static detector survey (average number of registrations per night across the survey period)

3.1.10. Table A6 below outlines the dates of the static detector surveys undertaken in July and August 2021.

Survey	Dates	Number of survey nights
July 2021	05/07/2021 – 12/07/2021	7
August 2021	04/08/2021 – 09/08/2021	5

Table A6: Dates of July and August static detector surveys

3.1.11. The findings of the static monitoring surveys for July and August 2021 are summarised in Tables A7 and A8 below. As above, the average number of registrations of each species per night has been presented.

3.1.12. The detector deployed at Location D in August 2021 encountered a technical error which prevented data from being recorded during its deployment. However, noting that this detector location is situated within the infill site, in a location which is significantly separated from both the proposed development and also any area of anticipated lightspill arising from its operation, it is not considered that this represents a fundamental omission in the data.

Species	Static Detector Location			
	A	B	D	E
Common Pipistrelle	11	29.4	61.7	275
Soprano Pipistrelle	0.86	10.9	46.4	4.9
Nathusius Pipistrelle	1	1.6	-	1.6
Noctule Bat	1.29	1	2.4	2.6
Leisler's Bat	0.14	0.14	0.1	0.1
Serotine	-	-	0.3	-
Long-eared Bat sp.	-	2.29	12.1	2.6
Myotis sp.	-	0.43	3.3	7.3
Barbastelle	-	0.14	2.3	1.6

Table A7: Results of July 2021 static detector survey (average number of registrations per night across the survey period)

Species	Static Detector Location		
	A	B	C
Common Pipistrelle	164.6	55.6	50.4
Soprano Pipistrelle	119.8	61.6	18.4
Nathusius Pipistrelle	0.4	-	-
Noctule	0.4	3.2	0.2
Nyctalus sp.	0.2	0.4	0.2
Serotine	0.2	7.8	0.2

Brown Long-eared	0.2	5.6	0.4
Myotis sp.	0.6	6.2	0.8
Barbastelle	1	0.4	-

Table A8: Results of August 2021 static detector survey (average number of registrations per night across the survey period)

3.1.13. As with the June 2021 survey, the information obtained from static detector surveys undertaken in July 2021 recorded a higher level of bat activity within the infill site. Whilst the picture in respect of the August 2021 survey is less clear, it is apparent that the vast majority of recorded activity across all surveys and within all areas still pertains to Pipistrelle species. Far fewer registrations were recorded of other bat species within the application site.

Roosting Surveys - Trees

3.1.14. Updated dusk emergence and dawn re-entry surveys of three trees (referred to as T1, T2 and T3) were undertaken by Ecology Solutions in June, July and August 2021. The location of these trees is shown on Updated Plan ECO3, which is included at Appendix A1 of this Addendum.

3.1.15. A minimum of two surveys were undertaken of each tree on account of them being considered to have 'Moderate' potential to support roosting bats. A third survey was subsequently undertaken of the two trees where evidence of roosting bats was recorded (see below).

3.1.16. The dates, survey type and weather conditions of these surveys are outlined in Table A9 below.

Date	Survey Type	Weather Conditions
24/06/2021	Emergence (T1, T2 & T3)	16°C, 80% cloud cover, dry, light breeze
22/07/2021	Emergence (T1, T2 & T3)	23°C, 20% cloud cover, dry and still
03/08/2021	Re-entry (T2 and T3)	12°C, 80% cloud cover, dry, light breeze

Table A9: Dates and weather conditions of tree bat roost surveys

3.1.17. The results of the tree bat roost surveys are outlined in Table A10 below.

Date	Tree	Confirmed Emergence / Re-entry?
24/06/2021	T1	None
	T2	Yes – Emergence of 3 x Common Pipistrelle from knot hole on low lying branch on western aspect
	T3	None
22/07/2021	T1	None

	T2	Yes – Emergence of 1 x Common Pipistrelle from knot hole on low lying branch on western aspect (same location as June survey)
	T3	Yes – Emergence of 1 x Common Pipistrelle from northern aspect of tree, suspected to be from rot hole c. 8m high
03/08/2021	T2	None
	T3	None

Table A10: Results of tree bat roost surveys

3.1.18. As outlined above, surveys identified the presence of roosting Common Pipistrelle bats within Trees T2 and T3. A maximum of three Common Pipistrelles were recorded to emerging from a knot hole on the western aspect (with a single bat recorded on a second occasion), whilst a single Common Pipistrelle was also recorded to emerge from a rot hole on Tree T3. No bats were recorded to emerge or re-enter from Tree T1 during the surveys undertaken.

Roosting Surveys - Buildings

3.1.19. As outlined above, updated dusk emergence and dawn re-entry surveys of Building B4 were undertaken by Ecology Solutions in July and August 2021.

3.1.20. The dates, survey type and weather conditions of these surveys are outlined in Table A11 below.

Date	Survey Type	Weather Conditions
22/07/2021	Emergence	23°C, 20% cloud cover, dry and still
03/08/2021	Re-entry	12°C, 80% cloud cover, dry, light breeze

Table A11: Dates and weather conditions of building bat roost surveys

3.1.21. The results of the roosting surveys of building B4 are outlined in Table A12 below.

Date	Confirmed Emergence / Re-entry?
22/07/2021	Emergence of 1 x Common Pipistrelle from gap under the eaves on the north-eastern corner
03/08/2021	None

Table A12: Results of roosting surveys of building B4

3.1.22. During the first dusk emergence survey carried out in July 2021, a Common Pipistrelle bat was confirmed to emerge from a gap in the eaves on the north-eastern corner of the building. It is noted that this is the same location that bats were recorded to emerge from this building in the survey work undertaken by Babec in 2018.

3.1.23. During the second dawn re-entry survey carried out in August 2021, no bats were recorded returning to roost within the building.

3.2. Amphibians

3.2.1. As noted in the Ecological Assessment, survey work undertaken by Babec in 2018 confirmed the presence of Great Crested Newts within three offsite waterbodies; specifically, waterbodies P2, P4 and P5 as shown on Plan ECO4, which is included at Appendix A2 of this Addendum.

3.2.2. Updated eDNA surveys of six waterbodies (P1 – P6) were subsequently undertaken by Ecology Solutions in June 2021 to ascertain whether Great Crested Newts are still present or absent.

3.2.3. Table A13 below notes the straight line distance of these features from the nearest part of the application site, with the locations of each of these waterbodies relative to the application site illustrated at Appendix A2.

Pond Reference	Location and approximate distance from nearest part of the application site
P1	c. 250 metres South
P2	c. 250 metres South
P3	c. 220 metres South-East
P4	c. 230 metres South-East
P5	c. 290 metres South-East
P6	c. 105 metres East

Table A13: Straight line distance between application site and off-site waterbodies

3.2.4. The results of the updated eDNA sampling survey are summarised in Table A14 below. A copy of the Technical Reports provided by SureScreen Scientifics is provided at Appendix A3 of this Addendum.

Pond Reference	eDNA survey result
P1	Negative
P2	Positive
P3	Negative
P4	Negative
P5	Negative
P6	Negative

Table A14: Results of updated eDNA sampling surveys

3.2.5. The updated eDNA sampling surveys have confirmed that Great Crested Newts are still present within pond P2. However, the updated eDNA surveys did not record any evidence to indicate that Great Crested Newts remain present within waterbodies P4 or P5.

3.3. Reptiles

3.3.1. Areas of semi-improved grassland and tall ruderal vegetation present within the application site provide suitable opportunities for common reptile species.

3.3.2. As outlined within the Ecological Assessment, updated reptile surveys have been undertaken by Ecology Solutions. The results of these surveys are summarised in Table A15 below.

Date	Survey Number	Weather Conditions	Reptiles Recorded
05/07/2021	1	16°C, 100% cloud cover	None
23/07/2021	2	14°C, 15% cloud cover	None
02/08/2021	3	16°C, 50% cloud cover	None
04/08/2021	4	16°C, 80% cloud cover	None
06/08/2021	5	17°C, 30% cloud cover	None
08/08/2021	6	17°C, 50% cloud cover	None
09/08/2021	7	17°C, 90% cloud cover	None

Table A15: Results of updated reptile survey

3.3.3. As outlined above, no reptiles were encountered within the application site during the course of the survey. It was noted that the two fields present within the infill site, which comprise the vast majority of the suitable reptile habitat, were subject to grazing by cattle on rotation during the course of the survey.

4. UPDATED ECOLOGICAL EVALUATION

4.1. Bats

4.1.1. As outlined in the Ecological Assessment report, bat activity surveys completed at the application site by Babec in 2018 confirmed that it is used by a range of common and widespread bat species for foraging and commuting.

4.1.2. The findings of the updated bat activity surveys undertaken by Ecology Solutions between July and August 2021 are entirely consistent with the work undertaken by Babec in 2018. Although there is variation between surveys, it remains the case that the vast majority of bat activity recorded at the site pertains to Common Pipistrelle and Soprano Pipistrelle bats, with far fewer registrations of other species. Activity levels in June and July were higher within the infill site than the development site.

4.1.3. With regard to Barbastelle bats, surveys have recorded low levels of activity within the application site. Relatively more activity was recorded within the infill site (with an average of up to 2.3 registrations per night in July), with lower activity within the development site (with an average of 1 registration per night in the August survey).

4.1.4. As noted within the Ecological Assessment, under the proposed scheme, three trees (T1 – T3) which are considered to have moderate potential to support roosting bats and two trees which are considered to have low potential to support roosting bats are to be removed.

4.1.5. Updated survey work of these trees has confirmed the presence of Common Pipistrelle day roosts within T2 (maximum of three bats) and T3 (a single bat). No bats were recorded to emerge from T1.

4.1.6. Previous survey work completed by Babec in 2018 identified the presence of a Common Pipistrelle and a Soprano Pipistrelle day roost within building B4. Updated surveys undertaken by Ecology Solutions have confirmed the continued presence of a Common Pipistrelle roost on the north-eastern corner of building B4.

<u>Avoidance, Mitigation and Enhancements</u>

Foraging and Commuting Bats

4.1.7. The findings of the further ecological surveys undertaken in June, July and August are consistent with those previously undertaken by Babec in 2018. As a result, the conclusions reached with regard to the impacts of the proposed development, and the avoidance and mitigation measures required, remain unchanged.

4.1.8. It is noted that the application site is located approximately 11.1km to the north-east of The Mens Special Area of Conservation (SAC) / Site of Special Scientific Interest (SSSI) at its closest point. This European designated site comprises one of the largest Ancient

Woodlands in West Sussex and is in part afforded protection on account of the presence of the breeding population of Barbastelle bats which it supports.

4.1.9. It is understood that radio-tracking studies of this species have demonstrated that Barbastelle bats can commute and forage significant distances away from their roosting sites. As a result, Natural England have recommended, in a draft document entitled "*Sussex Bat Special Area of Conservation Planning and Landscape Scale Enhancement Protocol*", that two 'impact zones' should be identified around The Mens SAC.

4.1.10. Firstly, a 6.5km 'key conservation area' is identified. Within this zone, Natural England states that "*all impacts must be considered as habitats within this zone are considered critical for sustaining the populations of bats within the SAC*". The application site is located outside of this zone.

4.1.11. Secondly, a 12km 'wider conservation area' is identified. The document states that this zone "*encompasses the wider conservation area which is the full extent of the range of foraging areas required by the bats*". The application site falls just within this wider zone, albeit at its outer extremity.

4.1.12. Notwithstanding the fact that it falls just within this zone, the level of Barbastelle activity recorded within both the development site and the infill site during the course of the updated surveys in 2021 is extremely low as outlined in the tables above. This accords with the findings of the Babec surveys completed in 2018.

4.1.13. Within the development site, the highest level of Barbastelle activity was recorded in August at Location A, with an average of just one registration per night. Upon closer inspection of the data, three registrations were recorded on the night of 4 August 2021 (in a 30 minute period), with two separate registrations recorded on the night of 5 August 2021. No Barbastelle bats were recorded on the other three nights that the detector was deployed in this location in August.

4.1.14. Furthermore, no Barbastelle registrations were picked up during the static monitoring surveys in either June or July at Location A.

4.1.15. The highest level of Barbastelle activity at the infill site was recorded at Location D during the July survey, with an average of 2.3 registrations per night. However, taking a closer look at the data, it remains the case that even this level of activity was inconsistent, with more than two registrations only recorded on three nights during this survey period. It is also noted that Barbastelle activity at Location D in June 2021 constituted just two registrations over the period (in contrast to 1008 Common Pipistrelle registrations).

4.1.16. It is also noted that no Barbastelle bats were recorded either within the development site or the infill site during the walked transect surveys in June, July or August 2021.

4.1.17. Bearing in mind that each registration represents a single pass of a bat at any given location, it is considered that this level of activity can reasonably be described as negligible. It is apparent from the data obtained that the habitats present within the application site are not regularly and consistently used by significant numbers of Barbastelle bats.

4.1.18. The findings of the updated survey work do not therefore provide any evidence to indicate that the habitats present within the application site are of significance for Barbastelle bats. In the context of The Mens SAC, the level of activity recorded does not therefore provide any evidence to indicate that the habitats present within the application site are utilised by Barbastelle bats associated with this designated site, and therefore that they could represent functionally linked land.

4.1.19. As a result, it is considered that the assessment of effects and the package of avoidance, mitigation and enhancement measures as outlined in paragraphs 5.3.16 to 5.3.20 of the Ecological Assessment report will ensure that the development proposals not only avoid potential harm to foraging and commuting bats, but moreover that enhancements will be delivered compared to the existing situation. This includes in particular a sensitive lighting strategy, the retention and enhancement of species-rich habitats and the instigation of long-term management regime to enhance their value for biodiversity.

4.1.20. As outlined within the Ecological Assessment, and within the documents produced by Midlands Lighting Solutions and the Floodlighting Report produced by Max Fordham LLP, the lighting strategy shall incorporate measures to ensure the level of light spill onto the surrounding habitats will be reduced. These measures include the use of LED directional lighting to reduce light-spill onto adjacent habitats, using the minimum amount of lighting required, limiting the colour temperature to 4500K, restricted times of use of floodlights (9am – 9pm only), and the provision of suitable landscaping (i.e. tree planting) which will act as a screen and maintain dark corridors through the application site. This will maintain existing flightlines and dark corridors post-development.

4.1.21. In respect of The Mens SAC, it is considered that with the delivery of the embedded measures which already form an integral part of the scheme, the development proposals are unlikely to lead to a significant effect upon the European designated site, either when the scheme is considered alone or in combination with plans or projects, and therefore specific assessment in light of the tests in the Habitats Regulations is not required in this case.

Roosting Bats

4.1.22. In light of the findings of the updated survey, due to the confirmed presence of roosting Common Pipistrelle bats within trees T2 and T3, it is confirmed that a European Protected Species mitigation licence will be required from Natural England prior to any works

taking place which will result in any adverse impacts upon these trees (including felling as well as lighting or other arboricultural works).

4.1.23. Whilst the precise mitigation requirements would be agreed with Natural England as part of the licensing process, it is envisaged that this would involve soft felling of the tree under the direct supervision of a suitably qualified ecologist during the period when bats are least likely to be present (between September and May inclusive). It is anticipated that new bat roosting boxes would be required to provide replacement roosting opportunities for Common Pipistrelles, with these to be installed on suitable mature trees associated with woodlands W1 or W2 at the north-west of the development site.

4.1.24. Notwithstanding the findings of the emergence surveys, as outlined in the Ecological Assessment a precautionary approach will continue to be adopted to any works on tree T1 and all other trees assessed to have low potential to support roosting bats. This will entail a soft felling exercise under the supervision of a suitably qualified ecologist. Should any roosting bats be encountered, works would need to cease and a licence sought from Natural England before proceeding.

