[redacted]
C/o Stokes Morgan
41a High Street
Nailsea
BS48 1AS

Avondale Ecology
7 Hollowmead Close
Claverham
North Somerset
BS49 4LG
[redacted]

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Preliminary Ecological Appraisal and Biodiversity Net Gain Assessment

Project Background and Scope of Survey

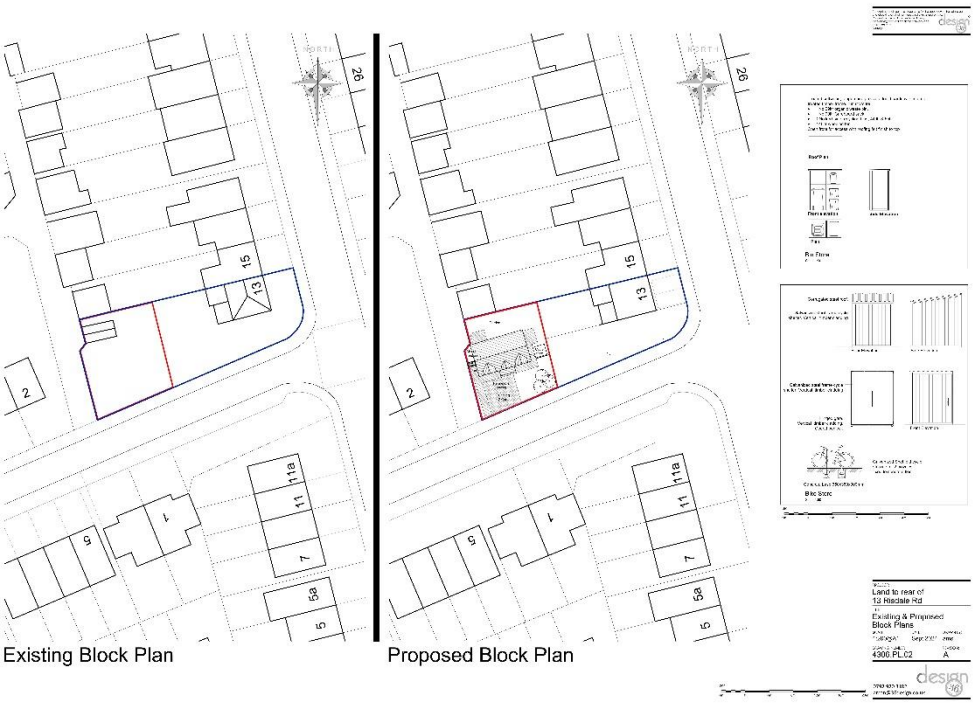
The proposals are for the demolition of an existing outbuilding for construction of one detached dwelling within the garden of 13 Risdale Road, Bristol, BS3 2QU (Ordnance Survey Grid Reference ST56627043). The location of the site and layout of the proposals are shown in Figure 1 below.

The Environment Act 2021 requires that Biodiversity Net Gain (BNG) assessments demonstrating at least 10% net gain in units as assessed through the Defra statutory Biodiversity Net Gain metric are provided for sites where there is more than 25m^2 of habitat/soft landscaping. A Preliminary Ecological Appraisal comprising a basic ecological desk study, habitat survey and protected species has also been completed to inform the assessment.

The survey aimed to identify any designated sites, Habitats of Principal Importance (priority habitat), irreplaceable habitats and features suitable for use by protected and notable species to inform the ecological and biodiversity net gain assessment. The survey included the following objectives:

- To identify any designated nature conservation sites on or in the vicinity of the site;
- To provide an indication of protected or notable species likely to be on or in the vicinity of the site;
- To record any habitats of ecological importance and to record their condition using the Defra condition sheets (this is not strictly required for the Small Sites Metric but may be used to inform habitat creation options);
- To identify whether there is any evidence of or potential for protected or notable species to be present;
- To detail constraints and requirements for avoidance, mitigation and compensation measures to meet legislative and best practice requirements; and
- To complete the Defra BNG metric and to highlight any opportunities for net biodiversity gain.

