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Land at Croft Farm Holiday Park

Preliminary Ecological Appraisal & Baseline Biodiversity Net Gain Assessment

CEC4031
22 July 2022

Document Control

Revision	Prepared by	Checked by	Approved by
First Issue **22/07/2022**	Cathy Shaw BSc(Hons), MSc, ACIEEM, MRSB Ecologist	Steve Adams BA(Hons), MSc, MCIEEM, CEnv Senior Ecologist	Natasha Collings-Costello MEnv Sci CEnv CSci MCIEEM Managing Director

Disclosure

The information, opinion and advice which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct and the British Standard for Biodiversity – Code of Practice for Planning and Development (2013). We confirm that the opinions expressed are our true and professional bona fide opinions.

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Summary

Site and methods	
Purpose of report	To identify the ecological constraints and opportunities associated with the site and provide sufficient information for the Local Planning Authority to determine the change of land use application.
Site assessed	Land at Croft Farm Holiday Park Luxulyan St Austell Cornwall PL30 5EH
Area (ha)	0.75
Location:	Grid reference: SX 04404 56901 What3words: vessel.lobby.pits
Planning Authority involved	Cornwall Council
Survey methods	Extended Phase 1 Habitat Survey UK Habitat Classification Biodiversity Net Gain Condition Assessment
Surveyor's name	Cathy Shaw BSc(Hons), MSc, ACIEEM, MRSB
Date of assessment	29th June 2022
Weather on date of assessment	Fine, sunny and dry

Results	
Designated sites	Mid Cornwall Moors SSSI is located c. 525m west of the site. Carne Cross & Starrick Moor CWS is adjacent to site. Treskilling Downs CWS is c. 400m to the west, North Hill Wood CWS is c. 700m north-west and Little Carne CWS is 940m to the south-east.

Important habitats present	Cornish hedge on site and wet woodland immediately adjacent to site.
Non-native invasive species present	Himalayan balsam, montbretia, *Rhododendron ponticum* and variegated yellow archangel.
Protected species present	Nesting birds
Potential for protected species	Hibernating reptiles, commuting and foraging badgers, otters and hedgehogs
Further survey recommendations	None
Mitigation recommendations	**Designated sites:** Pollution prevention measures to be adopted and consultation with Cornwall Wildlife Trust will be required. **Non-native invasive species:** Invasive species management plan will need to be prepared. **Nesting birds:** Timed vegetation removal outside of the nesting bird season, or removal to be completed under an ecological watching brief if not possible. **Hibernating reptiles:** Careful removal of the brash pile in the summer months. **Badgers & hedgehogs:** General management of the site to ensure that animals do not become trapped in any excavations or in any materials left around the site. Removal of the log and brash piles should be conducted between April and September, inclusive, to avoid disturbing hibernating hedgehogs. **Replacement planting:** Replacement native shrub planting for the loss of vegetation.
Biodiversity Net Gain Baseline	A complete biodiversity net gain (BNG) calculation will need to be calculated.

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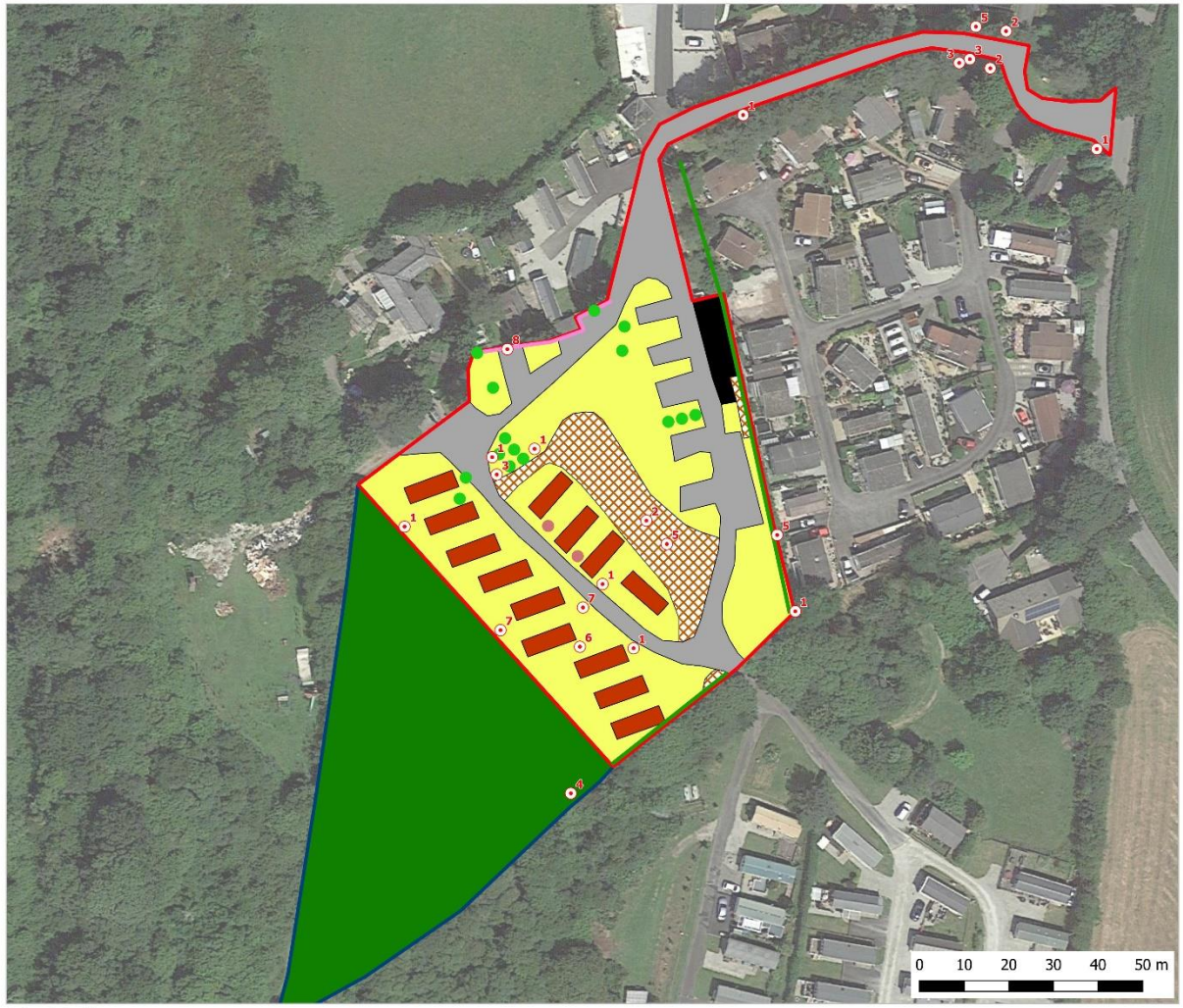

© Google Satellite

Croft Farm Baseline Habitat Plan

Legend

- Site boundary
- Additional survey area
- Target note

Habitats

- Building (permanent)
- Hardstanding
- Introduced shrub
- Lodge
- Modified grassland (amenity)
- Wet woodland
- Cornish hedge (sp. poor with bank)
- Cornish hedge (sp. rich with bank)
- Scattered broadleaved tree
- Scattered coniferous tree

Target Notes;
1 - Montbretia
2 - Rhododendron ponticum
3 - Variegated yellow archangel
4 - Himalayan balsam
5 - Cherry laurel
6 - Ephemeral grassland
7 - Brash pile
8 - Buddleia

Draw Date: 20/07/2022

Scale: 1:800 (@A3)

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1. Introduction

1.1. Background

1.1.1. Cornwall Environmental Consultants (CEC) Ltd were commissioned by Mr Edgar Paul Ager at Croft Farm Holiday Park in May 2022 to undertake an ecological assessment of Land at Croft Farm Holiday Park, near Luxulyan, St Austell, in St Austell Cornwall. The location of the site and its survey area is shown in Figure 1 below. The red line delineates the site boundary, whilst the blue line shows an additional survey area within the same land holding to be used for potential biodiversity net gain (BNG) offsetting.

