Phase II Bat Survey Report

13 Netherhall Gardens, South Hampstead

Tyler Grange

16th June 2020

Report No:	Date	Revision	Author	Checked
13154_R02	16th June 2020		Rebekah Baker MSc	Aaron Grainger BSc MSc MCIEEM

Contents

Appendices

Plans

Summary

S.1. This bat survey report has been prepared by Tyler Grange Group Ltd on behalf of Re Creo Netherhall Gardens Ltd. It sets out the findings of detailed bat emergence surveys at a parcel of land at 13 Netherhall Gardens (OS Grid Reference (TQ 26321 84976), hereinafter referred to as the 'site'.

S.2. The proposals for Phase 2 of the Netherhall Gardens development comprise the extension and reconfiguration of the lower ground floor, the construction of a new basement level, external soft landscaping and planting, and associated works. Works to the residential building have already been granted under planning application 2020/0971/P. As part of this previous application, emergence re-entry surveys were undertaken on the residential building, during which no roosts were confirmed. As such, bat survey work in relation to the residential building have not been considered within this report.

S.3. During the Preliminary Bat Roost Assessment (PBRA) undertaken by Tyler Grange, three trees, T14, T21 and T31 were found to have a low potential for roosting bats, tree T25 was found to have a moderate potential for roosting bats and trees T27 and T28 were found to have high potential for roosting bats. In line with best practice guidance, two and three emergence/re-entry surveys were recommended for trees T25 and trees T27 and T28, respectively. The underground bomb shelter, building B2, was found to have negligable potential for roosting bats and required no further survey work.

S.4. No evidence of bat roosts being present in any of the trees was found during any of the three survey visits.

S.5. The proposals will result in the removal of trees T14, T21, T31, T25, T27 and T28. As no evidence of any bat roosts were found during the emergence surveys, a European Protected Species Licence (EPSL) is not required to allow for the felling of trees T25, T27 and T28. If at the point of felling, two years has elapsed from the time of these surveys then repeat surveys will be required. As trees T14, T21 and T31 have a low potential for roosting bats, they should be soft felled under the supervision of a suitably qualified Ecological Clerk of Works (ECoW).

S.6. It is considered that the loss of the potential bat roost features as a result of the felling works can be mitigated for through the incorporation of new bat boxes into the scheme design. Furthermore, a sensitive lighting strategy has been recommended to ensure that the value of the site is maximised for foraging and commuting bats in the long term.

S.7. The development offers the opportunity to enhance the site for bats, through the establishment of native planting, including native hedgerow and shrub planting, tree planting, green wall planting and a wildflower lawn.

S.8. Overall, it is considered that if the recommendations detailed within this report are followed, that the proposals will conform with both legislation and national and local policy. The measures will ensure that bats are protected during the construction phase of the works and through enhancing the site for bats through the implementation of design principles/landscaping measures to improve biodiversity on site.

Section 1: Introduction

Introduction

1.1. This bat survey report has been prepared by Tyler Grange Group Limited, on behalf of Re Creo Netherhall Gardens Ltd. It sets out the findings of detailed bat emergence surveys at a parcel of land at 13 Netherhall Gardens (OS Grid Reference (TQ 26321 84976), hereinafter referred to as the 'site'.

Context

1.2. The site is approximately 0.11ha in size and currently comprises a residential unit (currently under property guardianship), an underground bomb shelter and an associated garden space. The site is situated on the residential street of Netherhall Gardens, in South Hampstead, London.

1.3. 13 Netherhall Gardens is subject to a phased development. Phase 1 of the development has had planning permission granted, and covers proposed works to the residential building, (planning reference: 2020/0971/P/) which includes the erection of 2 x dormers to rear roof slope; removal of 3 x existing dormers; removal of external staircase; alterations to fenestration; demolition of the existing ground floor extension on the southern side of the building.

1.4. As part of this previous application, the residential building B1 and the underground bomb shelter B2, were assessed as having moderate and low potential for roosting bats, respectively (18111 Netherhall Gardens Preliminary Ecological Appraisal Report – Corylus Ecology). Bat surveys were carried out in September and August 2018, during which no emergences were confirmed from either of the buildings (18111 Netherhall Gardens Bat Survey Report – Corylus Ecology).

1.5. This report has been produced to support Phase 2 of the development which proposes the extension and reconfiguration of the lower ground floor, the construction of a new basement level, external soft landscaping and planting, and associated works of building B1. Taking into account that the appropriate bat survey work has already been carried out to inform Phase 1 of the development and that the works relating to the residential building have planning permission granted, the residential building (building B1) was not considered for further survey work in relation to Phase 2 of the development.

1.6. During the Preliminary Bat Roost Assessment (PBRA) conducted by Robert Sinclair (Natural England Level 2 bat licence holder 2017-30685-CLS-CLS Survey Level 2 (CL18)) (13175/P01a) in April 2020, the onsite buildings and trees were assessed for their potential to support roosting bats.