Figure 1 Site Location and Layout



Methodology

A full Bristol Regional Environmental Records Centre (BRERC) data search for protected and notable species was not considered to be necessary or proportional in this instance. Instead, publicly available information and the surveyor's knowledge of the area based on 18 years' of local experience was used to inform a risk assessment of presence of protected and notable species. Internationally and nationally wildlife sites up to a 1km from the site and Special Areas of Conservation (SAC) designated for bat species up to 10km from the site were identified using MAGIC mapping (www.magic.gov.uk). Aerial photographs and Ordnance Survey maps were also reviewed to assess the site in context of surrounding habitats. MAGIC was also reviewed for Natural England mitigation licence applications and eDNA records for GCN within 1km.

An Extended Phase 1 Habitat survey i.e. habitat survey and protected species audit was completed in accordance with best practice guidance (*Guidelines for Ecological Impact Assessment in the UK and Ireland* (CIEEM, 2016) and *Handbook for Phase 1 Habitat Survey* (JNCC, 2010) on 11 November 2024. Habitats were also classified following UK Habitat Classification V2 (2023) guidance to be consistent with Biodiversity Net Gain requirements. The survey was completed by Sarah Dale MCIEEM, an experienced ecologist with over 18 years' professional practice. The vegetation type, structure and dominant species of any habitats present were noted. An indicative botanical species list was made for each habitat type. Botanical nomenclature in this report follows that laid out by Stace (2010). The presence of any invasive species subject to legal controls was also recorded.

The habitats were also assessed for evidence and potential to support legally protected or otherwise notable flora and fauna e.g. evidence of species such as badger and potential presence of species such as reptiles.

An internal and external building inspection/Preliminary Bat Roost Assessment of the outbuilding was undertaken in accordance with *Bat Surveys for Professional Ecologists - Good Practice Guidelines* 4th Edition (Collins Ed., 2023), *Bat Mitigation Guidelines* (English Nature, 2004), *UK Bat Mitigation Guidelines* (Reason and Wray, 2023) and the *Bat Workers Manual* (Mitchell-Jones and McLeish, 2004). The survey was completed by Sarah Dale MCIEEM and Natural England bat survey Class 2 licence holder 2018-36720-CLS-CLS.

The interior of the outbuilding was fully accessed and thoroughly searched. The exterior was observed externally from ground level paying particular attention to potential access points for bats. Features were searched for evidence of use by bats. Signs of bats include live animals, corpses, noises, droppings, urine staining, feeding remains (e.g. moth and butterfly wings) and scratches. Where present, these signs were recorded and mapped. Any evidence of nesting birds was also recorded. The building was categorised using the criteria in Table 1.

Table 1: Bat Roost Potential Categories

(Category descriptions drawn from Collins, 2023 and Mitchell-Jones, 2004)

Roost Potential	**Description**
Confirmed	Confirmed signs of bat presence/ occupation (droppings, oily staining around entry points, insect remains, odour, scratching) or actual bat presence (live or dead bats).
High	Features present with high potential to support roosting bats. These include structures with points of access to the interior through degraded/missing mortar/brickwork, proximity to good foraging habitat such as woodland or water and suitable crevices or woodpecker holes and holes within trees.
Moderate	Features with some potential to support roosting bats. Access points may include mortar cracks in brickwork or holes in soffits/fascias.
Low	Few features of bat interest. A limited number of features which may support individual bats rather than sizeable roosts.
Negligible	Negligible potential for roosting and bats very unlikely to be present. Includes structures constructed from unsuitable materials e.g. prefabricated with steel with no entrance opportunities.

A Biodiversity Net Gain assessment was completed using the Defra Small Sites metric due to the size of the site. Guidance set out in *The Small Sites Metric (Statutory Metric) – User Guide* (Defra, July 2024) was followed. Habitats were assessed using *UK Habitat Classification* methodology (as above). Habitat areas were mapped and measured using qGIS. Shapefiles are available on request. Although the Small Sites Metric does not require a condition assessment for the baseline assessment, for some habitats it can be useful to complete an evaluation to inform habitat creation options. Conservative assumptions were made when considering habitat creation options to provide a realistic estimation of likely target habitat quality for newly created habitats, and to minimise challenges with long-term

management and delivery. All habitats within the redline were assessed to inform potential habitat creation measures.

Constraints: The entire site was accessible. Although the survey was completed at a sub-optimal time of year for botanical assessment, due to the type and quality of habitats present, this will not have changed the outcome of the assessment. qGIS has been used to estimate the areas for BNG. As this is based on translation of a redline boundary into a georeferenced format, this is a best estimate of areas.

