APPENDIX 8.7

Land at Upper Cosmeston Farm, Lavernock Road, Penarth
Ecology Update Note
edp5187_r004c

1. Introduction

1.1 This Ecology Update Note has been prepared by The Environmental Dimension Partnership Ltd (EDP) on behalf of Welsh Government (hereafter referred to as 'the Applicant'), in relation to Land at Upper Cosmeston Farm, Lavernock Road, Penarth (hereafter referred to as 'the Application Site'). This note provides an update assessment of the potential of the Application Site to support roosting bats.

1.2 EDP is an independent environmental planning consultancy with offices in Cirencester, Cardiff, Cheltenham and Shrewsbury. The practice provides advice to private and public sector clients throughout the UK in the fields of landscape, ecology, archaeology, cultural heritage, arboriculture, rights of way and masterplanning. Details of the practice can be obtained at our website www.edp-uk.co.uk.

2. Background and Scope

2.1 Detailed ecological assessments of the Application Site were previously undertaken by Wardell Armstrong in 2016 and 2017 to inform an outline planning application for residential-led mixed use development. Surveys comprised a desk study and Extended Phase 1 Habitat survey followed by detailed surveys for protected species, including the following in respect of bats:

- A visual assessment of all buildings/structures associated with Upper Cosmeston Farm and the wider Application Site for bat roosting potential, completed during September 2016 and updated in April 2017;
- Dusk emergence and dawn re-entry surveys of buildings/structures associated with Upper Cosmeston Farm and the wider Application Site, between May and September 2017; and
- Four dusk bat activity transect surveys completed between September 2016 and September 2017 (albeit encompassing different areas of the Application Site following inclusion of additional land within the Application Site's boundaries), including the deployment of two automated detector across the land ownership boundary for a minimum of five nights on four occasions between September 2016 and September 2017.

2.2 Given the time that has elapsed since the Application Site was last assessed, however, and following consultation with Vale of Glamorgan Council (VoGC) Ecologist Erica Dixon on 01 February 2019, update surveys in respect of roosting bats were considered necessary to inform an Environmental Statement for the Application Site and forthcoming planning application. In agreement with the Council Ecologist, further survey effort comprised a single dusk emergence survey of each building/structure associated with the Application Site necessary to verify the existing baseline data and results of the previous survey effort undertaken.

2.3 Following identification of a bat roost not previously recorded, however, this was followed by an update visual inspection of onsite buildings and further dusk emergence survey during summer 2019.

2.4 Additionally, with respect to tree roosting bats potentially present, although an Extended Phase 1 Habitat survey reported the presence of several trees within the Application Site with suitable roosting features, no formal assessment of their suitability was undertaken.

2.5 This Ecology Update Note therefore details the findings of update baseline investigations in respect of roosting bats, completed by EDP between April and July 2019, to determine any additional potential ecological constraints to proposed development of the Application Site.

Site Context

2.6 The Application Site is situated at approximate Ordnance Survey Grid Reference (OSGR) ST 17964 68945 within the Local Planning Authority of VoGC. The Application Site encompasses an area of circa 25.2 hectares (ha), comprising a mixture of grazing pasture and arable land, the farm buildings of Lower Cosmeston Farm and the course of the disused railway route between Penarth and Sully, which dissects the Application Site at its centre from north to south. Field parcels within the Application Site are defined by a mixture of hedgerow boundaries and tree belts. Also passing through the Application Site is an agricultural-character track which connects the B4267 to the former Penarth Royal Observer Corps (ROC) Post, located adjacent to the Application Site's south-eastern corner.

2.7 The landform of the Application Site undulates between a low point of 14m above Ordnance Datum (AOD) at the Application Site's boundary with Lavernock Road and high point of 34m AOD at the southern boundary of the eastern half of the Application Site.

2.8 In terms of its wider context, the Application Site is bordered to the north by existing built form of Cosmeston, notably the residential streets of Upper Cosmeston Farm, Raven Way, Fulmar Close, Shearwater Close, Petrel Close, Whitcliffe Drive and Cosmeston Drive. To the west the Application Site is bordered by the course of the B4267 (Lavernock Road) which connects Cosmeston to the nearby settlement of Sully to the south-west and divides the Application Site from Cosmeston Lakes Country Park which is situated beyond to the north-west.

2.9 To the south of the Application Site the landscape is predominantly made up of arable agricultural land, with the village of Lavernock and its associated 'Holiday Village' located beyond the minor route of Fort Road. Directly to the east of the Application Site runs the course of the Wales Coastal Path, along the length of the Application Site's eastern boundary, before the land falls away as cliffs down to the Bristol Channel at Roundbush Rocks and Ranny Bay.

3. Methodology

Investigations of Bat Roosting – Trees

3.1 A ground-based visual assessment of all onsite trees was undertaken to determine the presence of, or potential to support, roosting bats. The survey was undertaken on 09 April 2019 by a suitably qualified and Natural Resources Wales (NRW) licensed ecologist and in accordance with best practice guidelines[1]. The trees were searched as thoroughly as possible from ground level, with all elevations covered where accessibility allowed.

3.2 Suitable features for roosting bats sought for during the assessment included:

- Loss/peeling/fissured bark;
- Natural holes e.g. rot holes and holes from fallen limbs;
- Woodpecker holes;
- Cracks/splits or hollow tree trunks/limbs; and
- Thick-stemmed ivy.

3.3 Signs of roosting bats sought for included:

- Bat/s roosting *in-situ*;
- Bat droppings within or beneath a feature;
- Staining around or beneath a feature;
- Oily marks (staining) around roost access points;
- Audible squeaking from the roost;

[1] Bat Conservation Trust (2016) Bat *Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition.* Bat Conservation Trust, London

- Large/regularly used roosts or regularly used sites may produce an odour; and
- Flies around the roost, attracted by the smell of guano.

3.4 Based upon the results of the visual assessment and features/evidence identified, the following ratings for trees were used during the assessment:

- **Known or confirmed roost** – European Protected Species (EPS) licence required for works to tree to be completed lawfully;
- **High potential** – Tree supports one or more features that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time;
- **Moderate potential** – Tree supports one or more features that could be used by bats, but are unlikely to support a roost type of high conservation status;
- **Low potential** – Tree supports one or more features that could be used by individual bats opportunistically, or is of sufficient size and age to contain such features; and
- **Negligible potential** – Negligible features likely to support roosting bats.

Limitations

3.5 A visual assessment of trees for roosting bats was undertaken early in the year when trees were not in full leaf which may otherwise obscure potential roosting features. This assessment was, therefore, not limited by seasonal or climatic factors.