Buildings

1.7. Building B1 is the main residential building at the site and was found to support several potential bat roost features including hanging tiles, gaps in brickwork and pointing, lifted lead flashing and missing, raised and broken tiles. Building B1 was considered to have moderate potential for roosting bats. As detailed above, the relevant survey work has already been undertaken on building B1 in support of the application for Phase 1 of the Netherhall Gardens Development (18111 Netherhall Gardens Bat Survey Report – Corylus Ecology), during which no evidence of roosting bats was found and as such, is not considered further in this report.

1.8. Building B2 is an underground bomb shelter, which was previously assessed as having a low potential for roosting bats by Corylus Ecology and was subject to one emergence survey during which no roosts were observed (18111 Netherhall Gardens Bat Survey Report – Corylus Ecology). Upon Tyler Grange's assessment, building B2 was considered to have negligable potential due to the interior surfaces within the

shelter being smooth, the lack of crevices for roosting bats and due to the open doorway allowing penetration of day light into the interior. As the building has a negligable potential for roosting bats, no further survey work was required.

Trees

1.9. Fifteen trees were subject to a PBRA during the Phase I survey visit. Six trees were found to have potential to support roosting bats and nine trees were found to have negligable potential for roosting bats. The trees assessed are listed below in **Table 1.1** alongside any features present and the bat roost potential:

Tree Number	Species	Potential Bat Roost Features	Bat Roost Potential
T27	Hybrid black poplar *Populus x canadensis*	Natural hole, woodpecker hole, crack in trunk and a snapped branch	High
T28	Hybrid black poplar *Populus x canadensis*	Two knot holes and large cavity	High
T25	Hybrid black poplar *Populus x canadensis*	70% dense ivy cover which could be concealing a potential bat roost feature or providing a feature in itself	Moderate
T14	Common lime *Tilia x vulgaris*	Knot hole	Low
T21	Common yew *Taxus baccata*	Ivy cover which could be concealing a potential bat roost feature or providing a feature in itself	Low
T31	Hybrid black poplar *Populus x canadensis*	Loose bark around pruned limb	Low
T1	Common lime *Tilia x vulgaris*	N/A	Negligable
T2	Ash *Fraxinus excelsior*	50% Ivy cover, but stem too small to support potential roost features	Negligable
G4	Sycamore *Acer pseudoplantanus*	N/A	Negligable
G4	Wild cherry *Cerasus avium*	70% ivy cover, but stem too small to support potential roost features	Negligable
G4	Ash *Fraxinus excelsior*	N/A	Negligable
T6	Common lime *Tilia x vulgaris*	N/A	Negligable
T24	Pissard's plum *Prunus ceasifera*	Some crossing branching but none that offered a potential roost feature	Negligable
T30	Common lime *Tilia x vulgaris*	N/A	Negligable
S33	Elder *Sambucus nigra*	Very small woodpecker holes on the western elevation, but too small to support roosting bats	Negligable

Table 1.1. The fifteen trees subject to a PBRA during the Phase I habitat survey and their potential for supporting roosting bats.

1.10. In line with best practice guidance, three emergence/re-entry surveys were recommended for the high potential trees, T27 and T28, two emergence surveys for the moderate potential tree, T25 and soft felling was recommended for the low potential trees, T14, T21 and T31.

Purpose

1.11. The purpose of this report is to describe the results of three dusk emergence surveys, in order to assess the potential impact of the scheme on bats and provide recommendations for appropriate mitigation and enhancement measures, where necessary.

Legislation and Conservation Status

1.12. As European protected species, all UK bats receive legal protection in England under the Conservation of Habitats and Species Regulations (CoHSR) 2017 (as amended) and the Wildlife and Countryside Act (WCA) 1981 (as amended).

1.13. All British species of bat are listed on Schedule 2 of the CoHSR 2017 as European Protected Species (EPS). Regulation 41 (1) makes it an offence to:

- Deliberately capture or injure a EPS;
- Deliberately disturb a EPS;
- Deliberately take or destroy the eggs of a EPS; and/or
- Damage or destroy a breeding site or resti0ng place of a EPS.

1.14. All British bats are listed in Schedule 5 of the WCA. Section 9 of the WCA affords protection to Schedule 5 animals against:

- Intentional killing, injuring or taking;
- Possessing (including parts or derivatives);
- Intentional or reckless damage, destruction, or obstruction of any structure or place used for shelter, or protection; and/or
- Selling, offering or exposing for sale (alive or dead, including parts or derivatives).

1.15. All British bats are also listed at Schedule 6 of the WCA, and as such under Section 11 (1) of the WCA cannot be killed or taken by certain methods, such as traps and nets, poisons, automatic weapons, electrical devices, smoke / gases etc.

1.16. Several British bat species are listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, which states that decision-makers such as Local Planning Authorities must have regard to Species of Principal Importance (SoPI) in all their activities, including when making decisions on planning applications.

1.17. The following bat species are SoPIs: barbastelle *Barbastella barbastellus*, Bechstein's *Myotis bechsteinii*, brown long-eared *Plecotus auritus,* greater horseshoe *Rhinolophus ferrumequinum*, lesser horseshoe *R. hipposideros*, noctule *Nyctalus noctula,* and soprano pipistrelle *Pipistrellus pygmaeus*. These are the species found in England which were identified as requiring action under the UK Biodiversity Action Plan (UKBAP) and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework.