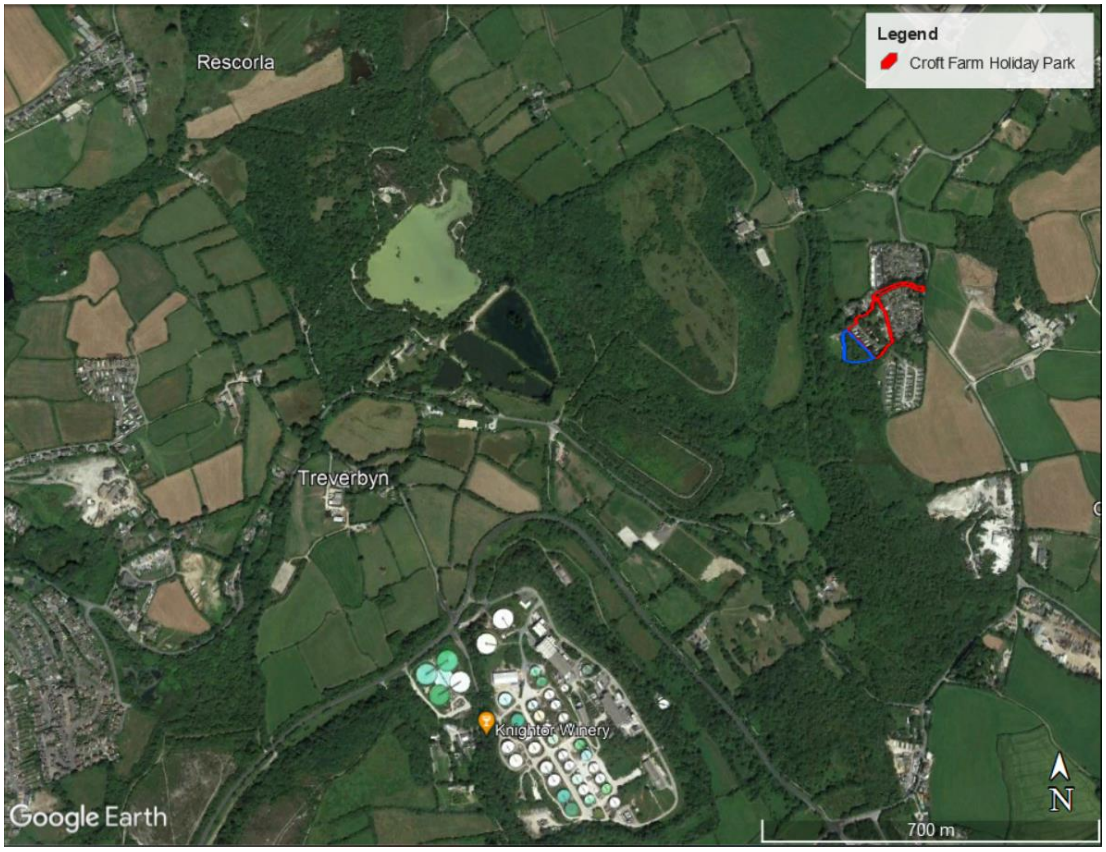


Figure 1: Site location

1.1.2. The c. 0.75ha site is located in a very rural area, c. 800m south of the village of Luxulyan and c. 1.8km north of the Eden Project in south-east Cornwall. The site itself is adjacent to a broadleaved woodland valley to the west and mixed-use agricultural fields, interspersed with houses, and industries such as cement works and water treatment centres. The site is connected to the wider landscape via Cornish hedges, broadleaved woodland and unlit narrow country lanes.

1.1.3. The client proposes to change use of the land from the stationing of 13 no. static holiday caravans and 15 no. seasonal pitches to the stationing of 15 no. residential park homes, together with vehicular access and car parking. The proposed development is set out on the plans included in Appendix A to this report.

1.1.4. This report has been prepared by Cathy Shaw, who has over eight years' experience of conducting ecology assessments including Preliminary Ecological Appraisals, such as this.

1.1.5. The purpose of this report is:

- To identify key ecological constraints to the proposed development
- To allow likely mitigation or compensation measures to be developed

1.1.6. This report will not be suitable for submission as part of a full planning application, as a full assessment of all ecological impacts as a result of development proposals has not yet been completed. This report will need to be updated with the post-development Biodiversity Net Gain (BNG) calculations to complete the DEFRA BNG 3.1 metric.

2. Planning Policy & Legislation

2.1. Planning Policy

National Planning Policy Framework

2.1.1. National planning policy is set out in the National Planning Policy Framework (NPPF) (2021). Chapter 15 relates to conserving and enhancing the natural environment.

2.1.2. The most relevant policies relating to planning decisions are summarised below:

- Recognising the wider benefits of natural capital and ecosystem services
- Minimising impacts to and providing net gains in biodiversity
- If significant harm resulting from a development cannot be avoided, adequately mitigated or compensated for, then planning permission should be refused
- Proposed development on land within or outside a SSSI likely to have an adverse effect on a SSSI should not normally be permitted
- Development proposals where the primary objective is to conserve or enhance biodiversity should be permitted
- Planning permission should be refused for development resulting in the loss of deterioration of irreplaceable habitats
- By ensuring that new development is appropriate for its location, and that the potential sensitivity of the site is taken into account, planning decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

2.2. Cornwall Planning Policy

2.2.1. The Cornwall Local Plan (2016) sets out policies relating to the natural environment.

2.2.2. Policy 23 relates to all aspects of the natural environment, section 3 of this policy relates specifically to biodiversity and geodiversity. The policy sets out that developments should conserve, protect, and where possible, enhance biodiversity and geodiversity, giving appropriate weight to their level of importance.

2.2.3. Opportunities should be sought within developments, to create networks of wildlife corridors linking County Wildlife Sites and other areas of biodiversity importance, helping to deliver the Cornwall Biodiversity Action Plan's actions.

2.2.4. Proposals should avoid impacts to designated sites, protected species or species/ habitats of principal importance, and any proposals where such impacts cannot be avoided will only be permitted where suitable mitigation/ compensation can be provided, and if the tests of the relevant legislation are met.

2.2.5. The mitigation hierarchy should be applied, such that attempts are first made to avoid impacts, and to enable net gains. Where impacts are unavoidable, they must be adequately and proportionately mitigation. Compensation would be required, as a final resort, if full mitigation cannot be provided.

2.3. Biodiversity Net Gain

2.3.1. The NPPF and Cornwall Local Plan, outlined above, both require schemes to achieve a net gain for biodiversity, though they do not specify a means for achieving or measuring net gain. The UK Government announced in the 2019 Spring Statement that Biodiversity Net Gain would become mandatory in England. The Environment Act was subsequently adopted in November 2021, with a two-year implementation period. However, Cornwall Council have moved ahead of the national timescale and applied a requirement for major development schemes to achieve 10% Biodiversity Net Gain, from 1st February 2020.

2.3.2. As this site will be classified as a major application, a full Biodiversity Net Gain calculation will need to be completed, using the 3.1 DEFRA Metric, as required by Cornwall Council.

2.4. Legislation

2.4.1. The Wildlife and Countryside Act (HM Government, 1981, as amended) is the main piece of legislation relating to nature conservation in Great Britain. It transposes into British law the Berne, Bonn and RAMSAR Conventions, and the European 'Birds Directive' (CEC, 1979). This legislation covers protection of wildlife (birds, other animals and plants), Sites of Special Scientific Interest (SSSI's) (with some SSSI's also designated as Special Protection Areas, SPA's), National Nature Reserves (NNR's) and RAMSAR sites.

2.4.2. The Conservation of Habitats and Species Regulations (HM Government, 2019) transposes into British law the European 'Habitats Directive' (CEC, 1992), and covers Special Areas of Conservation (SAC's) and European Protected Species (EPS) (see below). It also provides further protection for SPA's and RAMSAR sites.

2.4.3. The Countryside and Rights of Way (CRoW) Act (HM Government, 2000) increases protection for SSSIs and threatened species. It specifies the duty of Local Authorities to further the conservation of listed (UK BAP priority) habitats and species.

2.4.4. The Natural Environment and Rural Communities (NERC) Act (HM Government, 2006) confers a legal duty on every public authority to conserve biodiversity under Section 40(1). Section 41 required the publication of lists of habitats and species of principal importance for the conservation of biodiversity in England. This list contains the habitats and species previously known as UK BAP priorities for conservation, and the terminology of habitats and species of principal importance supersedes the UK BAP terminology. Such features will be referred to as Habitats of Principal Importance (HPIs) and Species of Principal Importance (SPIs), throughout this report.

2.4.5. The Environment Act 2021 (HM Government, 2021) sets clear statutory targets for the recovery of the UK's natural world in four priority areas: air quality, biodiversity, water and waste, and includes an important new target to reverse the decline in UK species abundance by the end of 2030. It will also require new developments to improve and/ or create habitats for nature, and tackle deforestation overseas.

2.4.6. The Hedgerows Regulations 1997 protects historically / ecologically important hedgerows.

2.4.7. The Protection of Badgers Act 1992 provides specific protection for badgers.

3. Methodology

3.1. Desk Study

3.1.1. The desk study consisted of a search of all existing ecological records within a 1km radius of the site using the information held by the Environmental Records Centre for Cornwall and the Isles of Scilly (ERCCIS). This data search was supplied to CEC on 14th July 2022.

3.1.2. Online information on the Multi-Agency Geographic Information for the Countryside (MAGIC) mapping tool was also used to look at granted Natural England European Protected Species licence applications within 1km of the site.

3.2. Field Survey

3.2.1. A walkover site survey was undertaken to identify plant species and map habitats present. Signs of faunal species were also searched for; including tracks, prints, droppings, hairs, feeding remains, nests and burrows. The survey was carried out by Cathy Shaw on 29th June 2022. The study area included the proposed development site, as shown in Map 1 and Figure 1. The weather conditions at the time of survey were dry, warm and sunny.

3.2.2. In addition, an assessment as to the suitability of the toilet block for bats nesting birds was made. The building was surveyed using a high-powered torch to illuminate all areas thought suitable for roosting bats and nesting birds. This included searching for bats, and nesting birds in situ, droppings, pellets, staining, liming, feathers and feeding remains. The roof void, walls, lintels and timbers were checked. A search around the perimeter of the building was then conducted and any gaps and crevices which had the potential for roosting bats checked.

3.2.3. The survey work was carried out in accordance with the following documents:

- Phase 1 Habitat Classification (JNCC, 2010)
- CIEEM Guidelines for Preliminary Ecological Appraisal (2013)
- UK Habitat Classification System (2018)
- Biodiversity Net Gain Metric 3.1 Condition Assessment (2022)
- BS42020:2013 Biodiversity – Code of Practice for Planning and Development (BSI, 2013)

3.3. Limitations

3.3.1. The conclusions and recommendations presented within this report are based on the current ecological features identified, and the current red line boundary as shown in Figure 1 and in Map 1. Ecological features can change over time, particularly if site management/ use changes; as a guide it is recommended that this report is valid until July 2023.

