2.2.3 Ecology Report

PANATTONI / PDC UK 7 Ltd

ECOLOGYSOLUTIONS

Part of the ES Group

LAND AT JUPITER HOUSE, HORTON ROAD, COLNBROOK, SLOUGH

Ecological Assessment

April 2023
11329.EcoAss.vf1

ecology solutions for planners and developers

PROTECTED SPECIES

This report contains sensitive information.
Relating to protected species.
The information contained herein.
Should not be disseminated without the
prior consent of Ecology Solutions.

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APPENDICES

1. INTRODUCTION

1.1. Background & Proposals

1.1.1. Ecology Solutions was commissioned by Panattoni / PDC UK 7 Ltd in February 2023 to undertake an ecological assessment of land at Jupiter House, Horton Road, Colnbrook, Slough (see Plan ECO1), hereafter referred to as the application site.

1.1.2. The description of the proposed development is as follows:

"Demolition of the existing buildings (Valerie House and Jupiter House) and the development of a commercial building with flexible general industrial and storage and distribution employment floor space, with associated service yards, car parking and landscaping"

1.1.3. A copy of the Soft Landscape Scheme for the proposals has been produced by Stephenson Halliday and is included at Appendix 1.

1.2. Application Context

1.2.1. The application site benefits from extant planning permission under planning reference P/09811/001, granted in April 2022. The extant permission provides a clear legal fallback, it has established that an intensified employment use is acceptable and is an important part of the sites baseline in the consideration of this planning application, especially given the *de minimis* difference in the quantum of development.

1.2.2. The extant planning permission delivers 7,320 sqm GEA of commercial floorspace over six smaller units, compared to the proposed development which seeks consent for a single unit of 7,331 sq m (GEA) of commercial floorspace.

1.2.3. An updated planning application has been submitted in response to occupier demand for HQ and last mile distribution centres to the west of London, which are built to Grade A standards and high ESG credentials.

1.2.4. At present, based on market intelligence, there is a very limited supply of units between 50,000 – 100,000 sq ft and a greater supply of smaller units in the local market. Due to proximity to Heathrow Airport a number of potential occupiers have requirements location critical to the immediate area and which currently cannot be satisfied due to the lack of supply.

1.2.5. This updated application submitted is in direct response to that need.

1.2.6. With specific reference to this report, the extant planning permission was also supported by an Ecological Appraisal. This updated assessment demonstrates that the scheme remains acceptable from an ecological perspective and accords with the

assessment work previously undertaken, confirming that the application site is of very limited ecological value and that biodiversity net gains can be secured.

1.3. Application Site Characteristics

1.3.1. The application site is located to the north of Horton Road in Colnbrook, near Slough. The application site is surrounded by existing industrial development, with Horton Road forming the southern boundary. Further afield, the M25 motorway and Heathrow Airport are situated towards the east, with a large reservoir situated to the south and open countryside towards the west.

1.3.2. The application site comprises existing industrial premises supporting two existing warehouse buildings and hardstanding, with small areas of amenity planting and scrub.

1.4. Ecological Assessment

1.4.1. This document assesses the ecological interest of the application site as a whole. The importance of the habitats present is evaluated with regard to current guidance published by the Chartered Institute of Ecology and Environmental Management (CIEEM)1.

1.4.2. The report also sets out the existing baseline conditions for the application site, setting these in the correct planning policy and legal framework and assessing any potential impacts which could occur from proposed development at the site. Appropriate mitigation where necessary is identified such that it will offset any negative impacts and where possible provide for an ecological enhancement of the application site, in accordance with relevant planning policy.

[1] CIEEM (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine.* Version 1.2. Chartered Institute of Ecology and Environmental Management, Winchester.

2. SURVEY METHODOLOGY

2.1. The methodology utilised for the survey work can be split into three areas, namely desk study, habitat survey and faunal survey. These are discussed in more detail below.

2.2. Desk Study

2.2.1. In order to compile background information on the application site and its immediate surroundings, Ecology Solutions contacted Greenspace Information for Greater London (GiGL), Surrey Biodiversity Information Centre (SBIC) and Thames Valley Environmental Records Centre (TVERC) in February 2023.

2.2.2. Information has been provided by GiGL, SBIC and TVERC and reference is made to records returned by the data search where relevant throughout this document. Due to publication conditions the records provided are not attached to this report. Information regarding designated sites is also shown where appropriate on Plan ECO1.

2.2.3. Further information on designated sites from a wider search area was also obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC)[2] database. This information is reproduced at Appendix 2 and is illustrated where appropriate on Plan ECO1.

2.3. Habitat Survey Methodology

2.3.1. A habitat survey was carried out in March 2023 to ascertain the general ecological value of the land contained within the boundaries of the application site and to identify the main habitats and associated plant species, with notes on fauna utilising the application site.

2.3.2. The application site was surveyed based around a combination of extended Phase 1 survey methodology[3] and UK Habitat Classification (UKHab) methodology[4], as recommended by Natural England and DEFRA, whereby the habitats present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail.

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[2] http://www.magic.gov.uk

[3] Joint Nature Conservation Committee (2010). *Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit*. England Field Unit, Nature Conservancy Council, reprinted JNCC, Peterborough.

[4] Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). *The UK Habitat Classification User Manual Version 1.1* at http://www.ukhab.org/

2.3.3. Using the above method, the application site was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified.

2.3.4. All of the species that occur in each habitat would not necessarily be detected during survey work carried out at any given time of the year, since different species are apparent at different seasons. However given the paucity of vegetation present at the application site, it is considered that an accurate and robust assessment has been made.

2.4. Faunal Survey

2.4.1. General faunal activity observed during the course of the survey was recorded, whether visually or by call. Specific attention was paid to the potential presence of any protected, rare, notable or Priority species. In addition, specific surveys were undertaken in relation to bats.

2.4.2. **Bats.** An assessment was undertaken in March 2023 to assess the potential for roosting bats within any buildings, structures and trees present within and immediately adjacent to the application site. The work was undertaken by an experienced bat worker and aimed to establish the likelihood of presence / absence of bats.

2.4.3. Field surveys were undertaken with regard to best practice guidelines issued by Natural England (20045), the Joint Nature Conservation Committee (20046) and the Bat Conservation Trust (20077).

2.4.4. The probability of a building being used by bats as a summer roost site increases if it:

- is largely undisturbed;
- dates from pre 20th Century;
- has a large roof void with unobstructed flying spaces;
- has access points for bats (though not too draughty);
- has wooden cladding or hanging tiles; and
- is in a rural setting and close to woodland or water.

2.4.5. Conversely, the probability decreases if a building is of a modern or pre-fabricated design / construction, is in an urban setting, has small or cluttered roof voids, has few gaps at the eaves or is a heavily disturbed premises.

2.4.6. The main requirements for a winter / hibernation roost site are that it maintains a stable (cool) temperature and humidity. Sites

[5] Mitchell-Jones, A. J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.
[6] Mitchell-Jones, A.J. & McLeish, A.P. (Eds.) (2004). *Bat Workers' Manual*. 3rd edition. Joint Nature Conservation Committee, Peterborough.
[7] Bat Conservation Trust (2007). *Bat Surveys – Good Practice Guidelines*. Bat Conservation Trust, London.

commonly utilised by bats as winter roosts include cavities / holes in trees, underground sites and parts of buildings. Whilst different species may show a preference for one of these types of roost site, none are solely dependent on a single type.

2.4.7. An assessment of the suitability of the application site and the immediate vicinity to support commuting and foraging bats in the local area was also undertaken.

3. ECOLOGICAL FEATURES

3.1. The application site was subject to an ecological survey in March 2023. The vegetation present enabled the habitat types to be satisfactorily identified and an accurate assessment of the ecological interest of the habitats to be undertaken.

3.2. The following main habitat / vegetation types were identified within the application site:

- Existing Buildings and Hardstanding;
- Scrub; and
- Ornamental Planting and Scattered Trees.

3.3. The locations of these habitats are shown on Plan ECO2. Each habitat present is described below with an account of their representative plant species.

3.4. Existing Buildings and Hardstanding

3.4.1. The application site primarily comprises two large existing warehouse buildings with attached offices (B1 and B2 on Plan ECO2) and associated hardstanding.

3.4.2. Both buildings comprise brick walls with flat roofs, with metal cladding also present on B2. At the time of survey in March 2023, neither building was recorded to be in active use, although both were recorded to be in very good condition.

3.4.3. The majority of the application site comprises extensive areas of hardstanding, including a mixture of concrete, paving slabs, tarmac and gravel. In the main these areas were recorded to be devoid of any vegetation, with occasional ruderal species such as Dandelion *Taraxacum officinale* agg., Bristly Oxtongue *Helminthoides echiodes* and Sow-thistle *Sonchus oleraceus* present in cracks.

3.5. Scrub

3.5.1. The central part of the application site supports an small band of recolonising scrub, primarily comprising the non-native species Butterfly-bush *Buddleja davidii* in addition to Bramble *Rubus fruticosus* agg..

3.5.2. It is also noted that the non-native species Cotoneaster has also previously been recorded within the application site boundary, although no evidence to indicate the continued presence of this species was recorded during the survey.

3.6. Ornamental Planting and Scattered Trees

3.6.1. An area of ornamental planting with scattered trees is associated with the western boundary of the application site. This area was recorded to support a range of ornamental, non-

native shrub species including Tutsan *Hypericum androsaemum*, Rose *Rosa sp.*, Barberry *Berberis sp.*, Cypress *Cupressus sp.* and Strawberry Tree *Arbutus unedo*. Scattered ruderal species also recorded in this area include Ragwort *Senecio jacobaea*, Spurge *Euphorbia sp.* and Dove's Foot Cranesbill *Geranium molle*.

3.6.2. Several scattered trees are also present within the application site, particularly along part of the western boundary. Species present include Silver Birch *Betula pendula*, Rowan *Sorbus aucuparia*, Ash *Fraxinus excelsior* and Horse Chestnut *Aesculus hippocastanum.*

3.7. Background records

3.7.1. The desk study undertaken with GiGL, SWT and TVERC did not identify any records of notable or protected botanical species within or directly adjacent to the application site.

3.7.2. The nearest record of notable plant species returned pertains to a record of Field Pepperwort *Lepidium campestre,* returned from a location approximately 0.4km to the south of the application site, recorded in 2010.

3.7.3. Other records of protected and notable plant species returned from the wider search area include Cornflower *Centaurea cyanus,* Common Cudweed *Filago vulgaris,* Corn Marigold *Glebionis segetum,* Bluebell *Hyacinthoides non-scripta,* Yellow Vetchling *Lathyrus aphaca,* Dittander *Lepidium latifolium,* Wild Pansy *Viola tricolor,* Devil's-bit Scabious *Succisa pratensis,* Hound's-tongue *Cynoglossum officinale,* and Ragged-Robin *Silene flos-cuculi.*

3.7.4. None of these protected or notable botanical species were recorded within the application site boundary during the survey and given the paucity of habitats it is considered highly unlikely that the application site would support any of these species.

4. WILDLIFE USE OF THE APPLICATION SITE

4.1. During the survey general observations were made of any faunal use of the application site with specific attention paid to the potential presence of protected or notable species. Specific surveys were also undertaken with regard to bats.

4.2. Bats

4.2.1. The existing buildings present within the application site do not offer any potential opportunities for roosting bats, on account of their construction and condition. Both buildings were examined externally for bats with no suitable access points identified and no other evidence of this faunal group recorded.

4.2.2. Similarly, there are no buildings or structures present within or immediately adjacent to the application site which provide any potential opportunities for roosting bats.

4.2.3. In addition, there are no trees within or immediately adjacent to the application site which have features of potential value for roosting bats.

4.2.4. The application site forms part of an existing industrial estate and is surrounded by industrial development on all sides. In addition, vegetation present within the application site is very limited, with the vast majority of the application site comprising built form. As such, the application site provides negligible opportunities for foraging and commuting bats.

4.2.5. On this basis, the development proposals are unlikely to lead to adverse effects to bats (roosting, commuting or foraging), and mitigation measures would not therefore be required. No further consideration has therefore been afforded to bat species within this assessment.

4.2.6. **Background information.** The data search undertaken with GiGL, SWT and TVERC did not return any records of bat species from within or immediately adjacent to the application site. The closest record of a bat species returned pertains to a Brown Long-eared Bat *Plecotus auritus*, returned from a location approximately 0.5km to the west of the application site from 2019.

4.2.7. Other records of bat species returned from the local area include Serotine *Eptescius serotinus,* Daubenton's bat *Myotis daubentoniid,* Natterer's bat *Myotis nattereri*, Noctule *Nyctalus noctula,* Nathusius's Pipistrelle *Pipistrellus nathusii*, Common Pipistrelle *Pipistrellus pipistrellus,* and Soprano Pipistrelle *Pipistrellus pygmaeus.*

4.3. Birds

4.3.1. Trees and ornamental scrub present within the application site provide small areas of superficially suitable foraging and nesting

habitat for common bird species. However, the vast majority of the application site comprises existing built form, and does not provide any nesting or foraging opportunities for this group.

4.3.2. **Background information.** The data search undertaken with GiGL, SWT and TVERC did not return any records of protected and notable bird species within or directly adjacent to the application site.

4.3.3. Records of protected and notable bird species were however returned within the wider search area, notably associated with the nearby designated sites (see below). The closest record pertained to House Sparrow *Passer domesticus* and Gannet *Morus bassanus* from a location approximately 0.3km to the west of the application site from 2022 and 2020 respectively.

4.4. Other Protected and Notable Species

4.4.1. Given the paucity of natural habitats, the application site does not provide any other opportunities for protected or notable faunal species, such as mammals (including Badgers *Meles meles*), reptiles or amphibians (including Great Crested Newts *Triturus cristatus*).

4.4.2. The desk study exercise undertaken with GiGL, SWT and TVERC returned a limited number of records of other protected and notable species from the local area.

5. ECOLOGICAL EVALUATION

5.1. The Principles of Site Evaluation

5.1.1. The latest guidelines for ecological evaluation produced by CIEEM propose an approach that involves professional judgement, but makes use of available guidance and information, such as the distribution and status of the species or features within the locality of the project.

5.1.2. The methods and standards for site evaluation within the British Isles have remained those defined by Ratcliffe[8]. These are broadly used across the United Kingdom to rank sites, so priorities for nature conservation can be attained. For example, current Site of Special Scientific Interest (SSSI) designation maintains a system of data analysis that is roughly tested against Ratcliffe's criteria.

5.1.3. In general terms, these criteria are size, diversity, naturalness, rarity and fragility, while additional secondary criteria of typicalness, potential value, intrinsic appeal, recorded history and the position within the ecological / geographical units are also incorporated into the ranking procedure.

5.1.4. Any assessment should not judge sites in isolation from others, since several habitats may combine to make it worthy of importance to nature conservation.

5.1.5. Further, relying on the national criteria would undoubtedly distort the local variation in assessment and therefore additional factors need to be taken into account, e.g. a woodland type with comparatively poor species diversity, common in the south of England may be of importance at its northern limits, say in the border country.

5.1.6. In addition, habitats of local importance are often highlighted within a local Biodiversity Action Plan (BAP).

5.1.7. Levels of importance can be determined within a defined geographical context from the immediate site or locality through to the international level.

5.1.8. The legislative and planning policy context are also important considerations and have been given due regard throughout this assessment.

[8] Ratcliffe, D A (1977). *A Nature Conservation Review: the Selection of sites of Biological National Importance to Nature Conservation in Britain*. Two Volumes. Cambridge University Press, Cambridge.

5.2. Habitat Evaluation

Designated sites

5.2.1. **Statutory sites.** There are no statutory designated sites of nature conservation interest within or immediately adjacent to the application site boundary.

5.2.2. The nearest statutory designated site is South West London Waterbodies Special Protection Area (SPA) / Ramsar site / Wraysbury Reservoir Site of Special Scientific Interest (SSSI), which is situated approximately 0.16km to the south-west of the application site boundary at its closest point (see Plan ECO1).

5.2.3. South West London Waterbodies SPA / Ramsar site is 828.14 hectares in size and is classified on account of the overwintering populations of Gadwall *Anas strepera* and Shoveler *Anas clypeata* that the site supports. The SPA citation also notes that the site supports nationally important numbers of Cormorant *Phalacrocorax carbo*, Great Crested Grebe *Podiceps cristatus*, Tufted Duck *Aythya fuligula*, Pochard *Aythya ferina* and Coot *Fulica atra*.

5.2.4. The closest component of the SPA / Ramsar site to the application site is Wraysbury Reservoir SSSI. This designated site is 205 hectares in size and is also designated on account of the populations of wintering waterfowl that the site supports.

5.2.5. The application site is separated from the designated sites by existing industrial development and roads. As such, subject to the adoption of standard engineering protocols and best practice throughout construction, the development proposals would not lead to any adverse effect either during construction or operation.

5.2.6. On the basis that the proposals will not result in a material change in the type of use of the site (i.e. the site will be retained as industrial development), there is no potential for adverse effects to arise to the designated sites via pathways such as increased recreational pressure or disturbance.

5.2.7. Similarly, it is considered that the development proposals are unlikely to result in any material increase in water use compared with the existing baseline situation, notwithstanding the fact that confirmation would need to be secured from the water supplier regarding capacity to serve the new development in any event.

5.2.8. It is understood that the drainage proposals for the new development will continue to utilise the existing mains drainage for the industrial estate, such that there would be no potential for contaminated run-off to enter the designated sites.

5.2.9. Furthermore, the application site and adjoining land parcels do not support any habitats which provide opportunities for the

qualifying species associated with the designated sites, and therefore clearly does not constitute functionally linked land.

5.2.10. In summary, therefore, the proposed development is not likely to lead to a significant effect on any statutory designated sites either when the proposals are considered alone or in combination with any other plans and projects.

5.2.11. **Non-statutory sites.** There are no non-statutory designated sites of nature conservation interest within or immediately adjacent to the application site.

5.2.12. The nearest non-statutory designated site is Wraysbury Reservoir Site of Nature Conservation Importance (SNCI), situated approximately 0.1km to the south-west of the application site boundary at its closest point (see Plan ECO1).

5.2.13. Wraysbury Reservoir SNCI is designated on account of the grazed grassland banks that the site supports, which are identified as providing a buffer for the adjoining SSSI / SPA / Ramsar site.

5.2.14. The application site is separated from all non-statutory designated sites within the local area by areas of existing development and infrastructure. As such, it is not considered that any adverse impacts would arise during either the construction or operational period, on the basis that the proposals constitute the retention of industrial units at the application site.

5.2.15. Nonetheless, standard engineering protocols and best practice shall be adopted throughout the construction phase, in order to minimise the potential for adverse effects to occur through pathways such as dust deposition and contaminated run-off. This is likely to include measures such as storage of materials such as fuels, oils and spoil in suitable bunded locations and the wheel washing to mitigate risks from dust.

5.2.16. It is envisaged that further details would be set out within a comprehensive Construction Environmental Management Plan (CEMP), which may be secured via a suitably worded planning condition.

