Appendices

Appendix C – Ecological Walkover Survey, BNG Assessment and Biodiversity Enhancement Strategy

DOCUMENT CONTROL

Document:	Ecological Walkover
Project:	Frog Island
Client:	S Walsh & Sons Limited
Project Number:	784-B065006
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Date:	04/04/24	**Checked and approved by:**	Felicity Andruszko BSc (Hons) MSc MCIEEM Associate Director
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Date:	12/04/24	**Checked and approved by:**	Felicity Andruszko BSc (Hons) MSc MCIEEM Associate Director
Status:	Final		
Description of Revision:	Final issue to support Appeal.		

INTRODUCTION

Tetra Tech was commissioned by S Walsh & Sons Limited on 11th March 2024 to undertake an ecology walkover survey for Frog Island, Rainham, hereafter referred to as "the site".

The site is located on Ferry Lane on the K9 Industrial Estate and is centred at Ordnance Survey National Grid Reference TQ 51220 80885 (Figure 1). It comprises an active material processing site with associated material storage and site offices. The flood defences for the River Thames, comprising a reinforced concrete flood wall, forms the south-western boundary of the site. The site itself is dominated by hardstanding and developed land. In the wider landscape, the River Ingrebourne is located to the north of the site, and Rainham Marshes Local Nature Reserve (LNR) and the Inner Thames Marshes Site of Special Scientific Interest (SSSI) is located northeast.

This report has been prepared by Principal Ecologist Frankie McDowell BSc (Hons) ACIEEM. The conditions pertinent to this report can be found in Appendix A.

Purpose of this Report

An Enforcement Notice (reference: ENF/559/20) was issued for the site from the London Borough of Havering Council on 18th July 2022 in relation to an alleged breach of planning control , and states the following in relation to biodiversity on site:

> *"The use of the Land for waste storage and processing of building materials fails to provide any enhancement to biodiversity contrary to the London Plan Policy G6, the Local Plan Policy 30 and the JWDPD Policy W5."*

The Statement of Case (3rd October 2022) from the client to appeal the Enforcement Notice, states the following in relation to ecology:

> *"The Appellant will put forward a site development plan, secured by planning obligation, which will show that the Appellant will set aside two areas for biodiversity enhancement on the Site. It is proposed that these areas are planted with native woodland and scrub in order to complement local habitats. The biodiversity enhancement areas will be subject to a five-year aftercare management regime to ensure the successful establishment of the created habitats. The Appellant's evidence will demonstrate that the provision of these habitats will represent a net gain in biodiversity."*

This report sets out to determine the ecological value of the site in relation to the above detailed Enforcement Notice and subsequent appeal.

METHOLDOLOGY

An ecological walkover survey was conducted by Principal Ecologist Frankie McDowell BSc (Hons) ACIEEM on 14th March 2024. The broad habitat types within the site were noted during the survey in accordance with the categories specified for a UK Habitat Classification v2.0 (UKHab) survey (UK Hab Ltd., 2023). Dominant plant species were recorded for each habitat present using nomenclature according to Stace (Stace, 2019). Any evidence of protected or notable species was recorded. Additionally, any invasive non-native species (INNS) were recorded if identified.

ECOLOGICAL VALUE ASSESSMENT

The site was found to comprise of primarily an urban broad habitat type of developed land with built linear features such as the flood defence wall and boundary fence. Containers and temporary site offices are present on site. Photographs of the site can be found in Appendix B. A single stand of Japanese knotweed *Reynoutria japonica* is present on the inside of the flood defence wall on south western boundary. This has been fenced off and signposted for avoidance. See Figure 2 for habitat present on site.

A narrow strip of bramble *Rubus fruticosus* agg. dominated scrub, approximately 1m wide, is present along the north to east boundary fence. Blackthorn *Prunus spinosa* occurs occasionally. The strip of scrub also has abundant buddleia *Buddleia davidii* present, which is listed on the London Invasive Species Initiative (LISI) as a species of concern. This strip of scrub is used for protection of the site and has razor wire throughout. The scrub extends outside of the site boundary to a larger extent of dense scrub of a similar specie composition situated on the roadside verge.

See Table 1 below for the UKHab classifications and Figure 2 for habitats present on site.

Table 1: Habitats recorded on site

Broad Habitat Type	UKHab Code	Habitat Type
Urban	u1b	Developed land: sealed surface
Heathland and Shrub	h3d	Bramble scrub

The scrub may provide nesting opportunities for common birds, shelter for common reptiles and amphibians and nectar sources to invertebrates however the quality of the habitat is low with limited species and structural diversity. It may also provide a commuting corridor for bats providing a pathway to additional habitats in the wider landscape such as scrub and grassland adjacent to the Thames to the south, the River Ingrebourne and links to Rainham Marshes to the northeast. Plant diversity on site is low, with INNS present.

The containers and temporary buildings on site have negligible potential to support roosting bats. There are no other habitats present able to support protected species and the site overall is subject to high disturbance being an active industrial site.

Overall the site has been assessed as having a very low ecological value, with extremely limited semi-natural habitats unable to provide significant biodiversity benefits.

DISCUSSION

It is recommended that the following ecological enhancement be carried out in order to increase the biodiversity value of the site:

- Creation of two biodiversity enhancement areas, as detailed in the Statement of Case, to include creation of a semi-natural habitat such as dense scrub to be planted with native species.

- Removal of Japanese knotweed through specialist contractor and method statement to limit the spread of this species which is listed on Schedule 9 of the Wildlife and Countryside Act 1981, as amended.
- Two bird boxes to be installed in a suitable location away from the disturbance of waste processing works. The boxes could be installed either on a fence line or on a wooden post either in northern corner of the site or along scrub boundary. Bird boxes that are suitable for London priority species such as starling should be considered.
- An insect house/hotel should be installed on site to further enhance the site for common invertebrates, and any species that may benefit form an increase in invertebrate prey.

Although buddleia is listed on LISI as a species of concern and is present on site within the bramble scrub, removal of this from the are would be difficult as it is connected to a wider expanse of scrub outside of the site boundary which also has abundant buddleia. It is likely the buddleia even if removed from within the site boundary, would establish from reseeding from stands present just outside.

FIGURES

Site Location Plan

Frog Island

GRS International

Legend

Site boundary

Notes:

Drawn by: DYLAN.GUSSMAN
Checked by: FM
Office: Southampton

Figure No. 1
Revision No. A
27 March 2024

0 25 50 75 100 Meters

Scale 1:2,241 @A3

British National Grid

NGR: 551234E 180892N

TETRA TECH

The Pavilion, 1st Floor
Botleigh Grange
Office Campus
Hedge End
Southampton
Hampshire, SO30 2AF

Existing Habitats Plan

Frog Island

GRS International

N

Legend

- Site boundary
- h3d - Bramble scrub
- u1b - Developed land, sealed surface
- Buddleia - present throughout bramble scrub
- Japanese knotweed

Notes:

Drawn by: dylan.gussman

Checked by: FM

Office: Southampton

Figure No. 2

Revision No. A

05 April 2024

0 15 30 45 60 Meters

Scale 1:1,500 @A3

British National Grid

NGR: 551286E 180898N

TETRA TECH

The Pavilion, 1st Floor
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Hedge End
Southampton
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APPENDIX A: REPORT CONDITIONS

This Report has been prepared using reasonable skill and care for the sole benefit of S Walsh & Sons Limited ("the Client") for the proposed uses stated in the report by Tetra Tech Limited ("Tetra Tech"). Tetra Tech exclude all liability for any other uses and to any other party. The report must not be relied on or reproduced in whole or in part by any other party without the copyright holder's permission.

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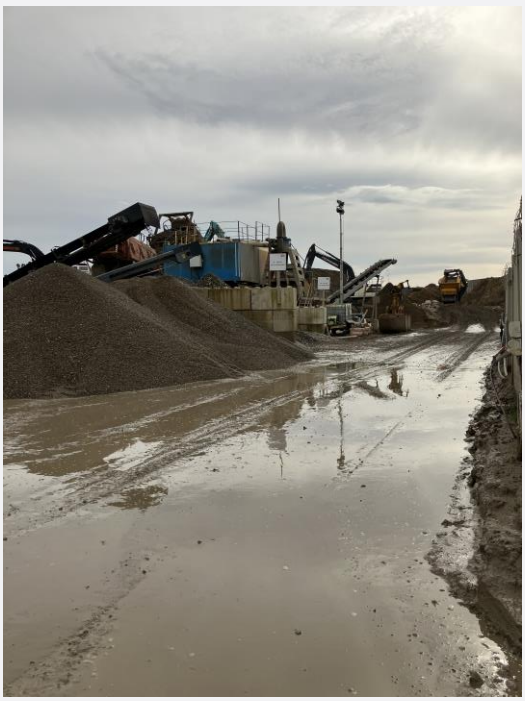
The report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing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

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

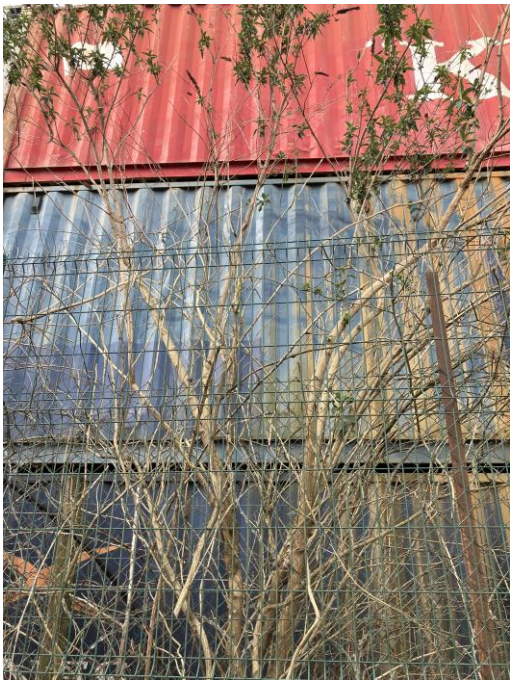
Tetra Tech reserves the right to share this Report and any related materials, surveys, drawings and/or documents at any time with the relevant Local Ecological Records Centre (LERC), any relevant statutory body or organisation as Tetra Tech may reasonably require from time-to-time.

