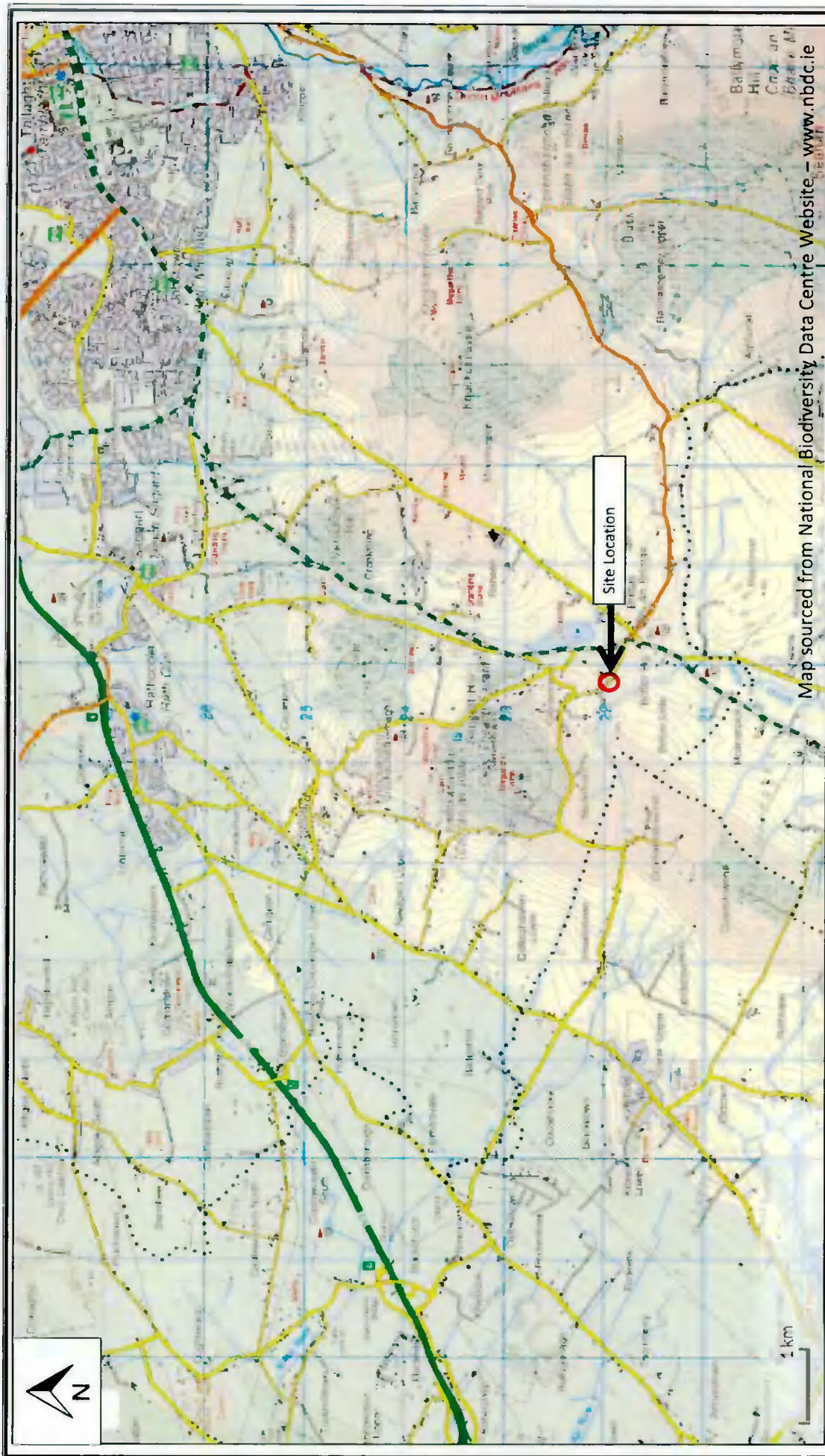
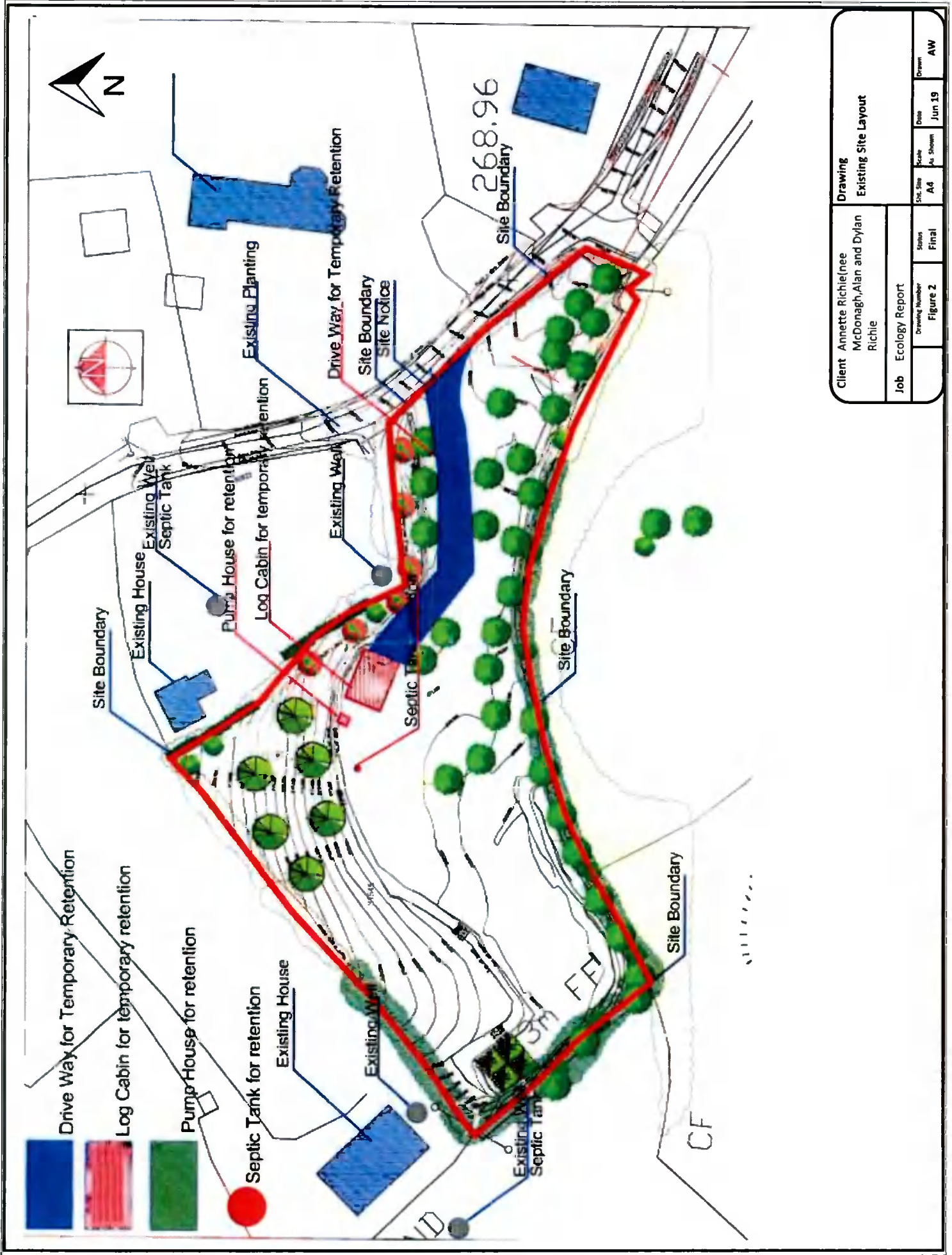