5.2.17. Subject to the incorporation of standard avoidance and mitigation measures during construction, it is considered that the proposed development would not lead to any significant adverse effects upon non-statutory designated sites.

Habitats within the application site

5.2.18. As outlined above, the application site primarily comprises existing buildings and hardstanding, which are not of any ecological value and do not provide any opportunities for faunal species.

5.2.19. Existing trees, scrub and ornamental planting present within the application site provides some limited ecological interest, although these areas are small in extent and are of limited botanical diversity. As such, losses to these habitats to facilitate the development proposals is of negligible ecological significance.

5.2.20. The development proposals provide an opportunity to not only mitigate for minor losses but moreover deliver net gains compared to the existing situation through the provision of new landscape planting within the development.

5.2.21. As outlined at Appendix 1, a range of habitat types are proposed, including native wildflower grassland, species-rich native trees and scrub, native hedgerows and ornamental planting. These habitats will represent an increase in both the extent and diversity of the habitats present within the application site boundary and will also provide opportunities for faunal species.

5.2.22. Having undertaken assessment work utilising the latest version of the Defra Metric (v4.0), the development proposals are anticipated to result in significant on-site net gains, both in respect of habitat units (+121.08%) and linear hedgerow units (+100%). A copy of the Summary Sheet from the metric is included at Appendix 3 of this assessment.

5.2.23. In summary, the development proposals will offset losses to existing species-poor habitats and moreover deliver significant net gains compared to the existing situation.

5.3. Faunal Evaluation

Birds

5.3.1. **Legislation.** Section 1 of the Wildlife and Countryside Act is concerned with the protection of wild birds, whilst Schedule 1 lists species which are protected by special penalties.

5.3.2. **Application Site Evaluation, Mitigation and Enhancements.** As all species of birds receive general protection whilst nesting, it is recommended that the clearance of any suitable nesting habitats should be undertaken outside of the main bird nesting season (typically considered to March to July inclusive).

5.3.3. Should this not be possible, potential nesting habitat should be subject to a nesting bird check by an experienced ecologist, immediately prior to its removal. Should any nesting birds be identified, then the nest should be fully safeguarded in situ and subject to an appropriate buffer (as advised by the ecologist), with the vegetation to be removed only once it has been confirmed all fledglings have left the nest and it is no longer active.

5.3.4. The provision of new native tree, hedgerow and grassland planting within the development will provide some limited opportunities for nesting and foraging birds, which are comparable to those currently present within the application site.

5.3.5. Mindful of the proximity of the application site to Heathrow Airport, new bird nesting boxes are not proposed at this site in order to mitigate potential risks associated with bird strike.

Other Species

5.3.6. The provision of new native species-rich habitats within the application site, including flowering and nectar-rich botanical species, will provide improved opportunities for invertebrates.

6. PLANNING POLICY CONTEXT

6.1. The planning policy framework that relates to nature conservation at the application site is issued at two main administrative levels – nationally through the National Planning Policy Framework and locally through policies within the Slough Local Plan. Any proposed development will be judged in relation to the policies contained within these documents.

6.2. National Policy

National Planning Policy Framework

6.2.1. The National Planning Policy Framework (NPPF) sets out the Government's requirements for the planning system and was adopted on 27th March 2012 and subsequently revised on the 24 July 2018, 19 February 2019, and 20 July 2021.

6.2.2. The key element of the NPPF is that there should be "*a presumption in favour of sustainable developmen*t" (paragraphs 10 to 11).

6.2.3. The revised NPPF is comparable to previous versions (which it replaces), including reference to minimising impacts on biodiversity and provision of net gains to biodiversity where possible (paragraph 179) and ensuring that Local Authorities place appropriate weight to statutory and non-statutory nature conservation designations, protected species, and biodiversity.

6.2.4. The NPPF also considers the strategic approach that Local Authorities should adopt with regard to the protection, maintenance and enhancement of Green Infrastructure, priority habitats and ecological networks, and the recovery of priority species.

6.2.5. Paragraph 180 of the NPPF comprises a number of principles which Local Authorities should apply, including:

- encouraging opportunities to incorporate biodiversity in and around developments;
- provision for refusal of planning applications if significant harm cannot be avoided, mitigated or, as a last resort, compensated for; and
- the provision for the refusal for developments resulting in the loss or deterioration of 'irreplaceable' habitats unless the need for, and benefits of, the development in that location clearly outweigh the loss.

6.2.6. National policy therefore implicitly recognises the importance of biodiversity and that with sensitive planning and design, development and conservation of the natural heritage can co-exist, and benefits can, in certain circumstances, be obtained.

6.3. Local Policy

The Slough Local Plan

6.3.1. The current Local Development Plan for Slough sets out the planning framework of relevance to the application site. The Development Plan consists of a number of documents including 'The Core Strategy Development Plan' (adopted in December 2008) and Local Plan Saved Policies (adopted in 2004).

6.3.2. Policies relevant to ecology and nature conservation outlined within these documents are summarised below.

6.3.3. **Core Policy 8: Sustainability and the Environment** is concerned with the sustainability of new developments to improve the quality of the environment and address the impact of climate change.

6.3.4. **Core Policy 9: Natural and Built Environment** states that a development will not be permitted unless it enhances and protects natural habitats and the biodiversity of the area, including corridors between biodiversity rich areas.

6.3.5. **Saved Policies EN21, EN22 and EN23** of the Local Plan are concerned with the protection of statutory designated sites, non-statutory designated sites and areas of local nature conservation interest respectively.

6.3.6. It is understood that the Council is currently in the process of producing an updated Local Plan, although at the present time there are no draft policies available.

6.4. Discussion

6.4.1. Recommendations have been put forward in this report that would fully safeguard the existing ecological interest of the application site, and wherever possible, measures to enhance ecological and biodiversity value have been set out. Based on surveys undertaken and assessment, the presence and potential presence of protected species has been given due regard and measures to enhance the application site for such species have been put forward.

6.4.2. In conclusion, implementation of the measures set out in this report enable emerging development proposals to fully accord with planning policy for ecology and nature conservation at all administrative levels.

7. SUMMARY AND CONCLUSIONS

7.1. Ecology Solutions was commissioned by Panattoni / PDC UK 7 Ltd in February 2023 to undertake an ecological assessment of land at Jupiter House, Horton Road, Colnbrook, Slough.

7.2. There are no statutory or non-statutory designated sites of nature conservation interest within or adjacent to the application site. The application site is situated approximately 0.16km to the north of South West London Waterbodies Ramsar site / SPA / Wraysbury Reservoir SSSI. The nearest non-statutory designated site is Wraysbury Reservoir SNCI, situated approximately 0.09km to the south of the application site boundary at its closest point.

7.3. Given the type of development and current habitats on site, subject to the implementation of standard engineering protocols and best practice throughout the construction period, it is considered that the proposed development is not likely to lead to any significant effects any designated sites within the local area, during either the construction or operational phase, both considered alone and in combination with other plans and projects.

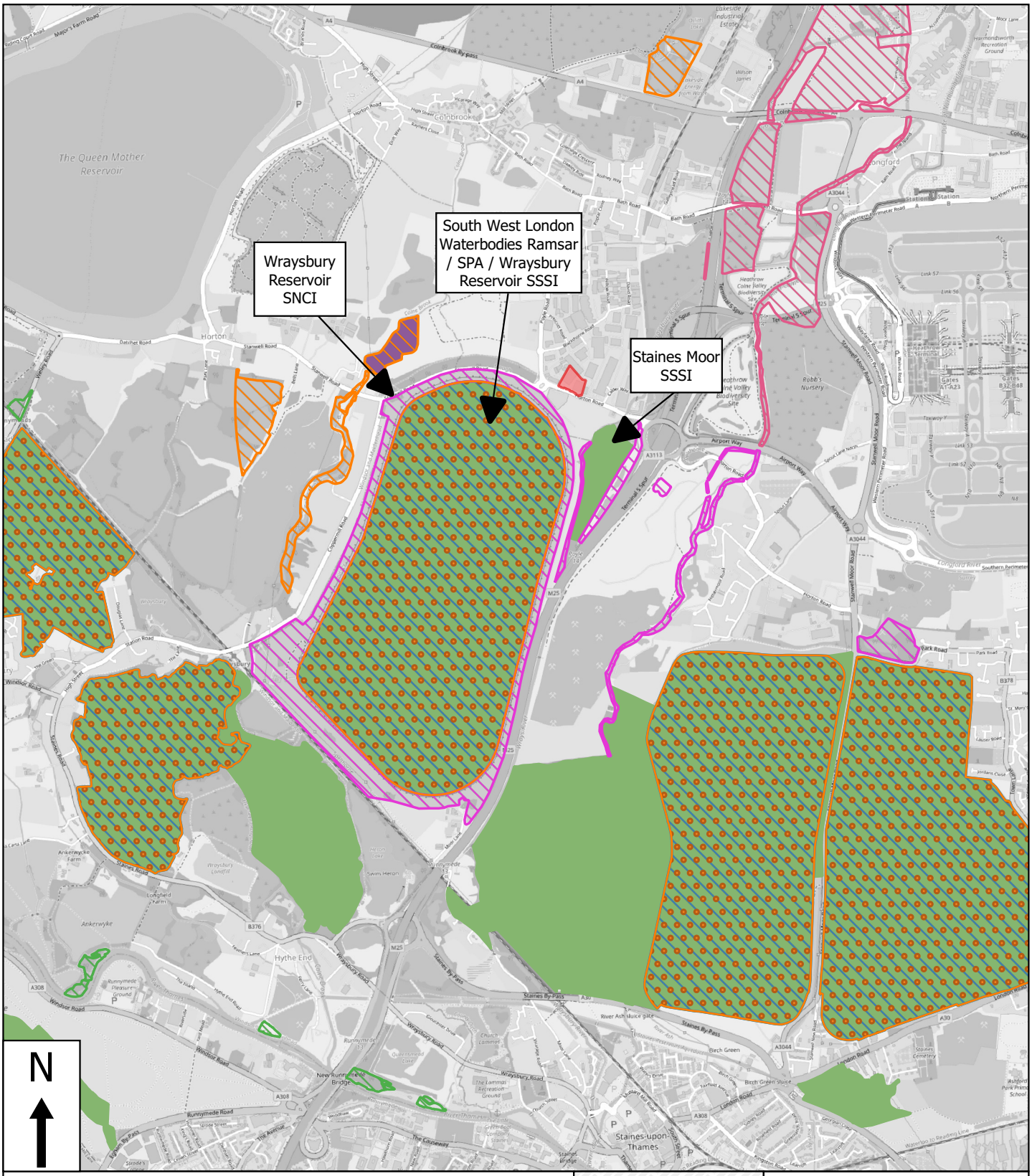
7.4. The application site is considered to be of very low ecological value at present, dominated by existing built form with small areas of ornamental planting, trees and scrub. The development proposals provide an opportunity to deliver net gains compared to the existing situation through the provision of a range of more diverse habitats. Appropriate mitigation measures have also been proposed, including measures to safeguard nesting birds.

7.5. In conclusion, on the evidence of the ecological surveys undertaken, the application site is not of intrinsic value from a nature and conservation perspective. The nature and design of the proposed development and the incorporation of the recommendations put forward in this report will ensure that there will be no adverse effects to designated sites, habitats of ecological significance or protected species, and moreover will ensure that the proposals deliver significant net gains, in line with emerging legislation.

PLANS

PLAN ECO1

Application Site Location and Ecological Designations



KEY:

- APPLICATION SITE LOCATION
- SITE OF SPECIAL SCENTIFIC INTEREST (SSSI)
- SPECIAL PROTECTION AREA (SPA)
- RAMSAR
- LOCAL NATURE RESERVE (LNR)
- BERKSHIRE LOCAL WILDLIFE SITE (LWS)
- SURREY SITE OF NATURE CONSERVATION IMPORTANCE (SNCI)
- SITE OF METROPOLITAN IMPORTANCE FOR NATURE CONSERVATION (MSINC)
- ANCIENT WOODLAND

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11329: LAND AT JUPITER HOUSE, HORTON ROAD, COLNBROOK

PLAN ECO1: APPLICATION SITE LOCATION & ECOLOGICAL DESIGNATIONS

Rev: A

Apr 23

PLAN ECO2

Ecological Features

Key:

- APPLICATION SITE BOUNDARY
- EXISTiNG BUILDING
- HARDSTANDING
- ORNAMENTAL PLANTING
- SCRUB
- TREE

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11329: LAND AT JUPITER HOUSE, HORTON ROAD, COLNBROOK

PLAN ECO2: ECOLOGICAL FEATURES

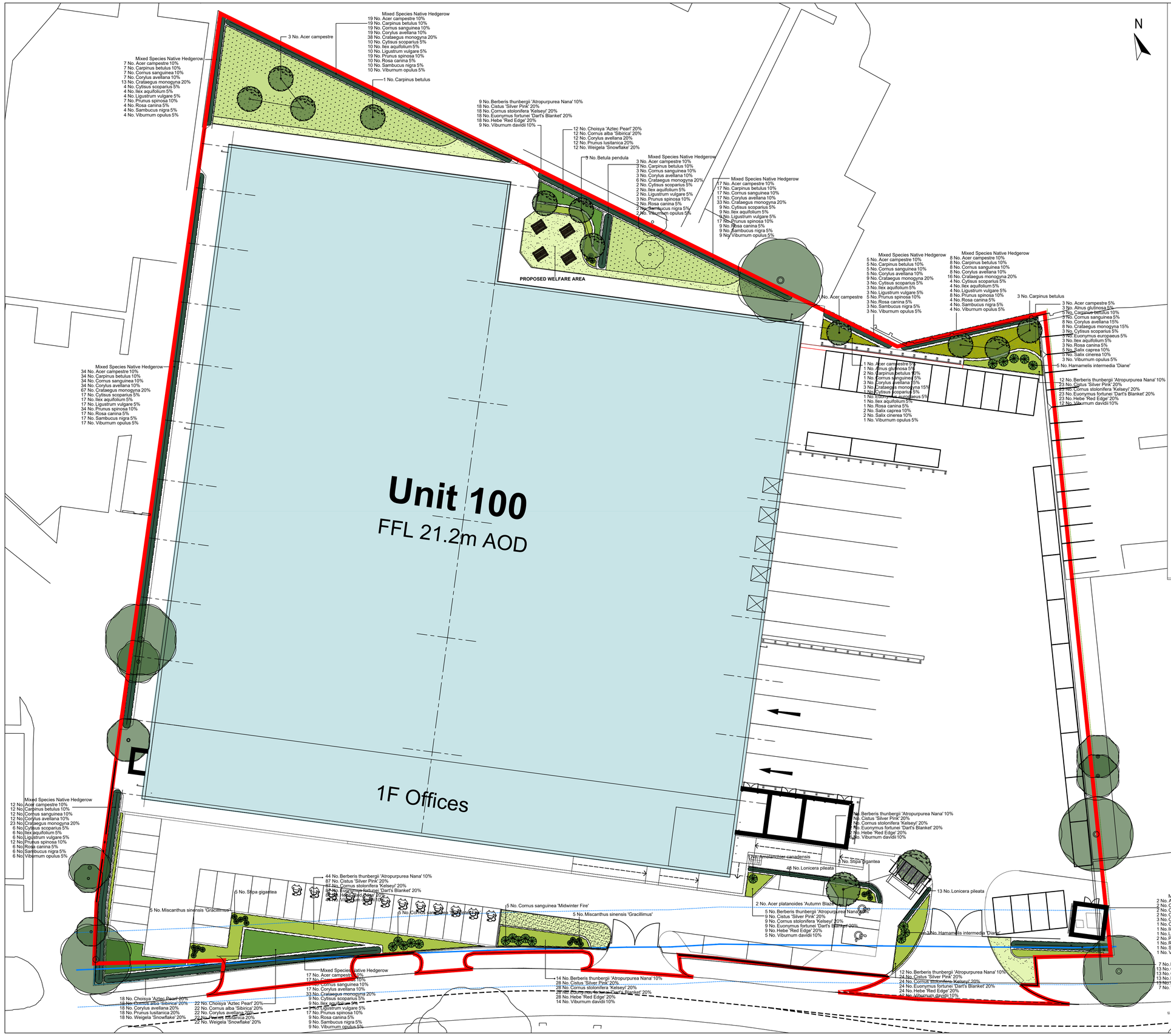
Rev: A

Apr '23

APPENDICES

APPENDIX 1

Detailed Soft Landscape Scheme (Stephenson Halliday)



KEY

EXISTING HEDGEROW AND TREES TO BE RETAINED AND PROTECTED

EXTRA HEAVY STANDARD TREES
14-20cm stem girth
4.0-6.0m height
1.75-2m clear stem
Rootballed
1500x1500x900mm tree pits

Species	Common name
Acer campestre	Field Maple
Betula pendula	Silver Birch

EXTRA HEAVY STANDARD TREES
14-16cm stem girth
4.0-4.5m height
1.75-2m clear stem
Rootballed
1500x1500x900mm tree pits

Species	Common name
Acer freemanii 'Autumn Blaze'	Maple clvr.

SPECIMEN SHRUBS
(*300mm depth of topsoil + minimum 300mm depth subsoil*)

Species	Supply Size	Pot Size
Amelanchier canadensis	800-1000mm	10L
Cornus sanguinea 'Midwinter Fire'	800-1000mm	10L
Miscanthus sinensis 'Gracillimus'	Full Pot	10L
Stipa gigantea	Full Pot	10L

MIXED SPECIES NATIVE HEDGEROW (TIER TWO AND THREE)
(*300mm depth of topsoil + minimum 600mm depth subsoil*)
Planted at 450mm centres in a double staggered row. Rows to be 500mm apart.
Transplants planted in groups of 3-7 of the same species.
Shallow rooted species selected to enable planting within easement.
Species marked # to be used in limited quantity as these are noted as having some potential to attract birds.

%	Species	Common Name	Size	Age	Root/Pot Size
10	Acer campestre	Field Maple	600-800mm	1+1	OG
10	Carpinus betulus	Hornbeam	600-800mm	1+1	OG
10	Cornus sanguinea #	Dogwood	600-800mm	1+1	OG
10	Corylus avellana	Hazel	600-800mm	1+2	OG
20	Crataegus monogyna #	Hawthorn	600-800mm	1+1	OG
5	Cytisus scoparius	Broom	600-800mm	1+1	OG
5	Ilex aquifolium #	Holly	300-400mm		3L
10	Prunus spinosa #	Blackthorn	600-800mm	1+1	OG
5	Rosa canina #	Dog Rose	600-800mm	1+1	OG
5	Sambucus nigra #	Elder	600-800mm	1+1	OG
5	Ligustrum vulgare #	Wild Privet	600-800mm	1+1	OG
5	Viburnum opulus #	Guelder Rose	600-800mm	1+2	OG

THICKET (WOODLAND EDGE) MIX PLANTING (TIER THREE)
(*300mm depth of topsoil + minimum 600mm depth subsoil*)
Where woodland or thicket is planted next to a hard surface/kerb/fence, it should be positioned 1m from the edge. Whips/Transplants planted in groups of 5-11 of the same species on a 2.0m grid. Planting to be underseeded with 'DLF PRO FLORA 7 Hedgerow and Light Shade' or similar approved. Sown at a rate of 5g/m².
Species marked # to be used in limited quantity as these are noted as having some potential to attract birds.