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

APPENDIX B: PHOTOGRAPHS OF THE SITE



Japanese knotweed on southern boundary



Mature Buddleia stand in scrub along fence

Bramble scrub present along northern boundary approximately 1m in between two fence lines

Bramble scrub – visible where scrub cutting outside of the site has been undertaken.

Frog Island, Rainham

784-B065006

Biodiversity Net Gain Assessment

Proof of Evidence for appeal made under Section 174 of the Town and Country Planning Act (TCPA) 1990 against the issuing of an enforcement notice by the Council of London Borough of Havering (Appeal Ref. APP/B5480/C/22/3305409).

S Walsh & Sons Limited

Document prepared on behalf of Tetra Tech Limited. Registered in England number: 01959704

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Date:	05/04/2024	**Checked by:**	**Gabrielle Cruttenden MSc BSc (Hons) ACIEEM** Senior Ecologist
Status:	DRAFT	**Approved By:**	Felicity Andruszko BSc (Hons) MSc MCIEEM Associate Director
Description of Revision:	DRAFT initial submission for review by client		

Revision:	**02**	**Prepared by:**	**Frankie McDowell BSc (Hons) ACIEEM** Principal Ecologist
Date:	12/04/2024	**Approved By:**	

Status:	Final		Felicity Andruszko BSc (Hons) MSc MCIEEM Associate Director F. Andruszko
Description of Revision:	Final Issue for support in Appeal		

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APPENDIX D: Detailed Methodology
APPENDIX E: Proposed Habitat Target Condition Assessment

EXECUTIVE SUMMARY

Contents	Summary
Site Location	The site is located on Ferry Lane on the K9 Industrial Estate and is centred at Ordnance Survey National Grid Reference TQ 51220 80885 (see Figure 1). It comprises an active material processing site with associated material storage and site offices.
Background	An Enforcement Notice (reference: ENF/559/20) was issued for the site from the London Borough of Havering Council on 18th July 2022 in relation to an alleged breach of planning control which highlighted the fact that no biodiversity enhancement has been undertaken on the site. On 3rd October 2022 a Statement of Case was submitted by the client to appeal the Enforcement Notice, states the following in relation to ecology: *The Appellant will put forward a site development plan, secured by planning obligation, which will show that the Appellant will set aside two areas for biodiversity enhancement on the Site. It is proposed that these areas are planted with native woodland and scrub in order to complement local habitats. The biodiversity enhancement areas will be subject to a five-year aftercare management regime to ensure the successful establishment of the created habitats. The Appellant's evidence will demonstrate that the provision of these habitats will represent a net gain in biodiversity".*
Scope of this Report	The aim of this BNG assessment is to: • Quantify the existing baseline habitat, hedgerow and river units present on site; • Quantify the proposed new habitat creation, hereafter referred to habitat, hedgerow and river units on site; • Calculate the likely change in biodiversity (habitats, hedgerow and river) units from current baseline to post- habitat creation to provide an indication of the biodiversity gains that may occur. The assessment has been made using DEFRA's Statutory Biodiversity Metric (DEFRA, 2024a) in conjunction with the User guide (DEFRA 2024b).
Results and Evaluation	**Development proposals would likely result in a net gain of approximately 0.53 area biodiversity units (+782.70%).**
Recommendations	The current proposals would achieve an on-site net gain in excess of 10%. The metric trading rules will also be satisfied on-site. A Biodiversity Enhancement Strategy (BES) to cover a five-year period relating to the management of newly created habitat and any other biodiversity enhancements proposed

Contents	Summary
	(Tetra Tech, 2024b) will secure the success of proposed habitat creation on site.

1.0 INTRODUCTION

1.1 BACKGROUND

Tetra Tech was commissioned by S Walsh & Sons Limited, hereafter referred to as "the client" on 11th March 2024 to complete a Biodiversity Net Gain (BNG) assessment for Frog Island, Rainham, hereafter referred to as "the site".

This report has been prepared by Principal Ecologist Frankie McDowell BSc (Hons) ACIEEM. Frankie has over seven years' experience working as an ecological consultant. Frankie has worked on a wide range of projects at varying scales from Nationally Scale Infrastructure Project (NSIPs), residential developments and utility sites and industrial projects. She has key experience in ecological appraisal and impact assessment, protected species surveys, habitat surveys and biodiversity net gain assessment. The conditions pertinent to this report can be found in Appendix A.

1.2 SITE DESCRIPTION

The site is located on Ferry Lane on the K9 Industrial Estate and is centred at Ordnance Survey National Grid Reference TQ 51220 80885 (see Figure 1). It comprises an active material processing site with associated material storage and site offices. The flood defences for the River Thames, comprising a reinforced concrete flood wall, forms the south-western boundary of the site. The River Ingrebourne is located directly to the north of the site, and Rainham Marshes Local Nature Reserve (LNR) is located northeast. The site itself is dominated by hardstanding and developed land with processing plant, storage containers and site offices present. See Appendix B for existing site plan (Drawing No. KD.FRG.2.D.007).

1.3 ECOLOGICAL SITE ASSESSMENT

An ecological walkover survey was conducted by Frankie McDowell BSc (Hons) ACIEEM on 14th March 2024. The broad habitat types within the site were noted during the survey in accordance with the categories specified for a UK Habitat Classification (UKHab) survey (UK Hab Ltd., 2023) (Tetra Tech 2024a).

The site was found to comprise of primarily urban broad habitat in developed land with sealed surface, built linear features such as the flood defence wall and boundary fence. A single stand of Japanese knotweed *Reynoutria japonica* is present on the inside of the flood defence wall on southwestern boundary.

A narrow strip of bramble *Rubus fruticosus* agg. dominated scrub, approximately 1m wide, is present along the north to east boundary fence. Blackthorn *Prunus spinosa* occurs occasionally. The strip of scrub also has abundant buddleia *Buddleia davidii* present, which is listed on the London Invasive Species Initiative (LISI) as a species for concern. This scrub is used for protection of the site and has razor wire throughout. Overall, the site has very low biodiversity value.

1.4 PURPOSE OF REPORT

The client has occupied the site since 2015 and March 2016, the client applied for an environmental permit which was subsequently granted by the Environment Agency on 11th July 2016 (Permit number:

EPR/EB3004CE). The client began waste processing activities shortly afterwards in July 2016. An Enforcement Notice (reference: ENF/559/20) was issued for the site from the London Borough of Havering Council on 18th July 2022 in relation to an alleged breach of planning control, and states the following in relation to biodiversity on site:

> *"The use of the Land for waste storage and processing of building materials fails to provide any enhancement to biodiversity contrary to the London Plan Policy G6, the Local Plan Policy 30 and the JWDPD Policy W5."*

The Statement of Case (3rd October 2022) from the client to appeal the Enforcement Notice, states the following in relation to ecology:

> *"The Appellant will put forward a site development plan, secured by planning obligation, which will show that the Appellant will set aside two areas for biodiversity enhancement on the Site. It is proposed that these areas are planted with native woodland and scrub in order to complement local habitats. The biodiversity enhancement areas will be subject to a five-year aftercare management regime to ensure the successful establishment of the created habitats. The Appellant's evidence will demonstrate that the provision of these habitats will represent a net gain in biodiversity."*

The aim of this BNG assessment is to:

- Quantify the existing baseline habitat, hedgerow and river units present on site;
- Quantify the proposed new habitat creation, hereafter referred to habitat, hedgerow and river units on site;
- Calculate the likely change in biodiversity (habitats, hedgerow and river) units from current baseline to post- habitat creation to provide an indication of the biodiversity gains that may occur.

A summary of key legislation and national and local planning policies is provided in Appendix C.

The details of this report will remain valid for a period of eighteen months from the date of the survey (September 2025), after which the validity of this assessment should be reviewed to determine whether further updates are necessary. The recommendations within this report should be reviewed (and reassessed if necessary) should there be any changes to the red line boundary or habitat proposals which this report was based on.

Scientific names are provided at the first mention of each species and common names (where appropriate) are then used throughout the rest of the report for ease of reading.

2.0 METHODOLOGY

2.1 BIODIVERSITY OFFSETTING GUIDANCE

The assessment has been made using the Department for Environment Food and Rural Affairs (DEFRA) Statutory Biodiversity Metric (DEFRA, 2024a) hereafter referred to as 'Biodiversity Metric' in conjunction with the User Guide (DEFRA 2024b) and Biodiversity Net Gain: Good Practice Principles for Development (Baker *et al*., 2019).

The Biodiversity Metric calculates the overall loss or gain of biodiversity for development projects by assessing the distinctiveness (i.e., type of habitat and its value), condition, extent, and strategic significance of habitats on site pre- and post-development. To achieve biodiversity net gain, the biodiversity unit score must have a post-intervention score higher than the baseline. Further details to supplement the methodology set out below can be found in Appendix D.

Although 10% BNG was mandated on all major planning applications by the Environment Act 2021 on 12th February 2024, and "small sites" on 2nd April 2024, the Enforcement Notice, subsequent appeal by the client, and alleged change of site use in 2016, pre-dates this law. In addition, the planning practice guidance published by the Government (Department for Levelling Up, Housing and Communities, 2024) states:

> *"Biodiversity net gain has only been commenced for planning permissions granted in respect to an application made on or after 12 February 2024. Permissions granted for applications made before this date are not subject to biodiversity net gain.*
>
> *Biodiversity net gain does not apply to: […]*
>
> *Retrospective planning permissions made under Section 73A*
>
> *Biodiversity net gain has not been commenced yet for planning permissions which have been granted through other routes to permissions. These include:*
>
> *Local development orders;*
>
> *Simplified Planning Zones;*
>
> *Neighbourhood development orders;*
>
> ***Successful enforcement appeals; and***
>
> *Deemed planning permission."*

Although the Statutory Biodiversity Metric has been used as the most up to date version of the calculation tool, the site is not eligible to meet the legislative requirements now bound to new developments going through the planning process.

2.2 HABITAT ASSESSMENT

2.2.1 Habitats

Existing Habitats

An ecological walkover survey was conducted by Frankie McDowell BSc (Hons) ACIEEM on 14th March 2024. The existing habitats present on site were mapped in accordance with the UK Habitat Classification Professional Edition V2 (UKHab Ltd., 2023). The existing habitats present on site are shown in Figure 2. The habitats were converted into the Biodiversity Metric (DEFRA 2024c) from the UKHab classification (UKHab Ltd., 2023).