3.3.2. June is an ideal time of year to undertake vegetation surveys: as many plant species will be in bloom, so an accurate identification of habitats was possible.

3.3.3. This ecological assessment does not include a search for Tree Preservation Orders (TPOs) or Conservation Area status.

3.3.4. Data from biological records centres or online databases is historical information, and datasets may be incomplete, inaccurate or missing. It is important to note that even where data is held, a lack of records

for a defined geographical area does not necessarily mean that the species is absent: the area may simply be under-recorded. Additionally, detailed grid reference locations of European Protected Species (EPS) records may be withheld by record centres / animal recording groups and remain confidential.

3.3.5. Furthermore, not all returned desk study records are listed and discussed in this report, only a discussion of important species, with relevance to the geographic location and the habitat types present within the site, is provided; if a full list is required, this can be supplied upon request.

4. Baseline Ecological Conditions

4.1. Site Description

4.1.1. The site is an existing holiday park and is comprised of amenity grassland, scattered trees, hardstanding and introduced shrubs, bound by Cornish hedges and a wet woodland. The wet woodland is outside of the site boundary, but within the wider survey area of the same landholding. See Figure 2 below, showing the overall character of the site.

Figure 2: Site overview

4.1.2. Phase 1 habitat distribution is shown in Map 1 and a species list for each habitat is included in Appendix B of this report.

4.2. Designated Sites

Statutory Designated Sites

4.2.1. There is one statutory designated sites of nature conservation importance within a 1km radius of the site, which is the Mid Cornwall Moors Site of Special Scientific Interest (SSSI).

4.2.2. Mid Cornwall Moors SSSI is located c. 525m west of the site. The SSSI is designated for its diverse mosaic of nationally important habitats such as wet and dry lowland heathland, the populations of nationally rare and nationally scarce plants, the invertebrate assemblage associated with scrub heath and moorland and the breeding population of willow tit.

4.2.3. The site is also within SSSI Impact Risk Zone of this SSSI. SSSI Impact Risk Zones have been created to help determine whether particular development proposals will impact the designated site and its features. Planning applications such as this do not require consultation between Natural England and the Local Planning Authority.

4.2.4. The small-scale proposals at this site are highly unlikely to impact statutory designated sites due to its distance away from the SSSI.

Non-statutory Designated Sites

4.2.5. There are four non-statutory designated sites within 1km of the site, all of which are County Wildlife Sites (CWS), including: Carne Cross & Starrick Moor, Little Carne, Treskilling Downs and North Hill Wood. See Appendix C for a map of these CWS.

4.2.6. Carne Cross & Starrick Moor CWS is located immediately adjacent to site. This CWS consists of a wet wooded valley supporting a number of Habitats of Principal Importance (HPI) including wet woodland, purple moor grass and rush pastures, lowland fens and hedgerows. Species of Principal Importance (SPI) recorded here include songthrush, skylark and dormouse.

4.2.7. Treskilling Downs CWS is located c. 400m to the west of the site and provides a buffer associated with the Mid Cornwall Moors SSSI. The site supports a complex range of habitats, including HPIs: wet woodland, lowland heathland, lowland fens, purple moor grass and rush pastures and hedgerows, which in turn support many SPI including: pillwort; marsh fritillary, small heath; 9 SPI moth species; adder, common lizard and grass snake; bullfinch, tree pipit, reed bunting, song thrush and linnet; and otter.

4.2.8. North Hill Wood CWS is c. 700m north-west of the site and is one of the largest continuous areas of woodland in the county. It supports ancient woodland and it is associated with historical industrial and mining activity. The valley is also designated as a World Heritage Site and contains a County Geology Site. It supports HPI: lowland mixed deciduous woodland, upland oakwood, wet woodland, hedgerows and supports a large number of moths and butterflies recorded in the area including dingy skipper, wall butterfly, wood white, brindled beauty, blood-vein and white ermine; also records of adder, grass snake, slow-worm, bullfinch, song thrush, marsh tit, dormouse, otter and bat species including lesser horseshoe, greater horseshoe and brown long-eared bat.

4.2.9. Little Carne CWS comprises an old drowned quarry (ex-China clay pit) and is located c. 940m to the south-east of the site, supporting upland oakwood and wet woodland which are both HPIs, and support the SPI grass snake.

4.2.10. Cornwall Wildlife Trust will need to be consulted with to ensure that there will be no other impact on the CWS as a result of the proposals. Pollution prevention measures will also need to be adopted during construction. If this mitigation is adopted, the small-scale localised change of land use within the small site is highly unlikely to negatively impact the non-statutory designated sites.

4.3. Habitats

4.3.1. The site consists of amenity grassland with areas of species-poor hedges, scattered trees, introduced shrubs and hard-standing, bound in part by Cornish hedges, with an area of wet woodland within the wider land holding.

Cornish Hedge

4.3.2. There are three Cornish hedges on site, which vary from a species-rich native hedge with bank along the eastern and south-eastern boundaries, and a native species poor hedge with minimal shrubs and a bank along a section of the north-western boundary. See Figure 3.

Figure 3: Cornish hedges

4.3.3. Woody species present include sycamore, hawthorn, blackthorn and holly. Ground flora present include: hart's tongue, maidenhair spleenwort, lady fern, hedge bindweed, camellia, enchanter's-nightshade, common male fern, fescues, cleavers, hedge bedstraw, herb-robert, wood avens, ivy, bluebell, hydrangea, tutsan, field forget-me-not, bracken, bramble, red campion, common nettle and common dog-violet. Additional non-native garden species were also present, but these were not identified further.

4.3.4. This habitat is not expected to be negatively impacted by the proposals. There is potential to enhance the hedges post-development.

Amenity (Modified) Grassland

4.3.5. A large proportion of the site within the application boundary consists of a regularly mown short amenity (modified) grassland. At the time of the survey, the sward was no higher than c. 3cm. See Figure 4 below.

Figure 4: Amenity (modified) grassland

4.3.6. Grass species dominated the sward and include Yorkshire fog, which was most abundant, with cock's-foot also present. A large number of forbs were recorded on site, but these were all only occasionally to rarely found in the grassland. Flower species present included: red campion, yarrow, daisy, common mouse-ear, spear thistle, marsh willowherb, dove's-foot crane's-bill, ribwort plantain, greater plantain, selfheal, creeping buttercup, broad-leaved dock, procumbent pearlwort, sphagnum moss, dandelion, lesser yellow trefoil, white clover, germander speedwell, thyme-leaved speedwell and soft rush.

4.3.7. A proportion of this habitat will be lost to the proposals. This habitat is of very limited ecological value due to its short sward height, which lacks in both structure and species diversity. There is scope to enhance

this habitat post-development. See Section 6.2.2.

Introduced Shrub Habitat Mosaic

4.3.8. There is a relatively large area of introduced shrub and coniferous trees. See Figure 5 below.

Figure 5: Introduced shrub and coniferous trees mosaic

4.3.9. Species present here included: red campion, common male fern, herb-robert, ivy, blackthorn, common nettle, scarlet pimpernel, creeping thistle, hazel, broad buckler fern, pine, cherry laurel, pedunculate oak, elder and sow thistle. In addition, the invasive non-native *Rhododendron ponticum* was also found here (see Section 4.4.3 for further details).

4.3.10. Under current proposals, this habitat will be lost to the development. Whilst of limited species diversity due to its predominantly non-native contents, there will be a loss in diversity and a habitat which can support many species. As such, mitigation measures will need to be adopted. See Section 5.2.4.

Introduced Shrub

4.3.11. There are several small areas of introduced shrubs on and immediately adjacent to the development site, as shown in Figure 6 below.

Figure 6: Introduced shrubs

4.3.12. Species here included ivy, cherry laurel, *Rhododendron ponticum*, hydrangea, yew and pendulous sedge. Many other non-natives were seen in addition to this list.

4.3.13. It is expected that some of this species-poor habitat will be lost. As these are small areas that are of

negligible ecological importance, this will not be a significant loss, but there will still need to be a biodiversity net gain across the site to account for this loss.

Scattered Trees

4.3.14. There are several scattered trees across the site, including both broadleaved and coniferous. See Figure 7 below. These comprise of both pine and beech trees.

Figure 7: Scattered coniferous (left) and broadleaved (right) trees on site

4.3.15. The trees are not expected to be lost to the development.

Wet Woodland

4.3.16. There is a relatively large area of wet woodland within the larger site ownership but this is not within the development boundary. See Figure 8.

Figure 8: Wet woodland immediately adjacent to the development boundary

4.3.17. The woodland is comprised of one level of tree canopy with willow and hazel dominating, with blackthorn, hawthorn and holly also present. The non-native (but non-Schedule 9 listed) cherry laurel was also present in the canopy. The ground flora is comprised of ivy, common male fern, common nettle, bramble, marsh thistle, foxglove, honeysuckle and the non-native invasive Himalayan balsam also present. See Section

4.4.3 regarding mitigation measures for finding Himalayan balsam.

4.3.18. This habitat will not be negatively impacted by the proposals. There is potential to improve this habitat to achieve additional biodiversity net gain off site. See Sections 5.2.5 and 6.2.7.

4.4. Species

Flora

Vascular Plants

4.4.1. The desk study found numerous records for plant species of conservation concern within the 1km search area of the site. Examples of notable records include bluebell which is a Schedule 8 species of the Wildlife and Countryside Act 1981; Nationally Scarce balm-leaved figwort and Cornish moneywort; SPI chamomile; as well as numerous Red List such as corn spurrey, corn marigold which are associated with arable fields and sheep's-bit, which is associated with heathland, walls and banks.