4.1.25. Recent surveys have confirmed that building B4 is still utilised by roosting bats as a day roost. Whilst one further survey is scheduled to be undertaken on a precautionary basis, it is considered unlikely that the roost associated with this building will be adversely impacted by the proposed development, given the adoption of a sensitive lighting strategy as outlined above.

4.2. **Amphibians**

4.2.1. There are no waterbodies situated within the application site boundary. However, some of the habitats present within the application site continue to offer superficially suitable opportunities for Great Crested Newts during their terrestrial phase; specifically areas of longer grassland, trees and scrub.

4.2.2. Survey work previously undertaken by Babec in 2018 confirmed the presence of Great Crested Newts within three offsite waterbodies. Ponds P2 and P4 were previously found to support a moderate and small breeding populations respectively, whilst Pond P5 was found to support a small non-breeding population.

4.2.3. Updated eDNA sampling surveys of the six waterbodies by Ecology Solutions in June 2021 have shown that one of these waterbodies (P2) continues to support Great Crested Newts. All other waterbodies, including P4 and P5 which were previously found to support this species, returned a negative eDNA result. As such, it is considered that Great Crested Newts may no longer be present within these waterbodies.

Avoidance, Mitigation and Enhancements

4.2.4. As previously discussed, in light of the significant distance between the off-site waterbodies and the application site (and in particular P2, which is some 250 metres to the south of the application site at its closest point), in addition to the significant barriers to the movement of amphibians in the form of roads and existing built form, and that higher quality terrestrial habitat which could be utilised by amphibians is available adjacent to these waterbodies compared to the lower-quality habitats present throughout much of the application site, it is still considered unlikely that any Great Crested Newts associated with these waterbodies would utilise the application site during their terrestrial phase. The fact that two of these waterbodies no longer appear to support Great Crested Newts means that the likelihood of this species being present is likely to be even smaller.

4.2.5. As previously proposed within the Ecological Assessment, on a precautionary basis, measures shall be adopted during the clearance of superficially suitable terrestrial habitats to ensure that potential for harm is avoided. These measures are consistent with the approach proposed below in respect of reptile species, involving habitat manipulation under the supervision of a suitably qualified ecologist.

4.2.6. The provision of new species-rich grassland habitats to be provided within the infill site upon completion of the reprofiling works, and the implementation of suitable long-term management will provide providing opportunities for amphibians, including Great Crested Newts, in the long-term.

4.3. **Reptiles**

4.3.1. As outlined in Section 3 above, updated surveys did not record any reptiles to be present within the application site in 2021. However, it is noted that the infill site was previously recorded to support a low population of Common Lizard in 2018, with a single individual recorded.

4.3.2. Whilst the updated survey did not record the presence of reptile species, given the findings of the 2018 survey and that there is connectivity between the infill site and suitable adjoining habitats, it is feasible that reptiles could in theory utilise parts of the infill site on occasion.

Avoidance, Mitigation and Enhancements

4.3.3. Given the potential presence of reptiles, on a precautionary basis a 'habitat manipulation' exercise will continue be undertaken for the clearance of habitats within the infill site. This will adopt a methodology that will avoid potential harm to reptiles, should they be present within the application site boundary. The methodology for a habitat manipulation exercise is set out in paragraphs 5.3.52 – 5.3.57 inclusive within the Ecological Assessment and is reproduced below.

4.3.4. Ground-level vegetation shall initially be cut to a height of no less than 15cm during the active period for reptiles (April to late September / October), in suitable weather conditions (dry and mild). This cut shall be undertaken in a systematic and methodical manner, working outwards from the site towards the site boundary, using low impact machinery.

4.3.5. No earlier than the subsequent day, all vegetation will be cut down to ground level, working again in a systematic manner working away from the centre of the application site. The adoption of this 'habitat manipulation' methodology will encourage reptiles, should they be present, to move out of the development footprint of their own accord, thereby avoiding potential harm.

4.3.6. These works will be supervised by a suitably qualified and experience ecologist who will check all vegetation and soil for the presence of common reptiles prior to removal. Any reptile encounters will be relocated to an adjacent area of suitable habitat.

4.3.7. Prior to the commencement of works all contractors will be given a toolbox talk, which will highlight the potential presence of reptiles and ensure that all are familiar with the habitat manipulation methodology.

4.3.8. The adoption of the above measures will ensure that the proposed development will not cause harm to reptile species, should they be present within the site.

4.3.9. The long-term management of new grassland habitats to be provided within the infill site following the reprofiling works shall be undertaken in a manner that avoids potential harm to reptiles and to provide optimal opportunities for this group. By cutting grassland no lower than 15cm in height, and on rotation, this will encourage dense, tussocky areas to persist in suitable locations through the application site, thereby providing opportunities for this group in the long-term.

5. SUMMARY AND CONCLUSIONS

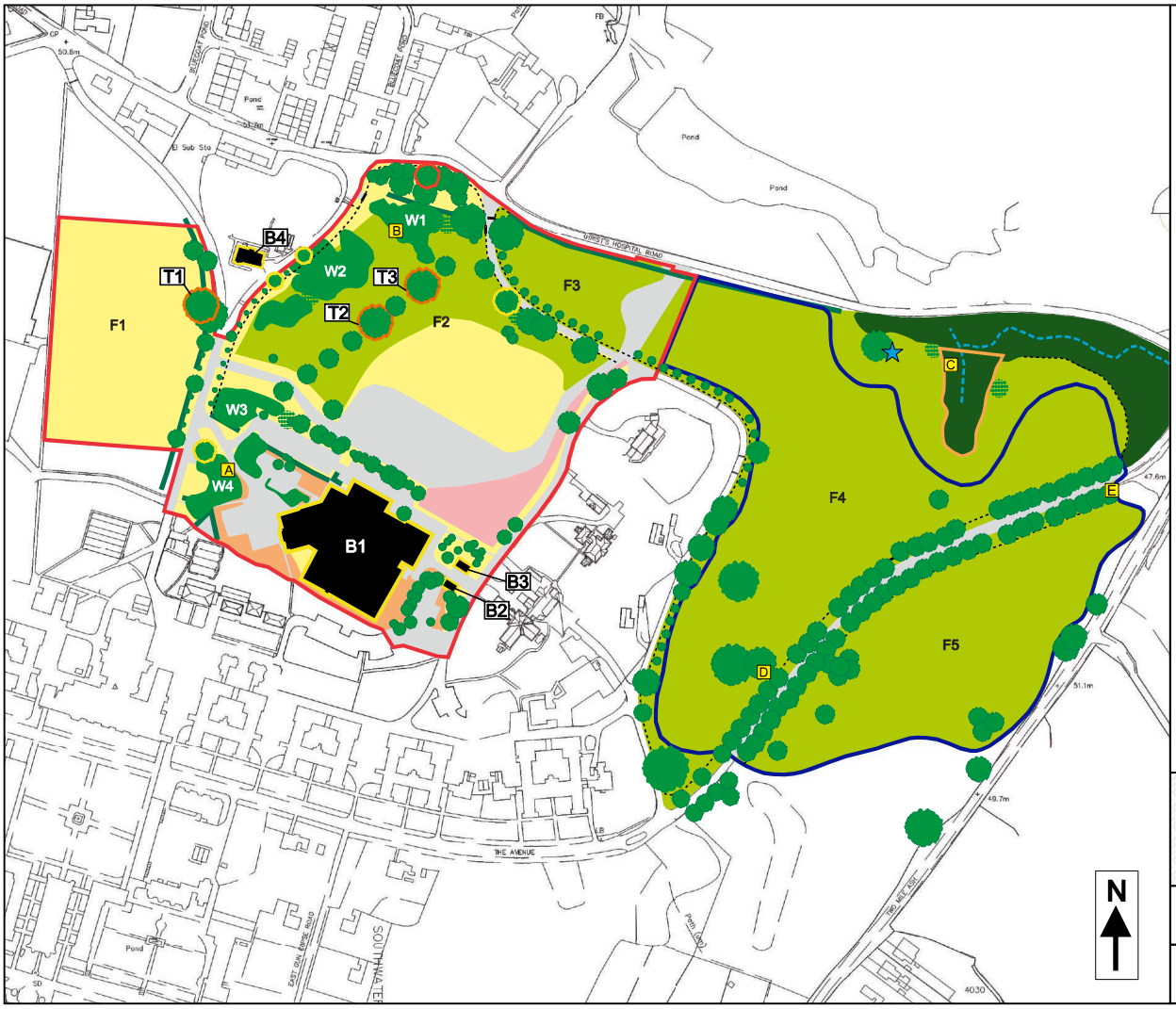
5.1. As outlined in this Addendum to the Ecological Assessment, further survey work has been undertaken respect of bats, amphibians and reptiles to identify the current baseline situation. In general, surveys have identified that the ecological baseline remains largely consistent with work undertaken in 2018, although minor differences have been identified in relation to Great Crested Newts and reptiles in particular.

5.2. Having undertaken an updated assessment in relation to these faunal groups, it is considered that subject to the adoption of suitable avoidance, mitigation and enhancement measures in relation to these groups, as outlined in the Ecological Assessment and updated in this Addendum, the development proposals would not be likely to lead to adverse effects upon any protected species, and that enhancements may be delivered compared to the existing situation.

APPENDICES

APPENDIX A1

Plan ECO3 Protected Species (Updated)



KEY:

- DEVELOPMENT SITE BOUNDARY
- INFILL SITE BOUNDARY
- A — STATIC BAT DETECTOR LOCATION
- TREE WITH LOW BAT ROOSTING POTENTIAL
- TREE WITH MODERATE BAT ROOSTING POTENTIAL
- TREE WITH HIGH BAT ROOSTING POTENTIAL
- LOCATION OF BARN OWL NEST BOX

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9931: CHRIST'S HOSPITAL SCHOOL, HORSHAM

PLAN ECO3: PROTECTED SPECIES

Rev: A

June 2021

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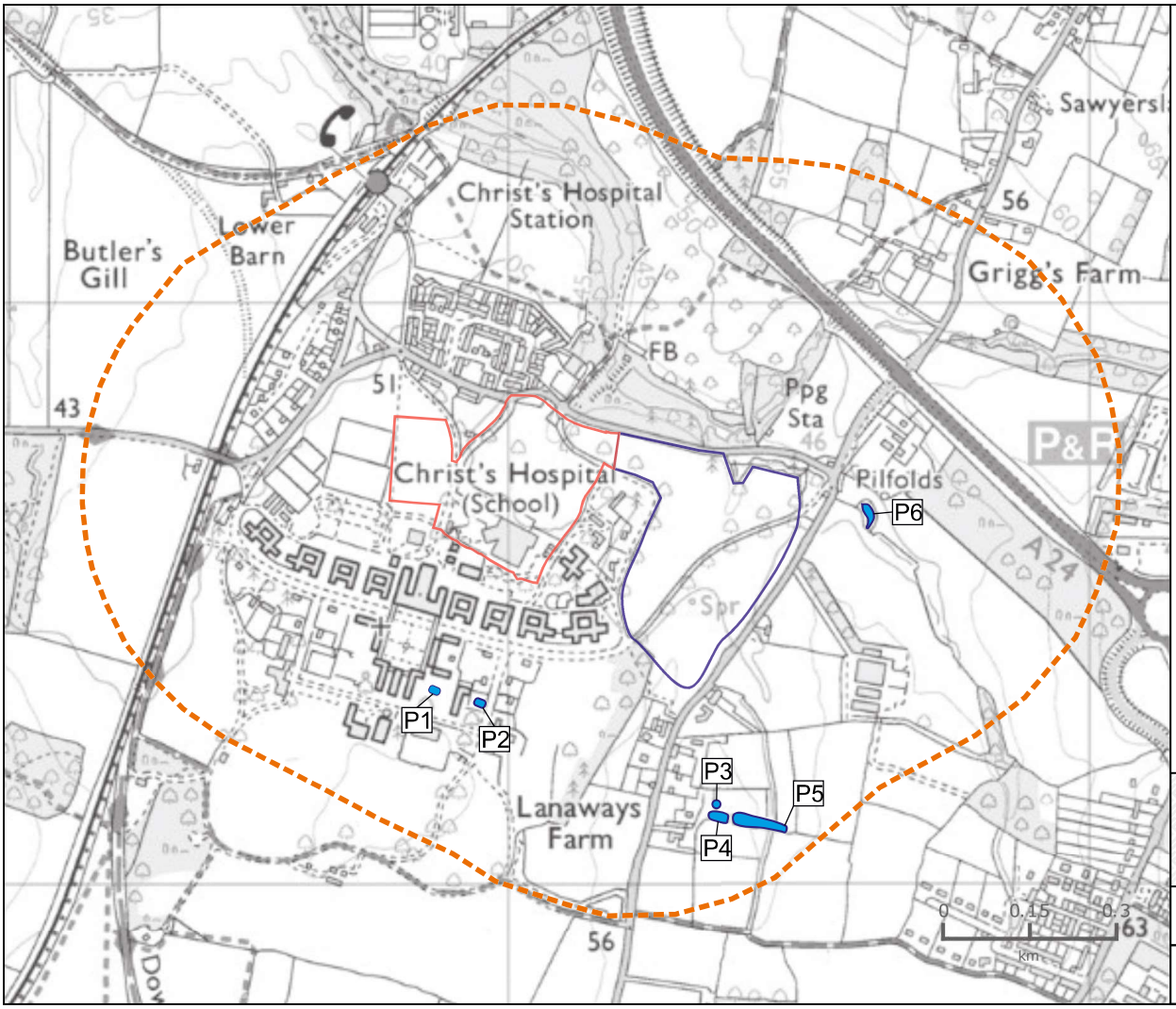
APPENDIX A2

Plan ECO4 Waterbody Location Plan



KEY:

- DEVELOPMENT SITE BOUNDARY
- INFILL SITE BOUNDARY
- 500m BUFFER
- OFF-SITE WATERBODY

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9931: CHRIST'S HOSPITAL SCHOOL, HORSHAM

PLAN ECO4: WATERBODY LOCATION PLAN

Rev: A

June 2021

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APPENDIX A3

Technical Reports (eDNA) from SureScreen Scientifics

SureScreen Scientifics

Folio No: E11090
Report No: 1
Purchase Order: 9931
Client: ECOLOGY SOLUTIONS LTD
Contact: Kitty Cook

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS (TRITURUS CRISTATUS)

SUMMARY

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analysing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

RESULTS

Date sample received at Laboratory: 21/06/2021
Date Reported: 28/06/2021
Matters Affecting Results: None

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
3763	9931 P1	TQ14882 28338	Pass	Pass	Pass	Negative	0
3766	9931 P2	TQ 14948 28301	Pass	Pass	Pass	Positive	9

If you have any questions regarding results, please contact us: ForensicEcology@surescreen.com

Reported by: Chris Troth **Approved by:** Jennifer Higginbottom

METHODOLOGY

The samples detailed above have been analysed for the presence of GCN eDNA following the protocol stated in DEFRA WC1067 'Analytical and methodological development for improved surveillance of the Great Crested Newt, Appendix 5.' (Biggs et al. 2014). Each of the 6 sub-sample tubes are first centrifuged and pooled together into a single sample which then undergoes DNA extraction. The extracted sample is then analysed using real time PCR (qPCR), which uses species-specific molecular markers to amplify GCN DNA within a sample. These markers are unique to GCN DNA, meaning that there should be no detection of closely related species.

If GCN DNA is present, the DNA is amplified up to a detectable level, resulting in positive species detection. If GCN DNA is not present then amplification does not occur, and a negative result is recorded.

Analysis of eDNA requires scrupulous attention to detail to prevent risk of contamination. True positive controls, negative controls and spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared and reported. Stages of the DNA analysis are also conducted in different buildings at our premises for added security.

SureScreen Scientifics Ltd is ISO9001 accredited and participate in Natural England's proficiency testing scheme for GCN eDNA testing. We also carry out regular inter-laboratory checks on accuracy of results as part of our quality control procedures.