No hedgerows are present on site. As such, hedgerow units are not subject to any further consideration within this report.

No watercourses are present on site. The Tidal River Thames is located directly south of the site. As per the DEFRA Statutory Biodiversity Metric User Guide (DEFRA 2024b), sub-tidal reaches are not included within the watercourse module of the biodiversity metric tool. The Water Framework Directive (WFD) data set shows the boundary between riverine and subtidal estuarine reaches and confirms that the adjacent area of the River Thames is a sub-tidal reach (WFD, 2023). As such, watercourse units are not subject to any further consideration within this report.

Proposed Habitats

Proposed habitats of mixed scrub and individual trees (Figure 3) were assigned a UKHab category which was considered to best represent the habitat present, this was then converted to a BNG Metric category.

2.2.2 Habitat Distinctiveness

Each habitat is assigned a score for distinctiveness. Distinctiveness includes parameters such as species richness, diversity, rarity (at local, regional, national and international scales) and the degree to which a habitat supports species rarely found in other habitats (DEFRA, 2024a).

2.2.3 Habitat Condition

The condition of each habitat is assessed using the methods set out in the Statutory Biodiversity Metric - The Statutory Biodiversity Metric -Technical Annex 1: Condition Assessment Sheets and Methodology November 2023 (DEFRA, 2024a).

The baseline condition assessment data can be found in Appendix E.

2.2.4 Strategic Significance

The strategic significance of a site within the Biodiversity Metric is based upon several factors such as but not limited to:

- If the site is identified within a Local Nature Recovery Strategy (LNRS) area.
- If an LNRS has not yet been published, if the site is identified within a local planning policy as a biodiversity and nature or green infrastructure improvement areas.

Existing Habitats

There is not a LNRS currently available for the Greater London area and the site itself is not identified in local planning policy documents, such as The Havering Local Plan (London Borough of Havering, 2016), for biodiversity or nature conservation. The bramble scrub has been given a low strategic significance, although it may provide some localised function to biodiversity in the local area through provision of habitat for birds, invertebrates, and small mammals, it is low in species biodiversity, very dense and

unmanaged, and has abundant non-native buddleia present. The developed land; sealed surface has been given a low strategic significance due to its negligible biodiversity value.

Proposed Habitats

The proposed new scrub habitat and individual urban trees have also been given a low strategic significance. Although the relatively small area of scrub and proposed individual trees will provide an increased in plant diversity as well as foraging and sheltering opportunities for protected species that may be using the adjacent river corridor of the River Ingrebourne, the proposed habitats do not provide a significant contribution to connectivity to wider landscape and biodiversity benefits will be localised to this small area.

2.2.5 Risk Factors

As part of any proposed habitat creation and enhancement, risk factors must be considered to correct for disparity, delay or risk; these are:

- Time to target condition;
- Difficulty of restoration / creation; and
- If habitat created is undertaken in advance or delayed prior to the development.

2.3 LIMITATIONS

The conclusions and recommendations detailed in this report are based upon the site redline boundary and the proposals as outlined by the client at the time of writing. Should there be any changes to the site redline boundary, landscape plans or proposals at a later stage, this assessment should be reviewed to determine whether any amendments or additional survey work is required.

The best possible effort was made during the mapping process to ensure that all habitats identified on site were mapped accurately and represent the area of habitats present on site. Some margin of error is possible due to the difficultly defining the continuous nature of habitat boundaries. However, this margin of error has been minimised as far as practically possible using the professional opinion of two experienced ecologists, desk-based information and up to date aerial imagery.

The outputs of the Biodiversity Metric are not absolute values but provide a proxy for the relative biodiversity worth of a site pre- and post-proposal. The calculations within this report should be reviewed and updated should there be any changes to the existing habitats on site. As the change in biodiversity units is determined by subtracting the number of pre-intervention biodiversity units (i.e. those originally existing on-site) from the number of post-intervention units (i.e. those projected to be provided), this report should be updated should the use/proposals for the site change.

The Biodiversity Metric does not override or undermine any existing planning policy or legislation, including the mitigation hierarchy, which should always be considered as the Metric is applied. Furthermore, the Metric does not change the protection afforded to biodiversity. Existing levels of protection afforded to protected species (such as for bats) and to habitats, are not changed by use of this or any other Biodiversity Metric.

The optimal period to undertake habitat condition assessment for botanical interest is April-September. The ecological walkover survey was completed in March 2024 which is outside the optimal survey window

however due to the highly urban nature of the site with the vegetation present being representative of that habitat type all year round, this was not a significant limitation.

3.0 RESULTS

3.1 EXISISTING HABITAT BASELINE UNITS

The existing habitats on site comprise primarily developed land: sealed surface and bramble scrub. Both of these habitats do not require condition assessments.

The habitats present on site are shown in Table 1, alongside their distinctiveness and strategic significance, with the total area of the habitats onsite (2.782 ha) and the associated baseline biodiversity units (0.7 units).

Table 1: Pre-development Habitat Baseline Units

Habitat Type	UKHab ref. code	Irreplaceable Habitat (Y/N)	Area (ha)	Area Retained (ha)	Area Enhanced (ha)	Area Lost (ha)	Distinctiveness	Condition	Strategic significance	Total habitat units
Urban – Developed land, sealed surface	u1b	N	2.766	2.756	0.00	0.00954	Very Low	N/A Other	Area/compensation not in local strategy/ no local strategy	0.00
Heathland and scrub - Bramble Scrub	h3d	N	0.017	0.017	0.00	0.00	Medium	N/A	Area/compensation not in local strategy/ no local strategy	0.07
									Total units:	**0.07**

3.2 PROPOSED HABITAT UNITS

The proposed habitats are shown on Figure 3. The planting of 0.0197ha of mixed scrub and 40 individual urban trees is proposed. On this basis, the proposals for post-development on-site habitats value is calculated to be 0.53 habitat units.

In order to meet the definition of UKHab Mixed scrub habitat category, the proposed native scrub needs to comprise a mixture of minimum three native species without a single species dominating over 75% of the habitat area. Criteria met for the mixed scrub and proposed trees to meet their target conditions is summarised in Appendix E.

Species to be planted as pre the landscaping plan (Appendix B) include the following:

Scrub species:

- Blackthorn;
- Hawthorn *Crataegus monogyna*;
- Dog rose *Rosa canina*.
- Hazel *Corylus avellana*; and
- Dogwood *Cornus sanguinea*.

Trees species:

- Fastigate hornbeam *Carpinus betulus Fastigiata*;
- Fastigate oak *Quercus robur Fastigiata*; and
- Corsican pine *Pinus nigra Corsicana.*

The habitats created as part of the development are provided in Table 2. Additionally, the existing bramble scrub that runs along the north to eastern boundary of the site is to be retained for use to secure the site. Habitat creation proposals of mixed scrub can be seen on Figure 3. The target condition assessment for the proposed mixed scrub is provided within Appendix E.

Table 2: Proposed Habitat Units – Created

Habitat Type	UKHab ref. code	Area (ha)	Distinctiveness	Condition	Strategic significance	Total habitat units
Urban – Developed land, sealed surface	u1b	2.756	Very Low	N/A Other	Area/compensation not in local strategy/ no local strategy	0.00
Heathland and scrub – Mixed Scrub	h3h	0.00954	Medium	Poor	Area/compensation not in local strategy/ no local strategy	0.04
Individual trees – Urban trees	N/A	0.163*	Medium	Poor	Area/compensation not in local strategy/ no local strategy	0.46
					Total units:	**0.53**

*Urban tree area calculated using the Biodiversity Metric tool and does not interfere with total site area

3.3 HEADLINE RESULTS

Headline habitat results are provided in Table 3. The data used to inform the condition assessments for the proposed habitats are provided in Appendix E.

Development proposals would likely result in a net gain of approximately 0.53 area biodiversity units (+782.70%).

Table 3: Headline results

Project Stage	Units
On-site baseline	0.07
On site post-intervention (including all **on site** habitat retention, creation and enhancement)	0.60
On site net % change (including all on site habitat retention, creation and enhancement)	**0.53 units/ +782.70%**

The above results demonstrate that the current proposals would achieve a net gain score for area habitats.

Trading rules

The trading rules set minimum habitat creation and enhancement requirements to compensate for specific habitat losses, up to the point of no net loss. They are based on the habitat type and distinctiveness of the lost habitat. As per rule 1 of the Biodiversity Metric (DEFRA, 2024a) *"The trading*

rules of this biodiversity metric must be followed" and *"if trading rules have not been satisfied, then a net gain in biodiversity cannot be claimed"*. The trading rules for habitats are met as all semi-natural habitats on site are retained and new habitat of the same or higher distinctiveness is being created above and beyond what currently present on site.

A summary of the trading rules is provided in Table 4.

Table 4: Trading Rule Summary

Trading Summary		
Distinctiveness Group	**Trading Rule**	**Trading Satisfied?**
Very High	Bespoke compensation likely to be required 🛠	Yes ✓
High	Same habitat required =	Yes ✓
Medium	Same broad habitat or a higher distinctiveness habitat required (≥)	Yes ✓
Low	Same distinctiveness or better habitat required ≥	Yes ✓

4.0 DISCUSSION

4.1 SIGNIFICANT ON-SITE ENHANCEMENTS

Significant on-site enhancements are defined as areas of habitat enhancement which contribute significantly to the proposed development's biodiversity net gain relative to the biodiversity value before development. Retention of existing habitat does not count as an on-site enhancement.

The creation of new mixed scrub habitat in the north of the site and individual urban trees along the site boundaries is seen as a significant on-site enhancement as urban developed land with no biodiversity value is being replaced with native planting to create a more biodiverse habitat. Additionally, the planting of individual trees along the north to east boundary will add additional structure to the adjacent bramble scrub.

4.2 TRADING RULES

The trading rules are met due to all habitats on site proposed to be replaced like for like or like for better distinctiveness of habitat as per Table 4, therefore no further design changes to the post development layout are required to meet the trading rules.

4.3 BEST PRACTICE PRINCIPLES

As per the Biodiversity Net Gain: Good Practice Principles for Development (Baker *et al*., 2019) and *BS 8683 – "Process for designing and implementing Biodiversity Net Gain",* the proposed development has been designed in acccordance with the following key priciples:

Principle 1: Apply the mitigation hierarchy

Avoidance / minimising damage:

There are no habitats of significant biodiveristy value on site to be avoided, or that are at risk from damage, therefore this principle does not apply.

