

PRELIMINARY ECOLOGICAL APPRAISAL

MAELOR FOODS, CROSS LANES,
WREXHAM

P/2022/0840 - WWTP extension application
Including combined enhancement strategy for
P/2022/0891 Condition 3

Cassidy & Ashton
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This report has been prepared by Sambrook Associates Ltd on behalf of Cassidy+Ashton in connection with the proposed extension of the WwTP at Maelor Foods, Wrexham and takes into account their particular instructions and requirements. It is not intended for, and should not be relied on, by any third party and no responsibility is undertaken to any third party.

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1 INTRODUCTION

1.1 Background Information

- 1.1.1 Sambrook Associates Ltd was instructed by Cassidy and Ashton to undertake a Preliminary Ecology Appraisal (PEA) in relation to the planning application for an extension to an existing WwTP at Maelor Foods, Cross Lanes, Wrexham. The application is in relation to the proposed increase in production at the site.
- 1.1.2 It is noted that a separate Habitats Regulations Assessment screening regarding potential for pollution impacts has been completed for the proposed development and therefore, this PEA does not cover potential effects on the Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake Special Areas of Conservation (SAC) designation since this is covered within the screening. Similarly, pollution effects on the Afon Dyfrdwy /River Dee Site of Special Scientific Interest (SSSI) designation, which is congruent with the SAC boundaries are, by default, also considered within the screening.
- 1.1.3 To inform the Appraisal, a desk-top study and an extended Phase 1 habitat survey were undertaken. This report provides the results of the study, an appraisal of the potential effects the proposed development may have on biodiversity, and where required, opportunities to avoid, offset or minimise such impacts.
- 1.1.4 The aim of the appraisal is to provide sufficient ecological information for the local planning authority (LPA) to determine the planning application. The objectives of the study were to:
- Provide baseline information on the current habitats and ecological features both on-site and in the immediate surrounding area;
 - Identify the presence or potential presence of any protected species or habitats and provide an appraisal of any potential effects that the proposed development may have on these;
 - Identify the proximity of any sites designated for nature conservation interest and provide an appraisal of any potential effects that the proposed development may have on these; and
 - Provide recommendations for further survey work and / or mitigation measures if required and present opportunities for biodiversity net gain.
- 1.1.5 The assessment is based upon Site Plan Proposed (Cassidy + Ashton dated 10.03.23).
- 1.1.6 The enhancement strategy at Section 4.5 also includes the required provision of biodiversity net benefit as required by Condition 3 of the planning permission SES P/2022/0891.

1.2 Site Description

- 1.2.1 The whole Maelor Foods site is an existing food processing plant comprising industrial units, hard standing, car parking and other infrastructure. The red line boundary sits within the curtilage of the existing site, at the eastern end and comprises hard standing apron and an area that is currently 'waste ground'.
- 1.2.2 The proposed development area is hereby referred to as the Site and comprises the land within the red line boundary. The Extended Phase 1 Habitat Survey covered the Site plus 30m,

where required (where access available) to take into consideration mobile species and badger setts.

2 LEGISLATION AND PLANNING POLICY

2.1.1 Many sites, animals and plants are protected by European and/or UK legislation either because of their decline across Europe and the UK or due to the persecution they have placed upon them by negligent or illegal acts such as baiting or trade. Legislation is also in place to prevent the spread of introduced or non-native invasive species and harmful weeds. When undertaking an appraisal of a proposed development, such legislation is taken into account as follows.

- **European:** Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive'); and Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds (codified version of Directive 79/409/EEC as amended) (the 'Birds Directive').
- **UK (England & Wales):** The Conservation of Habitats and Species Regulations 2017, as amended (the 'Habitat Regulations') which transposes the Habitats Directive in UK law. Since 1st January 2021, the UK is no longer a member of Europe but since the Habitats Directives are embedded into UK statute, The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 was published and still applies in England and Wales; The Wildlife and Countryside Act 1981 (as amended); the Countryside and Rights of Way Act (CROW) 2000; the Protection of Badgers Act 1992; the Natural Environment and Rural Communities Act (NERC) (2006) and the Environmental Protection Act (EPA) 1990.

