

Leconfield Industrial Estate – iSH Hub

784-B076698

Habitat Management and Monitoring Plan

Morgan Sindall Construction

July 2026

**Document prepared on behalf of Tetra Tech Group Limited.
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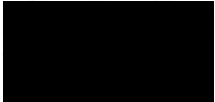
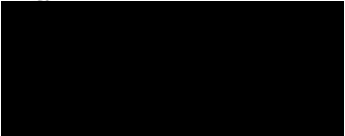
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SITE OVERVIEW

Contents	Summary
Scope of this Report	The overall aim of this Habitat Management and Monitoring Plan (HMMP) is to outline an appropriate and pragmatic habitat retention, creation, management and monitoring strategy, for the period of a minimum of 30-years as per the requirements of the Environment Act 2021.
Project Type	On-site Biodiversity Net Gain (BNG)
Development Name and Address	Former SPIDA Site, Leconfield Industrial Estate, Cleator Moor, CA25 5QB
Development Proposals	The proposals relate to planning application no. 4/26/2132/0F1: Full planning permission for the erection of a new building primarily for general industrial, office and research and development (E(G)(I), (II) & (III)), including associated car parking, hard and soft landscaping, associated infrastructure and biodiversity enhancements for the former SPIDA site, Leconfield Industrial Estate, Cleator Moor. A target of a minimum 10 % Biodiversity Net Gain (BNG) was required for the project in line with national and local planning policy.
Landowner	Cumberland Council
Land Manager	Cumberland Council
Responsible Person / Organisation for Initial Creation / Enhancement of Habitat	Morgan Sindall Construction
Responsible Person / Organisation for 30 year management period	Cumberland Council
Planning Authority	Cumberland Council
Planning Reference (if applicable)	4/26/2132/0F1
BNG Register Reference (if applicable)	N/A
Metric Revision / Title	784-B076698_Leconfield_ISH_BNG_Statutory Metric_V3
Metric Type	Standard

Contents	Summary
Are any Irreplaceable Habitats Present on Site?	Yes: ☐ No: ☒
Are there any Signs or Evidence that the Baseline Habitats Have Been Purposefully Degraded Since 30th January 2020?	Yes: ☐ No: ☒
Will the Proposed Measures be Delivered in Phases?	Yes: ☐ No: ☒

1.0 INTRODUCTION

1.1 BACKGROUND

Tetra Tech Limited (Tetra Tech) was commissioned by Morgan Sindall Construction in March 2026 to produce a Habitat Management and Monitoring Plan (HMMP) for Leconfield Industrial Estate, iSH Hub, hereafter referred to as “Main Works Site”.

This report has been prepared by Senior Ecologist Elizebeth Ferrier BSc (Hons), MSc, ACIEEM and the conditions pertinent to it are included within Appendix A.

1.2 SITE DESCRIPTION

The ‘Leconfield iSH Hub’ is located in Cleator Moor, Cumbria and is centred at Ordnance Survey National Grid Reference NY 01748 15539 (see Figure 1 and Appendix B for site location plans).

The Leconfield iSH Hub site is within the wider industrial estate ownership boundary (Blue Line Boundary BLB, see Figure 1).

The site comprises hardstanding and modified grassland road verges, with a small area of brownfield Open Mosaic Habitat on Previously Developed Land (OMHoPDL) present in the west where it borders the Leconfield Main Works Site (Plots 9 and 12) boundary (Purple Line Boundary PLB, see Figure 1), which is an adjacent planning application (4/25/2411/0F1). Other neutral grassland is also present in the south of the site.

The planning application boundary (Red Line boundary RLB, Figure 1) is the same as the iSH Hub boundary and the off-setting for the development will occur within this boundary.

The land surrounding the BLB is a mixture of built-up areas and agricultural fields. Cleator Moor town centre is located approx. 300 metres (m) southeast of the site.

1.3 DEVELOPMENT PROPOSALS

Cumberland Council seek to redevelop Leconfield Industrial Estate. This redevelopment is in two phases:

- **Phase 1** - Development of a new enterprise campus (iSH Hub) (Figure 1, RLB, also referred to as ‘the site’ within this report)
- **Phase 2** - Levelling Up Fund (LuF) Project which includes the ‘Main Works Site’ (Figure 1, PLB) and associated offsetting areas.

This report relates to Phase 1 only, the development of a new enterprise campus (the Hub) although the Phase 2 (Main Works Site) development proposals are referred to when appropriate, particularly in relation to the Open Mosaic Habitat on Previous Developed Land (OMHoPDL) landscaping proposals.

The development proposals on the site consist of the erection of a new building primarily for general industrial, office and research and development, including associated car parking, hard and soft landscaping, associated infrastructure and biodiversity enhancements.

The Hub building previously reached Stage 4, and the principles established are fed into the new Hub proposals as the project develops for relocating to a new site. The new design aims to respond to changes in client feedback and developing a new concept that responds to the relocation of the project from its original site to the new setting.

1.4 PURPOSE OF REPORT

The purpose of this report is to:

- Outline an appropriate and pragmatic habitat retention, creation, management and monitoring strategy, to be agreed with Cumberland Council, for the period of a minimum of 30-years as per the requirements of the Environment Act 2021.
- Detail mitigation for protected and notable species as outlined in the PEA report (Tetra Tech, 2026a).

The recommendations, herein, should be reviewed (and reassessed if necessary) should there be any changes to the red line boundary, site conditions (on the development site and the potential mitigation site) or development proposals which this document was based on. The HMMP should be reviewed over the course of the 30 year period and amended if any additional interventions are required subject to the findings of the monitoring regime.

Recommendations for reuse of materials from on site are recommendations only and appropriate due diligence should be undertaken to test if materials are contaminated and fit for purpose.

Scientific names are provided at the first mention of each species and common names (where appropriate) are then used throughout the rest of the report for ease of reading. Scientific names used conform to the nomenclature used within The New Flora of the British Isles (Stace, 2019).

This report should be read in conjunction with the Preliminary Ecological Appraisal (Tetra Tech, 2026a) and Biodiversity Net Gain Assessment report (Tetra Tech, 2026b). This HMMP corresponds with BNG Report version V3 and Landscape Site Plan P11 (Appendix B).

1.5 ROLES AND RESPONSIBILITIES

1.5.1 Morgan Sindall Construction

Morgan Sindall Construction will be responsible for the initial habitat creation including the following:

- To ensure that all permissions are in place before works commence;
- To ensure that the contractors employed are suitably qualified and experienced to undertake works;
- To provide to the contractor, all information required to allow them to carry out appropriate habitat and landscape management **during construction** (this includes the up-to-date versions of the HMMP and Construction and Environmental Management Plan (CEMP); and
- To adhere to the relevant provisions made within this document for the course of the habitat creation and construction works.

1.5.2 Cumberland Council

Cumberland Council will be responsible for ongoing habitat management measures, and monitoring beyond the Year 0 habitat creation works. Cumberland Council's responsibilities include the following:

- To ensure that the contractors employed for the ongoing management of the habitats on site are suitably qualified and experienced to undertake works;
- To provide to the contractor, all information required to allow them to carry out appropriate habitat and landscape management **after construction** (this includes up to date versions of the HMMP);
- To adhere to the relevant provisions made within this document for at least 30 years;
- To ensure / secure ongoing funding is available to be able to adhere to the relevant provisions made within this document for at least 30 years as required;
- To oversee that the created habitats on site are managed as per the HMMP for at least 30 years as required;
- To appoint a Suitably Qualified Ecologist (SQE) to monitor the condition of habitats and report on success / failure of establishment, including making recommendations for any remedial action, in line with the reporting schedule; and
- To ensure that remedial action is taken and this HMMP is updated where necessary for at least 30 years as required.

1.5.3 Contractor Responsibilities

Ecologist

Where additional issues are identified, or where it is considered that revised maintenance regimes are needed, the Ecologist can make changes to management prescriptions as appropriate.

The Ecologist will take photographs, make logbook entries of inspections and produce progress reports as appropriate to evidence that the above responsibilities are being upheld. This monitoring and review process will be carried out as an integral part of the overall HMMP.

Monitoring and reporting timescales are provided in Section 7.1 and Appendices C and D.

Construction and Landscaping Contractors

This HMMP will be distributed to all relevant personnel involved in the construction and landscaping works.

The Construction and Landscaping Contractors responsibilities include the following:

- To adhere to the relevant provisions made within this document and any method statements prepared by the Contractors;
- To adhere to the biosecurity procedures for invasive species under the advice of the Ecologist; and
- To contact the Landowner (Cumberland Council) or Ecologist, regarding any uncertainties or activities that may impact on ecological features on site.

1.6 TIMESCALES FOR ACTIONS

The construction period is expected to take up to two years, concluding in 2028. Any creation of habitats for BNG will be undertaken towards the end of this period, after the construction of the buildings.

The proposed management of the new, retained and enhanced ecological features is proposed for **30 years** following the completion of the construction and landscaping programme. For created habitats, after initial creation there is an establishment period of five years, after which the habitat will be managed for the remaining 30-year period.

The timescale for actions / management is presented in Table 1. Management actions following planting are summarised in Appendix D.

During Years 1-5 the contractor is to complete an annual check to inform upcoming management.

Dynamic ecological monitoring recommendations are to be provided at the reporting intervals as listed in Section 7.

Monitoring Reports will be produced after every scheduled monitoring event. Monitoring Reports should be completed using the Natural England HMMP Monitoring Report Template (Natural England, 2024).

Table 1: Timescales for Actions

Time Period	Action
Year 0	Creation of habitats
Year 1 - 5	Establishment of habitats and initial management activities
Years 5-30	Site visits for monitoring and reporting. Monitoring should be conducted in accordance with the schedule in Section 7. Monitoring will inform any additional management interventions required to achieve target condition.

1.7 FUNDING AND LEGAL AGREEMENTS

The 30 Year HMMP will be delivered in accordance with the Unilateral Agreement agreed by Cumberland Council. Under this Unilateral Agreement Cumberland Council agree to undertake monitoring of the creation measures on the site in compliance with the Biodiversity Gain Plan (BGP) and this HMMP. A Unilateral Agreement is a legally binding agreement and acts alongside a maintenance contract with the appointed managing agent to secure the delivery of the HMMP. In this instance the responsibilities are:

- Landowner: Cumberland Council
- Managing Agent: To be appointed by Cumberland Council

2.0 BASELINE INFORMATION

2.1 PREVIOUS REPORTS

The following reports and documents were reviewed to inform this HMMP:

- Preliminary Ecological Appraisal (PEA) (Tetra Tech, 2026a)
- Biodiversity Net Gain (BNG) Assessment (Tetra Tech, 2026b);
- Report to Inform Habitats Regulations Assessment (Tetra Tech, 2026c)
- Biodiversity Gain Plan (BGP) (Tetra Tech, 2026d)
- Landscape design drawings including (Appendix B):
 - ISH-ONE-ZZ-ZZ-D-L-00001-P11_LandscapeSitePlan;
 - ISH-ONE-ZZ-ZZ-D-L-0201-P02_DetailedPlantingPlanSheet1of2;
 - ISH-ONE-ZZ-ZZ-D-L-0202-P02_DetailedPlantingPlanSheet2of2.

The landscape plans used to inform this document are included in Appendix B.

2.2 HABITATS

Where ‘condition’ is referred to, this is the condition as per the Statutory Biodiversity Metric [referred to herewith as ‘the Metric’] -Technical Annex 1: Condition Assessment Sheets and Methodology November 2023 (Defra, 2024).

2.2.1 Pre-Development

The pre-development habitat plans for the site are shown in Figure 2 and post-development plans are shown in ISH-ONE-ZZ-ZZ-D-L-00001-P11_LandscapeSitePlan (Appendix B) and Figure 3. Retained areas are shown in Figure 4. Habitat plans are summarised below and described in depth in Section 3.0 and Appendices C and D.

2.2.2 Post-development

Retention

The development proposals are outlined in Section 1.3. One habitat will be retained within the post-development design (Figure 4), the retained area is the 0.45 ha hardstanding at Leconfield Street access road.

Creation

The following habitat types will be created within the Main Works Site: modified grassland, other neutral grassland, introduced shrub, open mosaic habitat, developed land; sealed surface, buildings and non-native and ornamental hedgerows. It is proposed to include 110 small trees (urban trees) in poor condition. See Appendix B Table B.2 for the conversion table of habitats listed on the site landscape plan (ISH-ONE-ZZ-ZZ-D-L-00001-P11_LandscapeSitePlan, Appendix B) into the UK Habitat Classification system (Professional Edition – Version 2.0 (UK Hab Ltd., 2023)), hereafter referred to as ‘UKHab’. The habitats on

the landscape plan were converted into the appropriate UKHab categories, following the Statutory Biodiversity Metric guidance (Defra, 2024b).

