



Pendine Park, Summerhill Road, Stansty

Ecological Mitigation and Management Plan

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1 Introduction

1.1 Background

This Ecological Mitigation and Management Plan Conservation Plan concerns a proposed development at Pendine Park Nursing Home, Summerhill Road, Stansty, Wrexham, LL11 4YE (National Grid Reference SJ 3182 5180).

Proposals are to construct a new extra care facility and to expand and complement existing services and facilities. The proposals will include the construction of a new building along with new parking, footpath and access routes.

Outline planning permission for this development has been granted by Wrexham County Borough Council (Planning Reference GWE P/2019/0126).

Condition 5 of the Planning Permission states:-

'As part of the detail reserved by condition no.1, a landscaping and ecological mitigation and management scheme shall be submitted to and approved in writing by the local planning authority. The development shall be implemented in accordance with the detail as may be approved and in accordance with timescales to be approved as part of the submission.'

Condition 8 of the Planning Permission states:-

'No development shall commence until a scheme of reasonable avoidance measures (RAMS) in relation to great crested newts has been submitted to and approved in writing by the local planning authority. The development shall be carried out in accordance with the approved scheme.'

Condition 9 of the Planning Permission states:-

'As part of the detail reserved by condition no.1, provision for a scheme of bat conservation measures and a scheme of external lighting (based on a detailed light spill analysis) which accords with the principles laid out in section 5. of the approved report of Kingdom Ecology - dated 25.10.2018 shall be made. The development shall be carried out in accordance with the approved plan.'

Condition 10 of the Planning Permission states:-

'Prior to the commencement of development a biosecurity risk assessment shall be submitted to and approved in writing by the local planning authority. The development shall be carried out in accordance with the approved plan.'

Kingdom Ecology Ltd have therefore produced this document to provide an Ecological Mitigation and Management Plan and to address Conditions 8, 9 and 10. This document also includes a badger mitigation plan to limit the risk of disturbance to a badger sett located close to the proposed development area.

This Document has been produced by Richard Roe (BSc, MSc, MIEEM, CEnv). Richard is a professional ecological consultant with over nineteen years' experience.

1.2 Pendine Park Ecology Summary

1.2.1 Site Overview

As part of the planning application, a desk study and a series of ecological surveys were completed at Pendine Park. An initial ecological field survey was undertaken on the 26th May 2015 with an update site visit completed on the 29th August 2018. A further badger survey of the site was undertaken in October 2020.

The proposed development area and adjacent habitats comprise of infrequently managed, semi-natural habitats with an extensive area of species-poor, semi-improved grassland with areas of tall herb and scattered hawthorn scrub. There are small patches of woodland and tree lines around the site boundaries.

The proposed development will result in the loss of some grassland habitats and some areas of bramble, tall herb habitat and scattered woody scrub. No mature trees would be affected by development proposals.

With regards to protected species, the study site is considered unlikely to support reptiles or great crested newt. However, great crested newt have been recorded in the wider landscape.

The site is also considered unlikely to support any significant or regularly used bat roosts but is likely to offer a locally valuable foraging resource for bats.

It is considered likely that the site supports nesting birds within areas of scrub and woodland during the breeding bird season. The site is likely to support farmland and garden bird species that are common in rural parts of Wrexham County Borough. Given the small size of the site and the habitats present, it is considered unlikely that the site supports a particularly varied or important assemblage of bird species.

A badger sett is located at the site. The site was found to comprise of 4 active badger sett entrances during the latest 2020 site surveys. The development layout has been designed to limit the risks of impacting upon this badger sett and a badger Method Statement has been produced.

The development proposals at the Pendine Park Site will seek to retain and manage areas of semi-improved grassland habitat and will also seek to limit the risk of harming breeding birds, badger, bats and great crested newt. The mechanisms to achieve these objectives are described in the remainder of this document. The report is divided into five further sections comprising of:-

- The Habitat Mitigation and Management Plan
- Amphibian Reasonable Avoidance Measures
- Bat and Breeding Bird Mitigation Measures
- Biosecurity Risk Assessment
- Badger Mitigation Plan

2 Habitat Mitigation and Management Plan

2.1 Overview

2.1.1 Development Proposals

Development proposals are to construct a new extra care facility, this will include the construction of a new building along with new parking and access routes.

The overall site measures approximately 2ha in area. The proposed development footprint will result in the loss of approximately 0.5ha of grassland, tall herb and scrub habitats at the site. The remaining 1.5 ha will be largely retained in its current state with areas of grassland managed as wildflower meadow.

Where the construction results in temporary damage to existing grassland or tall herb habitats these will be restored and reseeded as wildflower grassland.

Approximately 4300m² of wildflower grassland habitat would be created/retained and managed for its biodiversity value.

An approximate 800m² area located around the identified badger sett would be unmanaged and allowed to naturally develop into further dense scrub habitats.

In addition to the provision of managed grassland habitats, the mitigation measures will also provide a schedule of bat and bird boxes for the site (See Section 4 of the Report). Recommendations for great crested newt reasonable avoidance measures, a badger method statement and biosecurity risk assessment follow in Section 3, 5 and 6 of this Report.

2.1.2 Mitigation Plan Aims

The habitat management plan for the site has been designed around the following key principles and aims:-

- Where possible, retain blocks of interlinked habitat as opposed to isolated pockets of habitat;
- Maximise the biodiversity value of retained habitats at the site;
- Ensure the long-term viability of the grassland habitats by appropriate, long-term management and long-term protection of the mitigation areas;
- Allow for a flexible and iterative process with regards to the management of the habitats through an annual review of the habitats present and the management plan to allow biodiversity opportunities to be explored and promoted.

2.2 Grassland Habitats

2.2.1 Existing Habitats

The grassland habitats located around the proposed development area comprise of a mosaic of species-poor, semi-improved grassland, patches of tall herb community, scattered hawthorn trees and scrub and occasional young oak and sycamore trees.