1.18. The local plan for London and Camden, namely London Plan Policy 7.19, draft London Plan Policy G6 and Camden Policy A3, states that development within the area should not adversely affect local biodiversity.

Section 2: Methodology

2.1. The surveys followed standard methodologies set out in the Bat Mitigation Guidelines (Mitchel-Jones, A. J., 2004), the Bat Workers Manual (Mitchell- Jones, A.J. and McLeish, A.P., 2004) and Bat Surveys – Good Practice Guidelines 3rd Edition (Collins, 2016). The methods broadly comprise the following:

- Desk Study - acquiring records of bats and/or bat roosts within the local area; and
- Two emergence surveys conducted on tree T25 and three emergence surveys on trees T27 and T28, all of which are proposed to be felled as a result of the development.

2.2. Records of bats within 2km of the site were requested and received from the Green Space Information for Greater London (GIGL) on the 28th April 2020.

2.3. Tree T25 was considered to have moderate potential for roosting bats and trees T27 and T28 were considered to have high potential for roosting bats, and so in line with best practice guidelines (Colins, 2016), were subject to two and three emergence surveys respectively. Surveyors were positioned strategically to ensure that the potential bat roost features were covered adequately (see plan **13154/P02**). Surveyors remained in these positions, observing the trees from 15 minutes before sunset, through until 1.5 hours after sunset. **Table 2.1** shows the metadata for this emergence survey.

2.4. Surveyors used a combination of visual observations and echolocation detection to identify any bats emerging from the trees. The type of detector used is detailed within the raw data in **Appendix 1**.

Table 2.1: Date and weather conditions during the emergence survey.

Visit	**V1**		**V2**		**V3**	
Date	**06/05/20**		**26/05/20**		**29/06/20**	
Trees Surveyed	**T25, T26 and T27**		**T25, T26 and T27**		**T26 and T27**	
Weather at:	**Start time: 20:18**	**End time: 10:02**	**Start time: 20:46**	**End time: 22:32**	**Start time: 21:07**	**End time: 22:52**
Cloud Cover (%)	0	0	50	50	90	70
Wind (Beaufort Scale):	1	0	1	2	4	3
Precipitation:	0	0	0	0	0	0
Temperature (°C)	14	13	21	18	17	17

Table 2.1: Date and weather conditions during the emergence surveys

Limitations

2.5. Bats use a variety of roosts, ranging from maternity, mating or swarming and hibernation roosts containing a large number of individuals, to mating or night-time feeding roosts containing low numbers or individual bats. Bats also tend to be nomadic (although are faithful to certain favoured roosting sites), spending variable lengths of time in a variety of roosts. As a result, even considerable survey effort it is possible that small transient roosts

of bats may have been missed, although these tend to be less important to bats and so should not affect the evaluation and recommendations made.

2.6. Bat surveys are subject to numerous variables. The echolocation calls of species such as brown long-eared bats are of low amplitude and may not always be picked up on bat detectors. Survey results represent a sample of bat activity for the duration of the survey.

2.7. Due to the current Covid-19 guidance, surveyors were unable to use overnight accommodation. To avoid surveyors driving for long distances before and after dawn re-entry surveys, only dusk emergence surveys were undertaken to avoid the risks associated with fatigue/travel when undertaking dawn surveys.

2.8. The weather conditions were optimal during the survey visit and therefore do not pose any limitation to the interpretation of the survey results.

Quality Control

2.9. All ecologists at Tyler Grange Ltd are members of CIEEM and abide by the Institute's Code of Professional Conduct

Section 3: Results

Desk Study

3.1. The data search returned records of five bat species and records of unknown bat species within the past 10 years. A summary of the results of the data search are detailed in **Table 3.1 below**.

Species	Most Recent Record	Approximate Distance of Nearest Record
noctule *Nyctalus noctula*	July 2016	0.2km west in August 2012
common pipistrelle *Pipistrellus pipistrellus*	July 2019	0.1km east in September 2018
soprano pipistrelle *Pipistrellus pygmaeus*	September 2018	0.2km west in August 2012
Nathusius pipistrelle *Pipistrellus nathussi*	August 2012	0.2km west in August 2012
Pipistrellus species	August 2012	0.2km west in August 2012
Bat species Chriptera	April 2010	0.4km east in April 2010

Table 3.1. Summary of the data search for bat records in the past 10 years.

3.2. In addition, one record of a brown long eared bat *Plecotus auritus* was returned just over 10 years ago in June 2009, occurring approximately 0.9km north east from site.