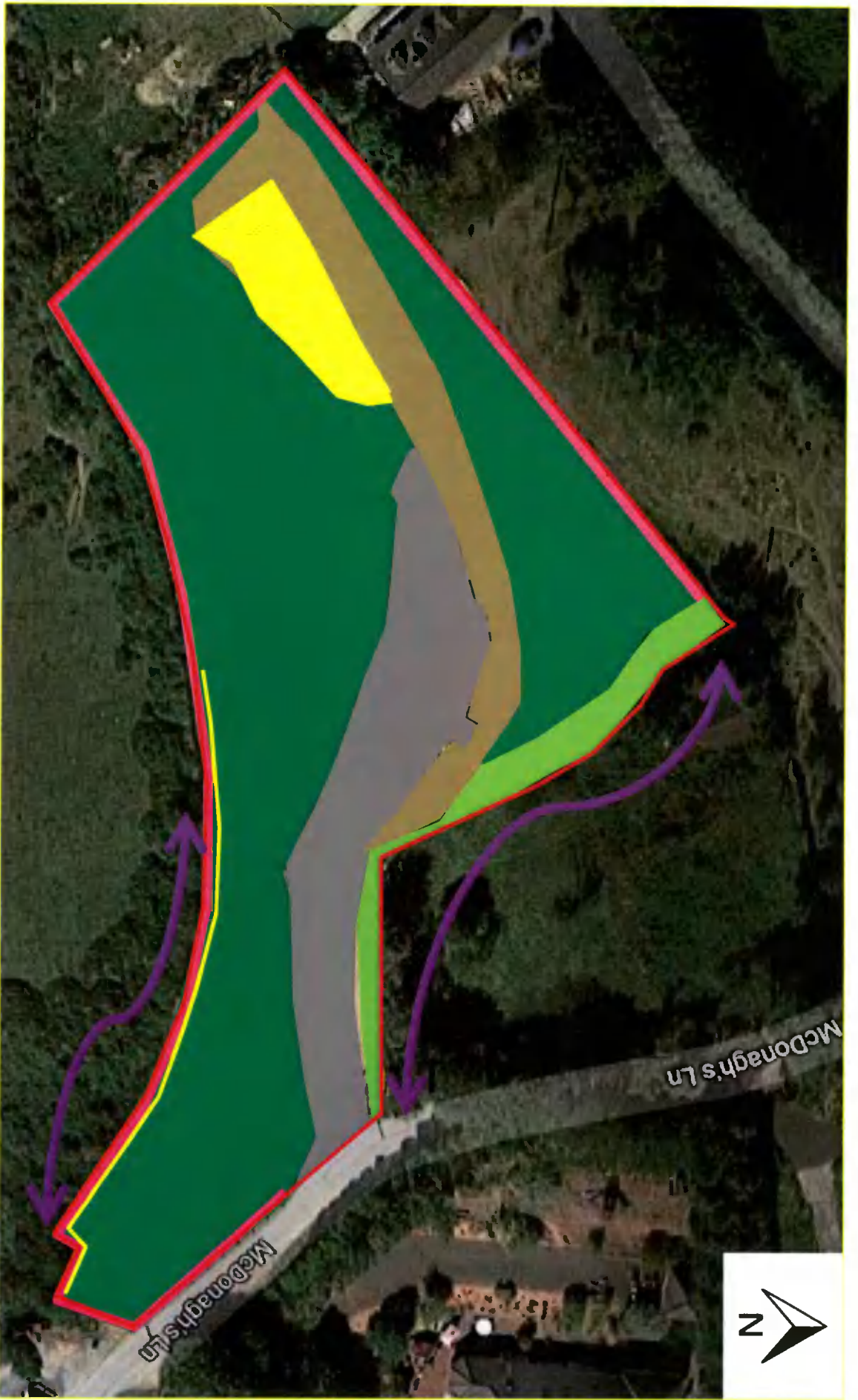
FIGURES



| | | | |
|--|--------------|---------------------------|----------------|
| Client Annette Richie(nee McDonagh), Alan and Dylan Richie | | Drawing Site location map | |
| Job Ecology Report | Status Final | Site No A4 | Scale As Shown |
| Drawing Number Figure 1 | Date Jun 19 | Drawn AW | |



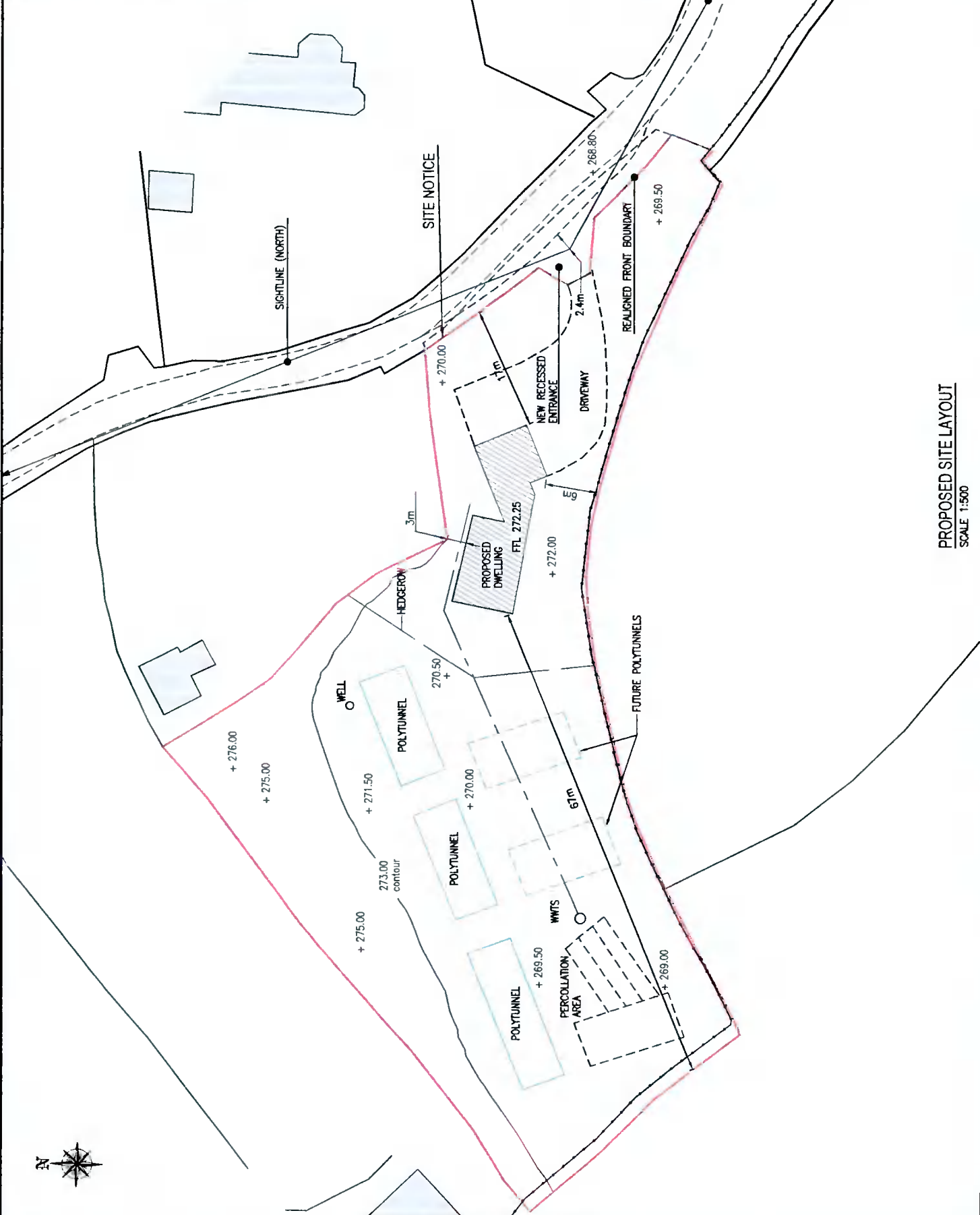
| | | | | |
|----------------|--|--|--|--|
| Client | | Annette Richie/nee McDonagh, Alan and Dylan Richie | | |
| Job | | Ecology Report | | |
| Drawing Number | | Figure 2 | | |
| Status | | Final | | |
| Site Size | | AA | | |
| Scale | | As Shown | | |
| Date | | Jun 19 | | |
| Drawn | | AW | | |