Restoration:

There are no habitats of significant biodiveristy value on site to be restored therefore this principle does not apply

Compensation:

There are no habitats of significant biodiveristy value on site that require specific compensation as part of the development proposals, therefore this principle does not apply.

Principle 2: Avoid losing biodiversity that cannot be offset by gains elsewhere

Irreplacable habitats are not present on site to proposed to be indirectly impacted by the proposed development, therefore this principle does not apply.

Principle 3: Be inclusive and equitable

As part of this BNG assessment, the landscaping team have been engaged early within the design process to achieve a net gain.

Principle 4: Address risk

As part of this BNG assessment, the project team have been engaged to address potential risks at a early stage, primarily around maximising the available space on site to provide a realistic habitat proposal.

Principle 5: Make a measurable net gain contribution

The site has achieved an measurable net gain for biodiversity, achieving a proposed, extemely high, net gain in habitat units.

Principle 6: Achieve the best outcomes for biodiversity

The site has achieved the best outcome for biodiversity through replacing developed land: sealed surface that hold no biodiversity value, with a native scrub planting scheme which will provide localised benefits to the area such as the increased diversity of flowering plants will encourage increased invertebrate activity, which will in turn provide additional prey for species such as birds and bats that may be using the nearby natural habitats.

Principle 7: Be additional

The site has achieved additionality through creating a more diverse habitat boundary between the site and the adjacent river corridor of the River Ingrebourne that will provide benefits to protected species that may be using the river corridor such as birds and invertebrates.

Principle 8: Create a net gain legacy

The site will achieve a net gain legacy through the measures set out in the Biodiviersty Enhancment Strategy (Tetra Tech, 2024b) which details the management required to meet the conditons of the habitats as detailed within this biodiversity net gain assessment.

Principle 9: Optimise sustainability

The site has aimed to optimise sustainablity through creating wider natural capital benefits to the site through the native mixed scrub planting and provision on trees on site.

Principle 10: Be transparent

The biodiversity net gain assessment outlines all methodology used to achieve a net gain for this proposed development, including baseline data, how this was recorded and how biodiversity net gain has been designed into the scheme.

5.0 CONCLUSION

The current proposals achieve a net gain of +782.70% in area habitat units. As there were no linear hedgerow or watercourse habitats present on site during the baseline, and none are proposed or appropriate as part of the development, they remain at 0.00%.

The trading rules are met due to all habitats on site proposed to be replaced like for like or like for better distinctiveness of habitat as per Table 4, therefore no further design changes to the post development layout are required to meet the trading rules.

The current post development layout therefore exceeds the minimum net gain of 10%.

Creation of habitats and ongoing management will be secured through use of the Biodiversity Enhancement Strategy (Tetra Tech, 2024b).

Should there be any changes to the landscape proposals on site, these will need to be reflected within an update to this BNG assessment.

REFERENCES

Baker, J., Hoskin, R., & Butterworth, T. (2019). Biodiversity Net Gain. Good practice principles for development: A practical guide.

British Standards Institute. (2021). BS 8683:2021 Process for designing and implementing Biodiversity Net Gain Specification.

BSI. (2013). BS 42020 – a code of practice for biodiversity in planning and development. London: BSI Group. Retrieved from https://www.bsigroup.com/LocalFiles/en-GB/biodiversity/BS-42020-Smart-Guide.pdf

Department for Environment Food & Rural Affairs (DEFRA). (2024a). The Statutory Biodiversity Metric: User Guide. Available from: https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides [accessed April 2024].

Department for Environment Food & Rural Affairs (DEFRA). (2024b). The Statutory Biodiversity Metric - Technical Annex 1: Condition Assessment Sheets and Methodology. Available from: https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides [accessed April 2024].

Department for Environment Food & Rural Affairs (DEFRA). (2024c). The Statutory Biodiversity Metric Calculation Tool.

Greater London Authority (GLA). (2020). The London Plan. London, UK. Available at: https://www.london.gov.uk/sites/default/files/the_london_plan_2021.pdf [Accessed April 2024].

GOV.UK (2023). Biodiversity net gain: exempt developments**.** Available online: https://www.gov.uk/guidance/biodiversity-net-gain-exempt-developments [accessed April 2024].

London Borough of Havering. (2016). The Havering Local Plan. London, UK. Available at: https://www.havering.gov.uk/download/downloads/id/5300/havering_local_plan_2016_-_2031.pdf [Accessed April 2024].

Stace. (2019). New Flora of the British Isles (4th ed.). Suffolk: C&M Floristics Middlewood Green.

Tetra Tech. (2024a). Ecology Walkover Survey Report. London, UK.

Tetra Tech. (2024b). Biodiversity Enhancement Strategy for Frog Island. London, UK.

Townsend Chartered Surveyors. (2022). Biodiversity Net Gain. Retrieved from Townsend Chartered Surveyors: https://townsendcharteredsurveyors.co.uk/environmental-services/biodiversity-net-gain/

UKHab Ltd. (2023). UK Habitat Classification Version 2.0. Available at: https://www.ukhab.org/ [Accessed April 2024].

Water Framework Directive (WDF). (2023) WDF Transitional and coastal Waterbodies Cycle 2 Available online: WFD Transitional and Coastal Waterbodies Cycle 2 - data.gov.uk [accessed April 2024].

FIGURES

Site Location Plan

Frog Island

GRS International

Legend

Site boundary

Notes:

Drawn by: DYLAN.GUSSMAN
Checked by: FM
Office: Southampton

Figure No. 1
Revision No. A
27 March 2024

0 25 50 75 100 Meters

Scale 1:2,241 @A3

British National Grid

NGR: 551234E 180892N

TETRA TECH

The Pavilion, 1st Floor
Botleigh Grange
Office Campus
Hedge End
Southampton
Hampshire, SO30 2AF

Existing Habitats Plan

Frog Island

GRS International

Legend

Site boundary

h3d - Bramble scrub

u1b - Developed land, sealed surface

Notes:

Drawn by: dylan.gussman

Checked by: FM

Office: Southampton

Figure No. 2

Revision No. A

03 April 2024

0 15 30 45 60 Meters

Scale 1:1,500 @A3

British National Grid

NGR: 551283E 180910N

TETRA TECH

The Pavilion, 1st Floor
Botleigh Grange
Office Campus
Hedge End
Southampton
Hampshire, SO30 2AF

Proposed Habitats Plan

Frog Island

GRS International

Legend

- Site boundary
- h3d - Bramble scrub
- h3h - Mixed scrub
- u1b - Developed land, sealed surface
- Urban individual trees

Notes:

Drawn by: ROSIE.DURHAM	Figure No. 3
Checked by: FM	Revision No. A
Office: Southampton	12 April 2024
0 10 20 30 40 Meters Scale 1:1,500 @A3	British National Grid NGR: 551278E 180888N

TETRA TECH

The Pavilion, 1st Floor
Botleigh Grange
Office Campus
Hedge End
Southampton
Hampshire, SO30 2AF

C:\Users\rosie.durham\OneDrive - Tetra Tech, Inc\Projects\Frog Island\B065006_FrogIsland\B065006_FrogIsland.aprx - Figure3_ProposedHabitats_

APPENDICES

Appendix A – Report Conditions

Appendix B – Site Plans

Appendix C - Relevant Planning Policy

Appendix D – Detailed Assessment Methodology

Appendix E– Post-Development Habitat Conditions and Management

APPENDIX A: REPORT CONDITIONS

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

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

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APPENDIX B: SITE PLANS AND LANDSCAPING PLANS

Proposed Landscape Character & Visual Mitigation & Enhancement Measures

Frog Island

Biodiversity Enhancement Area

Weighbridge & Offices

Site Access / Entrance

Site Offices & Welfare Facilities

Truck Parking

Staff Parking

Fuel

Staff Parking

HGV Parking

Pallets

Containers

Sizing Screen

Covered Workshop

Store

Rinsing Screen

Impact Crusher

Containers

Trommel

Existing Defense Wall

Equipment

Silo

Storage Bays & Stockpiles

Jaw Crusher & Silo Blender

Stockpiles

Existing Defence Wall

RIVER THAMES

Existing Containers

Stores

FERRY LANE

ACCESS

Note. The average metres Above Ordance Datum level of the top of the shipping containers is 9.6mAOD

LEGEND

- Application Boundary
- Contours (1m Intervals) & Spot Heights *m aOD*
- Waterbodies & Watercourses
- Woodland, Trees & Scrub
- Buildings
- Containers within the Site
- Stockpiles
- Concrete Hardstanding
- Biodiversity Enhancement Area
- Additional Shipping Containers
- Proposed Linear Tree Planting

Proposed Additional Landscape Character & Visual Mitigation & Enhancement Measures:

a. Strengthening existing woodland / scrubland planting to eastern boundary of site facing Ferry Lane

b. Creation of landscape scrub block within the northern area of the site to enhance Biodiversity Net Gain (BNG)

c. Reorganisation of shipping containers located along the site's eastern boundary - to be:
- more uniform
- new netting
- unifying colour and finish to match that of the adjacent Easter Industrial Park steel structures
- where there are currently only a single storey of containers along the north eastern boundary, a second and third storey is to be added to screen offices and plant

d. Confirmation that stocks will not be higher that the enhanced "screening barrier"

e. A triple storey of shipping containers is to be placed along the southern boundary of the site. These are again to be painted mid grey to provide a unified screening structure to match the character of the Easter Industrial Park. A line of tree plantIng is to be established in front of these containers. This would provide both screning and greening up / landscape enhancement of the River Thames Corridor.