Areas of tall herb vegetation comprise of frequent broad-leaved dock and bramble with occasional comfrey, nettle, red campion, white campion, garlic mustard, butterbur, hogweed, cleavers, rosebay willow-herb and occasional grasses including Yorkshire fog, perennial rye, cock's-foot, false oat-grass, meadow foxtail, red fescue and rough meadow-grass.

The species-poor, semi-improved grassland species comprise of frequent Yorkshire fog, perennial rye-grass and common bent with white clover and creeping buttercup plus occasional cock's-foot, sweet vernal grass, meadow foxtail, red fescue, rough meadow-grass, ribwort plantain, creeping thistle, germander speedwell, common mouse-ear, bloody crane's-bill, silverweed, black medick, common ragwort, red clover and creeping cinquefoil. The grassland habitats are currently mown at least annually by a local farmer with the arisings left on site.

There is a further patch of more intensively mown amenity grassland located next to the existing carparking area at the northern boundary of the development area. The grassland has been planted up with young cherry and copper beech.

The grassland mosaic is of minor conservation interest owing to the broad range of grass and herb species present some of which are indicative of less intensively managed grassland habitats however the frequent occurrence of perennial rye-grass, white clover and creeping buttercup within the sward indicates that the site is likely to have undergone some nutrient enrichment in the past and may have been farmed as pasture land.

2.2.2 Habitat Evaluation and Opportunities

The proposed development will result in the loss of some species-poor, semi-improved grassland. This habitat is considered to be of minor botanical and conservation interest. There are further areas of similar grassland located elsewhere at the site. If appropriately managed these could develop into a feature of greater conservation value. It was therefore proposed that a Habitat Management Plan is produced for the site.

The development proposals will retain extensive areas of open space between around the proposed new care building. It was proposed that much of these areas of open space are managed as species-rich grassland through a carefully timed mowing regime of grassland habitats.

The Management Plan requires no mowing to take place through late spring/early summer; with a hay crop to be taken in the late summer, the grassland can then be periodically mown from late summer through to early spring. This will allow plants to flower and set seed in spring and summer, but will also prevent vegetation from becoming so tall and dense that its botanical diversity is reduced.

No fertiliser will be applied to the soils within the grassland areas and arisings from each cut would be removed from the site.

As well as being of benefit in terms of its conservation value, the management of a species-rich meadow habitat is likely to be of amenity value to the residents of Pendine Park by providing a colourful and floristically interesting green space throughout late spring and summer.

Areas of habitat around the identified badger sett will be left unmanaged and allowed to continue to develop into scrub habitat. This is to limit the risk of causing disturbance badgers using the sett.

2.2.3 Management Plan Delivery and Responsibilities

The proposed Ecology Mitigation Areas are shown on Figure 1 in the Appendix. It is proposed that these are managed as wildflower grassland. The Ecology Mitigation areas will be managed in accordance with this Habitat Management Plan for the lifetime of the Pendine Park Site.

Pendine Park Care Organisation Ltd will be responsible for the management and maintenance costs and for arranging the required monitoring, management and maintenance activities.

Annual ecological monitoring would be undertaken at the site for the first 5 years following the completion of the development. The monitoring works will record habitats present, confirm whether management prescriptions are being correctly completed and will make recommendations to adjust the management plan, where required.

2.3 Habitat Management

2.3.1 Overview

Proposals within the mitigation areas will include the management of existing grassland and restored grassland habitats within the Ecology mitigation Areas.

Habitat management at the site would seek to encourage a biodiverse grassland habitat with a range of grassland habitats including some short sward grassland, some areas of hay meadow type habitat and some areas maintained as long grass with tall herbs.

This diversity can be achieved within the grassland habitats through the maintenance of low nutrient soils, through the control of scrub encroachment and by careful timing of cuts to allow grasses and herbs to flower and set seed. No fertiliser would be applied to the mitigation grasslands.

2.3.2 Grassland Restoration Works

Where possible, habitat management will rely upon the existing grassland seedbank and seek to encourage natural colonisation to encourage a biodiverse, locally appropriate sward.

Therefore, prior to construction, the proposed Ecology Areas will be demarcated and fenced off to limit encroachment by construction works. However, in some locations, this will not be possible and it is therefore likely that some patches of the Ecology Mitigation Area will be temporarily damaged during the construction phase of works.

Therefore, following the completion of works, these areas will be restored and re-seeded with an appropriate wildflower grassland mix. It is proposed that these areas are reseeded with Emorsgate EM2, 'Standard General Purpose Meadow Mixture'.

The existing soils should be used for restoration and new topsoil should not be imported to the site. This is because the existing soils are not considered to be highly fertile and so are more appropriate to receive a wildflower seed mix.

Ground preparation and aftercare would follow the recommendations provided by Emorsgate Seeds, with the preparation of an appropriate soil tilth, followed by sowing of the seeds ideally during the autumn or spring or at other times of the year if there is sufficient warmth and moisture. Once sown, the seeds will be firmed in with a roll, or by treading, to give good soil/seed contact.

These works would be undertaken by an appropriately experienced landscaping contractor.

Most sown meadow wildflower and grass species are perennial; they will be slow to germinate and grow and will not usually flower in their first growing season. There will often be a flush of annual weeds from the soil in the first growing season which may grow up and obscure the meadow seedlings beneath. This annual weed growth can be controlled by topping or mowing.

The newly sown meadows will be mown regularly throughout the first year of establishment to a height of 40-60mm, removing cuttings if dense. This will control annual weeds and help maintain balance between faster growing grasses and slower developing wildflowers. Any residual perennial weeds should be spot treated or dug out.

Once established, the grasslands will be managed as hay meadow habitat as described below.

2.4 Management Prescriptions

2.4.1 Short sward habitats

Areas of short sward grassland will be maintained at the site. These areas are located outside of the proposed Ecology Mitigation Areas and will largely be managed for their amenity value.

2.4.2 Hay Meadow Habitats

These areas will form the core of the Ecology Mitigation Areas and are identified on Figure 1 in the Appendix. Approximately 3000m² of hay meadow habitat would be provided at the site.