- Earthbank (BL2)
- Spoil and Bare Ground (ED2)
- Buildings and Artificial Surfaces (BL3)
- Amenity (lawn) Grassland (GA2)
- Treeline (WL2)
- Hedgerow (WL1)
- Approx. Site Boundary
- Highest Bat Activity due to Native Hedgerow and Treelines

| | | | |
|---|---------------|---------------------------------|-----------------|
| Client: Annette Richie(nee McDonagh, Alan and Dylan Richie) | | Drawing: Habitat Map - Existing | |
| Job: Ecology Report | Status: Final | Sht. Size: A4 | Scale: As Shown |
| Drawing Number: Figure 4 | Date: Jun 19 | Drawn: AW | |

| | | | |
|--------------|--|---|--|
| Drawing | | 21-03-01 | |
| Author | | P | |
| Checked by | | 22-09-2021 | |
| Project No. | | 21-03 | |
| Scale | | 1:500 | |
| Date issued | | 18 JUN | |
| Project Name | | DESIGN & CONSULTANCY SERVICES | |
| Client | | New Dwelling of Mc Donogh's Lane, Brinkia Co. Dublin | |
| Site Name | | Site Layout Plan | |
| Drawing No. | | 21-03-01 | |
| Scale | | 1:500 | |
| Date issued | | 18 JUN | |
| Project Name | | DESIGN & CONSULTANCY SERVICES | |
| Client | | New Dwelling of Mc Donogh's Lane, Brinkia Co. Dublin | |
| Site Name | | Site Layout Plan | |



PROPOSED SITE LAYOUT
SCALE 1:500

APPENDICES

APPENDIX A

| Species group | Species name | Date of last record | Designation |
|---------------|--|---------------------|---|
| amphibian | Common Frog (<i>Rana temporaria</i>) | 12/05/2018 | Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex V Protected Species: Wildlife Acts |
| amphibian | Smooth Newt (<i>Lissotriton vulgaris</i>) | 30/06/1972 | Protected Species: Wildlife Acts |
| bird | Barn Owl (<i>Tyto alba</i>) | 31/07/1991 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List |
| bird | Barn Swallow (<i>Hirundo rustica</i>) | 15/09/2017 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Black-headed Gull (<i>Larus ridibundus</i>) | 20/11/2017 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List |
| bird | Common Coot (<i>Fulica atra</i>) | 20/11/2017 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section II Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Common Goldeneye (<i>Bucephala clangula</i>) | 31/12/2011 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section II Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Common Kestrel (<i>Falco tinnunculus</i>) | 31/12/2011 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Common Kingfisher (<i>Alcedo atthis</i>) | 31/12/2011 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex I Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Common Linnet (<i>Carduelis cannabina</i>) | 31/12/2011 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Common Pheasant (<i>Phasianus colchicus</i>) | 23/03/2016 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section I Bird Species |
| bird | Common Pochard (<i>Aythya ferina</i>) | 31/12/2001 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section II Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Common Redshank (<i>Tringa totanus</i>) | 29/02/1984 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Common Sandpiper (<i>Actitis hypoleucos</i>) | 31/12/2011 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List |
| bird | Common Snipe (<i>Gallinago gallinago</i>) | 31/12/2011 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section III Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Common Starling (<i>Sturnus vulgaris</i>) | 08/06/2017 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Common Swift (<i>Apus apus</i>) | 07/05/2016 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Common Wood Pigeon (<i>Columba palumbus</i>) | 02/08/2016 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section I Bird Species |
| bird | Corn Crane (<i>Crex crex</i>) | 31/07/1972 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex I Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |

| | | | |
|------|---|------------|---|
| bird | Eurasian Curlew (<i>Numenius arquata</i>) | 26/12/2016 | Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section II Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List |
| bird | Eurasian Teal (<i>Anas crecca</i>) | 31/12/2011 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section II Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Eurasian Tree Sparrow (<i>Passer montanus</i>) | 31/12/2011 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Eurasian Wigeon (<i>Anas penelope</i>) | 31/12/2001 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section II Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Eurasian Woodcock (<i>Scolopax rusticola</i>) | 31/12/2011 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section III Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | European Golden Plover (<i>Pluvialis apricaria</i>) | 29/02/1984 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex I Bird Species Protected Species: EU Birds Directive >> Annex II, Section II Bird Species Protected Species: EU Birds Directive >> Annex III, Section III Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List |
| bird | Great Black-backed Gull (<i>Larus marinus</i>) | 31/12/2001 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Great Cormorant (<i>Phalacrocorax carbo</i>) | 31/12/2011 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Great Crested Grebe (<i>Podiceps cristatus</i>) | 31/12/2011 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Greylag Goose (<i>Anser anser</i>) | 31/12/2011 | Invasive Species: Invasive Species Invasive Species: Invasive Species >> Regulation S.I. 477 (Ireland) Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section II Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Hen Harrier (<i>Circus cyaneus</i>) | 31/07/1972 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex I Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Herring Gull (<i>Larus argentatus</i>) | 20/11/2017 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List |
| bird | House Martin (<i>Delichon urbicum</i>) | 15/09/2017 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | House Sparrow (<i>Passer domesticus</i>) | 28/04/2016 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Lesser Black-backed Gull (<i>Larus fuscus</i>) | 31/12/2011 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Little Egret (<i>Egretta garzetta</i>) | 20/11/2017 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex I Bird Species |
| bird | Little Grebe (<i>Tachybaptus ruficollis</i>) | 20/09/2016 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |

| | | | |
|------|---|------------|--|
| bird | Mallard (<i>Anas platyrhynchos</i>) | 20/11/2017 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section I Bird Species |
| bird | Merlin (<i>Falco columbarius</i>) | 31/12/2011 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex I Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Mew Gull (<i>Larus canus</i>) | 31/12/2011 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Mute Swan (<i>Cygnus olor</i>) | 20/11/2017 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Northern Lapwing (<i>Vanellus vanellus</i>) | 31/12/2011 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section II Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List |
| bird | Northern Pintail (<i>Anas acuta</i>) | 29/02/1984 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex III, Section II Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List |
| bird | Northern Wheatear (<i>Oenanthe oenanthe</i>) | 31/12/2011 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Peregrine Falcon (<i>Falco peregrinus</i>) | 31/12/2011 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex I Bird Species |
| bird | Red Grouse (<i>Lagopus lagopus</i>) | 31/12/2011 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section I Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List |
| bird | Ringed Plover (<i>Charadrius hiaticula</i>) | 31/07/1991 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Rock Pigeon (<i>Columba livia</i>) | 31/12/2011 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species |
| bird | Sand Martin (<i>Riparia riparia</i>) | 07/05/2016 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Sky Lark (<i>Alauda arvensis</i>) | 31/12/2011 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Spotted Flycatcher (<i>Muscicapa striata</i>) | 31/12/2011 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Stock Pigeon (<i>Columba oenas</i>) | 31/07/1972 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Tufted Duck (<i>Aythya fuligula</i>) | 20/11/2017 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex II, Section I Bird Species Protected Species: EU Birds Directive >> Annex III, Section II Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Water Rail (<i>Rallus aquaticus</i>) | 31/07/1972 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Whinchat (<i>Saxicola rubetra</i>) | 31/07/1972 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Whooper Swan (<i>Cygnus cygnus</i>) | 31/12/2011 | Protected Species: Wildlife Acts Protected Species: EU Birds Directive Protected Species: EU Birds Directive >> Annex I Bird Species Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |
| bird | Yellowhammer (<i>Emberiza</i>) | 31/12/2011 | Protected Species: Wildlife Acts Threatened Species: Birds of Conservation Concern Threatened Species: Birds of Conservation Concern >> Birds of Conservation Concern - Amber List |