%	Species	Size	Age	Root/Pot Size
5	Acer campestre	600-800mm	1+1	OG
5	Alnus glutinosa	600-800mm	1+1	OG
10	Carpinus betulus	600-800mm	1+1	OG
5	Cornus sanguinea #	600-800mm	1+1	OG
15	Corylus avellana	600-800mm	1+2	OG
15	Crataegus monogyna #	600-800mm	1+1	OG
5	Euonymus europaeus #	600-800mm	1+1	OG
5	Ilex aquifolium #	300-400mm		3L
5	Cytisus scoparius	600-800mm	1+1	OG
5	Rosa canina #	600-800mm	1+1	OG
10	Salix caprea	600-800mm	0/1	OG
10	Salix cinerea	600-800mm	0/1	OG
5	Viburnum opulus #	600-800mm	1+1	OG

LOW ORNAMENTAL SHRUB PLANTING
(*300mm depth of topsoil + minimum 300mm depth subsoil*)
Shrubs below 1m ultimate height
Species to be random mixed in groups of 5-11 of the same species.

%	Species	Supply Size	Pot	Spacing
10	Berberis thunbergii 'Atropurpurea Nana'	20-30cm	3L	0.45m c/s
20	Cistus 'Silver Pink'	30-40cm	3L	0.45m c/s
20	Cornus stolonifera 'Kelseyii'	30-40cm	3L	0.45m c/s
20	Euonymus fortunei 'Dart's Blanket'	20-30cm	3L	0.45m c/s
20	Hebe 'Red Edge'	20-30cm	3L	0.45m c/s
10	Viburnum davidii	20-30cm	3L	0.45m c/s

TALL ORNAMENTAL SHRUB PLANTING
(*300mm depth of topsoil + minimum 300mm depth subsoil*)
Shrubs above 1m ultimate height
Species to be random mixed in groups of 5-11 of the same species.
Species marked # to be used in limited quantity as these are noted as having some potential to attract birds.

%	Species	Supply Size	Pot	Spacing
20	Choisya 'Aztec Pearl'	40-60cm	3L	0.6m c/s
20	Cornus alba 'Sibirica' #	40-60cm	3L	0.6m c/s
20	Corylus avellane	60-80cm	3L	0.6m c/s
20	Prunus lusitanica #	40-60cm	3L	0.6m c/s
20	Weigela 'Snowflake'	40-60cm	3L	0.6m c/s

AMENITY GRASS AREAS
(*150mm depth of topsoil + minimum 150mm depth subsoil*)
DLF seed mixture 'PM 120 Slowgrowth' or similar approved.
Sown at a rate of 35-50g/m².

SPECIES RICH MEADOW AREAS
(Cultivated subsoil to a depth of *300mm*)
Emorsgate EM2 General Purpose meadow mixture or similar approved. Sown at a rate of 5g/m².

01	05-04-23	Issued for planning	CS	JM	CS
00	31-03-23	First Issue for Comment	CS	JM	CS

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Panattoni UK

Horton Road
Poyle

Detailed Soft Landscape Scheme

Drawn	Date	Checked	Date	Approved	Date
CS	31-03-23	JM	31-03-23	A1	31-03-23

Scale	Orig Size	Status
1:250	A1	Comment

Drawing No. 1000 — Rev. 01

File Path 0511-05-03

Scale 0 2.5 5 7.5 10 12.5m

APPENDIX 2

Information obtained from MAGIC

11329: Horton Road, Poyle

Legend

- Local Nature Reserves (England)
- National Nature Reserves (England)
- Ramsar Sites (England)
- Proposed Ramsar Sites (England)
- Sites of Special Scientific Interest (England)
- Special Areas of Conservation (England)
- Possible Special Areas of Conservation (England)
- Special Protection Areas (England)
- Potential Special Protection Areas (England)

Ancient Woodland (England)

- Ancient and Semi-Natural Woodland
- Ancient Replanted Woodland

Projection = OSGB36
xmin = 494600
ymin = 172100
xmax = 511300
ymax = 180000

0 1 2
km

Map produced by MAGIC on 24 March, 2023.

APPENDIX 3

Summary Sheet from BNG Assessment

Land at Jupiter house, Horton Road, Colnbrook

Return to results menu

Headline Results

Scroll down for final results ⚠

On-site baseline	*Habitat units*	0.19	
	Hedgerow units	0.00	
	Watercourse units	0.00	
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.42	
	Hedgerow units	0.58	
	Watercourse units	0.00	
On-site net change (units & percentage)	*Habitat units*	0.23	121.08%
	Hedgerow units	0.58	0.00%
	Watercourse units	0.00	0.00%

On-site net gain is less than target set ⚠

Off-site baseline	*Habitat units*	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change (units & percentage)	*Habitat units*	0.00	0.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%

Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	0.23
	Hedgerow units	0.58
	Watercourse units	0.00
Spatial risk multiplier (SRM) deductions	*Habitat units*	0.00
	Hedgerow units	0.00
	Watercourse units	0.00

FINAL RESULTS

Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	0.23
	Hedgerow units	0.58
	Watercourse units	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	121.08%
	Hedgerow units	100.00%
	Watercourse units	0.00%
Trading rules satisfied?		Yes ✓

Unit Type	Target	Baseline Units	Units Required	Unit Deficit	
Habitat units	10.00%	0.19	0.21	0.00	Unit requirement met or surpassed ✓
Hedgerow units	10.00%	0.00	0.00	0.00	Unit requirement met or surpassed ✓
Watercourse units	10.00%	0.00	0.00	0.00	Unit requirement met or surpassed ✓

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winvic

Construction Traffic & Environmental Management Plan

(England & Wales)

Panattoni Poyle Slough

Revision Number:	Description of changes made:	Updated by:	Date of Update:
V1	New CEMP	Laila Yasar	28/09/2023
V2	Include traffic management plan	Amit Patel	13/10/2023
V3	Updated to include comments from the Council	Amit Patel	21/11/2023

This plan is to be reviewed at least every three months

Contents

1. INTRODUCTION

This Construction Environmental Management Plan (CEMP) has been developed to identify and manage the environmental risks associated with Panattoni Poyle Slough and is a fundamental requirement of the Winvic Construction Limited (WCL) environmental management system.

A copy of the WCL ISO 14001 certificate is provided in Appendix 1. The WCL Environment Policy Statement should be clearly displayed, as well as Panattoni Environmental Policy statement on site noticeboards. WCL recognises the environmental impacts associated with this project and is committed to continually improving its environmental performance. The WCL Policy sets out the aims of the CEMP for the construction of the proposed development with the various aims summarised below:

- To meet the requirements of all relevant environmental legislation, agreements, authorisations and commitments.
- To ensure that all environmental undertakings and obligations of WCL are fulfilled.
- To adopt working practices that will achieve good environmental practice on site.
- To ensure that subcontractors and suppliers are aware of the environmental constraints and opportunities of the site and follow any necessary procedures in order to ensure good environmental practice.
- To identify the responsibilities of staff and contractors in achieving good environmental practice on site
- To mitigate the effects of the construction works on businesses, highway users and the general public.
- To assist in the development of the company environmental management system, not only for the requirements of this project but for future use.

All personnel are required to understand and implement the requirements of this CEMP.

Prior to issue, all environmental documentation on this Project, including this CEMP, has been reviewed and approved by (tbc), who is the Project Manager, as well as being reviewed by the Environmental Advisor. All amendments to this CEMP must be made by project management in consultation with the Senior Environmental Manager / Environmental Advisor or HSEQ Manager.

WCL will maintain records for all aspects of the work on Winvic's Intranet System (i.e., Union Square), namely:

- Environmental permits
- Environmental risk register and management systems, including instructions for methods of work and any pollution control plans
- All operating procedures
- Staff competence and training records
- Routine monitoring results such as water quality
- Monitoring and compliance checks, findings of investigation and actions taken
- Environmental incidents, non-conformance and near miss reports, findings of investigation and actions taken
- Complaints made, findings of investigation and actions taken
- Audits of management systems
- Management reviews and changes made to the management system.

2. ENVIRONMENTAL SETTING & REQUIREMENTS

The area of the proposed development covers approximately 7, 320 sqm (of commercial floorspace) and the national grid reference number for the site is TQ 03259 75695. The scope of the construction site is subject to a number of environmental sensitivities (as shown in the Environmental Constraints Map / site drainage plan) as summarised below.

2. 1 Geology and Hydrogeology

Ground conditions typically comprised Made Ground (thickness 0.20- 0.35m) consisting of concrete or brick paving over gravelly sand/ sandy gravel, over Alluvium to depths 1.45m bgl, inferred as sandy clay/clayey gravelly sand. The underlying Principal Aquifer (Shepperton Gravel Member); Highly permeable geology directly underlying the site, there is the potential for any mobile contaminants within soils to impact groundwater. Also, shallow groundwater has the potential to connect with the nearby land drain and Wraysbury River. The EA data indicates that the Site is not in a designated Groundwater Source Protection Zone (GSPZ).

2. 2 Hydrology

The site does not sit within proximity to a watercourse, nor does there appear to be a public surface water sewer located in Horton Road. There are high recorded levels of groundwater on site, as such infiltration devices such as soakaways are not deemed acceptable. The presence of nearby surface water features (Land drains, Wraysbury Reservoir and Wraysbury River) within the wider area. The site is underlying a Principal Aquifer (Shepperton Gravel Member).

Method	Suitability	Suitability for Development
Infiltration to Ground	Yes	The underlying sand and gravel geology means infiltration is a suitable means of draining the majority of the site, in areas located above the identified groundwater levels.
Connection to Watercourse	No	Wraysbury River located to the east of the site at a higher ground level.
Connection to Surface Water Sewer	No	No surface water sewer in close proximity.
Connection to a Foul / Combined Sewer	Yes	Due to the presence of high groundwater levels, infiltration will not be feasible to all areas and thus a connection to the foul sewer will also be required at reduced flow rates.

2. 3 Ecology (flora / fauna)

There are no trees within or immediately adjacent to the application site which have features of potential value for roosting bats.

Most of the application site comprises existing built form, and does not provide any nesting or foraging opportunities, and any other opportunities for protected or notable faunal species, such as mammals, reptiles or amphibians.

Based on the ecological surveys undertaken, the application site is not of intrinsic value from a nature and conservation perspective.

The site has no soft landscape features or trees of any note within the redline boundary. The detailed landscape plans set the planting the planting scheme with a mixture of native and ornamental trees and shrubs. Plans have been revised to increase tree sizes and species diversity. The proposal would result in the loss of the existing mature trees along the western boundary (need to ensure whether these trees are under a Tree Preservation Order or not).

The net gains in biodiversity are provided by the significant increase of planting on the site which include, Hebe Rakaiensis which attract bees and other pollinating insects. Given the quantity of landscaping that would replace the areas to be lost, together with the ecologically focused planting; the proposal is considered to result in net gains for biodiversity.

2. 4 Cultural Heritage (archaeology / SAMS / listed buildings)

Berkshire Council states there are no known archaeological constraints.

2. 5 Existing Site and Surrounding Land Use (neighbours / protected areas)

The site is accessed by the south at Horton Road. Junction 14 of the M25 is circa 500 metres to the east. To the north, east, and west, the site neighbours are other businesses within the Poyle Estate. The Poyle Park Private Estate which comprises the residential static homes are located on the southern site of Horton Road.

Historically, explosives works and later, and iron works shown to the north of the site between 1914 and 1932. By 1972, a furniture works, engineering works, steel works, motor depot located east of

the Site (Viscount Industrial Estate), a steel works and engineering to north and north west of the site respectively. An engineering works located immediately west of the site. From 1972, various other commercial/ industrial works are present in the wider surrounding area, with multiple ASTs and electricity substations associated with them.

2. 6 Contamination (soils / geology / water)

Petroleum hydrocarbons, polycyclic aromatic hydrocarbons, semi-volatile organic compounds and metals were locally identified above laboratory detection limits.

Hotspots of localised and marginally elevated concentrations of metals and polycyclic aromatic hydrocarbons were identified within groundwater. The source of hydrocarbon contamination in the north of the site is considered to be from the fuel tanks on site. One above ground storage tank is known to have been removed, and it is unknown whether the other thank remains underground. If the tank is present, it will require removal prior to development and contaminated soils disposed off-site.

In 2007, TPH (total petroleum hydrocarbon) concentrations were identified within the Alluvium deposits and the Sheppterton Gravel Member, and in multiple plumes in the groundwater. Gas monitoring detected elevated methane and carbon dioxide concentrations at several locations. A quantitative risk assessment indicated that the contamination plume had the potential to extend beyond the site boundary and migrate towards surface waters close to the development, this remediation work was recommended to be undertaken.

Offsite disposal proposed remediation Enabling Works and Groundwater Remediation by Provectus is the use of 'bio-treatment', the beneficial reuse of hydrocarbon impacted soils in landfill restoration schemes. Use of natural biological degradation to break down and remove hydrocarbons contaminants, ensuring efficient and eco-friendly remediation.

If there is the presence of asbestos in soils, strict measures to ensure safe handling and disposal will be implemented.

3. ENVIRONMENTAL CONSENTS / PERMITS / LICENCES & OTHER REQUIREMENTS

The need for any environmental consents, permits and / or licences and exemptions relating to work associated with Poyle Slough has been identified during the environmental risk assessment process. Consequently, the necessary environmental permissions for this project are listed within the Environmental Risk Register (E02).

The applicable other environmental requirements to be delivered by the project, in addition to WCL targets, are summarised below, and may include contractual requirements, as well as any conditions required by the Local Authority with respect to Planning or nuisance mitigation for the local community.

Reference should be made to pre-construction information and the Pre-Start Environmental Checklist (E01).

PROJECT SPECIFIC ENVIRONMENTAL REQUIREMENTS	
External (client / enforcing authority) requirements	3 (Ecology) The development hereby approved shall be carried out in accordance with the paragraphs 5.3.2. & 5.3.3. of the Ecological Assessment by Ecology

	Solutions (ref. 11329.EcoAss.vf1); Dated April 2023; Rec'd 27/04/2023. accordance with the approved details. 4 (Contamination) The development hereby approved shall be carried out in accordance with the land contamination remediation strategy set out in the Outline Remediation Strategy (Ref. No. 70106611-ORS), dated June 2023, and prepared by WSP UK Ltd.ge over the 5 (Contamination Remediation Validation) No development within or adjacent to any area(s) subject to remediation works carried out pursuant to the Outline Remediation Strategy (Ref. No. 70106611-ORS), dated June 2023, and prepared by WSP UK Ltd shall be occupied until a full final Validation Report for the purposes of human health protection has been submitted to and approved in writing by the Local Planning Authority. The report shall include details of the implementation of the remedial strategy and any contingency plan works approved pursuant to the Phase 3 condition above. In the event that gas and/or vapour protection measures are specified by the remedial strategy, the report shall include written confirmation that all such measures have been implemented by a competent installer and then verified by a qualified independent third party/Building Control Regulator. the approved details. 9 (Submission of construction waste measures) No development (with the exception of demolition) shall commence until a waste management plan for the construction phase has been submitted to and approved in writing by the Local Planning Authority. The waste management plan shall include measures to: a) Minimise, re-use and re-cycle waste and materials b) Dispose of unavoidable waste in an environmentally acceptable manner - Flow direction 10 (Construction Traffic Management Plan) Prior to any construction works (excluding demolition) taking place a Construction Traffic Management Plan has been submitted to and agreed in writing by the Local Planning Authority. The Plan shall include details of: a) A site set up plan displaying hoarding/fencing extents, vehicle and pedestrian access points during construction, provision for storage of materials, waste and recycling facilities/areas, contractor parking, turning space for construction vehicles, unloading area for deliveries, site office and wheel cleaning facilities during the construction period. b) Construction vehicles and to comply with Euro VI Emissions Standard as a minimum and machinery to comply with Table 10 of the Low Emissions Strategy Guidance. c) Delivery hours and working hours. Deliveries shall be made outside peak hours of 0800 0900 and 1700 1800 d) Details of traffic management measures to control deliveries to site

	and pedestrian movements on footways in proximity to the site in order to minimise the impact of construction on the safe operation of the surrounding highway network. e) Vehicle routing plan for HGVs. HGVs shall avoid weight restrictions and local schools at collection/drop off time. f) Details of dust control measures and wheel washing facilities to be provided on site. g) Confirmation of whether any abnormal loads will be required for the construction or demolition. If so, the LHA must be notified of any abnormal loads at the following location: https://www.slough.gov.uk/licences-permits/abnormal-loads/1. The development herby permitted shall thereafter be carried out in accordance with the approved Construction Traffic Management Plan. 11 (Working Method Statement) Prior to any construction works taking place details of a scheme (Working Method Statement) to control the environmental effects of construction work shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall include: a) Control of noise (refer to section 5.5 nuisance management, which covers our mitigation measures that will be employed during the construction stage) . c) Control of water run-off (refer to section 5.2- water management, which covers our mitigation measures that will be employed during the construction stage d) Appropriate hoarding to site boundaries (refer to section 5.5 – nuisance management, which covers our strategy for this). e) Proposed method of piling for foundations (refer to section 5.5 nuisance management which cover our piling strategy). The development herby permitted shall thereafter be carried out in accordance with the approved Working Method Statement.		
BREEAM / LEED / Passivhaus	Target rating	Tbc	
	Construction Waste Volume Target (by m^3 volume or tonnage) tbc	Tbc	
	Waste Diversion from Landfill Target	Demolition	tbc
		Construction	tbc
		Excavation	tbc
Watercourses/drainage/ dewatering	No known watercourses nearby, thus no discharge permit is required. Trade Effluent Consent for dewatering to be applied before.		
Waste (significant waste streams that will be generated)	tbc		
Contaminated Ground	See 2.6		
Cultural Heritage & archaeology	n/a		

Materials & Design	tbc
Sensitive Neighbours	See 2.5
Ecology & Biodiversity	See 2.3

4. ENVIRONMENTAL RISK ASSESSMENT

The Pre-Construction Manager and Project Manager, in collaboration with the Senior Environmental Manager and Environmental Advisor, have completed an environmental risk assessment, which is shown in the Environmental Risk Register (E02) that encompasses the pre-construction, construction and commissioning phases of the project.

Throughout the duration of this project, the environmental risk assessment will be reviewed and updated on a monthly basis during the '4-week planning meeting' (S01) that is held between the Project Manager and the HSEQ Manager. The purpose of this review is to ensure that the risk assessment remains suitable, adequate and effective in identifying and managing environmental risks.