3.6 Bats are mobile animals and will move between a series of different roost sites, frequently establishing and occupying new roost sites depending on seasonal requirements and resources available locally. This survey, therefore, only provides a snapshot of the conditions present at the Application Site at the time of survey.

Investigations of Bat Roosting – Buildings/Structures

External and Internal Bat Roost Assessment of Buildings

3.7 Upper Cosmeston Farm comprises a complex of six buildings, including an occupied farmhouse and a number of agricultural barns (**B1** and **B3** - **B7**). The Application Site also supports three old railway bridges (**B2**, **B8** and **B9**) located along the former railway line which crosses through the centre of the Application Site, north to south. A Preliminary Roost Assessment undertaken by Wardell Armstrong in September 2016 and April 2017 confirmed buildings **B1**, **B4** and **B6** as having moderate suitability to support roosting bats and **B3**, **B5** and **B7** as having low suitability to support roosting bats. Railway bridges **B2** (central rail bridge), **B8** (north-east rail bridge) and **B9** (south-west rail bridge) were all classified as having low suitability. As such,

further dusk emergence and dawn re-entry surveys were undertaken by Wardell Armstrong between May and September 2017.

3.8 To update the existing ecological baseline an external and internal visual inspection of onsite buildings/structures was undertaken by an NRW bat licenced ecologist from EDP for any evidence of, or potential to support roosting bats, with reference to best practice guidelines[2]. The visual assessment was undertaken on 12 July 2019. The buildings were searched from ground level, using a high-powered Clulite, a Rigid CA300 endoscope and binoculars where necessary, with all elevations covered where accessibility allowed.

3.9 Suitable features for roosting bats include:

- Large uncluttered roof spaces (preferably free of cobwebs), particularly when lined and insulated;
- Gaps in mortar of brickwork;
- Gaps under cracked/lifted/slipped roof/ridge/hanging tiles;
- Crevices between sheets of roofing felt or other materials;
- Gaps around window frames and door lintels;
- Access points in the apex, under the eaves or beneath/between tiles; and
- Ridge beam/main rafters with timber joists and free of cobwebs.

3.10 Signs of roosting bats include:

- Bat/s roosting *in-situ* (live, dead or parts of);
- Bat droppings within or beneath a feature/access point;
- Staining around or beneath an access point/feature;
- Oily marks (staining) around roost access points/features;
- Audible squeaking/chattering from the roost (particularly on hot summer days);
- Large/regularly used roosts or regularly used sites may produce an odour; and

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

- Flies around the roost, attracted by the smell of guano.

3.11 Based upon the results of the building assessments and the features/evidence identified (as above), each was assigned with a bat roost potential category, as shown in **Table EDP 3.1**.

Table EDP 3.1: Bat Roost Potential Categories for Buildings.

Bat Roost Potential	Description
Confirmed Roost	Evidence of bats found.
High Potential	Many of the potential roosting features (listed above) present, with good foraging habitat nearby that is well connected to the site.
Moderate Potential	A few potential roosting features (listed above) present with some foraging habitat nearby that is connected to the site.
Low Potential	One or two roosting features present with foraging habitat nearby, but with limited connectivity.
Negligible Potential	No features present.

Limitations

3.12 Visual assessments of buildings for roosting bats can be undertaken at any time of year and this assessment was therefore not limited by seasonal or climatic factors.

3.13 There was no internal access to the main farmhouse (**B1**) during the update visual inspection such that signs of roosting bats may have been missed. This is not, however, considered to be a limitation to the assessment given further survey effort, comprising a dusk emergence survey was undertaken to confirm presence/infer absence of a bat roost.

Dusk Emergence and Dawn Re-entry Surveys

3.14 To supplement existing data provided by Wardell Armstrong between May and September 2017, an additional dusk emergence survey of each building was undertaken by EDP during May and July 2019 with reference to best practice guidelines. The survey was undertaken by up to eight suitably qualified surveyors to provide adequate coverage of all elevations of each building/structure and suitable roosting features/access points previously identified during the roost assessment (refer to **Plan EDP 2a – 2e** for surveyor locations). Detailed field notes and recordings were made to allow for *in-situ* and *ex-situ* identification and analyses. The surveyors used Elekon Batlogger bat detectors.

3.15 This was followed by a dawn re-entry survey of building **B7** following identification of a new bat roost during initial survey effort. The survey was undertaken during July 2019 by two suitably qualified surveyors to provide adequate coverage of all elevations of building **B7** and suitable roosting features/access points previously identified during the roost assessment (refer to **Plan EDP 2a – 2e** for surveyor locations).

3.16 Each dusk emergence survey commenced approximately 15 minutes before sunset and continued for up to 2 hours after sunset. The one dawn re-entry survey commenced 1.5 hours

before sunrise and continued approximately 15 minutes after sunrise. A summary of each survey including dates, timings and weather conditions is included within **Table EDP 3.2**.

Table EDP 3.2: Summary of Bat Emergence/Re-entry Survey at Land at Upper Cosmeston Farm, Lavernock Road, Penarth.

Date	Surveyed structures	Start/ Finish Time	Sunset/ Sunrise Time	Time Recorded	Temp (C°)	Cloud (%)	Rain	Wind (Beaufort Scale)
07.05.19	**B4**, **B6**	20:25 - 22:20	20:45	Start	13.0	100	Nil	1
				End	13.0	100	Nil	1
14.05.19	**B3**, **B5**	20:40 - 22:50	20:56	Start	16.0	10	Nil	2
				End	14.0	10	Nil	1
15.05.19	**B1**, **B2**, **B7**, **B8**, **B9**	20:40 - 22:30	20:58	Start	15.0	20	Nil	1
				End	14.0	20	Nil	1
16.07.19	**B7**	03:44 - 05:29	05:14	Start	18.0	90	Nil	1
				End	17.0	90	Nil	1

Limitations

3.17 The surveys were undertaken under suitable weather conditions and as such are not considered to be limited by climatic factors.

4. Findings

4.1 This section summarises the baseline ecological conditions with respect to roosting bats determined through the course of update field-based investigations and should be read in conjunction with **Plans EDP 2a – 2e**.

Investigations of Bat Roosting – Trees

4.2 With reference to the tree numbering system used within the Arboriculture Technical Note prepared by EDP and to be submitted with a planning application, a total of 42 trees were assessed as having bat roosting potential, including 20 with high potential, 12 with medium potential and ten with low potential.