3.3. Five EPSLs have been granted for bats within a 2km radius and are listed in **Table 3.2.**

Case reference of licence	Species to which the licence relates	Start and end date	Notes or description of licence
EPSM2010-2134	Common and soprano pipistrelle	31/08/2010 – 30/08/2012	License allows destruction of a resting place.
2014-4879-EPS-	Common pipistrelle	14/04/2014 – 30/09/2014	License allows destruction of a resting place.
2015-10291-EPS-MIT	Common pipistrelle	08/05/2015 – 28/04/2020	License allows destruction of a resting place
2015-9230-EPS-MIT	Common and soprano pipistrelle	30/04/2015 – 29/04/2020	License allows destruction of a resting place
EPSM2012-4961	Common and soprano pipistrelle	16/10/2010 – 30/11/2012	License allows destruction of a resting place

Table 3.2: List of EPSL granted within a 2km radius of the site

Detailed Roost Survey

3.4. Two emergence surveys were undertaken on tree T25 and three emergence surveys were undertaken on trees T27 and T28. The results of these survey are shown in **Table 3.3** below:

Tree number	Visit		
	1	2	3
T25	No emergence	No emergence	N/A
T27	No emergence	No emergence	No emergence
T28	No emergence	No emergence	No emergence

Table 3.3: Emergence survey results

3.5. There was no evidence of roosting bats using trees T25, T27 or T28 during the emergence surveys.

3.6. Common pipistrelle and soprano pipistrelle were observed using the site, with common pipistrelles being the most common species represented. Bats were observed commuting across the site and using the site as foraging habitat, in particular the south western corner of the garden.

Section 4: Discussion and Recommendations

Site Proposals

4.1 The proposals are for the extension and reconfiguration of the lower ground floor, the construction of a new basement level, external soft landscaping and planting, and associated works.

4.2 The potential impacts of the development on bats are described below alongside relevant recommendations for mitigation and ecological enhancements.

Potential Impacts

4.3 As no emergences were observed during any of the three survey visits throughout May and June 2020, trees T25, T27 and T28 are not subject to legal protection with respect to bats and as such, no mitigation is required for their removal. It is considered that the removal of the three trees in relation to the proposals will not have any direct impact on any local roosting bat populations.

4.4 In line with best practice guidelines the removal of low potential trees must be subject to precautionary mitigation methods (Collins, 2016). As such, trees T14, T21 and T31 should be soft felled under the supervision of a suitably qualified ECoW.

4.5 It is clear from the results that the garden to the rear of the site is utilised by foraging bats, particularly the south western most corner of the site. The proposals will result in the loss of the tall scrub and tall ruderal habitat over which the bats are currently foraging.

4.6 The tree lined area of the site is relatively dark, despite the residential lighting that surrounds the garden, which includes security lighting on neighbouring properties. The species that were recorded using the site, common and soprano pipistrelles, are both light tolerant species and so any new lighting proposed as a result of the scheme isn't considered to pose a measurable impact and replacement tree planting along the western boundary could help create a darker foraging and commuting area over time. However, a sensitive lighting strategy will be recommended to ensure that the value of the site for bats is maximised in the long term,

4.7 Overall, it is considered that no legislation should be breached through the implementation of the proposals and that any impacts as a result of a loss of foraging habitat or increased light spill can be more than mitigated for through scheme design.

Mitigation

Roosting Bats

4.8 Although there will be no requirement to apply for a EPSL to enable the development to proceed, in the unlikely event that bats are discovered during any aspect of the demolition process, then works must cease immediately and advice must be sought from a licensed bat ecologist.

4.9 Trees T25, T27 and T28 are not considered to support roosting bats and so can now be felled without having to obtain an EPSL. However, if at the point of felling, two years has elapsed since the time of these surveys, then update surveys will be required.

4.10 As Trees T14, T21 and T31 were identified as having a low potential to support roosting bats precautionary mitigation methods should be implemented with respect to bats to ensure that no bats are harmed

during any works on these trees and to avoid triggering the relevant legislation, in the unlikely event that a bat should be found.

4.11 Precautionary soft felling must be undertaken during weather conditions suitable for bats to be active (i.e. dry and warm weather), and outside of both the bat hibernation period (November – March). If any soft felling must take place during the nesting bird season the i.e. during March, the ECoW must do a check for nesting birds. If a nesting bird is found a suitable buffer should be erected around the nest, within which no works can take place until the ECoW can confirm the chick has fledged or the nest has failed. It should be noted that nests can be found outside of the core nesting season (March-August, inclusive) and if any active nest is found during this period an ecologist must be contacted for advice.

4.12 The following methods should be implemented for the soft felling of trees T14, T21 and T31:

- A suitably qualified ECoW will be present during any soft felling to advise on the method in which the tree is felled;
- As advised by the ECoW, sections of the tree identified as having bat roost potential will be carefully removed and lowered to the ground and checked by the licenced ecologist to confirm absence of bats;
- These sections will be left undisturbed on the ground for a week to allow for any undetected bats that may be present to fly away; and
- If any roosting bats are found in the process of implementing the above methods all works must stop and shall not recommence until Natural England has been consulted and an appropriate licence has been granted.

4.13 To mitigate for the loss of potential roosting sites, bat boxes should be incorporated into the scheme design. These can either take the form of free hanging bat boxes which can be hung on suitably sized trees or onto the walls of the residential building, or internal bat boxes that can be integrated into the building. See **Appendix 2** for bat box specifications.

Lighting

4.14 No tangible impacts are predicted in terms of lighting however to ensure the value of the site for foraging and commuting bats is maximised once to scheme is built a sensitive lighting strategy should be implemented. Any lighting scheme should be designed to maintain dark, unlit areas by avoiding the illumination of bat foraging and commuting habitats (as below), particularly those that aren't already subject to illumination. Sensitive lighting will help to encourage the continued use of the site by bats.