Further details concerning the methodology employed to assess project environmental risks are detailed within the WCL Project Environmental Management Working Instruction (WI 01).

Subcontractors whose specific construction work packages pose a risk to the environment will develop and implement a RAMS to mitigate those risks, which will be reviewed and approved by WCL (via completion of the Method Statement Review Sheet (S05)).

Subcontractors must manage all risks associated with their work activity / package in accordance with this CEMP. Where a subcontractor identifies additional environmental risk(s), the subcontractor must inform the WCL Project Manager and request that the Environmental Risk Register (E02) is amended.

5. ENVIRONMENTAL CONTROL MEASURES

In addition to the project-specific environmental control measures detailed within the Environmental Risk Register (refer to E02) the mandatory control measures described below also apply to this project:

5.1 Waste Management

The environmental control measures defined below apply to all personnel including WCL staff, subcontractors, suppliers and third parties, and all activities and operations associated with the project. These environmental control measures are in addition to the project specific control measures defined with the Environmental Risk Register (E02).

Any Client specific environmental and / or sustainability requirements / targets / KPIs related to waste management required by any certification schemes (e.g., BREEAM / CEEQUAL / Well Standard) should be retained. This may include confirmation of the specific format and content of information, and evidence to satisfy the applicable scheme.

Risk	Environmental Control Measure(s)	Project Applicable (Yes / No)
Waste storage, handling and segregation	• Store wastes in areas away from surface / foul drains and watercourses • Segregate all construction wastes, at a minimum, into hazardous and non-hazardous waste streams • Segregate construction wastes into dry recyclables • Cover waste containers if there is a risk that wastes may be blown out or the wastes contained therein are water sensitive e.g., plasterboard wastes • Use waste signage i.e., labels that specify waste contents • Secure waste containers *(Note: On insecure sites or in areas where theft and vandalism may occur, skips should be lockable).*	Y
Off-site disposal of site waste streams	• Develop, implement and maintain a Site Waste Management Plan (E04) throughout the duration of the project • Ensure the removal of inert / non-hazardous wastes is recorded on Waste Transfer Notes (WTNs). Season tickets may also be used for multiple transfers over a 12-month period • Use consignment notes for the off-site disposal of all hazardous wastes • Retain all WTNs for at least three years • Register the site with NRW if more than 500kgs / year of hazardous waste is to be sent for off-site disposal. Renew this registration on an annual basis *(Wales only)* • Only use licensed waste carriers to transport wastes from site and obtain documentation to demonstrate registration • Obtain full copies of the Environmental Permits or Exemptions for the disposal locations of site waste streams • Periodically follow a waste vehicle to its destination (refer to EG06) where: – The condition of the waste contractor's vehicle is poor, or – The waste contractor's waste paperwork is weak, or – A waste contractor uses a lower tier waste haulage company, or – A higher risk waste is being transported e.g., asbestos or oily wastes – There is a suspicion that wastes may be taken to a non-licensed site • Contact the HSEQ Manager immediately if site wastes are not taken to a licensed waste disposal / recycling facility.	Y
Reporting	Report project waste performance on a monthly basis (WI 10).	Y

Refer to the Site Waste Management Plan (E04) that has been developed for this project.

5.2 Water Management

The environmental control measures defined below apply to all personnel including WCL staff, subcontractors, suppliers and third parties, and all activities and operations associated with the project. These environmental control measures are in addition to the project specific control measures defined with the Environmental Risk Register (E02).

Any Client specific environmental and / or sustainability requirements / targets / KPIs related to water pollution management required by any certification schemes (e.g., BREEAM / CEEQUAL / Well Standard) should be retained. This may include confirmation of the specific format and content of information, and evidence to satisfy the applicable scheme.

Risk	Environmental Control Measure(s)	Project Applicable (Yes / No)
Abstraction, impounding & dewatering	• Obtain an abstraction licence from the EA / NRW for the abstraction of more than 20m^3 of water / day from any controlled water (refer to EG05) • Obtain an Environmental Permit from the EA / NRW if clean uncontaminated temporary dewatering effluent is being discharged to surface watercourses for longer than three consecutive months • Obtain an abstraction licence if waters from dewatering activities are to be used e.g., for dust suppression • Obtain an Impounding Licence from the EA / NRW prior to any impounding works commencing • Ensure that the WCL Permit-to-Pump (E12) system is used for all effluent pumping activities (refer to EG05) • Ensure that a pump head rose is used to reduce the risk of harm to aquatic life • Ensure conformance to requirements of obtained licences / authorisations.	Y
Discharges to surface water or groundwater	• Consult with the EA / NRW as to the need for an Environmental Permit for the discharge of effluent to surface waters prior to the discharge proceeding • Obtain an Environmental Permit for the discharge of effluent to surface waters if chemical dosing agents are to be used (e.g., coagulants and / or flocculants) as a means of treating silt laden effluent • Ensure that the WCL Permit-to-Pump (E12) system is used for all effluent pumping activities (refer to EG05) • Obtain permission to discharge silt laden waters to land from the landowner and consult with the EA / NRW prior to discharge • Ensure all effluent discharges from site cabins are directed into sewers (with permission from the local water company) or holding tanks • Ensure conformance to requirements of obtained permits / authorisations.	N
Discharges to sewer	• Obtain a trade effluent discharge consent from the local water company or written permission from the sewer owner prior to the discharge of any trade effluent into a foul sewer • Ensure that the WCL Permit-to-Pump (E12) system is used for all effluent pumping activities (refer to EG05) • Ensure conformance to requirements of any obtained consent.	Y
Works in, near or over water	• Obtain an Environmental Permit / Exemption from the EA / NRW for the construction of any structure in, over or under a main river (refer to EG05) when: – Within 8m of the bank of a main river, or 16m if it is a tidal main river – Within 8m of any flood defence structure or culvert on a main river, or 16m on a tidal river, or where it is a sea defence structure • Obtain a Land Drainage / Ordinary Watercourse Consent from the Lead Local Flood Authority (LLFA) for the construction of any structure in, over or under an ordinary	N

	watercourse, including the construction of dams, weirs, mills, channel diversions and culverts (refer to EG05). • Give the EA / NRW at least seven working days' notice of any intention to temporarily or permanently divert the flow of a main river, carry out works over or within a main river channel, commence operations in a main river channel or work on or near foul sewers • Give LLFAs at least seven working days' notice of any intention to temporarily or permanently divert the flow of an ordinary watercourse, carry out works over or within an ordinary watercourse or commence operations in an ordinary watercourse channel • Develop, communicate and implement a suitable, adequate and effective method statement, where any watercourse diversion is to be undertaken • Consult with the EA / NRW as to the need for an abstraction licence where overpumping operations are to be undertaken • Obtain formal approval from the EA / NRW prior to the use of any herbicide in or near a watercourse (i.e., within 10m of a watercourse) • Plant and equipment entering or working alongside watercourses should be well maintained, clean and free from oil leaks • Prevent liquid / solid debris falling into a watercourse or onto an embankment during construction activities. • Ensure conformance to requirements of any obtained consent / approval.	
Works in tidal waters	Consult with the Marine Management Organisation / EA (in England) the NRW (in Wales) before any construction works commence in, near, under or over tidal waters to ensure that all appropriate consents are obtained.	N
Site Drainage	• Develop and display a site drainage plan that identifies surface and foul water drainage systems and nearby controlled waters • Implement and maintain control measures to ensure site drainage does not contaminate drains or watercourses e.g., cut-off ditches / silt fences • Provide toolbox talks to relevant personnel and contractors that effluent must not be poured down surface / foul water drains without permission.	Y
Washing Activities	• Conduct all washing and cleaning operations (including the washing of vehicles and / or plant) in a designated area, which should be isolated from the surface water drainage systems and within hardstanding areas • Ensure no detergent contaminated wash down effluent is allowed to enter controlled waters unless permitted by the EA / NRW • Direct detergent contaminated wash down effluent via the foul sewer, after having gained permission from the Water Company, or ensure that it is contained for off-site disposal • Establish an impermeable concrete / mortar washout area at least 10m away from drains, surface waters or trees.	Y
Monitoring	Monitor the quality of watercourses potentially affected by site activities at least once per day and at agreed locations whilst construction operations are in progress, which may involve visual monitoring and / or physical (e.g., pH, suspended solids, total organic carbon) sampling.	N

5.3 Ecological Management

The environmental control measures defined below apply to all personnel including WCL staff, subcontractors, suppliers and third parties, and all activities and operations associated with the project. These environmental control measures are in addition to the project specific control measures defined with the Environmental Risk Register (E02).

Any Client specific ecological and / or biodiversity requirements stipulated by the Client and / or any certification

schemes (e.g., BREEAM / CEEQUAL / Well Standard) should be retained. This may include identifying requirements and responsibilities for providing and interpreting site investigations, environmental reports, surveys and consents, and confirmation of the specific format and content of information, and evidence to satisfy the applicable scheme.

Risk	Environmental Control Measure(s)	Project Applicable (Yes / No)
Works in protected areas	• Consult with Natural England / NRW and / or the local Planning Authority before works commence within a conservation area e.g., Ramsar site, SAC, SPA, AONB, SSSI, NNR, ESA, NHA or a local conservation designation • Develop and submit a method statement to NE / NRW • Ensure a Phase 1 Habitat Survey has been conducted by a competent person (e.g., qualified ecologist and / or arboriculturist), where necessary • Communicate control measures defined within the Habitat Survey to all staff and relevant subcontractors • Provide information (e.g., site induction / toolbox talks) to site personnel.	N
Protected species	• Ensure a Phase 1 Habitat Survey has been conducted by a competent person (e.g., qualified ecologist) where the presence of protected ecological resources is known / suspected • Ensure an extended Phase 2 Habitat Survey is conducted by a competent person to assess the potential presence of protected fauna and / or flora, if required as a result of a Phase 1 Habitat Survey • Ensure protected faunal species surveys (e.g., bat surveys) are conducted where their presence have been identified • Develop and implement a method statement, (that should be agreed with NE / NRW), for the management of protected species that includes all relevant recommendations made within ecological surveys • Obtain and fully implement the conditions of a European Protected Species Licence i.e., Development Licence, if required • Phase all construction activities to ensure that proposed construction works avoid disturbance and / or damage to local ecological constraints • All site clearance works would be undertaken outside bird nesting season (March to August inclusive); however, if works cannot be avoided during the nesting season an ecologist should supervise clearance works • Create a physical separation between construction operations and ecologically sensitive areas e.g., fencing • Staff and subcontractors to report any protected flora / fauna discovered during construction to site management. Suspend all works within that area until authorised by an ecologist and site management • Provide information (e.g., site induction / toolbox talks) to site personnel.	N
Tree & hedgerow protection	• Consult with the local planning authority to determine whether there are any TPOs in effect or whether trees are within a conservation area • Consult with the local planning authority to determine whether hedgerows are designated as an 'important' hedgerow • Ensure permission (i.e., section 211 Notice / Tree Felling Licence) is obtained from the local planning authority / Forestry Commission / NRW for works to protected trees e.g., tree surgery / felling and / or uprooting • Ensure a Tree Felling Licence is obtained from the Forestry Commission / NRW for the felling of more than 5m^3 of non-protected trees • Ensure a Hedgerow Removal Notice is formally submitted to the local planning authority if the full or part removal of a hedgerow is required • Ensure a Phase 1 Habitat Survey has been conducted by a competent person (e.g., qualified arboriculturist) where the presence of Tree Preservation Orders (TPOs) /	Y

	important hedgerows is known / suspected • Create a physical separation between construction operations and ecologically sensitive areas e.g., fencing • Erect tree fencing to protect tree roots from construction activities e.g., vehicle and / or plant use, installation of underground services and / or hard or soft surfaces • Provide information (e.g., site induction / toolbox talks) to site personnel.	
Invasive species	• Ensure a Phase 1 Habitat Survey has been conducted by a competent person where the presence of invasive species is known / suspected • Develop and implement a method statement for the management of invasive species as well as the disposal of invasive species wastes • Segregate invasive plant species locations from construction activities using durable fencing • Prevent the spread of invasive species through use of exclusion zones, boot wash facilities, wheel wash facilities etc. • Provide information (e.g., site induction / toolbox talks) to site personnel.	N
Biodiversity Net Gain	Where there is a contractual requirement to achieve Biodiversity Net Gain (BNG) all recommendations stipulated within the biodiversity enhancement plan, developed by the Pre-construction / Design team, should be implemented.	N

Additionally, WCL recognises our role in maintaining and enhancing, where possible, resilient ecological habitats. Consequently, WCL will implement this project specific Biodiversity Action Plan (BAP), which will be completed during Pre-construction and Construction phases of our works. Examples below.

Actions	**Mitigation**	**Enhancement**	**Eradication**	**Requirement by Planning / Ecologist / BREEAM / WCL**	**Pre-Construction Status** *(Programme date, whether in progress or completed, who's responsible for collating evidence)*	**Construction Status** *(Programme date, whether in progress or completed, who's responsible for collating evidence)*
Biodiversity Net Gain e.g., significant increase of planting of site to increase pollinating insects.		✓		Planning	Ongoing	
SUDS system		✓		Planning	Ongoing	

5.4 Land Use Management

The environmental control measures defined below apply to all personnel including WCL staff, subcontractors, suppliers and third parties, and all activities and operations associated with the project. These environmental control measures are in addition to the project specific control measures defined with the Environmental Risk Register (E02).

Any existing site surveys, investigations and other environmental requirements, including responsibilities for providing any additional site surveys and investigations along with interpretation of reports, should be retained as part of the design development and compliance.

Risk	**Environmental Control Measure(s)**	**Project Applicable (Yes / No)**

Earthworks	• Develop an earthworks method statement where more than 50m^3 of spoil is to be excavated, refer to WI 09 • Avoid stripping soil following periods of heavy rainfall (i.e., 5mm or more in a 24-hour period), when practicable • Keep areas of exposed ground to a practicable minimum • Segregate top and subsoil stockpiles • Handle soils carefully to minimise potential soil structure damage • Keep temporary stockpile heights as low as possible given space restrictions e.g., 3m for topsoil and 4m for subsoil • Minimise run-off from stockpiles by light compaction and at an angle of no more than 45°, use of trenches and locating stockpiles away from drainage systems and watercourses • Protect stockpiles to minimise erosion losses and weed infestation if storage is to be longer than 6 months (e.g., seeding or light compaction) • Protect stockpiles (e.g., using berms) from flooding to avoid soil losses • Keep traffic off soil stockpiles, as much as possible, throughout the period of soil storage • Display clear and unambiguous signage to notify site personnel of the presence of different types of soil stockpiles • Avoid reinstating soils following periods of heavy rainfall (i.e., 5mm or more in a 24-hour period), when practicable • Reinstate subsoil to maintain natural drainage patterns and avoid settlement • Reinstate topsoil by rendering into a loose and workable condition, as well as contouring to maintain the profile with the adjacent undisturbed area • Implement effective temporary and / or permanent soil erosion control measures, where necessary • Implement and maintain suitable, adequate and effective control measures to prevent run-off from stockpiles contaminating surface waters.	Y
Contaminated Land	• Cordon off areas of contamination from those that are uncontaminated • Develop and implement a remediation and / or disposal strategy for the management of contaminated land • Use competent contractors to implement any defined remediation and / or disposal strategy • Ensure all appropriate environmental permissions have been obtained where remediation, reuse and / or disposal of contaminated soils is to be undertaken e.g., a Mobile Plant Licence or an Environmental Permit or Exemption, Waste Acceptance Criteria Testing has been undertaken on treated and / or untreated soils when disposing to landfill • Store contaminated soils in areas effectively demarcated from construction works and access / egress routes • Place soils on impermeable surfaces to prevent contamination of the underlying ground • Cover stockpiles to prevent windblown dust or the ingress of rainwater, where practicable • Implement controls for containing surface water run-off from contaminated stockpiles to prevent the uncontrolled discharge of contaminated effluent • Display clear and unambiguous signage to notify site personnel of the presence of contaminated soils.	Y

5.5 Nuisance Management

The environmental control measures defined below apply to all personnel including WCL staff, subcontractors, suppliers and third parties, and all activities and operations associated with the project. These environmental control measures are in addition to the project specific control measures defined with the Environmental Risk Register (E02).

Any Client specific environmental and / or sustainability requirements / targets / KPIs to minimise the risks of nuisance from vibration, light and noise pollution required by any certification schemes (e.g., BREEAM / CEEQUAL / Well Standard) should be retained. This may include confirmation of the specific format and content of information, and evidence to satisfy the applicable scheme.

Risk	Environmental Control Measure(s)	Project Applicable (Yes / No)
Noise and vibration controls	• Limit operation times to agreed working hours • Comply with Section 61 Agreements, (agreement with Local Authority to limit noise), if applicable • Notify and consult with all potentially affected parties that may be adversely affected from construction site noise either via verbal face to face communications or letter drops • Provide the local authority with advance notice of any works scheduled to take place outside agreed working hours • Assess (e.g., via structural surveys) any and all structures that may be adversely impacted by vibration from vehicles or site activities • Select inherently quiet plant, where appropriate • Ensure all major compressors are 'sound reduced' models fitted with properly lined and sealed acoustic covers, where appropriate, that are kept closed whenever the machines are in use • Ensure all ancillary pneumatic percussive tools are fitted with mufflers or silencers of the type recommended by the manufacturers • Position ancillary plant (e.g., crushers, screeners, generators, compressors, pumps) to reduce noise disturbance i.e., furthest from receptors or behind noise barriers • Ensure subcontractors properly maintain and operate all plant according to manufacturer's recommendations so as to avoid causing excessive noise • Place vibrating equipment or plant on a base separate to that on which any sensitive structure is located, to reduce vibration impacts • Programme deliveries to arrive during daytime hours only • Take care when unloading vehicles to minimise noise • Route delivery vehicles so as to minimise any noise disturbance to local residents as well as reducing potential vibration impacts upon structures • Do not leave plant engines unnecessarily idling • Erect site hoarding, screens or barriers, as necessary and practicable, to shield noisy activities. • Existing perimeter will be utilised and where needed heras panel will be used which will be double clipped. • Regularly monitor both on and off site to ensure minimal noise and vibration impacts upon local neighbours and wildlife.	Y
Dust & Odour Controls	• Finished ground / road surfaces will be set down as early as is feasible to seal the ground to ensure that the generation of dust is kept to a minimum • Surfaced and unsurfaced access roads will be kept clean and will be watered as necessary using a water bowser, which will be monitored on a daily basis during dry weather • A means of wheel washing will be utilised, as required • No burning of any materials is permitted, unless authorised by the Project Manager • Ensure all construction traffic follows specifically designated routes: – Implement speed limits for all vehicular movements – Cover all vehicles carrying loose materials – Dampen down haul roads, as necessary, to reduce dust emissions • Conduct all cutting and grinding operations in a manner to reduce the risk of dust	Y

	migration e.g., wet cutting techniques • Adopt dust suppression techniques (e.g., water suppression) to reduce dust emissions from crushing and screening activities • Locate stockpiles away from any sensitive receptors, where feasible • Seed / seal soil stockpiles to reduce the risk of dust migration • Any exposed soil or material stockpiles will be damped, if necessary, using sprinklers and hoses. A windsock will be located on the site and where this indicates a prevailing wind toward sensitive receptors, particular attention will be given to the damping of exposed soil and material stockpiles • All areas of completed earthworks that are not subject to subsequent works such as drainage will be covered with topsoil and vegetated, as soon as is practicable. • Compliance with NRMM.	
Visual impact & Light controls	• Erect site hoarding, screens or barriers, as necessary, to screen site activities • Choose and assemble site lighting to reduce light nuisance impacts to local neighbours and wildlife • Position lighting properly and direct light downwards to minimise impacts of light pollution on neighbours and wildlife • Switch off site lighting or minimise its use during periods of site inactivity • Lighting will be directed downwards to illuminate the target area to reduce spill light • Specifically designed lighting equipment will be installed to minimise the spread of light near to or above the horizontal • To keep glare to a minimum, the main beam angle of all lights directed towards any potential observer will be kept below 70° • Keep site boundaries clean and tidy at all times • Maintain hoarding and / or fencing to be free of graffiti and non-project specific posters • Repair damaged or unsightly hoarding and / or fencing, as soon as possible. •	Y
Noise & Vibration Monitoring	• To establish the noise emission levels, a noise monitoring programme will be carried out to determine the noise levels at the closest receptors.	Y
Dust Monitoring	• Visual dust monitoring will be conducted around the site perimeter during dry periods to check for dust deposition on vegetation, cars and other objects	Y

Piling Strategy

Our piling strategy as set out by our contractor Vibro Menard is as follows:

4 TECHNICAL

4.1 Description of the ground improvement technique

Vibro Stone Columns are formed by inserting a vibroprobe into the soils to compact and incorporate granular material into the ground and create vertical inclusions with high stiffness, shear strength and drainage characteristics.