These grasslands are to go uncut between April and late August. This will allow a hay meadow type habitat with associated wildflowers to come through during the summer. After flowering in August, a 'hay cut' of the meadow will be taken using a power scythe, petrol strimmer or tractor mower. The grassland will be cut back to a height of approximately 50mm.

The 'hay' will be left to dry and shed seed for 1-7 days and then will be removed from site. This can be used as animal fodder by a local farmer or can be piled up and left to compost elsewhere at the Pendine Park site.

Over the Autumn, winter and early spring, the grassland can be mown and kept short if considered desirable from an amenity perspective.

After each cut, the mown material should always be removed from the sward. Failure to do so will result in a build-up of litter forming a dense mat which can impact upon plant diversity. No fertiliser would be applied to these areas.

The proposed Hay Meadow Habitat is shown on Figure 1 in the Appendix.

2.4.3 Taller Grassland Habitats

These areas will be managed to maintain areas of tall grassland and dead wildflower seed-heads over the winter period. Such habitats can provide important refuges for overwintering invertebrates whilst the tussocky grassland can provide a valuable habitat for small mammals, amphibians and other invertebrates.

This grassland will be located along the southern boundary of the site and around the edges of the proposed hay meadow habitats (Areas shown on Figure 1 in the Appendix). Approximately 1300m² of tall grassland habitat would be provided.

Management of these areas of grassland would be undertaken on a rotational basis, with only half of the area strimmed/mown during the late Summer/Autumn each year. This would comprise of a single cut, the purpose of which would be to control scrub invasion. The other half of the grassland would be retained as tall grassland habitat through to the following Autumn. It is recommended that 5m stretches are cut and then 5m stretches are left, alternately running along the band of tall grassland habitat to create a patchwork of habitat types in close proximity to one another.

Following the cut, all mown material should always be removed from the sward.

The proposed Tall Grassland Habitat is shown on Figure 1 in the Appendix.

2.4.4 Natural Regeneration Area

An active badger sett was identified at the site within an existing area of hawthorn scrub and nettle.

It is proposed that this area plus habitats within approximately 5m of the badger sett are left unmanaged to develop as tall herb, bramble and scrub habitat.

This will limit disturbance to the badger sett and will allow cover to develop between the proposed new Care Facility and the badger sett itself.

The proposed Natural Regeneration Area is shown on Figure 1 in the Appendix.

A summary of Management proposals along with frequency and time of year is provided in Table 1 below.

Table 1- Habitat Management Summary

Habitat	Time of Year	Management Proposal
Re-seeded Grassland Management	Re-seeding ideally during the autumn or spring or at other times of the year if there is sufficient warmth and moisture.	Re-seeded with Emorsgate EM2, Standard General Purpose Meadow Mixture. Ground preparation and aftercare would follow the recommendations provided by Emorsgate Seeds The newly sown meadows will be mown regularly throughout the first year of establishment to a height of 40-60mm, removing cuttings if dense Once established, the grasslands will be managed as hay meadow habitat as described below
Established hay meadow habitat	April and late August Late August/September September-April	No management to allow grassland to flower A 'hay cut' of the meadow will be taken. 'Hay' will be left to dry and shed seed for 1-7 days and then will be removed from site. Grassland can be mown and kept short Autumn-Spring if considered desirable. After each cut, the mown material will be removed from the sward.
Tall grassland habitat	Late August/September	50% of this area to be mown just once each year (comprising of 5m sections alternatively mown and left). The other 50% to be mown the following year. After each cut, the mown material will be removed from the sward. No further management for the remainder of the year.
Natural Regeneration Area	n/a	No specific habitat management to be carried out in this area. Left to naturally develop into tall herb and scrub habitat.

2.4.5 Monitoring of the Grassland Habitats

Annual ecological monitoring would be undertaken at the site for the first 5 years following the completion of the development. The monitoring works will record habitats present, confirm whether management prescriptions are being completed and will make adjustments to the management plan, where required.

The monitoring survey would take place during the summer and aim to assess the success of the previous year's habitat management works. This would allow for any refinement of management practices.

An annual monitoring report with management recommendations (where relevant) would be produced and submitted to Pendine Park Care Organisation Ltd and would be available to the Council.

Habitat management proposals are largely scheduled for late August/September each year. The monitoring report would be provided in advance of the annual habitat management to allow any refinements and recommendations to be carried out.

2.4.6 Woodland Habitats and Habitat Piles

Some areas of scattered scrub will be cleared from the site as part of the development proposals.

It is proposed that some of the cut material including logs and brash is retained as habitat piles within the areas of woodland around the site perimeter. These brash piles will offer additional habitat for invertebrates and small mammals.

2.4.7 Landscaping and Amenity Areas

there are several new trees and areas of planting proposed as part of the landscaping design for the development. It is recommended that new planting includes species which can provide nectar sources for insects and berries/fruits for invertebrates and birds.

The following small/medium sized tree species are recommended as they offer suitable foraging opportunities to various native wildlife (including birds and invertebrates): rowan, wild cherry, crab apple, silver birch, holly, and willow. These trees should be included in the planting mix.

Areas of new shrubbery should include suitable nectar sources for insects. The Royal Horticultural Society provides a list of suitable plants for invertebrates (see [rhs.org.uk/plantsforpollinators](https://www.rhs.org.uk/plantsforpollinators)). It is recommended that this list is consulted when producing detailed landscaping designs for the site.

3 Amphibian Avoidance Measures

3.1 Overview

3.1.1 Great Crested Newt Records

There are two ponds located within 250m of the study site. Pond 1 is located approximately 220m to the north of the site on the opposite side of Highfield Road. This pond is considered to be isolated from the proposed development site by the presence of the existing Pendine Park buildings and infrastructure and by Highfield Road itself.

Pond 2 is located 250m to the south west of the study site. It is located within Gatewen Marsh SSSI. It is considered unlikely that any hypothetical great crested newt population using Pond 2 would travel across the intervening 250m of arable land to reach the Pendine Park site when extensive, more suitable terrestrial habitats are present within Gatewen Marsh itself.