4.3 A summary of the findings of the initial ground level assessment is provided in **Table EDP 4.1** below.

Table EDP 4.1: The results of the ground level bat tree assessment undertaken by EDP on 01 February 2019 (numbers in brackets refer to tree/group numbers illustrated within a submitted Arboricultural Technical Note).

Ecology Tree Number	Arb Tree Number	Species	Potential Roost Features	Bat Roost Potential - Ground Level Assessment
1	H14	Hawthorn	Dense ivy coverage, mature.	Low
2	G13	Hawthorn	Dense ivy coverage, mature.	Low
3	G13	Ash	Single limb hole tear present, mature.	Low
4	G13	Ash	Single hole at base (bee occupied), mature with two branches torn.	Medium
5	G13	Ash	Multiple (5+) limb holes with a 2m lateral split, mature.	High
6	G13	Hawthorn	Dense ivy, mature.	Low
7	T10	Ash	Several limb holes (3+) with flaking bark, mature.	High
8	G15	Field Maple	Multiple (5+) limb holes, mature.	High
9	G15	Field Maple	Rot hole present near cut branch, mature.	High
10	T16	Field Maple	Several (2+) rot holes present, mature.	High
11	G17	Field Maple	Woodpecker hole, several (3+) limb holes, rot hole and flaking bark present, mature.	High
12	G17	Hawthorn	Three shallow limb holes with limited flaking bark, mature.	Medium
13	G17	Field maple	Several (3+) deep limb holes, tear-out and flaking bark, mature.	High
14	G17	Field maple	Several (3+) deep limb holes, rot hole and flaking bark, mature.	High
15 - 19	G17	Field maple	Multiple (5+) deep limb holes, mature.	High
20	G18	Hawthorn	Overlapping limbs, mature.	Low
21	G18	Hawthorn	Dense ivy, mature.	Medium
22	G18	Elder	Single limb hole with some ivy, mature.	Medium

Ecology Tree Number	Arb Tree Number	Species	Potential Roost Features	Bat Roost Potential - Ground Level Assessment
23	G18	Field maple	Several (2+) limb holes, 2+ tear-outs, single lateral split, mature.	High
24	G18	Hawthorn	Limb hole, ~1.5m high with dense ivy, mature.	Medium
25	H8	Field maple	Several (3+) limb holes and a tear-out, mature.	High
26	G22	Hawthorn	Overlapping limbs and some ivy cover.	Low
27	G22	Group of 10+ trees, consisting of mature hawthorn and field maple	Limb holes, tear-outs, hollow trunk and over lapping limbs noted.	High
28	G22	Group of hawthorn	Dense structured group with dense ivy cover.	Low
29	G22	Sycamore	Damaged limbs with multiple (4+) limb holes.	Medium
30	G22	Ash	Tear out present with dense ivy.	Medium
31	G22	Ash	Dense ivy.	Low
32	G18	Field maple	Multiple (5+) splits.	High
33	H30	Hawthorn	Dense ivy.	Medium
34	H46	Hawthorn	Overlapping limbs.	Medium
35	H38	Hawthorn	Dense ivy.	Low
36	H38	Hawthorn	Dense ivy.	Low
37	G45	Hawthorn	Single limb hole, overlapping limbs, split limb and flaking bark.	Medium
38	H43	Elder	Several (3+) limb holes, overlapping limbs, mature.	High
39	G45	Hawthorn	One large limb hole and three small limb holes.	High
40	G45	Elder	Several holes and overlapping limb.	Medium
41	G45	Field maple	Single limb hole and overlapping limbs.	Medium
42	G45	A group of elder	Several (3+) limb holes.	High

Bat Roost Building Inspection Survey

4.4 Six agricultural buildings and three railway bridges present within the Application Site were surveyed by EDP for their potential to support roosting bats. A full description and photographs of buildings surveyed, along with details of any bat signs and potential roost features identified, are provided within **Table EDP 4.2**. below.

Table EDP 4.2: Bat Roost Inspection Survey Results and Assessment undertaken by EDP in July 2019

Photograph and Building Reference Number	Description of Features Suitable/Unsuitable for Roosting Bats	Bat Roost Potential
B1: Farmhouse Building 	Two storey main farmhouse building with natural slate tiles and clay ridge tiles. Building located along the northern edge of the Lower Cosmeston Farm. Some of the roof slate tiles are partly raised, providing potential access points for bats. The walls are made of partly rendered brick and stone in good condition. The eves are closed with a timber plate. There is a narrow gap running along the western gable end where the eve plates join the external wall render. The building has one chimney which is well preserved with tightly fitted lead flashing. The roof valley is also fitted with lead with gaps between the lead and adjacent slate tiles. One swallow nest was recorded within the eves of the building. No internal access. No signs of bats were recorded.	Moderate summer roosting and low hibernation potential.
B2: Bridge 	Four crevices were recorded within the north-west wing of the stone bridge. A bird nest was recorded within one of the crevices. No signs of bats were recorded.	Low summer roosting and hibernation potential.

Photograph and Building Reference Number	Description of Features Suitable/Unsuitable for Roosting Bats	Bat Roost Potential
B3: Stone Barn 	The barn is made entirely from stone bricks. Mortar is in good condition apart from a few gaps (up to 4) visible internally. The roof is made of corrugated metal sheeting. The metal sheeting is positioned on top of the stone gable walls creating access opportunities underneath. The windows and doors of the barn are open providing internal access. The timber lintels of the windows have gaps, which could be utilised by roosting bats. The barn has a stone lean-to on its south-eastern elevation which is also covered with corrugated metal sheeting. There is an open window along the south eastern gable end as well as open doors along the south western elevation. One swallow nest was recorded within the lean-to. No signs of bats were recorded.	Low summer roosting and hibernation potential. Confirmed roost during 2017 and 2019.
B4: Stone Barn 	The barn is made of stone brick with a corrugated metal roof. Red brick surrounds the window and door frame. There is a gap running along the eves of south-western elevation enabling internal access. The windows and doors along the south-western elevation are closed or blocked. The north western gable end of the barn has a number of (up to 10) natural slate tiles installed along the barge-board area which are slightly raised and providing access underneath. The north-eastern elevation of the barn has a small single-story flat roof extension made of concrete breeze-block. There was no access into the extension, however the outside inspection did not record any potential access points leading internally. Five bat droppings were recorded within the middle barn compartment. They were scattered on concrete floor below a ceiling with visible timber support beams.	Moderate summer roosting and low hibernation potential. Confirmed bat roost during 2017 and 2019.