Newly created habitats include:

- 0.7 ha of modified grassland
- 0.02 ha total area of other neutral grassland
- 0.11 ha of introduced shrub
- 0.06 ha of OMHoPDL*
- 0.61 ha of developed land; sealed surface including buildings, roads and paths
- 0.44 ha (110 no. of trees) of urban trees
- 0.12 kilometres (km) of non-native hedgerows.

*Within the Main Works Site, 0.33ha of OMHoPDL landscaping is proposed for creation. The Main Works Site OMHoPDL landscaping is immediately west of the proposed OMHoPDL landscaping within the iSH Hub. Therefore, the two areas are directly connected and together these areas have a size of 0.39 ha which is greater than the 0.25 ha threshold, described within the JNCC Priority habitat description (JNCC, 2010).

2.3 PROTECTED OR NOTABLE SPECIES

The following protected species were considered during the Preliminary Ecological Appraisal (Tetra Tech, 2026a). Further information on protected species and appropriate mitigation measures is included in Section 2.4.

Badger

The site offers suitable badger *Meles meles* foraging habitat, however, no badger setts or signs were identified on-site. The desk study returned one record of badger within 2 km of the site.

The site was assessed to be of **Local** value for badger (Tetra Tech, 2026a).

Great Crested Newts (GCN) and Common Amphibians

No great crested newts (GCN, *Triturus cristatus*) records post 2014 were available within a 2 km radius of the site. All waterbodies within the BLB were surveyed for eDNA of GCN in 2024 and were negative. GCN are considered likely **absent** from site.

Smooth *Lissotriton vulgaris* and palmate newt *Lissotriton helveticus*, common frog *Rana temporaria* and common toad *Bufo bufo* were recorded within the BLB during surveys conducted in 2024 (Tetra Tech, 2025a).

The other neutral grassland and OMHoPDL are **suitable for foraging and sheltering amphibians** but otherwise there is limited suitable terrestrial habitat present on site.

Reptiles

Common lizard was found within the Main Works Site, adjacent to the site during an Ecological Clerk of Works (ECOW) site inspection conducted in 2023 (E. Ferrier personal observation). Areas of suitable reptile habitat on site include OMHoPDL, other neutral grassland and ruderal / ephemeral habitat.

The site was assessed to be of **Local** value for reptiles (Tetra Tech, 2026a).

Invertebrates

The desk study reported 35 records of invertebrates within a 2 km radius of the site recorded since 2014.

The Invertebrate Survey conducted on the Main Works Site in 2024 (Tetra Tech, 2024a) observed the following invertebrates (all moths / butterflies: Lepidoptera):

- Six spot burnett *Zygaena filipendulae* on selfheal *Prunella vulgaris*;
- Meadow brown *Maniola jurtina*;
- Dingy skipper *Erynnis tages*;
- Green vined white *Pieris napi*;
- Dingy skipper *Erynnis tages* (NERC¹ SPI and LBAP²); and
- Cinnabar *Tyria jacobea* (NERC, SPI and LBAP).

The food plants of the above species were found on site; i.e common ragwort *Jacobaea vulgaris* (within the other neutral grassland and kidney vetch *Anthyllis vulneraria* (in the ephemeral vegetation within the u1b areas (Tetra Tech, 2026a). The other food plants of the species listed above (common bird's-foot trefoil *Lotus corniculatus* and greater bird's-foot trefoil *Lotus pedunculatus* were not found within the site during this survey, but as the survey was conducted out of botanical survey season, their presence within the site boundary cannot be ruled out at this time.

The site was assessed to be of **Local** value for invertebrates

Invasive Non-Native Species (INNS)

No INNS were observed on site during the PEA (Tetra Tech, 2026a). The INNS management plan for the Main Works Site (Tetra Tech, 2024b) includes the iSH boundary – hence, works to control and eradicate INNS from the wider BLB site are already underway. However, as the survey was conducted out of season there is the possibility that species may have been missed (Tetra Tech, 2026a) or could re-establish before site clearance works commence.

2.4 SPECIFIED PROTECTED SPECIES MITIGATION

Specific consideration will be required for sensitive receptors on or near the site during site works and management activities. Bespoke species and habitat on-site mitigation measures are detailed in the aforementioned reports (notably the PEA report) and must be read in conjunction with this document.

- Eradication and control of INNS through the INNS Management Plan (Tetra Tech, 2024b), as required for the mitigation of the risk of spread of INNS during the construction and operational phases, as identified in the HRA (Tetra Tech, 2026c);
- Precautionary working measures will be followed to minimise impacts on badgers, other mammals, common amphibians, reptiles, invertebrates and control the risk of spreading INNS (Tetra Tech, 2026a).

¹ Natural Environment and Rural Communities (NERC) Act 2006 Species of Principle Importance (SPI)

² Local Biodiversity Action Plan (LBAP) species

- Good practice measures (such as covering excavations or providing means of escape) are recommended to prevent entrapment of wildlife;
- All vegetation management of trees, shrubs and hedgerows between March and September, inclusive, will need to be subject to a nesting bird check prior to activities commencing.
- Tall vegetation and scrub will require a two-stage cut to minimise the risk of injury to reptiles, amphibians and small mammals. The first cut will be to a height of no lower than 200 millimetres (mm), and the area cleared of arisings before commencing the second cut to the required height. Cutting should be directional, moving towards the boundaries of the site to displace any animals present from the work area.
- Maintenance activities will be undertaken during daylight hours, to avoid the requirement for site lighting and thereby minimise impacts on nocturnal species (bats, badgers, etc).
- Site staff are to be vigilant for invasive / protected species and report any findings immediately.

3.0 LANDSCAPE PLAN INTERPRETATION

The landscaping drawings and planting schedules used to inform this document are listed within Appendix B.

4.0 GOOD PRACTICE MANAGEMENT

Climatic Conditions

All maintenance works shall be carried out while soil and weather conditions are suitable for the relevant operations.

Machines and Tools

Only machinery and tools suitable for the site conditions and the work to be carried out shall be used. Hand tools shall be used around trees / plants and in confined spaces where it is impracticable to use machinery. Cutting tools must be sharp and caution should be exercised to prevent the transmission of plant disease via tools.

Excavation and Filling

Excavations shall be carried out in accordance BS3882:2015 (BSI, 2015), BS8601:2013 (BSI, 2013) and the DEFRA Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (Defra, 2009). Good-quality subsoil / topsoil is to be stored on-site for re-use.

Topsoil used on-site is to comply with BS3882:2015 (BSI, 2015), with the handling of the topsoil to comply with BS3882, Annexe A (BSI, 2015).

Where soil (topsoil and subsoil) needs to be imported then it must be suitable for specific planting (e.g. heathland, other neutral and calcareous grassland creation).

Litter Clearance

All types of litter should be removed on a periodic basis (i.e., every visit to site made by the contractor, January – December). Any materials that can be reused such as bricks, concrete blocks, etc should be stored appropriately until needed.

Chemical Fertilisers, Weedkillers and Sprays

Chemical fertilisers, weedkillers and sprays are to be avoided where possible or used sparingly and only where specified and measured by qualified personnel, ensuring no run-off or spray drift to adjoining areas. They shall conform in every respect to the mixture required and be applied strictly in accordance with the manufacturer's instructions. All chemicals are to be used and distributed by an appropriately trained contractor.

All chemicals to be used must have been approved for the use specified by DEFRA (Ministry of Agriculture, Fisheries and Food (MAFF) prior to 2002) in accordance with Control of Pesticides Regulations, 1986 (as amended)³. All chemicals used will be non-toxic to humans, birds, and animals under normal use and only chemicals on the "Agricultural Chemicals Approved Scheme" current list of approved products may be used. The appropriate sections of the Health and Safety at Work Act of 1974⁴, the Food and Environment Protection Act of 1985⁵ and the control of Substances Hazardous to Health Regulations 1988⁶, shall be adhered to in full.

³ [The Control of Pesticides Regulations 1986](#)

⁴ [Health and Safety at Work etc. Act 1974](#)

⁵ [Food and Environment Protection Act 1985](#)

⁶ [The Control of Substances Hazardous to Health Regulations 1988](#)

Pruning Operations

Pruning, shaping and trimming of trees, woodland edge and hedges shall be carried out in accordance with BS 3998; 2010 (BSI, 2010). Dead, dying, or diseased wood, stumps or branches, unwanted epicormic shoots, climbing plants and rubbish accumulated in branch forks should be removed if there is a risk of harm (e.g., during management works or from the spread of disease). Where possible, cuttings should be retained on-site to provide further benefit to local biodiversity (e.g., breeding invertebrates).

Pruning cuts should be made at a fork or at the main stem and wounds shall be kept as small as possible. The final cut should be just outside the branch or collar or at an angle, which is the mirror image of the branch bark ridge. Treatment of wounds shall only take place where the risk of infection is high.

Formative pruning should produce a plant which is fair and symmetrical, and which will be free from major physical weaknesses.

Damaged roots or those that must be pruned should be cut so that the final wound will be as small as possible and free from ragged and torn ends. Exposed roots should be cut back to clean wood and covered with the indigenous soil.

Mowing

Mowing will be undertaken using a ride-on mower, or similar due to the extent of the areas requiring clearing. Slopes of over 30 degrees must be cut with a side-arm flail or remote-control mower, and a Safe System of Work will be required. Prior to each cut, the area should be made free from fallen leaves, weeds, litter, and domestic animal excrement. The timings for grassland cutting should be completed as detailed in Section 5.1.1 and Appendices C and D.

Weeding

Trees, hedgerows and introduced shrub planting shall be inspected and maintained accordingly to make sure that they can develop without unnecessary competition. Weeding around the base of the plants shall be by hand or by carefully machine (strimming) to avoid accidental girdling or ring-barking of woody species.

Damage of Stock

Special care shall be taken when working in planting areas not to cause damage to plants by trampling, careless mechanical weeding, or in any other way. The planting material is to be checked as to whether it has been firmly planted monthly (or after periods of high wind) for the first three years after planting and firmed in as required.

Watering

All plants are to be thoroughly watered prior to planting. During long dry spells, within the initial three years or following re-sowing or re-planting, all plants shall be watered using a fine hose or a sprinkler until full depth of topsoil is saturated. This is to be conducted as deemed necessary by the management contractor. Trees are to be watered in accordance with an irrigation plan as per BS 8545: 2014 (BSI, 2014).

Pesticides / Fungicides

Pesticides / fungicides shall not be used unless in the case of heavy infestation of insects, fungi or other pests, the plants shall be treated with an approved treatment. Should application of treatment be required this should be conducted in winter, under suitable weather conditions, where appropriate.

Frost Lift

All plants that have been lifted by frost, or have exposed roots, and plants not standing upright shall be lifted and replanted.

5.0 HABITAT CREATION MEASURES

Creation

A post-development habitat plan is shown in Figure 3, and relevant plans included in Appendix B, with full condition targets per habitat shown in Appendix C.

5.1.1 Modified Grassland

Modified Grassland will be created within the west of the site, between the two open mosaic mounds. This will comprise a flat area of modified grassland with the proposed footpath running through the centre and two triangular mounds. Small, modified grassland verges will also be present between sections of non-native hedgerow, introduced shrub and trees, along Leconfield Street.

For the modified grassland, the target is ‘poor’ condition as per Appendix C and Natural England Statutory Biodiversity Metric condition assessment criteria in three years. The monitoring schedule for the modified grassland is in Appendix C.

The grassland will be created using a pre-made turf, such as Rolawn Medallion turf [Buy Medallion® Turf | Premium Turf | Free Delivery | Rolawn](#), which is a ryegrass, *Lolium perenne* and fine-leaved fescue *Festuca rubra* ssp. turf.

Consideration should be given to using a flowering lawn type, rather than a wholly grass-lawn which is hardwearing, can support frequent mowing but also provides nectar sources for pollinators.

Ground Preparation

The soil should be cultivated to between 100 mm – 150 mm deep, when the soil is fairly dry and rake to a fine tilth. After cultivation operations have been carried out, use a base starter fertiliser and rake or till into the top 25 mm of soil (Rolawn Limited, 2026). Existing vegetation and stones should be removed and a light tilth prepared. Water the soil to a depth of 75 mm, two days before laying the turf (Rolawn Limited, 2026).

Installation of Turf

The best time of year to lay turf is early to mid-autumn, turf can also be laid in Spring, but the establishing turf may need regular watering if dry periods occur.

Turf should be laid as soon as possible after delivery (within 24 hours). If it is not laid directly, it should be stored appropriately to keep it cool. Begin laying the turf along a straight edge. After turves are laid they should be gently firmed onto the substrate using a suitable machine with a flat-tine fork. Turves can be manually adjusted if needed with a spade and any gaps filled with similar subsoil to achieve a flat ground surface. They should be rolled after they have been laid to ensure contact with sub-soil and to remove air gaps.