COFNOD holds no records of great crested newt using either Pond 1 or Pond 2.

The nearest known great crested newt breeding pond is located at Stansty Park which is located approximately 360m to the northeast of the site. Summerhill Road and the study site's eastern boundary wall along with the boundary wall along the western side of the Stansty Park Estate would prevent terrestrial habitats at the study site from being used by newts associated with Pond 3.

Taking account of the above, it is considered to be unlikely that great crested newt associated with these ponds would use terrestrial habitats at the Pendine Park site.

3.1.2 Habitats

The proposed development site mostly comprises of a species-poor, semi-improved grassland habitats with areas of tall herb vegetation plus scattered hawthorn scrub and young trees.

There are also scattered rubble piles of stone, slates and logs located within the western half of the site. The slates are mostly stored on pallets.

Habitats around the rubble piles comprise of tall herb and bramble scrub. There are further small areas of tall herb vegetation located around groups of scattered scrub and at the edges of the woodland and hedgerow habitats.

The areas of grassland and the discreet rubble and log piles offer suitable refuge habitat for amphibians.

3.1.3 Risk of Great Crested Newt Presence at the Site

Although the proposed development site supports some areas of suitable great crested newt terrestrial habitat, the risk of harming any amphibians during construction is considered to be low. This is on account of the relative isolation of the site from suitable breeding sites and therefore a low likelihood of any newts actually being present at the site. However, this risk will be further reduced by the implementation of standard amphibian reasonable avoidance measures during construction works.

Prior to the start of works, a toolbox talk should be provided to site workers by the Project Ecologist. The induction should cover the legal status of great crested newt, the method of working, the avoidance measures to be followed and actions to be taken if protected species are encountered.

3.2 Reasonable Avoidance Measures

The reasonable avoidance measures to be implemented should comprise of the following.

3.2.1 Site Clearance

The proposed construction areas should be kept tidy and free from piles of debris, stone or construction materials in advance of site clearance. This is so that there are no features beneath which Amphibians could seek shelter.

There are some discreet rubble and log piles already located within and adjacent to the proposed construction areas. There is a low risk that great crested newt could be taking refuge beneath these features.

It is therefore recommended that, when removing these from site, they are either carefully moved by hand or are carefully lifted with a machine. They should then be checked beneath for great crested newt or any other amphibians (see Section 3.3.4 for actions undertaken on discovery of amphibians).

A hand search of suitable habitats (smaller piles of rubble, logs, areas of scrub etc) would also be undertaken by the Project Ecologist prior to the start of site clearance.

3.2.2 Storage of Materials

Where construction materials are brought onto site for use in the development, all such materials should be stored on pallets or in skips, so that they are elevated off the ground and do not create new features beneath which amphibians can take shelter.

3.2.3 Excavations

Where new trenches or pits are to be excavated, these should not be left open overnight in case dispersing amphibians fall into them. Where this is not possible, trenches should be fitted with wooden ramps or have their sides battered to form a slope, to allow any wildlife to escape.

3.2.4 Discovery of Amphibians

If any frogs or toads are encountered during the development, it is recommended that these are carefully captured and moved to woodland habitats along the boundaries of the site.

If a newt of any type is identified during works, works should immediately stop and advice sought from the Project Ecologist.

3.2.5 Habitat Piles

Old logs and some of the sandstone rubble removed from the construction area can be retained on site within areas of woodland or at the fringes of the site to act as habitat piles.

Advice on locations for habitat piles and which items to retain would be provided by the Project Ecologist when undertaking the toolbox talk.

The habitat piles would be supplemented by newly cut logs and brash arising from site clearance works (See Section 2.4.6).

4 Bat and Bird Mitigation Plan

4.1 Overview

A Bat and Bird Mitigation plan has been produced for the site. This comprises of a bat and bird box plan including both building and tree mounted roost/nest boxes.

In addition, to limit the impacts of the proposals on foraging bats, a Lighting Plan has been produced which has been designed to limit the effects of increased light levels on potential bat foraging habitats at the site. This Lighting Plan has considered recommendations provided in the Institute of Lighting Professional's Guidance Note 08/18- '*Bats and Artificial Lighting in the UK*'.

4.2 Bat and Bird Box Plan

It is proposed that bird nest boxes and bat boxes are installed at the site. The bird box scheme should aim to provide suitable nesting sites for a variety of different bird species.

It is recommended that 12 bird nest boxes (Recommended model Vivara Pro WoodStone Nest Boxes or similar comprising of 8 boxes with 32mm entrances and 4 boxes with 28mm entrances) should be erected on retained trees at the site.

The bird boxes should be positioned in a shaded area, at a height of 2-4m and positioned so that flight lines in and out of the boxes are not hindered by any vegetation

These bird boxes will provide suitable nesting habitat for a variety of garden and woodland bird species including tits, wren, nuthatch and sparrows.

It is also recommended that 6 sparrow nest boxes are built into the proposed new building at the site (suitable model include the Vivara Pro WoodStone House Sparrow Nest Box). These bird boxes should be located immediately below the eaves of the building.

It is recommended that bat roosting habitat is built into the proposed new building. This can be achieved by building dedicated bat roosting modules into the external masonry walls of the building. It is recommended that 4 bat boxes are provided and that these are built into the south face of the building. Suitable models of bat box include the Habibat 003 and the Ibstock Bat Box). These bat boxes provide suitable roosting habitat for large aggregations of crevice dwelling bats including maternity sites.

The bat boxes should be positioned at a minimum height of 4m and as close to the building eaves as practicable.

It is also recommended that a further 5 x WoodStone bat boxes (recommended model Schwegler 2F or similar) are erected on retained trees at the site. These should be positioned at a minimum height of 4m; should be positioned with a more-or-less southerly aspect and sited so that flight lines in and out of the bat boxes are not hindered by vegetation.

Proposed locations for bat and bird boxes are shown on Figure 2 in the Appendix.