| | | | |
|------------------------------|---|------------|---|
| crustacean | ciirinnella) Freshwater White-clawed Crayfish (<i>Austropotamobius pallipes</i>) | 19/08/2013 | Species: Birds of Conservation Concern >> Birds of Conservation Concern - Red List Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex II Protected Species: EU Habitats Directive >> Annex V Protected Species: Wildlife Acts |
| flowering plant | Blue Fleabane (<i>Erigeron acer</i>) | 26/07/2017 | Threatened Species: Endangered |
| flowering plant | <i>Lamium galeobdolon</i> subsp. <i>montanum</i> | 24/05/2012 | Threatened Species: Vulnerable |
| insect - beetle (Coleoptera) | <i>Macroplea appendiculata</i> | 31/12/1992 | Threatened Species: Near threatened |
| insect - butterfly | Wall (<i>Lasiommata megera</i>) | 31/12/1972 | Threatened Species: Endangered |
| insect - hymenopteran | <i>Andrena (Andrena) fucata</i> | 22/06/2005 | Threatened Species: Near threatened |
| insect - hymenopteran | <i>Andrena (Melandrena) nigroaenea</i> | 01/04/1923 | Threatened Species: Vulnerable |
| insect - hymenopteran | <i>Andrena (Micrandrena) semilaevis</i> | 18/08/1923 | Threatened Species: Vulnerable |
| insect - hymenopteran | <i>Andrena (Oreomelissa) coitana</i> | 28/06/2005 | Threatened Species: Vulnerable |
| insect - hymenopteran | <i>Andrena (Taenandrena) wilkella</i> | 06/06/1922 | Threatened Species: Data deficient |
| insect - hymenopteran | <i>Bombus (Bombus) cryptarum</i> | 01/04/2006 | Threatened Species: Data deficient |
| insect - hymenopteran | <i>Bombus (Bombus) magnus</i> | 22/06/2005 | Threatened Species: Data deficient |
| insect - hymenopteran | Gypsy Cuckoo Bee (<i>Bombus (Psithyrus) bohemicus</i>) | 26/04/2004 | Threatened Species: Near threatened |
| insect - hymenopteran | Gooden's Nomad Bee (<i>Nomada goodeniana</i>) | 15/05/2005 | Threatened Species: Endangered |
| insect - hymenopteran | Great Yellow Bumble Bee (<i>Bombus (Subterraneobombus) distinguendus</i>) | 01/04/1923 | Threatened Species: Endangered |
| insect - hymenopteran | Large Red Tailed Bumble Bee (<i>Bombus (Melanobombus) lapidarius</i>) | 05/08/2018 | Threatened Species: Near threatened |
| insect - hymenopteran | <i>Lasioglossum (Dialictus) smedhamnellum</i> | 07/08/2018 | Threatened Species: Data deficient |
| insect - hymenopteran | Moss Carder-bee (<i>Bombus (Thoracobombus) muscorum</i>) | 07/05/2018 | Threatened Species: Near threatened |
| insect - hymenopteran | <i>Nomada obtusifrons</i> | 04/08/1923 | Threatened Species: Endangered |
| insect - hymenopteran | <i>Nomada panzeri</i> | 20/06/1943 | Threatened Species: Near threatened |
| insect - hymenopteran | <i>Nomada striata</i> | 15/05/2005 | Threatened Species: Endangered |
| insect - hymenopteran | Red-tailed Carder Bee (<i>Bombus (Thoracobombus) ruderarius</i>) | 01/04/1923 | Threatened Species: Vulnerable |
| insect - hymenopteran | <i>Sphecodes hyalinatus</i> | 11/08/1922 | Threatened Species: Vulnerable |

| | | | |
|-----------------------|---|------------|--|
| liverwort | Blunt-leaved Earwort (<i>Diplrophyllum obtusifolium</i>) | 31/12/1965 | Threatened Species: Near threatened |
| liverwort | Round-fruited Flapwort (<i>Junggermannia sphaerocarpa</i>) | 22/06/2007 | Threatened Species: Near threatened |
| mollusc | Heath Snail (<i>Helicella itala</i>) | 31/12/1914 | Threatened Species: Vulnerable |
| mollusc | Moss Chrysalis Snail (<i>Pupilla</i> (<i>Pupilla</i>) <i>muscorum</i>) | 31/12/1914 | Threatened Species: Endangered |
| mollusc | Tree Snail (<i>Balea</i> (<i>Balea</i> <i>perversa</i>)) | 31/12/1914 | Threatened Species: Vulnerable |
| moss | Donn's Grimmia (<i>Grimmia</i> <i>donniana</i>) | 31/12/1991 | Threatened Species: Near threatened |
| moss | Hair-pointed Grimmia (<i>Grimmia</i> <i>trichophylla</i>) | 22/06/2007 | Threatened Species: Data deficient |
| moss | <i>Polytrichum commune</i> var. <i>perigoniale</i> | 22/06/2007 | Threatened Species: Data deficient |
| moss | <i>Weissia longifolia</i> var. <i>angustifolia</i> | 31/12/1953 | Threatened Species: Vulnerable |
| moss | Wulfsberg's Tamarisk-moss (<i>Heterocladium wulfsbergii</i>) | 31/12/1962 | Threatened Species: Near threatened |
| reptile | Common Lizard (<i>Zootoca</i> <i>vivipara</i>) | 21/08/2018 | Protected Species: Wildlife Acts |
| terrestrial mammal | Brown Long-eared Bat (<i>Plecotus</i> <i>auritus</i>) | 05/07/2012 | Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts |
| terrestrial mammal | Daubenton's Bat (<i>Myotis</i> <i>daubentonii</i>) | 21/08/2014 | Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts |
| terrestrial mammal | Eurasian Badger (<i>Meles meles</i>) | 13/09/2016 | Protected Species: Wildlife Acts |
| terrestrial mammal | Eurasian Pygmy Shrew (<i>Sorex</i> <i>minutus</i>) | 25/04/2010 | Protected Species: Wildlife Acts |
| terrestrial mammal | Eurasian Red Squirrel (<i>Sciurus</i> <i>vulgaris</i>) | 14/10/2017 | Protected Species: Wildlife Acts |
| terrestrial mammal | European Otter (<i>Lutra lutra</i>) | 24/08/2014 | Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex II Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts |
| terrestrial mammal | Lesser Noctule (<i>Nyctalus leisteri</i>) | 18/09/2012 | Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts |
| terrestrial mammal | Natterer's Bat (<i>Myotis nattereri</i>) | 14/09/2011 | Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts |
| terrestrial mammal | Pine Marten (<i>Martes martes</i>) | 01/05/2017 | Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex V Protected Species: Wildlife Acts |
| terrestrial mammal | Pipistrelle (<i>Pipistrellus pipistrellus</i> <i>sensu lato</i>) | 15/10/2012 | Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts |
| terrestrial mammal | Red Deer (<i>Cervus elaphus</i>) | 09/11/2015 | Protected Species: Wildlife Acts |
| terrestrial mammal | Soprano Pipistrelle (<i>Pipistrellus</i> <i>pygmaeus</i>) | 05/08/2012 | Protected Species: EU Habitats Directive Protected Species: EU Habitats Directive >> Annex IV Protected Species: Wildlife Acts |
| terrestrial mammal | West European Hedgehog (<i>Erinaceus europaeus</i>) | 23/07/2017 | Protected Species: Wildlife Acts |

APPENDIX B



Plate 1: View of the Amenity Grassland (GA2) and Hedgerows (WL1)/Earthbank (BL2) to the right of plate and planted cherry laurel hedgerow to the back.



Plate 2: View of the Amenity Grassland (GA2) and Native Hedgerow (WL1)/Earthbank (BL2) to the left of plate and planted cherry laurel hedgerow to the back.



Plate 3: View of habitats adjacent to site, Gorse Scrub (WS1) and Dry-Humid Acid Grassland (GS3).



Plate 4: A view of the Spoil and Bare Ground (ED2) and Earthbank (BL2).



Plate 5: A view of the site looking east towards the Log Cabin with Spoil and Bare ground to foreground grading into Amenity Grassland (GA2)



Plate 6: View of pipistrelle bat species flying overhead during the bat survey (See arrow).