Site Context and Desk Study

The area within the redline boundary comprises an area of approximately 215m^2. The site comprises an outbuilding, area of gravel and vegetated garden including regularly mown lawn and ornamental shrubs. The site is within the curtilage of a semi-detached property to the east. The site is located within the city of Bristol, with Tregarth Road to the south, Risdale Road to the east and an access track directly to the west. There are surrounding properties and gardens of a similar nature, including immediately bordering the site to the north. The site lies on the south-west edge of the city. There is open countryside 750m to the south and west.

There are no statutory designated sites for nature conservation within 1km. The site does not fall within Natural England's Site of Special Scientific Interest (SSSI) Impact Risk Zone criteria. There are no designated sites such as Special Areas of Conservation (SACs) for highly mobile species which could use the site within 10km. Due to the nature of the site, it does not meet the criteria for Local Wildlife Site/Site of Nature Conservation Interest designation.

The closest priority habitats/Habitats of Principal Importance (designated under the NERC Act 2006) are deciduous broadleaved woodland 255m south and calcareous grassland 455m south-west. Neither will be impacted by the proposals.

Bristol supports a high bat biodiversity for a city, with at least 12 species recorded. There is one Natural England bat mitigation licence records 990m south for brown long-eared *Plecotus auritus* and lesser horseshoe *Rhinolophus hipposideros* bats. Other mammals including badger *Meles meles* and hedgehog *Erinaceous europaeus* also have a relatively widespread distribution within Bristol. Birds of Conservation Concern (e.g. RSPB, 2015) use gardens within Bristol including species such as house sparrow *Passer domesticus*, starling *Sturnus vulgaris* and song thrush *Turdus philomelos.* There are no swift *Apus apus* nests shown in close proximity on the RSPB Swift Mapper (swiftmapper.org.uk). Slow worm *Anguis fragilis* are frequently found within gardens in Bristol, but other reptile species occur rarely. There are no ponds shown on Ordnance Survey mapping within 250m. Unmapped ponds may be present within gardens. There are no nearby great crested newt *Triturus cristatus* records shown on MAGIC mapping; the closest record is 1.5km west.

Habitats and Plant Species

Findings are mapped in the pre-development habitat map in Figure 2 and site photographs are provided below. Habitats comprise:

Building (u1b5)

The outbuilding within the site comprises intact block and render walls with an unlined corrugated felt panel roof. The eaves have been sealed with expanding foam, the door is well-fitting and windows are glazed. There is a small area of gravel (u1c) to the north and west of the building which is mostly unvegetated.

Vegetated Garden (u1, 828)

Most of the site comprises vegetated garden with regularly mown, species-poor grassed lawn and sparce ornamental shrubs. Most of the grassland sward was less than 20cm in height at the time of the survey. Species include perennial ryegrass *Lolium perenne*, Yorkshire fog *Holcus lanatus,* ragwort *Senecio jacobaea*, cock's-foot *Dactylis glomerata*, dandelion *Taraxacum* agg., round-leaved cranesbill *Geranium rotundifolium*, white clover *Trifolium repens*, rough hawkweed *Hieracium scabrum*, ribwort plantain *Plantago lanceolata* and creeping cinquefoil *Potentilla reptans*. There is a narrow (less than 1m wide) margin around the west and south boundaries which is less frequently cut and is dominated by false oat grass *Arrhenatherum elatius.* There are also some scattered ornamental shrubs and planting beds including buddleia *Buddleja davidii*, rose *Rosa* sp., sparse bramble *Rubus fruticosus* agg., *Prunus* species, ornamental *Geranium* and spurge *Epilobium* species. No notable plant species and no non-native species subject to legal controls are present.

Other and Adjacent Habitats

North, west and south boundaries comprise close-boarded fences in good condition. There is no fence along the eastern boundary as this is continuous with the wider garden. There are no trees or shrubs of over 7.5cm diameter at breast height i.e. none would be classed as a tree.

Protected and Notable Species

Badger

There was no evidence of badger within the site.

Bat Species

The outbuilding has negligible potential to support roosting bats. It is light internally and there are no suitable features for void or crevice-dwelling bats. There was no evidence of use by bats inside the garage. The main property will remain unaffected by the proposals, and is likely to have low suitability for roosting bats. Bat species such as pipistrelles *Pipistrellus* sp. which are widespread in urban areas may forage and commute across the site, but no habitats of any notable quality for bat species are present.