4.3 Bats and Lighting Plan

A Lighting Plan has been produced for the site by Thorlux Lighting. In devising the lighting plan, the designers have consulted the Institute of Lighting Professional's '*Guidance Note 8- Bats and Artificial Lighting*' (ILP 2018). A summary of the Lighting Plan and luminaire specifications is provided in the Appendix.

The plan has been designed to be sensitive to potential bat foraging habitat and will also seek to avoid impacts to potential bat roosting habitat wherever possible. In order to achieve this, the Lighting Plan has included the following design considerations:-

- The Lighting Plan will use LED lighting throughout and will be installed with a 'bat friendly' warm spectrum (set to 3000° Kelvin)
- Where possible, lighting used low level lighting such as low-level bollard lighting along the proposed footpath
- On the faces of the buildings, the Lighting Plan uses wall mounted luminaires fixed at a height of 2m and angled down to the ground.
- All lighting luminaires are fixed at the horizontal with no upward tilt

There are proposals to fit bat boxes on the south west and south east faces of the new building. Lighting must also be fitted to these faces to allow safe use of the footpath around the building's perimeter.

Nevertheless, the lighting will be fixed at a height of 2m and angled downwards with bat boxes fixed at a height of 4m so that the bat box entrances and immediate flight paths should remain in darkness.

The lighting plan as a whole has been designed to limit any light spill onto surrounding areas of woodland and hedgerows (see Figure 4 - Lighting Contour Plan in Appendix). With the majority of these habitats suffering no increases in light levels from external lighting.

Some light spill is unavoidable where access routes and car parks are located within proximity to areas of woodland. However, the lighting design has sought to ensure that this increased light spill is minimised and is maintained below an increase of 5 Lux.

5 Biosecurity Risk Assessment

5.1 Risk Assessment

The proposed development site and proposed Ecology Mitigation/landscaping areas currently do not support any non-native invasive species. There are also no waterbodies on the site. The risk of spreading invasive plant species from the site are therefore considered to be very low.

However, insensitive planting regimes could result in the introduction of invasive species at the site which could in-turn invade wider habitats.

No plants as listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) will be planted at the site. A list of prohibited species is provided in the Appendix.

The landscaping plan for the site will be vetted first by an appropriately qualified ecologist in order to confirm that plant species included are suitable for the site and will not be detrimental to the adjacent habitats.

Likewise, the import of contaminated topsoil can easily introduce non-native species, particularly Japanese knotweed. Imported soils should only be obtained from a reputable source.

5.2 Biosecurity Risk Avoidance Measures

There remains a low risk that invasive plant species could be brought to the site during construction works or during future habitat monitoring/management.

It is therefore recommended that the following measures are followed to limit this risk:-

- Ecologists and maintenance staff visiting the proposed habitat management area should wear footwear and outerwear that can easily be kept clean.
- Footwear and outerwear should be regularly cleaned and kept visually free from soil and organic debris.
- Vehicles and construction machinery should be cleaned before entering or leaving the site to ensure that organic debris particularly around tyres, wheels or under wheel arches is not transferred onto/off site.
- All tools and equipment used for habitat management should be kept clean, serviceable and free from organic debris. Only equipment needed for the management tasks should be taken into the conservation area.

- The landscaping plan for the site will be vetted first by an appropriately qualified ecologist in order to confirm that plant species included are suitable for the site and will not be detrimental to the adjacent habitats.
- Any imported soils should only be obtained from a reputable source.

6 Badger Mitigation Measures

6.1 Overview

6.1.1 Background

A sporadically used badger outlier sett is located within the grounds of Pendine Park.

Development proposals have been designed to avoid impacting upon this badger sett by locating the new building footprint away from the sett entrances and by following badger Reasonable Avoidance Measures during construction works.

6.1.2 Badger Surveys

An active badger outlier sett and rabbit warren was identified within an area of hawthorn scrub near the southern end of the site (see Figure 3). The sett was considered to be disused during the 2015 and 2018 surveys but was found to be active again during the latest October 2020 survey.

During the 2020 survey, four badger sett entrances were identified amongst the smaller rabbit burrows with signs of recent digging. A badger guard hair was recovered from with the spoil heaps in both 2018 and 2020. The Pendine Park gardener reported finding a dead badger at the site in 2017.

It is considered likely that badgers frequently visit the proposed development site and that the badger sett is still used sporadically, with the sett currently in active use.

No other badger setts were identified at the site.

6.1.3 Protection of Badgers Act 1992

Badgers are afforded protection under the Protection of Badgers Act 1992; this act was introduced on welfare grounds. The Act is based primarily on the need to protect badgers from baiting and deliberate harm or injury. Badgers are not considered to be a species of any conservation concern. However, the Act contains restrictions that apply more widely and can have implications where badgers and development come into conflict. All the following are considered criminal offences:

- to wilfully kill, injure, take, possess or cruelly ill-treat a badger;
- to attempt to do so; or
- to intentionally or recklessly interfere with a sett.

Sett interference includes damaging or destroying a sett, obstructing access to a sett, and disturbing a badger whilst it is occupying a sett. It is not illegal, and therefore a licence is not required, to carry out disturbing activities in the vicinity of a sett if no badger is disturbed and the sett is not damaged or obstructed.

The legislation recognises the need for a range of legitimate activities to be carried out and allows licences to be granted for certain purposes permitting work that would otherwise be illegal, including development. Badger licences are project specific and cannot be issued until full planning permission has been granted. Badger licenses are issued by Natural Resources Wales and the Welsh Government.

6.2 Badger Reasonable Avoidance Measures

6.2.1 Overview

It is proposed that development works are undertaken in such a manner as to limit the risk of interference and disturbance to the badger sett present. This will be with the aim of avoiding any breaches of the Protection of Badgers Act 1992 and therefore avoiding the need for a Badger License. Therefore an appropriate Badger Method Statement is provided below.

In developing these avoidance measures, guidance as provided by Natural Resources Wales (NRW) has been followed (see NRW Guidance Note- '<https://naturalresourceswales.gov.uk/media/3889/guidance-on-undertaking-work-close-to-badger-setts-that-cannot-be-licensed-under-the-protection-of-badgers-act-1992.pdf>').