INTERPRETATION OF RESULTS

SIC: **Sample Integrity Check** [Pass/Fail]
When samples are received in the laboratory, they are inspected for any tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to inconclusive results.

DC: **Degradation Check** [Pass/Fail]
Analysis of the spiked DNA marker to see if there has been degradation of the kit or sample between the date it was made to the date of analysis. Degradation of the spiked DNA marker may lead indicate a risk of false negative results.

IC: **Inhibition Check** [Pass/Fail]
The presence of inhibitors within a sample are assessed using a DNA marker. If inhibition is detected, samples are purified and re-analysed. Inhibitors cannot always be removed, if the inhibition check fails, the sample should be re-collected.

Result: **Presence of GCN eDNA** [Positive/Negative/Inconclusive]
Positive: GCN DNA was identified within the sample, indicative of GCN presence within the sampling location at the time the sample was taken or within the recent past at the sampling location.
Positive Replicates: Number of positive qPCR replicates out of a series of 12. If one or more of these are found to be positive the pond is declared positive for GCN presence. It may be assumed that small fractions of positive analyses suggest low level presence, but this cannot currently be used for population studies. In accordance with Natural England protocol, even a score of 1/12 is declared positive. 0/12 indicates negative GCN presence.
Negative: GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as evidence of GCN absence, however, does not exclude the potential for GCN presence below the limit of detection.

SureScreen Scientifics

Folio No: E11260
Report No: 1
Purchase Order: 9931
Client: ECOLOGY SOLUTIONS LTD
Contact: Kitty OBrien

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS (TRITURUS CRISTATUS)

SUMMARY

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analysing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

RESULTS

Date sample received at Laboratory: 28/06/2021
Date Reported: 30/06/2021
Matters Affecting Results: None

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
3748	Christ's Hospital School P6		Pass	Pass	Pass	Negative	0
3756	Christ's Hospital School P3		Pass	Pass	Pass	Negative	0
3758	Christ's Hospital School P4		Pass	Pass	Pass	Negative	0
3747	Christ's Hospital School P5		Pass	Pass	Pass	Negative	0

If you have any questions regarding results, please contact us: ForensicEcology@surescreen.com

Reported by: Chris Troth **Approved by:** Chris Troth

METHODOLOGY

The samples detailed above have been analysed for the presence of GCN eDNA following the protocol stated in DEFRA WC1067 'Analytical and methodological development for improved surveillance of the Great Crested Newt, Appendix 5.' (Biggs et al. 2014). Each of the 6 sub-sample tubes are first centrifuged and pooled together into a single sample which then undergoes DNA extraction. The extracted sample is then analysed using real time PCR (qPCR), which uses species-specific molecular markers to amplify GCN DNA within a sample. These markers are unique to GCN DNA, meaning that there should be no detection of closely related species.

If GCN DNA is present, the DNA is amplified up to a detectable level, resulting in positive species detection. If GCN DNA is not present then amplification does not occur, and a negative result is recorded.

Analysis of eDNA requires scrupulous attention to detail to prevent risk of contamination. True positive controls, negative controls and spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared and reported. Stages of the DNA analysis are also conducted in different buildings at our premises for added security.

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When samples are received in the laboratory, they are inspected for any tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to inconclusive results.

DC: **Degradation Check** [Pass/Fail]
Analysis of the spiked DNA marker to see if there has been degradation of the kit or sample between the date it was made to the date of analysis. Degradation of the spiked DNA marker may lead indicate a risk of false negative results.

IC: **Inhibition Check** [Pass/Fail]
The presence of inhibitors within a sample are assessed using a DNA marker. If inhibition is detected, samples are purified and re-analysed. Inhibitors cannot always be removed, if the inhibition check fails, the sample should be re-collected.

Result: **Presence of GCN eDNA** [Positive/Negative/Inconclusive]
Positive: GCN DNA was identified within the sample, indicative of GCN presence within the sampling location at the time the sample was taken or within the recent past at the sampling location.
Positive Replicates: Number of positive qPCR replicates out of a series of 12. If one or more of these are found to be positive the pond is declared positive for GCN presence. It may be assumed that small fractions of positive analyses suggest low level presence, but this cannot currently be used for population studies. In accordance with Natural England protocol, even a score of 1/12 is declared positive. 0/12 indicates negative GCN presence.
Negative: GCN eDNA was not detected or is below the threshold detection level and the test result

should be considered as evidence of GCN absence, however, does not exclude the potential for GCN presence below the limit of detection.



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CHRIST'S HOSPITAL SCHOOL

ECOLOGYSOLUTIONS

Part of the ES Group

BLUECOAT SPORTS CENTRE, CHRIST'S HOSPITAL SCHOOL, HORSHAM

Ecological Assessment

June 2021
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ecology solutions for planners and developers

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PLANS

PLAN ECO1	Application Site Location and Ecological Designations
PLAN ECO2	Ecological Features
PLAN ECO3	Protected Species
PLAN ECO4	Waterbody Location Plan
PLAN ECO5	[redacted]

APPENDICES

APPENDIX 1	Proposed Block Plan (LK2 Architects Ltd) (Drawing No. (08) 003, Rev A22)
APPENDIX 2	Information obtained from MAGIC
APPENDIX 3	Soft Landscape Layout (Ramsat & Co. Landscape Architecture) (Drawing No. RCo 226/01, Rev 11)

1. INTRODUCTION

1.1. Background & Proposals

1.1.1. Ecology Solutions Limited was commissioned by Christ's Hospital School in June 2021 to undertake an Ecological Assessment of Bluecoat Sports Centre, Christ's Hospital School, Horsham (see Plan ECO1), hereafter referred to as the 'application site'.

1.1.2. Planning permission is sought for the extension of the existing Bluecoat Sports Centre, in addition to the provision of a new floodlit athletics track and all-weather sports pitch with associated car parking and access to the north and west. The proposals will include the development of these areas in addition to infill and reprofiling of two grassland fields situated immediately east of the application site (to facilitate the relocation of generated topsoil). For clarity, the area where development is proposed is hereafter referred to as the 'development site', with the area designated as infill the 'infill site'.

1.1.3. A Proposed Site Layout Plan for the development as produced by LK2 Architects Limited and is included at Appendix 1.

1.2. Application Site Characteristics

1.2.1. The application site is located to the south-west of the town of Horsham and is bounded to the north by the Christ's Hospital Road; to the south by Christ's Hospital School buildings; and to the east and west by areas of open space and areas of existing development.

1.2.2. The development site primarily comprises existing development and amenity grassland, with areas of semi-improved grassland and pockets of plantation woodland. Other habitats include scattered trees, hedgerows, ornamental planting, and hardstanding.

1.2.3. The infill site primarily comprises cattle grazed semi-improved grassland pasture, in addition to scattered trees, hedgerows and scrub. An area of Ancient Woodland is located adjacent to the northern boundary of the infill site.

1.3. Ecological Assessment

1.3.1. This document assesses the ecological interest of the application site. The importance of the habitats present is evaluated with regard to current guidance published by the Chartered Institute of Ecology and Environmental Management (CIEEM)[1].

1.3.2. This report outlines the existing baseline conditions for the application site, setting these in the correct planning policy and legal framework and assessing any potential impacts which may occur from the proposed development. Appropriate mitigation where necessary is identified such that it will offset any negative impacts

[1] CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine.* Version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.

and where possible provide for the ecological enhancement of the application site, in accordance with relevant planning policy.

1.3.3. The application site has been subject to a suite of ecological survey and assessment work over recent years, with the methodology and findings outlined in the report entitled 'Ecological Surveys and Assessment', produced by Babec Ecological Consultants (Babec) which supported the previous application at the site.

1.3.4. To confirm the latest ecological baseline, and to identify any material changes which may have occurred since work was previously completed, updated ecological surveys are currently being undertaken at the site. Whilst the information obtained to date has been included within this report, due to the seasonal nature of the work, at the time of submission updated surveys remain ongoing in relation to bats, reptiles and Great Crested Newts *Triturus cristatus*. Further detail regarding the findings of these updated surveys will be provided prior to the determination of the planning application, by way of an Addendum Report.

2. SURVEY METHODOLOGY

2.1. The methodology utilised for the survey work can be split into three areas, namely desk study, habitat survey and faunal survey. These are discussed in more detail below.

2.2. Desk Study

2.2.1. In order to compile background information on the application site and its immediate surroundings, Ecology Solutions contacted Sussex Biodiversity Record Centre (SxBRC) and [redacted] in June 2021.

2.2.2. Information has been provided by SxBRC and the BTS and is referenced within this report where appropriate. Due to publication conditions, the raw data received as part of the desk study exercise cannot be included as an appendix to this document; however, pertinent information regarding non-statutory designated sites is illustrated on Plan ECO1.

2.2.3. Further information on designated sites from a wider search area was also obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC)[2] database. This information is reproduced at Appendix 2 and where appropriate on Plan ECO1.

2.3. Habitat Survey

2.3.1. Habitat surveys were undertaken at the application site by Babec Ecological Consultants (Babec) in January 2018 and by Ecology Solutions in June 2021. The purpose of these surveys was to ascertain the general ecological value of the land contained within the boundaries of the application site.

2.3.2. The application site was surveyed based around extended Phase 1 survey methodology[3], as recommended by Natural England, whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail.

2.3.3. Using the above method, the application site was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified.

2.3.4. All of the species that occur in each habitat would not necessarily be detected during survey work carried out at any given time of the year, since different species are apparent at different seasons.

[2] http://magic.defra.gov.uk
[3] Joint Nature Conservation Committee (2010). *Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit*. England Field Unit, Nature Conservancy Council, reprinted JNCC, Peterborough.

However, given that the updated survey in June 2021 was undertaken at an optimal time of year for botanical identification, it is considered that an accurate and robust assessment has been made.

2.4. Faunal Survey

2.4.1. General faunal activity observed over the course of the survey work undertaken was recorded, whether visually or by call. Specific attention was paid to the potential presence of any protected, rare, notable or Priority Species, and the extent to which the application site could provide any potential opportunities for these species / groups.

2.4.2. In addition, specific surveys and assessments were undertaken in respect of bats, [redacted] *Meles meles*, Great Crested Newts and reptiles.

2.4.3. **Bats.** A preliminary ground-based bat roost assessment survey was undertaken of all trees and existing buildings at the application site by Babec in January 2018. A subsequent updated bat roost assessment survey was undertaken by Ecology Solutions in June 2021. The purpose of the assessment surveys was to assess the suitability of existing buildings, structures, and trees within and in close proximity to the application site and infill site to support roosting bats.

2.4.4. Field surveys were undertaken with regard to the Bat Mitigation Guidelines (English Nature, 2004[4]) and guidance produced by the Bat Conservation Trust (2016[5]).

2.4.5. The main requirements for a winter / hibernation roost site is that it maintains a stable (cool) temperature and humidity. Sites commonly utilised by bats as winter roosts include cavities / holes in trees, underground sites and parts of buildings. Whilst different species may show a preference for one of these types of roost site, none are solely dependent on a single type.

2.4.6. The probability of a structure being used by bats as a roost site increases if it:

- is largely undisturbed;
- dates from pre 20th Century;
- has large voids with unobstructed flying spaces;
- has access points for bats (though not too draughty);
- has wooden cladding or hanging tiles; and
- is in a rural setting and close to woodland or water.

2.4.7. Conversely, the probability decreases if a building is of a modern or pre-fabricated design / construction, is in an urban setting, has small or cluttered voids, has few gaps at the eaves or is a heavily disturbed premises.

[4] Mitchell-Jones, A. J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.
[5] Collins, J. (Eds.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)*. Bat Conservation Trust, London.

2.4.8. For a tree to be classified as having some potential for roosting bats it must usually have one or more of the following characteristics:

- obvious holes, e.g. rot holes and old woodpecker holes;
- dark staining on the tree below the hole;
- tiny scratch marks around a hole from bats' claws;
- cavities, splits and/or loose barn from broken or fallen branches, lightning strikes etc.;
- very dense covering of mature Ivy *Hedera helix* over trunk.

2.4.9. As outlined in detail below, one building (B4) situated in close proximity to the application site is considered to have potential to support roosting bats. Whilst this building is located beyond the application site boundary, and as such will not be directly impacted by the emerging proposals, there is potential for this building to be indirectly affected through increased light spill from the proposed development.

2.4.10. Detailed survey work in the form of dusk emergence and dawn re-entry surveys of building B4 has previously been undertaken by Babec between June and August 2018. Updated dusk emergence and dawn re-entry surveys of this building will be undertaken by Ecology Solutions in Summer 2021 to ascertain whether this building continues to support roosting bats. Further detail with regard to the survey findings will be provided in the form of an Addendum Report, to be submitted prior to determination of the application.

2.4.11. A number of trees at the application site were identified to have potential to support roosting bats. Subsequent tree climbing survey work was undertaken by Babec between June and August 2018 in order to ascertain the presence or absence of bats within any potential roosting features noted.

2.4.12. The updated assessment work undertaken in June 2021 confirmed that there are three trees with moderate potential to support roosting bats located within the footprint of the proposed development, which are therefore scheduled to be removed. As such, updated survey work of these trees in the form of emergence / re-entry surveys is currently being undertaken by Ecology Solutions in Summer 2021. As above, the findings of this survey will be provided in the form of an Addendum Report.

2.4.13. For the evening emergence and dawn re-entry survey work (for Building B4 and trees identified to have potential to support roosting bats), surveyors will be positioned to observe identified roosting features to ascertain whether any bats are entering or leaving the features. Echo Meter Touch 2 Pro and Bat Box Duet detectors will be utilised to record data, which will be subsequently analysed using bat sound analysis software.

2.4.14. In line with the guidelines, dusk emergence surveys will commence 20 minutes prior to sunset and will continue for 2 hours after sunset.

The dawn re-entry survey will commence 2 hours prior to sunrise and will continue until 15 minutes after sunrise.

2.4.15. Monthly dusk bat activity surveys were also undertaken by Babec in 2018 to ascertain the level of use of the application site by foraging and commuting bats. Updated bat activity surveys are currently being undertaken by Ecology Solutions, with survey work undertaken in June 2021 and further monthly surveys scheduled to be undertaken between July and October 2021 inclusive.

2.4.16. The evening activity bat surveys are conducted from 15 minutes before sunset to approximately 2 hours after sunset. Surveyors utilise EchoMeter2 (EMT2) bat detectors to aid identification of bats and record data. Surveyors walk transects in order to encompass all features of potential value to foraging and commuting bats, including hedgerows, treelines and scrub. All bat data recorded is subsequently analysed using Kaleidoscope bat sound analysis software.

2.4.17. Static bat detectors (SM4+) are also deployed on a monthly basis for a minimum period of five consecutive nights in strategic locations to ascertain long term data regarding the use of the application site by foraging and commuting bats. All data is subsequently analysed using Kaleidoscope bat sound analysis software.

2.4.18. All survey work in respect of bats will be completed during optimal conditions for bat surveys, in mild and dry conditions with no more than light winds.

2.4.19. [redacted]

2.4.20. [redacted]

[redacted]

2.4.22. **Amphibians.** The application site does not support any waterbodies which offer potential opportunities for breeding amphibians, including Great Crested Newts.

2.4.23. A review of OS mapping and aerial photography was initially undertaken to identify all waterbodies within 500 metres of the application site.

2.4.24. A Habitat Suitability Index (HSI) assessment[6] was subsequently undertaken by Babec between April and May 2018. The HSI assessment methodology involves a numerical index which identifies a score between 0 and 1, indicating the suitability of a waterbody for breeding Great Crested Newts. Each waterbody was subject to a visual assessment (where access was possible), with the feature 'scored' in relation to each of the criteria which comprise the HSI methodology.