PLEASE SEE DRAWING NO. KD.FRG.2.D.010 FOR LANDSCAPE PLANTING PROPOSALS FOR ITEMS A, B & E

KEDD Limited

PROJECT:
Frog Island

TITLE:
Proposed Landscape Character & Visual Mitigation & Enhancement Measures

REF NO:
KD.FRG.2.D.007

DATE:
March 2024

SCALE:
1:1,250 @ A3

STATUS:
FINAL

N

Fox Studio, Much Wenlock, Shropshire TF13 6BL

LOCATION REFERENCE A

***AIM :** To help strengthen the green vertical "tree" street scene, to help break up the form of the potential shipping containers and provide additional screening of the site, tying into the existing landscape structure.*

***TYPE OF PLANTING** Trees*
***NUMBERS** 28*

PLANTING SCHEDULE

Species	Form	Size	Root Type	Number
Carpinus betulus Fastigiata - Fastigiate Hornbeam	Premium Standard Tree 12cm GRTH	3m	45L Pot	10
Quercus robur Fastigiata - Fastigiate Oak	Premium Standard Tree 12cm GRTH	3m	45L Pot	10
Pinus nigra corsicana - Corsican Pine	Feathered Tree	1.8m	20L Pot	8
			Total	**28**

To be planted in groups of 1's and 3's

LOCATION REFERENCE E

***AIM :** To add a green vertical element / landscpae structure to the River Thames corridor. To help integrate the site into its local setting*

***TYPE OF PLANTING** Trees*
***NUMBERS** 12*

PLANTING SCHEDULE

Species	Form	Size	Root Type	Number
Carpinus betulus Fastigiata - Fastigiate Hornbeam	Premium Standard Tree 12cm GRTH	3m	45L Pot	6
Pinus nigra corsicana - Corsican Pine	Feathered Tree	1.8m	20L Pot	6
			Total	**12**

To be planted in two groups of three and three groups of two.

LOCATION REFERENCE B

***AIM :** Biodiversity enhancement Area - adjacent ot sites boundary with River Ingebourne*

***TYPE OF PLANTING** Native Scrub Vegetation*
***AREA** 197metres²*

PLANTING SCHEDULE

Species	Height (cm)	%	Root Type	Number
Crataegus monogyna - Hawthorn	20-30	20	Bare Root (BR)	40
Rosa canina - Dog Rose	2yrs	20	Bare Root (BR)	40
Corylus avellana - Hazel	30-45	20	Bare Root (BR)	40
Prunus spinosa - Blackthorn	30-45	20	Bare Root (BR)	40
Cornus sanguinea - Dogwood	30-45	20	Bare Root (BR)	40
			Total	**200**

SPECIFICATION: Tree Planting

Tree Planting
Trees shall conform to BS 3936 and be planted in tree pits of 900 x 900 x 450 . The bottom 250mmof the pit shall be dug and broken up. Backfill shall be imported topsoil as specified unless directed otherwise.

Compost for Planting Pits
Compost shall be a proprietary product, bark based incorporating fertilisers and improving additives.

Stakes for Trees
Stakes shall be peeled round softwood, pointed or minimum diameter 75mm. The stakes shall be driven into the base of the tree pit prior io placing the tree and Stakes shall in general have a clear height above the finished ground level as follows unless directed otherwise: 750mm (one tie). The stake shall be long enough to drive until they hold the tree firmly without rocking.

Tree Ties
Ties shall be approved nail-on type with cushioned spacer such as Toms, or other equal and approved, Nails shall be flat headed galvanised and shall hold the ties securely into the stake. Ties shall not be over tight on the tree stems.

Planting of Trees
The tree shall be set upright and at the same depth as grown in the nursery, the roots shall be spread out and the topsoil, or compost topsoil mixture, backfilled. Backfilling should be done to ensure close contact between roots and by firming in layers. The soil shall be left level and tidy, any subsoil clods, bricks or stones over 50mm arising, collected and carted off site.

Mulching
A 75mm compacted layer of medium grade pulverised bark, with a particle size of not more than 100mm and containing no more than 10% fines, shall be spread to form a continuous layer covering the whole of the bed, or in the case of standard tees shall be in the form of a circle of 600mm diameter around the base of the tree.

Watering
The site shall ensure that sufficient water is applied to maintain healthy growth.

Losses
Any losses are to be replaced.

SPECIFICATION: Scrub Planting

- Stock should be watered during any continuous dry spells in the first growing season.
- Weeding / spraying of herbicide in 1m diameter around the bases of the trees will be required to help combat competing vegetation through establishment.
- Following the 1st growing season, each winter an inspection of plant failures will be carried out, and a 'beating up' schedule produced, which will include recommendations for the replacement of dead / diseased or dying plant stock, replacement / straightening of tree guards and stakes, removal of herbaceous vegetation from tree guard as necessary, to ensure successful establishment.
- To control weeds and allow proper growth and prevent unwanted succession by invasive species, each spring, one application of an approved glyphosate will be applied (if required) by spot spraying of any unwanted vegetation.
- During years 1 to 3, three maintenance visits will be made per annum (February, May and September).
- During the May and September visits, any dead / diseased or dying species are to be taken out and removed off site and replaced during the following planting season (November to February), to ensure an 85% overall stock density by year 3.
- In September, encroaching vegetation is to be strimmed or removed by hand (as required). Otherwise vegetation between plants is to be left to become rank herbage. The edges of the establishing habitat will seek to maintain open edges and promote flowering herbs.
- The tree guards and canes should be inspected to ensure their integrity. Once the stock has matured, the tree guards must be removed.
- Post establishment, vegetation is to be cut back by 25% each year, in rotation, to diversify

PLEASE REFER TO DRAWING NO. KD.FRG.2.D.007 FOR THE LOCATION OF SOFT LANDSCAPE PROPOSALS

KEDD Limited

PROJECT:
Frog Island

TITLE:
APPENDIX F - Soft Landscape Planting Proposals

REF NO:
KD.FRG.2.D.010

DATE:
March 2024

SCALE:
1:1,250 @ A3

STATUS:
FINAL

N

Fox Studio, Much Wenlock, Shropshire TF13 6BL

APPENDIX C: RELEVANT PLANNING POLICY

National Planning Policy Framework

National Planning Policy Framework (NPPF) is the top tier of planning policy. The Framework provides guidance to local authorities and other agencies on planning policy and the operation of the planning system. Section 15 relates to 'Conserving and enhancing the natural environment'.

Relevant policies in relation to planning application include Paragraphs:

"180. Planning policies and decisions should contribute to and enhance the natural and local environment by:

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate; d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

185. To protect and enhance biodiversity and geodiversity, plans should: a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and

local partnerships for habitat management, enhancement, restoration or creation; and b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

186. When determining planning applications, local planning authorities should apply the following principles: a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused; b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest; c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate." .– see here for full details:

https://www.gov.uk/guidance/national-planning-policy-framework

The London Plan (Greater London Authority, 2020) Policy G6

"Sites of Importance for Nature Conservation (SINCs) should be protected. B Boroughs, in developing Development Plans, should:

1) use up-to-date information about the natural environment and the relevant procedures to identify SINCs and ecological corridors to identify coherent ecological networks

2) identify areas of deficiency in access to nature (i.e. areas that are more than 1km walking distance from an accessible Metropolitan or Borough SINC) and seek opportunities to address them

3) support the protection and conservation of priority species and habitats that sit outside the SINC network, and promote opportunities for enhancing them using Biodiversity Action Plans

4) seek opportunities to create other habitats, or features such as artificial nest sites, that are of particular relevance and benefit in an urban context"

The Havering Local Plan (London Borough of Havering, 2016) Policy 30 states

"The Council will protect and enhance the borough's natural environment and seek to increase the quantity and quality of biodiversity in Havering by:

i. Ensuring developers demonstrate that the impact of proposals on protected sites and species have been fully assessed when development has the potential to impact on such sites or species. Appropriate mitigation and compensation measures will also need to be identified where necessary. If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission will normally be refused;

ii. Not permitting development which would adversely affect the integrity of Specific Scientific Interest, Local Nature Reserves and Sites of Importance for Nature Conservation except for reasons of overriding public interest, or where adequate compensatory measures are provided; If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission will normally be refused;

iii. Supporting proposals where the primary objective is to conserve or enhance biodiversity;

iv. Encouraging developments where there are opportunities to incorporate biodiversity in and around the development;

v. Supporting developments that promote the qualitative enhancement of sites of biodiversity value, (by supporting proposals that improve access, connectivity and the creation of new habitats. Measures include maintaining trees, native vegetation, and improving and restoring open spaces and green infrastructure for the benefit of wildlife;

vi. Working with partners and local conservation groups to improve conditions for biodiversity in the borough"

Joint Waste Development Plan for the East London Waste Authority Boroughs (JWDPD) Policy W5 states

"The information supporting the planning application must include, where relevant to a development proposal, assessment of the following matters and where necessary, appropriate mitigation should be identified so as to minimise or avoid any material adverse impact and compensate for any loss including… the loss or damage to significant biodiversity conservation interests".

APPENDIX D: DETAILED METHODOLOGY

HABITAT ASSESSMENT

Habitats

Existing Habitats

The pre-development habitats present on site were mapped in accordance with the UK Habitat Classification Professional Edition V2 (UKHab Ltd., 2023). These habitats were assessed during the site survey and, where necessary, were updated to reflect the habitats as currently present on site. The pre-development habitats are shown in Figure 2. The area of identified habitats are calculated in hectares (ha) to two decimal places, ignoring linear features such as hedgerows or ditches (the area should be measured to the centre line of such features). The length of linear features (hedgerows and watercourses) were measured separately in kilometres (km) to two decimal places.

The habitats were converted into the Statutory Biodiversity Metric (Deparment for Environment Food & Rural Affairs (DEFRA), 2024c) from the UKHab classification (UKHab Ltd, 2023), as shown in Table 5.

Table 5: UKHab code and conversion into the Metric category

UKHab Code and secondary codes	Corresponding BNG Metric category
u1b – Developed land – sealed surface	Urban – Developed land: sealed surface
h3d – bramble scrub	Heathland and shrub – Bramble scrub

Proposed Habitats

Proposed habitats were assigned a UKHab category which was considered to best represent the habitat present post-development, this was then converted to a BNG Metric category. See Figure 3 for the post-development habitats and Table 6**Error! Reference source not found.** for the conversion categories.

Table 6: Post-development landscaped habitats and their conversion into UKHab and BNG category

UKHab Code and secondary codes	Corresponding BNG Metric category
u1b – Developed land – sealed surface	Urban – Developed land: sealed surface
h3d – bramble scrub	Heathland and shrub – Bramble scrub
h3h – mixed scrub	Heathland and shrub – Mixed scrub
Secondary code 200 - tree	Individual trees – Urban tree

Habitat Distinctiveness

Each habitat is assigned a score for distinctiveness. Distinctiveness includes parameters such as species richness, diversity, rarity (at local, regional, national and international scales) and the degree to which a habitat supports species rarely found in other habitats (Department for Environment Food & Rural Affairs (DEFRA), 2024a). The categories for distinctiveness within the Statutory Biodiversity Metric are shown within Table 7.