Nesting Birds

There was no evidence of use by nesting birds within the outbuilding and negligible potential for use due to lack of access into the building. There is a very low risk of nesting birds using remaining shrub habitats within the site, as these are sparse.

Reptiles

There is a very low risk of slow worm being present in the narrow vegetated margins around the west and south boundaries or within a compost bin adjacent to the south-west corner of the shed. The intact close-boarded fences and adjacent roads on three sides may limit potential colonising opportunities for reptiles. Most of the site is unsuitable for reptile species due to current management of the grassland.

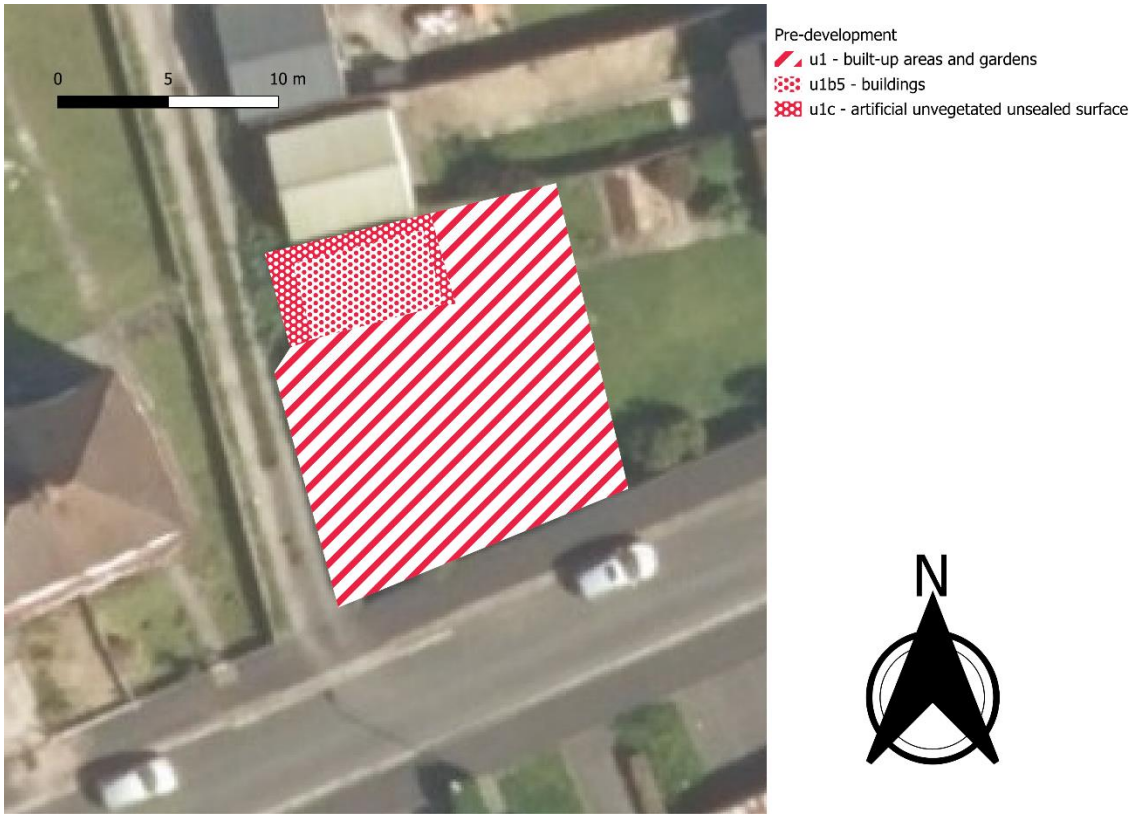
Great Crested Newt

As with reptiles, the site offers very limited suitability in terrestrial habitat for great crested newt. The species is likely to be absent given lack of records and potential breeding ponds in the area.

Other Species

Due to habitats present, the site is of limited interest for invertebrate species. It is possible that hedgehog may foraging or shelter within the site (e.g. in the compost bin), but the likelihood is very low due to lack of connectivity measures through boundary fences. There is negligible potential for other protected or notable species to be present or impacted.

Figure 2 Pre-development Habitat Map



Recommendations – Habitats and Protected and Notable Species

No impacts on designated sites are anticipated. There is negligible risk to any habitats of ecological value.