2.4.25. These scores can then be used to determine pond suitability using the categorisation shown in Table 1 below. The intention of this method is to scope out the requirement for further specific survey work, where robustly possible.

HSI Score	Pond Suitability
<0.5	Poor
0.5 – 0.59	Below Average
0.6 – 0.69	Average
0.7 – 0.79	Good
>0.8	Excellent

Table 1: Categorisation of HSI Scores

2.4.26. Further specific surveys, including environmental DNA (eDNA) sampling and full aquatic surveys, were undertaken by Babec in April 2018. Such surveys were undertaken on seven of the offsite waterbodies which where were assessed by Babec in 2018 as having potential suitability to support breeding Great Crested Newts.

2.4.27. Updated eDNA surveys of six offsite waterbodies have been undertaken by Ecology Solutions in June 2021 in order to ascertain

[6] Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. Herpetological Journal 10 (4), 143-155

the continued presence or absence of Great Crested Newts. The location of these waterbodies is illustrated on Plan ECO4.

2.4.28. The eDNA survey involved collecting twenty 40ml samples of water at equally spaced locations around the perimeter of the waterbody (where access was available). These 20 samples were then mixed in a plastic sample bag to form a single amalgamated sample of the water from the pond. The amalgamated sample was then mixed thoroughly to ensure that any DNA present is distributed evenly throughout the sample bag.

2.4.29. A total of 15ml of water was then taken from the amalgamated sample and added to 35ml of ethanol within a separate sample tube, to preserve any DNA present. The sample tubes were then shaken vigorously to mix the water sample and ethanol thoroughly and to prevent the degradation of any DNA. This technique was repeated six times, using water from the amalgamated sample, such that a total of six sample tubes were filled for each waterbody.

2.4.30. The six sample tubes were subsequently sent to be analysed by a laboratory using Polymerase Chain Reaction (PCR) amplification techniques. The analysis involves producing DNA sequences that verify the taxonomic assignation of amplified DNA signals.

2.4.31. Each sample is run in 12 replicates. The results are then reported as the proportion of these 12 replicates that have successfully amplified, indicating whether Great Crested Newt DNA is present (e.g. 1/12 up to 12/12). A negative result is given if all of the replicates are negative; a positive result is given if one or more of the replicates are positive.

2.4.32. Water samples have been collected from off-site waterbodies in line with the methodology outlined above in June 2021, with some results obtained to date from the laboratory. The findings of outstanding results will be presented in the Addendum Report, which will be submitted prior to the determination of the application.

2.4.33. **Reptiles.** Specific surveys to identify the presence or absence of common reptiles were undertaken at the application site by Babec in April 2018. An updated reptile survey by Ecology Solutions to ascertain the latest situation is currently underway.

2.4.34. In line with previous survey work, the updated survey has been undertaken with regard to the methodology outlined in the Herpetofauna Workers' Manual[7]. A total of 120 artificial refugia or 'tins' (0.5m x 0.5m squares of roofing felt) have been distributed across suitable reptile habitats within the application site. These tins will be left in place for a suitable period of time to 'bed in'.

2.4.35. Subsequently, all natural and artificial refugia within the application site will be inspected during suitable weather conditions, with details recorded of any reptiles encountered. Any reptiles observed within the site in general (e.g., whilst walking between refugia) will also be

[7] Gent, T. & Gibson, S. (2003). *Herpetofauna Workers' Manual.* JNCC, Peterborough.

noted. A total of seven check surveys will be completed in suitable weather conditions.

2.4.36. The tins provide shelter and heat up quicker than the surroundings in the morning and can remain warmer than the surroundings in the late afternoon. Being ectothermic (cold blooded), reptiles use them to bask and raise their body temperature which allows them to forage earlier and later in the day.

2.4.37. Suitable weather conditions for carrying out the surveys are when the air temperature is between 9 and 18°C. Heavy rain and windy conditions will be avoided.

2.4.38. The findings of the updated reptile survey will again be provided in the form of an Addendum Report.

3. ECOLOGICAL FEATURES

3.1. The application site was subject to habitat surveys in 2018 (Babec) and 2021 (Ecology Solutions). The vegetation present enabled the habitat types to be satisfactorily identified and an accurate assessment of the ecological interest of the habitats to be undertaken.

3.2. The following main habitat / vegetation types were identified within the application site:

- Amenity Grassland;
- Semi-Improved Grassland;
- Mixed Plantation Woodland;
- Scattered Trees;
- Dense Scrub;
- Tall Ruderal;
- Ornamental Shrub;
- Hedgerow;
- Hardstanding; and
- Existing Buildings.

3.3. The location of these habitats is shown on Plan ECO2. Each habitat present is described below with an account of their representative plant species. Where relevant, reference is also made to the vegetation communities present based on the findings of the botanical survey work.

Amenity Grassland

3.4. Field F1 and a portion of Field F2 comprise regularly managed amenity grassland. F1 comprises a sport pitch which F2 comprises general open space / parkland.

3.5. This habitat primarily comprises Annual Meadow-grass *Poa annua*, with occasional Clover and Creeping Buttercup *Ranunculus repens*.

Semi-improved Grassland

3.6. The development site supports areas of semi-improved grassland to the north and north-east within Fields F2 and F3.

3.7. Within F2, areas of longer semi-improved grassland are situated around W1 and W2, bounded by more regularly managed amenity grassland. This area was noted to have a long, tussocky sward during the habitat survey undertaken in June 2021. This area does not appear to be subject to any intensive management at present, with the exception of a mown pathway between the two woodland copses. Species recorded within this area include Yorkshire Fog *Holcus lanatus*, Cock's-foot *Dactylis glomerata*, Perennial Rye-grass *Lolium perenne*, Creeping Buttercup, Ribwort Plantain *Plantago lanceolata*, Lesser Celandine *Ranunculus ficaria*, Willowherbs *Epilobium* spp. and Common Knapweed *Centaurea nigra*.

3.8. F3 currently comprises an unmanaged, long sward dominated by Cock's-foot, Yorkshire Fog, Perennial Rye-grass, Meadow Foxtail *Alopecurus pratensis* and Creeping Buttercup.

3.9. F4 and F5 are situated within the infill site boundary and predominantly comprise grassland pasture. At the time of the survey, these areas supported a long, tussocky sward, with F5 also noted as being used by grazing cattle.

3.10. Fields F4 and F5 are considered to be more diverse than F2 and F3 with species recorded including Meadow Foxtail, Yorkshire Fog, Cock's-foot, Perennial Rye-grass, Meadow-grass *Poa* sp. and Fescue *Festuca* sp. Herb species recorded within these fields include Meadow Buttercup *Ranunculus acris*, Creeping Buttercup, Germander Speedwell *Veronica chamaedrys*, White Clover *Trifolium repens*, Curled Dock *Rumex crispus*, Broadleaved Dock *Rumex obtusifolius*, Dandelion *Taraxacum officinale* agg., Common Vetch *Vicia sativa subsp*. *segetalis*, Creeping Thistle *Cirsium arvense* and Common Mouse-ear *Cerastium fontanum*.

3.11. A small spring is present near to the northern boundary of F5. Species indicative of wetter conditions were recorded in close proximity to this feature, including Rush *Juncus* sp. and Crested Dog's-tail *Cynosurus cristatus.*

Mixed Plantation Woodland

3.12. As illustrated on Plan ECO2, the development site supports four areas of mixed coniferous and broadleaved plantation woodland (W1 – W4 on Plan ECO2). These four copses are situated to the north and central parts of the development site.

3.13. These areas support a range of native broadleaved and coniferous species, including Pedunculate Oak *Quercus robur*, Larch *Larix* sp., Cherry *Prunus* sp., Sycamore *Acer pseudoplatanus*, Pine *Pinus* sp. and Cypress *Cupressaceae* sp.

3.14. The woodland understorey comprises Bramble *Rubus fruticosus* agg, Hazel *Corylus avellana* and *Prunus* species, with sparse ground flora limited to Cock's-foot, Yorkshire Fog, Curled Dock, Lesser Celandine and Common Knapweed.

Scattered Trees

3.15. Scattered mature and semi-mature trees are present throughout the application site, with species including Oak, London Plane *Platanus occidentalis x orientalis*, Silver Birch *Betula pendula*, Sycamore, Horse-chestnut *Aesculus hippocastanum* and occasional Cypress and Pine.

Dense Scrub

3.16. Areas of dense scrub are present within the application site, typically associated with areas of woodland within and adjacent to the site. These areas primarily comprise a dense coverage of Bramble, with other occasional species including Hawthorn *Crataegus monogyna* and Blackthorn *Prunus spinosa*.

Tall Ruderal

3.17. Recolonising tall ruderal vegetation was recorded to be present on a bund to the south-east of the development site. Species associated with this habitat include Common Nettle *Urtica dioica*, Willowherbs, Cleavers *Galium aparine*, Spear Thistle *Cirsium vulgare*, Ribwort Plantain and Curled Dock.

3.18. Scattered stands of tall ruderal vegetation are also present within field F4 and F5, comprising Common Nettle, Curled Dock, Thistle and Dog's Mercury *Mercurialis perennis*.

Ornamental Shrub

3.19. Vegetation surrounding the existing Bluecoats Sports Centre and hardstanding on the site primarily comprises ornamental planted shrub. Species within these borders include Dogwood *Cornus sanguinea*, *Cotoneaster* sp., Snowberry *Symphoricarpos albus*, Butterfly-bush *Buddleja davidii*, in addition to ornamental Bamboo.

Hedgerows

3.20. There are multiple hedgerows situated within and adjacent to the application site. The existing hedgerows are regularly managed box-cut hedgerows dominated by Hawthorn and Beech *Fagus sylvatica*, with occasional other species including Hazel, Blackthorn and Portuguese Laurel *Prunus lusitanica*.

Hardstanding

3.21. The application site supports existing roads, car parking and pathways associated with B1 and head south and west towards the main Christ's Hospital School buildings.

3.22. Areas of temporary car parking have been which will be used as proposed access routes for the emerging development.

Buildings

3.23. There are four buildings situated within the development site, including the existing Bluecoat Sports Centre (B1), two garages (B2 and B3) and an electricity substation. These are discussed in further detail below in relation to bat roosting assessments.

3.24. **Background Information.** The data search undertaken with SxBRC did not return any records of any protected or notable plant species from within the application site boundary. The closest returned record was of Bluebell *Hyacinthoides non-scripta* from a location approximately 20 metres north of the application site at its closest point, recorded in 2008.

3.25. Other notable plant species recorded within the wider area include Autumn Lady's-treses *Spiranthes spiralis*, Bitter-vetch *Lathyrus linifolius*, Bladder-sedge *Carex vesicaria*, Chicory *Cichorium intybus*, Common Cudweed *Filago valgaris*, Common Valerian *Valeriana officinalis*, Corn

Mint *Mentha arvensis*, Crosswort *Cruciata laevipes*, Devil's-bit Scabious *Succisa pratensis*, Dwarf Spurge *Euphorbia exigua*, Field Scabious *Knautia arvensis*, Heath Speedwell *Veronica officinalis*, Lesser Spearwort *Ranunculus flammula*, Oak-leaved Goosefoot *Chenopodium glaucum*, Quaking-grass *Briza media*, Ragged-Robin *Silene flos-cuculi*, Rye Brome *Bromus secalinus*, Sanicle *Sanicula europaea*, Stinking Hellebore *Helleborus foetidus*, Toothwort *Lathraea squamaria*, Welsh Poppy *Meconopsis cambrica*, White Helleborine *Cephalanthera damasonium*, Wild Strawberry *Fragaria vesca* and Wood-sorrel *Oxalis acetosella*.

3.26. None of these species were recorded within the application site during the botanical survey work completed, and given the habitats present it is considered unlikely that the application site would support any protected or notable plant species.

4. WILDLIFE USE OF THE APPLICATION SITE

4.1. General observations were made during the survey of any faunal use of the application site with specific attention paid to the potential of any protected or notable species. Specific surveys and assessments were also undertaken in respect of bats, [redacted] Great Crested Newts and reptiles.

4.2. Bats

Preliminary Roost Assessments

4.2.1. **Existing Buildings.** Detailed external inspection surveys of all buildings situated within or immediately adjacent to the application site were initially undertaken by Babec in January 2018. An updated assessment of these buildings was undertaken by Ecology Solutions in June 2021.

4.2.2. Building B1, which comprises the existing Bluecoat Sports Centre, is a large, modern building constructed of red brick with a corrugated metal-sheet clad roof covering. This building is considered to provide negligible opportunities for roosting bats, on account of its modern construction and excellent condition. Features noted previously by Babec in 2018 as providing some limited potential for roosting bats (missing mortar and put log holes) were reassessed and not considered likely to provide suitable opportunities for this group.

4.2.3. Building B2 and B3 are both single-storey brick garages with corrugated metal roof coverings. These buildings are not considered to provide any potential opportunities for roosting bats. An electrical substation is situated to the north of B3, which similarly is not considered to provide any suitable opportunities for roosting bats.

4.2.4. Building B4 is a residential house constructed of red brick with a hipped concrete tile roof with a section of flat lead at the centre. This building is situated to the north of the development site boundary. Previous emergence / re-entry roost survey work undertaken by Babec between June and August 2018 has confirmed the presence of two day-roosts pertaining to Common Pipistrelle *Pipistrellus pipistrellus* and Soprano Pipistrelle *Pipistrellus pygmaeus* within B4. As such, this building is considered to offer 'High' bat roosting potential. The updated survey completed in June 2021 confirmed that there had been no material change to the condition of the building since work was previously undertaken in 2018.

4.2.5. **Trees.** Specific assessment work was undertaken of trees present within the application site to ascertain their potential to support roosting bats by Babec in 2018. Updated ground-level tree assessments were undertaken by Ecology Solutions in June 2021.

4.2.6. Findings of the updated tree assessment were consistent with those recorded previously by Babec in 2018, with a number of trees within the development site found to support potential roosting features. A total of four trees were recorded to have low bat roosting potential,

three trees to have moderate bat roosting potential and one tree was recorded to have high bat roosting potential.

4.2.7. Three Pedunculate Oak trees (illustrated as T1, T2 and T3 on Plan ECO3) identified to have 'Moderate' potential to support roosting bats are situated within the development footprint and will be subject to removal.

Emergence/Re-entry Surveys

4.2.8. Previous tree climbing survey work of all trees identified to have potential roosting features within the application site were undertaken by Babec between June and August 2018.

4.2.9. No roosting bats, or evidence of bats was recorded within any of the trees surveyed. However, it is considered that the potential roosting features present on these trees do still provide some potential roosting opportunities for bats.

4.2.10. Specific dusk emergence and dawn re-entry surveys of trees T1, T2 and T3 are scheduled to be undertaken in Summer 2021, with the results to be provided in an Addendum report during the consultation period.

4.2.11. No further survey work is due to be undertaken of any other trees identified to have high or moderate bat roosting potential within the application site. This is on the basis that these features are to be retained under the development proposals and will not be affected either directly or indirectly (through an increase in artificial lighting). As such, existing roosting opportunities for bats that these trees provide will therefore be unaffected by the proposals.

4.2.12. As detailed above, previous dusk emergence and dawn re-entry survey work of building B4 was undertaken by Babec between June and August 2018 identified the presence of a Common Pipistrelle and Soprano Pipistrelle day roosts.

4.2.13. Updated emergence / re-entry survey work of building B4 will be undertaken by Ecology Solutions in Summer 2021, with the results to be provided by way of an Addendum report.

Activity Surveys – Walked Transects

4.2.14. As outlined above, the application site offers potential foraging and committing opportunities for bats in the local area, with the existing hedgerows, woodland and trees considered to be features of potential value for this group.

4.2.15. Specific bat activity surveys, including walked transect surveys in addition to static monitoring surveys, were undertaken at monthly intervals at the development site by Babec between April and October 2018. In addition, seasonal bat activity surveys of the infill site were undertaken in May, August and October 2018.