Turf should have temporary barrier tape fencing and signs to indicate no access to the area, until the turf is established. The grass will be dense and of a uniform green colour free of broad-leaved weeds and not visibly affected by pest or disease. Allowance should be made to keep the grass watered during dry periods encountered throughout the establishment period.

First Season Management

Should there be areas that have failed to thrive, these will be re-cultivated and re-seeded / turfed, in the next suitable planting season.

The establishing turf should be watered as necessary to full depth of topsoil (150 mm), evenly without displacing seed, seedlings or soil.

The first cut should be completed when the grass is reasonably dry. To prepare the area, debris, litter and stones and earth clods larger than 25 mm in any dimension should be removed. The grass should be cut to 12.5 mm and arisings removed and composted on site (not within retained habitat or landscaped areas).

On-Going Management

Mow lawns regularly as required throughout the growing season (generally March – October).

The modified grassland can be cut regularly throughout the first growing year and subsequent years after, as required to maintain its function. The contractor should check for cover of scrub, bracken *Pteridium aquilinum* and bare ground compared to the desired condition (Appendix C), at the monitoring intervals described in Appendix C and take remedial action where required.

To increase biodiversity value of the grassland, the following measures will also be adopted:

- All arisings removed to prevent nutrient level increase in the soil and added to compost piles;
- Avoidance of use of herbicide and fertiliser; and
- Trim or remove undesirable species such as creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius* and common nettle *Urtica dioica*.

5.1.2 Other Neutral Grassland (Medium, High and Very High Distinctiveness)

Other neutral grassland will be created within a verge south-west of the newly created building, adjacent to the Main Works Site boundary. There will also be two areas of other neutral grassland as verges to the cycle area and disabled parking bays, north of the carpark.

For the other neutral grassland, the target is 'poor' condition as per Appendix C and Natural England Statutory Biodiversity Metric condition assessment criteria in two years. The monitoring schedule for the other neutral grassland is in Appendix C.

A suitable seed mix such as 'Meadowmania Other Neutral grassland seedmix ([Other Neutral Grassland Seed Mix – Meadowmania UK](#)) (ISH-ONE-ZZ-ZZ-D-L-0201-P02_DetailedPlantingPlanSheet1of2, Appendix B) or Emorsgate Seeds EM1 Basic General Purpose Meadow Mixture ([EM1 Basic General Purpose Meadow Mixture - Emorsgate Seeds](#)) will be used at a rate as specified by the supplier. Species lists are included in Appendix E.

Ground Preparation

Minimum 300 mm depth of imported subsoil to BS 8601:2013 to be spread over all areas of proposed wildflower seeding. Any imported subsoil to be tested by soil analysis to confirm appropriate for landscape use. This is to be laid in layers as specified and lightly firmed. Topsoil to be freely draining, clean and sterile. A clean, weed free seed bed is required to establish the meadow.

Sowing

Seed must be surface-sown and can be applied by machine or broadcast by hand. To get an even distribution and avoid running out divide the seed into two or more parts and sow in overlapping sections. Do not incorporate or cover the seed but lightly rake or harrow the seedbed after seeding and firm in with a lightweight roller to give good soil seed contact.

Meadow seed mix to be sown at any time of year, as long as the ground is workable and the area can be watered adequately. The best time to sow is autumn from early September to November as the ground is workable and the seeds benefit from a colder spell that aids germination. Avoid summer sowing unless plentiful regular irrigation can be provided.

First Season Management

In the first year of establishment, the grassland will be cut regularly throughout the winter until April to support plant diversity by helping to maintain a balance between faster growing grasses, and wildflowers which are slow to develop. Mowing during or shortly after periods of wet weather should be avoided as this can damage the sward. Therefore, how wet the winter is will determine how many cuts will be undertaken, however two / three cuts are anticipated to be sufficient. The grass will be cut to a height of 30-50 mm and all arisings must be removed (e.g. bailing and removed from site) to reduce and maintain low nutrient levels to inhibit the growth of coarse, aggressive grasses and increase diversity.

On-Going Management

From the second year from sowing, the grassland can be left uncut to flower for most of the year. A first cut should be undertaken in September - October after flowering plants have had an opportunity to set seed. All arisings should be left *in situ* for one to seven days to allow for seed dispersal, before being removed.

Any large areas of undesirable species such as nettle *Urtica dioica* and dock *Rumex obtusifolius* or *Rumex crispus* will be spot treated with broad-spectrum herbicide, where required. However, natural management (such as hand pulling or cutting) is preferred. If any INNS, or any undesirable species (as identified below), are identified within the grassland as it establishes, these will be removed appropriately and disposed of as contaminated waste where necessary (for INNS). Undesirable species cover will be kept below 5 % of the total grassland area to meet Criterion E as per Appendix C and Natural England Statutory Biodiversity Metric condition assessment criteria.

Undesirable species include the following;

- Creeping thistle
- Spear thistle
- Curled dock
- Broad-leaved dock
- Common nettle
- Creeping buttercup *Ranunculus repens*
- Greater plantain *Plantago major*
- White clover *Trifolium repens*
- Cow parsley *Anthriscus sylvestris*

5.1.3 Introduced Shrub

Introduced shrub planting is not assessed under Natural England Statutory Biodiversity Metric condition assessment criteria and receives an automatic condition of N/A. There are four different Planting Mixes proposed (Ornamental Planting Mix 1-4: ISH-ONE-ZZ-ZZ-D-L-0201-P02_DetailedPlantingPlanSheet1of2, Appendix B).

- Planting Mix 1 is proposed on the northern and eastern boundaries adjacent to Leconfield Street,
- Planting Mix 2 is proposed within two of the three ‘islands’ between the Open Mosaic area and the western side of the building,
- Planting Mix 3 is proposed with the third ‘island’ between the Open Mosaic area and the western side of the building, adjacent to the disabled parking and on the southern boundary of the car parking,
- Planting Mix 4 is proposed on the south-eastern corner of the site, adjacent to the site entrance from Leconfield Street and adjacent to the eastern side of the building.

Planting

Introduced shrub planted areas are to be planted in 300 mm depth sandy loam topsoil to BS 3882:2015, laid in layers as specified and lightly firmed and 300 mm imported loamy sand subsoil, topped with 75 mm composted bark mulch.

First Season Management

Following planting, the shrubs are to be maintained as often as is necessary throughout the first year to ensure survival.

The maintenance will comprise the following tasks:

- All planting beds to be kept weed-free through hand weeding;
- All litter to be picked and removed;
- Mulch to be topped up as required;
- Shrubs to be pruned at appropriate times of year for each species to promote healthy growth and desirable ornamental features;
- Watering of ornamental shrub planting as required. Soil is to be checked for dryness using either a soil moisture sensor or by observing the appearance of the soil. The full depth of topsoil should be wet without loosening or damaging plants. Any compacted soil should be broken up sufficiently to allow water to reach the rootzone; and
- Replacement of any failed plants.

On-Going Management

The areas should be kept mulched and weed free. If the species within the introduced shrub planted areas spread to the adjacent other neutral grassland or other habitats onsite, these should be removed.

5.1.4 Open Mosaic Habitat

The open mosaic habitat will be present in the western boundary of the Site. This is immediately east of the proposed open mosaic landscaping within the Main Works Site. As discussed in Section 2.2.2 the landscaping for the iSH Hub and the Main Works Site have been designed to form one continuous area between the two plots, with a total area of 0.39 ha.

The Open Mosaic Habitat will comprise the following elements:

- open calcareous grassland;
- species rich neutral grassland;
- heathland habitats;
- cut concrete planks;
- concrete in-situ path and
- gabions.

These habitats have been chosen to emulate OMHoPDL and provide both spatial and structural diversity. The West Midlands Compensatory Habitat Guide (Nash, 2024) suggests that by designing alternative mosaics using eco-mimicry, the structural and ecological diversity of OMHoPDL can be replicated using standard habitats. The aim is to create a habitat that is structurally diverse, that will make use of materials onsite, including crushed concrete, and recreate existing habitats on site including calcareous and neutral grassland. The Open Mosaic Habitat will include plant species found on site pre-development and include the foodplants for notable invertebrates (i.e. dingy skipper and cinnabar moth).

The open mosaic landscaping within the site falls between the landscaping on the Main Works Site and the proposed iSH building and will be comprised of two open mosaic mounds and an additional two modified grassland mounds. The two open mosaic mounds will be roughly triangular, the 'inside' faces of which will be stepped with 600 x 600 x 1200 mm gabions filled with crushed concrete and heathland planting and the rear of the mounds will be a 1:5 gradient slope with neutral grassland (1:3 gradient slope for the eastern mound). An area to the west will comprise open calcareous grassland and cut concrete planks. See Appendix B (ISH-ONE-ZZ-ZZ-D-L-00001-P11_LandscapeSitePlan). Tree planting will be present on the northern and southern boundaries and scattered throughout the modified grassland to the east.

The Open Mosaic Habitat target is 'moderate' condition as per Appendix C and Natural England Statutory Biodiversity Metric condition assessment criteria in four years. To achieve this the habitat should comprise at least four early successional communities (a) – (i):

- (a) annuals,
- (b) mosses/liverworts,
- (c) lichens,
- (d) ruderals,
- (e) inundation species,
- (f) open grassland,
- (g) flower-rich grassland,

(h) heathland, and

(i) pools.

The above communities should form a mosaic, and a single structural habitat component or vegetation type should not account for more than 80 % of the total habitat area. The monitoring schedule for the Open Mosaic Habitat is in Appendix C.

Species lists for the three habitat types (as shown on ISH-ONE-ZZ-ZZ-D-L-00001-P11_LandscapeSitePlan) are included in Appendix E.

Any suitable other neutral and calcareous grassland seedmixes can be used at a rate as specified by the supplier.

Common bird's-foot trefoil, greater bird's-foot trefoil, kidney vetch and common ragwort should be included in seedmixes when appropriate (greater bird's-foot trefoil is a species associated with damp grasslands, so although it is found on site currently it may not be suitable to include within the target Open Mosaic Habitat) as the foodplants of target invertebrates: dingy skipper and cinnabar moth. Any self-seeded ragwort should be retained.

Table 2. Habitat Creation and Management – Open Mosaic Habitat – Main Works Site

Habitat Type	Ground Preparation	Sowing / Planting	First Season Management	On-Going Management
Other neutral grassland	300 mm depth of imported subsoil to BS 8601:2013. Laid in layers as specified and lightly firmed. Topsoil to be free draining, clean and sterile. Appropriate pH: 5.0 – 6.5 (Jefferson, 2019). For further information on soil preparation for the creation of species-rich grasslands see (White, 2014).	Seed must be surfaced sown and can be applied by machine or broadcast by hand. To get an even distribution and avoid running out divide the seed into two or more parts and so in overlapping sections. Do not incorporate or cover the seed but lightly rake or harrow the seed bed after seeding and firm in with a lightweight roller to give good soil seed contact. Meadow seed mix to be sown at any time of year, as long as the ground is workable and the area can be watered adequately. The best time to sow is autumn from early September to November as the ground is workable and the seeds benefit from a colder spell that aids germination. Avoid summer	In the first year of establishment, the grassland will be cut regularly throughout the winter until April to support plant diversity by helping to maintain a balance between faster growing grasses, and wildflowers which are slow to develop. Mowing during or shortly after periods of wet weather should be avoided as this can damage the sward. Therefore, how wet the winter is will determine how many cuts will be undertaken, however two / three cuts are anticipated to be sufficient. The grass will be cut to a height of 30-50 mm and all arisings must be removed (e.g. bailing and removed from site) to reduce and maintain low nutrient levels to inhibit the growth of coarse, aggressive grasses and increase diversity.	From the second year from sowing, the grassland can be left uncut to flower for most of the year. A first cut should be undertaken in September-October after flowering plants have had an opportunity to set seed. All arisings should be left in situ for 1-7 days to allow for seed dispersal, before being removed. Any large areas of undesirable species such as nettle and dock will be spot treated with broad-spectrum herbicide, where required. However, natural management (such as hand pulling or cutting) is preferred. If any INNS, or species of suboptimal condition, are identified within the grassland as it establishes, these will be removed appropriately and disposed of as contaminated waste where necessary. Undesirable species (see

Habitat Type	Ground Preparation	Sowing / Planting	First Season Management	On-Going Management
		sowing unless plentiful regular irrigation can be provided.		Section 'Other Neutral Grassland') cover will be kept below 5 % of the total grassland area to meet Criterion E as per Appendix C and Natural England Statutory Biodiversity Metric condition assessment criteria.
Open calcareous grassland	Surface soils of calcareous grasslands have shallow topsoil depths, Moderate to rapid drainage rates, high organic matter content and total nitrogen and low levels of available phosphorus (Ashwood, 2014). Ideal characteristics of soils suitable for creation of calcareous grassland (Taken from Table 1 (Ashwood, 2014): Topsoil depth: 100-200 mm Drainage: Moderate to rapid (can be sloped) pH: Alkaline to strongly alkaline (pH 7.8 – 8.5)	If substrates from site are used it is preferable to allow these to naturally colonise from the existing seedbank. To aid stabilisation of substrates and the rapid creation of an attractive sward a pioneer/nurse mix can be used (Ashwood, 2014). This may contain common bent <i>Agrostis capillaris</i>, sheep's fescue <i>Festuca ovina</i>, red fescues <i>Festuca rubra</i> spp. and smooth meadow grass <i>Poa pratensis</i>. Seed must be surfaced sown and can be applied by machine or broadcast by hand. If seed is sown by hand, mix with damp sand to help	Grassland establishment typically takes 3-5 years. If grassland is not established on bare mineral substrate, cutting and removal of arisings is needed in the first year to keep the sward shorter than 10 cm.	In Year 2 and Year 3 grassland should be mowed once a year, after flowers and grasses have set seed (September-October). All arisings should be left in situ for 1-7 days to allow for seed dispersal, before being removed. If scrub species such as bramble <i>Rubus fruticosus</i> agg. and blackthorn <i>Prunus spinosa</i> become established this should not be allowed to become dense or cover more than 20 % of area. Scrub should be managed by cutting and spot spraying / stump treatment as necessary.