2.1.2 Species such as bats, great crested newts, otter, water vole, reptiles and badgers are all protected to varying degrees under this legislation.

2.1.3 The Environment (Wales) Act 2016 introduced an enhanced biodiversity and resilience of ecosystems duty (Section 6 Duty). This duty applies to public authorities in the exercise of their functions in relation to Wales and will help maximise contributions to achieving the well-being goals. The Nature Recovery Action Plan supports this legislative requirement to reverse the decline in biodiversity, address the underlying causes of biodiversity loss by putting nature at the heart of decision-making and increasing the resilience of ecosystems by taking specific action focused around the 6 objectives for habitats and species.

2.1.4 Species such as birds, bats, great crested newts, otter *Lutra lutra*, water vole *Arvicola amphibious*, reptiles and badgers *Meles meles* are all protected to varying degrees under this legislation.

2.1.5 In addition to legislation, there are also national and local planning policies pertaining to the protection of biodiversity. Planning Policy Wales (PPW) Edition 11 (February 2021) states: 'the planning system has a key role to play in helping to reverse the decline in biodiversity and increasing the resilience of ecosystems, at various scales, by ensuring appropriate mechanisms are in place to both protect against loss and to secure enhancement. Development plan strategies, policies and development proposals must consider the need to:

- support the conservation of biodiversity, in particular the conservation of wildlife and habitats;
- ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;
- ensure statutorily and non-statutorily designated sites are properly protected and managed;
- safeguard protected and priority species and existing biodiversity assets from impacts which directly affect their nature conservation interests and compromise the resilience of ecological networks and the components which underpin them, such as water and soil, including peat; and
- secure enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks.'

- 2.1.6 To accompany the PPW, Technical Advice Note 5 (TAN5) demonstrates how local authorities, developers and stakeholders can deliver sustainable development that does not result in losses to biodiversity and takes the opportunity to protect and enhance it. Wrexham County Borough council also have their own guidance and local policy to promote ecological resilience in their decision making.
- 2.1.7 Under the NERC Act, local authorities (and other public bodies) have a duty to conserve biodiversity. The Act confers responsibility on the local authority to take the protection of priority habitats and species (as listed in Section 41) into consideration when making a planning decision. Habitats listed in this section include eutrophic standing waters, rivers, lowland meadows and lowland mixed deciduous woodland. Species listed in this section include great crested newt *Triturus cristatus*, sky lark *Alauda arvensis*, hedgehog *Erinaceus europaeus*, otter *Lutra lutra*, soprano pipistrelle *Pipistrellus pygmaeus* and red squirrel *Sciurus vulgaris*. Full habitats and species' lists can be found at the Natural History Museum website, nhm.ac.uk or jncc.defra.gov.uk.
- 2.1.8 The RSPB's Birds of Conservation Concern 3' (Eaton et al., 2009) is also taken into consideration when undertaking this appraisal.

3 METHODOLOGY

3.1 Introduction

- 3.1.1 To inform this Ecological Appraisal, a desktop study and an Extended Phase 1 habitat survey were undertaken in April 2023.

3.2 Desk-top Study

- 3.2.1 The desktop study involved a search for information on statutory sites within 1km radius of the Site and non-statutory sites within 500m. The centre of the Site (Ordnance Survey Grid Reference SJ38714668) was used for the search.

- 3.2.2 The following sources were searched for information about the Site:

- Defra's 'MAGIC' website;
- Google Earth;
- Bing Maps;
- Wrexham CB Council.

3.3 Walk-over Survey

- 3.3.1 The purpose of the Extended Phase 1 Habitat Survey was to determine:

- the habitats present;
- any potential constraints to development;
- the potential for legally protected species to be present;
- the presence of invasive plant and animals; and
- any requirement for additional ecological surveys.

- 3.3.2 Sambrook Associates Ltd. carried out an Extended Phase 1 Habitat Survey of the Site on 03 April 2023. The weather was mild with an average temperature of 13°C with no wind or rain. The survey was carried out by Rebecca Sambrook BSc. (Hons) MCIEEM. The surveyor is a Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and adheres to that organisation's Code of Professional Conduct.