4.2.16. The walked transect surveys of the development site and infill site recorded a moderate amount of bat activity. The highest number of registrations were attributed to Common Pipistrelle. Other species recorded across the application site across the surveys (albeit less frequently) include Soprano Pipistrelle, *Myotis* bats, Serotine *Eptesicus serotinus* and Long-eared bats *Plecotus* sp..

4.2.17. The greatest level of activity within the development site was recorded along lines of scattered broadleaved trees and areas of plantation woodland within the northern and western areas of the development site, in close proximity to B4. Comparatively less activity was recorded within areas of open habitats such as areas of amenity grassland and around areas of existing development.

4.2.18. The greatest level of activity within the infill site was recorded along the tree corridors adjacent to the road which bisects field F4 and F5. A moderate level of activity was also recorded along the hedgerows and broadleaved woodland situated immediately adjacent to the infill site boundary.

4.2.19. As outlined above, the habitats present within the application site remain largely unchanged since survey work was previously undertaken in 2018, both in terms of their species-richness, composition and management. As such, opportunities for foraging and commuting bats also remain largely as previously assessed, such that it is unlikely that there would have been any material change in the level of use of the site by this group.

4.2.20. Notwithstanding the above, as outlined in Section 2 updated bat activity surveys are currently being undertaken at the application site by Ecology Solutions. To date, bat activity survey work has been undertaken at the application site in June 2021.

4.2.21. Table 2 below outlined the date and weather conditions for the walked transect survey undertaken in June 2021.

Date	Weather Conditions
17/06/2021	17°C, 90% cloud cover, dry, light breeze

Table 2: Summary of dates and weather conditions of walked transect surveys (2021)

4.2.22. Table 3 below summaries the overall findings of the June 2021 walked transect survey at the application site, with the total number of registrations of each species identified during the course of the survey.

17/06/2021		
Species	Number of Registrations	
	Development Site	Infill Site
Common Pipistrelle	3	35
Soprano Pipistrelle	4	21
Myotis sp.	-	4
Nyctalus sp.	-	2
Noctule	-	1

Nyctalus noctula		

Table 3: Bat registrations during June 2021 activity survey

4.2.23. The activity surveys to date show that the application site is predominately used by a low number of common and widespread species. Activity was found to be greatest within the infill site as opposed to the development site, where very little activity indeed was recorded. Most registrations within the development site were recorded around areas of mixed plantation woodland to the north-west. The highest number of registrations across the application site were attributed to Common Pipistrelle and Soprano Pipistrelle.

4.2.24. Further monthly transect surveys are scheduled to be undertaken between July and October 2021 inclusive, with the results to be provided in an Addendum Report.

Activity Surveys – Static Detectors

4.2.25. As outlined in Section 2 above, static monitoring surveys were undertaken in conjunction to the walked transect surveys.

4.2.26. Static monitoring surveys undertaken by Babec in 2018 recorded a moderate amount of bat activity across the application site, with the highest number of registrations were attributed to Common Pipistrelle. Other species recorded across the application site across the surveys (albeit less frequently) include Soprano Pipistrelle, Nathusius's Pipistrelle *Pipistrellus nathusii*, Noctule, *Myotis* bats, Serotine, Long-eared bats and Barbastelle *Barbastella barbastellus*.

4.2.27. The greatest level of activity recorded at the development site was from a location situated on the northern boundary of the development site, within a ground of trees adjacent to building B4. The next greatest level of activity was recorded within the infill site from a location on the edge of the adjacent Ancient Woodland. The lowest level of activity was recorded from a location at the west of the development site, near to the amenity grassland habitat within F2.

4.2.28. Updated static monitoring surveys are being undertaken undertaken at the application site by Ecology Solutions, with one static monitoring survey undertaken to date in June 2021. The dates of the survey are outlined in Table 4 below.

Survey	Dates
June 2021	17/6/2021 – 23/6/2021

Table 4: Dates of June 2021 static detector survey

4.2.29. The findings of the static monitoring period for June 2021 are summarised in Table 5 below. Four static bat detectors were deployed at strategic locations within the application site (labelled A - D on Plan ECO3).

Species	Static Detector Location

	A	B	C	D
Common Pipistrelle	160	176	91	1008
Soprano Pipistrelle	12	17	49	44
Nathusius Pipistrelle	2	0	0	0
Noctule	3	0	2	9
Nyctalus sp.	0	0	24	0
Serotine	0	2	1	8
Brown Long-eared *Plecotus auritus*	0	5	17	35
Myotis sp.	1	1	22	17
Barbastelle	0	0	2	2

Table 5: Results of June 2021 static detector survey (total number of registrations across the survey period per species)

4.2.30. The detectors deployed within the infill site recorded a greater level of activity compared to those deployed within the development site. The overall number bat registrations over the five-night monitoring period were largely pertained to Common Pipistrelle and Soprano Pipistrelle, with much lower levels of activity recorded for other species.

4.2.31. The greatest level of activity was recorded at Location D, situated to the south of the the infill site. The greatest level of activity within the development site solely was recorded at Location B, around areas of mixed plantation woodland in the north-east.

4.2.32. Further static monitoring surveys are scheduled to take place between July and October 2021 inclusive, with further information to be provided by way of an Addendum Report.

4.2.33. **Background Information.** The data search undertaken with SxBRC returned one records of Common Pipistrelle *Pipistrellus pipistrellus* from a location immediately adjacent to north-western boundary of the application site.

4.2.34. The desk study identified records of a number of other bats species within the locality, including Soprano Pipistrelle *Pipistrellus pygmaeus*, Nathusius's Pipistrelle, Noctule, Brown Long-eared bat, Serotine, Western Barbastelle, Daubenton's Bat *Myotis daubentonii*, Whiskered Bat *Myotis mystacinus* and Natterer's Bat *Myotis nattereri*.

[redacted]

[redacted]

4.4. Amphibians

4.4.1. The application site does not support any features which could be utilised by breeding amphibians, including Great Crested Newts. However, the terrestrial habitat present within the application site does provide suitable for amphibians within the local areas during their terrestrial phase.

4.4.2. A review of Ordnance Survey mapping identified a total of 20 off-site ponds and ditches located within 500 metres of the application and infill site boundary.

4.4.3. As outlined in Section 2 above, HSI assessments were undertaken of these off-site waterbodies by Babec in April and May 2018. Following this assessment, seven waterbodies were scoped in for further survey.

4.4.4. Subsequent eDNA sampling and full aquatic surveys of these waterbodies undertaken by Babec in 2018 confirmed the presence of Great Crested Newts within three offsite waterbodies (P2, P4 and P5 on Plan ECO4).

4.4.5. Following an updated HSI assessment, eDNA surveys of six of the seven waterbodies (shown as P1 – P6 on Plan ECO4) were undertaken by Ecology Solutions in June 2021 to ascertain whether Great Crested Newts are still present or absent. One of the waterbodies which lies immediately adjacent to the infill site boundary (referred to as P16 in the Babec report) was recorded to be dry at the time of survey.

4.4.6. Table 6 below notes the distance of these features from the application site, with the locations of each of these waterbodies illustrated on Plan ECO4.

Pond Reference	Location relative to application site
P1	c. 250 metres South

P2	c. 250 metres South
P3	c. 220 metres South-East
P4	c. 230 metres South-East
P5	c. 290 metres South-East
P6	c. 105 metres East

Table 6: Location of off-site waterbodies

4.4.7. Whilst water samples have been collected from each of these waterbodies in line with the eDNA survey methodology set out in Section 2 above, the results of the laboratory analysis have not yet been provided. The findings of the updated eDNA survey will be provided in an Addendum Report.

4.4.8. **Background Information.** The data search undertaken with SxBRC did not return any records of amphibians from within the application site or local area. The nearest record returned is an eDNA survey record of Great Crested Newt from a location approximately 0.46 kilometres to the north-east of the infill site.

4.4.9. Other amphibians recorded within the local area include Common Toad *Bufo bufo*, Palmate Newt *Lissotriton helveticus*, Smooth Newt *Lissotriton vulgaris* and Common Frog *Rana temporaria*.

4.5. Hazel Dormice

4.5.1. Given the paucity of the habitats present across the application site, and particularly within the majority of the development site, it is considered that there are negligible opportunities for Hazel Dormice *Muscardinus avellanarius*.

4.5.2. The mixed plantation woodland blocks within the site support relatively limited species diversity and are generally of a single age stand, thereby with structure that provides sub-optimal opportunities for Dormice. Whilst the off-site broadleaved woodland to the north-east of the infill site supports a greater diversity in terms of species, this area is to be full retained under the development proposals, will the proposals restricted to the grassland fields only.

4.5.3. On the basis that it is considered highly unlikely that Dormice would be present within the application site, and that the development proposals would not be likely to lead to any potential adverse effects to this species. As such, no further consideration has been afforded to this species within this Ecological Assessment.

4.5.4. **Background Information.** The desk study undertaken returned no records of Hazel Dormice from within or immediately adjacent to the application site. A total of nine records of this species were returned from within the 2km search radius around the application site.

4.5.5. The closest record of this species returned was from a location approximately 900m south-east of the application site, recorded in 2016.

4.6. Reptiles

4.6.1. Areas of semi-improved grassland and tall ruderal vegetation present within the application site provide suitable opportunities for common reptile species. In order to ascertain the presence or absence of this group from the application site, specific survey work was undertaken by Babec between April and May 2018.

4.6.2. The reptile surveys undertaken by Babec identified the presence of Common Lizard *Zootoca vivipara* within the infill site, with a peak count of one adult individual recorded. No other reptiles were recorded within the application site.

4.6.3. An updated reptile survey is currently being undertaken by Ecology Solutions. To date, in line with the methodology outlined in Section 2 above, a total of 120 tins have been deployed within areas of suitable habitat across the application site, with the overall area of suitable reptile habitat being approximately 9 hectares in size. On this basis therefore, the density of tins exceeds the standard density of 10 per hectare.

4.6.4. Further surveys are scheduled to be undertaken in Summer 2021 with the results to be provided in an Addendum Report.

4.6.5. **Background Information.** The desk study undertaken by SxBRC returned no records of common reptiles from within or immediately adjacent to the application site.

4.6.6. The closest record of reptiles returned is of two Common Lizards *Zootoca vivipara*, recorded approximately 0.7km to the north-east of the infill site boundary in 2016.

4.6.7. Other common reptiles recorded within the local area (albeit further afield) include Slow-worm *Anguis fragilis* and Grass Snake *Natrix Helvetica*.

4.7. Birds

4.7.1. The hedgerows, woodland, scattered trees and scrub habitats within the application site provide suitable nesting opportunities for birds. However, there is nothing to suggest that any particularly rare, protected or notable bird species or assemblage are likely to be reliant upon the application site.

4.7.2. A large nesting box suitable for raptors such as Kestrel *Falco tinnunculus* and Barn Owls *Tyto alba* was noted to be present on a mature tree within Field F4. To date, no evidence to indicate the use of this box by nesting Barn Owls or other bird species was recorded, although activity will be monitored during the course of further surveys at the site in 2021, with an update to be provided within the Addendum Report.

4.7.3. **Background records.** The data search undertaken by SxBRC returned one record of Kingfisher from within the application site. This record noted that one individual was noted to be flying south to north over the infill site in 2018. The next closest record returned is of a Grey Wagtail from a location approximately 0.25km north of the application site.

4.7.4. Other notable and protected bird species recorded from the wider search area include Black-headed Gull *Chroicocephalus ridibundus*, Cetti's Warbler *Cettia cetti*, Common Firecrest *Regulus ignicapilla*, House Martin *Delichon urbicum*, Reef Bunting *Emberiza schoeniclus*, Corn Bunting *Emberiza calandra*, Cuckoo *Cuculus canorus*, Dunnock *Prunella modularis*, Eurasian Bullfinch *Pyrrhula pyrrhula*, Skylark *Alauda arvensis*, Green Woodpecker *Picus viridis*, Herring Gull *Larus argentatus*, Hobby *Falco subbuteo*, House Sparrow *Passer domesticus*, Kestrel, Lapwing *Vanellus vanellus*, Lesser Redpoll *Acanthis cabaret*, Linnet *Linaria cannabina*, Mallard *Anas platyrhynchos*, Mistle Thrush *Turdus viscivorus*, Nightingale *Luscinia megarhynchos*, Red Kite *Milvus milvus*, Redstart *Phoenicurus phoenicurus*, Song Thrush *Turdus philomelos*, Spotted Flycatcher *Muscicapa striata*, Starling *Sturnus vulgaris*, Swallow *Hirundo rustica*, Swift *Apus apus*, Tawny Owl *Strix aluco*, Tree Sparrow *Passer montanus*, Tufted Duck *Aythya fuligula*, Barn Owl, Willow Warbler *Phylloscopus trochilus* andYellowhammer *Emberiza citrinella*.

5. ECOLOGICAL EVALUATION

5.1. The Principles of Site Evaluation

5.1.1. The latest guidelines for ecological evaluation produced by CIEEM propose an approach that involves professional judgement, but makes use of available guidance and information, such as the distribution and status of the species or features within the locality of the project.

5.1.2. The methods and standards for site evaluation within the British Isles have remained those defined by Ratcliffe[8]. These are broadly used across the United Kingdom to rank sites, so priorities for nature conservation can be attained. For example, current Site of Special Scientific Interest (SSSI) designation maintains a system of data analysis that is roughly tested against Ratcliffe's criteria.

5.1.3. In general terms, these criteria are size, diversity, naturalness, rarity and fragility, while additional secondary criteria of typicalness, potential value, intrinsic appeal, recorded history and the position within the ecological / geographical units are also incorporated into the ranking procedure.

5.1.4. Any assessment should not judge sites in isolation from others, since several habitats may combine to make it worthy of importance to nature conservation.

5.1.5. Further, relying on the national criteria would undoubtedly distort the local variation in assessment and therefore additional factors need to be taken into account, e.g. a woodland type with comparatively poor species diversity, common in the south of England may be of importance at its northern limits, say in the border country.

5.1.6. In addition, habitats of local importance are often highlighted within a local Biodiversity Action Plan (BAP).

5.1.7. Levels of importance can be determined within a defined geographical context from the immediate site or locality through to the International level.

5.1.8. The legislative and planning policy context are also important considerations and have been given due regard throughout this assessment.

[8] Ratcliffe, D A (1977). *A Nature Conservation Review: the Selection of sites of Biological National Importance to Nature Conservation in Britain*. Two Volumes. Cambridge University Press, Cambridge.

5.2. Habitat Evaluation

Designated sites

5.2.1. **Statutory sites.** There are no statutory designated sites of nature conservation interest located within or immediately adjacent to the application site boundary. The nearest statutory site is Slinfold Stream and Quarry Site of Special Scientific Interest (SSSI), located approximately 3.4km to the north-west of the application site at its closest point (straight line distance; see Plan ECO1).

5.2.2. There are no European designated sites located within 10km of the application site. As such, there is no potential for direct effects to arise on the European designated site as a result of the proposed development.

5.2.3. As illustrated on Plan ECO1, the application site is significantly separated from any statutory designated sites by extensive areas of countryside, as well as existing development and infrastructure. Moreover, given the nature of the proposals at the application site, it is considered that the development proposals would not be likely to lead to any significant effect upon any statutory designated sites, whether considered alone or in combination with other plans or projects.

5.2.4. **Non-statutory sites.** There are no non-statutory designated sites of nature conservation interest located within or immediately adjacent to the application and infill site boundaries. The closest non-statutory designated site is the Sparrow Copse Local Wildlife Site (LWS), which is located approximately 0.15km north of the application site (see Plan ECO1).