4.15 The areas of habitat where sensitive lighting should be employed are at the new landscape planting areas associated with the south western most corner of the site and the tree line that will be established at the western site boundary. This could maintain a dark corridor for bats commuting between gardens and foraging area at the rear of the garden area.

4.16 In addition, areas of newly created habitat, as described below in the enhancements section, which would provide habitat for foraging and commuting bats, including new boundary planting, should be subject to sensitive lighting. Lighting should also be designed to avoid illuminating newly installed bat boxes.

4.17 Sensitive lighting measures may include low bollard lighting, use of hoods and cowls on lamps and use of low-pressure sodium or, where glass glazing is preferred, use of high pressure sodium instead of metal halide lamps (Collins, 2016; BCT and Institute of Lighting Engineers, 2009).

Enhancements

4.18 The proposals offer the opportunity to deliver enhancements at the site for bats through habitat creation and providing an increase in roosting opportunities.

4.19 Roosting opportunities could be provided at the site through installing either exterior bat boxes at the site post-development on walls or suitably large enough trees, as illustrated in the illustrative landscape plan (7050-04-LANDSCAPE-STRATEGY-PLAN), such as the Schwegler 2F bat box, or by incorporating internal bat boxes within the scheme design, such as the Ibstock Enclosed bat box "C". Any bat boxes integrated into the site design should be installed in suitable locations on proposed buildings (See **Appendix 2** for more details on bat box specification).

4.20 As shown in the illustrative landscape plan (7050-04-LANDSCAPE-STRATEGY-PLAN), the development of the site will include the establishment of a new native hedgerow, tree planting, a green wall, and a wildflower lawn.

4.21 This habitat creation will enhance foraging opportunities for bats at the site through increasing the amount of insects available to bats as a foraging resource. In particular, planting a range of nectar rich species such as honey suckle *lonicera periclymenum* and common ivy *Hedra helix* could increase the availability of insect forage on site. As well as providing increased foraging opportunities for bats, the proposed green wall planting is in line with the London plan Policies 5.10 and 5.11 and the draft London plan Policies G1 and G5.

4.22 These enhancements would be in line with the London plan Policy 7.19, draft London plan Policy G6 and the Camden Local Plan Policy A3 which state that proposals should create enhancements for biodiversity. Furthermore, enhancements for bats will be in line with both the London Biodiversity Action Plan (BAP), Camden BAP and the Camden Planning Guidance on Biodiversity which recommends the incorporation of green walls and bat boxes into scheme designs.

Section 5: Conclusion

5.1 The results of the emergence survey on trees T25, T27 and T28 indicate that it is unlikely that bats are using these trees as roosting sites. As such, these three trees can be felled without an EPSL. If, at the point of felling, two years have elapsed since the completion of these surveys, repeat surveys will be required,

5.2 Trees T14, T21 and T31 should be subject to precautionary mitigation methods and should be soft felled under the supervision of a suitably qualified ECoW outside of the bat hibernation period (November-March, inclusive).

5.3 In the unlikely event that a bat roost is discovered during tree works, works should cease and liaison with Natural England should be made in order to plan the appropriate plan of action.

5.4 It is considered that there are no ecological issues that would affect the proposed development at the site. If the suggested enhancement measures are followed, the development should comply with relevant legislation, the NPPF and local planning policy (London plan Policy 7.19, draft London plan Policy G6 and the Camden Local Plan Policy A3) which seek to protect and enhance ecological features.

5.5 In addition, it is considered that the development proposals offer the opportunity to enhance the site for bats, by creating new habitats through ecologically minded soft landscaping as shown in the illustrative landscaping plan (7050-04-LANDSCAPE-STRATEGY-PLAN), and through the incorporation of bat boxes to mitigate for the loss of trees and provide an increase in both foraging and roosting opportunities.

References

Chartered Institute of Ecology and Environmental Management (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland, 2nd Edition*. http://www.cieem.net/ecia-guidelines-terrestrial-. Chartered Institute of Ecology and Environmental Management, Winchester.

Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd Edition.* The Bat Conservation Trust, London.

Joint Nature Conservation Committee (2010). *Handbook for Phase 1 habitat survey - a technique for environmental audit*. JNCC, Peterborough.

Jones, J. (2000) *Impact of Lighting on Bats*. Bat Conservation Trust, London.

Appendix 1: Raw Bat Survey Data

A1.1 See **13154/P02** for bat surveyor locations.

Emergence Survey V1

Surveyor: Rebekah Baker		
Date: 06/05/20		
Survey: Dusk		
Tree: T25		
Surveyor Location: SL1		
Equipment used: Echo meter Touch		
Sunset time: 20:33	Start time: 20:18	End Time: 22:02
Weather	At Start	At End
Cloud Cover (%):	0	0
Wind (Beaufort Scale):	1	0
Precipitation	0	0
Temperature (C°)	14	13
Notes: almost constant common pipistrelle activity from 20:47 until 21:54, including both foraging bats and commuting bats. One soprano pip was heard during the survey. No emergences.		