Habitat Type	Ground Preparation	Sowing / Planting	First Season Management	On-Going Management
	Available phosphorous: 25 mg L⁻¹ (5-10mg⁻¹) Organic matter: 4 % (6 – 19 %) Total nitrogen: 0.2 % (0.30 – 1.16 %) Ideally Nitrogen provision should come from a seed-mix containing legumes (peas) rather than application of fertilisers. The suggested seed mix (Appendix E) includes the following pea species: Horseshoe vetch <i>Hippocrepis comosa</i>, common Bird's-foot Trefoil and Kidney vetch. For further information on soil preparation for the creation of species-rich grasslands see (White, 2014).	ensure seed is evenly distributed. Do not incorporate or cover the seed but lightly roll or tread the soil surface (Ashwood, 2014). Meadow seed mix to be sown at any time of year, as long as the ground is workable and the area can be watered adequately. The best time to sow is autumn from early September to November as the ground is workable and the seeds benefit from a colder spell that aids germination. Avoid summer sowing unless plentiful regular irrigation can be provided.		Any large areas of undesirable species such as nettle and dock will be spot treated with broad-spectrum herbicide, where required. However, natural management (such as hand pulling or cutting) is preferred. If any invasive non-native species (INNS), or species of suboptimal condition, are identified within the grassland as it establishes, these will be removed appropriately and disposed of as contaminated waste where necessary. Undesirable species (see Section 'Other Neutral Grassland') cover will be kept below 5 % of the total grassland area to meet Criterion E as per Appendix C and Natural England Statutory Biodiversity Metric condition assessment criteria.
Heathland	600 mm imported subsoil over 75 mm bark mulch. Appropriate pH <5.	Heathland can be created by spreading litter or brash from a donor site, by seeding or by	Water plants during dry spells or hot weather to aid establishment.	Manage undesirable species such as thistles <i>Cirsium</i> sp., bramble and bracken.

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Habitat Type	Ground Preparation	Sowing / Planting	First Season Management	On-Going Management
	Soil fertility should be very low. The availability of soil phosphorous should be less than 10 mg kg⁻¹ (Nature After Minerals, 2026). The pH of soil should be acidic and between pH 3-5 (Nature After Minerals, 2026).	planting plug plants (Nature After Minerals, 2026). Aim to use a mixture of seeding and plug plants to create a structural heathland with plants of different ages. Heathland comprises not only heather <i>Calluna</i> sp. plants but also acid grassland and bare ground (Nature After Minerals, 2026).		If areas become grass-dominant, mow / cut and remove arisings, to reduce grass dominance and to encourage heather to grow in a prostrate form (Nature After Minerals, 2026). Once heathland is established if it becomes even aged, introduce varied cutting cycles to encourage different ages of heather stands and increase structural diversity. Ling heather goes through four main stages of growth: Pioneer stage (5-6 years), Building (6-15 years), Mature (15-25 years) and Senescent (25-30 years).
Concrete plank	Concrete plank (c.150 x 600 x 1200 mm) over a 150 mm grit / sand layer.	N/A	N/A	Plants such as lichens and mosses should be allowed to colonise concrete planks and not cleaned off or treated with herbicide. Plants growing at the base of concrete planks should also be retained especially ragwort and wild carrot <i>Daucus carota</i> ssp.

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Habitat Type	Ground Preparation	Sowing / Planting	First Season Management	On-Going Management
				<i>carota</i>. Undesirable species (see Section ‘Other Neutral Grassland’ for list) can be spot treated with broad-spectrum herbicide, where required. However, natural management (such as hand pulling or cutting) is preferred. If any INNS, are identified these will be removed appropriately and disposed of as contaminated waste where necessary.
Gabions	600 x 600 x 600mm gabion basket with 100 % crushed concrete, 100 – 200 mm.	N/A	N/A	Plants should be allowed to colonise gabion baskets, and not cleaned off or treated with herbicide, with the exception of undesirable species; INNS; trees and scrub. These species can be spot-treated with herbicide, hand-pulled or cut. Any INNS will be removed appropriately and disposed of as contaminated waste where necessary.

5.1.5 Individual Trees

Individual trees are proposed to be planted throughout the site in road verges with introduced shrub, adjacent to hedgerows and within modified grassland and Open Mosaic Habitat. For the individual trees the target is ‘poor’ condition as per Appendix C and Natural England Statutory Biodiversity Metric condition assessment criteria in ten years. The monitoring schedule for the individual trees is in Appendix C.

Planting

In order to achieve Criterion A (as per Appendix C and Natural England Statutory Biodiversity Metric condition assessment criteria), at least 70 % of the individual trees proposed on site will be native species. Proposed trees species are shown on ISH-ONE-ZZ-ZZ-D-L-0201-P02_DetailedPlantingPlanSheet1of2, (Appendix B) and species lists are included in Appendix E.

Trees will be planted between late October to late March. Carry out the work while soil and weather conditions are suitable. Do not plant in strong winds.

A typical tree pit will consist of 600 mm imported sandy loam topsoil, on top of 400 mm imported loamy sand subsoil, over 100 mm depth clean gravel aggregate drainage layer. The tree pits will be installed with a tree irrigation system.

Management

Management of the trees will include the following:

- Removal and replacement of dead saplings within the first five years of planting.
- Removal of any protective sheaths once the trees have established.
- New planting may require watering in times of drought and replacement where new stock has failed to take.
- Trees should be allowed to have as natural a canopy as possible with limited pruning.

5.1.6 Non-Native hedgerows

Non-native hedgerows are proposed in the verges adjacent to Leconfield Street, along the access road into the site and at the end of parking bays. Non-native hedgerows are not assessed under Natural England Statutory Biodiversity Metric condition assessment criteria and receives an automatic condition of ‘poor’ in three years.

Planting

The hedgerow will be comprised of *Prunus lusitanica* Portuguese laurel and will be planted in 300 mm depth sandy loam topsoil to BS 3882:2015, laid in layers as specified and lightly firmed and 300 mm imported loamy sand subsoil, topped with 75mm composted bark mulch.

First Season Management

Early management of the hedgerows will be limited to replacement of dead plants. Initially, to encourage dense and bushy growth, the newly planted hedges should be pruned during the winter for the first couple of years.

Watering is important during the first growing season; hedges should be watered once or twice weekly for the first three months and then weekly in dry weather until the hedge has been established for a year.

On-Going Management

Hedging should be watered up to once a week during dry periods or if displaying signs of drought such as drooping or browning leaves.

Hedges can be pruned to the desired shape. Light trimming encourages branching and thicker foliage. The most suitable time to prune is late Spring (May-June) and in Early Autumn (September).

Where any diseased and dead plants are identified, these should be removed by an appropriately skilled contractor and replaced accordingly. The trees within the hedgerows should be monitored for signs of damage from human activity, such as cutting through.

6.0 RISKS AND REMEDIAL MEASURES

Table 6 below identifies the perceived risks associated with the above prescriptions. Where applicable, suggested initial remedial measures are outlined, which will require review if risks are realised.

Table 6: Risks and Remedial Measures

Risk Identification Date	Habitat Type	Risk Factor	Trigger for Action	Remedial Measure
During monitoring (Year 1+)	Modified grassland	Bare ground more than 5 %	Monitoring survey identifies excessive bare ground	Reseeding or turfing
During monitoring (Year 1+)	Other neutral grassland	Cover of bare ground less than 1 % or more than 10 %	Monitoring survey identifies no bare ground, or an excess of bare ground	Provision of scrapes where there is too little bare ground Overseeding of bare ground areas where there is too much
During monitoring (Year 1+)	Other neutral grassland	Cover of scrub is more than 5 %	Monitoring survey identifies excess of scrub	Removal of scrub
During monitoring (Year 1+)	Other neutral grassland	Species indicative of suboptimal condition (undesirable species) more than 5 %	Monitoring survey identifies undesirable species	Removal of undesirable species
During monitoring (Year 1+)	Other neutral grassland	INNS present	Monitoring survey identifies INNS	Removal of INNS
During monitoring (Year 3+) after establishment	Open Mosaic Habitat – calcareous grassland	Soil fertility too high – calcareous species out competed by rank grasses	Monitoring survey identifies – closed sward, grass litter build-up or lack of calcareous indicators	Reduce soil fertility through addition of low fertility substrates and strict removal of arisings after cutting.
During monitoring (Year 1+)	Open Mosaic Habitat – heathland	Plants die due to drought or hot weather	Dead plants	Replacement of plants and water plants during dry

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				spells or hot weather
During monitoring (Year 1+)	Open Mosaic Habitat – heathland	Species indicative of suboptimal condition (undesirable species) more than 5%	Monitoring survey identifies undesirable species	Removal of undesirable species
During monitoring (Year 1+)	Non-native hedgerow	Failure of saplings	Dead saplings	Replacement of saplings
During monitoring (Year 1+)	Non-native hedgerow	INNS present	Monitoring survey identifies INNS	Removal of INNS
During monitoring (Year 1+)	Individual Trees	Failure of saplings	Dead saplings	Replacement of saplings

7.0 MONITORING AND REPORTING SCHEDULE

7.1 MONITORING AND REPORTING STRATEGY

A Monitoring Report will be produced at the beginning of the intervention period and then at Years 5, 10, 15, 20, 25 and 30. To inform this report, an inspection of the site should be undertaken at the monitoring frequency noted in Table 7 and Appendices C and D, these results would be included within the Monitoring Report alongside a summary of the management of the site over the last period and the measures achieved.

The report need not be produced by an Ecologist, but by someone with sufficient authority and time on site to influence activities that may affect biodiversity as well as monitor the measures that have been put in place.

Reports should be completed using the Natural England HMMPT Monitoring Report Template (Natural England, 2024).

Table 7. Monitoring and Reporting Schedule Per Habitat Type

Habitat Measure	Habitat Type	Ecological Monitoring Years
Creation	Modified grassland	Years 1, 2, 3, 4, 5, 10, 15, 20, 25 and 30.
	Urban – Introduced shrub	N/A
	Urban trees	Six months and Years 1, 3, 5, 7, 10, 13, 15, 20, 25 and 30.
	Open Mosaic Habitats on Previously Developed Land	Years 1, 2, 3, 4, 5, 10, 15, 20, 25 and 30.
	Urban – Developed land; Sealed surface	N/A
	Non-native hedgerow	N/A

7.2 ADAPTIVE MANAGEMENT

Adaptive management is a systematic approach to natural resource management that involves monitoring and evaluating the effectiveness of management actions then adjusting as necessary to improve outcomes over time. It is an iterative process in which management actions are followed by targeted monitoring outcomes. These, in turn, inform the ongoing management.

In consideration of the risks identified in Table 6, these will be evaluated within subsequent monitoring surveys and reports. Where risks have been highlighted, or further risks are identified throughout the monitoring process, remedial measures will be put in place. Where the initial remedial measures detailed in Table 6 are considered to be failing at addressing any identified risks, further remedial strategies will be detailed within subsequent monitoring reports.