5.2.5. The citation for Sparrow Copse LWS notes that this site comprises ancient and semi-natural woodland supporting a wide variety of species, including Oak, Ash *Fraxinus excelsior*, Hornbeam *Carpinus betulus*, Wild Cherry *Prunus avium*, Sessile Oak *Quercus petraea* and Field Maple *Acer campestre*. This site is noted for its diverse species-rich ground flora, with species including Yellow Archangel *Lamiastrum galeobdolon*, Dog's Mercury and Bluebell present.

5.2.6. As illustrated on Plan ECO1, there are two other non-statutory designated sites within the local area:

- High Wood LWS, located approximately 0.95 km to the north of the application site; and
- Courtland Wood LWS, located approximately 1.20 km to the south.

5.2.7. The development proposals separated from all non-statutory designated sites by existing infrastructure and development. With the implementation of standard engineering protocols and best practice throughout the construction period, it is considered that any potential effects which could arise, such as contaminated run-off, dust deposition and noise disturbance, would be fully avoided.

5.2.8. Given the nature of the scheme, which is for the provision of new sports facilities associated with Christ's Hospital School, the development will therefore not result in an increase in recreational pressure upon any designated sites in the locality. As such, it is not considered that the development would not result in any adverse impacts upon non-statutory designated sites.

5.2.9. As such, subject to the adoption of standard avoidance and mitigation measures, it is considered that the development proposals would not be likely to lead to any significant adverse effects to non-statutory designated sites.

5.2.10. **Ancient Woodland.** A small area of ancient woodland is situated adjacent to the northern boundary of the infill site, with several additional blocks of ancient woodland present within the wider local area. These are illustrated on Plan ECO1 and Appendix 2.

5.2.11. The development proposals will not result in any works which will lead to direct losses to Ancient Woodland, although the proposals for the infill site are located in close proximity. As such, avoidance measures will be undertaken to ensure none of the trees associated with this parcel of Ancient Woodland is impacted by the proposed infill and reprofiling works. This will include root protection zones with boundaries sufficiently demarcated to ensure there is no route of possible damage.

5.2.12. A suitable buffer zone around the edge of the ancient woodland will be identified (of a minimum of 15 metres, in accordance with Standing Advice from Natural England), with measures employed to prevent potential encroachment of machinery and personnel into this buffer zone, including the use of protective fencing (e.g. Heras) throughout the duration of the infill and reprofiling works.

5.2.13. Given the separation of the application site from additional areas of Ancient Woodland within the local area, it is considered that subject to the adoption of standard engineering protocols and best practice, it is unlikely that the proposed scheme would have any adverse effect on this habitat.

Habitats within the application site

5.2.14. As illustrated on Plan ECO2 and described above, the application site supports a range of habitats, including semi-improved grassland, mixed plantation woodland, amenity grassland, dense scrub, tall ruderal vegetation, in addition to scattered trees, hedgerows, areas of existing development and hardstanding.

5.2.15. There are several small areas of mixed plantation woodland which are considered to be of moderate ecological value within the context of the application site. Under the development proposals, the vast majority of woodland W1 will be retained.

5.2.16. Woodland W2 will be partially lost, while W3 and W4 will be fully lost to facilitate the development proposals. Whilst these areas support a range of native tree and scrub species, they generally comprise

immature specimens, with a poorly developed understorey and species-poor ground flora. These are therefore not considered to be of significant ecology value in respect of biodiversity, however they do provide some opportunities for faunal groups including foraging and commuting bats and nesting birds (see below).

5.2.17. As illustrated on the Soft Landscape Plan (Appendix 3), new areas of native tree and shrub planting are proposed within the northern and western parts of the development site. The proposed planting mix comprises a broad range of native species of local provenance and value to wildlife. It is considered that these new areas of planting will more than mitigate for the small areas of woodland lost.

5.2.18. Areas of semi-improved grassland are present throughout the application site. As outlined above, whilst there is some variation in the species composition and vegetation communities present within the application site, the grassland habitats present are considered to be relatively species-poor, with extensive areas dominated by coarse grasses and supporting a limited herb content. However, these habitats do provide suitable opportunities for reptiles and amphibians (see below).

5.2.19. Under the development proposals areas of grassland will be lost to facilitate the new development. However, following the infill and reprofiling works of F4 and F5, these areas will be reinstated as pastoral fields and sown with a species-rich wildflower meadow seed mix. The provision of this habitat will increase the biodiversity value of the grassland resource present within the application site. Some areas (such as at the field boundaries) will be retained in order to ensure that optimal opportunities for reptile species are available during the time in which new areas of grassland become established (see below).

5.2.20. Other habitats present within the application site include dense scrub (primarily dominated by Bramble), tall ruderal vegetation and hedgerows. These areas support limited botanical diversity and whilst they offer some opportunities for faunal species (e.g., nesting birds), they are not considered to be of any particular ecological significance.

5.2.21. As illustrated on the Soft Landscape Plan (Appendix 3), new areas of native hedgerow planting are proposed throughout the application site. As such, it is considered that the minor losses required to facilitate the proposed development will be fully mitigated for. This will comprise a range of native species currently absent from the application site and will include new tree planting serving to enhance the value of this feature further. The creation of this habitat, in combination with areas of species-rich grassland, native thicket planting and new tree planting, and the implementation of a long-term management plan, it is considered that adverse effects will be offset and overall a net gain in biodiversity will be achieved post-development.

5.2.22. In conclusion, whilst the development proposals will necessarily result in losses to habitats such as semi-improved grassland, plantation woodland, hedgerows, trees, and scrub, it is considered that through the enhancement of retained features and the provision of extensive areas of new species-rich habitats including native wildflower grassland, native hedgerow and trees would offset losses. Moreover, the implementation of a site-wide management plan to maximise the long-term biodiversity value of new and retained habitats is likely to deliver enhancements in terms of the biodiversity value of habitats present within the site, compared to the existing situation.

5.3. Faunal Evaluation

Bats

5.3.1. **Legislation.** All bats are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and included on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 ("the Habitats Regulations"), as amended. These include provisions making it an offence:

- To deliberately to kill, injure or take (capture) bats;
- To deliberately to disturb bats in such a way as to: -
  - be likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or to hibernate or migrate; or
  - affect significantly the local distribution or abundance of the species to which they belong;
- To damage or destroy any breeding or resting place used by bats; or
- To intentionally or recklessly to obstruct access to any place used by bats for shelter or protection.

5.3.2. While the legislation is deemed to apply even when bats are not in residence, Natural England guidance suggests that certain activities such as re-roofing can be completed outside sensitive periods when bats are not in residence provided these do not damage or destroy the roost.

5.3.3. The words deliberately and intentionally include actions where a court can infer that the defendant knew that the action taken would almost inevitably result in an offence, even if that was not the primary purpose of the act.

5.3.4. The offence of damaging or destroying a breeding site or resting place (which can be interpreted as making it worse for the bat) is an absolute offence. Such actions do not have to be deliberate for an offence to be committed.

5.3.5. European Protected Species licences are available from Natural England in certain circumstances, and permit activities that would otherwise be considered an offence.

5.3.6. Licences can usually only be granted if the development is in receipt of full planning permission, and it is considered that:

(i) The activity to be licensed must be for imperative reasons of overriding public interest or for public health and safety;
(ii) There is no satisfactory alternative; and
(ii) The action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

5.3.7. **Application Site Evaluation.** Previous survey work completed by Babec in 2018 identified the presence of a Common Pipistrelle and a Soprano Pipistrelle day-roost within building B4.

5.3.8. Ground-level survey work in respect of roosting bats has also identified a total of eight trees with potential to support roosting bats within the development. Under the proposed scheme, two trees considered to have low bat roosting potential and three trees considered to have moderate roosting potential are to be removed. All other trees considered to have potential to support roosting bats within the application site are to be fully retained under the development proposals.

5.3.9. Bat activity surveys completed at the application site by Babec in 2018 confirmed that it is used by a range of common and widespread bat species for foraging and commuting. The vast majority of activity was associated with Common Pipistrelle, with much lower levels of activity of other species recorded.

5.3.10. The greatest level of activity was recorded towards the northern boundary of the development site, adjacent to areas of mixed plantation woodland and trees adjacent to B4. The greatest level of activity within the infill site was found to be associated with the road which bisects field F4 and F5 and at the field boundaries, with the least amount of activity recorded within areas of open space.

5.3.11. To date, the findings of updated activity surveys undertaken by Ecology Solutions to date are consistent with the findings of previous surveys. A higher level of activity was recorded within the infill site as opposed to the development site. Within the development site, the greatest level of activity was recorded in the north-east around areas of mixed plantation woodland. However, the majority of this activity is associated with activity of Common Pipistrelle and Soprano Pipistrelle bats, with much less registrations of other species.

5.3.12. **Avoidance, Mitigation and Enhancements.** Whilst further survey work is scheduled to be undertaken in order to robustly determine the presence / absence of roosting bats within trees T1, T2 and T3, and therefore whether specific avoidance and mitigation measures would be required, on the basis of the findings from the previous survey work, it is considered relatively unlikely that roosting bats are present within these trees.

5.3.13. Nonetheless, in the instance that roosting bats are found to be present within trees T1 – T3, a European Protected Species mitigation licence will be required from Natural England prior to any works taking place (including felling as well as lighting or other arboricultural works). This would likely entail the provision of new / alternative roosting opportunities, in addition to the adoption of a methodology to safeguard bats from potential harm.

5.3.14. Notwithstanding the findings of the emergence and re-entry surveys, which are currently being updated, in line with best practice, a precautionary approach will be adopted to any works adversely affecting any trees assessed to have potential to support roosting bats, with this subject to a soft felling exercise under the supervision of a suitably qualified ecologist. Should any roosting bats be encountered, works would need to cease and a licence sought from Natural England before proceeding.

5.3.15. In light of previous findings, it is expected that building B4 will likely still be utilised by roosting bats as a day roost. Consideration has been afforded to the potential impacts of increased light spill from new artificial lighting associated with the proposed development to prevent potential disturbance to roosting, foraging and commuting bats which utilise the application site.

5.3.16. A sensitive lighting strategy, as outlined in the documents produced by Midlands Lighting Solutions and the Floodlighting Report produced by Max Fordham LLP, will be adopted in respect of the proposed development. This strategy incorporates measures to ensure the level of light spill onto the surrounding habitats will be reduced. These measures include the use of LED directional lighting to reduce lightspill onto adjacent habitats, using the minimum amount of lighting required, limiting the colour temperature to 4500K, restricted times of use of floodlights (9am – 9pm only), and the provision of suitable landscaping (i.e. tree planting) which will act as a screen and maintain dark corridors through the application site.

5.3.17. Whilst the development proposals for the application site will result in losses of suitable commuting and foraging habitats, the retention and enhancement of existing features, alongside the provision of new species-rich habitats throughout the site will fully mitigate for these losses, and moreover, provide enhancements over and above the existing situation.

5.3.18. In particular, the provision of extensive areas of new tree and hedgerow plating across the application site, as illustrated on the Soft Landscaping proposals for the scheme (see Appendix 3) will provide strong corridors passing through the application site. As such, opportunities for foraging and commuting bats will be retained at the application site post-development.

5.3.19. The provision of new species-rich grassland habitats within the infill site boundary and the implementation of management to enhance the biodiversity value of habitats is likely to improve invertebrate prey density and abundance, and in turn deliver better foraging habitats than currently present within the application site.

5.3.20. As an enhancement, additional new bat boxes will be provided on suitable trees at the application site. It is recommended that Schwegler 1FF or 3FF (or similar equivalent) boxes are provided on the basis of their suitability for the species recorded during survey work and that they do not require regular maintenance. Boxes will be installed on suitable features at a variety of orientations and at a suitable height to prevent potential for predation (at least 3m). All boxes will be placed at locations away from artificial light sources.

[redacted]

[redacted]

Great Crested Newts

5.3.36. **Legislation.** Great Crested Newts are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as Amended) and included on Schedule 2 of the Conservation of Habitats and Species Regulations 2010 ("the Habitats Regulations", as amended). These include provisions making it an offence to:

- Deliberately to kill, injure or take (capture) newts;
- Deliberately to disturb newts in such a way as to:-

(i) Be likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or to hibernate or migrate; or

(ii) Affect significantly the local distribution or abundance of the species to which they belong;

- Damage or destroy any breeding or resting place used by newts; and
- Intentionally or recklessly to obstruct access to any place used by newts for shelter or protection (even if they are not in residence).

5.3.37. If proposed work is likely to destroy or disturb newts or their habitat Natural England should be consulted, and if necessary, any works carried out under a licence.

5.3.38. Great Crested Newts are also a UK Priority species.

5.3.39. **Application Site Evaluation.** There are no waterbodies situated within the application site boundary. However, some of the habitats present within the application site do offer some superficially suitable opportunities for Great Crested Newts during their terrestrial phase; specifically areas of longer grassland, trees and scrub.

5.3.40. Survey work previously undertaken by Babec in 2018 confirmed the presence of Great Crested Newts within three offsite waterbodies. Ponds P2 and P4 were previously found to support a moderate and small breeding populations respectively, whilst Pond P5 was found to support a small non-breeding population.

5.3.41. Updated eDNA sampling surveys of six waterbodies supporting water at the time of survey have been undertaken by Ecology Solutions in June 2021 to determine the continued presence or absence of Great Crested Newts from six offsite waterbodies. The findings of these will be provided within an Addendum Report, but it is anticipated that the results are most likely to be consistent with the work undertaken in 2018.

5.3.42. **Avoidance, Mitigation and Enhancements**. Taking into account the distance between the off-site waterbodies and the application site, the significant barriers to the movement of amphibians in the form of roads and existing built form, and that higher quality terrestrial habitat which could be utilised by amphibians is available adjacent to these waterbodies compared to the lower-quality habitats present throughout much of the application site, it is considered to be unlikely that any Great Crested Newts associated with these waterbodies would utilise the application site during their terrestrial phase.

5.3.43. Nonetheless, on a precautionary basis, measures shall be adopted during the clearance of superficially suitable terrestrial habitats to ensure that potential for harm is avoided. These measures are consistent with the approach proposed below in respect of reptile

species, involving habitat manipulation under the supervision of a suitably qualified ecologist.

5.3.44. The provision of new species-rich grassland habitats to be provided within the infill site upon completion of the reprofiling works, and the implementation of suitable long-term management will provide providing opportunities for amphibians, including Great Crested Newts, in the long-term.

Reptiles

5.3.45. **Legislation.** All six British reptile species receive a degree of legislative protection that varies depending on their conservation importance.

5.3.46. Due to their abundance and more cosmopolitan habitat requirements in Britain, Common Lizard, Slow Worm, Grass Snake and Adder *Vipera berus* are only 'partially protected' under the Wildlife and Countryside Act 1981 (as amended), and as such only receive protection from:

- deliberate killing and injuring;
- being sold or other forms of trading.

5.3.47. **Application Site Evaluation.** As outlined in Section 4 above, the application site was previously recorded to support a low population of Common Lizard within the infill site. No reptiles were recorded within the development site.

5.3.48. Updated surveys to determine the current baseline in relation to reptiles at the application site are currently being undertaken.

5.3.49. **Avoidance, Mitigation and Enhancements.** Whilst further surveys are scheduled to be undertaken at the application site in respect of reptiles, it is considered likely that findings will be largely consistent with previous surveys findings in 2018.

5.3.50. In the instance that common reptiles are recorded within either the development or the infill site boundary, appropriate avoidance and mitigation measures as detailed below will be adopted to avoid any direct harm to reptiles at the application site.

5.3.51. It is recommended that a 'habitat manipulation' exercise is adopted for the clearance of all suitable habitat for reptiles within the application site, in line with a methodology that will avoid potential harm to reptiles, should they be present.

5.3.52. Ground-level vegetation shall initially be cut to a height of no less than 15cm during the active period for reptiles (April to late September / October), in suitable weather conditions (dry and mild). This cut shall be undertaken in a systematic and methodical manner, working outwards from the site towards the site boundary, using low impact machinery.