Under uniformly loaded structures such as embankments and slabs-on-grade, Vibro Stone Columns are installed on a regular grid spacing. Treatment by Vibro Stone Columns results in a reduction of the total and differential settlements.

Vibro Stone Columns can also be installed as a group to support isolated loads (shallow pads) or directly under linear loadings such as strip footing or retaining walls. In this case, Vibro Stone Columns increase the bearing capacity of the soil while reducing the magnitude of settlement.

4.2 Method of Execution

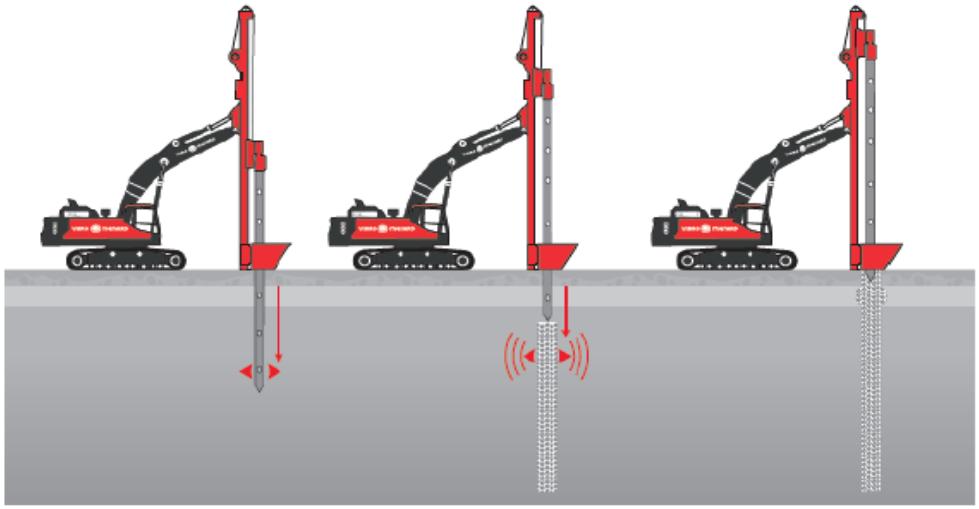


Figure 2 - VSC installation process

The soil is penetrated to the required depth by the combined effects of Vibroprobe weight and vibration (plus jetting action by air if free hanging). The in situ soil is displaced sideways.

The vibroprobe is then lifted out. Coarse gravel, crushed stone or slag is tipped into the hole in increments of typically 500mm of the column bore. The vibroprobe is re-inserted and the stone infill is compacted under the weight and vibration of the vibroprobe. Radial forces produced by the vibroprobe force the stone infill material horizontally out against the in situ soil.

When the required degree of compaction has been reached, the vibroprobe is again removed. The filling / compacting cycle is repeated step by step up to the working platform level. Thus, a continuous column of dense granular material interlocking with the surrounding ground is formed through the treatment zone.

VIBRO MENARD

The diameter of the vibro stone column constructed is typically between 300-600mm and is subject to the properties of the surrounding soil: in softer soils, the compaction process results in higher lateral expansion of the columns. Over the length of the entire column, variable diameter could thus be created due to variable layers with different soil conditions.

Figure 3 – VSC rig on site

5.6 Resource Management

The environmental control measures defined below apply to all personnel including WCL staff, subcontractors, suppliers and third parties, and all activities and operations associated with the project. These environmental control measures are in addition to the project specific control measures defined with the Environmental Risk Register (E02).

Any Client specific environmental and / or sustainability requirements / targets / KPIs related to the efficient use of materials required by any certification schemes (e.g., BREEAM / CEEQUAL / Well Standard) should be retained. This may include confirmation of the specific format and content of information and evidence to satisfy the applicable scheme.

Risk	Environmental Control Measure(s)	Project Applicable (Yes / No)
Energy conservation	• When possible, procure electricity supplies through WCL preferred suppliers • Ensure time controls and thermostats are set to take account of unoccupied periods so that heaters are off when there is no one around • Ensure WCL and subcontractors use ECO-rated site accommodation • Ensure windows / doors are closed when the heating systems are on • Ensure light sensors and timers are correctly set • Make sure generator(s) are correctly sized for their proposed use • Ensure generators or other diesel plant are not left unnecessarily idling	Y

	• Ensure generator(s) are regularly maintained by the owner / supplier • Ensure construction plant are well maintained to maximise fuel efficiency • Ensure compressors are correctly sized for their proposed use • Ensure compressors are turned off to avoid being left unnecessarily idling • Make sure compressor(s) are regularly maintained by the owner / supplier • Ensure unused office equipment (e.g., printers, fans, coffeemakers, radios), that drain energy when not in use, are turned off and / or unplugged • Ensure power management features are enabled (i.e., sleep mode) on all office equipment (e.g., photocopiers, printers and computers) • Ensure office equipment (e.g., computers, monitors, photocopiers) are turned off at the end of the workday • Ensure photocopiers / printers are set to default by printing on both sides • Ensure electrical appliances (e.g., fridges) have an Energy Rating of A or B • Provide employees / subcontractors with awareness training regarding conserving energy and hence reducing costs • Encourage employees / subcontractors to suggest energy saving ideas.	
Water Conservation	• Turn off hose pipes when not in use • Switch off taps when not in use • Ensure there are no water leaks • Within site accommodation, use water boilers rather than kettles to encourage water savings • Where possible, install water efficiency measures e.g., low water flush toilet cisterns • Where feasible, implement rainwater harvesting on site • Provide employees / subcontractors with awareness training regarding water conservation • Encourage employees / subcontractors to suggest ideas for saving water.	Y
Material reuse	• Records of material reuse will be retained to demonstrate actions taken to avoid waste • Records will summarise materials provided to exchange / reuse networks, charitable and community groups, and reuse with other WCL projects.	Y

5.6.1 Sustainable Procurement

The environmental control measures defined below apply to all personnel including WCL staff, subcontractors, suppliers and third parties, and all activities and operations associated with the project. These environmental control measures are in addition to the project specific control measures defined with the Environmental Risk Register (E02).

Risk	Environmental Control Measure(s)	Project Applicable (Yes / No)
Supplier assessment	Ensure procurement teams undertake a supplier pre-qualification assessment that focuses on business management including environmental and social issues (Q25 / Q65).	Y
Material ordering	• Avoid over-ordering of construction materials i.e., material waste allowance rates should be kept ≤5% • Encourage suppliers and subcontractors to provide take-back construction / product wastes e.g., pallets, packaging.	Y
Timber Procurement	• Ensure all timber / timber products purchased for either temporary or permanent works are certified as legally and sustainably sourced, as defined by the UK Government Central Point of Expertise on Timber • Periodically conduct checks upon the delivery of timber / timber products to site: – Verify that FSC / PEFC Chain of Custody (CoC) certificate(s) are valid and genuine – Check the CoC certificate number matches the delivery note – Check that the relevant claim to each product supplied (e.g., Mix 70%, 100%,	Y

	Recycled Credit) is specified on the delivery note.	
Aggregates procurement	• Maximise the use of cement replacement products in concrete mixes • Maximise the use of Recycled Concrete Aggregate (RCA).	Y
Reduce packaging waste	• Minimise packaging waste on products supplied • Work with suppliers to implement packaging take back schemes.	Y
Local suppliers	Where possible, use local suppliers to reduce transportation costs and maintain a low carbon footprint.	Y

5.6.2 Hazardous Materials Management

The environmental control measures defined below apply to all personnel including WCL staff, subcontractors, suppliers and third parties, and all activities and operations associated with the project. These environmental control measures are in addition to the project specific control measures defined with the Environmental Risk Register (E02).

Risk	Environmental Control Measure(s)	Project Applicable (Yes / No)
Hazardous materials storage	• Develop a Spill Response Plan (E11) • Store hazardous materials more than 10m from a watercourse or surface water and / or foul water drainage gullies • Undertake COSHH assessment for hazardous materials (S73) • Segregate COSHH raw material stores and COSHH waste stores • Develop a COSHH Register for materials stored and handling requirements (S74) • Store hazardous material containers on secondary containment systems that will contain 110% of the contents of the largest container or 25% of the total, whichever is greater • Protect hazardous material containers so as to minimise the ingress of rainwater and secure them against accidental damage • Maintain and inspect hazardous material bunds and spill kits • Monitor hazardous material storage areas for leaks and signs of spillage • Provide site spill kits with instructions in areas of high risk (refer to EG04) • Undertake spill response exercises / drills at a frequency as defined within the Spill Response Plan (E11) • Train staff in the use of spill kits and the correct disposal of used material.	Y
Refuelling	• Undertake all plant refuelling on hardstanding or within defined areas that utilise drip trays / plant nappies • Provide secure valves and nozzles on fuel storage tanks / bowsers • Conduct refuelling activities at least 10m away from watercourses or surface / foul water drainage gullies • Locate spill kits in all appropriate locations, with instructions for use • Ensure training has been provided to those that conduct refuelling activities on correct refuelling procedures.	Y

5.6.3 Raw Material Storage

The environmental control measures defined below apply to all personnel including WCL staff, subcontractors, suppliers and third parties, and all activities and operations associated with the project. These environmental control measures are in addition to the project specific control measures defined with the Environmental Risk Register (E02).

Risk	Environmental Control Measure(s)	Project Applicable (Yes / No)
Storage of raw materials	• Store and handle all construction related materials so as to prevent: – Damage & degradation of material quality characteristics – Contamination of the material and / or the external environment – Excessively long on-site storage periods – Loss through theft and vandalism • Conduct site inspections to review construction related material handling and storage practices to ensure that material integrity and quality are being maintained and that their handling and storage is not contributing to an adverse environmental impact.	Y

5.6.4 Aggregates

The environmental control measures defined below apply to all personnel including WCL staff, subcontractors, suppliers and third parties, and all activities and operations associated with the project. These environmental control measures are in addition to the project specific control measures defined with the Environmental Risk Register (E02).

Risk	Environmental Control Measure(s)	Project Applicable (Yes / No)
Import of recycled aggregates	• Include the wording provided in EG07 in all purchase orders for recycled aggregates • Ensure that recycled aggregates have been produced in conformance with the Aggregates Quality Protocol: Production of Aggregates from Inert Wastes if more than 5,000 tonnes (over a 3-year period) are to be imported. Retain documentation, as detailed within EG07, to verify conformance to the Aggregates Quality Protocol ***(Note: grading certificates should be no longer than 3 months old)*** • Obtain a U1 Environmental Permit Exemption for the import of less than 5,000 tonnes (over a 3-year period) of recycled aggregates that does not conform to the Aggregates Quality Protocol • Ensure that an Environmental Permit is obtained if more than 5,000 tonnes (over a 3-year period) of recycled aggregates that do not conform to the Aggregates Quality Protocol are planned to be imported to site • Reject all loads of delivered recycled aggregates that does not appear to meet the defined material specification e.g., 6F2, 6F5, Type 1, Type 2 • Reject all loads of delivered recycled aggregates that contain more than 1% by mass of Class X materials i.e., wood, plastic and / or metal • Reject all loads of delivered recycled aggregates that contain any asbestos materials or smells of hydrocarbons e.g., oils / diesels.	N
Crushing inert aggregates	• Ensure that subcontractors' crushing plant has been issued with a PPC Permit issued by a Local Authority. Retain a copy of the issued PPC Permit within site documentation • Obtain and retain confirmation from the subcontractor operating the crushing plant that a Deployment Notice has been submitted to the local authority where the crusher is registered, if the crusher is operating outside the registered local authority • Ensure that recycled aggregates are produced in conformance with the Aggregates Quality Protocol if more than 5,000 tonnes (over a 3-year period) are to be produced. Retain documentation, as detailed within EG07 to verify conformance to the Aggregates Quality Protocol • Obtain an Environmental Permit if more than 5,000 tonnes (over a 3-year period) of aggregates / soils are to be screened on-site • Obtain a T5 Environmental Permit Exemption if less than 5,000 tonnes (over a 3-year period) of aggregates / soils are to be screened on-site • Obtain a U1 Environmental Permit Exemption for the use of less than 5,000 tonnes (over a 3-year period) of crushed recycled aggregates that does not conform to the Aggregates Quality Protocol • Develop (via the Geotechnical Services Manager) and / or obtain a Materials Management Plan (compliant with the CL:AIRE Code of Practice) or an Environmental Permit for the use of more than 5,000 tonnes (over a 3-year period) of recycled aggregates that does not conform to the Aggregates Quality Protocol.	Y

The following opportunities for materials reuse have been identified during Pre-Construction. These include the generation of materials on site and / or the import of processed materials from donor sites, as well as use of purchased recycled materials that are imported. *Note: If none of the below apply, please insert "NA".*

SITE WON MATERIALS				
Material Prediction	**Volume to be Generated**	**Volume to be Reused On-site**	**Volume to be Exported Off-site**	**Control(s) Allowing Reuse**
Aggregates	tbc			Choose an item.
				Choose an item.
IMPORTED MATERIALS				
Material Prediction	**Volume to be Generated**	**Volume to be Reused On-site**	**Volume to be Exported Off-site**	**Control(s) Allowing Reuse**
Aggregates	tbc			Choose an item.
				Choose an item.

5.6.5 Soils

The environmental control measures defined below apply to all personnel including WCL staff, subcontractors, suppliers and third parties, and all activities and operations associated with the project. These environmental control measures are in addition to the project specific control measures defined with the Environmental Risk Register (E02).

Risk	Environmental Control Measure(s)	Project Applicable (Yes / No)
Import of Soils	• Obtain documentation from the supplier, irrespective of whether the topsoil is premium, general purpose or economy grade, to verify that the topsoil satisfies the requirements of BS 3882 and other test certificates to demonstrate the soil is fit for purpose for the specified end use criteria • Obtain a U1 Environmental Permit Exemption for the use of less than 1,000 tonnes (over a 3-year period) of waste soils • Develop (via the Geotechnical Services Manager) or obtain a Materials Management Plan (compliant with the CL:AIRE Code of Practice) or an Environmental Permit for the import and use of more than 1,000 tonnes (over a 3-year period) of waste soils.	Y
Export of Soils	• Ensure that a Materials Management Plan (compliant with the CL:AIRE Code of Practice) is developed (via the Geotechnical Services Manager) or an Environmental Permit is obtained for the export and use of more than 1,000 tonnes (over a 3-year period) of waste soils; this could be developed by WCL or the receiving site – discuss with the Senior Environmental Manager / Environmental Advisor • Ensure all other waste Duty of Care legal requirements are complied with in relation to the transport and disposal of waste soils.	Y

The following opportunities for materials reuse have been identified during Pre-Construction. These include the generation of materials on site and / or the import of processed materials from donor sites, as well as use of purchased recycled materials that are imported. *Note: If none of the below apply, please insert "NA".*

SITE WON MATERIALS				
Material Prediction	**Volume to be Generated**	**Volume to be Reused On-site**	**Volume to be Exported Off-site**	**Control(s) Allowing Reuse**
Topsoil	tbc			Choose an item.
Subsoil	tbc			Choose an item.
Made Ground	tbc			Choose an item.

IMPORTED MATERIALS				
Material Prediction	**Volume to be Generated**	**Volume to be Reused On-site**	**Volume to be Exported Off-site**	**Control(s) Allowing Reuse**
Topsoil	tbc			Choose an item.
Subsoil	tbc			Choose an item.
Made Ground	tbc			Choose an item.

5.7 Cultural Heritage Management

The environmental control measures defined below apply to all personnel including WCL staff, subcontractors, suppliers and third parties, and all activities and operations associated with the project. These environmental control measures are in addition to the project specific control measures defined with the Environmental Risk Register (E02).

Risk	Environmental Control Measure(s)	Project Applicable (Yes / No)
Earthworks	• Consult with the local planning authority and / or Historic England (HE) / Cadw (Welsh Historic Monuments), where relevant, before works commence in areas of known or suspected cultural heritage assets e.g., archaeology, listed buildings • Develop and submit a method statement to HE / Cadw for works that may impact known or suspected cultural heritage assets • Install effective segregation around known or suspected cultural heritage assets from construction activities • Erect signage to notify project personnel of the presence of known or suspected cultural heritage assets • Ensure an archaeological Watching Brief monitors construction activities (e.g., topsoil stripping, excavations) in areas of known or suspected cultural heritage assets • Use toothless buckets, when a Watching Brief is present, to remove topsoil in areas of known or suspected cultural heritage assets • Suspend all construction related works, in the immediate vicinity, if a suspected cultural heritage asset is identified • Report the identification of any cultural heritage asset to the local planning authority • Report and record any damage cultural heritage assets • Provide information (e.g., site induction / toolbox talks) to site personnel.	Y
Works on or near Cultural Heritage Assets	• Consult with the local planning authority prior to any demolition works within a conservation area • Obtain Listed Buildings Consent from the local planning authority for any works to a Listed Building • Ensure construction designs are sensitive to the presence of known cultural heritage assets • Conduct structural surveys before construction activities commence to ensure any vibration impacts do not damage known cultural assets • Report and record any damage cultural heritage assets • Provide information (e.g., site induction / toolbox talks) to site personnel.	Y

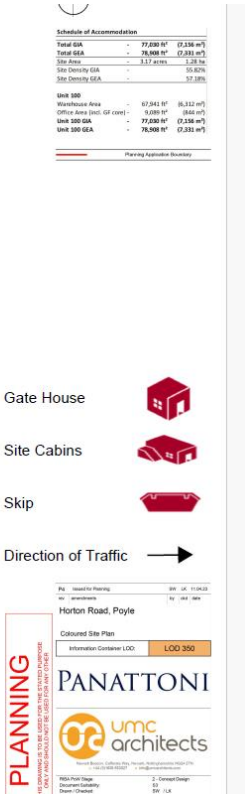
5.8 Traffic Management

The environmental control measures defined below apply to all personnel including WCL staff, subcontractors, suppliers and third parties, and all activities and operations associated with the project. These environmental control measures are in addition to the project specific control measures defined with the Environmental Risk Register (E02).