- 3.3.3 The survey was carried out in accordance with the Extended Phase 1 Habitat Survey methodology as described in Guidelines for Ecological Assessment (Institute of Environmental Assessment, 1995). This is a development of the original methodology outlined in the Handbook for Phase 1 habitat survey – A technique for environmental audit (JNCC, 2010). Photographs are included within the document. Plant names follow the third edition of the New Flora of the British Isles (Stace, 2010). The common name of the plant is stated first and is followed by the Latin name, on the first occasion that it is used. Only the common name is used subsequently.

- 3.3.4 The Site was searched for evidence of fields signs or habitats that may support protected species such as bats, great crested newts, badgers, birds, reptiles, otters, water vole and also any invasive plants or animals. Trees were assessed for their potential to support bats using

the criteria set out by the Bat Conservation Trust's Bat Surveys for Professional Ecologists: Good Practice Guidelines, 2016 (3rd edn).

3.4 Limitations

- 3.4.1 No limitations were encountered during the survey, although access outside of the site was restricted in some areas, most areas could be viewed from the site.

4 RESULTS

4.1 Introduction

- 4.1.1 This section provides a commentary on the data collected during the desk-top study and site surveys. Photographs depicting the Site are in the Photographs Section at the back of this report.

4.2 Desk-top Study

- 4.2.1 As discussed above, a number of available online resources were reviewed as part of the desk-top study.
- 4.2.2 There are two statutory designated sites within the 1km search area. These are Afon Dyfrdwy a Llyn Tegid/River Dee and Bala Lake SAC and Afon Dyfrdwy /River Dee SSSI which are approximately 92m from the application site at its nearest point. Both designations are associated with the River Dee and the boundaries of the sites within the stretch that falls within 1km of the site are congruent with each other. A separate HRS screening has been undertaken and therefore, the designated sites are not considered further within this report.
- 4.2.3 A search for non-statutory sites was not conducted; due to the limited nature of the works being wholly within existing hardstanding curtilage and with the implementation of pollution prevent measures, no off-site effects are anticipated and hence non-statutory sites that may be within 1km will not be affected.
- 4.2.4 There is one waterbody located within 250m of the application site – this is just on the eastern boundary of the 250m buffer at NGR SJ38884685. The pond is surrounded by woodland which extends to the site boundaries.
- 4.2.5 Wrexham Council planning portal did not reveal any pertinent information regarding proposed adjacent developments and hence there will unlikely be in-combination effects with the application site.

4.3 Walk-over Survey

- 4.3.1 The walk-over survey comprised an extended Phase 1 habitat survey.

Habitats

- 4.3.2 The habitats are described generally in the first paragraph and then are broken down into areas, named as per the main infrastructure proposed there. See the Site Plan Proposed drawing for geographical reference.
- 4.3.3 The application site comprised both a clean concrete apron as part of the existing operations and solid bare earth. The whole production site boundaries comprised steel palisade fencing all the way around the perimeter, which on the southern and eastern boundaries of the application site is flanked by trees and shrubs.
- 4.3.4 **Proposed micro bio-reactor plant:** the new plant site is a small area within a much larger compartment which comprised flat bare ground and earth bunds with no ecological interest.

The eastern boundary is formed by an approx. 4m high bund which had become vegetated in places with pioneer flora typical of disturbed ground including nettles *Urtica dioica*, docks *Rumex sp.*, dandelions *Taraxacum sp.*, grasses and other tall herbs. Willow *Salix sp* was also present along the top of the bund. The northern boundary was formed by a timber fence. The southern and western boundaries were 'open' to the rest of the compartment.

- 4.3.5 **Proposed building housing de-watering system and DAF Unit:** existing concrete apron and hardstanding bare earth. No ecological interest.
- 4.3.6 **Concrete bund:** existing hardstanding/bare earth with no ecological interest within footprint. This is flanked by an existing approx. 3m bund which is mainly vegetated and managed as amenity grassland, with several buddleja shrubs interspersed with bramble *Rubus fruticosus* tall herbs and dock.
- 4.3.7 **Chemical scrubber x 2:** existing concrete apron and hardstanding. No ecological interest.
- 4.3.8 **Proposed additional treatment tank:** existing hardstanding. No ecological interest.
- 4.3.9 There was no habitat of ecological interest within the main body of the site; there are no ponds, trees, watercourses or areas of diverse vegetation. The main ecological interest was limited to the other side of the site boundaries, beyond the palisade fencing which comprised trees and grassland.
- 4.3.10 There was no evidence of the presence of invasive species such as Japanese knotweed *Reynoutria japonica* or Himalayan balsam *Impatiens glandulifera*.