5.3.53. No earlier than the subsequent day, all vegetation will be cut down to ground level, working again in a systematic manner working away from the site. The adoption of this 'habitat manipulation' methodology will encourage reptiles, should they be present, to move out of the development footprint of their own accord, thereby avoiding potential harm.

5.3.54. These works will be supervised by a suitably qualified and experience ecologist who will check all vegetation and soil for the presence of common reptiles prior to removal. Any reptile encounters will be relocated to an adjacent area of suitable habitat.

5.3.55. Prior to the commencement of works all contractors will be given a toolbox talk, which will highlight the potential presence of reptiles and ensure that all are familiar with the habitat manipulation methodology.

5.3.56. The adoption of the above measures will ensure that the proposed development will not cause harm to reptile species, should they be present within the site.

5.3.57. The long-term management of new grassland habitats to be provided within the infill site following the reprofiling works shall be undertaken in a manner that avoids potential harm to reptiles and to provide optimal opportunities for this group. By cutting grassland no lower than 15cm in height, and on rotation, this will encourage dense, tussocky areas to persist in suitable locations through the application site, thereby providing opportunities for this group in the long-term.

Birds

5.3.58. **Legislation.** Section 1 of the Wildlife and Countryside Act 1981 is concerned with the protection of wild birds, whilst Schedule 1 lists species which are protected by special penalties.

5.3.59. **Application Site Evaluation.** The application site offers opportunities for nesting and foraging birds in form of mixed plantation woodland, hedgerows, dense scrub, scattered trees, tall ruderal vegetation and unmanaged semi-improved grassland.

5.3.60. A large nesting box is located on a tree within the infill site boundary, however no evidence pertaining to its use by Kestrels or Barn Owls has been recorded during the updated survey work undertaken at the application site to date.

5.3.61. **Avoidance, Mitigation and Enhancements.** As all species of birds receive general protection whilst nesting, it is recommended that the clearance of any suitable nesting habitats should be undertaken outside of the main development of the main bird breeding season (typically considered to March to July inclusive).

5.3.62. Should this not be possible, potential nesting habitat should be subject to a nesting bird check by an experienced ecologist, immediately prior to its removal. Should any nesting birds be

identified, then the nest should be fully safeguarded *in situ* and subject to an appropriate disturbance buffer (as advised by the ecologist), and only removed once it has been confirmed all fledglings have left the nest and it is no longer active.

5.3.63. Due to the proximity of the large nesting box to the infill site boundary, on a precautionary basis, a pre-dawn nesting bird check will undertaken by a suitably qualified ecologist prior to any works commencing to determine whether nesting Barn Owls are present. Should an active nest be identified, advice would be sought from the ecologist to ensure that birds are protected from harm or disturbance whilst the nest remains active and until young have fledged.

5.3.64. Whilst the proposed development will result in losses to suitable nesting habitats (in the form of woodland, trees and areas of dense scrub), the provision of areas of new native tree and hedgerow planting, in addition to the provision of new species-rich grassland pasture will provide replacement nesting and foraging habitats (once established), with the use of seed and berry-bearing species of value for some bird species.

5.3.65. In order to provide new nesting opportunities, new bird nesting boxes will be provided within the application site. A range of box types shall be installed, including hole-fronted and open-fronted boxes, which will serve to provide opportunities for a range of species. All nest boxes should be situated out of direct sunlight and out of reach of predators, particularly cats.

6. PLANNING POLICY CONTEXT

6.1. The planning policy that relates to nature conservation in Christ's Hospital, Horsham is issued at two main administrative levels: nationally though the National Planning Policy Framework (NPPF) and at a local level through the Horsham District Planning Framework (HDPF) and the emerging Draft Horsham District Local Plan.

6.2. The proposed development will be judged in relation to the policies contained within these documents.

6.3. **National Policy**

National Planning Policy Framework (2019)

6.3.1. The National Planning Policy Framework (NPPF) sets out the Government's requirements for the planning system and was adopted on 27 March 2012 and subsequently revised on 24 July 2018 and 19 February 2019.

6.3.2. The key element of the NPPF is that there should be "*a presumption in favour of sustainable developmen*t" (paragraphs 10 to 11).

6.3.3. The revised NPPF is comparable to previous versions (which it replaces), including reference to minimising impacts on biodiversity and provision of net gains to biodiversity where possible (paragraph 170) and ensuring that Local Authorities place appropriate weight to statutory and non-statutory nature conservation designations, protected species and biodiversity.

6.3.4. The NPPF also considers the strategic approach that Local Authorities should adopt with regard to the protection, maintenance and enhancement of green infrastructure, priority habitats and ecological networks, and the recovery of priority species.

6.3.5. Paragraph 175 of the NPPF comprises a number of principles which Local Authorities should apply, including:

- encouraging opportunities to incorporate biodiversity in and around developments;
- provision for refusal of planning applications if significant harm cannot be avoided, mitigated or, as a last resort, compensated for; and
- the provision for the refusal for developments resulting in the loss or deterioration of 'irreplaceable' habitats unless the need for, and benefits of, the development in that location clearly outweigh the loss.

6.3.6. National policy therefore implicitly recognises the importance of biodiversity and that with sensitive planning and design, development and conservation of the natural heritage can co-exist and benefits can, in certain circumstances, be obtained.

6.4. Local Policy

The Horsham District Planning Framework

6.4.1. The Horsham District Local Plan was adopted in November 2015 and is the overarching planning document which governs development in the district.

6.4.2. A broad spatial objective of the Framework is to safeguard and enhance the environmental quality of the district, not least through identifying development which maximises opportunities for biodiversity. This spatial objective is in turn implemented through the following policies:

6.4.3. Policy 25 – District Character and the Natural Environment, which identifies that protected landscapes and habitats will be protected from inappropriate development, a net loss of biodiversity avoided, and opportunities for biodiversity net gains sought.

6.4.4. Policy 26 – Countryside Protection notes, amongst other matters, that development should be of an appropriate scale and design such that existing biodiversity features within the landscape are retained.

6.4.5. Policy 31 – Green Infrastructure and Biodiversity identifies that development which maintains or enhances Green Infrastructure will be supported. The policy further states that developments will be required to retain and enhance biodiversity and outlines the protection afforded to statutory and non-statutory designated sites.

6.4.6. Policy 33 – Development Principles identifies, amongst other matters, that developments should seek to retain existing landscape and natural features, with any losses sufficiently justified and mitigated for.

6.4.7. Policy 37 – Sustainable Construction requires development seeks to incorporate features which enhance biodiversity value.

Draft Horsham District Local Plan 2019 - 2036

6.4.8. As part of the Local Plan Review process, Horsham are in the process of updating a Regulation 18 Draft Local Plan following consultation. This document sets out how the District aims to meet new home requirements in a sustainable way and planning policies to guide development in the borough for the period 2019 to 2036.

6.5. Discussion

6.5.1. Recommendations have been put forward in this report that would fully safeguard the existing ecological interest of the application site, and wherever possible, measures to enhance ecological and biodiversity value have been set out. Based on surveys undertaken to date and assessment, the presence and potential presence of protected species has been given due regard and measures to enhance value of the application site have been put forward.

6.5.2. In conclusion, implementation of the measures set out in this report would enable the emerging development proposals for the application site to fully accord with planning policy for ecology and nature conservation at all administrative levels.

7. SUMMARY AND CONCLUSIONS

7.1. Ecology Solutions Limited was commissioned by Christ's Hospital School in June 2021 to undertake an Ecological Assessment of Bluecoat Sports Centre, Christ's Hospital School, Horsham.

7.2. The proposals include the redevelopment of the existing Bluecoat Sports Centre, in addition to the provision of a floodlit athletics track and all-weather sports pitch with associated car parking and access to the north and west.

7.3. There are no statutory designated sites of nature conservation interest located within or immediately adjacent to the application site. Given the significant separation of the site from any statutory designated sites, it is considered that the proposed development is unlikely to have any significant impacts upon statutory designated sites, during either the construction or operation phase.

7.4. Moreover, there are no non-statutory designated sites of nature conservation interest located within or immediately adjacent to the application site. Given the design and nature of the proposals, and subject to the implementation of standard engineering protocols and best practice throughout the construction period, it is considered that the proposed development is unlikely to have any significant impacts on any designated sites within the local area, during either the construction or operational phase.

7.5. Whilst the application site supports a range of habitats, losses to habitats of relatively greater ecological value, including plantation woodland, semi-improved grassland, hedgerows and trees will be offset through the provision of extensive areas of new species-rich wildflower grassland within the infill site following the completion of the reprofiling works, in addition to native hedgerow and tree planting within the development site.

7.6. The habitats on site are considered to offer potential opportunities for protected species, namely bats (roosting, foraging and commuting), [redacted] Great Crested Newts, reptiles and nesting birds.

7.7. A number of protected species surveys have been undertaken, including surveys in respect of bats, [redacted] Great Crested Newts and reptiles. To date, these have confirmed that the application site is utilised by protected species, including commuting and foraging bats. Further survey work is ongoing to provide additional clarification in terms of the use of the application site by protected species, with the results of these surveys to be present in an Addendum report.

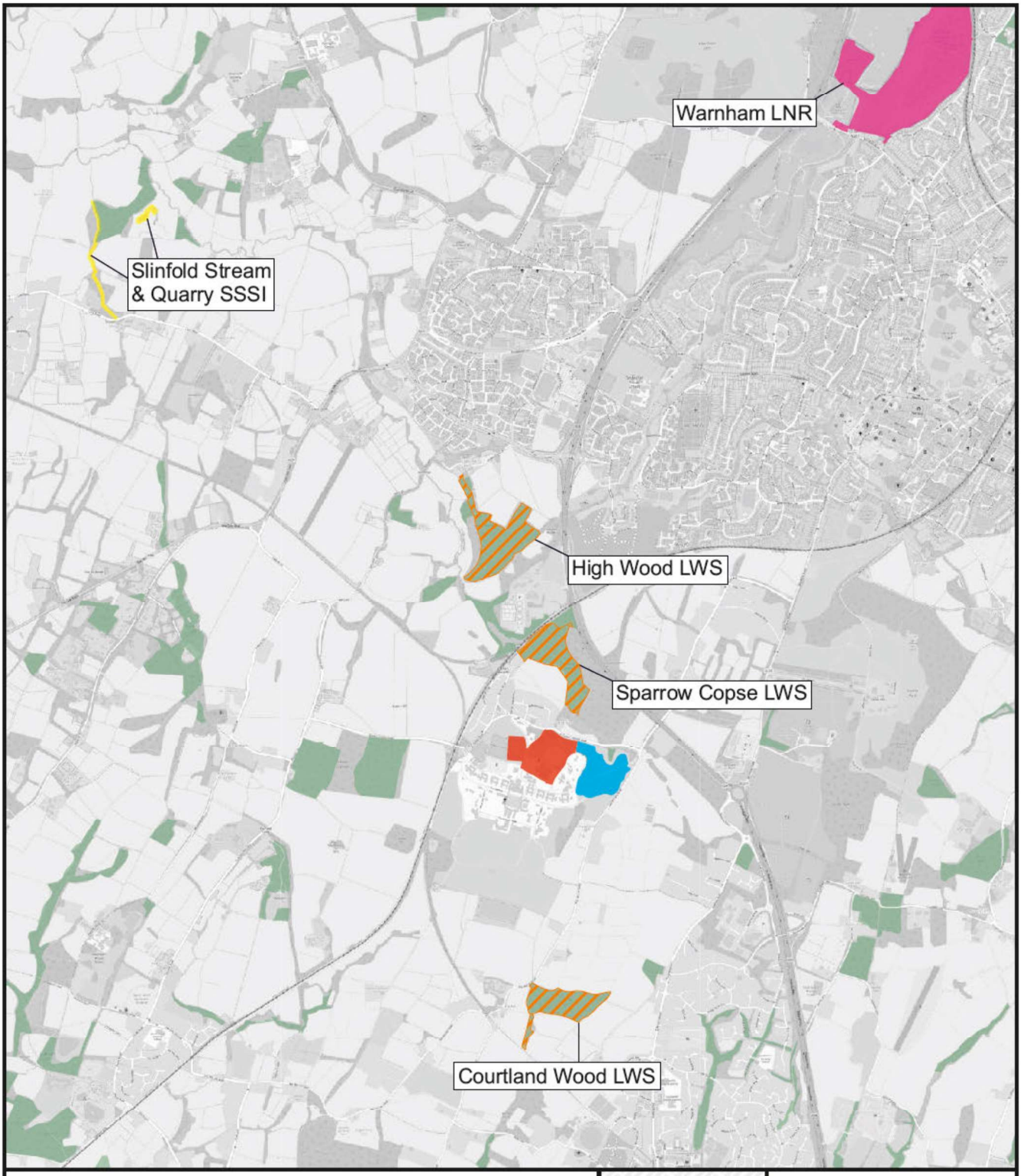
7.8. Appropriate mitigation measures have been proposed, including measures to safeguard bats, reptiles, Great Crested Newts, [redacted] and nesting birds. Subject to the implementation of avoidance, mitigation and enhancement measures as outlined in this Ecological Assessment, adverse effects to protected species will be avoided and opportunities for key faunal groups will be retained and moreover enhanced post-development.

7.9. In conclusion, on the evidence of the ecological surveys undertaken previously and updated surveys taken to date, it is considered that the application site is not of particularly high intrinsic value from a nature and conservation perspective. The nature and design of the proposed development and the incorporation of the recommendations put forward in this report will ensure that there will be no adverse effects to designated sites, habitats of ecological significance or protected species.