Table 7: Categories and scores for distinctiveness

Distinctiveness Category	Categories	Score
Very high	Priority Habitats as defined in Section 41 of the Natural Environment and Rural Communities (NERC) Act that are highly threatened, internationally scarce and require conservation action, for example blanket bog. Small amount of remaining habitat with a high proportion unprotected by designation. Critically Endangered European Red List habitats. Species-rich native hedgerow with trees - associated with bank or ditch.	8
High	Priority Habitats as defined in Section 41 of the NERC Act requiring conservation action, for example lowland fens. Remaining Priority Habitats not in very high distinctiveness band and other Near Threatened and Vulnerable Red List habitats. Species-rich native hedgerow with trees; Species-rich native hedgerow - associated with bank or ditch; or Native hedgerow with trees - associated with bank or ditch.	6
Medium	Semi-natural habitats not classed as a Priority Habitat but with significant wildlife benefit, for example mixed scrub. Arable field margins (Priority Habitat only). Species-rich native hedgerow; Native hedgerow - associated with bank or ditch; Native hedgerow with trees; Ecologically valuable line of trees; or Ecologically valuable line of trees - associated with bank or ditch.	4
Low	Habitat of limited biodiversity value for example temporary grass and clover ley. Agricultural and urban land of lower biodiversity value. Native hedgerow; Line of trees; or Line of trees - associated with bank or ditch.	2
Very low (Hedgerow module)	Non-native and ornamental hedgerow	1
Very low (area and watercourse module)	Little or no biodiversity value for example hard standing or sealed surface	0

Habitat Condition

The condition of each habitat is assessed using the methods set out in the Statutory Biodiversity Metric - The Statutory Biodiversity Metric -Technical Annex 1: Condition Assessment Sheets and Methodology November 2023 (Department for Environment Food & Rural Affairs (DEFRA), 2024b).

This approach determines how many of the condition criteria descriptions for each habitat type are met or are not met. For each habitat type, thresholds then apply for the numbers of condition criteria that must be met.

Conditions and associated scores in the Statutory Biodiversity Metric are as follows:

- Good: 3
- Fairly Good: 2.5
- Moderate: 2
- Fairly Poor: 1.5
- Poor: 1
- Condition Assessment N/A: 1
- N/A - Other: 0

Hedgerows and Line of Trees have a simplified condition assessment of Good, Moderate or Poor.

A number of lower distinctiveness habitats such cropland, urban habitats and bramble scrub are assigned default values and do not require a detailed condition assessment. The details of all habitats, hedgerows and rivers which are automatically assigned a poor condition value are set out within the Statutory Biodiversity Metric - Technical Annex 1: Condition Assessment Sheets and Methodology November 2023 (Department for Environment Food & Rural Affairs (DEFRA), 2024b).

Strategic Significance

The strategic significance of a site within the Statutory Biodiversity Metric is based upon several factors such as but not limited to:

- If the site is identified within a Local Nature Recovery Strategy (LNRS) area.
- If an LNRS has not yet been published, if the site is identified within a local planning policy as a biodiversity and nature or green infrastructure improvement areas.

Strategic significance scores in the Statutory Biodiversity Metric are detailed in Table 8.

Table 8: Strategic significance and corresponding scores

Condition	Criteria Met	Score
High strategic significance	Where there is a published LNRS: • The location of the habitat parcel has been mapped in the Local Habitat Map as an area where a potential measure has been proposed to help deliver the priorities of that LNRS; and • The intervention is consistent with the potential measure proposed for that location. or Where there is no published LNRS and the habitat type is mapped and described as locally ecologically important within a specific location, within documents specified by the relevant planning authority.	1.15

Condition	Criteria Met	Score
Medium strategic significance	This category cannot be applied where the LNRS is published, or where the habitat and location is included within other strategic documents specified by the relevant planning authority. Users should: • Explain how the habitat type is ecologically important within a specific location • Demonstrate the importance of that habitat in providing ecological linkage to other strategically significant locations • Use professional judgement	1.1
Low Strategic Significance	Where the definitions for high and medium strategic significance are not met.	1

Risk Factors

As part of any proposed habitat creation and enhancement, risk factors must be considered to correct for disparity, delay or risk; these are:

- Time to target condition;
- Difficulty of restoration / creation; and
- If habitat created is undertaken in advance or delayed prior to the development.

To take this into account, creation of a habitat which will take many years to get to target condition or is difficult to recreate would have a reduced biodiversity value compared to the same habitat already in situ. Therefore, to compensate for loss of that original habitat a larger area would be required as an offset.

Default values are provided for a range of habitats as part of the Statutory Biodiversity Metric. These may be altered if informed by knowledge of the site and proposed management prescriptions, as detailed within the habitat assessment tables. The habitat creation in advance or delay can be changed based on proposed timelines of the development, but this must be secured by a management plan and with agreement with the consenting authority.

APPENDIX E: PROPOSED HABITAT TARGET CONDITION ASSESSMENT

The below habitat creation and enhancements measures are based on the required management to fulfil the desired post-development habitat conditions required to reach the current BNG score. Please see the Biodiversity Enhancement Strategy (Tetra Tech, 2024b) for five-year management plan.

Condition assessment for on-site enhanced mixed scrub

Habitat	Heathland and shrub		
Reference	Mixed scrub – h3h		
Target condition change	Newly created habitat – land was previously urban - poor target condition		
Condition Assessment	**Assessment Criteria**		**Pass/fail**
	A	The parcel represents a good example of its habitat type - the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range).[1] - At least 80% of scrub is native, - There are at least three native woody species[2], - No single species comprises more than 75% of the cover (except hazel *Corylus avellana*, common juniper *Juniperus communis*, sea buckthorn *Hippophae rhamnoides* (only in its restricted native range), or box *Buxus sempervirens*, which can be up to 100% cover).	**Pass – will be all native species, and at least three woody species with not one being dominant.**
	B	Seedlings, saplings, young shrubs and mature (or ancient or veteran[3]) shrubs are all present.	**Fail**
	C	There is an absence of invasive non-native plant species[4] (as listed on Schedule 9 of WCA[5]) and species indicative of suboptimal condition[6] make up less than 5% of ground cover.	**Pass – will be checked regularly for invasive presence.**
	D	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	**Fail**
	E	There are clearings, glades or rides present within the scrub, providing sheltered edges.	**Fail**
Result	**Poor**		
Notes	• Passes 5 criteria: Good • Passes 3 or 4 criteria: Moderate • Passes 2 or fewer criteria Poor		

Footnote 1 – Professional judgement should be used alongside the UKHab description.

Footnote 2 – Native woody species as defined and listed in the Hedgerow Survey Handbook: DEFRA (2007) Hedgerow Survey Handbook: A standard procedure for local surveys in the UK. 2nd ed. [online]. Defra, London. PB1195. Available from: Hedgerow Survey Handbook (publishing.service.gov.uk).

Footnote 3 – See gov.uk standing advice on ancient and veteran species. Available from:
Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk)
and
https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions

Footnote 4 – Assess this for each distinct habitat parcel. If the distribution of invasive non-native species varies across the habitat, split into parcels accordingly, applying a buffer zone around the invasive non-native species with a size relative to its risk of spread into adjacent habitat, using professional judgement.

Footnote 5 – Wildlife and Countryside Act 1981 (as amended).

Footnote 6 – Species indicative of suboptimal condition for this habitat type may include: non-native conifers, tree-of-heaven *Alianthus altissima*, holm oak *Quercus ilex*, European turkey oak *Quercus cerris*, cherry laurel *Prunus laurocerasus*, snowberry *Symphoricarpos spp*., shallon *Gaultheria shallon*, American skunk cabbage *Lysichiton americanus*, buddleia *Buddleja* spp., cotoneaster *Cotoneaster* spp., Spanish bluebell *Hyacinthoides hispanica* and hybrid bluebells *Hyacinthoides x massartiana*. There may be additional relevant species local to the region and or site.

Condition assessment for on-site urban trees

Habitat	Individual trees		
Reference	Urban tree		
Target condition change	Newly created habitat – land was previously urban - poor target condition		
Condition Assessment	**Assessment Criteria**		**Pass/fail**
	A	The tree is a native species (or at least 70% within the block are native species).	**Fail**
	B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	**Fail**
	C	The tree is mature (or more than 50% within the block are mature)[1].	**Fail**
	D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	**Pass – trees will be protected from adverse human activities by containers**
	E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	**Fail**
	F	More than 20% of the tree canopy area is oversailing vegetation beneath.	**Pass – the scrub adjacent will likely**

			encroach below
Result	**Poor**		
Notes	• Passes 5 or 6 criteria: Good • Passes 3 or 4 criteria: Moderate • Passes 2 or fewer criteria Poor		

Footnote 1 - See gov.uk standing advice on ancient and veteran trees. Available from:
Keepers of time: ancient and native woodland and trees policy in England (publishing.service.gov.uk)
and:
Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

Footnote 2 - Enhancement of this habitat type is only possible by improving the habitat so that it meets all Criteria B, D and F. It is not possible or appropriate to enhance individual tree/s through meeting just one or two of those Criteria, nor by meeting Criteria A, C or E.

DOCUMENT CONTROL

Document:	Biodiversity Enhancement Strategy (BES)
Project:	Frog Island
Client:	S Walsh & Sons Limited
Project Number:	784-B065006
File Origin:	\\lds-dc-vm-101\Data\Projects\784-B065006_Frog_Island\60 Project Output\61 Work in Progress\Ecology\HEP

Revision:	**V1**	**Prepared by:**	Charlie Lee BSc (Hons) Graduate Ecologist
Date:	05/04/2024	**Checked by:**	Frankie McDowell BSc (Hons) ACIEEM Principal Ecologist
Status:	DRAFT	**Approved By:**	Felicity Andruszko BSc (Hons) MSc MCIEEM Associate Director
Description of Revision:	DRAFT initial submission for review by client		

Revision:	**V2**	**Prepared by:**	Charlie Lee BSc (Hons) Graduate Ecologist
Date:	12/04/2024	**Checked by:**	Frankie McDowell BSc (Hons) ACIEEM Principal Ecologist
Status:	Final	**Approved By:**	Felicity Andruszko BSc (Hons) MSc MCIEEM Associate Director
Description of Revision:	Final issue to support Appeal.		