A copy of this Method Statement must be agreed with NRW before work starts.

6.2.2 Badger Method Statement

Firstly, development proposals have been designed to retain the badger sett by locating the new building's footprint away from the sett entrances.

Efforts will also be taken to limit disturbance to any badgers using the sett during construction works. Disturbance of a sett without a license would constitute an offence under the Protection of Badgers Act 1992.

Appropriate buffer areas would be retained around the sett entrances. These will comprise of:-

- A 10m buffer zone would be marked out from the nearest sett entrances under the supervision of an appointed badger ecologist. No works or construction workers would be permitted within the 10m buffer zone unless under supervision of the badger ecologist. No excavations would be carried out within the buffer area. This would limit the risk of excessive disturbance to any badgers within the sett and would limit the risk of tunnel collapses within the sett itself.
- A further 20m buffer zone would be marked out. No excavations would be permitted in this area unless under supervision of the badger ecologist. The badger ecologist would supervise such works to ensure that no badger tunnels are breached. This would further limit the risk of excessive disturbance to badgers within the sett and would limit the risk of tunnel collapses within the sett itself. The development will require some supervision of excavation works as the proposed building will be located approximately 15m away from the closest badger sett entrance.

Other measures to limit disturbance or harm to the badger sett would be as follows:

- Prior to the start of works on site, a toolbox talk would be provided to site workers by the Project Ecologist. The induction would cover the legal status of badger, the methods of working, and the avoidance measures to be followed.
- No works should be carried out at the site between sunset and sunrise.
- No overnight lighting to be used.
- Noise and vehicle movements at the site will be kept to a minimum at all times.
- Fires and chemicals must not be used within 20 metres of the badger sett. Chemicals should be stored safely away from the sett area.
- No dogs to be taken onto the site by any of the workforce.
- Where any trenches or other excavations are to be left open overnight these would be fitted with mammal ramps or would have the sides battered to form a slope to allow badgers to escape.
- A tidy works area would be maintained during construction and any hazardous substances would be fenced off to remove any badger hazards from the site.

***Pendine Park
Ecological Mitigation and Management Plan***

Post construction, it is proposed that habitats within approximately 5m of the badger sett are left unmanaged to develop as tall herb, bramble and scrub habitat.

This will limit disturbance to the badger sett and will allow cover to develop between the proposed new Care Facility and the badger sett itself.

The proposed Natural Regeneration Area is shown on Figure 1 in the Appendix.

Appendix

Non-Native, Invasive Species List

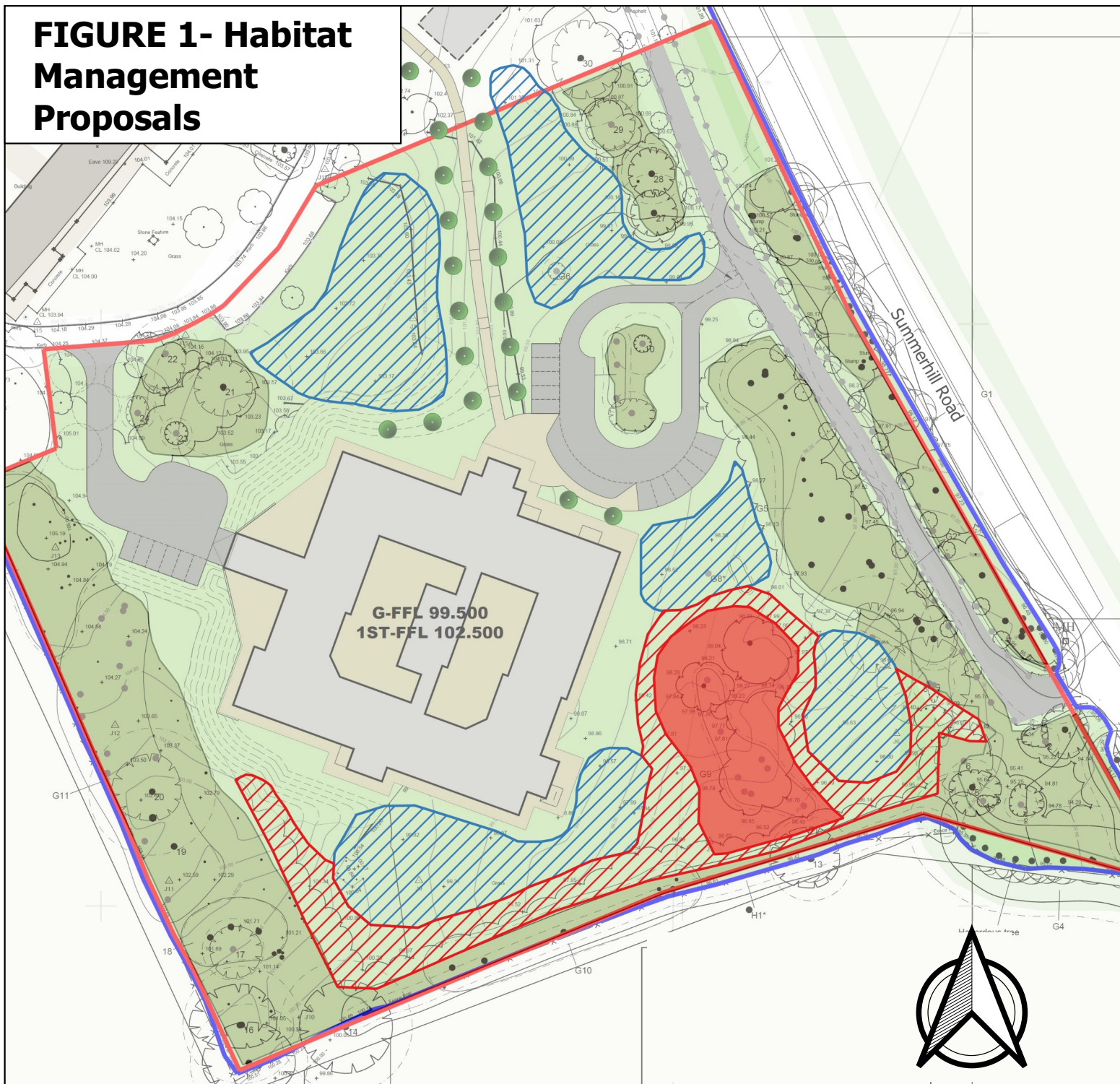
The Wildlife and Countryside Act 1981 (as amended) provides the primary controls on the release of non-native species into the wild in Great Britain. It is an offence under section 14(2) of the Act to plant or otherwise cause to grow in the wild any plant listed in Schedule 9, Part II.