PLANS

PLAN ECO1

Application Site Location and Ecological Designations



KEY:

- DEVELOPMENT SITE LOCATION
- INFILL SITE LOCATION
- ANCIENT WOODLAND
- SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
- LOCAL NATURE RESERVE (LNR)
- LOCAL WILDLIFE SITE (LWS)

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9931: CHRIST'S HOSPITAL SCHOOL, HORSHAM

PLAN ECO1: APPLICATION SITE LOCATION AND ECOLOGICAL DESIGNATIONS

Rev: A

June 2021

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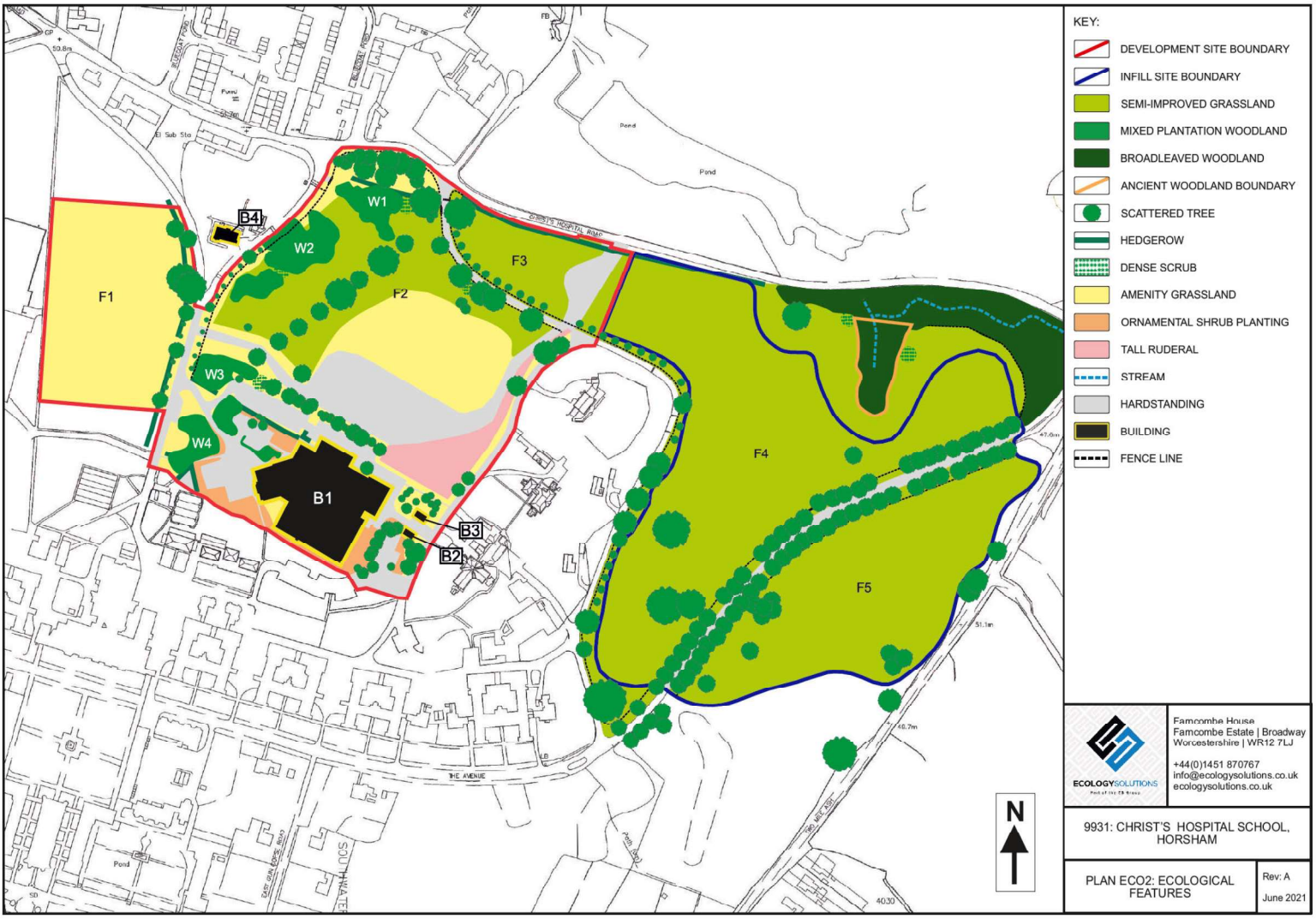
PLAN ECO2

Ecological Features



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9931: CHRIST'S HOSPITAL SCHOOL, HORSHAM

PLAN ECO2: ECOLOGICAL FEATURES

Rev: A

June 2021

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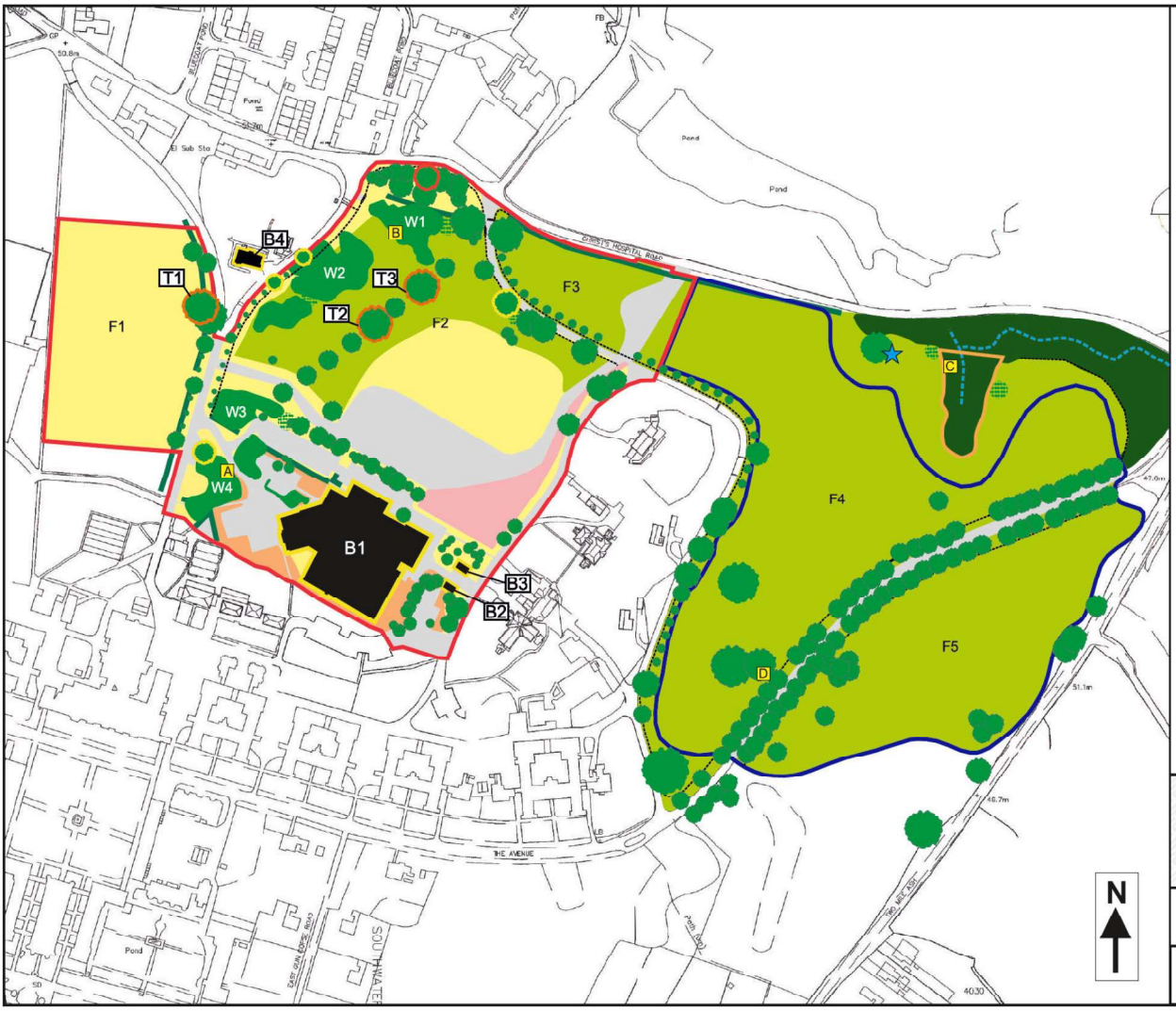
PLAN ECO3

Protected Species



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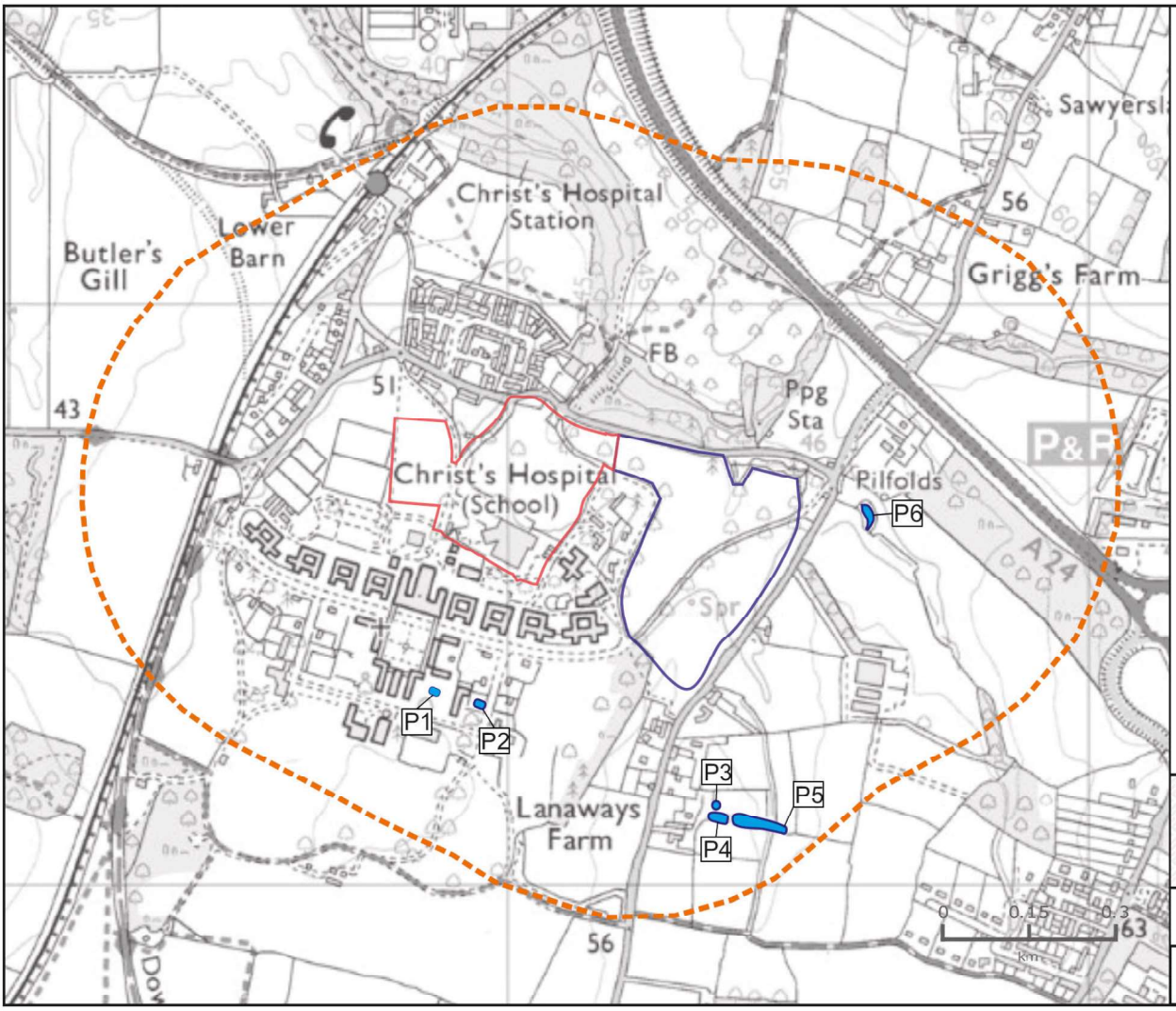
PLAN ECO4

Waterbody Location Plan



KEY:

- DEVELOPMENT SITE BOUNDARY
- INFILL SITE BOUNDARY
- 500m BUFFER
- OFF SITE WATERBODY

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9931: CHRIST'S HOSPITAL SCHOOL, HORSHAM

PLAN ECO4: WATERBODY LOCATION PLAN

Rev: A

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PLAN ECO5

[redacted]

APPENDICES

APPENDIX 1

Proposed Block Plan (LK2 Architects Ltd) (Drawing No. (08) 003, Rev A22)


NOTES
1. No dimensions are to be scaled from this drawing.
2. All dimensions are to be checked on site prior to construction.
Existing AGP's
Tennis Courts
Floor 3G AGP
Rugby and Football
Athletics Track with Users Rugby Training Pitch in the Infield
Existing Grassland Retained
Overflow Car Park Capacity 30 cars inc.
Car Parks =220 spaces
Proposed Extension
Existing Woodside Sport Centre
Existing Staff Car Park/Overflow Car Park
Chanctonbury Ring
Chanctonbury Ring
Chanctonbury Ring

APPENDIX 2

Information obtained from MAGIC

MAGiC

9931 - Bluecoat Sports Centre, Christ's Hospital School, Horsham



Legend

- Local Nature Reserves (England)
- National Nature Reserves (England)
- Ramsar Sites (England)
- Proposed Ramsar Sites (England)
- Sites of Special Scientific Interest (England)
- Special Areas of Conservation (England)
- Possible Special Areas of Conservation (England)
- Special Protection Areas (England)
- Potential Special Protection Areas (England)

Ancient Woodland (England)

- Ancient and Semi-Natural Woodland
- Ancient Replanted Woodland

Projection = OSGB36
xmin = 508500
ymin = 127200
xmax = 521900
ymax = 133300

0 0.75 1.5 km

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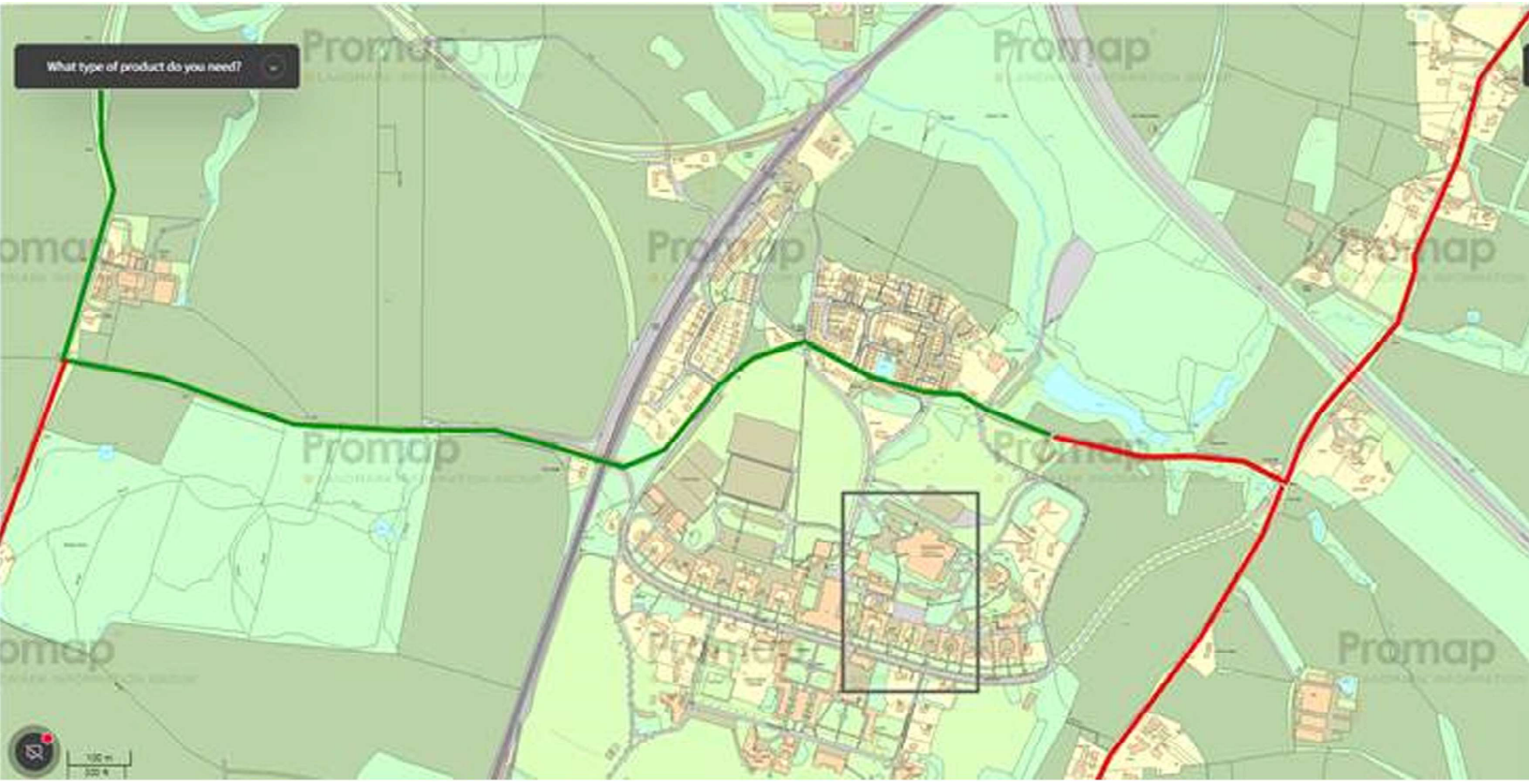
APPENDIX 3

Soft Landscape Layout (Ramsat & Co. Landscape Architecture) (Drawing No. RCo 226/01, Rev 11)



NOTES:
All construction vehicle movement to use the "Itchingfield" route to the A264 as indicated in green above.

Red routes indicated above are not to be used for construction vehicle access