4.4.2. No notable plant species or species of conservation concern were identified on site, and only a small list of commonly found species was recorded on site. Therefore, the small-scale proposal on this small site will not negatively impact the populations of conservation notable species.

Non-native Invasive Plants

4.4.3. Non-native invasive species listed under Schedule 9 of the Wildlife and Countryside Act 1981 are scheduled weeds and it is an offence to 'cause [them] to spread'. The desk study returned numerous records for these species within the 1km search area, including: montbretia, variegated yellow archangel, three-cornered garlic, *Rhododendron ponticum*, curly waterweed, Himalayan balsam and Japanese knotweed, which are all listed under Schedule 9. The desk study also returned additional invasive species that are not listed but are still both invasive and non-native and include buddleia and winter heliotrope.

4.4.4. On site, there are several areas of Schedule 9-listed species, including:

- Montbretia, Target Note 1
- *Rhododendron ponticum*, Target Note 2
- Variegated yellow archangel, Target Note 3
- Himalayan balsam, Target Note 4

4.4.5. These Schedule 9 species are shown in Figure 9 below.

Figure 9: Schedule 9 listed invasive species found on site. Clockwise from top-left: montbretia, rhododendron and Himalayan balsam

4.4.6. In addition, cherry laurel (Target Note 5), buddleia (Target Note 6) and Japanese butterbur (Target Note 7) were all recorded on site and within the wider landholding. Whilst these species are not listed under Schedule 9, they are both non-native and very invasive.

4.4.7. As there are many invasive species spread across the site, it is highly likely that these species will be disturbed. As such, these plants will legally have to be removed in a carefully controlled manner, before disturbance as described in Section 5.2.5.

Lower Plants

4.4.8. A specialised survey for non-vascular plants, bryophytes and lichens, was outside the scope of this study. The desk study revealed three records for lower plant species, including marsh clubmoss (SPI), and smaller white-moss and aloe haircap that are both Cornwall Red Data Book species. The habitats within the proposal site are highly unlikely to support such notable lower plant species, but all of these species listed above have potential to be found within the adjoining wet woodland in the larger landholding.

Bats

4.4.9. All UK bat species and their roosts are legally protected under the Conservation Regulations 2017 (HM Government, 2019).

4.4.10. The desk study revealed three records for bat species with the search area, all of which were for common pipistrelle. A search for granted European Protected Species (EPS) licence applications on MAGIC found no such licence applications.

4.4.11. The site is located in a very rural area, c. 800m south of the village of Luxulyan and c. 1.8km north of the Eden Project in south-east Cornwall. The site itself is adjacent to a broadleaved woodland valley to the west and mixed-use agricultural fields. The site is connected to the wider landscape via Cornish hedges, broadleaved woodland and unlit shaded country lanes. There is also limited lighting on site. The habitats on site are species-poor with minimal herb species present, although the hedges and shrub will provide a limited level of commuting and foraging opportunities. The wet woodland within the landholding, the unlit track and adjoining broadleaved woodland valley, surrounding hedges and lanes all hold more potential than the site itself to support commuting and foraging bats. Despite this, lighting should be kept to a minimum as described in Section 5.2.13.

4.4.12. There are numerous mature trees on site, but these are not considered as having potential to support roosting bats on site as there are no suitable roosting features. There is a single storey, flat-roofed and

single-skinned toilet block on site, with no roof void, or gaps in which bats could roost or gain access, so it has no potential to support roosting bats. Furthermore, this building will actually be retained.

Badgers

4.4.13. The desk study returned five records for badger within the search area; two of which were recorded close to Croft Farm Holiday Park. Although widespread and common in Cornwall, badgers and their setts are legally protected under the Protection of Badgers Act 1992 (HM Government, 1992).

4.4.14. An assessment of the habitats potential to support badgers was undertaken. No badger setts or evidence of badger activity, such as snuffle holes, mammal pathways, latrines or hairs were recorded on-site. Whilst no signs of this species were recorded, the site could have potential to support badgers commuting across the site, to get to neighbouring fields and neighbouring woodland. As such, mitigation measures must be adopted during construction. See Section 5.2.16.

Otter

4.4.15. The desk study revealed two records for otter within the search radius of the site. An online search for granted licence applications for otter revealed one application c. 900m north-west of the site.

4.4.16. Otters and their resting places are legally protected under the Conservation Regulations 2019, and are a SPI and Cornwall BAP Priority species.

4.4.17. The habitats within the site boundary are highly unlikely to support otter, however, they could be found within the wet woodland and stream and adjoining broadleaved woodland valley. See Section 5.2.16 regarding precautionary mitigation measures.

Dormice

4.4.18. The desk study revealed two records for dormice from the ERCCIS search, one of which was found on site in 2006. Despite this being on site, this record was for feeding remains and was “considered correct”, as opposed to “valid”. No records have been found on site since 2006.

4.4.19. No granted dormouse licence applications were found on MAGIC within the 1km radius of the site. Dormice and their nests are legally protected under the Conservation Regulations 2019; they are also SPI and Cornwall BAP Priority species.

4.4.20. The site is in a rural location and the hedges surrounding the site are relatively species-rich with cover, providing nesting and foraging opportunities for dormice. It is understood from the client that there will be no hedge loss, but the introduced shrub in the centre of the site will be lost. Dormice are associated with native scrub and tree species, and not introduced shrub species. This coupled with the highly disturbed nature of a busy campsite, under current proposals, it is considered highly unlikely that there will be an impact on dormice. There is also potential to enhance the site for dormice as described in Section 6.2.

Hedgehog

4.4.21. The desk study returned four records for hedgehog within the 1km search area, one of which was recorded on site. Hedgehogs are SPI and Cornwall BAP Priority species.

4.4.22. Hedgehogs are often associated with suburban areas, in parks and gardens. No evidence of this secretive species was found on site, although there is potential for hedgehogs to be both commuting and foraging on site, therefore suitable mitigation measures must be adopted during the site clearance. The brash piles currently present are too small to support hibernating hedgehogs. See Section 5.2.16.

Birds

4.4.23. The desk study revealed a range of bird species of conservation value have been recorded within 1km of the site. All birds are legally protected whilst nesting under the Wildlife & Countryside Act 1981, as amended. The bird records are of differing statutory protection and conservation importance, ranging from Wildlife and Countryside Act 1981, as amended, Schedule 1 species such as redwing; RSPB red-listed willow tit, herring gull, marsh tit and starling; and SPI and RSPB red-listed house sparrow, spotted flycatcher, curlew and cuckoo. Many songbirds such as those returned in the desk study have potential to be foraging and breeding within the proposal site, and the tit species have potential to be found in the wet woodland.

4.4.24. Commonly occurring species observed during the site visit include bullfinch, house sparrow, wood pigeon, greater spotted woodpecker, goldfinch, dunnock, blue tit, blackcap, goldcrest and blackbird which were all recorded on site. This is not a comprehensive list as a bird survey was not carried out, and merely provides an indication of the conspicuous species present on the day of survey.

4.4.25. The hedges, shrubs, trees and wet woodland have potential to support nesting common songbirds. Therefore, suitable mitigation measures must be adopted to ensure that no nesting birds are harmed during any vegetation removal/ site clearance works, as described in Section 5.2.14.

Reptiles & Amphibians

4.4.26. The desk study revealed seven records for reptiles including adder, grass snake, common lizard and slow worm, as well as two records for common frog.

4.4.27. Adder, common lizard, slow worm and grass snake are partially protected under Schedule 5 (section 9(1) and 9(5)) of the Wildlife and Countryside Act 1981 (as amended) Cornwall is considered a UK stronghold for adder. Slow-worm, grass snake, adder and common lizard are listed as priority species for conservation on the UK BAP (BRIG, 2007). Adder and grass snake have been identified as priority species for conservation within the county BAP (CBI, 1997, 1998).

4.4.28. Reptiles require a mixture of dry sheltered sites such as hedgerows/ woodland for shelter/ hibernation, open areas such as grassland for basking, and in the case of grass snake standing water in which to hunt. The grassland lacks any thatch structure suitable for reptiles, so the site lacks suitable habitat to support reptiles in their active phase in the summer months (April-September, inclusive). The wet woodland has potential to support species such as grass snake and adders in the summer. However, the gaps between the stones in the Cornish hedges and the small brash piles seen at Target Note 7 have potential to support hibernating reptiles. See Section 5.2.18 regarding mitigation measures for reptiles.

4.4.29. All British amphibian species require standing water to reproduce, so amphibians would not breed on this site in its current condition. According to OS mapping, the closest area of standing water is c. 400m south-west of the site. It is unknown whether any nearby properties contain ponds. Any ponds may have potential to support common and widespread breeding amphibians.

Invertebrates

4.4.30. The desk study returned over 100 conservation notable invertebrate species, from SPI butterflies such as small heath (heathland and grassland), wall butterfly (short grassland) and dingy skipper (wide range of open, sunny habitats), to SPI moths such as buff ermine (gardens, hedges and woodland), cinnabar (short grassland) and small phoenix (woodland and open habitats).

4.4.31. In addition, Cornwall Red Data Book Odonata species were also returned in the desk study, including scarce blue-tailed damselfly, black-tailed skimmer, ruddy darter and small red damselfly. All of these

records were associated with standing water at Treskilling Pit.

4.4.32. The common and widespread habitats within the site boundary are unlikely to support any conservation notable species, but some species could be found within the wet woodland within the survey area of the wider landholding. There is potential to increase invertebrate interest on site post-development.