Photograph and Building Reference Number	Description of Features Suitable/Unsuitable for Roosting Bats	Bat Roost Potential
B5: Stables 	The small stable block is made in style with the rest of the buildings. The walls are made of stone with the roof covered with corrugated metal sheeting. The roof is supported by timber beams. The windows and doors are open providing free access into the building. The internal walls of the barn are relatively intact, with three crevices noted where the mortar has failed. No signs of bats were recorded.	Low summer roosting and low hibernation potential.
B6: Stone Barn 	The stone barn is covered with corrugated metal sheets, which are in good state of repair. The sheets are overlapping the gable-end walls and creating crevices and potential internal access. The roof area is partly insulated with timber boards, which can provide a roosting space between the corrugated metal sheets and timber surface. The roof is supported with timber rafters which are in good condition. The main ridge rafter is double and therefore creating roosting opportunities in connection with the roof. There is a metal lean-to constructed along the northern elevation of the barn. There is an open access leading internally providing opportunistic feeding and perching areas along the timber rafters supporting the roof. There is also a partly underground room located along the eastern part of the barn ground floor level. The doors leading internally are open, however no signs of bat presence were recorded inside. No signs of bats were recorded in this building.	Moderate summer roosting and low hibernation potential.

Photograph and Building Reference Number	Description of Features Suitable/Unsuitable for Roosting Bats	Bat Roost Potential
B7: Metal Barn 	The barn is made of three separate compartments. The walls are made of corrugated metal sheeting; however, the ceiling is made of corrugated asbestos. The ceiling is supported by timber rafters. The internal area of the barn looks like it was until recently in regular use by horses. A minimum of 30 loosely scattered droppings which appeared to belong to *Pipistrelle sp*. bats were found in all three compartments of the barn. It appears that pipistrelle bats are using the space between the timber rafters and the asbestos sheeting as a roosting area.	Low summer roosting and low hibernation potential. Confirmed bat roost during 2019.
B8: Bridge 	The bridge is made of brick which is in good condition. However, dense ivy is overgrowing the bridge on both sides and providing some limited opportunities for roosting bats. One crevice was observed under the arch ring, however, after an inspection with endoscope, it was ruled out as suitable roosting feature. No signs of bats were recorded.	Low summer roosting and negligible hibernation potential. Confirmed roost during 2017 and 2019.
B9: Bridge 	The bridge is made of brick and overall in a good state of repair. The north-western wing has a long split approximately 2m in length, where the mortar has failed and is providing potential bat roosting and bird nesting areas. No signs of bats were recorded.	Low summer roosting and low hibernation potential.

Dusk Emergence/Dawn Re-entry Surveys

4.5 During the dusk emergence surveys of Upper Cosmeston Farm in May 2019 three common pipistrelle bats were seen emerging from the open barn door of Building **B3** at 21:26 followed by an emergence of a single common pipistrelle (*Pipistrellus pipistrellus*) from the same building at 21:32.

4.6 On 15 May 2019, a possible emergence of a single common pipistrelle from **B8** was recorded. Dense vegetation surrounding the bridge did, however, obscure activity. Results are, however, consistent with previous survey effort during 2017 where a possible common pipistrelle emergence was identified at this location.

4.7 In addition, two common pipistrelle bats were reported emerging from the north-east facing elevation of building **B7**, specifically from gaps beneath metal sheathing along the roof line. This is in addition to emergence of a single common pipistrelle bat from the southern corner of the south-west facing elevation and another two common pipistrelles from beneath the bargeboard at the base of the roof, with a potential emergence from features located more centrally.

4.8 During the dawn re-entry survey of building **B7** during July 2019, three common pipistrelle bats were observed to re-enter the middle compartment of the barn through the open gates along the north-eastern elevation of the building. Based on the emergence and re-entry survey results as well as internal inspection of the building, it is highly likely that the bats are utilising crevices between timber rafters and asbestos sheeting of the roof.

4.9 No bats were seen emerging from Building **B4** on 15 May 2019 compared to previous survey effort undertaken in 2017 where a possible emergence was recorded by Wardell Armstrong. However, the building inspection undertaken by EDP in July 2019 recorded low numbers (up to five) of bat droppings being present within the central area.

4.10 Based on the above results, it is concluded that **B3, B7** and **B8** supports a summer day roost for low numbers of common pipistrelle bat with **B7** supporting multiple features occupied by roosts. **B4** is concluded to support an occasional day roost for *Pipistrelle sp*. bats.

4.11 More generally, foraging and commuting activity was recorded amongst the farm buildings as well as either side of each railway bridge. Activity was dominated by common and soprano (*Pipistrelle pygaemus*) bats although Nathusius' pipistrelle (*Pipistrellus nathusii*), *Myotis sp*. and noctule (*Nyctalus noctula*) bats were recorded occasionally.

Breeding Birds

4.12 With respect to breeding birds, it is considered that the farm buildings provide suitable areas which could be utilised for nesting. The internal and external building inspection undertaken in July 2019 confirmed presence of swallow nests in buildings **B1, B3, B4, B5, B6,** and **B7**. A bird nest which looked to be a wren's (*Troglodytes troglodytes*) was also noted in the north-eastern stone wing of the western most bridge **B2**. The eastern most bridge (**B8**) is overgrown with thick ivy which can be utilised by nesting birds.

5. Summary and Conclusions

5.1 This Ecology Update Note has been prepared by EDP on behalf of Welsh Government in relation to Land at Upper Cosmeston Farm, Lavernock Road, Penarth. This note provides an update assessment of the potential of the Application Site to support roosting bats.

5.2 Detailed ecological assessments of the Application Site were previously undertaken by Wardell Armstrong in 2016 and 2017 to inform an outline planning application for residential-led mixed use development. Detailed surveys comprised a desk study, Extended Phase 1 survey followed by detailed surveys for protected species. This included a visual assessment of all buildings/structures associated with Lower Cosmeston Farm and the wider Application Site for bat roosting potential, subsequent dusk emergence and dawn re-entry surveys of buildings/structures, and manual transect and automated bat detector surveys on four occasions between September 2016 and September 2017.

5.3 Given the time that has elapsed since the Application Site was last surveyed, an update assessment of those buildings/structures located within the Application Site was considered necessary to determine whether any material changes have arisen during the interim period. This is in addition to a formal assessment of on-site trees for their potential to support roosting bats.

5.4 A single dusk emergence surveys of all buildings located within the Application Site confirmed the continued presence of a common pipistrelle bat summer day roost within building **B3** and a railway bridge **B8**. This is comparable to the existing ecological baseline.