Species

- 4.3.11 **Badger:** during the survey no evidence of badger in the form of setts, pathways, latrines, dung pits, feeding remains, push-throughs or hairs was recorded. The embankments along the southern boundaries of the whole site may support badger setts. This could not be accessed as they are not within land ownership but it was obvious that even if they were present, badgers were not accessing the site. The palisade fencing acts as a barrier to accessing the site. Furthermore, the proposed works are more than 25m from the southern site boundary so no impacts are anticipated. The eastern boundary is also on embankment, but this embankment could be seen in many places from the site and evidence of badger was not apparent. Furthermore, the proposed works within 25m of this embankment comprise a portal building sitting on concrete pads and the construction of a building which is already a concrete base. Therefore, the likelihood of setts (if present) being damaged is negligible.
- 4.3.12 **Bats:** some of the trees to the southern and eastern boundaries exhibited suitable potential roosting features for bats and so roosting within these trees is possible. The trees along the southern boundary are more than 20m away from the proposed works and the trees along the eastern boundary were less suitable but could still support bats. These trees on the boundaries provide good bat foraging resource and linear features that bats prefer to follow when commuting. There are good links to the wider landscape via the woodland beyond the eastern side of the site.
- 4.3.13 **Birds:** there are no nesting bird opportunities within the site (due to lack of habitats and no suitable structures) but the woodland to the east of the site will provide nesting opportunities.

nesting opportunities are present, in the main, in the hawthorn on the western and southern boundaries.

- 4.3.14 There are no ponds on site but there is one pond on the edge of the 250m buffer. There is no suitable terrestrial habitat for **great crested newts** for foraging or sheltering and it is highly unlikely these would be present within the application site. The boundaries do provide suitable habitat.
- 4.3.15 There are no watercourses on site. The nearest watercourse to the application site is the Afon Dyfrdwy which is 92m away and is known to support **otter**. Otter are known to spend a lot of their time on land and will travel a considerable distance to forage and shelter in woodlands and grasslands. It is possible that otter utilise the wooded area beyond the eastern boundary and the palisade fencing would make it difficult for large otters to access the site, but smaller or younger otters may be able to 'squeeze' through the gaps. However, the likelihood of them regularly visiting the site is negligible. This is because the site does not offer suitable habitat for foraging or sheltering and there would be 'need' for otter to do this. Far better habitat exists within the woodland.
- 4.3.16 Similarly, no suitable habitat exists for **water vole** or **reptiles** and these are not considered further.

4.4 Appraisal of Potential Effects

- 4.4.1 Overall, the main body of the Site offers no opportunities for protected or notable species. The two main ecological interests are the eastern and southern boundaries, which offer roosting, foraging and commuting habitat for bats, nesting opportunities for birds, foraging and sheltering for badgers and otters.
- 4.4.2 The application comprises various component of an overall extension to an existing waste water treatment plant. Short (construction) and long term (operational) effects of the proposed development on biodiversity have been reviewed and assessed. Three key components have been reviewed; the potential for short and long-term effects on:
- Nearby statutory sites;
 - Boundary and local habitats (woodland, trees);
 - protected species (badger, otters, bats and birds).
- 4.4.3 **Designated sites:** for the Afon Dyfrdwy, please see the HRA Screening. For non-statutory designated sites; given the localised and limited nature of the proposals and the distance between the designated site and the application site, no impact pathways, either aquatic, airborne or terrestrial have been identified; effects are not anticipated.
- 4.4.4 **Habitats:** The loss of hard standing/bare ground is of no significant ecological consequence. Although the scheme incorporates the retention of boundary habitats, the construction of the proposed development has the potential to affect boundary and local (adjacent) habitats and hence a scheme of protection is to be implemented to protect habitat from damage during the construction period. As a minimum, good site management should be implemented in

line with the Considerate Constructors Scheme, Code of Considerate Practice. Key principals of good management to protect the habitats include:

- Being organised, clean and tidy; always net skips to prevent materials and rubbish from blowing around the site and onto adjacent habitats.
- Identifying, managing and promoting environmental issues.
- Seeking sustainable solutions, and minimising waste, carbon footprint and resources.
- Minimising the impact of vibration, and air, light and noise pollution.
- Protecting the ecology, the landscape, wildlife, vegetation and water courses through the use of wheel washing, dedicated re-fueling areas with capture bunds and absorbent pads.

4.4.5 Palisade fencing will protect boundary features and there are no plans to construct buildings close to tree canopies. Boundary habitats will be retained and unaffected by the proposals.

4.4.6 During the operational phase, the key consideration is pollution of boundary features through surface water/effluent. All effluent and surface water run-off are dealt with by the WwTP and therefore no effects are anticipated.

4.4.7 On the basis both construction and operational phase matters are concluded sufficiently, as outlined above, effects on habitats are not anticipated.

4.4.8 **Species: Birds** may nest and forage within the boundary features around the site. There is no requirement to remove boundary features but in the unlikely instance some work is needed, this should be done outside of the bird nesting season i.e. not between the months of March to August inclusive to prevent disturbance and destruction of active nests, unless an appropriately experienced ecologist can confirm no nests or active nest building is taking place at the time.

4.4.9 **Badger:** during the survey no evidence of badger was recorded, albeit the view was restricted on the southern boundary. The proposed works are more than 25m from the southern site boundary so no impacts are anticipated. The eastern boundary proposed works within 25m of this embankment comprise a portal building sitting on concrete pads and the construction of a building which is already a concrete base. Therefore, the likelihood of setts (if present) being damaged is negligible. Badgers are highly unlikely able to access the site due to the palisade fencing, the gaps of which are too minimal for badgers there is one small breach in the fencing where it has been damaged presumable by machinery but this has been blocked off. During the operational phase, the status of the site's suitability for badgers will remain unchanged and therefore, effects on badgers during construction and operation are not anticipated.

4.4.10 **Bats:** no bat roosts were identified within the site. But bats are likely to use the woodland edge beyond the eastern boundary as commuting routes and foraging ground. Developments have the potential to cause effects on bats during the construction and operational phases. During construction, there is potential for disturbance, damage and destruction of features that may be used by bats to commute between roosts and foraging grounds causing

fragmentation and isolation of populations. The introduction of plant machinery, people and lighting, and increased noise, vibration and dust can all cause effects on bats and their habitats.

4.4.11 The trees along the southern boundary are more than 20m away from the proposed works and therefore no direct impacts on roosts are anticipated. The trees along the eastern boundary were less suitable but could still support bats but due to the relatively low level works within 20m of these trees, no direct impacts on roosts are anticipated.

4.4.12 To avoid impacts on bats and their habitats during the construction phase the following measures will be implemented:

- A tool box talk is to be provided to contractors and site personnel on Day 1. The talk would include the importance of good site management and the avoidance of impacts on boundary features.
- All boundary features are to remain intact and protected by the existing palisade fencing.
- Any lighting is to be directed away from boundary features so that they remain in darkness between dusk and dawn.

4.4.13 During the operational phase the key consideration is light spillage into boundary habitats which would detract bats from commuting and foraging. This could cause fragmentation and isolation of roosting and foraging grounds and trigger the failure of the local bat population.

4.4.14 To avoid impacts on bats and their habitats during the operational phase the following measure will be implemented:

- a lighting scheme will be designed that is sensitive to the requirements of bats, in accordance with the current guidance jointly issued by the Institution of Lighting Professionals and Bat Conservation Trust; Guidance Note 08/18: Bats and Artificial Lighting in the UK.