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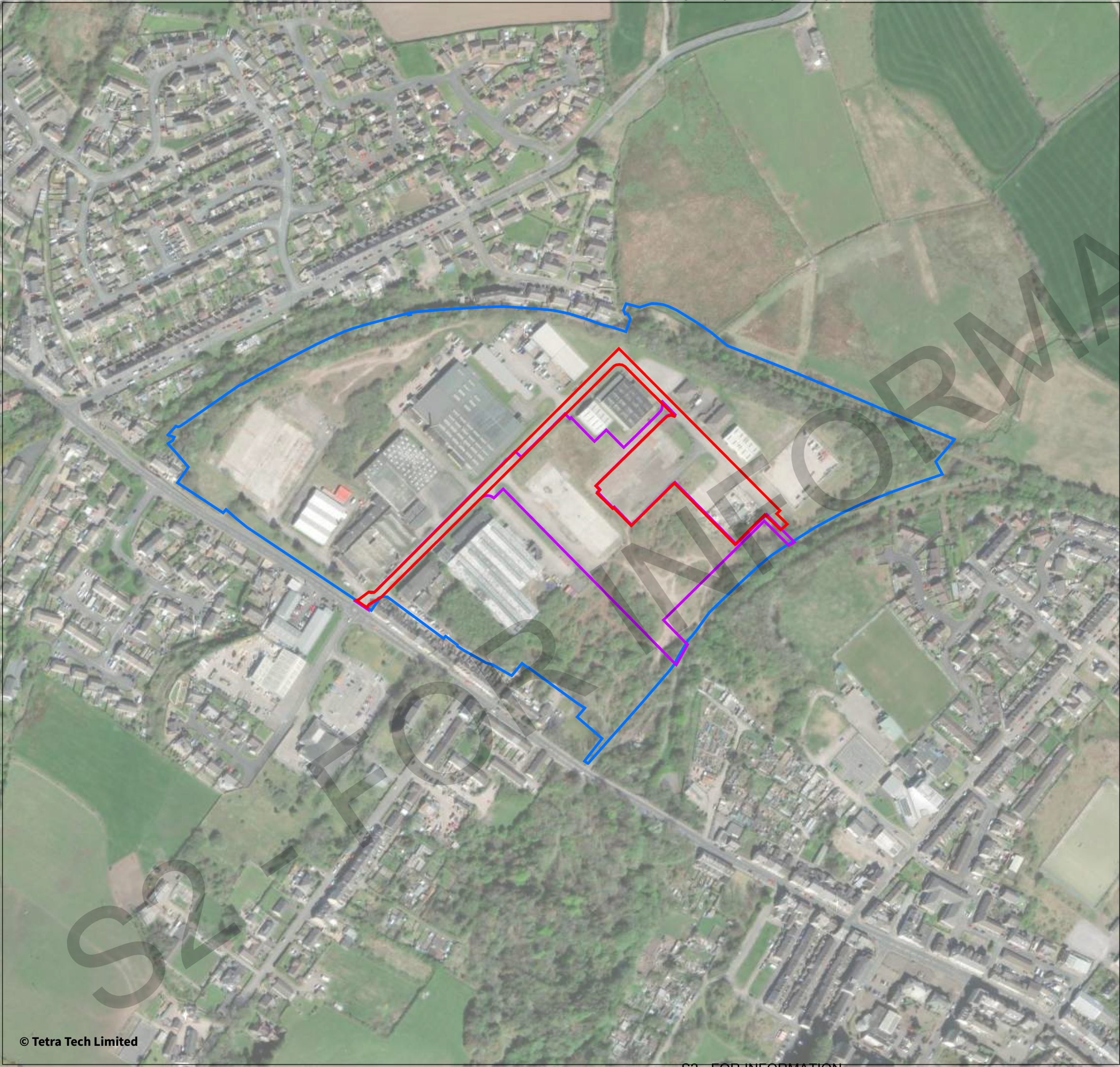
FIGURES

Figure 1 – Site Location Plan

Figure 2 – Pre-Development Plan

Figure 3 – Post-Development Plan

Figure 4 – Retained Areas



Site Location Plan

iSH Hub, Leconfield



Morgan Sindall Construction

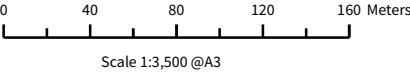
Legend

- Phase 1 - iSH Hub site boundary
- Phase 2 - Main Works site boundary
- Wider Leconfield Industrial Estate boundary

Notes:

Drawn by: Chris.Dawe
Checked by: Elizebeth Ferrier

Figure No. 1
Revision No. A
17 March 2026



British National Grid
NGR: 301621E 515476N

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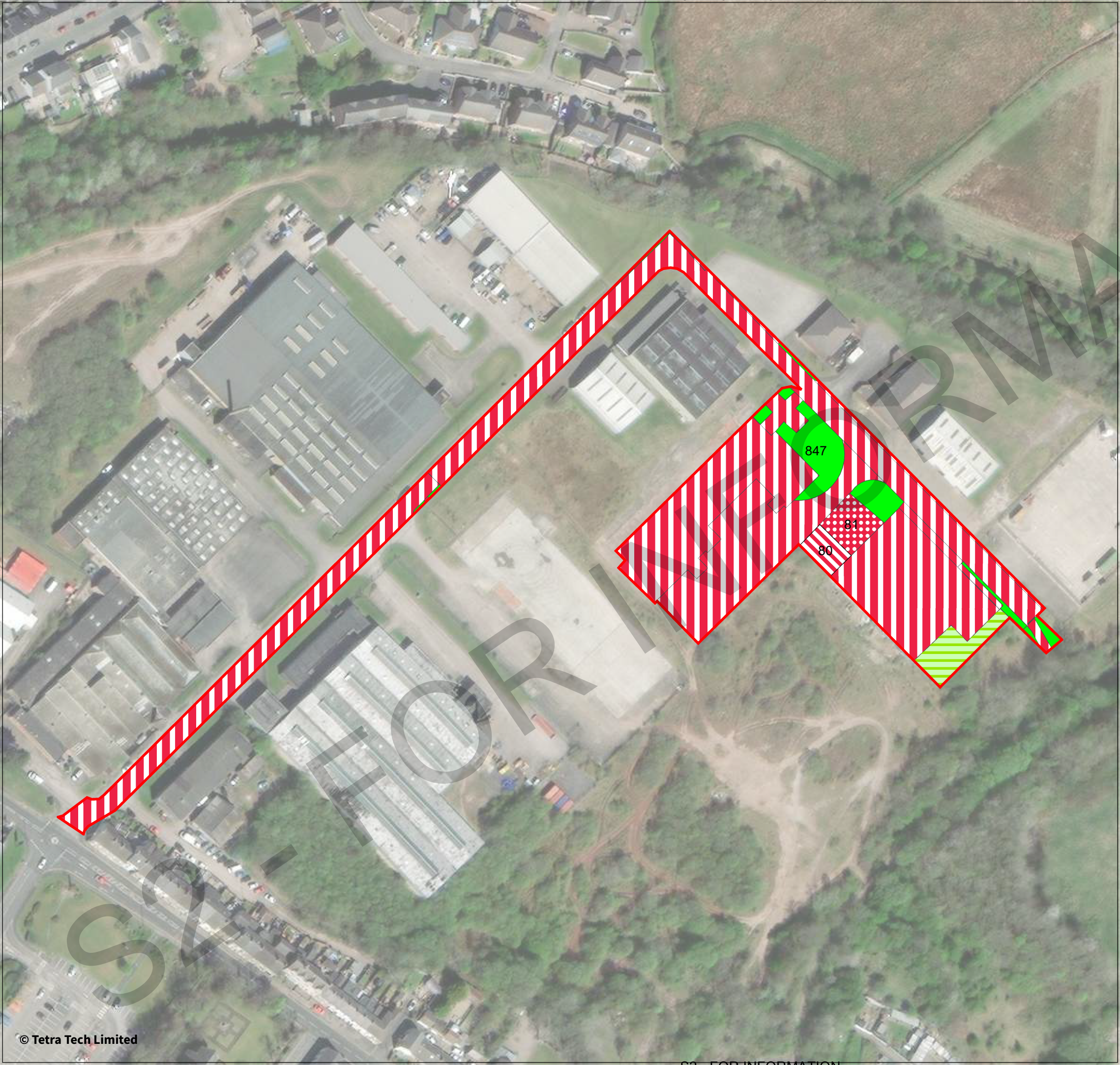




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Pre-Development Plan

iSH Hub, Leconfield



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Legend

-  Site boundary
-  g3c - Other neutral grassland
-  g4 - Modified grassland
-  u1b - Developed land, sealed surface
-  u1c - Artificial unvegetated unsealed surface
-  u1f - Sparsely vegetated urban land

Secondary codes:
80 - Open mosaic habitats on previously developed land
81 - Ruderal or ephemeral
847 - Introduced shrub

Notes: Symbology defined by UK Habs. <https://ukhab.org/ukhab-documentation/>

Drawn by: lily.dunwell
Checked by: Elizebeth Ferrier

Figure No. 2
Revision No. A
11 March 2026

0 10 20 30 40 Meters
Scale 1:1,500 @A3

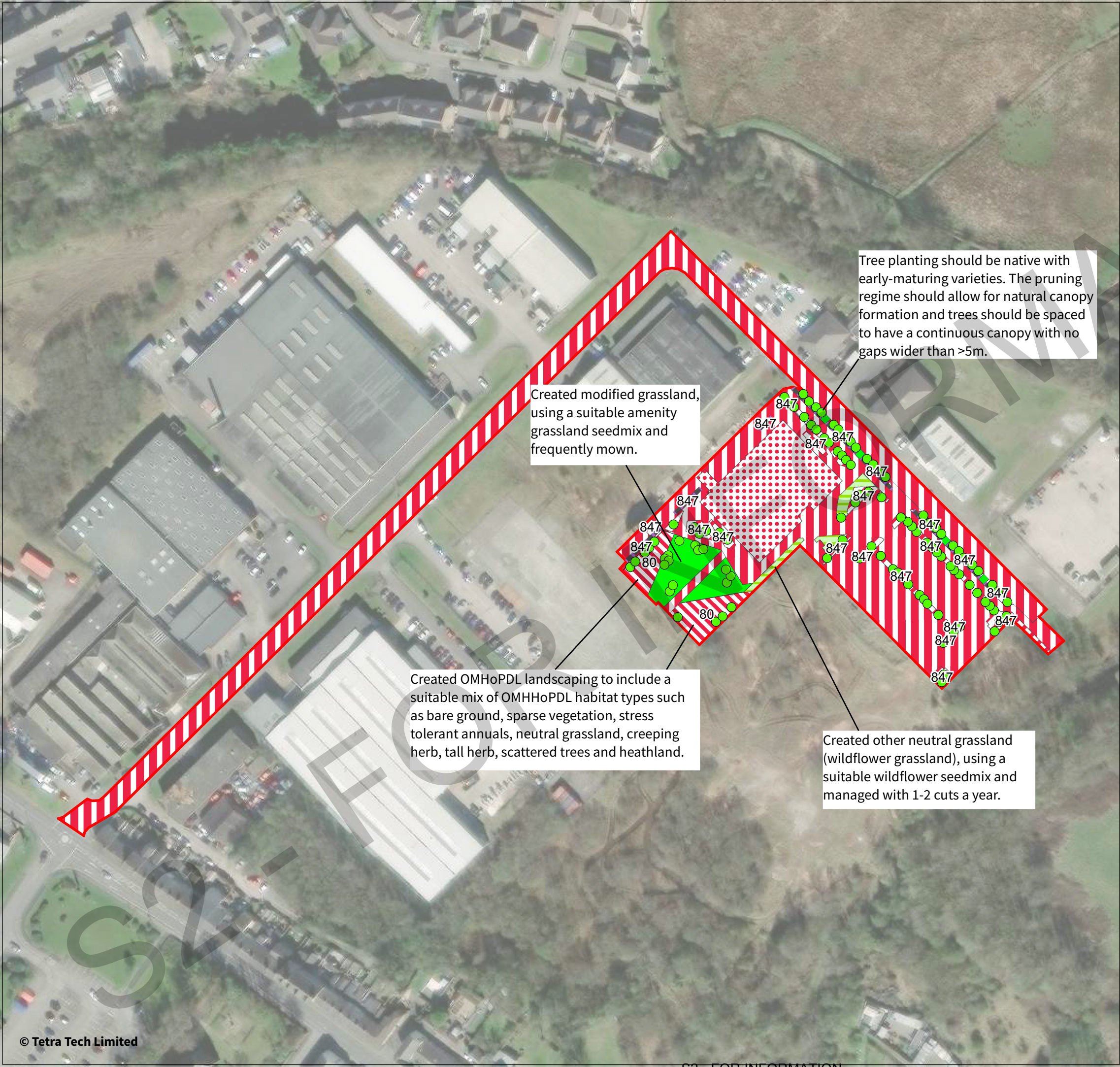
British National Grid
NGR: 301631E 515528N