5.5 A common pipistrelle summer day roost was also confirmed within building **B7** during the dusk emergence and a subsequent dawn re-entry survey of this building, specifically whilst **B4** is considered to support an occasional day roost for pipistrelle bat following identification of several bat droppings during the update visual building inspection undertaken by EDP on 12 July 2019.

5.6 With respect to onsite trees, total of 42 trees were assessed as having bat roosting potential, including 20 with high potential,12 with medium potential and ten with low potential .

5.7 All species of British bat are listed as a European Protected Species (EPS) on Schedule 2 of the Conservation Regulations (Annex IV(a) to the Habitats Directive). This affords it protection under the Conservation of Habitats and Species Regulations 2017, making it an offence to:

(i) Deliberately capture, injure or kill a wild animal of an EPS;

(ii) Deliberately disturb wild animals of a EPS wherever they are occurring, in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, to affect significantly the local distribution or abundance of the species to which they belong, or in the case of hibernating or migratory species, to hibernate or migrate; or

(iii) Damage or destroy a breeding site or resting place of a wild animal of an EPS.

5.8 Additional protection for bats is also afforded under the Wildlife and Countryside Act 1981 (as amended), making it an offence to intentionally or recklessly disturb bats whilst they are occupying a structure or place which is used for shelter or protection, or to obstruct access to this structure or place. In addition, eight of the 18 species of bat resident in the UK (greater horseshoe (*Rhinolophus ferrumequinum*), lesser horseshoe (*Rhinolophus hipposideros*), barbastelle (*Barbastellus barbastellus*), Bechstein's (*Myotis bechsteinii*), soprano pipistrelle (*Pipistrellus pygmaeus*), common pipistrelle, brown long-eared (*Plecotus auritus*) and noctule (*Noctula noctula*) are also listed as Priority species.

5.9 As such, it will be necessary to obtain a Development Licence (EPS licence) from NRW prior to demolition of any buildings with confirmed bat roosts, and supported by a detailed method statement, with sufficient replacement roost provision.

5.10 The principles of an outline mitigation strategy are detailed within the Environmental Statement (Ecology Chapter) to be submitted alongside the planning application and aims to ensure no detrimental impact to the local bat population, thereby ensuring the maintenance of the species at favourable conservation status.

5.11 With respect to any trees to be felled/subject to tree pruning to facilitate development, these will be subject to an update ground-level inspection by a suitably qualified ecologist to determine their current potential to support roosting bats. Where trees are identified as having moderate or greater potential, then such trees will be subject to a further detailed aerial inspection, whereby all suitable roosting features will be checked at height for the presence of bats. Aerial surveys will be undertaken by a suitably qualified and NRW bat licensed ecologist, arboricultural contractor with a NRW bat survey licence, or with experience of working with bats and under the supervision of a NRW bat survey license holder.

5.12 If any bats are discovered during the aerial inspection, owing to the strict legal protection afforded to bats and their roosts, works are likely to require a Development Licence from NRW before works can continue. If no evidence of roosting bats is uncovered during the aerial inspection, works may proceed without a Development Licence from NRW, albeit in accordance with precautionary measures.

5.13 Overall, the findings of an update assessment with respect to roosting bats are largely consistent with those previously reported by Wardell Armstrong. Provided the recommendations in respect of mitigation made above and further detailed within an Environmental Statement, are implemented, it is considered that the proposals could proceed lawfully and in line with planning policy requirements.

Plans

Plan EDP 1: Assessment of Bat Roosting Potential – Trees (edp5187_d018a 07 August 2019 GY/ZH)

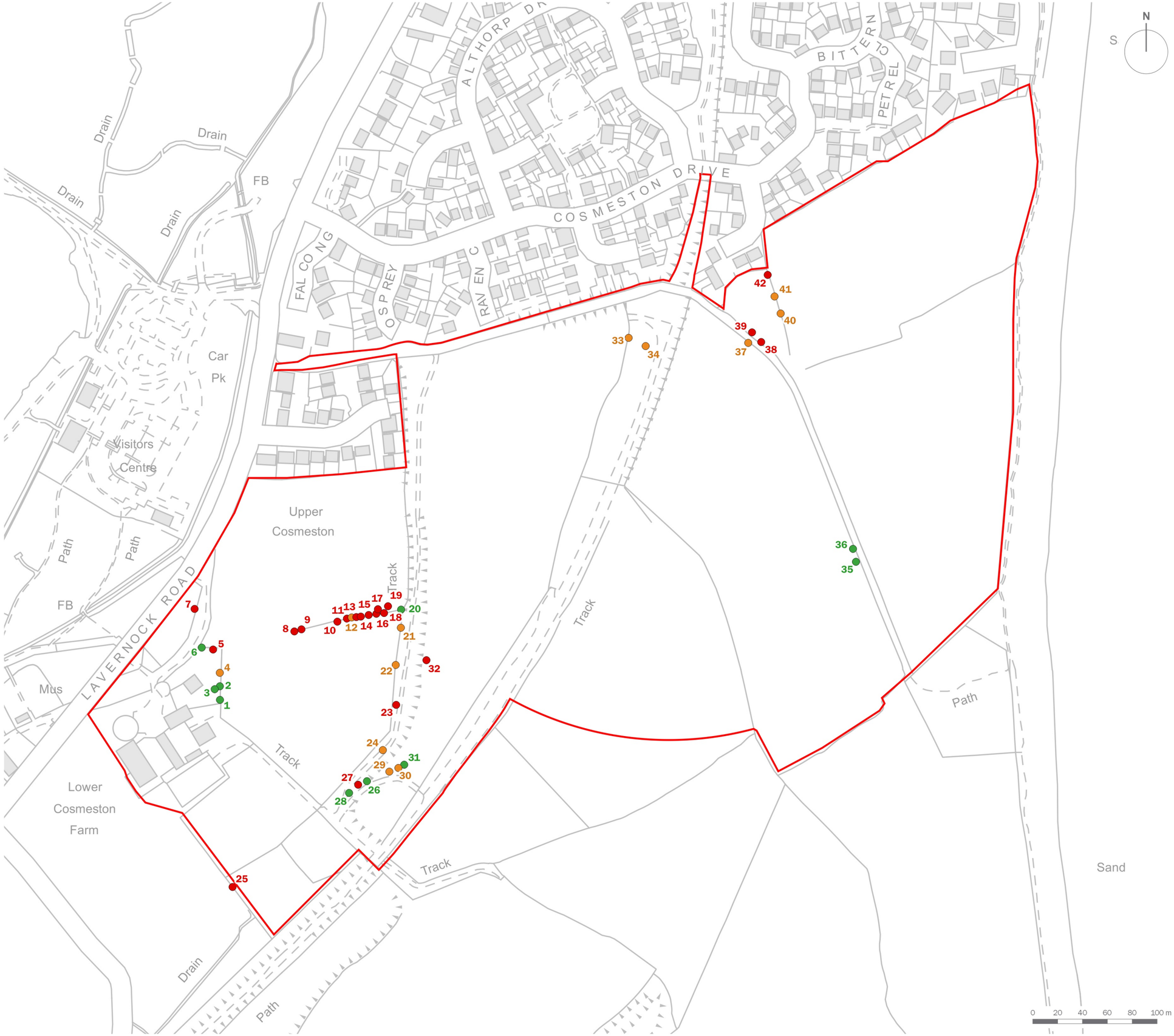
Plan EDP 2a: Dusk Emergence Survey Results – May 2019 (edp5187_d021a 07 August 2019 GY/EW)