Prohibited plants listed under Schedule 9 include:

- All species of the genus *Elodea* (waterweeds)
- Curly waterweed *Lagarosiphon major*
- Duck potato *Sagittaria latifolia*
- Entire-leaved cotoneaster *Cotoneaster integrifolius*
- *Fallopia japonica* x *Fallopia sachalinensis* (a hybrid knotweed)
- False Virginia creeper *Parthenocissus inserta*
- Fanwort (Carolina water-shield) *Cabomba caroliniana*
- Few-flowered leek *Allium paradoxum*
- Floating pennywort *Hydrocotyle ranunculoides*
- Floating water primrose *Ludwigia peploides*
- Giant Hogweed *Heracleum mantegazzianum*
- Giant knotweed *Fallopia sachalinensis*
- Giant rhubarb *Gunnera tinctoria*
- Giant salvinia *Salvinia molesta*
- Green seafingers *Codium fragile*
- Himalayan cotoneaster *Cotoneaster simonsii*
- Hollyberry cotoneaster *Cotoneaster bullatus*
- Hottentot-fig *Carpobrotus edulis*
- Indian balsam *Impatiens glandulifera*
- Japanese knotweed *Fallopia japonica*
- Japanese rose *Rosa rugosa*
- Montbretia *Crocasmia* x *crocosmiiflora*
- New Zealand pigmyweed (Australian swamp-stonecrop) *Crassula helmsii*

- Parrot's-feather *Myriophyllum aquaticum*
- Perfoliate Alexanders *Smyrniium perfoliatum*
- Purple dewplant *Disphyma crassifolium*
- Red algae *Grateloupia luxurians*
- Rhododendron *Rhododendron ponticum*
- Rhododendron *Rhododendron ponticum* x *Rhododendron maximum*
- Small-leaved cotoneaster *Cotoneaster microphyllus*
- Shallon *Gaultheria shallon*
- Three-cornered garlic *Allium triquetrum*
- Variegated yellow archangel *Lamiastrum galeobdolon* subsp. *argentatum*
- Virginia creeper *Parthenocissus quinquefolia*
- Water fern *Azolla filiculoides*
- Water hyacinth *Eichhornia crassipes*
- Water lettuce *Pistia stratiotes*
- Water primrose *Ludwigia grandiflora* / *Ludwigia uruguayensis*
- Yellow azalea *Rhododendron luteum*

FIGURE 1- Habitat Management Proposals



KEY

Proposed Habitat Management Areas



Proposed Tussock/Tall Herb



Proposed Hay Meadow Area



Natural Regeneration Area

Development Proposals/ Retained Habitats



Proposed building



Grassland (amenity area)



Proposed footpath/ hardstanding



Proposed access road/ carpark



Retained woodland area

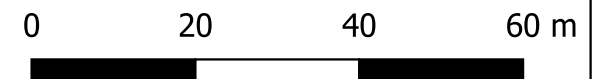
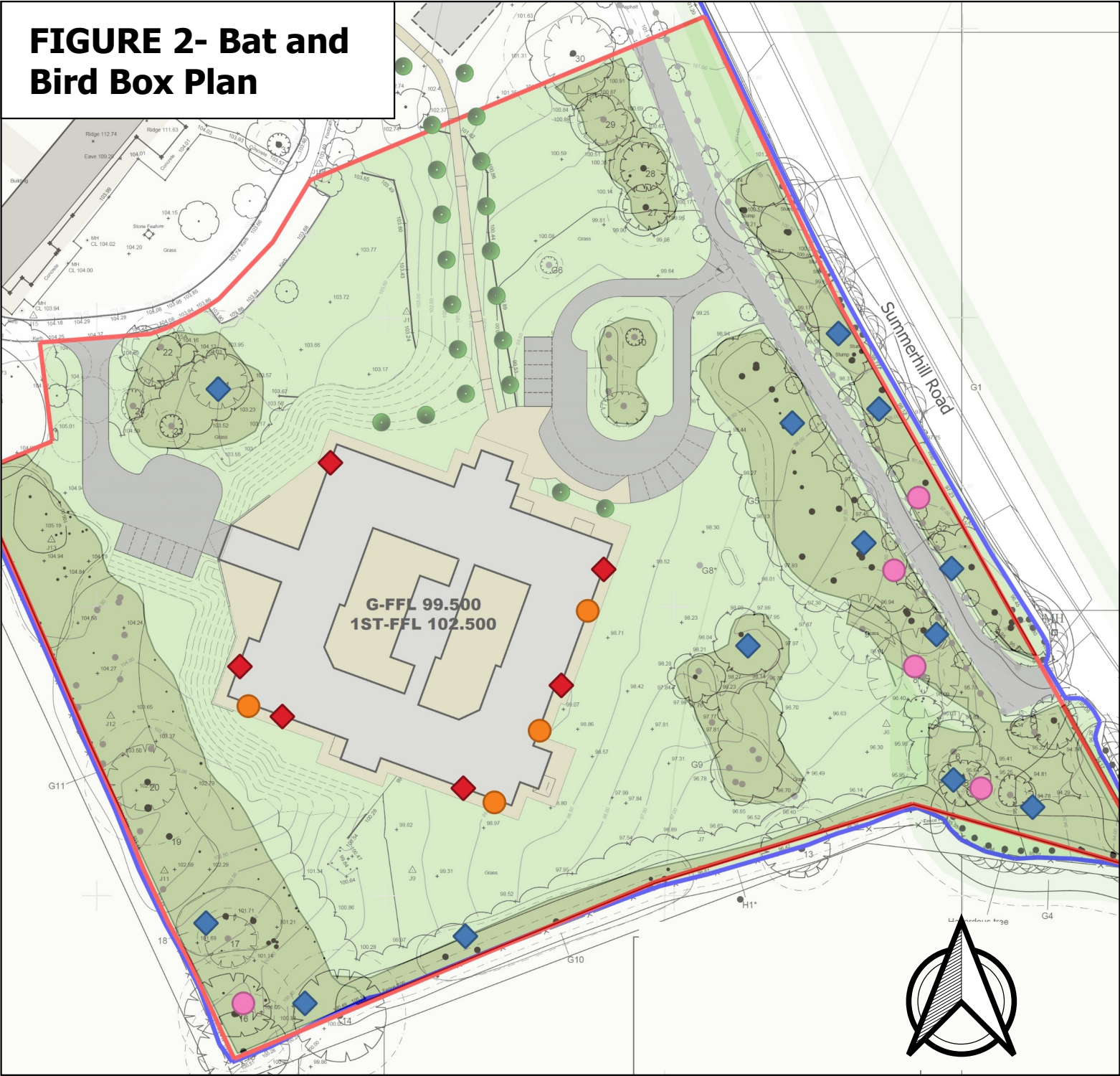