There is negligible potential to impact on roosting bats or any bat habitats of note. If any additional lighting is proposed, a best practice approach to minimising light spill should be followed in accordance with *Bats and Artificial Lighting at Night* (ILP, 2023). Measures include:

- Only using external lighting where absolutely necessary for safety reasons;
- All external lighting to be fitted with PIR sensors and short-duration timers (less than 2 minutes);
- Avoiding floodlighting and using downward-facing, wall-mounted and/or bollard lighting; and
- Warmer light colours below 2700K to be used.

There is a very low risk of nesting birds being present within sparse shrubs. The risk is insufficient to require a pre-commencement nesting bird check. All contractors must be instructed to remain vigilant for nesting birds. If active nests are unexpectedly found within the site during works, all activities must cease and an ecologist contacted for advice. The nest and a buffer area (5m+) would need to be retained undisturbed until chicks have fledged which can take up to six weeks. As the main nesting season is March to August inclusive, site clearance during September to February would be unlikely to risk impacts on nesting birds.

Habitats within the footprint of the proposals should continue to be cut to less than 20cm in height before works commence to prevent any colonisation by reptiles and other wildlife. The compost bin must be cleared by hand and longer grassed margins strimmed to at least 10cm in height and left for at least 48 hours before removal, with an ecologist contacted if reptiles such as slow worm are unexpectedly found. Additional mitigation such as an ecological clerk of works being present during site clearance and a small designated reptile receptor would be likely to be required if reptiles are found.

Ecological survey reports usually remain valid for up to two years. An updated Biodiversity Net Gain walkover will be required if the planning application has not been submitted by 11 May 2025.

Biodiversity Net Gain Assessment and Ecological Enhancement Measures

The Defra Biodiversity Net Gain metric spreadsheet is appended. There are no Irreplaceable Habitats within the site.

The site achieves a baseline of 0.0364 habitat units. The original landscape proposals achieved 0.0197 habitat units i.e. a 45.92% net loss. As habitat creation within private gardens cannot contribute towards net gain based on Defra advice, there are limited options to achieve net gain on-site. The solution proposed is that the south-west strip of the site is fenced off to create a public/shared area with species-rich flowering lawn (e.g. Emorsgate EL1 mix wildseed.co.uk) seeded and managed according to manufacturer's instructions. Trees planted within garden

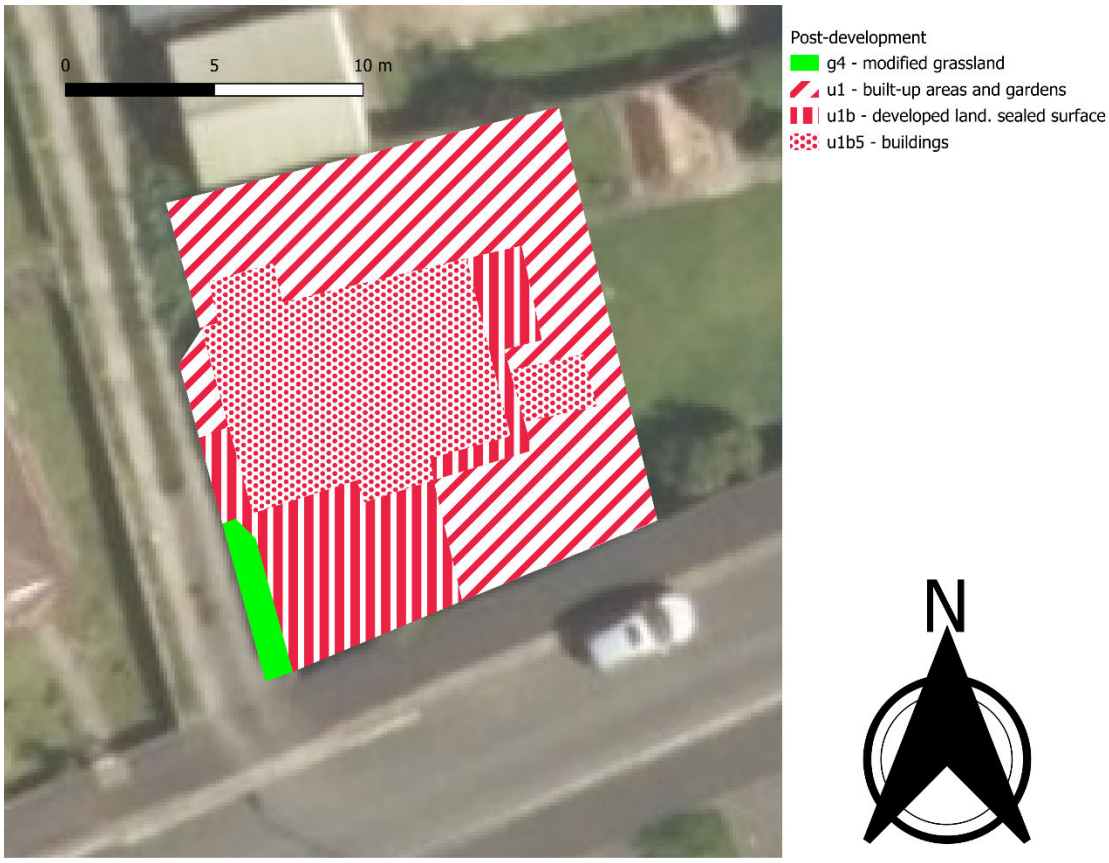
curtilages cannot be counted towards net gain under Defra guidance, so the small area will be demarcated as distinct to the rest of the garden and managed separately. Three small trees growing to over 7.5cm diameter at breast height once established will also be planted. Species such as small fruit trees or shrubs such as holly or hazel would suffice, as long as they are allowed to grow to maturity. This would achieve 0.0580 habitat units i.e. a 59.26% net gain.