4.4.15 In consideration of the above measures, impacts on bats are not anticipated.

4.4.16 **Great crested newts:** there is no suitable terrestrial habitat for foraging or sheltering and it is highly unlikely this species would be present within the application site. The boundaries do provide suitable habitat but since these will be retained, no impacts are identified. During the operational phase, the status of the site's suitability for great crested newts will remain unchanged and therefore, effects on this species during construction and operation are not anticipated.

4.4.17 **Otter:** the likelihood of otter being present on site, or affected by the proposed works is negligible. During the operational phase, the status of the site's suitability for otter will remain unchanged and therefore, effects on this species during construction and operation are not anticipated.

4.4.18 **Site contractors, directors, owners, other personnel and their agents are reminded that many species and habitats are protected by law, and to kill, injure or harm such species and their habitats is a criminal offence. Custodial sentences and/or large financial**

penalties are expected if you break the law. Protected species and habitats commonly found on development sites include (but not limited to):

- bats including their roosts in buildings and trees;
- birds including their nests;
- badgers including their setts which can be damaged or destroyed up to 25m from the sett entrance;
- Otters including their holts.

4.5 Enhancement

4.5.1 The proposed scheme includes installation of bird and bat boxes and the planting of new trees which will provide a net gain in priority habitats, bat roosting and bird nesting opportunities. This enhancement strategy also comprises the Biodiversity Net Benefit Plan required by Condition 3 of the planning permission SES P/2022/0891. It is considered that a combined approach to the biodiversity net benefit of both planning applications will provide a more holistic approach.

4.5.2 The following bird and bat boxes are proposed (see Figure 1 for locations):

- 3no. Vivara Pro woodstone house sparrow nest box or similar, are to be installed on the palisade fencing on the eastern boundary at least two metres off the ground to reduce risk of predators and human interference.
- 3no. Vivara Pro Seville woodstone nest boxes (mix of 28mm and 32mm holes) or similar are to be installed on the palisade fencing on the eastern boundary at least two metres off the ground to reduce risk of predators and human interference.
- 3no. Schwegler 2F bat box or similar are to be installed on a pole on the inside of the site, in the north eastern corner at NGR SJ38734671 at a height of between 3 to 6 metres, in an open sunny position. The three boxes can be placed on the same pole but facing different directions which will provide a variety of micro-habitats. This location links in to the existing abandoned railway which provides an excellent green corridor for commuting. Not to be installed in cluttered environments.

4.5.3 Tree planting is proposed along the grassland banks inside the perimeter fencing along Pick Hill Lane; 3no. cherry *Prunus avium* trees and 3no. crab apple *Malus sylvestris* trees. See below Figure 1 showing the locations of trees.

4.5.4 All planting stock supplied shall be healthy and viable and comply with BS3936: Parts 1-10 as relevant and BS4043, the National Plant Specification published by the Horticultural Trades Association, as appropriate.

4.5.5 Tree planting should be undertaken by a qualified and experienced landscape contractor following BS8545 to include:

- The planting area will be treated with a suitable herbicide (qualified landscape contractor to provide specifications) or hand-weeded to remove weeds and initiate a clear area for tree planting.
- 12-14cm heavy standard trees are to be placed in pits at least 70mm greater than the diameter of the root spread. The bottom and sides of the pit shall be forked to break up the subsoil. Once in place, the pits are to be back-filled with the topsoil and Just Naturally Singletons Soil Improver (or equivalent) and well firmed in.
- Trees are to be double staked with looped rubber or hessians straps with spacers so that they can be adjusted as the tree grows.
- The exact timing of the planting will be dependent on ground conditions, but planting should not take place during frost, water logged or arid conditions.
- All planting will be protected from rabbit damage using approved proprietary guards.

4.5.6 New trees are to be managed by an experienced landscape contractor. During the first five growing seasons, all tree planting shall be maintained in accordance with BS 7370 Part 1 (1991): Grounds maintenance. Every 6 months all tree ties and stakes will be checked and adjusted if too loose, too tight or if chafing is occurring. Any broken stakes will be replaced. Any damaged shoots/branches will be pruned back to healthy wood. Plants will be pruned in accordance with good horticultural practice to maintain healthy well-shaped specimens. The requirement for watering of newly planted trees will generally be dependent on weather conditions during the first growing season following planting. In a dry season watering may be required on a fortnightly basis from immediately after planting until the end of the growing season, but in a wet season watering may not be required at all. Therefore, trees shall be monitored regularly by test digging down to root level to assess the water content of the soil, with watering undertaken as required to ensure that the soil is at field capacity 2-3 days after watering. Guards will be removed once they are no longer required to prevent rabbit damage and before they start to restrict growth.