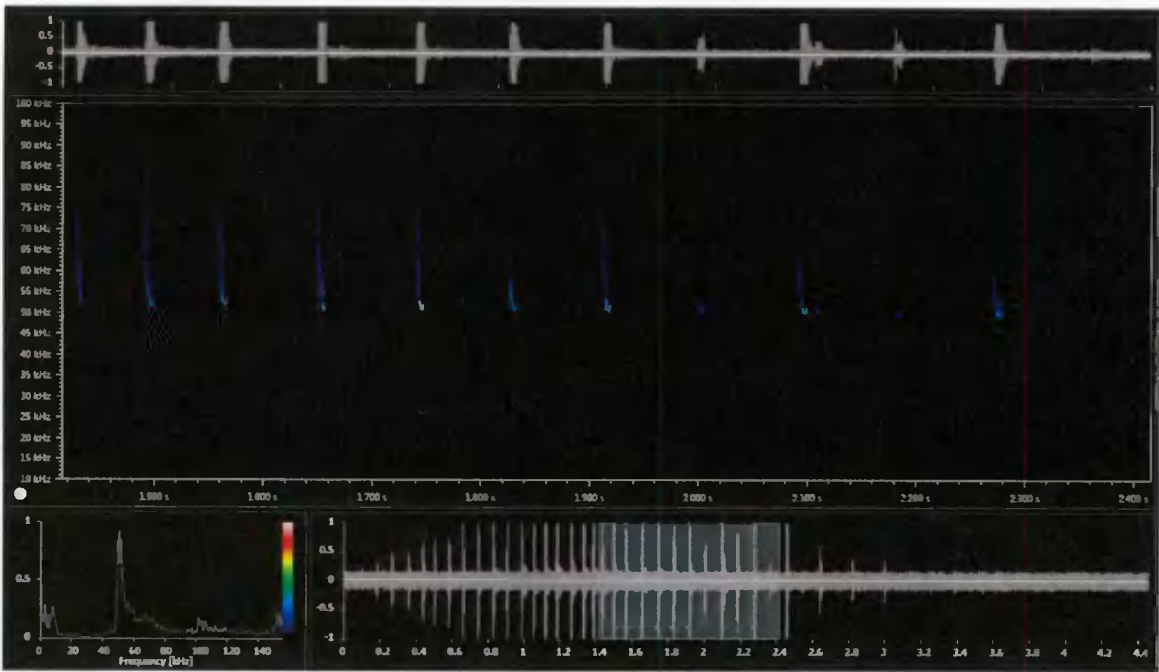


Plate 7: Soprano Pipistrelle Sonogram from Survey

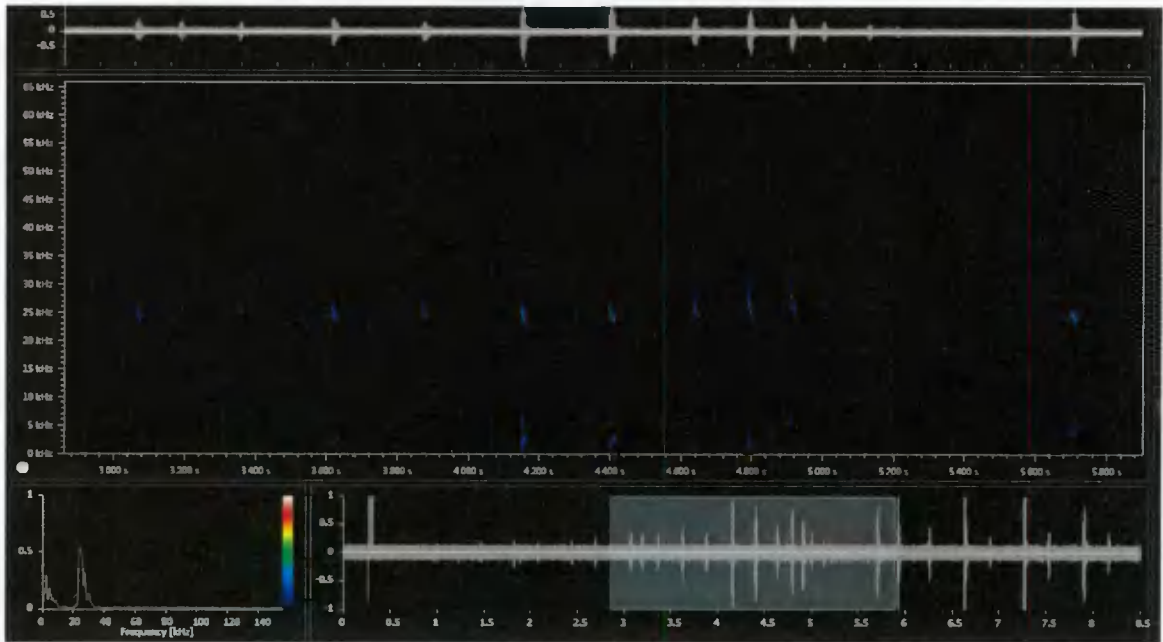


Plate 8: Leisler's Bat Sonogram from Survey

APPENDIX C

Bat Data from an Activity Survey Carried out on the Site on June 24th 2019

| Time | Species | Calls [#] | Mean Peak Frequency [kHz] | Mean Max Frequency [kHz] | Mean Min Frequency [kHz] | Mean Call Length [ms] | Mean Call Distance [ms] | Temperature [°C] | Latitude [WGS84] | Longitude [WGS84] |
|----------|----------------------|-----------|---------------------------|--------------------------|--------------------------|-----------------------|-------------------------|------------------|------------------|-------------------|
| 21:56:38 | Leisler's Bat | 5 | 23.1 | 24.8 | 22.5 | 14 | 294 | 15 | 53.23853 | -6.4622 |
| 21:56:45 | Leisler's Bat | 7 | 22.7 | 26.2 | 22.2 | 15.5 | 275 | 15 | 53.23853 | -6.4622 |
| 22:00:21 | Leisler's Bat | 27 | 23.1 | 25.7 | 22.8 | 15 | 260 | 15 | 53.23852 | -6.46219 |
| 22:02:01 | Leisler's Bat | 24 | 24.7 | 27.8 | 23.7 | 14 | 255 | 15 | 53.23852 | -6.46221 |
| 22:02:23 | Leisler's Bat | 24 | 24.2 | 27.6 | 23.3 | 14 | 240 | 15 | 53.23852 | -6.4622 |
| 22:02:58 | Leisler's Bat | 4 | 23.3 | 24.6 | 22.6 | 13.6 | 356 | 15 | 53.23851 | -6.46219 |
| 22:03:04 | Leisler's Bat | 10 | 23.1 | 24.3 | 22.4 | 14 | 329 | 14 | 53.23851 | -6.46219 |
| 22:03:53 | Leisler's Bat | 3 | 22.8 | 24.3 | 22.6 | 12.2 | 580 | 14 | 53.23851 | -6.46221 |
| 22:04:34 | Leisler's Bat | 7 | 22.7 | 25.2 | 22.3 | 18.2 | 351 | 14 | 53.23852 | -6.46221 |
| 22:04:40 | Leisler's Bat | 4 | 24.2 | 25.9 | 23.4 | 9.2 | 142 | 14 | 53.23852 | -6.46221 |
| 22:04:54 | Leisler's Bat | 5 | 22 | 22.9 | 21.4 | 20 | 274 | 14 | 53.23852 | -6.46221 |
| 22:05:03 | Leisler's Bat | 15 | 24 | 26 | 23.4 | 16 | 275 | 14 | 53.23851 | -6.46221 |
| 22:05:12 | Leisler's Bat | 45 | 23.9 | 27.5 | 23 | 22 | 260 | 14 | 53.23851 | -6.46221 |
| 22:05:32 | Leisler's Bat | 7 | 23.4 | 28.4 | 22.9 | 12 | 324 | 14 | 53.23851 | -6.4622 |
| 22:05:42 | Leisler's Bat | 3 | 21.8 | 23.3 | 20.9 | 14 | 277 | 14 | 53.23851 | -6.46221 |
| 22:05:48 | Leisler's Bat | 10 | 23.1 | 25 | 22.8 | 12.9 | 290 | 14 | 53.23851 | -6.46221 |
| 22:06:08 | Leisler's Bat | 5 | 22.8 | 24.4 | 22.5 | 13.2 | 257 | 14 | 53.23851 | -6.4622 |
| 22:06:14 | Brown Long Eared Bat | 8 | 24.9 | 27.2 | 24.1 | 12 | 185 | 14 | 53.23851 | -6.4622 |
| 22:06:22 | Leisler's Bat | 5 | 23 | 24.2 | 22.4 | 12 | 258 | 14 | 53.23851 | -6.4622 |
| 22:06:31 | Leisler's Bat | 3 | 21.9 | 23 | 21.6 | 10.9 | 481 | 14 | 53.23852 | -6.4622 |
| 22:08:14 | Leisler's Bat | 6 | 21.5 | 22.4 | 21.2 | 14.2 | 303 | 14 | 53.23852 | -6.46221 |
| 22:11:00 | Leisler's Bat | 10 | 24.1 | 26.5 | 23.2 | 11.8 | 262 | 14 | 53.23853 | -6.46219 |
| 22:11:07 | Leisler's Bat | 27 | 23.3 | 26.4 | 22.7 | 15 | 250 | 14 | 53.23854 | -6.46219 |
| 22:11:18 | Leisler's Bat | 1 | 23.2 | 23.2 | 22.9 | 5.2 | 0 | 14 | 53.23854 | -6.46219 |
| 22:11:20 | Leisler's Bat | 1 | 22.6 | 23.8 | 22.3 | 15.7 | 0 | 14 | 53.23854 | -6.46219 |
| 22:11:36 | Leisler's Bat | 5 | 22.3 | 23.4 | 22 | 12.2 | 331 | 14 | 53.23855 | -6.46219 |