INTRODUCTION

Tetra Tech was commissioned by S Walsh & Sons Limited on 11th March 2024 to complete a Biodiversity Enhancement Strategy (BES) for Frog Island, Rainham, hereafter referred to as "the site".

The site is located on Ferry Lane on the K9 Industrial Estate and is centred at Ordnance Survey National Grid Reference TQ 51220 80885 (see Figure 1). It comprises an active material processing site with associated material storage and site offices. The flood defences for the River Thames, comprising a reinforced concrete flood wall, forms the south-western boundary of the site. The site itself is dominated by hardstanding and developed land. In the wider landscape, the River Ingrebourne is located to the north of the site, and Rainham Marshes Local Nature Reserve (LNR) and the Inner Thames Marshes Site of Special Scientific Interest (SSSI) is located northeast.

This report has been prepared by Tetra Tech Graduate Ecologist Charlie Lee BSc (Hons). The conditions pertinent to this report can be found in Appendix A.

Purpose of this Report

An Enforcement Notice (reference: ENF/559/20) was issued for the site from the London Borough of Havering Council on 18th July 2022 in relation to an alleged breach of planning control , and states the following in relation to biodiversity on site:

> *"The use of the Land for waste storage and processing of building materials fails to provide any enhancement to biodiversity contrary to the London Plan Policy G6, the Local Plan Policy 30 and the JWDPD Policy W5."*

The Statement of Case (3rd October 2022) from the client to appeal the Enforcement Notice, states the following in relation to ecology:

> *"The Appellant will put forward a site development plan, secured by planning obligation, which will show that the Appellant will set aside two areas for biodiversity enhancement on the Site. It is proposed that these areas are planted with native woodland and scrub in order to complement local habitats. The biodiversity enhancement areas will be subject to a five-year aftercare management regime to ensure the successful establishment of the created habitats. The Appellant's evidence will demonstrate that the provision of these habitats will represent a net gain in biodiversity."*

This BES sets out the measures in which to secure the success of the habitat creation proposed on site, and any further biodiversity enhancements proposed, and should be read in conjunction with the Biodiversity Net Gain (BNG) assessment for the site (Tetra Tech, 2024).

Ecological Assessment of the Site

An ecological walkover survey of the site was conducted in March 2024 (Tetra Tech, 2024b). The broad habitat types within the site were noted in accordance with the categories specified for a UK Habitat Classification (UKHab) survey (UKHab Ltd, 2023) The site was found to comprise of primarily urban broad habitat in developed land with sealed surface, built linear features such as a flood defence wall and boundary fence. A single stand of Japanese Knotweed *Reynoutria japonica* is present on the inside of the flood defence wall on the southwestern boundary.

A narrow strip of bramble *Rubus fruticosus* agg. scrub, approximately 1m wide, is present along the north to east boundary fence. Buddleia *Buddleja davidii* is present and abundant within the strip of scrub, which is listed on the London Invasive Species Initiative (LISI) (GIGL, 2014).

Overall, the site has been assessed has having a very low ecological value, with limited semi-natural habitats unable to provide significant benefits to biodiversity. Plant diversity on site is low, with invasive non-native species (INNS) present.

The current proposals achieve an extremely high net gain of 782.70% for habitat units (Tetra Tech, 2024). As the biodiversity net gain assessment shows that the current post development layout will achieve a net gain in habitats and trading rules are met, it is considered that this meets the current National Planning Policy Framework (NPPF) policy relating to biodiversity net gain and relevant local planning policy, as set out in Appendix B.

BIODIVERSITY ENHANCEMENT MEASURES

A permanent member of site personnel will be assigned the role of 'biodiversity champion' responsible for implementing the following measures. Two 'Biodiversity Enhancement Areas' will be created: one area of mixed scrub in the northern corner of the site, and a second comprising a line of urban trees to be planted on the inside of the existing bramble scrub on the north to east boundary (See Figure 2).

HABITAT CREATION AND MANAGEMENT

Mixed scrub creation

A Biodiversity Enhancement Area will be created in an area along the north central boundary of the site, transforming the habitat from developed land; sealed surface into mixed scrub (see Appendix C and Figure 2). Outlined in the UK Habitat Classification Version 2.0 document (UKHab Ltd, 2023), a mixed scrub habitat is defined as a dense scrub comprising a mixture of species without a single species dominant or stands with a dominant species not listed in habitat codes h3a-h3k. These include blackthorn *Prunus spinosa*, hazel *Corylus avellana*, sea buckthorn *Hippophae rhamnoides*, bramble, gorse *Ulex europaeus*, hawthorn *Crataegus monogyna*, Rhododendron *Rhododendron ponticum*, willow *Salix spp.* and juniper *Junipers communis* dominated scrub.

Mixed scrub should be managed to meet target 'Poor' condition as per the BNG assessment for the site (Tetra Tech, 2024) and Appendix E and Defra Statutory Biodiversity Metric condition assessment criteria (DEFRA, 2024).

Ground preparation

- All excavations will be undertaken in accordance with BS 3882:2015, BS 8601:2013 and the 2009 DEFRA Construction Code of Practice for the Sustainable Use of Soils on Construction Sites;
- All extraneous rubbish (concrete, metal, grass, decayed vegetation, contaminated topsoil) should be removed. Stones larger than 50mm in dimension should be removed;
- Any compacted topsoil will be broken up to full depth, and within a few days of planting the top 450mm of soil should be loosened, aerated, and broken up into particles of 2-8mm; and
- Backfilling material used will be previously removed topsoil plus additional if required.

Planting

After the ground has been prepared to bare soil, shrub whips can be planted. Shrubs to be planted as bare root stock, 60-80cm, at 2p/m^2. No invasive plant species (such as rhododendron, as listed on Schedule 9 of the Wildlife and Countryside Act 1981) will be included and if encountered during works, must be removed during management.

[MF1]A mix of native scrub species should be planted randomly and in clumps, not in rows as this can create wind tunnels. To be planted in groups of 3-5 plants, in autumn and winter (October - April). Species to be planted include:

- Hawthorn *Crataegus monogyna*;
- Dog rose *Rosa canina*.
- Hazel *Corylus avellana*;
- Blackthorn, and;
- Dogwood *Cornus sanguinea*.

Shrubs will not be planted in waterlogged or frozen soil and should receive regular water when the earth is dry. Additionally, whips should be protected with spiral guards, tubes or stakes and ties (ideally plastic free) as necessary.

Ongoing management

Any weeds should be removed to prevent competition. Weeding/spraying of herbicide in 1m diameter around bases of the trees may be required to help combat competing vegetation through establishment. Additionally, to control weeds and allow proper growth and prevent unwanted succession by invasive species, each spring, one application of an approved glyphosate will be applied (if required) by spot spraying of any unwanted vegetation.

Corrective pruning may be required. Corrective light pruning of shrubs during winter, outside of the breeding bird season (February – August inclusive), will encourage denser growth, which is favourable for wildlife.

Following the 1st growing season, each winter an inspection of plant failures will be carried out, and a 'beating up' schedule produced. This will include recommendations for the replacement of dead/diseased or dying plant stock, replacement/straightening of tree guards and stakes, removal of herbaceous vegetation from tree guard as necessary, to ensure successful establishment. The tree guards and canes should be inspected to ensure their integrity. Once the stock has matured, the tree guards must be removed.

During years 1 – 3, three maintenance visits will be made per annum (February, May and September). During the May and September visits, any dead/diseased or dying species are to be taken out and removed off site and replaced during the following planting season (November to February), to ensure an 85% overall stock density by year 3.

In September, encroaching vegetation is to be strimmed or removed by hand. Otherwise, vegetation between plants is to be left to become rank herbage. The edges of the established habitat will seek to maintain open edges and promote flowering herbs. Post establishment, vegetation is to be cut back by 25% each year, in rotation, to maintain structural diversity. No one species should dominate, therefore bramble may need to be selectively cleared and overplanted where required.

Bramble scrub monitoring

The existing bramble scrub present along the north to east site boundary fence is required to be maintained for the purpose of site security.

Corrective pruning of the bramble, to maintain structural security of the razor wire present within, should be carried out as and when required outside of the breeding bird season (February – August inclusive).

Tree planting along the north – east site boundary

A total of 28 trees will be planted along the north to east border of the site to strengthen the existing woodland/scrubland habitat, strengthen the green vertical 'tree' street scene, and to provide additional screening of the site. Additionally, a total of 12 trees will be planted south of the site to add a green element/landscape structure to the River Thames corridor and to help integrate the site into its local setting. The ground preparation for tree planting should occur in the same process outlined above for the mixed scrub creation.

Planting

Tree planting will be undertaken in accordance with BS 8545:2014 Tree – From Nursery to Independence. Trees should be watered immediately, thoroughly and without damaging or displacing plants or soil in accordance with an irrigation plan as per BS 8545:2014.

Deciduous trees will be planted in late October to late March, however, any container grown plants can be planted at any time of year if ground conditions are favourable (e.g., not frozen and not within a drought).

Trees will be planted in tree pits of 900 x 900 x 450 and the bottom 250mm of the pit shall be dug and broken up. Stakes shall be peel around softwood, pointed or minimum diameter 75mm. The stakes shall be driven into the base of the tree prior to placing the tree into the pit. Stakes shall in general have a clear height above the finished ground level as follows unless directed otherwise: 750mm. The stake shall be long enough to drive until they hold the tree firmly without rocking.

Tree ties shall be approved nail-on type with a cushioned spacer such as Toms, or other equal and approved. Nails shall be flat headed galvanised and shall not hold the ties securely into the stake. Ties shall not be over tight on the tree stems.

The tree shall be set upright and at the same depth as grown in the nursery, roots shall be spread out and the topsoil, or compost topsoil mixture, backfilled. Backfilling should be done to ensure close contact between roots and by firming in layers. The soil shall be left level and tidy, any subsoil clods, bricks or stones over 50mm arising should be collected and carted off site. Lightly firming soil around plants and fork or rake the soil without damaging the roots.