Figure 1: Locations of Proposed Enhancements**Key:**

Black circle, red infill: crab apple tree

Black circle green infill: Wild Cherry tree

Blue star: 3no. Vivara Pro woodstone house sparrow nest box or similar

Purple star: 1no. Vivara Pro Seville woodstone nest box or similar at each location

Orange star: pole mounted 3no. Schwegler 2F bat box or similar

5 CONCLUSIONS AND RECOMMENDATIONS

- 5.1.1 The Site has been subject to assessment in 2023, it is concluded that the application site is reasonable unlikely to support protected, notable and priority species and habitats. Furthermore, the proposed development is unlikely to result in significant effects on nearby designated sites, habitats or species.
- 5.1.2 The following recommendations are made.
- 5.1.3 The likelihood of effects on boundary habitats is low in the absence of mitigation.
- **Recommendation:** good site management is implemented in line with the Considerate Constructors Scheme, Code of Considerate Practice.
 - **Recommendation:** barrier fencing is installed at the outset of site works, as a minimum 2m distance from features. Note root protection zones of trees are to be protected in line with BS 5837:2012 – Trees in Relation to Design, Demolition and Construction.
 - **Recommendation:** a tool box talk is provided to all contractors and site personnel on Day 1 to inform of environmental protection measures to be employed across the site.
- Reason:** to avoid localised impacts on habitats and the species that use them.
- 5.1.4 The likelihood of effects on nesting birds is low, however, as a precaution one recommendation is made.
- **Recommendation:** any trimming/removal of vegetation should be undertaken outside of the bird nesting season (i.e. not between March-August inclusive) to prevent disturbance and destruction of active nests unless an appropriately experienced ecologist can confirm no nests or active nest building is taking place at the time. If nests are present, they are to be left undisturbed until the young have fledged.
- Reason:** to avoid impacts on nesting birds, under the Wildlife and Countryside Act 1981 (as amended).
- 5.1.5 The likelihood of construction effects on bats is low since tree works are not proposed. However, two recommendations are made.
- **Recommendation:** lighting during the construction phase is to be directed away from woodland edges so as to maintain dark commuting routes along the woodland edge.
- Reason:** to avoid impacts on bats, under the Habitats Regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended).
- 5.1.6 The likelihood of operational phase effects on bats is low, however, one recommendation is made.

- **Recommendation:** a lighting scheme will be designed that is sensitive to the requirements of bats, in accordance with the current guidance jointly issued by the Institution of Lighting Professionals and Bat Conservation Trust; Guidance Note 08/18: Bats and Artificial Lighting in the UK.

Reason: to avoid impacts on bats, under the Habitats Regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended).

5.1.7 The enhancement scheme comprises the following measures:

- **Recommendation:** install bat and bird boxes as per the specification detailed above in Section 4.
- **Recommendation:** new tree planting is implemented as per the specification detailed above in Section 4.

5.1.8 If the above recommendations are implemented, the development would not result in negative effects on biodiversity. No further surveys are required.

6 REFERENCES

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PHOTOGRAPHS

Photographs of the Site

Plate A: New Bio-reactor site, facing east



Plate B: Southern boundary of the wider site



Plate C: Southern boundary tree with bat potential



Plate D: Northern boundary of new Bio-reactor plant



Plate E: Eastern boundary of the new Bio-reactor plant



Plate F: Southern boundary showing narrow palisade fencing uprights



Plate G: Area for proposed concrete bund, de-watering system housing and DAF unit



Plate H: Area for proposed concrete bund, de-watering system housing and DAF unit



Plate I: Area for proposed concrete bund, de-watering system housing and DAF unit



Plate J: Eastern boundary bund



Plate K: Eastern boundary pallisade fencing and embankment



Plate L: Proposed chemical scrubber location