Plan EDP 2b: Dusk Emergence Survey Results – May 2019 (edp5187_d022a 07 August 2019 GY/EW)

Plan EDP 2c: Dusk Emergence Survey Results – May 2019 (edp5187_d023a 07 August 2019 G/EW)

Plan EDP 2d: Dusk Emergence Survey Results – May 2019 (edp5187_d024a 07 August 2019 GY/EW)

Plan EDP 2e: Dawn Re-Entry Survey Results – July 2019 (edp5187_d026 01 August 2019 AG/LL)



client

Welsh Government

project title

Land at Upper Cosmeston Farm, Lavernock Road, Penarth

drawing title

Plan EDP 1: Assessment of Bat Roosting Potential - Trees

date	**07 AUGUST 2019**	drawn by	**GY**
drawing number	**edp5187_d018a**	checked	**ZH**
scale	**Refer to scale bar**	QA	**JTF**

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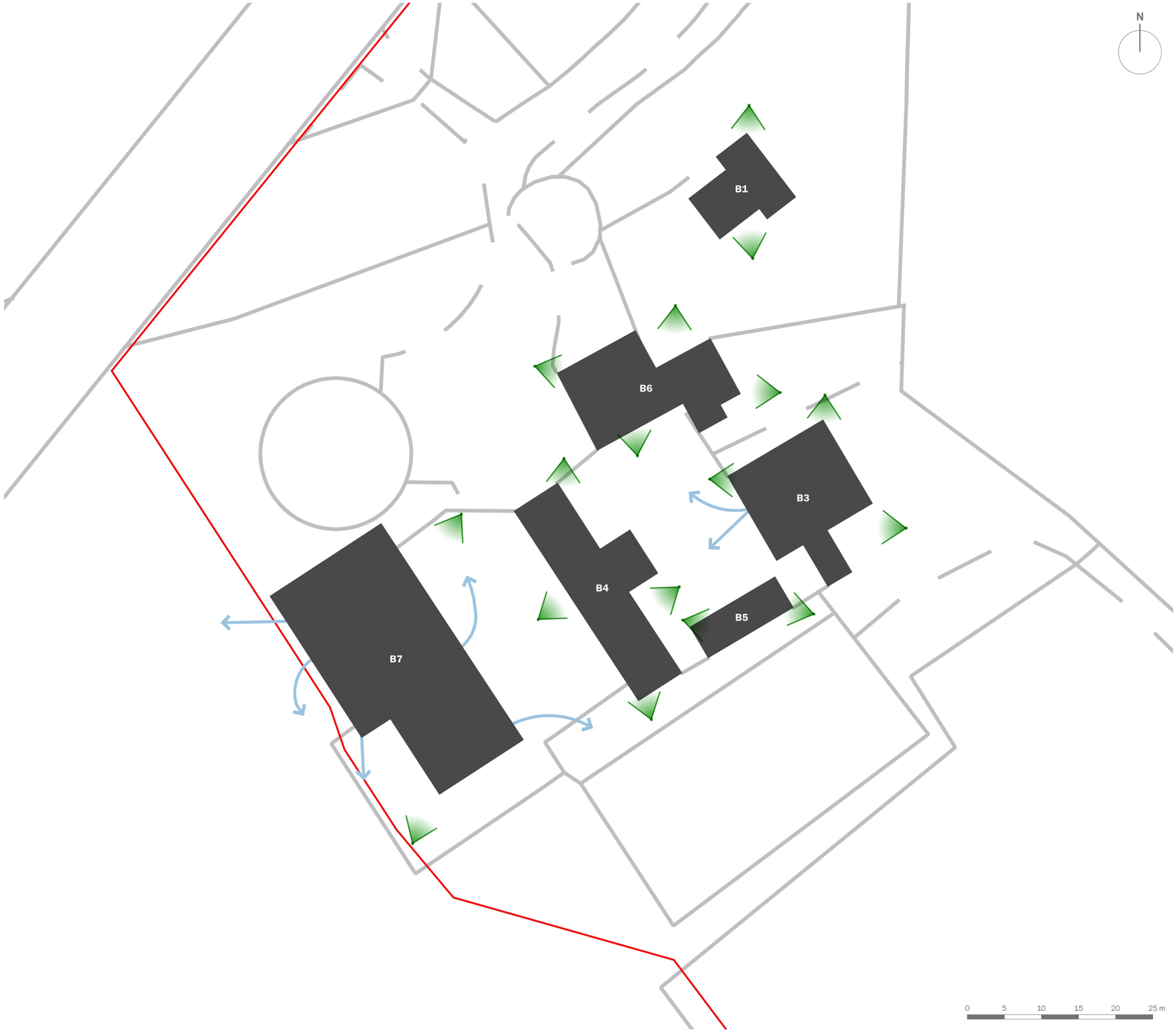

N

Site Boundary

B1 Building and Number

Surveyor Location

Bat Emergence (Common pipistrelle)

0 5 10 15 20 25 m

client

Welsh Government

project title

Land at Upper Cosmeston Farm, Lavernock Road, Penarth

drawing title

Plan EDP 2a: Dusk Emergence Survey Results - May 2019

date	**07 AUGUST 2019**	drawn by	**GY**
drawing number	**edp5187_d021a**	checked	**EW**
scale	**1:500 @ A3**	QA	**LB**