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Post-Development Plan

iSH Hub, Leconfield



Morgan Sindall Construction

Legend

- Site boundary
- g3c - Other neutral grassland
- g4 - Modified grassland
- u1 - Built-up areas and gardens
- u1b - Developed land, sealed surface
- u1b5 - Buildings
- u1f - Sparsely vegetated urban land
- h2b - Non-native and ornamental hedgerow
- Urban tree

Secondary codes:
80 - Open mosaic habitat on previously developed land
847 - Introduced shrub

Notes: Symbology defined by UK Habs. <https://ukhab.org/ukhab-documentation/>

Drawn by: LILY.DUNWELL

Checked by: Elizebeth Ferrier

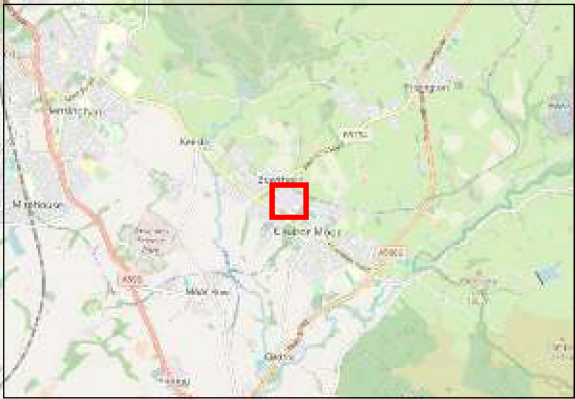
Figure No. 3

Revision No. A

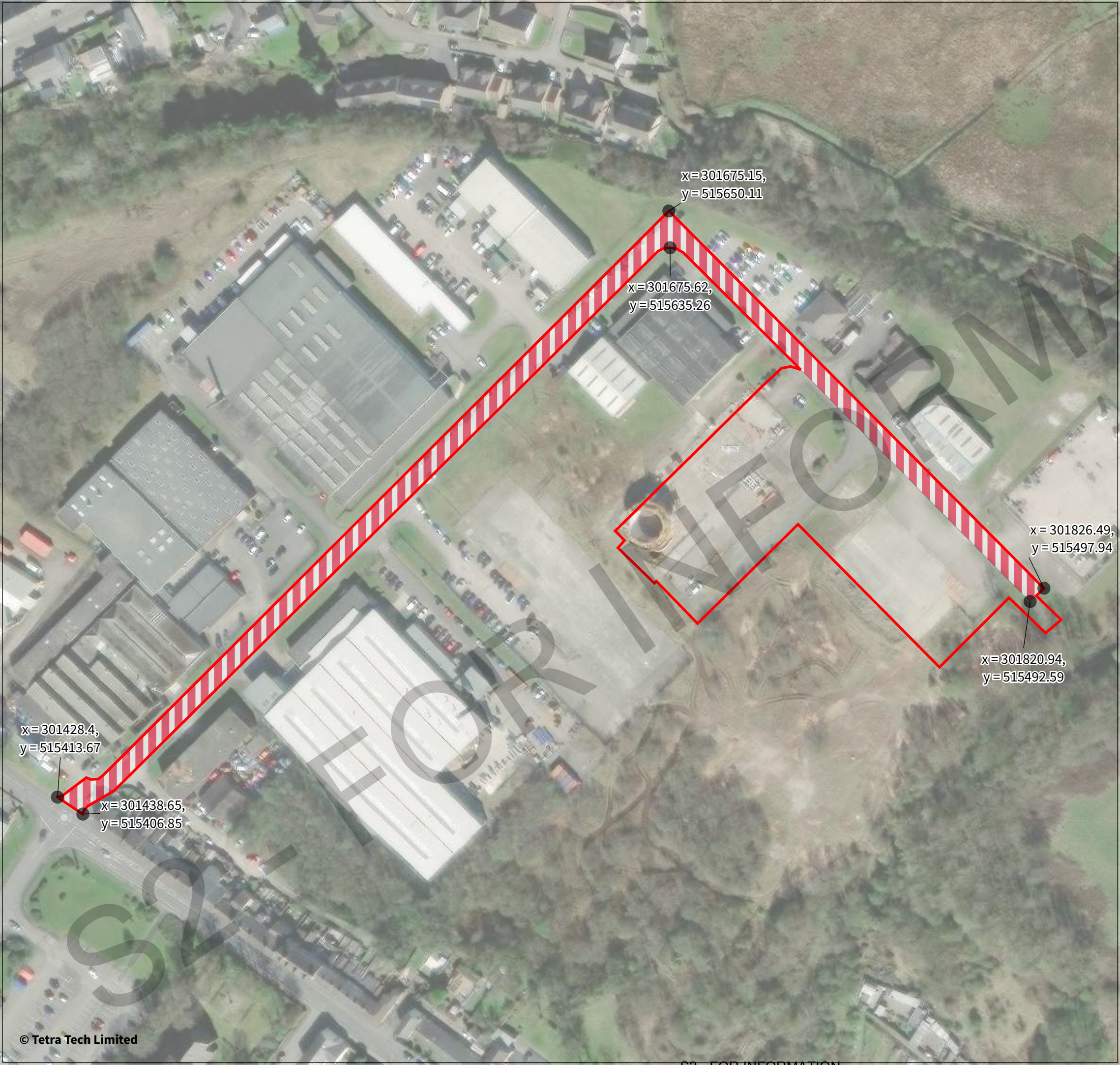
29 June 2026

0 20 40 60 80 Meters British National Grid
Scale 1:1,500 @A3
NGR: 301631E 515528N

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Retained Areas

iSH Hub, Leconfield

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Legend

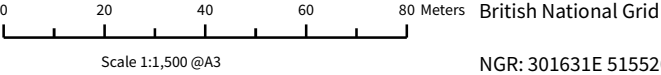
-  Site boundary
-  u1b - Developed land, sealed surface
-  Retention points



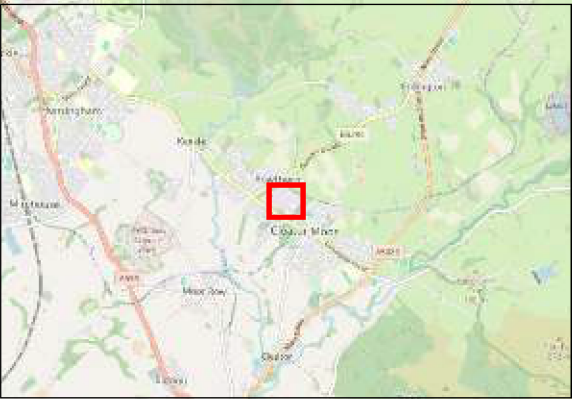
Notes:

Drawn by: LILY.DUNWELL
Checked by: Elizebeth Ferrier

Figure No. 4
Revision No. A
29 June 2026



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APPENDICES

APPENDIX A: REPORT CONDITIONS

APPENDIX B: LANDSCAPING DRAWINGS AND INTERPRETATION

APPENDIX C: HABITAT CREATION

APPENDIX D: MANAGEMENT CHECKLIST

APPENDIX E: SPECIES LISTS

APPENDIX A: REPORT CONDITIONS

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The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The “shelf life” of the Report will be determined by a number of factors including; its original purpose, the Client’s instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

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The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. Tetra Tech accept no liability for issues with performance arising from such factors.

APPENDIX B: LANDSCAPING DRAWINGS AND INTERPRETATION

Table B.1 Landscaping Documents Used to Inform the HMMP

Document Title
ISH-ONE-ZZ-ZZ-D-L-00001-P11_LandscapeSitePlan
ISH-ONE-ZZ-ZZ-D-L-0201-P02_DetailedPlantingPlanSheet1of2
ISH-ONE-ZZ-ZZ-D-L-0202-P02_DetailedPlantingPlanSheet2of2

Table B.2: Post-Development Landscaped Habitats and their Conversion into UKHab (as shown on Figures 3 and 6) and BNG Category

Habitat Terminology on Landscape Plan (Appendix B) Drawing: ISH-ONE-ZZ-ZZ-D-L-00001-P11_LandscapeSitePlan	UKHab Code	UKHab Secondary Codes	Corresponding BNG Metric Category
Ornamental planting	u1 - Built-up areas and gardens	847 – Introduced shrub	Urban – Introduced shrub
Amenity turf	g4 – Modified grassland		Grassland – Modified grassland
Hedgerow	h2b – Non-native and ornamental hedgerow hedgerow		Non-native and ornamental hedgerow
Species rich grassland	g3c – Other neutral grassland		Grassland - Other neutral grassland
Open calcareous grassland	u1f – Sparsely Vegetated Urban Land	80 – Open Mosaic habitats on previously developed land	Urban – Open mosaic habitats on previously developed land
Species rich neutral grassland			
Heathland mix			
Cut concrete planks			
Gabions			
Proposed trees	Urban tree		Individual tree – Urban tree
Vehicular grade Asphalt			

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Pedestrian grade Asphalt	u1b – Developed land; sealed surface		Urban - Developed land; sealed surface
Building edge concrete block paving			
Gravel			
Concrete hardstand			
Permeable concrete paving type 1			
Permeable concrete paving type 2			
Tactile Blister paving			
Tactile Corduroy paving			

©One-Environments Ltd. This drawing is not to be scaled. All dimensions to be verified on site prior to commencement of works. Discrepancies, ambiguities and/or omissions between this drawing & information supplied by others must be reported immediately for clarification before proceeding

NOTES

- Redline Boundary
- Ornamental Shrub Planting
- Ornamental Hedgerow
- Amenity Turf
- Proposed Trees
- Vehicular Grade Asphalt
- Pedestrian Grade Asphalt
- Building Edge Concrete Block Paving
- Gravel
- Concrete Hardstand
- Permeable Concrete Paving Type 1
- Permeable Concrete Paving Type 2
- Concrete insitu path
- Accesible Bays
- EV Charger Kiosk
- Open Calcareous Grassland
- Species Rich Neutral Grassland
- Heathland Mix
- Cut Concrete Planks
- Gabions
- Tactile Blister Paving
- Bollard
- Electric Vehicle Charging Post
- Cycle Maintenance Stand
- Existing Path Retained

REVISION | P11 DATE | 30.06.26 BY | GS CHECKED | PA

Substation Updated to revised HVSS Layout

REVISION | P10 DATE | 29.06.26 BY | GS CHECKED | PA

Updated to HVSS Layout

REVISION | P09 DATE | 10.06.26 BY | GS CHECKED | PA

Updated to meet BNG requirements

REVISION | P08 DATE | 03.06.26 BY | GS CHECKED | PA

Relocation of Visitor cycle and widening of path

REVISION | P07 DATE | 30.04.26 BY | GS CHECKED | PA

Path added to central zone.

REVISION | P06 DATE | 31.03.26 BY | GS CHECKED | PA

General update to comments

REVISION | P05 DATE | 17.03.26 BY | GS CHECKED | PA

General update to comments

CLIENT Cumberland County Council

PROJECT **CMIQ Hub**

TITLE Landscape Site Plan

DWG No. ISH-ONE-ZZ-ZZ-D-L-00001 REV P11

STATUS PRELIMINARY

SCALE 1:500 @ A1 DATE 29.01.26 DRN BY GS



NOTES

- Redline Boundary
- Wildflower Meadow/ Species Rich Grassland
- Ornamental Planting
- Ornamental Hedge
- Open Calcareous Grassland
- Species Rich Neutral Grassland
- Heathland
- Proposed Trees

0201

0202

REVISION | P02 DATE | 01.07.26 BY | GS CHECKED | PA

Updated to Site Plan

REVISION | P01 DATE | 16.06.26 BY | GS CHECKED | PA

First Issue

CLIENT Cumberland County Council

PROJECT CMiQ Hub

TITLE Detailed Planting Plan - Sheet 1 of 2

DWG No. ISH-ONE-ZZ-ZZ-D-L-0201 REV P02

STATUS PRILLIMINARY

SCALE 1:200 @ A1 DATE 10.06.26 DRN BY GS

0 2 4 8
metres
1:200

*One-Environments Ltd. This drawing is not to be scaled. All dimensions to be verified on site prior to commencement of works. Discrepancies, ambiguities and/or omissions on this drawing & information supplied by others must be reported immediately for clarification before proceeding

- NOTES
- Redline Boundary
 - Wildflower Meadow/ Species Rich Grassland
 - Ornamental Planting
 - Ornamental Hedge
 - Open Calcareous Grassland
 - Species Rich Neutral Grassland
 - Heathland
 - Proposed Trees