5. Ecological Constraints and Opportunities, including mitigation requirements

5.1. Ecological Constraints

Designated Sites

5.1.1. Carne Cross & Starrick Moor CWS is situated immediately adjacent to site.

Vegetation Loss

5.1.2. The central brash pile and dense scrub will be lost, so this loss of vegetation must be mitigated for.

Invasive Non-Native Species

5.1.3. Montbretia, *Rhododendron ponticum* and variegated yellow archangel were found on site, and Himalayan balsam was found within the woodland immediately adjacent to site. All of these are listed under Schedule 9 of the Wildlife and Countryside Act 1981, as amended. It is illegal to allow such species to spread off site.

5.1.4. Cherry laurel and buddleia were also found on site, and Japanese butterbur within the woodland immediately adjacent to site. Whilst not listed on Schedule 9, these species are all invasive and can take over habitats if left unmanaged.

Commuting & Foraging Bats

5.1.5. The hedges and introduced shrub have a limited potential to support commuting and foraging bats. All UK bat species and their roosts are legally protected under the Conservation Regulations 2019.

Nesting Birds

5.1.6. Songbirds are likely to be found within the hedges and introduced shrubs. All birds are protected from harm and disturbance under the Wildlife and Countryside Act.

Commuting & Foraging Mammals

5.1.7. There is potential that hedgehogs, badgers and otters that commute across the site could be harmed during the construction and operational phase of the development. Hedgehogs are SPI and Cornwall BAP species. Badgers and their setts are legally protected under the Protection of Badgers Act and are also Cornwall BAP species. Otters and their resting places are legally protected under the Conservation Regulations 2019, and are a SPI and Cornwall BAP.

Reptiles

5.1.8. The hedges and brash piles have potential to support hibernating reptiles. Reptiles are protected under Schedule 5 of the Wildlife and Countryside Act 1981; and therefore, it is an offence to intentionally kill, injure or take them. It also prohibits interference with places of shelter or protection, or intentionally disturbing animals occupying these places.

Dormice

5.1.9. A single dormouse entry for feeding remains was recorded in 2006 on site. Dormice and their nests are legally protected under the Conservation Regulations 2019; they are also SPI and Cornwall BAP Priority species.

5.2. Impact Avoidance and Mitigation

Designated Sites

5.2.1. Mitigation measures will need to be adopted to ensure that there is no negative impact on the non-statutory designated sites as a result of the proposals.

5.2.2. Whilst the Environment Agency has now retracted their Pollution Prevention Guidelines (PPG) as they are out of date, a review plan for the PPGs is currently underway, resulting in a replacement guidance series: "Guidance for Pollution Prevention" (GPPs) for Northern Ireland, Scotland and Wales. England regulatory guidance has not yet been developed, but GPP5: Works and Maintenance in or Near Water and PPG6: Working at Construction and Demolition Sites can still be used as best practice guidance.

5.2.3. Consultation with Cornwall Wildlife Trust is recommended to ensure that there will be no impact on Carne Cross & Starrick Moor CWS.

Vegetation Loss

5.2.4. To mitigate for the loss in shrubs, new trees or shrubs should be planted in suitable areas on site. These should be native trees and shrubs such as crab apple, hawthorn, hazel and blackthorn. In addition, new native pollinator plants should be planted in amenity areas to attract invertebrates which will in turn attract other species which prey upon them. Examples of suitable species can be found in the RHS 'Perfect for Pollinators' plant list, which is freely available online.

Invasive Non-native Species

5.2.5. It is illegal to cause Schedule 9 species to spread to another location off site, therefore, as these plants are likely to be disturbed, these plants will need to be removed and disposed of appropriately. It is recommended that an invasive species management plan is completed by a specialist contractor. Please see the sections below for general removal recommendations.

Montbretia

5.2.6. As there are only relatively small clumps of montbretia, it is recommended that these non-native invasive plants are hand-dug, ensuring that all of the underground corms are extracted, and taken to a commercial composting facility, or to landfill. The receptor of this waste should be informed that it contains Schedule 9 species.

Rhododendron ponticum

5.2.7. This plant will be disturbed under current proposals. This plant invades areas both via seed and vegetative growth. It produces large quantities (thousands per complete flower head) of viable seed, which will create an enormous seedbank in the soil. Established plants spread by lateral horizontal growth of the branches, whenever branches touch the ground.

5.2.8. This plant can be both mechanically and chemically controlled. So, these plants should be cut to ground level and then the stumps treated, or burnt, or excavated. Alternatively, herbicides could be injected into plants that are below 1.3m in height.

5.2.9. It is important to ensure that on-going monitoring and chemical treatment, or hand pulling should then be implemented for a number of years until both the seed bank and root system are depleted. As described above, these plants then be taken to a commercial composting facility, or to landfill, or kept in a bund on site.

Variegated Yellow Archangel

5.2.10. This species *may be impacted by the proposals, if so these plants should be removed before they are disturbed.* This plant spreads through seed and long creeping runners, which form roots from nodes on those runners.

5.2.11. As the current areas of this invasive species are relatively small, is recommended that these non-native invasive plants are hand-dug and taken to a commercial composting facility, or to landfill. Care should be taken to remove all of the plant material as the runners will easily break when disturbed and have the potential to propagate new colonies. Alternatively, this plant could also be treated with a herbicide and applied while the plant is actively growing to ensure maximum effectiveness. Once the plants have died, these can then be taken to a commercial composting facility, or to landfill, or kept in a bund on site, as described above.

Himalayan Balsam

5.2.12. Whilst not within the development site, Himalayan balsam could be managed to ensure it does not dominate the wet woodland. Whilst the area of Himalayan balsam are quite extensive, the easiest and simplest way to remove this plant is by hand-pulling as they are very shallow-rooted plants. The best time of year to hand-pull is just before flowering so that the plants do not have the opportunity to set seed. However, they might be easier to spot once they are in flower. Once removed from the ground, these should be left on the ground for several days, to allow the plants to dry out and die. Once the plants have died, these can then be taken to a commercial composting facility, or to landfill, or kept in a bund on site, as described above.

Commuting & Foraging Bats

5.2.13. Lighting should be kept to a minimum on this dark site, and certainly should not be allowed to spill out to the hedges to ensure that linear features that may act as bat commuting routes are not impacted by this proposed development. All lighting should be kept to low lux levels (<0.5 Lux) and directional light and hoods and cowl attachments should be used during the operational phase (and incidentally the construction phase) of the development. See Bat Conservation Trust (2018) for further information regarding artificial lighting and bats.

Nesting Birds

5.2.14. Any vegetation removal should be timed to avoid the main breeding bird season between March and September (inclusive) and therefore be undertaken between October and February (inclusive). The nests and eggs of all wild birds are protected against taking, damage or destruction under the Wildlife and Countryside Act 1981.

5.2.15. If this is not possible, and vegetation removal needs to be undertaken during the breeding bird season, vegetation clearance will need to be undertaken under the supervision of a suitably experienced ecologist, carrying out an ecological watching brief during removal. If an active birds' nest is discovered, it will be necessary to stop work immediately and create a 10m exclusion zone in which no works are undertaken until the birds have fledged naturally.

Commuting & Foraging Mammals

5.2.16. The site has the potential to support individual hedgehogs, badgers and otters, therefore trenches and large excavations should be covered overnight to prevent wildlife falling in and failing to escape. If this is not possible then a strategically-placed wooden plank should be placed in the hole to provide a means of escape for these species. If any boreholes/ pipes are required for the site proposals, then these should be

capped at the end of the day to reduce the potential for wildlife entering them and becoming trapped.

5.2.17. Contractors must ensure that no harm should come to wildlife by maintaining the site efficiently by clearing away any material such as wire that animals can become entangled and preventing access to toxic substances.

Reptiles

5.2.18. If required for removal, the brash pile will need to be removed in the summer months, when reptiles in their active phase, slowly and cautiously, ideally by hand. If any reptiles are found during vegetation removal these should be removed immediately and placed in area which will not be disturbed by the development, such as in the wet woodland. Completing this in the summer will ensure that reptiles that could be hibernating or sheltering will not be illegally harmed or injured as a result of the proposed development.

5.2.19. If hedges are required to be removed additional mitigation measures will need to be recommended.

Dormice

5.2.20. Under current proposals, no hedges will be negatively impacted by the proposals; only introduced shrub will be lost, so there will be no impact on the dormouse population potentially using the native habitats in the area. If however proposals change, and any native habitats (particularly the hedges) will be affected, then a review for the impact on dormice as a result of these proposals will be need to be completed.

6. Biodiversity Net Gain & Ecological Enhancements

6.1. Biodiversity Net Gain

6.1.1. Please see the accompanying spreadsheet for full details on the baseline calculation.

6.1.2. As requested by the client, we have completed a Biodiversity Net Gain Baseline calculation. The baseline BNG unit score is 0.97 Habitat Units and 3.08 Hedgerow Units. The summary in biodiversity units is set out below in Table 1.

Table 1: Biodiversity net gain results

On site baseline	Habitat units	0.97
	Hedgerow units	3.08
On site post-intervention	Habitat units	-
	Hedgerow units	-
Total net unit change	Habitat units	-
	Hedgerow units	-
Total net % change	**Habitat units**	**-**
	Hedgerow units	**-**

6.1.3. To ensure that the 10% minimum required uplift in Biodiversity Units is achieved, the following ecological enhancement measure should be adopted, as described in Section 6.2.