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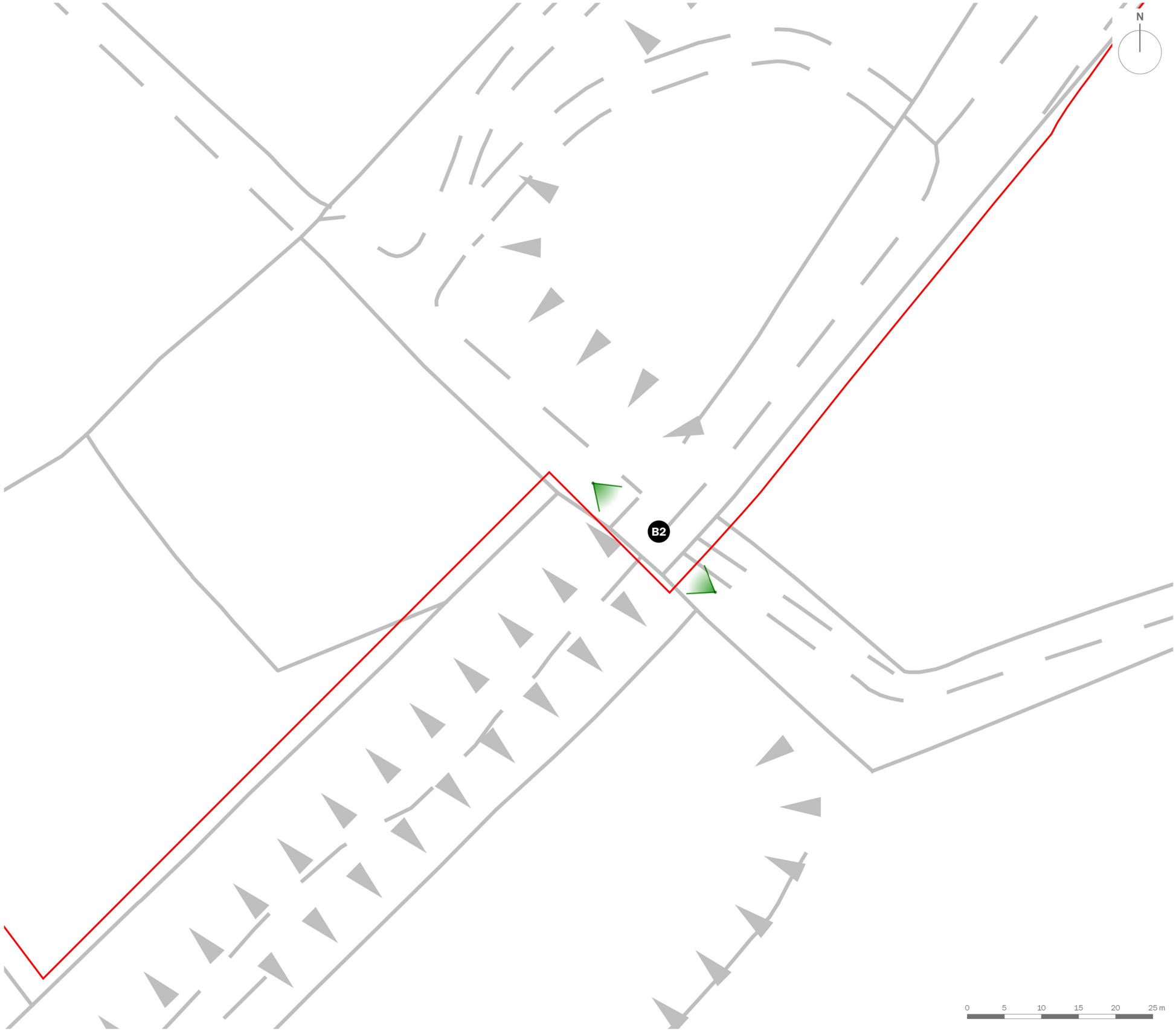

Site Boundary

Surveyor Location

B2 Bridge Number

client

Welsh Government

project title

Land at Upper Cosmeston Farm, Lavernock Road, Penarth

drawing title

Plan EDP 2b: Dusk Emergence Survey Results - May 2019

date	**07 AUGUST 2019**	drawn by	**GY**
drawing number	**edp5187_d022a**	checked	**EW**
scale	**1:500 @ A3**	QA	**LB**

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Site Boundary

Surveyor Location

Bat Emergence (Common pipistrelle)

B8 Bridge Number

client

Welsh Government

project title

Land at Upper Cosmeston Farm, Lavernock Road, Penarth

drawing title

Plan EDP 2c: Dusk Emergence Survey Results - May 2019

date	**07 AUGUST 2019**	drawn by	**GY**
drawing number	**edp5187_d023a**	checked	**EW**
scale	**1:500 @ A3**	QA	**LB**

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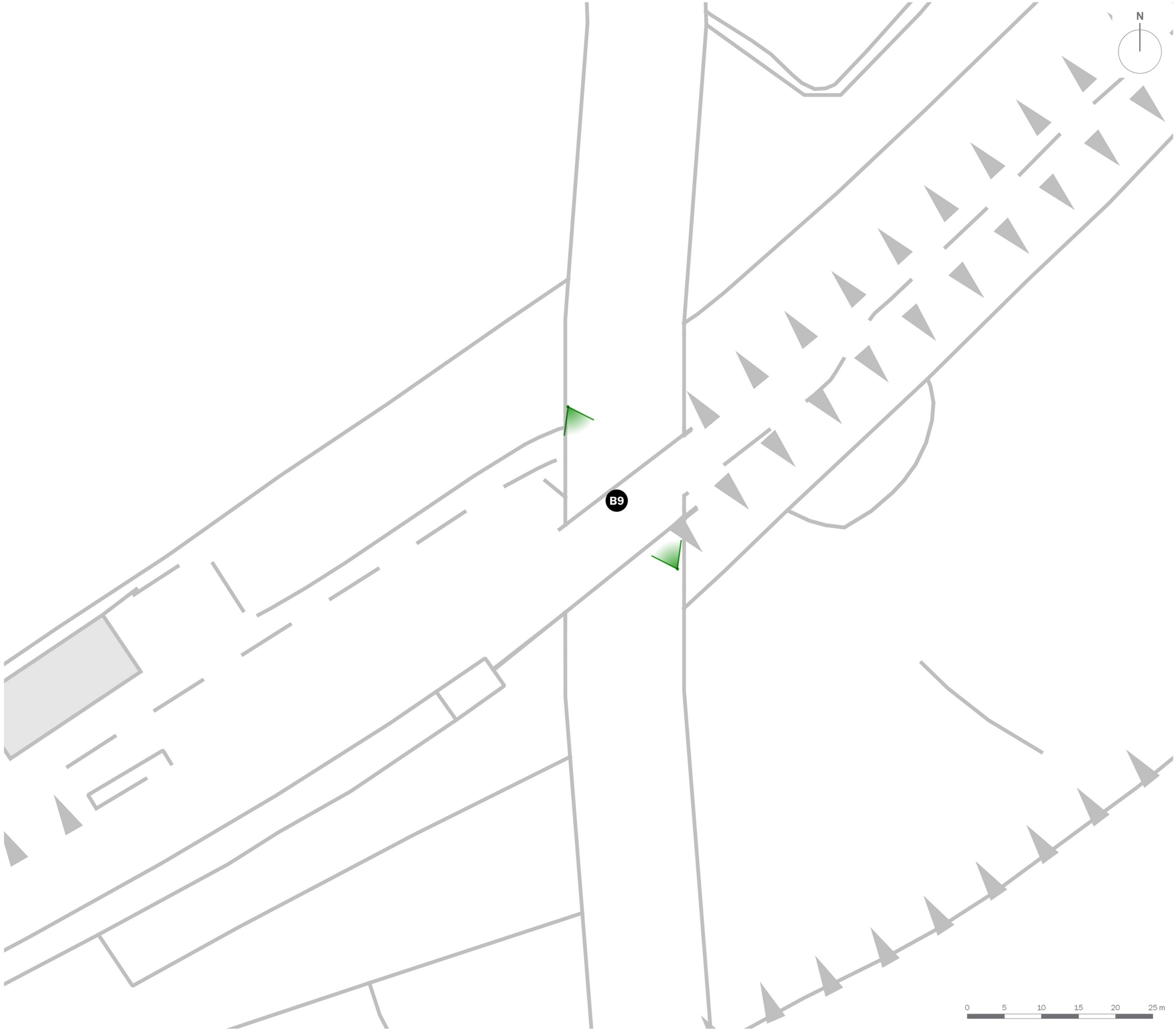