Table A1.1: Raw data from SL1 during V1

Surveyor: Aaron Grainger		
Date: 06/05/20		
Survey: Dusk		
Tree: T27		
Surveyor Location: SL2		
Equipment used: Bat Box Duet and Zoom		
Sunset time: 20:33	Start time: 20:18	End Time: 22:02
Weather	At Start	At End
Cloud Cover (%):	0	0
Wind (Beaufort Scale):	1	0
Precipitation	0	0
Temperature (C°)	14	13
Notes: Regular common pipistrelle foraging activity from 20:52 until 21:14 and continuous common pipistrelle foraging from 21:26 through to 21:39. No emergences.		

Table A1.2: Raw data from SL2 during V1

Surveyor: Nathan Jenkinson		
Date: 06/05/20		
Survey: Dusk		
Tree: T28		
Surveyor Location: SL3		
Equipment used: Peersonic and Anabat Express		
Sunset time: 20:33	Start time: 20:18	End Time: 22:02
Weather	At Start	At End
Cloud Cover (%):	0	0
Wind (Beaufort Scale):	1	0
Precipitation	0	0
Temperature (C°)	14	13
Notes: Regular foraging activity from common pipistrelles from 20:52 through till 21:46. No emergences.		

Table A1.3: Raw data from SL3 during V1

Emergence Survey V2:

Surveyor: Daniel Lock		
Date: 26/05/20		
Survey: Dusk		
Tree: T25		
Surveyor Location: SL1		
Equipment used: Bat Box Duet and Zoom		
Sunset time: 20:20	Start time: 20:46	End Time: 22:32
Weather	At Start	At End
Cloud Cover (%):	50	50
Wind (Beaufort Scale):	1	2
Precipitation	0	0
Temperature (C°)	21	18
Notes: Almost constant activity from 21:18 through to 22:06 from foraging and commuting *Pipistrellus* species. No emergences.		

Table A1.4: Raw data from SL1 during V1

Surveyor: Robert Sinclair		
Date: 26/05/20		
Survey: Dusk		
Tree: T27		
Surveyor Location: SL2		
Equipment used: Echo Meter Touch		
Sunset time: 20:20	Start time: 20:46	End Time: 22:32
Weather	At Start	At End
Cloud Cover (%):	50	50
Wind (Beaufort Scale):	1	2
Precipitation	0	0
Temperature (C°)	21	18
Notes: Occasional *Pipistrellus* foraging activity from 21:19 till 21:47, including four common pipistrelles and one soprano pipistrelle. No emergences.		

Table A1.5: Raw data from SL2 during V2

Surveyor: Nathan Jenkinson		
Date: 26/05/20		
Survey: Dusk		
Tree: T27		
Surveyor Location: SL3		
Equipment used: Echo Meter Touch		
Sunset time: 20:20	Start time: 20:46	End Time: 22:32
Weather	At Start	At End
Cloud Cover (%):	50	50
Wind (Beaufort Scale):	1	2
Precipitation	0	0
Temperature (C°)	21	18
Notes: Low activity levels of common pipistrelles commuting. No emergences.		

Table A1.6: Raw data from SL3 during V2

Emergence Survey V3:

Surveyor: Daniel Lock		
Date: 29/06/20		
Survey: Dusk		
Tree: T27		
Surveyor Location: SL2		
Equipment used: Bat Box Duet and Zoom		
Sunset time: 21:22	Start time: 21:07	End Time: 22:52
Weather	At Start	At End
Cloud Cover (%):	90	70
Wind (Beaufort Scale):	4	3
Precipitation	0	0
Temperature (C°)	17	17
Notes: Occasional common pipistrelle foraging activity from 21:36 till 22:51. No emergences.		

Table A1.7: Raw data from SL2 during V3

Surveyor: Ben Nelumbu		
Date: 29/06/20		
Survey: Dusk		
Tree: T28		
Surveyor Location: SL3		
Equipment used: Batlogger		
Sunset time: 21:22	Start time: 21:07	End Time: 22:52
Weather	At Start	At End
Cloud Cover (%):	90	70
Wind (Beaufort Scale):	4	3
Precipitation	0	0
Temperature (C°)	17	17
Notes: Occasional common pipistrelle foraging activity from 21:36 till 22:51. No emergences.		

Table A1.8: Raw data from SL3 during V3

Appendix 2: Bat Box Specifications

A2.1 External bat boxes (such as the Schweglar 2F bat box) could be installed onto the building walls of the site post-development or on suitably big enough trees or internal bat boxes (such as the Ibstock Enclosed bat box “C”) could be integrated into the scheme design. These boxes offer suitable roosting conditions for crevice dwelling species such as common pipistrelle.