| | | | | | | | | | | |
|----------|----------------------|----|------|------|------|------|-----|----|----------|----------|
| 22:12:07 | Leisler's Bat | 1 | 27.1 | 27.8 | 26.5 | 4.6 | 0 | 14 | 53.23854 | -6.46219 |
| 22:13:27 | Leisler's Bat | 13 | 22.4 | 24.1 | 21.5 | 15 | 270 | 14 | 53.23855 | -6.46219 |
| 22:13:33 | Leisler's Bat | 15 | 24.2 | 28 | 23 | 16 | 140 | 14 | 53.23855 | -6.46219 |
| 22:17:44 | Leisler's Bat | 2 | 23.2 | 23.9 | 22.6 | 12.5 | 409 | 14 | 53.23873 | -6.46257 |
| 22:17:51 | Leisler's Bat | 5 | 25.7 | 28 | 24.9 | 11.7 | 234 | 14 | 53.23873 | -6.46257 |
| 22:17:57 | Leisler's Bat | 6 | 23 | 23.5 | 22.4 | 18 | 214 | 14 | 53.23873 | -6.46257 |
| 22:18:03 | Brown Long Eared Bat | 15 | 25.3 | 27.2 | 24.4 | 13 | 240 | 14 | 53.23873 | -6.46257 |
| 22:18:07 | Leisler's Bat | 13 | 23.8 | 25.2 | 23.2 | 14 | 270 | 14 | 53.23873 | -6.46257 |
| 22:20:58 | Leisler's Bat | 25 | 23.5 | 25.5 | 22.7 | 16 | 226 | 14 | 53.23873 | -6.46259 |
| 22:23:44 | Leisler's Bat | 24 | 23.9 | 25.8 | 23.1 | 12 | 255 | 14 | 53.23873 | -6.46257 |
| 22:31:14 | Leisler's Bat | 5 | 21.8 | 23.1 | 21.2 | 16 | 280 | 13 | 53.23873 | -6.46258 |
| 22:34:39 | Leisler's Bat | 5 | 23.7 | 25.1 | 23.1 | 12.7 | 343 | 13 | 53.23873 | -6.46258 |
| 22:41:07 | Leisler's Bat | 5 | 23.6 | 24.3 | 22.9 | 16 | 289 | 13 | 53.23873 | -6.46258 |
| 22:41:11 | Leisler's Bat | 9 | 22.3 | 23 | 22 | 20 | 30 | 13 | 53.23873 | -6.46259 |
| 22:44:44 | Common Pipistrelle | 1 | 42.7 | 46.7 | 41.8 | 4.6 | 0 | 13 | 53.23873 | -6.46256 |
| 22:58:10 | Soprano Pipistrelle | 25 | 51.2 | 60.8 | 50.7 | 6 | 90 | 13 | 53.23874 | -6.46257 |
| 23:04:57 | Brown Long Eared Bat | 2 | 22.6 | 25.3 | 20.3 | 3.6 | 774 | 13 | 53.23842 | -6.46286 |
| 23:07:00 | Common Pipistrelle | 17 | 41.8 | 42.3 | 41.6 | 7 | 190 | 13 | 53.23852 | -6.46304 |
| 23:09:04 | Common Pipistrelle | 1 | 41.8 | 42.1 | 41.2 | 9.8 | 0 | 13 | 53.23853 | -6.4626 |
| 23:12:52 | Leisler's Bat | 1 | 25.6 | 27.1 | 24.1 | 2.6 | 0 | 14 | 53.23848 | -6.46139 |
| 23:14:59 | Leisler's Bat | 1 | 21.7 | 24.7 | 18.6 | 2 | 0 | 14 | 53.23863 | -6.46185 |
| 23:15:09 | Leisler's Bat | 1 | 24.7 | 27.5 | 24.1 | 2 | 0 | 14 | 53.23864 | -6.46187 |
| 23:15:54 | Common Pipistrelle | 9 | 42.5 | 46.3 | 42 | 5 | 100 | 14 | 53.23867 | -6.46186 |
| 23:19:22 | Soprano Pipistrelle | 17 | 50.3 | 54.5 | 49.3 | 6 | 90 | 14 | 53.23865 | -6.46207 |
| 23:25:06 | Common Pipistrelle | 22 | 49.1 | 50.5 | 48.4 | 9 | 100 | 13 | 53.23864 | -6.46207 |
| 23:28:06 | Common Pipistrelle | 13 | 49 | 49.3 | 48.5 | 6 | 350 | 13 | 53.23865 | -6.46207 |
| 23:31:20 | Brown Long Eared Bat | 9 | 26.4 | 28.7 | 25.3 | 5 | 360 | 13 | 53.23866 | -6.46208 |
| 23:33:28 | Leisler's Bat | 8 | 24.9 | 25.4 | 24.1 | 6 | 530 | 13 | 53.23866 | -6.46208 |

APPENDIX D

Which plants should I choose?

Bat-friendly gardeners should aim to plant a mixture of flowering plants, vegetables, trees and shrubs to encourage a diversity of insects, which in turn may attract different bat species. Flowers that bloom throughout the year, including both annuals and herbaceous perennials, are a good idea: night-flowering blossoms attract night-flying insects. Trees and shrubs provide food for insects and roosting opportunities for bats.

Approximate flowering periods are listed below, although they may vary according to area and weather conditions!