Surveyor Location

B9 Bridge Number

client

Welsh Government

project title

Land at Upper Cosmeston Farm, Lavernock Road, Penarth

drawing title

Plan EDP 2d: Dusk Emergence Survey Results - May 2019

date	**07 AUGUST 2019**	drawn by	**GY**
drawing number	**edp5187_d024a**	checked	**EW**
scale	**1:500 @ A3**	QA	**LB**

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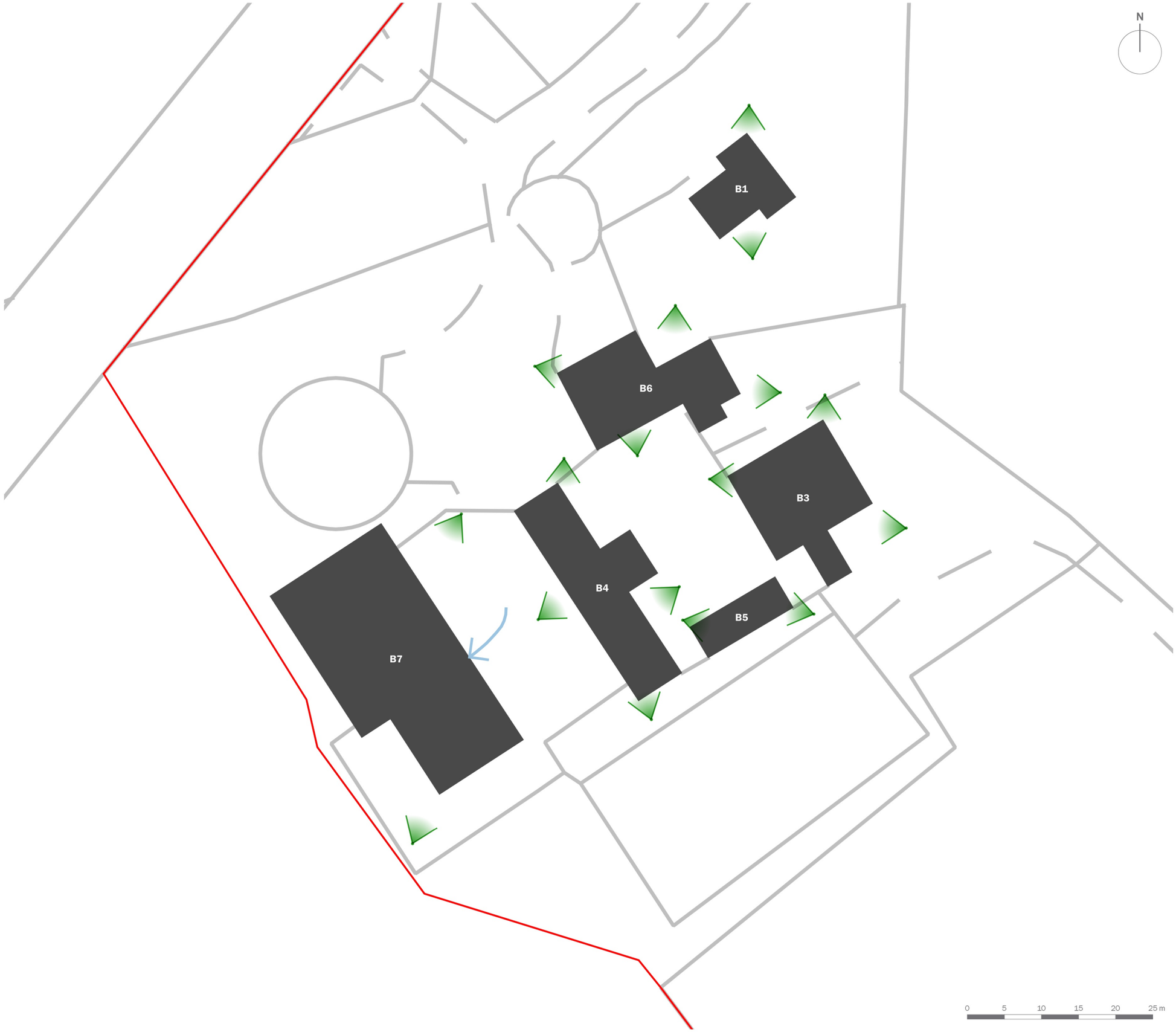

N

Site Boundary

B1 Building and Number

Surveyor Locations

Bat Re-Entry (Common Pipistrelle)

0 5 10 15 20 25 m

client

Welsh Government

project title

Land at Upper Cosmeston Farm, Lavernock Road, Penarth

drawing title

Plan EDP 2e: Dawn Re-Entry Survey Results – July 2019

date	**01 AUGUST 2019**	drawn by	**AG**
drawing number	**edp5187_d026**	checked	**LL**
scale	**1:500 @ A3**	QA	**GY**

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