Risk	Environmental Control Measure(s)	Project Applicable (Yes / No)
Use of public, temporary & permanent haul roads	• Develop and implement a Traffic Management Plan • Identify local receptors that may be adversely impacted by traffic related nuisance complaints (e.g., noise, congestion and visual) • Establish and maintain contact with local residents and other potentially affected parties prior to the commencement of, and during, construction works in order to avoid any potential traffic nuisance related complaints • Ensure all construction related traffic uses agreed access points, as defined within the Traffic Management Plan • Ensure subcontractor HGVs are in good working order and hold a valid MOT certificate • Ensure all vehicles carrying loose material are covered • Obtain permission from the owner of street furniture (e.g., local authority or Local Highway Authority) prior to attaching directional signage • Site deliveries will be onto a stone capping layer or hard surfacing to reduce the risks of mud and / or debris being deposited on the Public Highway. Site access and surrounding roads will be monitored at all times and if necessary, road sweeping plant be used • Use wheel wash facilities / road sweepers, where appropriate, to keep public roads clear of dust and mud • Ensure all material suppliers adhere to agreed working hours in relation to material deliveries.	Y

The figure below shows our traffic management plan for the job. Where applicable we will refer to the reports undertaken by Mode for the travel plan and the transport plan produced in April 2023.

*NB
- All deliveries to utilise main route off M25
- A ll deliveries to avoid peak hours 08:00-09:00 and 17:00-18:00
-Full time road sweeper to service site during working hours.



We will ensure that construction gates to be setback to ensure HGVs do not block Horton Road whilst waiting for gates to open.

We will comply with the non-mobile machinery Euro VI emissions standard.

6. PROJECT ENVIRONMENTAL OBJECTIVES / TARGETS AND KPIs

The Project Manager, or their nominated representative, and the HSEQ Manager will review progress in achieving the objectives defined below on a monthly basis during the '4-week planning meeting' (S01). The Project Manager will also ensure the following information is recorded:

- Waste generated
- Electricity consumed
- Fuel consumed
- Water consumed.

Meter readings (e.g., electricity, water) must be entered monthly and waste information recorded on InfoTracker each month. Reported data is to be reviewed on a monthly basis and any data outliers are to be validated to ensure readings are correct and data provided correct; discuss variance to targets with the Environmental Advisor to note reasons or review options for improvement.

	OBJECTIVE	TARGET	RESPONSIBILITY	COMPLETION DATE
1	Design to use all materials on site	**tbc**		
2	> 90% waste diversion from landfill	**tbc**		

7. ROLES AND RESPONSBILITIES

Key project roles and responsibilities are provided in Appendix 3. The designated WCL staff that will be involved with the construction works throughout the project are identified below.

ROLE	DESIGNATED PERSON	CONTACT NUMBER
Construction Director	James Mandley	01604 678960
Operations Manager	Jonathan Neill	01604 678960
Project Manager	tbc	01604 678960
Site Manager / Agent	tbc	01604 678960
Head of HSEQ	Martin Law	01604 678960
Senior Environmental Manager	Amit Patel	01604 678960
Environmental Advisor	Laila Yasar	01604 678960
HSEQ Manager	Trevor Swailes	01604 678960

8. SUBCONTRACTOR MANAGEMENT

The project will engage various subcontractors to carry out project construction related activities. These subcontractors are responsible for performing all work in conformance with:

- Relevant environmental legislation and other environmental requirements e.g., Pollution Prevention Guidelines
- The requirements of this CEMP and WCL Working Instructions
- Contractual environmental requirements e.g., WCL Subcontractor Minimum Standards (G100).

Subcontractors are required to develop suitable, adequate and effective method statements that explicitly define the measures to be taken to manage significant environmental risks associated with their scope of works. No works should be permitted to commence until such method statements have been developed and approved by site management and, where necessary, the Environmental Advisor / HSEQ Manager. Additionally, subcontractors are required to provide sufficient and competent resources to monitor conformance with their own defined method statements.

The HSEQ Manager will conduct monthly General Inspections (GIs), that will assess subcontractor conformance to approved method statements, relevant environmental legislation and WCL Working Instructions.

9. COMMUNICATION & LIAISON

The communication of project related environmental information to key stakeholders is a vital element in maximising project environmental performance. Hence, the Project Manager, with the assistance of the HSEQ Manager, will ensure proactive communication of pertinent environmental information, as detailed below.

9.1 Communication with Client Representatives

TBC

9.2 Communication with Suppliers and Subcontractors

Suppliers and subcontractors will be made aware of the specific environmental requirements for working on site and for identifying and dealing with specific environmental issues associated with their work packages through:

- Issuance of the WCL Subcontractor Minimum Standards (G100)
- Attendance at the Health, Safety and Environment Planning Meeting (S01)
- Attendance on WCL and project specific induction processes.

Additionally, this CEMP and other relevant environmental management documentation (e.g., Spill Response Plan and Environmental Risk Register) will be made available on-site notice boards.

9.3 Communication with the public

The Project Manager, or their nominated representative, will liaise with the local community throughout the duration of the project on an as needed basis. However, all potentially affected parties that may be subject to disruption and / or disturbance as a result of project activities will be consulted and / or notified either via verbal face to face communications or letter drops. Additionally, site specific activities will be planned to minimise disturbance and disruption to local communities, schools, colleges, and local businesses. Furthermore, specific local community events (e.g., presentations, open days, site tours) will be held, as required, to foster a strong and open relationship with the members of the local community.

9.4 Communication with external parties

Proactive environmental communications will be conducted, as required, with the following:

- Environment Agency (EA) / Natural Resources Wales (NRW)
- Environmental Health Officer (EHO) from Slough Borough Council
- Thames Water

The purpose of maintaining a proactive and open dialogue with external parties (including regulators) is to ensure compliance with statutory and project environmental requirements is maintained.

If the project receives a reactive environmentally related communication (e.g., telephone call / email / site visit) from an enforcement authority (e.g., Environment Agency or Local Authority), the HSEQ Manager will record the communication on the Notification of Authority Enforcement Contact form (S30b) along with corresponding actions. Actions required following the visit will be closed out, as soon as practicable. In the event of any communications from regulatory bodies regarding possible enforcement action, the Senior Environmental Manager / Environmental Advisor should be contacted immediately, who can offer support and guidance, as needed.

9.5 Considerate Constructors Scheme (CCS)

The Project will be registered with CCS. All works will be carried out with positive consideration towards our neighbours and the environment. Works that are likely to cause an impact to our neighbours will be advertised

through a mechanism to be agreed with the local authority. This mechanism may be door to door leafleting of nearby properties, advertising in a local paper, posters in prominent locations and will address issues relating to programme, activities and likely effects, duration and points of contact.

10. MANAGING COMPLAINTS & COMPLIMENTS

The Project Manager / HSEQ Manager will ensure that all environmentally related complaints are recorded within InfoTracker. Thereafter, each substantiated complaint will be managed in accordance with the WCL Environmental Incident Reporting & Investigation Working Instruction (WI 02) that requires each complainant to be contacted within two (2) working days of the complaint being received and the complaint being thoroughly investigated and closed out in a timescale agreed with the complainant. The HSEQ Manager will also ensure that environmentally related complaints are effectively closed out within InfoTracker.

11. ENVIRONMENTAL INCIDENTS & EMERGENCY RESPONSE

All environmental incidents should be reported to the Project Manager (who should report to Clients, when required) who should ensure WCL management are contacted, as defined below, and relevant enforcement authorities. The Project Manager / HSEQ Manager should ensure that all environmental incidents should be recorded within InfoTracker.

WCL ENVIRONMENTAL INCIDENT CATEGORISATION	LEVEL 4	LEVEL 3	LEVEL 2	LEVEL 1
	Substantiated incident with no impact on the environment, people / property and / or reputation (WCL OBSERVATION)	Minor impact on the environment, people / property and / or reputation	Significant impact on the environment, people / property and / or reputation	Major impact on the environment, people / property and / or reputation
	Example incidents *(Categorisation to be confirmed with the Winvic Construction Limited (WCL) Environmental Team)*			
NOTIFICATION	• All WCL staff via InfoTracker	• HSEQ Manager • Operations Manager • Environmental Advisor • Senior HSEQ Manager • Sector Head of HSEQ • Construction Director	• HSEQ Manager • Operations Manager • Senior Environmental Manager • Senior HSEQ Manager • Sector Head of HSEQ • Construction Director	• Operations Manager • Head of Environment • Senior Environmental Manager • HSEQ Director • Sector Head of HSEQ • Construction Director

For Level 1 and Level 2 incidents, the Project Manager should contact the Senior Environmental Manager by telephone who will then further escalate the WCL response, if required.

Guidance on environmental incident categorisation is detailed within the WCL Environmental Incident Reporting & Investigation Working Instruction (WI 02; Appendix 1); however, the Senior Environmental Manager / Environmental Advisor will be consulted to agree final environmental incident categorisation.

The Project Manager / HSEQ Manager will ensure that the dedicated HSEQ telephone number is used in the event of an environmental incident occurring outside of normal working hours i.e., the 'HSEQ Team – Out of Hours On-Call Number' is called in the event of out of hour's environmental incidents, which should be used between the following hours:

- **Midweek** – after 1700hrs in the evening to 0700hrs the next day
- **Weekends** – after 1700hrs Friday to 0700hrs Monday
- **During normal working hours** – 0700hrs to 1700hrs Monday to Friday *(ensure contact is made with the HSEQ Manager direct in the first instance)*.

The Project Manager will, when necessary, report environmental incidents to:	
WCL Management (Out of Hours On-Call Number)	**0330 320 2185**
Environment Agency / Natural Resources Wales 24-hour Emergency Hotline	**0800 80 70 60**

The On-Call Manager will provide advice and guidance in relation to the environmental incident as well as assistance

in completing InfoTracker. If project personnel identify a suspected cultural heritage asset (e.g., archaeological artefact) all construction related works in the immediate vicinity should be stopped. Thereafter, the find should be reported to the Project Manager and the Environmental Advisor who should take all necessary and appropriate action(s), as defined in WCL Working Instruction (WI 05, Cultural Heritage Management).

Furthermore, if project personnel identify suspected rare or invasive plant species and / or rare fauna (e.g., Great Crested Newts, Water Voles, Bats, Barn Owls, Badgers and breeding birds) all construction related works in the immediate vicinity should be stopped. Thereafter, the find should be reported to the Project Manager and the Environmental Advisor who should take all necessary and appropriate action(s), as defined in WCL Working Instruction (WI 04, Ecological Management).

The WCL Working Instruction entitled Environmental Emergency Preparedness & Response (WI 03) describes the actions required to plan for the effective management of potential environmental emergency incidents so as to minimise any potential detrimental environmental impacts. As a result of implementing this Working Instruction, a Spill Response Plan (SRP) (E11) has been developed and made available to all site personnel.

Additionally, the Project Manager will ensure that this SRP is tested at least once and that site personnel are adequately trained in its requirements. The Project Manager should ensure that environmental emergency equipment (e.g., spill kits) appropriate to the significance of the spill risk and the sensitivity of the surrounding environment, are appropriately located and maintained on site.

In the event of a major hazardous material spill incident (i.e., incidents which cannot be dealt with using equipment available on site or spills / pollution which have, or are likely to, enter(ed) a watercourse / drain) site personnel should call the following 24-hour national spill response hotline:

AMBIPAR RESPONSE	
Response Time: **Within 4 – 6 hours**	**01202 653558**
Information to be provided when an emergency response call is made:	• Name of person reporting the incident • Quote Winvic Construction Limited • Telephone Number of person reporting the incident • Purchase Order Number • Incident details i.e., what has been spilled / location of spill / site contact details.

12. ENVIRONMENTAL TRAINING

Courses are run by WCL covering various environmental issues, as defined in the WCL Training Matrix. For site personnel, the site induction will be used to promote overall environmental awareness as well as employee and subcontractor environment management responsibilities. The site induction will be further enhanced through the delivery of a series of toolbox talks that should be delivered to relevant site personnel on an ongoing basis.

The environmental toolbox talks that should be delivered on this project are:

WCL ENVIRONMENTAL TOOLBOX TALKS	
TBTENV02	Tree Protection
TBTENV20	Spill Control
TBTENV21	Petrol, Diesel and Oils
TBTENV22	Re-Useable Soil Resources on-site
TBTENV23	Soil Planning and Management

TBTENV24	Stripping Topsoil
TBTENV25	Stripping Sub-soil
TBTENV26	Stockpiling Soil
TBTENV27	Spreading Soil
TBTENV28	Sourcing Topsoil
TBTENV29	Manufacturing Topsoil
TBTENV30	Soil Aftercare
TBTENV31	Use of Surplus Soil
TBTENV32	Working with Previously Developed Land
TBTENV34	Dust and Air Quality
TBTENV35	Noise and Vibration
TBTENV36	Be a Good Neighbour
TBTENV37	Materials Management and Housekeeping
TBTENV38	Energy Conservation – Construction Site Good Practice
TBTENV39	Timber Procurement
TBTENV40	Waste Management
TBTENV41	Storage of Waste
TBTENV42	Waste Segregation
TBTENV43	Water Pollution Prevention
TBTENV44	Water Pollution - Silt
TBTENV45	Water Pollution – Cement and Concrete
TBTENV46	Pumping and Overpumping
TBTENV47	Washing Down Plant and Machinery
TBTENV48	Bentonite
TBTENV49	Climate Change
TBTENV50	Construction Carbon Reduction
TBTENV51	Road Sweepers

The delivery of these environmental toolbox talks will be planned during the '4-week planning meeting' (S01) that is held between the Project Manager and the HSEQ Manager. Evidence of delivery of any relevant training and / or TBTs will be recorded on the Training Attendance Register (S43).

13. ENVIRONMENTAL AUDITS & INSPECTIONS

Continuous monitoring of environmental performance will take place via monthly General Inspections (GIs), which establishes subcontractors' compliance to the requirements of the WCL EMS, this CEMP, method statements and the Client and statutory obligations.

GIs will be conducted by the HSEQ Manager with any findings recorded within InfoTracker. Thereafter, appropriate corrective and remedial action(s) will be taken in a timely manner. Environmental information from GIs is collated by the HSEQ Department and analysed for any arising trends. From this analysis, preventative action is taken to prevent recurrence e.g., re-briefings, toolbox talks. Project environmental audits will be conducted by the Senior Environmental Manager / Environmental Advisor to ISO14001 standards, to ensure compliance with the WCL EMS. HSEQ Managers will also include environmental observations and corrective actions as part of their site visit reports.

14. PROJECT CLOSE OUT

The Project Manager must ensure the following are completed upon conclusion of site-based project activities.

ITEM	ACTIONS	YES; NO; N/A
DoWCoP / MMP / Verification Report	Has all documentation / records been completed for the reuse of excavated material?	
	Has the required information been returned to the appropriate consultants? Has CL:AIRE been notified?	
U1 Exemption	Have record logs been completed for the reuse of excavated material (demonstrating <1,000t used)?	
	Are all waste transfer notes retained?	
Aggregates Quality Protocol	Has appropriate information been provided demonstrating compliance with the Aggregates Quality Protocol?	
Environmental permits, consents, licences and / or approvals	Have all environmental regulatory permissions (e.g., discharge permits / abstraction licences / waste permits) been surrendered to the appropriate regulatory body?	
BIG Challenge	If relevant, has the WCL Environmental Advisor been contacted to develop a project BIG Challenge case study to highlight biodiversity enhancement initiatives undertaken?	
Project Case Study	If relevant, has the Marketing & BD Department been contacted produce a HS&E / Sustainability Case Study to highlight HS&E / Sustainability achievements made during project delivery?	
Awards	If relevant, has the WCL Environmental Advisor been contacted to develop a submission for an environmental award (e.g., Green Apple Award) to recognise significant environmental achievements?	
Environmental Performance (KPIs)	Have all WTNs / HWCNs been added to InfoTracker?	
	Has the Waste Management Service Provider diversion from landfill figures provided / accurate? Has the final project C/D/E performance data been received from each provider?	
	Has all diesel / water usage been recorded?	
	Has the final electric meter reading(s) been entered onto InfoTracker?	
Incidents & Communication	Have all environmental incidents, Enforcement Authority visits been recorded and closed out?	
	No. of L1 incidents ??	
	No. of L2 incidents ??	
	No. of L3 incidents ??	
	No. of L4 observations ??	
	No. of environmentally related complaints ??	

APPENDIX 1: WCL ISO 14001 CERTIFICATION

British Assessment Bureau

Certification is conditional on maintaining the required performance standards throughout the certified period of registration
The British Assessment Bureau, 30 Tower View, Kings Hill, Kent, ME19 4UY

The management system of Certificate Number 2032456

Winvic Construction Limited

Brampton House, 19 Tenter Road, Moulton Park, Northampton, NN3 6PZ

has been assessed and certified as meeting the requirements of

ISO 14001:2015

for the following activities

The design and project management of construction projects for the private sector and commercial clients throughout the United Kingdom. For the purpose of SSIP this Organisation has been assessed against a Principal Contractor and Principal Designer; CDM role.

Further clarifications regarding the scope of this certificate and the applicability of requirements may be obtained by consulting the certifier.