Flowers for borders

*Aubretia (spring to early summer)
 *Candytuft (summer to autumn)
 *Cherry pie (summer to autumn)
 Corncockle
 Cornflower
 Corn marigold
 Corn poppy
 *Echinacea
 English Bluebell (spring)
 *Evening primrose (summer to autumn)
 Field poppies (summer)
 *Honesty (spring)
 *Ice plant 'Pink lady' (early autumn)
 Knapweed (summer to autumn)
 Mallow (summer to autumn)
 *Mexican aster (summer to autumn)
 *Michaelmas daisy (summer to autumn)
 *Night-scented stock (summer)

Ox-eye daisy (summer)
 *Phacelia (summer to autumn)
 *Poached egg plant (summer)
 Primrose (spring)
 Red campion (spring)
 *Red valerian (summer to autumn)
 Scabious (summer)
 St John's wort (spring)
 *Sweet William (summer)
 *Tobacco plant
 *Verbena (summer to autumn)
 *Wallflowers (spring to early summer)
 Wood forget-me-not (spring)
 Yarrow (early summer)



Plants marked * are hybrids or exotics that may be useful in the garden



Herbs (both leaves & flowers are fragrant)

Angelica
 Bergamot (summer to early autumn)
 Borage (spring to early autumn)
 Coriander (summer)
 English marigolds
 Fennel (summer to early autumn)
 Feverfew (summer to autumn)
 Hyssop (summer to early autumn)
 Lavenders
 Lemon balm
 Marjoram (summer)
 Rosemary (spring)
 Sweet Cicely (spring to early summer)
 Thyme (summer)

Things to remember

- Pesticide-free gardens tend to be better for wildlife and bats.
- Wherever possible, try to choose native plants and trees.
- Never dig up plants from the wild. Buy native plants from reputable suppliers who breed their own stock.
- Use peat-free compost or peat-substitutes such as coir. Peat extraction is unsustainable and seriously damages our unique bog habitats. Gardeners can help by reducing the demand for this product.
- Creating a range of habitats such as a pond, vegetable garden and hedgerow makes your garden more attractive to insects and in turn bats.
- Add a seat, put your feet up and watch your garden come to life!
- Hedge and tree lines are important to help bats navigate.
- Use lighting sensitively in your garden and do not point it at a bat box or roost.

Trees, shrubs & climbers

Bramble (climber)

*Buddleia (shrub)

Common alder
(suitable for coppicing)

Dog rose (climber)

Elder (small)

English oak (large gardens only)

Gorse (shrub)

Guelder rose (shrub)

Hawthorn (suitable for coppicing)

Hazel (suitable for coppicing)

Honeysuckle (native honeysuckle)

Hornbeam

Ivy (climber)

*Jasmine (night-scented)

Pussy willow (suitable for coppicing)

Rowan

Silver birch



Wild flowers for pond edges & marshy areas

Bog bean

Bugle

Creeping Jenny (spring to summer)

Flag iris

Hemp agrimony (summer)

Lady's smock (spring to summer)

Marsh mallow

Marsh marigold (spring)

Marsh woundwort

Meadowsweet

(summer to early autumn)

Purple loosestrife (summer)

Water avens

Water forget-me-not

(summer to autumn)

Water mint (summer to autumn)

Build a bat box



What you will need:

- ready-made bat box
- or untreated rough-sawn wood 150 mm wide x 1.1 m x 15 mm or more
- ladder
- drill
- screws
- saw
- nails

Step by step guide

1 The basic principles of a bat box.

They should:

- be made from untreated wood, ie wood that hasn't been pressure-treated with chemicals - bats are sensitive to smells, and preservative chemicals may be harmful to them
- be made from rough-sawn wood (rather than smooth, planed wood)
- have good tight joints – bats hate a draught
- have a narrow slit at the back of the box, with a rough piece of wood leading up to it that they can clamber up

2 Buy a bat box. You can buy a box – or more! – if you don't have time or the right tools to make one. Research has shown that you're more likely to be successful if you have several boxes up near each other.

The very best bat box is one with two or more internal compartments, and one that is as large as possible – a deep cavern makes bats feel really safe, and keeps the air temperature more constant.

3 Make sure you have the right wood.

To make your own bat box, get hold of some untreated, rough-sawn wood. That can be easier said than done! You will probably need to go to a sawyard rather than a timber merchant, as you're unlikely to find it at a DIY store!

Make sure you look for the Forest Stewardship Council logo.

If your wood feels too smooth, rough it by dragging the teeth of a saw across the surface - this helps bats get a good grip as they clamber around their new home.

4 Building your bat box. You'll need a sheet of timber 150 mm wide by at least 1.1 m long, and as thick as possible to keep the bats insulated from too much cold and heat inside (ideally 15 mm or more).

Mark the wood with a pencil, and then cut it in to the sections shown on the diagram.

Nail all the pieces together as shown in the diagram, making the joints as airtight as possible.

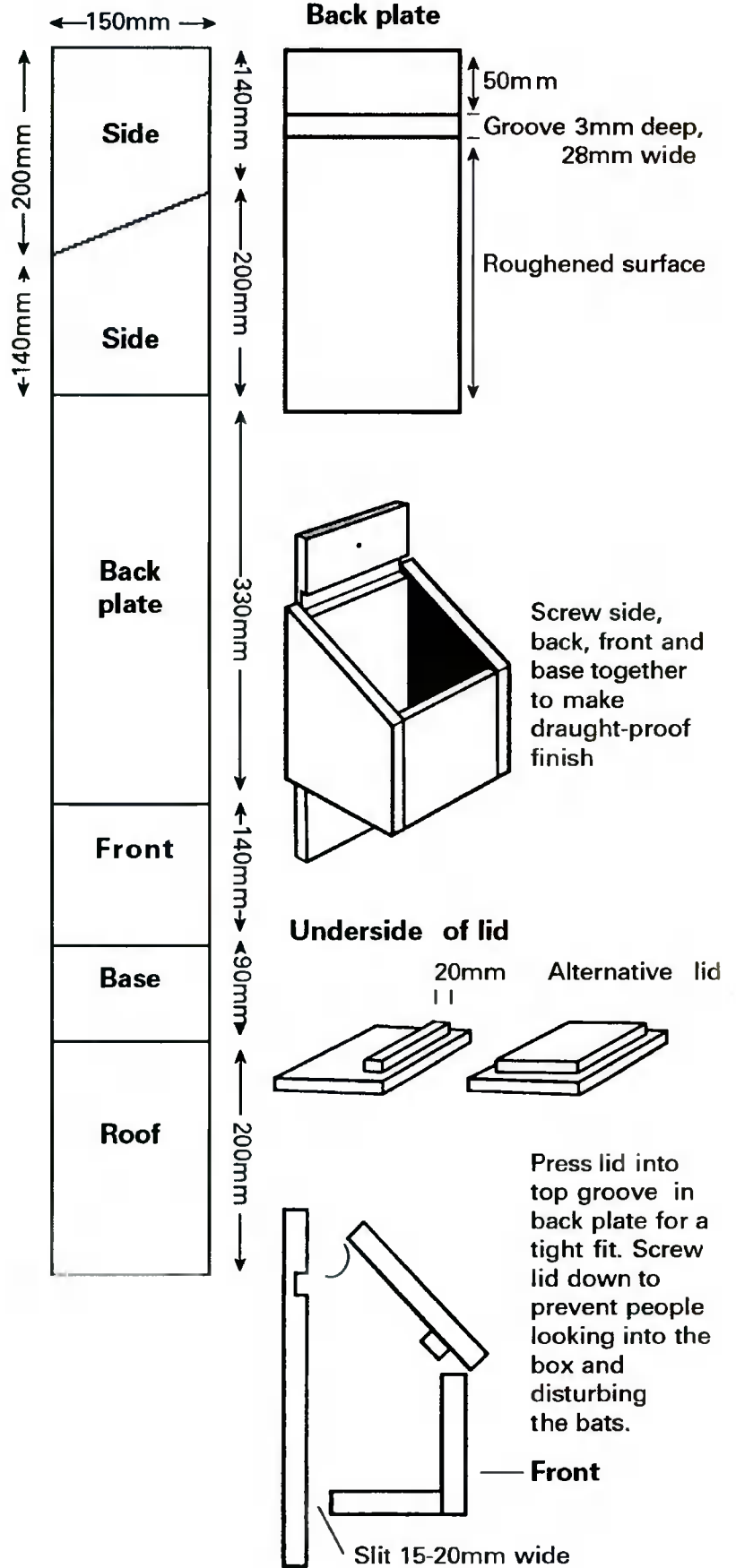
5 Choose your location.

You could put it under the eaves of your house or, if you have a large garden, on the trunk a mature tree. Ideally, look for a spot that is at least 3 m (10 feet) from the ground, sheltered from strong winds and exposed to the sun for part of the day. Unlike birds, facing your box between south west and south east is recommended. Make sure there is a clear flight line in.