Additional enhancement measures for protected and notable species should be considered such as:

- A feature for nesting birds such as a house sparrow terrace could be incorporated (RSPB Sparrow Terrace Nest Box - RSPB Shop). If appropriate to be included, nest boxes should be sited at 2m+ externally. All boxes should be sited in a location where it is unlikely to be disturbed or accessible to predators and ideally on a north facing elevation or out of direct sunlight as much as possible.
- An integrated feature for roosting bats could be considered if appropriate locations are present. Options for bat roost creation include:
    - Roost feature in new soffit/fascias created by leaving 2-3cm access gaps or holes or installing a soffit bat box (see Soffit Bat Box (wildcare.co.uk)). Ideally, the soffit would be wood or rough-surfaced (i.e. not uPVC) for this option to be most effective;
    - Bat tubes such as Schwegler 1FR incorporated into the building fabric;
    - Bat bricks such as Ibstock brick or Habibat boxes incorporated into the building fabric; or
    - Attached bat boxes such as Schwegler 2FE or Beaumaris woodstone boxes, although these often degrade more rapidly or become detached over time.

  Bat roost features are usually installed at least 3-4m in height to maximise their chance of use and ideally installed on south/west elevations.
- Hedgehog connectivity measures (13cm x 13cm gaps) incorporated into a solid boundary or under a gate.

Figure 3 Post-Development Habitat Plan



Site Photographs

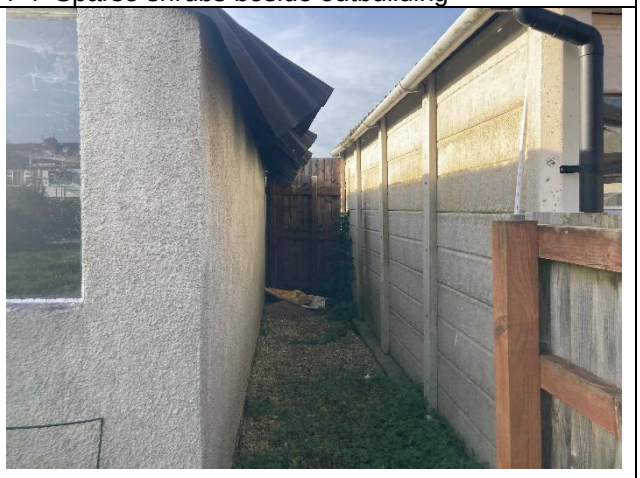
P1 Site facing north-west

P2 Site facing west

P3 Boundary shrubs and longer grass margins

P4 Sparse shrubs beside outbuilding

P5 Typical grass sward



P6 Gravel to north of outbuilding

	
P7 Interior of outbuilding	P8 Southern close-boarded fence and adjacent road