6.2. Ecological Enhancements

6.2.1. Enhancement measures are recommended under NPPF Chapter 11, Cornwall Local Plan Policy 23 (see Section 2.1.2) and Cornwall Planning for Biodiversity Guide (2018). This planning guidance recommends that at least one bird/ bat box should be installed per 'unit'. At least 75% of bat and bird boxes must be provided built into the dwellings themselves as tree-mounted boxes have a limited life span. Examples of suitable boxes are shown in Appendix B. One of each of the following boxes/bricks should be installed on each of the new properties; locations are as follows:

- Bat boxes should be installed on south, south-east and south-westerly aspects, to face the sun, at least 2m above ground level;
- Bird boxes should be installed between northern and eastern aspects, avoiding direct sunlight, at least 2m above ground level; and
- Bee bricks should be installed on southern aspects, at least 1m above ground level with no upward height limit, close to areas of vegetation but not shaded by them.

6.2.2. As new amenity grassland lawn is likely to be proposed for the new properties, a seed mix such as Emorsgate Seeds EL1 Flowering Lawn Mixture should be used to increase biodiversity on site. Details regarding the management of this seed mix can be found at https://wildseed.co.uk/mixtures/view/56.

6.2.3. In addition, new native pollinator plants should also be planted in amenity areas to attract invertebrates which will in turn attract other species which prey upon them. Examples of suitable species can be found

in the RHS 'Perfect for Pollinators' plant list, which is freely available online.

6.2.4. New trees or shrubs could be planted in suitable areas on site. These should be native trees and shrubs such as crab apple, hawthorn, hazel and blackthorn.

6.2.5. New Cornish hedges could be planted as new boundaries on site, such as between the new pitches. These should be planted with native woody species and be allowed to form a dense hedge that will provide a foraging, commuting and nesting resource for a range of species. This hedgerow (and existing hedges) should be managed as a dense bushy structure to c. 2m wide and 3m tall and consist of species including hazel, hawthorn, field maple, blackthorn, oak, willow, rowan, spindle and crab apple. The hedges should be cut every 3-5 years to c. 2m wide and 3m tall.

6.2.6. If fencing is proposed, 13cm x 13cm gaps should be created in occasional places at the base of the fences, to allow the movement of protected species such as hedgehogs to still be able to commute across the site.

6.2.7. The adjacent wet woodland could be enhanced, and its condition be improved to increase the biodiversity net gain off site. The control of Himalayan balsam, creation of open glades, by removing areas of ground flora, would all increase the condition score of this habitat.

7. Conclusions

7.1.1. The purpose of this report is to identify key ecological constraints and mitigation requirements to inform the site design and planning application for the proposed re-development of the predominantly touring caravan site, into a residential lodge development.

7.1.2. Under current proposals, the client plans to install 15 holiday lodges, together with associated access and re-landscaping.

7.1.3. The potential for nesting birds, hibernating reptiles, commuting and foraging mammals including badgers, otters and hedgehogs, which are all protected species, was identified on site. Several non-native invasive species were also recorded.

7.1.4. It is considered that suitable mitigation can be incorporated into the development to minimise any impacts to acceptable levels. A commitment to deliver these recommended measures will be secured through planning conditions.

7.1.5. There is considerable scope to provide a biodiversity net gain on site if the ecological enhancement recommendations are adopted. The amount of biodiversity net gain will need to be determined in a separate Biodiversity Net Gain Assessment.

8. References

Bat Conservation Trust (2018). Bats and Artificial Lighting in the UK Guidance Note. Bat Conservation Trust, London.

British Standards Institute (BSI) (2013) Biodiversity – Code of Practice for Planning and Development BS42020:2013.

Cheffings, C.M. & Farrell, L. (Eds), (2005) The Vascular Plant Red Data List for Great Britain. Species Status 7: 1-116. Joint Nature Conservation Committee, Peterborough.

CIEEM [Chartered Institute of Ecology and Environmental Management] (2017), Guidelines for Preliminary Ecological Appraisal, CIEEM, Winchester.

CIEEM (2017) Guidelines for Ecological Report Writing. Available from: https://www.cieem.net/guidelines-for-ecological-report-writing [last accessed 3rd December 2021]

Cornwall Council (2016) Cornwall Local Plan: Strategic Policies 2010-2030. Available from: https://www.cornwall.gov.uk/environment-and-planning/planning/planning-policy/adopted-plans/ [last accessed 3rd December 2021]

Cornwall Council (2018) Biodiversity Guide. Available from: https://www.cornwall.gov.uk/environment-and-planning/planning/planning-policy/adopted-plans/planning-policy-guidance/cornwall-planning-for-biodiversity-guide/ [last accessed 3rd December 2021]

Cornwall Mammal Group (2013) The Mammals of Cornwall and the Isles of Scilly. ERCCIS, Truro.

Eaton M. A., Aebischer, N., Brown, A., Hearn, R., Lock, L., Musgrove, A., Noble, D., Stroud, D. & Gregory, R. (2015) Birds of Conservation Concern 4: The population status of birds in the United Kingdom, Channel Islands and Isle of Man. British Birds December 2015.

HM Government (2017) The Conservation of Habitats and Species Regulations 2017. HMSO, London.

HM Government (2006) The Natural Environment and Rural Communities Act 2006. HMSO, London.HM Government (1981) The Wildlife and Countryside Act 1981. HMSO, London.

HM Government (2000) The Countryside and Rights of Way Act 2000. HMSO, London.

HM Government (1992). Protection of Badgers Act 1992. HMSO, London.

HM Government (1981, as amended) The Wildlife and Countryside Act 1981 (as amended). HMSO, London.

JNCC [Joint Nature Conservation Committee] (2011a) UK BAP Priority Species and Habitats. Available at: http://jncc.defra.gov.uk/page-5705 [accessed 3rd December 2021].

JNCC (2010) Handbook for Phase 1 Habitat Survey - A Technique for Environmental Audit. ISBN 0 86139 636 7.

9. List of Appendices

A. Site Proposals

B. Phase 1 Habitat Survey Vascular Plant List

C. Non-Statutory Designated Sites within 1km of the Site

D. Recommended Bat, Bird and Bee Bricks

A. Site Proposals

B. Phase 1 Habitat Survey Vascular Plant List

DAFOR is a nominative scale where D = Dominant, A = Abundant, F = Frequent, O = Occasional and R = Rare. L = Locally

Latin name	Common name	Introduced shrub	Amenity grassland	Introduced shrub and coniferous tree mosaic	Cornish hedge	Wet woodland	Scattered broadleaved trees	Scattered coniferous trees
Acer pseudoplatanus	Sycamore				x			
Achillea millefolium	Yarrow		x					
Anagallis arvensis	Scarlet pimpernel			x				
Asplenium scolopendrium	Hart's tongue				x			
Asplenium trichomanes ssp quadrivalens	Maidenhair spleenwort				x			
Athyrium filix-femina	Lady fern				x			
Bellis perennis	Daisy		x					
Calystegia sepium	Hedge bindweed				x			
Camellia sp.	Camellia				x			
Carex pendula	Pendulous sedge	x						
Cerastium fontanum	Common mouse-ear		x					
Circaea lutetiana	Enchanter's-nightshade				x			
Cirsium arvense	Creeping thistle			x				
Cirsium palustre	Marsh thistle					x		
Cirsium vulgare	Spear thistle		x					
Corylus avellana	Hazel			x		x		
Crataegus monogyna	Hawthorn				x	x		
Dactylis glomerata	Cock's-foot		x					
Digitalis purpurea	Foxglove					x		
Dryopteris dilatata	Broad buckler fern			x				
Dryopteris filix-mas	Common male fern			x	x	x		
Epilobium palustre	Marsh willowherb		x					
Fagus sylvatica	Beech						x	
Festuca sp.	Fescues				x			