6 Now put your bat box up.

Drill holes at the top and bottom of the box's backing plate and fix the bat box to the wall with screws or plugs. If you're fixing it to a tree, you can use adjustable ties so you don't cause any damage to the tree. If you don't have these, use timberscrew bolts.

All bats and their homes are protected by law so it's important you don't disturb them. Watch and enjoy from a distance.



APPENDIX E

Choosing the right species of native tree and shrub

As mentioned, choosing the right species of tree and shrub is very important in urban areas where there are restrictions on space. Where possible, always use native species. Below is a list of the trees and shrubs native to Ireland, and advice on the locations to which they are suited.

| Common name | Latin name | Height (max) | Suitable for public open spaces | Suitable for streets and confined spaces | Suitable for tubs, containers, raised beds etc. | Guide to planting: see key below |
|----------------------------|-----------------------------|--------------|---------------------------------|--|---|----------------------------------|
| Alder | <i>Alnus glutinosa</i> | 22m | Yes | No | Yes | ADPS |
| Alder buckthorn | <i>Frangula alnus</i> | 6m | Yes | No | Yes | D |
| Arbutus (strawberry tree) | <i>Arbutus unedo</i> | | Yes | No | Yes | |
| Ash | <i>Fraxinus excelsior</i> | 28m | Yes | Yes | No | ADIPS |
| Aspen | <i>Populus tremula</i> | 24m | Yes | No | No | DPSV |
| Bird cherry | <i>Prunus padus</i> | 14m | Yes | Yes | Yes | P |
| Bramble | <i>Rubus fruticosus</i> | | | | | C/H |
| Broom | <i>Cytisus scoparius</i> | 2m | | | | |
| Burnet rose | <i>Rosa pimpinellifolia</i> | | | | | C/H |
| Common (or European) gorse | <i>Ulex europeus</i> | 2.5m | | | | HV |
| Crab apple | <i>Malus sylvestris</i> | 6m | Yes | No | No | AHIP |
| Dog rose | <i>Rosa canina</i> | | | | | C/H |
| Downy birch | <i>Betula pubescens</i> | 18m | Yes | Yes | Yes | ADIP |
| Elder | <i>Sambucus nigra</i> | 6m | | | | V |
| Guelder rose | <i>Viburnum opulus</i> | 4.5m | | | | DH |

| | | | | | | |
|------------------------------------|--|------|-----|-----|-----|-------|
| Hawthorn | <i>Crataegus monogyna</i> | 9m | | | | AHIPS |
| Hazel | <i>Corylus avellana</i> | 6m | | | | AHS |
| Holly | <i>Ilex aquifolium</i> | 15m | Yes | No | Yes | AHPS |
| Honeysuckle | <i>Lonicera periclymenum</i> | | | | | C |
| Ivy | <i>Hedera helix</i> | | | | | C |
| Juniper | <i>Juniperus communis</i> | 6m | Yes | No | No | |
| Pedunculate oak | <i>Quercus robur</i> | 30m | Yes | No | No | AI |
| Privet | <i>Ligustrum vulgare</i> | 3m | | | | No |
| Purging buckthorn | <i>Rhamnus cathartica</i> | 4.5m | | | | AHPV |
| Rowan or mountain ash | <i>Sorbus aucuparia</i> | 9m | Yes | Yes | Yes | ADHIP |
| Scots pine | <i>Pinus sylvestris</i> | 24m | Yes | No | No | AI |
| Sessile oak | <i>Quercus petraea</i> | 30m | Yes | No | No | AI |
| Silver birch | <i>Betula pendula</i> | 18m | Yes | Yes | Yes | ADIP |
| Sloe, blackthorn | <i>Prunus spinosa</i> | 3m | | | | AHPV |
| Spindle | <i>Euonymus europaeus</i> | 7.5m | | | | H |
| Western (or mountain) gorse | <i>Ulex gallii</i> | | | | | |
| Whitebeam spp. | <i>Sorbus aria/S. anglica/S. devoniensis/S. hibernica/S. latifolia/S. rupicola</i> | 12m | Yes | Yes | Yes | IPS |
| Wild cherry | <i>Prunus avium</i> | 15m | Yes | Yes | Yes | AHI |

| | | | | | | |
|--------------------|----------------------|-----|-----|----|-----|------|
| Willow spp. | <i>Salix spp.</i> | 6m | | | | V |
| Wych elm | <i>Ulmus glabr</i> | 30m | Yes | | No | PS |
| Yew | <i>Taxus baccata</i> | 14m | Yes | No | Yes | AIPS |

- A – Grows in a wide variety of soils
- C – Climber
- H – Suitable for hedging
- I – Suitable as an individual tree
- D – Tolerates or prefers damp conditions
- P – Tolerates smoke or pollution
- S – Tolerates shade
- V – Invasive

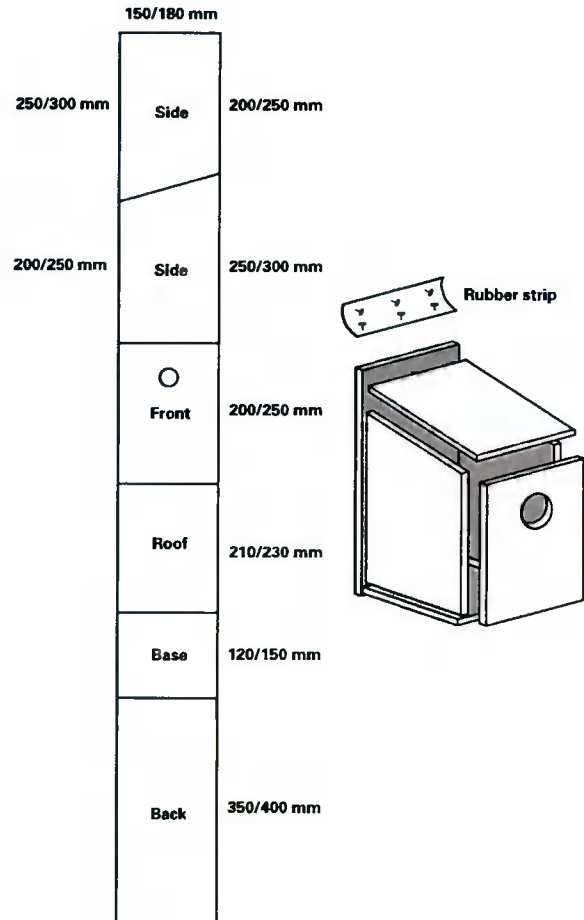


Make a nestbox

If you'd like to help the birds in your garden, why not have a go at making your own nestbox?

Please ask an adult to help as you may need to use tools that could hurt you.

1. Natural nest holes don't come in standard sizes, so please use the following sizes as a guide. Use a plank about 150 mm wide and 15 mm thick. Use the diagram to help you.
2. The inside of the box must be at least 100 mm square and the bottom of the entrance hole must be at least 125 mm from the floor. If it is less, young birds might be scooped out by a cat.
3. Use galvanised nails or screws. The inside front surface should be rough – this will help the young birds to clamber up. A drainage hole in the base will also help to stop the box getting damp inside.
4. Hinge the lid with a strip of leather or rubber (an old piece of bicycle inner tube would do). Do not nail the lid down (because you will need to clean out the box in autumn). Instead, use a catch to keep it closed.
5. The entrance hole size depends on the type of bird you want to attract:
 - 25 mm for coal tits, marsh tits and blue tits
 - 28 mm for great tits and tree sparrows
 - 32 mm for nuthatches and house sparrows
 - A starling box needs to be 25-30% larger with an entrance 45 mm across



If you remove the top half of the front panel, the same type of box could attract robins, pied wagtails or wrens to nest. Spotted flycatchers prefer an even shallower, open-fronted box.

Softwood boxes (such as pine) can be treated with water-based wood preservatives, such as Fenceguard or Sadolin: apply only to the outside of the box, and not around the entrance hole. Whatever you use, make sure the box dries and airs thoroughly before putting it up.

PLEASE DO NOT use chemicals like wood preservatives without an adult – they can be dangerous.

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