UKAS MANAGEMENT SYSTEMS
8289

Valid from
Initial Certification: 17 September 2009
Latest Issue: 06 July 2021
Expiry Date: 17 September 2024
subject to annual assessments

Authorised by

Mike Tims
Chief Executive Officer

www.british-assessment.co.uk

Certificate issued by Amtivo Group Limited, trading as British Assessment Bureau

To confirm the 'Live Status' of this certificate please use the 'Certificate Verification' tool located at www.british-assessment.co.uk

APPENDIX 2: PROJECT ENVIRONMENTAL RISK REGISTER

winvic E02

Environmental Management — **Environmental Risk Register**

Project Name:		Prepared By:		Date Prepared:	
Project Number:		Position:		Date Last Reviewed:	
Regional Environmental Manager:					

Ref	Description (Select Activities)	Nuisance: Noise	Nuisance: Odour	Nuisance: Dust	Nuisance: Traffic	Nuisance: Visual Impact	Nuisance: Vibration / Light	Discharges & Emissions: Surface Water	Discharges & Emissions: Ground Water	Discharges & Emissions: Solid Waste(s)	Discharges & Emissions: Liquid Waste(s)	Land & Resources: Cultural Heritage	Land & Resources: Land Use Management	Land & Resources: Materials, Energy & Water Conservation	Land & Resources: Ecological Management	General: Environmental Incident	General: Other	General: Environmental Legal Permissions
	Construction Activity	View Notes	View Notes	View Notes	View Notes	View Notes	View Notes	View Notes	View Notes	View Notes	View Notes	View Notes	View Notes	View Notes	View Notes	View Notes		View Notes
1	Abstraction of Water																	
2	Boring and Bored Tunnelling																	
3	Brick / Blockwork																	
4	Building Refurbishment																	
5	Concrete Batching																	
6	Concrete Pours & Washout																	
7	Crushing, Screening & Material Reuse																	
8	Demolition Works																	
9	Dewatering / Overpumping																	
10	Dredging																	
11	Earthworks																	
12	Erection of Site Fencing																	
13	Excavation																	
14	Exposed Structural Element Repair																	
15	Grouting																	
16	Internal & External Fit-out																	
17	M&E Work																	
18	Microtunnelling																	
19	Office Maintenance																	
20	Permanent Office Set-Up & Operation																	
21	Piling																	
22	Pipeline Testing & Commissioning																	
23	Planning Conditions																	
24	Plant & Vehicle Maintenance																	
25	Procurement of Materials & Services																	
26	Roadworks																	
27	Site Access / Egress																	
28	Site Clearance																	
29	Site Drainage																	
30	Site Office Set-Up & Operation																	
31	Steelwork Erection																	
32	Storage / Use of Hazardous Materials																	
33	Temporary Works																	
34	Transportation - materials / wastes																	
35	Use of Plant & Vehicles																	
36	Vegetation Clearance																	
37	Washdown Activities																	
38	Working in Tidal Waters																	
39	Working in, near or over Water																	
40	Working with Groundwater																	
41	User Defined Risk 1 - double click																	
42	User Defined Risk 2 - double click																	
43	User Defined Risk 3 - double click																	

APPENDIX 3: PROJECT ROLES & RESPONSBILITIES

NAME / POSITION	KEY ENVIRONMENTAL RESPONSIBILITIES	MOBILE NUMBER
tbc Project Manager	• Overall management of the environmental component of the project. • Secure environmental permits in collaboration with the Senior Environmental Manager / Environmental Advisor • Support and check that environmental plans, associated guidance, and processes are being followed with support from the Environmental Advisor. • Highlight new areas of work that may present environmental risk and ensure these are proactively managed.	Enter telephone number
tbc Site Manager/ Agent	• Highlight new areas of work that may present environmental risk. • Lead on developing new ways of working to avoid, reduce and mitigate pollution, obtain support from the HSEQ Manager / Environmental Advisor. • Communicate and where necessary supervise the delivery of the agreed work and any additional actions. • Act in the event of pollution incidents. • Delivery of environmental training (induction and toolbox talks) for site personnel and subcontractors.	Enter telephone number
Laila Yasar Environmental Advisor	• Support day to day activities to ensure significant environmental effects are avoided. • Review and update the site Construction Environmental Management Plan, where necessary. • To act as the main point of contact between the regulatory authorities (EA / NRW / local authority) and the project on environmental issues. • Liaison with the acoustic, air, lighting and ecological consultant(s) to the project. • To act as the main point of contact between neighbours and the project. • Ensure best practice is promoted at all times. • Assisting with the implementation of emergency response procedures after environmental incidents. • Assisting in the management of the monitoring programme, including dust, noise, smoke, light and land contamination.	07761341964
Amit Patel Senior Environmental Manager	• Provide support to evaluate environmental risk and advise on developing new ways of working to avoid, reduce and mitigate pollution. • Monitor, review and update environmental plans; include site-specific protection measures, discuss any actions with Environmental Advisor and HSEQ manager; agree responsible persons and timeframe for delivering on actions. • Support the development of new guidance and processes in line with the ISO14001 EMS. • Provide advice in the event of pollution incidents. • Provide environmental training to all staff.	07519348045
tbc HSEQ Manager	• Lead on proposals to address strategic environmental risk and present these to the business. • Chair '4 weekly' meetings on site to evaluate environmental monitoring, incidents, non-conformances, complaints and change or variation in the working method. • Ensure the project Environmental Risk Register is formally reviewed monthly during '4 .weekly' meetings • Support development and sign off method statements for high-risk activities. • Environmental incident monitoring and reporting.	Enter telephone number

NAME / POSITION	KEY ENVIRONMENTAL RESPONSIBILITIES	MOBILE NUMBER
Earthwork, Groundwork and Water Management Support	• Follow processes communicated with respect to environmental protection and specific methods of work. • Implement environmental plans and any site-specific measures. • Report to senior engineer any pollution and near miss incidents. • Act in the event of pollution incidents.	Enter telephone number
Spill Responder(s)	• Ensure spill response equipment is available and well maintained • Respond to any spill incident that occurs if it is safe to do so • Ensure incident details are entered within InfoTracker following any spill incident.	Enter telephone numbers
Site Staff	• Follow processes communicated with respect to environmental protection and specific methods of work. • Report to their immediate supervisor any pollution and near miss incidents observed. • Act in the event of pollution incidents.	N/A

STEPHENSON HALLIDAY

Planning, Landscape & Environment
an RSK company

HORTON ROAD, POYLE

Landscape and Ecological Management Plan
Panattoni UK Ltd
April 2023

STEPHENSON HALLIDAY
Planning, Landscape & Environment
an RSK company

Contents

Document history

	Name	Date
Author	Craig Scott	31-03-2023
Technical Reviewer	Joanne Mayneord	31-03-2023
Approved	Craig Scott	31-03-2023

1 INTRODUCTION

1.1.1 This Landscape and Ecological Management Plan (LEMP) is submitted to Slough Borough Council on behalf of Panattoni UK Ltd, in support of the Planning Application for a commercial unit at Horton Road at Poyle.

1.1.2 This LEMP refers to, and should be read in conjunction with, the extent of landscape and ecological works illustrated on the following drawings:

- 0511-05-03-1000 Detailed Landscape Plan

1.1.3 This 30-year Landscape and Ecological Management Plan (LEMP) provides the documented basis for successful establishment, after-care, and long-term management and maintenance of the proposed landscape and ecological scheme. The LEMP objectives are driven by the overall vision of the design intentions for the scheme and to ensure that the report is in accordance with BS 42020:2013 Section 11.1.1. Planned maintenance and management operations are described for the site's various landscape treatments. It is the intention that this LEMP will be implemented by Panattoni Ltd, with the completion of the landscape scheme alongside that of the development, and that the future landscape maintenance (as per the schedule in Appendix 1) will be the responsibility of their nominated landscape contractor.

1.2 Overall Vision

1.2.1 The landscape vision is to provide an aesthetically pleasing and usable space, ensuring that the landscape is maintained for users and visitors to the site as well as enhancing biodiversity and habitat value, whilst allowing for minimal maintenance regimes.

1.2.2 The landscape scheme aims to achieve the following

- To ensure that the proposed planting scheme maximises the opportunities and potential for onsite biodiversity
- To provide visual amenity and structure to the proposed development
- To ensure ongoing compliance with airport safeguarding in relation to bird strike management

1.3 Landscape Elements

1.3.1 The landscape proposals will focus on the creation and retention of the following habitats:

- **Proposed Tree Planting:** 13no. in total, planted in native shrub, ornamental and grassland areas these trees will provide a good structure to the landscape by their placement at key locations.
- **Native thicket** Approximately 62m² of native shrub to provide habitat for birds, bats, invertebrates and reptiles.

- **Native species-rich hedgerow:** Approximately 279 lin m of species-rich native hedgerow is to provide additional ecological corridors throughout the site.
- **Ornamental planting:** Approximately 237m² low maintenance and aesthetic shrub and herbaceous planting is to provide structure and colour to the development, in addition to providing nectar foraging opportunities for invertebrates and foraging resources for birds and mammals.
- **Species rich grassland:** Approximately 300m² of meadow grassland with wildflowers is to be established to provide foraging for pollen and nectar loving wildlife, this also includes the understory to native shrub and woodland areas.
- **Amenity grassland:** Approximately 189m² of amenity grass to maintain a neat, healthy, uniform sward to provide an aesthetic edge to pathways and wildflower grassland

2 LANDSCAPE MANAGEMENT

2.1.1 Management operations are defined as long term cyclical operations over several years to allow successful establishment of the soft landscape areas.

2.1.2 Management objectives are focused on achieving objectives described in the overall vision and facilitated by the maintenance operations described below.

2.1.3 The management plan sets out operations for a 30-year period following practical completion of the works to comply with emerging biodiversity net gain guidance.

2.1.4 The soft landscape for each phase will, for the initial 1 year after Practical Completion, be maintained by the Landscape Contractor appointed to install the soft landscape. The contract will include a defects liability clause to ensure that replacement planting is carried out and successful establishment achieve with a detailed 12-month maintenance schedule provided as part of the soft landscape specification for the phase.

2.1.5 Following this, the ongoing maintenance and management of the landscape will be overseen by facilities management and their appointed landscape contractor. The work undertaken, and scheme progress will need to be assessed annually, with a major assessment after the fourth year to allow revision to the existing maintenance and management regime to reflect findings. This assessment will be carried out in conjunction with the Ecological Consultant to ensure that the requirements for habitat creation and the successful establishment of the landscape are met; and to identify and mitigate any previously unforeseen impacts. Maintenance for the following years is to be reviewed at 3-year intervals using the same method to ensure appropriateness of regime. The matrix in Appendix 1 at the end of this report identifies the anticipated work over an extended 30-year period.

2.1.6 This approach will ensure that the quality of the landscape infrastructure created in the early years can be maintained for the benefit of visitors to the Site as well as providing a benefit to persons who live near to the site who interact with it. In addition, it will ensure that the landscape develops to maximise the ecological potential of the proposals.

2.2 General Management Operations

2.2.1 Regular monitoring and maintenance works carried out to keep a healthy and functional landscape beneficial to wildlife and an aesthetic character to the development. All areas to be tidied including the removal of litter. Plant material will be selected from British grown nurseries, with known provenance. All plant and seeding failures during the 1 year defects liability period are to be replaced to the original specification within the next planting season and will be covered by the contract requirements. Planting and grassland areas that fail, die, or are damaged as a result of environmental factors or poor design in the longer term, will be addressed by redesign/replacement as appropriate to achieve complete vegetation cover and satisfy landscape planning condition establishment requirements where relevant.

2.2.2 All tree planting operations to be in accordance with BS 8545: 2014 Trees: ‘From Nursery to Independence in the Landscape - recommendations’.

2.2.3 All planting material is to conform to BS 3936 - parts 1-10 Specification for Nursery stock.

2.2.4 All landscape operations to be in accordance with BS 4428: 1989 Recommendations for general landscape operations.

2.2.5 Existing trees and hedgerows (including root protection zones / areas) either within, or along the boundary of, the site will be protected during construction in accordance with 'BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations'.

2.2.6 In line with recommendations from the UK Government's Tree Health and Plant Biosecurity Expert Taskforce all planting material is to be sourced from reputable nurseries (registered under the HTA Nursery Certification Scheme) in order to avoid the spread of any pest and plant disease which may threaten the health of any proposed or existing planting material. All necessary information with regards to the identity and source of the planting material, from original source, will be obtained from the nursery and made available for inspection on request. Every care has been taken at time of preparation of the planting design to specify plants which are currently disease free. For further details on notifiable, and non-notifiable, pests and diseases refer to the Department for Environment, Food & Rural Affairs (DEFRA) UK Plant Health Risk Register.

2.2.7 Soil management and storage should follow best practice guidelines; refer to DEFRA; Construction Code of Practice for the Sustainable Use of Soils on Construction Sites.

2.2.8 Any imported subsoil to be in accordance with BS 8601:2013 'Specification for subsoil and requirements for use'; With debris and contamination removed; stone to be a maximum ring size of 100mm in any dimension.

2.2.9 Any imported topsoil to be in accordance with BS 3882:2015 'Specification for topsoil'; weed free, fertile medium loam with maximum 20% stone content. Stones to be a maximum ring size of 50mm in any dimension for general tree, shrub and hedge planting and 38mm maximum ring size for grass seed areas.

2.2.10 Planting shall not be undertaken when the ground is waterlogged or frost bound but otherwise shall be undertaken between November and March.

2.3 Proposed Trees

Management Objective

2.3.1 The trees are outlined in Table below and will be planted in the locations shown on Drawing 0511-03-05-1000 Detailed Landscape Plan. Trees shall be planted at no closer than 5m intervals.

Management Operation

2.3.2 Trees are to be checked regularly by a qualified arboriculturist to identify any diseases or deadwood to be removed, and any remedial works to be carried out. As plants develop, pruning, remedial tree surgery, and crown lifting will be implemented across the site to maintain the health, vigour, and appearance of trees. All works to be carried out by an Arboricultural Association approved contractor in accordance with BS 3998:2010 Tree Work.

2.3.3 All tree planting is to be protected throughout the first 5 years of establishment. All tree protection is to be regularly adjusted and removed in year 5 to allow for healthy plant growth.

Native Trees

Botanical name	Common name
Acer campestre	Field Maple
Acer platanoides 'Autumn Blaze'	Field Maple cultivar
Betula pendula	Silver Birch
Carpinus betulus	Hornbeam

2.3.4 All trees listed are to be rootballed stock. The trees listed above are to be planted in pits of minimum size 1500 x 1500 x 900mm depth. The bottom of pits will be loosened to allow root penetration, and free draining to avoid waterlogging.

2.3.5 Rootballed and contained grown trees will be supported by two no. 900mm long 50mm diameter softwood stakes, machine round pointed with a chamfered top, driven 600mm depth with cross bar finished 300mm above ground. Tree will be secured to centre of cross bar using Flat Back Unslotted Block and T260 Buckle Tree Tie by Rubberloc (or equivalent).

2.3.6 Rootballed and contained grown trees will be planted with a RootRain urban irrigation system (or similar) installed.

2.3.7 Rootballed and contained grown trees will be topped with 75mm of bark mulch.

2.3.8 Tree pits are to be backfilled with topsoil mixed with 25% Tree Planting Compost (TPC). A general purpose slow release fertiliser at a rate of 75g/m2 is to be incorporated into the top 150mm of topsoil.

2.3.9 All newly installed trees must be watered.

2.4 Native Thicket Planting

Management Objective

2.4.1 Native thicket provides will provide additional connectivity to existing offsite landscape along with wildlife habitat and additional biodiversity. The thicket will provide a robust treatment that, over time, will aid in providing an increased buffer to the development when viewed from the surrounding landscape.

Management Operation

2.4.2 Thicket shrubs are to be planted in 300mm depth topsoil and planted on a 1 metre grid in single species groups of 7-15 in moist, friable and not waterlogged soil. Due to the majority of the stock being bare root, planting and replacement planting should take place between November and March.

2.4.3 Thicket areas are to be under-seeded with a shade tolerant wildflower mix to increase the biodiversity value but with the area within and immediately adjacent to any guards being kept clear of weed growth. All shrubs are to be protected throughout the first 5 years of establishment with guarding regularly monitored, adjusted and removed at year 5.

Thicket Mix

%	Botanical name	Common name
10	Carpinus betulus	Hornbeam
10	Cornus sanguinea	Dogwood
15	Corylus avellana	Hazel
15	Crataegus monogyna	Hawthorn
5	Euonymus europaeus	Spindle
5	Ilex aquifolium	Holly
10	Ligustrum vulgare	Wild Privet
15	Prunus spinosa	Blackthorn
5	Rosa canina	Dog rose
10	Viburnum opulus	Guelder Rose
100		

2.5 Native Species Rich Hedgerow

Management Objective

2.5.1 Native hedgerows are to increase the overall diversity of vegetation throughout the site as well as provide essential connectivity and habitat for wildlife; and a screen to ground level activity. Native hedgerow is to be planted primarily at the site boundaries.

Management Operation

2.5.2 Hedgerow shrubs are to be notch planted in double staggered rows 0.5m apart with 5 plants per linear meter with 0.45m centres in moist, friable and not waterlogged soil. Due to the inclusion of bare root species within the hedgerow mix, planting and replacement planting should take place from November to March. Regular checks shall be undertaken to remove dead, diseased or damaged shrubs and branches; replace removed shrubs with same species.

2.5.3 All hedgerow shrubs are to be protected, with protection regularly monitored, adjusted and removed at year 5. The risk of flocking birds in the Crataegus monogyna (Hawthorn), Prunus spinosa (Blackthorn) and Ilex aquifolium (Holly) can be mitigated through annual clipping in summer (after flowering) to limit the berry production. Ensure that hedgerows are maintained in accordance with safeguarding guidance with a maximum width of 1.2m and height of between 1.2 and 1.5m.

2.5.4 Hedgerow shrubs are to be planted in staggered double rows in single species groups of 5 to 11 with quantities as specified of the following species mix:

Native Hedgerow mix

%	Botanical name	Common name
10	Acer campestre	Field Maple
10	Carpinus betulus	Hornbeam
10	Cornus sanguinea	Dogwood
10	Corylus avellana	Hazel

20	Crataegus monogyna	Hawthorn
5	Cytisus scoparius	Broom
5	Ilex aquifolium	Holly
5	Ligustrum vulgare	Privet
10	Prunus spinosa	Blackthorn
5	Rosa canina	Dog Rose
5	Sambucus nigra	Elder
5	Viburnum opulus	Guelder rose

2.6 Ornamental Hedgerow

Management Objective

2.6.1 Ornamental hedgerows will be established around the building entrance to aid with framing and defining the space. The aim will be for quick establishment to form neat, clipped hedgerows.

Management Operation

2.6.2 General maintenance regime of pruning, weeding and tidying required regularly to maintain health and vigour and pleasing amenity value. Replace failed plants in the next suitable season. Hedgerows to be maintained at a height of 0.5m and at a width of between 0.4 and 0.6m.

Single Species Native Hedgerow (Tier One and Two)

Botanical name	Common name
Lonicera pileata	Box-leaved honeysuckle

2.7 Ornamental Planting

Management Objective

2.7.1 Ornamental planting is to be healthy and aesthetically pleasing mix of species selected in part for their benefit for pollinators. A general maintenance regime of pruning, weeding and tidying will be implemented to encourage good health and flowering, retaining features such as seed heads for extended interest throughout the seasons, and to maintain the health and shape of ornamental plants in a clean, weed-free state throughout the year.

Management Operation

2.7.2 General maintenance regime of pruning, weeding and tidying required regularly to maintain health and vigour and pleasing amenity value. Replace failed plants in the next suitable season.