Figure A2.1: Schweglar 2F bat boxes (image from: https://www.wildcare.co.uk/bat-box-45.html)

Figure A2.2 Ibstock Enclosed bat box “C” (image from: http://nhbs.com/)

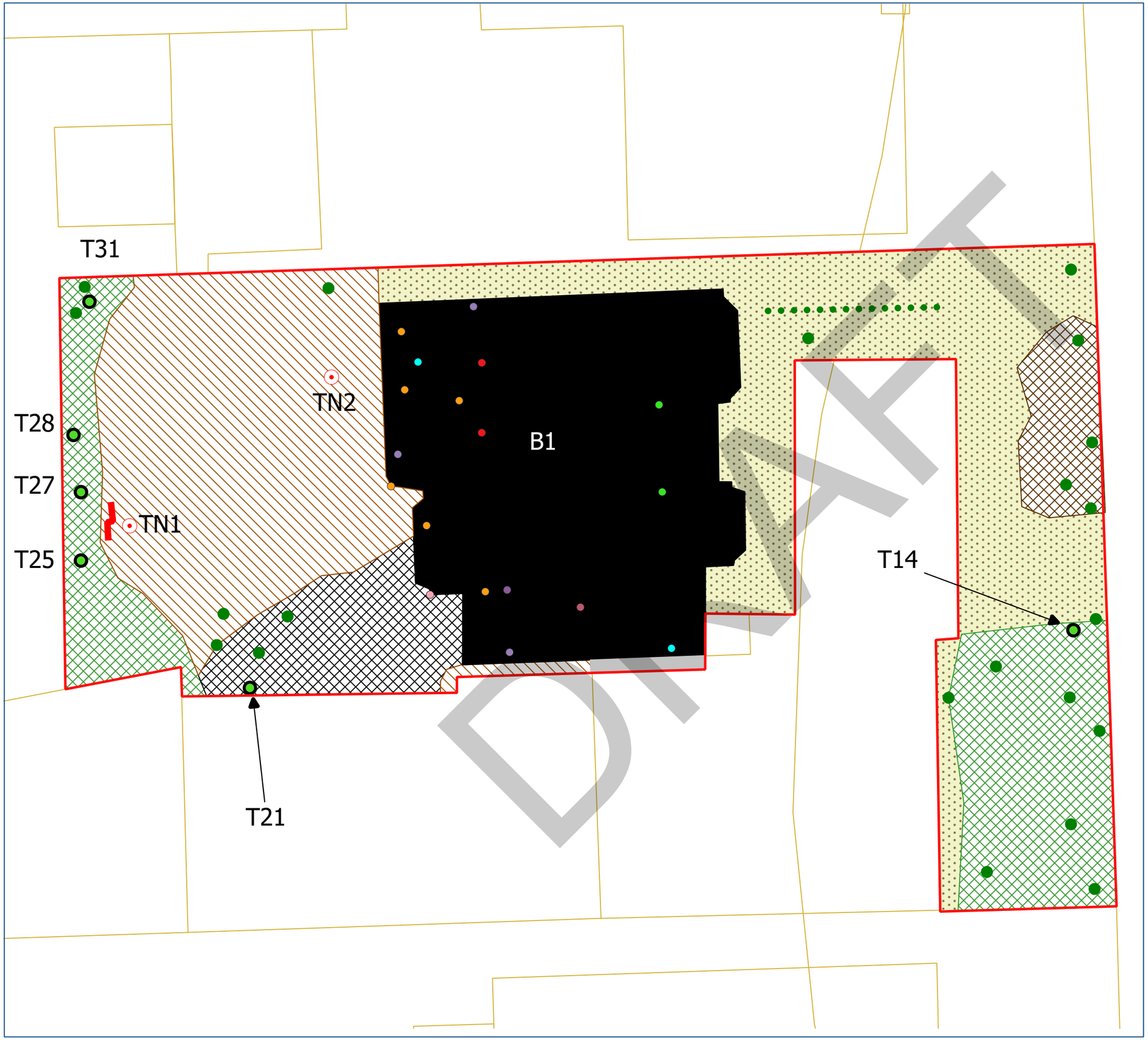
A2.2 The bat boxes should be installed at least 4m off the ground and positioned with an unobstructed approach. If possible, they should be placed where there will be no lighting directed towards them.

A2.3 As temperature is known to be an important factor influencing the success of artificial roost boxes (BCT, 2016 the boxes are to be sited on the south, west and east aspects of trees or buildings to receive maximum amounts of sunlight and warmth.

Plans

Plan 1: Habitat Features and Preliminary Bat Roost Assessment Plan – 13154/P01a

Plan 2: Bat Surveyor Location Plan – 13154/P02



- Red Line Boundary
- Bare Ground
- Building
- Ephemeral/Short Perennial
- Hardstanding
- Continous Scrub
- Introduced Shrub
- Tall Ruderal
- Tree Line
- Scattered Broadleaved Trees
- Target Note