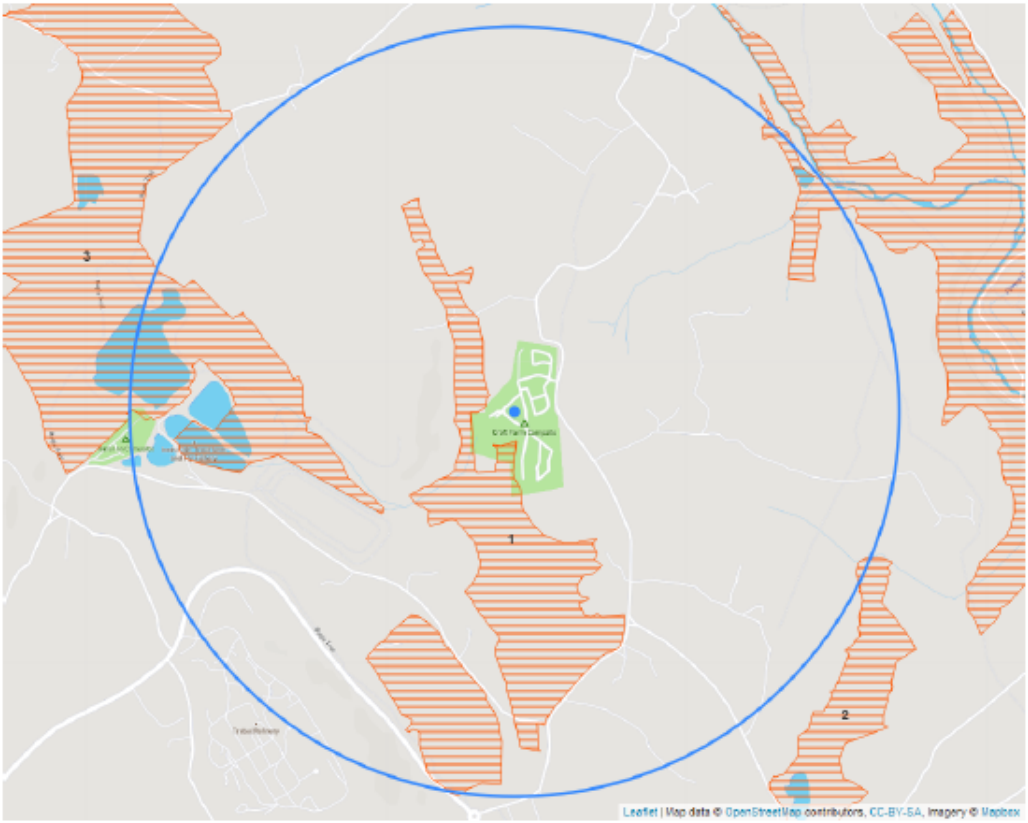
Latin name	Common name	Introduced shrub	Amenity grassland	Introduced shrub and coniferous tree mosaic	Cornish hedge	Wet woodland	Scattered broadleaved trees	Scattered coniferous trees
Galium aparine	Cleavers				x			
Galium mollugo	Hedge bedstraw				x			
Geranium molle	Dove's-foot crane's-bill		x					
Geranium robertianum	Herb-robert			x	x			
Geum urbanum	Wood avens				x			
Hedera helix	Ivy	x		x	x	x		
Hyacinthoides non-scripta	Bluebell				x			
Hydrangea sp.	Hydrangea	x			x			
Hypericum androsaemum	Tutsan				x			
Ilex aquifolium	Holly				x	x		
Impatiens glandulifera	Himalayan balsam					x		
Juncus effusus	Soft rush		x					
Lonicera periclymenum	Honeysuckle					x		
Myosotis arvensis	Field forget-me-not				x			
Pinus sp.	Pine			x				x
Plantago lanceolata	Ribwort plantain		x					
Plantago major	Greater plantain		x					
Polypodium vulgare	Common polypody					x		
Prunella vulgaris	Selfheal		x					
Prunus laurocerasus	Cherry laurel			x		x		
Prunus spinosa	Blackthorn			x	x	x		
Pteridium aquilinum	Bracken				x			
Quercus robur	Pedunculate oak			x				
Ranunculus repens	Creeping buttercup		x					
Rhododendron ponticum	Rhododendron			x				
Rubus fruticosus agg.	Blackberry/bramble				x	x		
Rumex obtusifolius	Broad-leaved dock		x					

Latin name	Common name	Introduced shrub	Amenity grassland	Introduced shrub and coniferous tree mosaic	Cornish hedge	Wet woodland	Scattered broadleaved trees	Scattered coniferous trees
Sagina procumbens	Procumbent pearlwort		x					
Salix sp.	Willow					x		
Sambucus nigra	Elder			x				
Silene dioica	Red campion		x	x	x			
Sonchus sp.	Sow thistle			x				
Sphagnum sp.	Sphagnum moss		x					
Taraxacum officinale agg.	Dandelion		x					
Taxus baccata	Yew	x						
Trifolium dubium	Lesser yellow trefoil		x					
Trifolium repens	White clover		x					
Urtica dioica	Common nettle			x	x	x		
Veronica chamaedrys	Germander speedwell		x					
Veronica serpyllifolia	Thyme-leaved speedwell		x					
Viola riviniana	Common dog-violet				x			

C. Non-Statutory Designated Sites within 1km of the Site

ERCCIS

Non-Statutory Sites & Reserves Map



Location	Site Code	Site Type	Site Name	Colour
1	R38	CWS	Carne Cross & Starrick Moor	
2	R41	CWS	Little Carne	
3	R7.4	CWS	Treskilling Downs	
4	R9.1	CWS	North Hill Wood	

Hosted by: Cornwall Wildlife Trust

ERCCIS Data Search Report

D. Recommended Bat, Bird and Bee Bricks

Examples of integrated bat boxes within external walls of buildings

Seek advice from a specialist bat worker for installation and placement of all boxes

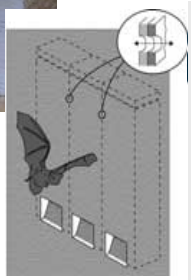
Cornwall Environmental Consultants Ltd

Green&Blue Bat Block

- Suitable for all crevice-dwelling bat species found in the UK.
- Maintenance-free and designed to exclude light and draughts.
- Entrance ideal for bats but deters birds.
- Tiered entrance to allow easy access for bats.
- Simple and safe to erect.
- **Material:** Cast Concrete. CEM1 cement, up to 75% waste material from the Cornish china clay industry, cast with waterproofing agent
- **Dimensions:** height 44cm x width 21.5cm x depth 12cm.
- Build into course work using mortar mix as main build components in place of a standard brick or block.
- Can also be wall mounted. Can be turned into a colony by knocking out section on the side and installing blocks next to each other.

SCHWEGLER Bat Tube 2FR

Schwegler 2FR

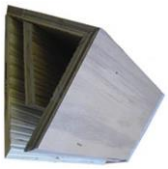


Three tubes placed next to each other with connecting holes

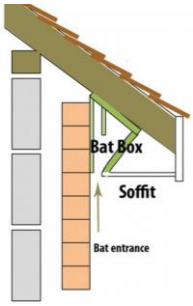
- Suitable for all crevice-dwelling bat species found in the UK.
- Maintenance-free and designed to exclude light and draughts.
- **Material:** Schwegler wood-concrete.
- **Dimensions:** height 47cm x width 20cm x depth 12.5cm.
- At least **three tubes** should be installed together to provide a larger space for roosting bats. There are **capped holes** on the side panels that can be knocked through to create connecting holes between each unit.
- There is a capped hole on the rear panel, which can be knocked through with a hole provided through to a wall cavity, creating a much larger and warmer space deep within the wall, suitable for use during the spring and summer.

Wildcare Nationwide Ecology Supplies Soffit Bat Box

- Utilises the wasted space **above the soffit** on a standard roof structure.
- The entrance is formed by cutting away a 20mm slot in the back of the soffit board against the external wall, and a specially designed plate is then screwed through into the bat box to secure it and to make it a tidy finish.
- The box is designed to exclude light and draughts.
- **Material:** 12-18mm FSC hardwood exterior plywood.
- **Dimensions:** height 14-25cm x width 33cm (entrance slot: 20mm).



Soffit Bat Box



Bat Conservation Trust & EcoSurv HABIBAT Housing Nature Bat Boxes

Habibat 2S

Habibat 003

Habibat 001

- A range of products suitable for all crevice-dwelling bat species found in the UK.
- Maintenance-free.
- **Material:** Insulating concrete.
- **Dimensions:** Range of sizes from height 22.5 x width 21.5cm x depth 10.2cm. (Habibat 2S), to height 44cm x width 21.5cm x depth 10.2cm (Habibat 003).

SCHWEGLER Summer & Winter Batbox 1WI

- Designed for **hibernation** of bats in winter as well as for roosting during summer.
- Flush-mounted and often rendered over so only the entrance remains visible.
- Maintenance-free and designed to exclude light and draughts.
- **Material:** Schwegler wood-concrete.
- **Dimensions:** height 55cm x width 35cm x depth 9.5cm.

Schwegler 1WI

Ibstock Brick Enclosed Bat Box B and C

Bat Box B

Bat Box C

- Designed with pipistrelle bats in mind, with several roosting zones
- Maintenance-free.
- **Material:** Available in all brick types.
- **Dimensions:** height 21.5-29cm x width 21.5cm.

Examples of externally-mounted bat boxes on trees and walls

Seek advice from a specialist bat worker for installation and placement of all boxes

Cornwall Environmental Consultants Ltd

Schwegler Bat Access Panel 1FE with back plate

- Suitable for all crevice-dwelling bat species found in the UK.
- Maintenance-free and designed to exclude light and draughts.
- **Materials:** Schwegler wood-concrete (weather-resistant, air-permeable, rot-proof and long-lasting).
- **Dimensions:** height 30cm x width 30cm x depth 8cm.
- Can be painted with air-permeable paints.

Bat Access Panel 1FE

Back Plate for 1FE

Schwegler 1FF with rear wooden panel

- Suitable for all crevice-dwelling bat species found in the UK.
- Maintenance-free and designed to exclude light and draughts.
- Bats can choose between the cooler woodcrete surface, or the warmer wooden panel.
- Spacious enough for bats to use as a summer roost or nursery site.
- **Materials:** Schwegler wood-concrete.
- **Dimensions:** height 43cm x width 27cm x depth 14cm.

Schwegler Bat Hibernation Box 1FW

- Suitable for all crevice-dwelling bat species found in the UK.
- Large box suitable for both winter hibernation and forlarge colonies in the summer.
- Contains 3 internal, grooved, wooden panels which can be lifted out for cleaning and inspection.
- **Materials:** Schwegler wood-concrete.
- **Dimensions:** height 50cm x width 38cm (28kg).

Schwegler 2F

Schwegler 2F-DFP

Schwegler 2F and 2F-DFP

- Standard general purpose bat box suitable for summer roosting of smaller British bats.
- Interchangeable front panel so it can become a bird nest box if bats do not use it.
- **2F-DFP:** addition of inner wooden panel to create a crevice for Pipistrelle species
- **Materials:** Schwegler wood-concrete.
- **Dimensions:** height 33cm x width 16cm x depth 14cm (4kg).