Ornamental Planting Species

Botanical name	Common name
Amelanchier canadensis	Serviceberry
Berberis thunbergia ‘Atropurpurea Nana’	Dwarf purple barberry

Choisya ‘Aztec Pearl’	Mexican orange ‘Aztec Pearl’
Cistus ‘Silver Pink’	Rock Rose ‘Silver Pink’
Cornus alba ‘Sibirica’	Siberian Dogwood
Cornus stolonifera ‘Kelseyi’	Red Osier Dogwood ‘Kelseyi’
Corylus avellana	Hazel
Euonymus fortunei ‘Dart’s Blanket’	Spindle ‘Dart’s Blanket’
Hamamelis intermedia ‘Diane’	Witch Hazel ‘Diane’
Hebe ‘Red Edge’	Shrubby Veronica
Miscanthus sinensis ‘Gracillimus’	Chinese Silver Grass
Prunus lusitanica	Portuguese Laurel
Stipa gigantea	Golden Oats
Viburnum davidii	David Viburnum
Weigela ‘Snowflake’	Weigela ‘Snowflake’

In terms of long-term management, the following will be considered:

- Gap up spaces within planting beds if required.
- Review planting species, replace over-mature or tired-looking plants.

2.8 Species Rich Grassland

Management Objective

2.8.1 Species rich grassland will be maintained to encourage the growth of wildflowers in the relatively long grass. Cutting times will allow for flowering and seeding, and the removal of arisings from cutting operations will keep soil fertility low and so reduce the strength of the grass cover to encourage the growth of wildflowers and floral diversity.

2.8.2 Once established, grassland management will be based around a main summer cut in combination with an autumn cut if required. Leave the arisings to dry and shed seed then remove from site. Grassland swards to be cut to a minimum height of 100mm to avoid impacts to reptiles.

Management Operation

2.8.3 There will be likely to be a flush of annual weeds from the soil in the first growing season which may grow up and obscure the meadow seedlings beneath which can be controlled by topping or mowing.

2.8.4 Mow newly sown meadows regularly throughout the first year removing cuttings if dense. This will control annual weeds and help maintain a balance between faster growing grasses and slower developing wildflowers.

2.8.5 In subsequent years grassland management will be as a traditional meadow, based around a main summer hay cut in combination with an autumn cut if required. Leave the 'hay' to dry and shed seed then remove from site. Grassland swards to be cut to a minimum height of 100mm to avoid impacts to reptiles. For the first few years there may be a need to re-seed areas to enable a sufficient, self-sustaining sward to develop.

2.8.6 No fertilisers will be used as this enriches the soil nutrients, allowing grasses to easily outcompete wildflowers. Similarly, the use of chemical pesticides will be avoided as wildflowers are more susceptible than grasses and weeds. Spot-treatment of noxious weeds will be allowed due to its localised nature.

Species Rich Grassland Mix

Emorsgate EM2 General Purpose meadow mixture – 4g/m

Composition
Wild flowers

%	Latin name	Common name
1.0	Betonica officinalis	Betony
3.5	Centurea nigra	Common Knapweed
0.1	Daucus carota	Wild Carrot
1.0	Filipenula ulmaria	Meadowsweet
0.3	Galium verum	Lady's Bedstraw
0.5	Leucanthemum vulgare	Oxeye Daisy
0.9	Lotus corniculatus	Birdsfoot Trefoil
1.0	Malva moschata	Musk Mallow
2.0	Plantago lanceolata	Ribwort Plantain
0.1	Primula veris	Cowslip
0.1	Prunella vulgaris	Selfheal
1.0	Ranunculus acris	Meadow Buttercup
3.5	Vicia cracca	Tufted Vetch
15		

Grasses

%	Latin name	Common name
8.5	Agrostis capillaris	Common Bent
34	Cynosurus cristatus	Crested Dogstail
25.5	Festuca rubra	Slender-creeping Red-fescue
17.0	Poa pratensis	Smooth-stalked Meadow-grass
85		

2.9 Amenity Grass

Management Objective

2.9.1 To maintain a neat, healthy, uniform sward which presents a formal feel to the business park, which provides an edge for more biodiverse species rich wildflower seeding. The seeding also has a mixture of clover and ryegrass to improve the diversity of this grassland.

Management Operation

2.9.2 Cut regularly during the first two years to minimise annual weed growth and maintain a balance between grasses and wildflower growth, removing cuttings.

Amenity Grassland Mix:

DLF PM 120 Slowgrowth (35-50g/m²).

3 LANDSCAPE MAINTENANCE

Maintenance operations can be defined as short term regular operations that are required on a day to day, week to week basis, such as grass cutting and weeding

3.1 General Maintenance Principles

3.1.1 The maintenance programme for the 30 years following completion of the soft landscape works is detailed in Appendix 1. Whilst the nature of these maintenance operations will typically be carried through subsequent years, the frequency of operations remains flexible so that response can be made to any change in circumstances. The maintenance programme will, therefore, need to be reviewed on an annual basis to determine the exact requirements to suit the longer-term management objectives.

3.1.2 Generally, over the site area:

- Tidy up areas removing rubbish, litter etc.
- Treat pests and diseases including removal of dead, dying, diseased wood. Control measures to be carried out to a programme that prevents re-occurrence and controls the spread of the problem.
- Watering when deemed necessary to maintain healthy growth.
- Keep planting areas, tree bases and grassland free of weeds.
- Monitoring and reporting.

3.2 Individual Trees

3.2.1 Management objectives can be achieved through a programme of general tree works to produce healthy specimens to and through maturity.

General

3.2.2 In the initial years after planting, trees will need to be checked for damage or disease and to ensure they are firmed in, stakes are secure and not rubbing, and tree shelters should be adjusted to ensure they are secured and protect the tree to ground level. Where damage has occurred, necessary pruning, adjustments or replacements should be carried out. Water trees and shrubs as necessary to maintain healthy growth.

3.2.3 Trees are to be planted into tree pits at least 150mm greater than the tree root in every direction, backfilled with as dug soils and compost mix and secured by a short stake 600mm (above ground level). All trees are to be protected by a tree tube.

3.2.4 Defective, diseased, unsafe or weak parts of trees additional to those scheduled for attention: Give notice if detected.

3.2.5 Initially, mulch mats will keep the base of trees and shrubs free of weeds. Mulch mats should be checked every year and secured or replaced as necessary, bark mulch to be checked and topped up as required to 75mm (one visit per year).

3.2.6 Ensure a weed-free area of 600mm during the first three years of establishment. Weed control may be achieved through spot treatment with an approved glyphosate-based herbicide (i.e. Roundup or similar approved), applied following the manufacturer's recommendations in suitable weather conditions. Care must be taken to ensure spray does not damage trees or affect vertebrate populations. Spraying operations should be carried out by competent operators and in calm conditions to avoid drift of spray. Only non-residual herbicides approved for use near water bodies should be used on site.

3.2.7 A tree condition and safety survey will be undertaken every 3 years by a suitably qualified arboricultural consultant. Any remedial works (e.g. pruning or felling) as recommended by the tree condition and safety survey shall be carried out within the timescales recommended by the consultant.

3.2.8 A newly planted tree should ideally receive approximately 50 litres of water each week during dry periods throughout May, June, July and August. Ideally carried out in the morning or evening. If a watering pipe is present, then approximately half of the water should be poured down the pipe and half added to the ground surface around the tree.

Tree works

3.2.9 Tree Work is to be carried out by an approved member of the Arboricultural Association. Chainsaw work; operatives must hold a Certificate of Competence. Tree maintenance shall only take place between November and February (inclusive) to avoid the nesting bird session.

3.2.10 Remove whole branches back to the stem or cut lower portions of branches back to lateral or sub lateral buds or branches. Do not leave stumps. Cut vertical branches similarly, with no more slope on the cut surface than is necessary to shed rainwater.

Crown Reduction and Shaping

- Cut back selectively to lateral or sub lateral buds or branches to retain flowering branch lines without leaving stumps.
- Leave trees with a well-balanced natural appearance.

Crown Lifting

- Remove branch systems to give clearances as follows – 2400mm above ground level.

Crown Thinning

- Removing branches: Remove inward growing, crossing, rubbing, dead and damaged branches.
- Thinning: Selectively remove approximately 15% of secondary and small live branch growth evenly throughout the crown.

- Cutting: Make no cuts of more than 75mm diameter. Cut portions of branches back to lateral or sub lateral buds or branches without leaving stumps.

3.3 Native Thicket Planting

Native Thicket Mix

3.3.1 The areas of thicket will provide connectivity to adjacent offsite planting. Species which will create a varied canopy have been selected for the ability to be coppiced, form to provide dappled shade, and develop low growing scrubby vegetation. Prescribed maintenance will aid the successful establishment of vegetation with good species diversity, health and once mature, maintenance will be focussed on preventing succession to a woodland typology and encroachment into grassland areas.

General

3.3.2 In the 5-year period after planting, trees and shrubs will be checked for:

- Damage or disease (Where damage has occurred, necessary pruning, adjustments or replacements should be carried out).
- Ensure they are firmed in.
- Stakes are secure and not rubbing.
- Tree shelters will be adjusted to ensure they are secured and protecting the tree to ground level.
- Water trees and shrubs as necessary to maintain healthy growth.
- On removal of stakes, the hole will be backfilled with lightly compacted soil.
- Species rich grassland seeding within scrubland and woodland areas will be maintained in accordance with principles set out for grassland areas and maintained to ensure that the mix does not out compete the establishment of scrub and woodland species.

3.3.3 Weed control will be achieved through spot treatment using a weed wiper with an approved glyphosate-based herbicide (i.e., Roundup or equivalent approved), applied in accordance with the manufacturer's recommendations in suitable weather conditions. Care shall be taken to ensure herbicide does not damage trees and shrubs. Weed control operations shall be carried out by competent operators and in calm conditions to avoid drift of herbicide.

3.3.4 A tree condition and safety survey will be undertaken in year 4 by a suitably qualified arboricultural consultant. Any remedial works (e.g., pruning or felling) as recommended by the tree condition and safety survey shall be carried out within the timescales recommended by the consultant and before the end of the 5-year establishment period.

Pruning Generally

3.3.5 Trees and shrubs will be pruned as necessary to remove dead, dying or diseased wood and suckers and to promote healthy growth and natural shape. Pruning will be carried out in

accordance with BS 8545:2014 Trees from nursery to independence in the landscape and good horticultural and arboricultural practice.

3.3.6 Dead or dying trees / shrubs and felled timber may be used to create habitat log piles to allow them to decay naturally within the woodland providing habitats for insects and other species.

3.3.7 Diseased trees are to be taken from site and disposed of. Diseased trees will not be burnt, chipped, or used for ecological purposes on site.

3.3.8 No plant replacement is proposed after the 5-year establishment period.

- Timing: Do not prune during the late winter / early spring sap flow period.
- Do not prune whips or feathered trees.
- Do not damage or tear the stem of branches to be removed.
- Keep wounds as small as possible and cut cleanly back to sound wood.
- Make cuts above and sloping away from an outward facing healthy bud, angled so that water will not collect on the cut area.
- Prune larger branches using the branch bark ridge as a pruning guide.
- Thin, trim and shape each specimen appropriately to species, location, season, and stage of growth, leaving a well-balanced natural appearance.
- Use clean, sharp secateurs, hand saws or other appropriate tools. Ragged edges of bark or wood to be trimmed with a sharp knife.
- Remove growth encroaching onto grassed areas, paths, roads, signs, sightlines, and road lighting luminaries.
- Dead, diseased, or dangerous plants should be treated, lopped and/or felled as necessary. The resultant timber and debris should be made available to create log piles for vertebrates or habitat piles for other species. (Please note any diseased wood should be removed from site).
- General light pruning shall include removal of the oldest, longest, most branched shoots to the base of the plant with secateurs or loppers. Activity should be phased year by year to incrementally achieve the overall effect. Apply this approach to the more vigorous planting at most times of the year to reduce spring pruning load.

3.3.9 Pruning of flowering shrubs:

- Winter flowering shrubs: Spring.
- Shrubs flowering between March and July: Immediately after the flowering period.
- Shrubs flowering between July and October: Back to old wood in winter.

3.4 Native Hedgerows

3.4.1 Before planting, ensure that the ground is free of vegetation and weeds; vegetation should be hand-cut if possible, this is generally the least damaging to wildlife, however, herbicides are usually more effective at reducing competition. Their use should be the minimum necessary for effective control.

3.4.2 Protect plants from rabbits using shrub guards and perimeter fencing. Regularly check for damage or disease. Ensure shrubs are firmed in, stakes are secure and not rubbing, and shelters should be adjusted to ensure they are secured and protect the shrub to ground level. On removal of stakes, hole to be backfilled with lightly compacted soil. Where damage has occurred, necessary pruning, adjustments or replacements should be carried out. Remove shrub protection at year 5. Top up mulch matts when required up to year 5.

3.4.3 Watering may need to be carried out during periods of drought.

3.4.4 Carefully dig out or spot treat any residual weeds with a selective herbicide to suppress perennial weeds.

3.4.5 Saplings will be cut at year 3 and year 5 to establish bushy growth.

3.4.6 The target dimensions for species-rich native hedgerows are to be 1.2m-1.5m tall and 1.2m wide. Cutting of the tops and sides will take place in January.

3.4.7 Following year 5 hedgerows are considered established.

3.4.8 Once established, native hedgerows will be cut twice a year to maintain height and width in accordance with safeguarding guidance. Cuts shall typically be undertaken as late into the autumn / winter period as possible. The base of the hedge should be wider, tapering to a slightly narrower top.

3.4.9 Infill any gaps in hedges using native species, using local sources.

3.5 Ornamental Planting

3.5.1 Ornamental planting beds to clear of litter, damaged, diseased or dead plants. Plant up gaps with the same adjacent species, replace failed plants.

3.5.2 Encourage full coverage of ornamental planting area to minimise future maintenance operations by suppressing weed growth. Maintain neat formal edge to planted areas at 25mm below any adjacent to hard landscape areas. Maintain shape and form of planting to maximise amenity benefit while considering airfield safeguarding.

3.5.3 Ornamental hedgerows to be maintained at a height of 0.5m and at a width of between 0.4 and 0.6m.

3.6 Species Rich Grassland

3.6.1 During the first year of establishment, mow regularly between March to November to a height of 40-60mm, removing arisings from the site. The number and timing of cuts will depend on-site productivity and weather.

3.6.2 Following establishment, the species rich grassland will enter into a maintenance regime that accords with airfield safeguarding principles. Cutting will be carried out on an annual basis with an initial cut down to 50mm in mid-March. The sward should then be allowed to grow and set seed prior to being maintained at a height between 250-300mm for the remainder of the year. The meadow should be cut from the centre outwards or from one side to another so that it allows any resident wildlife to disperse.

3.6.3 Carefully dig out or spot treat any residual weeds with a selective herbicide to suppress perennial weeds. Selectively remove dominant grasses by hand.

Any arising's will be left in situ and/or turned for 3 - 5 days before being removed to allow the sown species an opportunity to set seed. Any arising's will then be removed.

3.7 Amenity Grass

3.7.1 Provide a formal close mown sward adjacent to site access roads and footpaths. Ensure grassed areas maintain a neat, shaped edge and that worn areas are re-seeded. Exact number of maintenance visits for grass cutting to be determined by visual importance of area. All arisings to be removed from site.

APPENDIX 1
LANDSCAPE MAINTENANCE PROGRAMME

30 YEAR LANDSCAPE MAINTENANCE PROGRAMME

Note: Refer to Section 2 for detail on the operations listed below.

Item of Work	Timing	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11-20	Year 21-30
General														
Tidy up areas removing rubbish, litter etc from planted, grass and hard surface areas	Once every 2 months As required	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Monitor and treat pests and diseases including removal of dead, dying and diseased wood and plants with replacements as appropriate.	As required				✓			✓			✓		Every 3rd year	Every 3rd year
Weed control spot treat or by hand	As required	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Water all plant material and grass as necessary to maintain healthy growth.	As required	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Monitoring and reporting by Landscape Manager	Each visit	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Check plant material is firmly planted and firm in as required.	As required & immediately after strong winds	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Tree & woodland edge planting														
Regularly monitor, adjust and replace stakes, ties, guards and fence. Remove any weed growth from shelter guards.	Once every 2 months as required	✓	✓	✓	✓	✓								

Item of Work	Timing	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11-20	Year 21-30
Maintain grass sward within woodland areas in accordance with species rich grassland maintenance requirements		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Remove stakes, ties, guards and fence.							✓							
Replacement planting	November – February As required		✓	✓	✓	✓	✓							
Checks to replacement planting such as adjusting tree protection, watering.	Once every 2 months As required			✓	✓	✓	✓	✓	✓	✓	✓	✓		
Woodland to be managed to maximise species and age diversity. A gradual development of diverse age structure should be established over a period using a regime of selective thinning, crown lifting and coppicing as required. Initial works to be carried out 5 years after completion of the development. All works to be carried out by an Arboricultural Association approved contractor in accordance with BS3998: 2010 Tree Work and in accordance with Airfield safeguarding guidance.	November – February As required						Up to 1/3 of thicket plants					Up to 1/3 of thicket plants	Up to 1/3 of thicket plants in Year 15 & 20	Up to 1/3 of thicket plants in Year 25 & 30
Remove any branches that overhang footpaths, obscure visibility splays, or prevent access for grass cutting.	As necessary	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ each year	✓ each year

Item of Work	Timing	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11-20	Year 21-30
Hedgerow														
Regularly monitor, adjust and replace stakes, ties, guards and fence. Remove any weed growth from shelter guards	Once every 2 months As required	✓	✓	✓	✓	✓								
Remove stakes, ties and guards							✓							
Replacement tree / shrub planting	November – February As required		✓	✓	✓	✓	✓							
Checks to replacement planting such as adjusting tree protection, watering.	Once every 2 months As required			✓	✓	✓	✓	✓	✓	✓	✓	✓		
Prune native hedges to maintain maximum width of 1.2m and a height between 1.2m and 1.5m.	Twice a year (May and September)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Item of Work	**Timing**	**Year 0**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**	**Year 11-20**	**Year 21-30**
Ornamental Planting														
Monitor, gap-up, remove dead or diseased plants and replace failed plants.	Once every 2 months		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Prune	As required		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Removal of weeds and littler	Once a month	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Item of Work	Timing	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11-20	Year 21-30
Prune ornamental hedgerows to be maintained at a height of 0.5m and at a width of between 0.4 and 0.6m.	Twice a year (May and September)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Species Rich Grassland														
Regular establishment cuts	March – November As required	✓												
Grass cutting 1no. cut to uniform height of 50mm	Mid-March													
Grass cutting as required to maintain height at between 250 and 300mm	July to November		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Selective weed control	As required		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Selective removal of dominant grasses	As required		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Amenity Grass														
Regular establishment cuts	March – November As required	✓	✓											
Regular cuts	April – June As required			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Selective weed control	As necessary	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shape grass edge as necessary with half-moon spade. 2 times per year	Approx. May and September	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