FIGURE 2- Bat and Bird Box Plan



KEY

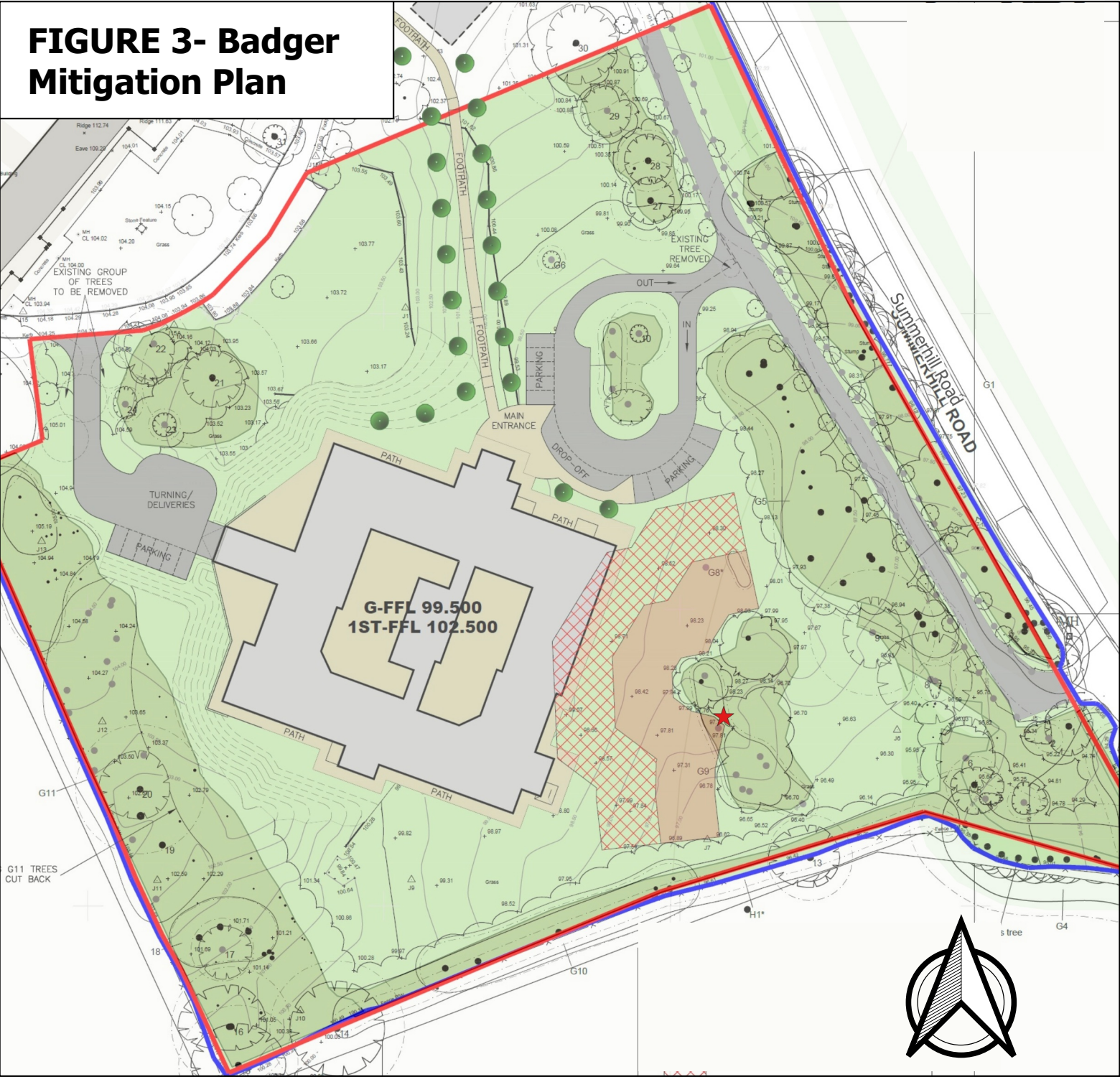
Proposed Bat and Bird Boxes

- Bat Building Box
- Bat Tree Box
- Bird Tree Box
- Sparrow Box

**Development Proposals/
Retained Habitats**

- Proposed building
- Grassland (amenity area)
- Proposed footpath/ hardstanding
- Proposed access road/ carpark
- Retained woodland area

FIGURE 3- Badger Mitigation Plan



KEY

Badger Mitigation Proposalss

- ★ Badger Sett
- 10m "no works" buffer area
- 20m "supervised works" buffer area

Development Proposals/ Retained Habitats

- Proposed building
- Grassland (amenity area)
- Proposed footpath/ hardstanding
- Proposed access road/ carpark
- Retained woodland area