Header				
Trees				
Species	Height	Girth	Specification	Number
Alnus glutinosa	500-550cm	20-25cm	RB: 3x; Semi-mature; clear stem minimum 200cm	6 -
Betula pendula	350 - 400cm	Multi-stem	RB: 3x; Multi-stem; bushy; 3 stems minimum	13 -
Carpinus betulis 'Fastigiata'	600-650cm	30-35cm	RB:5x; Ball on stem; Semi-mature; clear stem 175-200cm; neatly clipped	46 -
Prunus avium 'Plena'	500-550cm	20-25cm	RB: 3x; Semi-mature; clear stem minimum 200cm	15 -
Prunus padus	600-650cm	30-35cm	RB: 4x; Semi-mature; clear stem minimum 200cm	10 -
Quercus robur	500-550cm	20-25cm	RB: 3x; Semi-mature; clear stem minimum 200cm	19 -
Total :109 -				

Species	Height	Pot Size	Density	Number
Lonicera nitida 'May Green'	30-40cm	3L	5/m²	432 -
Prunus laurocerasus 'Otto Luyken'	20-30cm	3L	5/m²	380 -
Total :812 -				

Species	Height	Pot Size	Density	Number
Prunus lusitanica	90-120cm	10L	4/m	507 -
Total:507 -				

Seed Mix Name	Seed Mix Supplier	Density	Area
Lowland Calcareous Grassland Mix (UKHab g1b / NVC CG2)	Meadowmania	3g/m²	31.6037m²
Medellion Turf	Rotawen	No.	505.1711m²
Species-Rich Neutral Grassland Mix (UKHab g4c / NVC MG5)	Meadowmania	3g/m²	379.5759m²
Total :916.3507m²			

Number	Abbreviation	Species	Density	Pot Size	%
369 -	CALVU	Calluna vulgaris	5/m²	2L	45%
247 -	ERICI	Erica cinerea	5/m²	2L	30%
206 -	ERITET	Erica tetralix	5/m²	2L	25%
Total :822 -					

Number	Abbreviation	Species	Density	Pot Size	%
284 -	CID	Carex 'Ice Dance'	7/m²	2L	20%
143 -	G m 'WN'	Geranium macrorrhizum 'White-Ness'	7/m²	2L	10%
143 -	H 'GG'	Hebe 'Green Globe'	7/m²	2L	10%
73 -		Helioleborus x hybridus 'Harvington Shades of the Night'	7/m²	2L	5%
143 -	LAV GRO	Lavandula x intermedia 'Grosso'	7/m²	5L	10%
73 -	P b 'S'	Persicaria bistorta 'Superba'	7/m²	2L	5%
143 -		Rosa 'White Flower Carpet'	7/m²	5L	10%
143 -	R f s 'G'	Rudbeckia fulgida sullivantii 'Goldsturm'	7/m²	2L	10%
284 -	STITEPT	Stipa tenuissima 'Pony Tails'	7/m²	2L	20%
Total :1429 -					

Number	Abbreviation	Species	Density	Pot Size	%
30 -	A f 'G P'	Achillea filipendulina 'Gold Plate'	7/m²	2L	5%
86 -		Cistus x obtusifolius 'Thrive'	7/m²	2L	15%
86 -	DG	Deschampsia caespitosa 'Goldtau'	7/m²	5L	15%
30 -		Gaura lindheimeri 'The Bride'	7/m²	2L	5%
30 -		Hesperantha coccinea 'Pink Princess'	7/m²	2L	5%
86 -	PBS	Perovskia 'Blue Spire'	7/m²	2L	15%
59 -	P 'M d'H'	Philadelphus 'Manteau d'Hermine'	7/m²	5L	10%
59 -	SHL	Salvia microphylla 'Hot Lips'	7/m²	2L	10%
59 -	STIGI	Stipa gigantea	7/m²	10L	10%
59 -	V b	Verbena bonariensis	7/m²	2L	10%
Total :584 -					

Number	Abbreviation	Species	Density	Pot Size	%
234 -	C ter	Choisya ternata	5/m²	5L	20%
119 -	DIEPUBB	Dierama pulcherrimum 'Blackbird'	5/m²	2L	10%
176 -	H pa 'Li'	Hydrangea paniculata 'Limelight'	5/m²	5L	15%
119 -	MAHMEWIS	Mahonia media 'Winter Sun'	5/m²	2L	10%
234 -	MOLCAT	Molinia caerulea 'Transparent'	5/m²	10L	20%
119 -		Sambucus nigra 'Black Lace'	5/m²	2L	10%
176 -		Veronicastrum virginicum 'Album'	5/m²	2L	15%
Total :1177 -					

Number	Abbreviation	Species	Density	Pot Size	%
316 -	P lau 'O L'	Prunus laurocerasus 'Otto Luyken'	3/m²	3L	40%
238 -	SPINISN	Spiraea nipponica 'Snowmound'	3/m²	3L	30%
238 -	SYMCHHA	Symphoricarpos chenaultii 'Hancock'	3/m²	3L	30%
Total :792 -					

REVISION P02	DATE 01.07.26	BY GS	CHECKED PA
Updated to Site Plan			
REVISION P01	DATE 10.06.26	BY GS	CHECKED PA
First Issue			
CLIENT	Cumberland County Council		
PROJECT	CMiQ Hub		
TITLE	Detailed Planting Plan - Sheet 2 of 2		
DWG No.	ISH-ONE-ZZ-ZZ-D-L-0202	REV	P02
STATUS	PRILLIMINARY		
SCALE	1:200	@ A1	DATE 10.06.26 DRN BY GS



0 2 4 8
metres
1:200

APPENDIX C: HABITAT CREATION

The below habitat retention, creation and enhancements measures are based on the required management to fulfil the habitat conditions as per Natural England Statutory Biodiversity Metric condition assessment criteria (Defra, 2024). Habitat management is subject to change based on any dynamic management recommendations provided after monitoring.

Monitoring is to be completed by a suitably qualified Ecologist in the years stated to ensure the habitat is meeting the required (UKHab Ltd. , 2023) category and condition. Reports will be produced after every scheduled monitoring event. Reports should be completed using the Natural England HMMPT Monitoring Report Template (Natural England, 2024).

Table C1. Summary of Condition Required and Associated Management for Created Habitats within the Site

Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (Years)	Habitat Condition Sheet	Condition Criteria and Maintenance Actions	Ecological Monitoring Years
Created habitats						
Modified grassland	Creation	Poor	3 years	Grassland (low distinctiveness)	Target condition is 'poor' in 3 years. To achieve this, the habitat must achieve 3 criteria (or less) or passes 4-6 criteria but fails essential Criterion A. Manage in line with Biodiversity Metric Technical Annex 1 Grassland (Low distinctiveness) condition criteria including avoidance of physical damage such as access or storage on grassland. Scrub and bracken should not be allowed to colonise the grassland and if present should be managed so that cover is less than 20% of the area (Criterion D).	Modified grassland to be monitored at Years 1, 2, 3, 4, 5, 10, 15, 20, 25 and 30.
Other neutral grassland	Creation	Poor	2	Grassland (medium to high distinctiveness)	Target condition is 'poor' in two years. Bare soil will be seeded with a neutral grassland meadow seed mix (e.g. EM3 Special general purpose meadow mix by Emorsgate) containing native species or seeds of local provenance can be used. A seed mix containing at least nine different species, should be used. A clean, weed free seed bed is required to establish the meadow. The meadow should ideally be seeded in autumn from early September to November but can be sown at any time of year when ground is workable.	Other neutral grassland to be monitored at Years 1, 2, 3, 4, 5, 10, 15, 20, 25 and 30.

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Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (Years)	Habitat Condition Sheet	Condition Criteria and Maintenance Actions	Ecological Monitoring Years
					Ideally the grassland should be cut 1-2 times a year with an early spring cut (April/May) and an autumn cut (anytime from late August – October), to allow plants to flower and set seed and to keep fertility low. To contribute towards grassland diversity (Criterion A) an infrequent mowing regime should be implemented to ensure flowers are allowed to set seed. Removal of arisings will reduce fertility and aid species richness. Scrub and bracken should not be allowed to colonise the grassland and if present should be managed so that cover is less than 20 % of the area (Criterion D). Physical damage such as access or storage on grassland should be avoided (Criterion E).	
Urban – Introduced shrub	Creation	N/A	1	Urban	Target condition is 'N/A' in one year. This condition is pre-set within the metric. NA – no set prescription required due to the habitat's pre-set condition.	N/A
Urban trees	Creation	Poor	10 years	Individual Trees	Target condition is 'poor' in 10 years. To achieve these three criteria should be achieved. Trees should be native (when possible). The canopy should be continuous, with gaps in canopy cover making up <10 % of total area and no gap being >5 m wide. Ensure that trees are oversailing vegetation not hardstanding (Criterion 6) and maintain tree protection areas.	Urban trees to be monitored at six months and Years 1, 3, 5, 7, 10,

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Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (Years)	Habitat Condition Sheet	Condition Criteria and Maintenance Actions	Ecological Monitoring Years
					Avoid physical damage and vandalism, including mowing to the base of trees, waste tipping or excessive pruning (Criterion 4).	13, 15, 20, 25 and 30.
Open Mosaic Habitat	Creation	Moderate	4 years	Urban	Target condition is 'Moderate' in 4 years. To achieve this 2-3 core criteria should be achieved including a complete absence of non-native species. Created OMHoPDL should form a mosaic and a single structural habitat component or vegetation type should not account for more than 80% of the total habitat area. Vegetation structure is varied, providing opportunities for invertebrates to live, eat and breed. The habitat should include at least four early successional communities (a) – (i): (a) annuals, (b) mosses/liverworts, (c) lichens, (d) ruderals, (e) inundation species, (f) open grassland, (g) flower-rich grassland, (h) heathland, (i) pools. The parcel should contain different plant species that are beneficial for wildlife for example flowering species providing nectar sources for a range of invertebrates at different times of the year. If scrub becomes dense or covers greater than 20% of area, then this should be managed. Monitoring for INNS and removal if become established.	OMHoPDL to be monitored at Years 1, 2, 3, 4, 5, 10, 15, 20, 25 and 30.
Urban – Developed land; Sealed surface	Creation	N/A	0	N/A	This condition is pre-set in the metric. NA – no set prescription required due to the habitat's pre-set condition.	N/A

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Habitat Management and Monitoring Plan

Habitat Type	Habitat Measure	Target Condition	Time to Target Condition (Years)	Habitat Condition Sheet	Condition Criteria and Maintenance Actions	Ecological Monitoring Years
Non-native hedgerow	Creation	Poor	3	N/A	Target condition is 'poor' in three years. This condition is pre-set within the metric. N/A – no set prescription required due to the habitat's pre-set condition.	N/A

APPENDIX D: MANAGEMENT CHECKLIST

Summary of management actions (excluding initial planting) are shown in Table D1. The corresponding HMMP report section must be referred to before undertaking any actions. The contractor is to undertake any checks to inform upcoming management, and dynamic ecological monitoring recommendations are to be provided at the intervals as listed in Appendices C and D.

Table D1: Site Management Checklist – Created Areas

Task / Month		J	F	M	A	M	J	J	A	S	O	N	D
Initial Habitat Creation (Year 0)													
Tree and hedgerow planting.													
Heathland planting													
Grass sowing (best time of year but can be sown all year round as long as ground is workable and can be watered. Summer should be avoided unless plentiful irrigation is available).													
Turf laying can be completed at any time of year but optimal time is either spring or early to mid-autumn.													
Creation of gabion baskets and concrete planking													
Shrub planting (species dependant).													
Ongoing Management													
Urban Trees, Introduced Shrub and Hedgerows		J	F	M	A	M	J	J	A	S	O	N	D
Year 1	Water trees once a month, during the growing season, for the first year at a rate of 120 L per tree, with additional watering during periods of drought.												
Year 1	Top up mulch as needed.												
Years 1-2	Check planted tree stakes and ties.												
Years 1-2	Adjust tree ties if required.												

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Habitat Management and Monitoring Plan

Every two to three years	Prune trees and shrubs if required.												
Years 1-3	Weeding around planted trees as required (urban trees and shrubs).												
Years 1-5	Planted trees and shrubs checked and replaced if failed.												
Every two to three years	Hedge trimming.												
Modified Grassland (created)		J	F	M	A	M	J	J	A	S	O	N	D
Year 1	Water establishing turf as needed.												
Years 1-3	Any areas that have failed to thrive, will be re-cultivated and re-seeded/turfed, in the next suitable planting season.												
Annual	Trim or remove undesirable species if required.												
Annual	Mow lawns regularly as required throughout the growing season and remove arisings.												
Other Neutral Grassland (created)		J	F	M	A	M	J	J	A	S	O	N	D
Year 1	Cut regularly throughout the winter until April												
Annual	Trim, cut, hand pull or otherwise remove undesirable species if required.												
Annual	Annual grassland cut (above 50 mm) and arising removal.												
Open Mosaic – calcareous grassland (created)		J	F	M	A	M	J	J	A	S	O	N	D
Years 1	Cutting and removal of arisings is needed in the first year to keep the sward shorter than 10 cm.												
Years 2-3	In Year 2 and Year 3 grassland should be mowed once a year, after flowers and grasses have set seed (September-October). All arisings should be left in situ for one to seven days to allow for seed dispersal, before being removed.												
Annual	Trim, cut, hand pull or otherwise remove undesirable species if required.												
Ongoing	Cut and remove any colonising scrub, including bramble.												