Bat Features

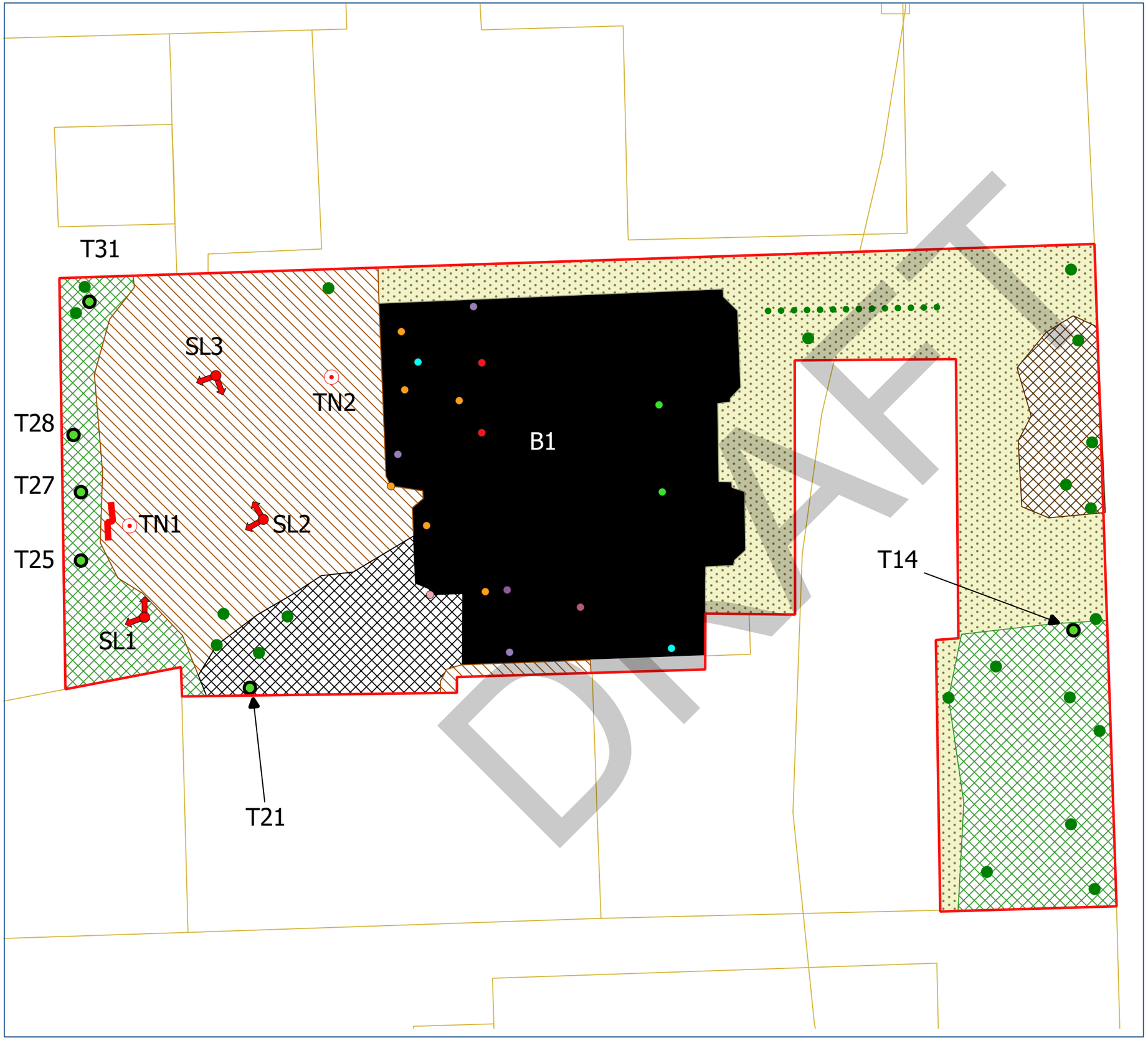
- Trees with Bat Roost Potential
- Broken Chimney Stack
- Gap between Gutter and Brickwork
- Hanging Tiles
- Gap under Hanging Tiles
- Missing Brickwork or Pointing
- Missing Fillet
- Missing, Broken or Hanging Tiles
- Ridge Gaps

N

0 5 m

Project	13 Netherhall Gardens
Drawing Title	**Habitat Features and Potential Bat Roost Features Plan**
Scale	As Shown (Approximate)
Drawing No.	13154/P01a
Date	June 2020
Checked	RB

Tyler Grange
30 Stamford Street, Southbank, London, SE1 9LQ
T: 020 3934 9470 E: info@tylergrange.co.uk W: www.tylergrange.co.uk



- Red Line Boundary
- Bare Ground
- Building
- Ephemeral/Short Perennial
- Hardstanding
- Continous Scrub
- Introduced Shrub
- Tall Ruderal
- Tree Line
- Scattered Broadleaved Trees
- Target Note

Bat Features

- Trees with Bat Roost Potential
- Broken Chimney Stack
- Gap between Gutter and Brickwork
- Hanging Tiles
- Gap under Hanging Tiles
- Missing Brickwork or Pointing
- Missing Fillet
- Missing, Broken or Hanging Tiles
- Ridge Gaps
- Bat Surveyor Positions

N

0 5 m

Project	13 Netherhall Gardens
Drawing Title	**Bat Survey Location Plan**
Scale	As Shown (Approximate)
Drawing No.	13154/P02
Date	June 2020
Checked	RB

Tyler Grange
30 Stamford Street, Southbank, London, SE1 9LQ
T: 020 3934 9470 E: info@tylergrange.co.uk W: www.tylergrange.co.uk