Schwegler 1FQ for external walls

- Suitable for all crevice dwelling bat species found in the UK.
- Suitable use as a roost or nursery.
- The rough internal wooden panel is fixed with wooden inserts used as perches
- **Materials:** Schwegler wood-concrete.
- **Dimensions:** height 60cm x width 35cm x depth 9cm (15.8kg).

Nest Box Company - Crevice Bat Box

- Suitable for small British crevice-dwelling bats including Barbastelle.
- Can come with 2 or three crevices.
- **Materials:** FSC certified exterior grade European birch plywood and ceramic inserts.
- **Dimensions:** height 33cm x width 16cm x depth 13cm (1.4kg or 2kg).

Beaumaris Woodstone Bat Box, Midi & Maxi

- Suitable for all summer-roosting crevice dwelling bat species found in the UK.
- The rough internal wooden panel
- **Materials:** Woodstone
- **Dimensions:** height 40-50cm x width 28-38cm x depth 6.5cm.

No.	Date	Dr/Ch	Revision Notes
A	10/11/2020	PDR	Proposal reduced to 15 units total
B	17/02/2021	PDR	Unit bases added to plans (3" margin)

Project Title
Croft Farm Holiday Park

Project Client
Croft Farm Holiday Park

Suitability
Code - Description
-

Sheet Scale
1: 250 @ A1

Date
2020/05/11

Drawn By
PR

Reviewed By
JS

Sheet No.
Project ID - Originator - Volume - Level - Type - Role - Number
1903-CMS- XX -XX-DR-A-SK10

Rev
B

Sheet Title
Proposed Site Layout

26 Martingate, Corsham, Wiltshire, SN13 0HL, Web: www.cms-group.co, Tel: 01249 701333

CMS Architects

Examples of common bird nest boxes

Seek advice from a specialist ecologist for installation and placement of all boxes

Cornwall Environmental Consultants Ltd

Schwegler 1B nest box

- Suitable for trees and buildings, at least 4m above ground.
- Available in a range of hole sizes depending on species' requirement: 2.6cm; 3.2cm; and 5.5cm.
- **Materials:** Schwegler wood-concrete with galvanised steel hanger and aluminium nail.
- **Dimensions:** height 26cm x width 17cm x depth 18cm (3.6kg).

Schwegler 2M nest box

- Designed for fixing to an exposed tree trunk.
- Holes available in two sizes: 2.6cm for small tits; and 3.2cm also for great tit, nuthatch, flycatchers, redstart, wryneck and sparrows.
- **Materials:** Schwegler wood-concrete with galvanised steel hanger.
- **Dimensions:** height 71cm x width 74cm x depth 50cm (18kg).

Schwegler 1MR Avianex

- Designed to be placed on house and garage walls and balconies.
- For small birds, with a 3.2cm diameter nesting hole.
- **Material:** Schwegler wood-concrete with galvanised steel hanger.
- **Dimensions:** height 27cm x width 19cm x depth 23cm (5.2kg).

Schwegler 24 brick box

- Integral design, suitable for installation within external walls, at least 2m above ground.
- Suitable for: redstart, nuthatch, sparrows and all tit species.
- Can also be rendered over to only leave the hole visible.
- **Material:** Schwegler wood-concrete.
- **Dimensions:** height 19cm x width 18cm x depth 18cm (7.3kg).

Schwegler 1HE brick box

- Integral design, suitable for installation within external walls, at least 2m above ground.
- Suitable for black redstart, pied wagtail, flycatchers and house and tree sparrows.
- **Material:** Schwegler wood-concrete, with a galvanised bracket.
- **Dimensions:** height 15cm x length 28cm x depth 15cm.

RSPB Apex nest box (classic and open)

Classic

Open

- **Classic:** suitable for many common UK garden bird species.
- **Open:** suitable for robins, wren and flycatchers.
- Supplied with a bracket.
- **Material:** FSC certified 32mm timber, with recycled plastic mounting plates
- **Dimensions:** height 28cm x width 23cm x depth 17cm.

Schwegler 2GR nest box (oval and three hole)

- Suitable for installation on trees, between at least 3m above ground.
- Predator-proof design.
- **Material:** Schwegler wood-concrete with galvanised steel hanger.
- **Dimensions:** height 31cm x width 20cm x depth 27cm (6.7kg).

Oval

Three hole

Schwegler 2H nest box

- Suitable for installation building walls (not on trees due to predation risk).
- Suitable for robins, flycatchers, wrens and black redstart.
- **Material:** Schwegler wood-concrete, with a galvanised bracket.
- **Dimensions:** height 20cm x width 15cm x depth 20cm (2.5kg).

Examples of wall-mounted & integral bird boxes

Seek advice from a specialist ecologist for installation and placement of all boxes

Cornwall Environmental Consultants Ltd

Schwegler 1SP House Sparrow Terrace

- Integral design ideal for external walls of buildings, at least 4m above ground.
- Can also be attached externally.
- Also attracts tit species, redstarts and flycatchers.
- **Materials:** Schwegler wood-concrete.
- **Dimensions:** height 24.5cm x width 43cm x depth 20cm (15kg).

CJ Wildlife WoodStone Swift nest box

- Designed for fixing to an external wall of a building.
- If possible, boxes should be sited under the shelter of eaves or overhanging roofs.
- **Materials:** FSC certified Woodstone (mixture of concrete and wood fibres).
- **Dimensions:** height 24.5cm x width 38cm x depth 26.5cm (5.4kg).

Schwegler 1MR Avianex

- Designed to be placed on house and garage walls and balconies.
- For small birds, with a 3.2cm diameter nesting hole.
- **Material:** Schwegler wood-concrete with galvanised steel hanger.
- **Dimensions:** height 27cm x width 19cm x depth 23cm (5.2kg).

Schwegler 24 brick box

- Integral design, suitable for installation within external walls, at least 2m above ground.
- Suitable for: redstart, nuthatch, sparrows and all tit species.
- Can also be rendered over to only leave the hole visible.
- **Material:** Schwegler wood-concrete.
- **Dimensions:** height 19cm x width 18cm x depth 18cm (7.3kg).

Schwegler 1HE brick box

- Integral design, suitable for installation within external walls, at least 2m above ground.
- Suitable for black redstart, pied wagtail, flycatchers and house and tree sparrows.
- **Material:** Schwegler wood-concrete, with a galvanised bracket.
- **Dimensions:** height 15cm x length 28cm x depth 15cm.

CJ Wildlife House Martin nests (left, right and double entrances)

Left single

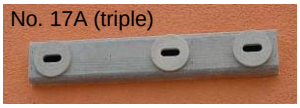
Double

- Suitable for installation on walls, between 2m and 3m above ground.
- Supplied with a fixing bracket.
- **Material:** FSC certified Woodstone and plywood back plate.
- **Dimensions: Single:** h 16cm x w 20cm x d 11cm; **Double:** h 16.5cm x w 38cm x d 12cm.

Schwegler Swift boxes (17, 17A, 17B)

No. 17 (single)

No. 17B (enlarged)



No. 17A (triple)

- Suitable for installation on trees, between 5m and 7m above ground.
- Available in a range of sizes.
- **Material:** Schwegler wood-concrete and galvanised fixing bracket.
- **Dimensions: 17:** h 15cm x l 34cm x d 15cm; and **17A:** h 15cm x l 98cm x d 15cm.

RSPB Swallow nest

- Suitable for installation in outbuildings and garages.
- Supplied with a bracket.
- **Material:** FSC certified timber and high-fired terracotta nest cup.
- **Dimensions:** height 12cm x width 21cm.

Examples of bee bricks

Seek advice from a specialist ecologist for precise installation and placement of all bricks

- There are 224 native solitary bees in the UK.
- Our native solitary bees have experienced a massive population decline since 1990.
- Solitary bees are completely safe to have around children and pets, as they are not aggressive, have no queen or honey to protect.
- The houses all contain cavities, where solitary bees lay their eggs; the bees then seal the entrances with mud or chewed vegetation, depending on species, and the offspring emerge the following spring to repeat the cycle.
- **Materials:** These bee houses are constructed from cast concrete, using up to 70% waste materials from the Cornish china clay industry.
- **Positioning:** These should be installed in a sunny spot, south facing, with no plants in front of the holes. Placed at least 0.75m from the ground with no upward limit.

Bee Brick

- The bee brick provides a stylish nesting site for red mason bees and leafcutter bees, amongst others, and makes a real design statement in any garden, allotment or within the external walls of building.
- Available in a range of colours.
- **Measurements**: 215 x 105 x 65mm; 2.9kg.

Bee Block

- Designed for fixing to be used within the construction of walls, or alternatively it can be installed in a garden.
- **Measurements**: 215 x 215 x 102.5mm (half the size of a breeze block); 7kg.

Large Bee Block & Small Bee Brick

- A freestanding bee nest which can be placed in your garden or which can also be built into walls to provide additional habitat for solitary bees.
- Available in two sizes and in a range of colours.
- **Measurements: Large:** 105 x 105 x 105mm; 2.8kg & **Small:** 65 x 70 x 105mm; 1.1kg.

Bee Post

- A freestanding architectural bee tower, perfect for use in urban landscapes and redevelopment, or to make a strong style statement in any garden.
- These can be either natural concrete or charcoal, in colour
- **Measurements:** 2.3m x 120mm x 120mm

BeePot Concrete Planter & Bee House

- The Beepot is a stylish concrete planter combining a safe nesting site for solitary bees with a space for perfect pollinator planting, meaning a food source for the bees is never far away.
- **Measurements:** 225 x 150 x 152mm; 8kg.

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