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Open Mosaic – Heathland (created)		J	F	M	A	M	J	J	A	S	O	N	D
Year 1	Water plants during dry spells or hot weather to aid establishment.												
Annual	Trim, cut, hand pull or otherwise remove undesirable species if required.												
Annual	If areas become grass-dominant, mow/cut and remove arisings, to reduce grass dominance and to encourage heather to grow in a prostrate form (if needed).												
Every 5 years	Once heathland is established if it becomes even aged, introduce varied cutting cycles to encourage different ages of heather stands and increase structural diversity. Ling heather goes through four main stages of growth: Pioneer stage (5-6 years), Building (6-15 years), Mature (15-25 years) and Senescent (25-30 years).												

APPENDIX E: SPECIES LISTS

Modified Grassland

Rolawn Medallion turf ISH-ONE-ZZ-ZZ-D-L-0201-P02_DetailedPlantingPlanSheet1of2, Appendix B. [Buy Medallion® Turf | Premium Turf | Free Delivery | Rolawn](#)

Table F.1 Other Neutral Grassland Species List

Meadowmania Species-rich neutral grassland Mix (UKHab g3c/ NVC MG5): ISH-ONE-ZZ-ZZ-D-L-0201-P02_DetailedPlantingPlanSheet1of2, Appendix B.

Common Name	Latin Name
Common (lesser) knapweed	<i>Centaurea nigra</i>
Oxeye daisy	<i>Leucanthemum vulgare</i>
Field scabious	<i>Knautia arvensis</i>
Meadow cranesbill	<i>Geranium pratense</i>
Red clover	<i>Trifolium pratense</i>
Bird's foot trefoil	<i>Lotus corniculatus</i>
Yellow rattle	<i>Rhinanthus minor</i>
Yarrow	<i>Achillea millefolium</i>
Selfheal	<i>Prunella vulgaris</i>
Salad burnet	<i>Poterium sanguisorba</i>
Musk mallow	<i>Malva moschata</i>
Ribwort plantain	<i>Plantago lanceolata</i>
Sorrel	<i>Rumex acetosa</i>
Teasel	<i>Dipsacus fullonum</i>
Greater knapweed	<i>Centaurea scabiosa</i>
Wild carrot	<i>Daucus carota</i>
Browntop bent	<i>Agrostis capillaris</i>
Crested dog's tail	<i>Cynosurus cristatus</i>
Strong creeping red fescue	<i>Festuca rubra subsp. rubra</i>
Chewings fescue	<i>Festuca rubra subsp. commutata</i>

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Common Name	Latin Name
Sweet vernal grass	<i>Anthoxanthum odoratum</i>
Yellow oat	<i>Trisetum flavescens</i>

Table F.2 Introduced Shrub Species List

Ornamental Planting Mix 1-3: ISH-ONE-ZZ-ZZ-D-L-0201-P02_DetailedPlantingPlanSheet1of2

Common Name	Latin Name
Planting Mix 1	
‘Ice dance’	<i>Carex sp.</i>
‘White-ness’	<i>Geranium macrorrhizum</i>
‘Green globe’	<i>Hebe sp.</i>
‘Harvington Shades of the Night’	<i>Helleborus x hybridus</i>
‘Grosso’	<i>Lavandula x intermedia</i>
‘Superba’	<i>Persicaria bistorta</i>
‘White flower carpet’	<i>Rosa sp.</i>
‘Goldsturm’	<i>Rudbeckia fulgida sullivantii</i>
‘Pony tails’	<i>Stipa tenuissima</i>
Planting Mix 2	
‘Gold plate’	<i>Achillea filipendulina</i>
‘Thrive’	<i>Cistus x obtusifolius</i>
‘Goldtau’	<i>Deschampsia cespitosa</i>
‘The bride’	<i>Gaura lindheimeri</i>
‘Pink princess’	<i>Hesperantha coccinea</i>
‘Blue spire’	<i>Peroviskia</i>
‘Manteau d’hermine’	<i>Philadelphus</i>
‘Hot lips’	<i>Salvis microphylla</i>
Golden oats	<i>Stipa gigantea</i>
Purple top	<i>Verbena bonariensis</i>
Planting Mix 3	
	<i>Choisya ternata</i>
‘Blackbird’	<i>Dierama pulcherrimum</i>
‘Limelight’	<i>Hydrangea paniculata</i>
‘Winter sun’	<i>Mahonia media</i>

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‘Transparent’	<i>Molinia caerulea</i>
Elder - ‘Black lace’	<i>Sambucus nigra</i>
‘Album’	<i>Veronicastrum virginicum</i>
Planting Mix 4	
‘Otoo Luyken’	<i>Prunus laurocerasus</i>
‘Snowmound’	<i>Spiraea nipponica</i>
‘Hancock’	<i>Symphoricarpos chenaultii</i>

Table F.3 Open Calcareous Grassland Species List

Meadowmania Lowland calcareous grassland mix (UKHab g1b / NVC CG2): ISH-ONE-ZZ-ZZ-D-L-0201-P02_DetailedPlantingPlanSheet1of2, Appendix B.

Common Name	Latin Name
Wild thyme	<i>Thymus polytrichus</i>
Horseshoe vetch (key calcareous indicator)	<i>Hippocrepis comosa</i>
Bird’s-foot trefoil	<i>Lotus corniculatus</i>
Kidney vetch	<i>Anthyllis vulneraria</i>
Meadow clary (if available)	<i>Salvia pratensis</i>
Small scabious	<i>Scabiosa columbaria</i>
Field scabious	<i>Knautia arvensis</i>
Greater knapweed	<i>Centaurea scabiosa</i>
Common knapweed	<i>Centaurea nigra</i>
Lady’s bedstraw	<i>Galium verum</i>
Bladder campion	<i>Silene vulgaris</i>
Clustered bellflower	<i>Campanula glomerata</i>
Harebell	<i>Campanula rotundifolia</i>
Salad burnet	<i>Sanguisorba minor</i>
Hoary plantain	<i>Plantago media</i>
Salad burnet (alternative name)	<i>Poterium sanguisorba</i>
Cowslip	<i>Primula veris</i>

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Common Name	Latin Name
Germander speedwell	<i>Veronica chamaedrys</i>
Rough hawkbit	<i>Leontodon hispidus</i>
Carline thistle	<i>Carlina vulgaris</i>
Common rock-rose	<i>Helianthemum nummularium</i>
Wild marjoram	<i>Origanum vulgare</i>
Common toadflax	<i>Linaria vulgaris</i>
Wild mignonette	<i>Reseda lutea</i>
Wild carrot	<i>Daucus carota</i>
Bulbous buttercup	<i>Ranunculus bulbosus</i>
Yarrow	<i>Achillea millefolium</i>
Sheep's fescue	<i>Festuca ovina</i>
Red fescue	<i>Festuca rubra</i>
Tor-grass (sparingly if needed)	<i>Brachypodium pinnatum</i>
Crested hair-grass	<i>Koeleria macrantha</i>
Quaking grass	<i>Briza media</i>
Downy oat-grass	<i>Helictotrichon pubescens</i>
Sweet vernal grass	<i>Anthoxanthum odoratum</i>
Common bent	<i>Agrostis capillaris</i>

Table F.4 Heathland Species Mix

ISH-ONE-ZZ-ZZ-D-L-0201-P02_DetailedPlantingPlanSheet1of2, Appendix B.

Common Name	Latin Name
Ling heather	<i>Calluna vulgaris</i>
Bell heather	<i>Erica cinerea</i>
Cross-leaved heath	<i>Erica tetralix</i>

Table F.5 Urban Tree species

ISH-ONE-ZZ-ZZ-D-L-0201-P02_DetailedPlantingPlanSheet1of2, Appendix B.

Common Name	Latin Name
Alder	<i>Alnus glutinosa</i>
Silver birch	<i>Betula pendula</i>
Hornbeam	<i>Carpinus betulus</i> 'Fastigiata'
Plena wild cherry	<i>Prunus avium</i> 'Plena'
Bird cherry	<i>Prunus padus</i>
English oak	<i>Quercus robur</i>

Table F.6 Species Currently Found on Site, or Locally that would be Appropriate to Include Within Seedmixes or Site Planting.

Common Name	Latin Name
Neutral grassland	
Red fescue	<i>Festuca rubra</i>
Common knapweed	<i>Centaurea nigra</i>
Creeping bent	<i>Agrostis stolonifera</i>
Creeping cinquefoil	<i>Potentilla reptans</i>
Ribwort plantain	<i>Plantago lanceolata</i>
Wild angelica	<i>Angelica sylvestris</i>
Common bird's-foot trefoil	<i>Lotus corniculatus</i>
Yorkshire-fog	<i>Holcus lanatus</i>
Meadow buttercup	<i>Ranunculus acris</i>
Meadow vetchling	<i>Lathyrus pratensis</i>
Ribwort plantain	<i>Plantago lanceolata</i>
Creeping cinquefoil	<i>Potentilla reptans</i>
Oxeye daisy	<i>Leucanthemum vulgare</i>
Rough hawkbit	<i>Leontodon hispidus</i>
Tufted vetch	<i>Vicia cracca</i>
Common bird's-foot trefoil	<i>Lotus corniculatus</i>

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Common Name	Latin Name
Yarrow	<i>Achillea millefolium</i>
Cock's-foot	<i>Dactylis glomerata</i>
Common bent	<i>Agrostis capillaris</i>
Crested dog's tail	<i>Cynosurus cristatus</i>
Common cat's-ear	<i>Hypochaeris radicata</i>
Red clover	<i>Trifolium pratense</i>
Selfheal	<i>Prunella vulgaris</i>
Calcareous	
Kidney vetch	<i>Anthyllis vulneraria</i>
wild thyme	<i>Thymus polytrichus</i>
small scabious	<i>Scabiosa columbaria</i>
salad burnet	<i>Poterium sanguisorba</i>
fairy flax	<i>Linum catharticum</i>
mouse-ear hawkweed	<i>Pilosella officinarum</i>
yellow-wort	<i>Blackstonia perfoliata</i>
quaking-grass	<i>Briza media</i>
sheep's fescue	<i>fescue ovina</i>
Common bird's foot trefoil	<i>Lotus corniculatus</i>
Zigzag clover	<i>Trifolium medium</i>
Bulbous buttercup	<i>Ranunculus bulbosus</i>
Rough hawkbit	<i>Leontodon hispidus</i>
Wild carrot	<i>Daucus carota</i>
Sweet vernal grass	<i>Anthoxanthum odoratum</i>
Common bent	<i>Agrostis capillaris</i>
Eyebright sp.	<i>Euphrasia</i>
Common restharrow	<i>Ononis repens</i>
Crested hair-grass	<i>Koeleria macrantha</i>
Yellow oat-grass	<i>Trisetum flavescens</i>

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Common Name	Latin Name
Crosswort	<i>Cruciata laevipes</i>
Sheep's sorrel	<i>Rumex acetosella</i>
Lady's bedstraw	<i>Galium verum</i>
Wild marjoram	<i>Origanum vulgare</i>
Viper's Bugloss	<i>Echium vulgare</i>
Herb-dominated – tall herbs	
Rosebay willowherb	<i>Chamaenerion angustifolium</i>
Great willowherb	<i>Epilobium hirsutum</i>
Wild carrot	<i>Daucus carota</i>
Toadflaxes	<i>Linaria spp.</i>
Mugwort	<i>Artemisia vulgaris</i>
Wormwood	<i>Artemisia absinthium</i>
Common fleabane	<i>Pulicaria dysenterica</i>
Dyer's green weed	<i>Reseda luteola</i>
Wild mignonette	<i>Reseda lutea</i>
Common knapweed	<i>Centaurea nigra</i>
Vipers bugloss	<i>Echium vulgare</i>
Common ragwort	<i>Jacobaea vulgaris</i>
St. John's wort	<i>Hypericum sp.</i>
Herb-dominated – creeping herbs	
Creeping cinquefoil	<i>Potentilla reptans</i>
Wild strawberry	<i>Fragaria vesca</i>
Mouse-ear hawkweed	<i>Pilosella officinarum</i>
Common bird's foot trefoil	<i>Lotus corniculatus</i>
Silverweed	<i>Potentilla anserina</i>