A 75mm compacted layer of medium grade pulverised bark, with a particle size of no more than 100mm and containing no more than 10% fines, shall be spread to form a continuous layer covering the whole of the bed. In the case of standard trees, this shall be in the form of a 600mm diameter circle around the base of the tree.

The 28 trees to be planted along the north – east boundary of the site will be planted in groups of 1's and 3's as 12cm girth, premium standards and will include fastigiate hornbeam *Carpinus betulus Fastigiata* (10), fastigiate oak *Quercus robur Fastigiata* (10) and Corsican pine *Pinus nigra corsicana* (8), as per the planting plans (Appendix C).

The 12 trees to be planted south of the site will be planted in two groups of three and three groups of two as 12cm girth premium standards and will include hornbeam (6) and Corsican pine (6), as per the planting plans (Appendix C).

Ongoing management

Any weeds surrounding the trees should be removed to prevent competition.

Replacement of any failed plantings, during the next suitable planting period (November – February), should occur annually. Guards, tubes, stakes and ties will be checked in spring and adjusted in autumn to prevent constriction of the stem or plant. After two growing seasons the plants should have made sufficient root growth to anchor the plant and supporting stakes can be removed. Tree guards should also be removed when beginning to split.

FURTHER BIODIVERSITY ENHANCEMENTS

The following ecological enhancement will further increase the biodiversity value of the site:

Management of Japanese knotweed

Japanese knotweed is a perennial plant which reproduces mainly through rhizome fragments or cut stems. The plant has significant spread with high regeneration rates and can have implications for dispersal by both natural and human means. Japanese knotweed was recorded inside of the sea wall in the western corner of the site during the site walkover in March 2024.

It is recommended that the INNS is managed appropriately on site to eradicate and control the spread. Managing the INNS may also prevent potential future implications to the site and wider landscape. Some of these implications may include disruption of the structural integrity of the sea wall, damage to the urban environment as the plant pushes up through tarmac and paving, and out-competing other plant species in the wider landscape.

A range of different techniques may be required to eradicate the plant. Other methods may be applicable for this site therefore, it is recommended a specialist contractor be employed to develop a bespoke treatment strategy.

Table 1 outlines management options to control Japanese knotweed on the site.

Table 1. Summary of Management Options for Japanese Knotweed

Method	Detail
Good site hygiene	Maintaining good site hygiene can avoid contamination of Japanese knotweed around the site. Ways to maintain good site hygiene to manage Japanese knotweed includes: • Fence the area off clearly to mark out the area of infestation with signage warning people working in the area that there is Japanese knotweed contamination; • Do not use vehicles with caterpillar tracks within the infested area;

Method	Detail
	• Vehicles leaving the area should either be confined to haulage routes protected by root barrier membranes, or be pressure washed, and; • Vehicles used to transport contaminated soils must be thoroughly pressure-washed in a designated wash-down area before being used for other work.
Chemical control	It is essential that a competent and qualified person carries out herbicide treatment if this method is used to control Japanese knotweed on site. Contractors must have the appropriate National Proficiency Tests Council Certification and will need approval from the Environmental Agency to use herbicides in or near water. As Japanese knotweed was recorded on the sea wall on site, within 10m of the River Thames, the choice of herbicides is limited to formulations of glyphosate and 2,4-D amine that are approved for use near water. It is important that suitably qualified operators use these chemicals appropriately and should always follow the information on the label.
Mechanical control	Wherever possible, the amount of Japanese knotweed excavated on site should be kept to a minimum and focus should be on treating the plant in-situ. It is good practice and more effective to treat Japanese knotweed chemically. However, mechanical control can be sought by: • Cutting Japanese knotweed canes: - You should cut stems where they can dry out; - You should leave drying canes on an appropriate membrane surface, not on soil or grass to prevent contamination; - You should cut stems cleanly so that they don't create pieces of stem that may spread and regrow, and; - You should not use flails. • Burning: - You can use controlled burning of stem, rhizome and crown material as part of the programme to control Japanese knotweed; - Burning must consider any local by-laws and the potential to cause a nuisance or pollution, and; - You should contact the Environmental Health Office of the relevant local council before burning. • Excavation: - Wherever possible, Japanese knotweed should always be treated in its original location and excavation should only be sought as a last resort, and;

Method	Detail
	- Carefully identify rhizomes during the excavation process, guidance on recognising rhizomes is outlined in the Japanese Knotweed ID sheet (GB Non-native Species Secretariat, 2015) .
Root barrier membranes	A root barrier membrane can be used to physically protect a structure of clean soil and must be made of a material that is fit for purpose. A root barrier membrane is only as good as the way in which it has been laid. It is essential that there is expert supervision when the root barrier membrane is supplied. Japanese knotweed will tend to break through holes or joins in the fabric, so it is essential that the integrity of the root barrier membrane is maintained, and there is a minimum number of seams. Ideally, root barrier membrane material should consist of a single sheet. You must ensure that root barrier membranes containing leachable chemicals do not pollute streams and groundwater. Given that Japanese knotweed rhizome may remain dormant for at least 20 years, it is important that a root barrier membrane carries a guarantee well beyond that time. It is advised that a manufacturer's guarantee of at least 50 years.

Insect hotel and bird box installation

During the site walkover (Tetra Tech, 2024), the scrub habitat running along the outside of the north to southeast site boundary was recorded as having potential to provide suitable habitat for common invertebrates and nesting birds.

An artificial invertebrate habitat, in the form of an 'insect hotel', will be installed on site. An optimal location would be adjacent northeast of the proposed biodiversity enhancement area on site, facing northeast towards suitable habitat (see suggested location on Figure 2). This could enhance provisions for invertebrates on-site and within the suitable scrub habitat and adjacent River Ingrebourne corridor.

Two bird boxes will be erected on wooded posts. Optimal locations will be away from the main processing works, in the same area as the insect hotel, and/or on the edge of existing bramble scrub boundary (see suggested locations on Figure 2). Bird boxes should be installed at least 1.5 metres from the ground, at least 10m apart and traditionally are erected during the spring. The boxes should be facing away from the site and towards suitable habitat. It is recommended that nest boxes are cleaned annually. This should be done between 1st September and 31st of January, outside of the breeding bird season. Any dead eggs must be destroyed promptly and cannot be kept or sold. See Appendix D for suggested models.

SUMMARY

Summary of ongoing management actions (excluding initial establishment) is shown in Table 2. The biodiversity champion is to do an annual check to inform upcoming management and dynamic ecological monitoring recommendations are to be provided at the intervals as listed below. The final column is included for purpose of keeping a record of any required management by the biodiversity champion.

Table 2. Onsite management checklist

Year (s)	Time	Maintenance actions	Additional recommendations from annual management check (if required)
Mixed scrub (created)			
2-3	Winter	Inspection of plant failures to be carried out	
1-3	February, May and September	Three maintenance visits made per annum: • May and September visits - failed plants to be taken out and removed from site, and; • September visits – strim encroaching vegetation or removed by hand (as required)	
1-3	November - February	Replacement planting of failed plant (where required)	
1-3	April - October	Check for invasive species	

Year (s)	Time	Maintenance actions	Additional recommendations from annual management check (if required)
1-3	Spring	One application of an approved glyphosate (if required) by spot spraying to control invasive species	
1-3	January - February	Corrective pruning to encourage denser growth and/or weeding where required to reduce competition	
1-3	Spring and Autumn	Adjust and/or remove guards/tubes/stakes/ties as required	
2-3	October - February	Post establishment, vegetation to be cut back by 25% in rotational glades	
Bramble scrub (retained)			
As and when needed	October - February	Pruning to protect integrity of razor wire on fencing	
Annually	April - October	Check for invasive species	
Tree planting			

Year (s)	Time	Maintenance actions	Additional recommendations from annual management check (if required)
1 - 3	Spring and Autumn	Guards, tubes, stakes and ties checked in spring and adjusted in autumn to prevent constriction of stem.	
3	Winter	Supporting stakes can be removed	
Annually	January – February	Once established, trees should be maintained through thinning, coppicing or supplementary planting, as required.	
Insect hotel			
Annually	Any time of year	Damage inspection	
Bird nest boxes			
Annually	September - January	Damage inspection	
Annually	September - January	Cleaning out debris and dead eggs	

CONCLUSION

Given that the implementation and monitoring of the measures set out in this Biodiversity Enhancement Strategy are followed over a five year management plan, the site will be compliant with the London Plan Policy G6, the Local Plan Policy 30 and the JWDPD Policy W5 outlined in the Enforcement Notice (reference: ENF/559/20) issued by the London Borough of Havering Council.

REFERENCES

DEFRA, 2024. *Statutory biodiversity metric tools and guides.* [Online]
Available at:
https://assets.publishing.service.gov.uk/media/65c60f00cc433b000ca90b33/Statutory_Biodiversity_Metric_Condition_Assessments-_Feb24.xlsx
[Accessed April 2024].

GB Non-native Species Secretariat, 2015. *Japanese Knotweed.* [Online]
Available at:
https://www.nonnativespecies.org/assets/Uploads/ID_Fallopia_japonica_Japanese_knotweed.pdf
[Accessed April 2024].

GIGL, 2014. *LISI London Invasive Species Initiative.* [Online]
Available at: https://www.gigl.org.uk/GiGLFiles/WebDocuments/LISIspeciesofconcernNov2014.pdf
[Accessed April 2024].

Greater London Authority, 2021. *The London Plan 2021.* [Online]
Available at: https://www.london.gov.uk/sites/default/files/the_london_plan_2021.pdf
[Accessed April 2024].

London Borough of Havering, 2016. *Havering Local Plan 2016 - 2031.* [Online]
Available at: https://www.havering.gov.uk/download/downloads/id/5300/havering_local_plan_2016_-_2031.pdf
[Accessed April 2024].

Tetra Tech, 2024. *Frog Island, Rainham Biodiversity Net Gain Assessment,* s.l.: s.n.

UKHab Ltd, 2023. *UK Habitat Classification Version 2.0.* [Online]
Available at: https://www.ukhab.org/
[Accessed April 2024].

FIGURES

Site Location Plan

Frog Island

GRS International

Legend

Site boundary

Notes:

Drawn by: DYLAN.GUSSMAN
Checked by: FM
Office: Southampton

Figure No. 1
Revision No. A
27 March 2024

0 25 50 75 100 Meters

Scale 1:2,241 @A3

British National Grid

NGR: 551234E 180892N

TETRA TECH

The Pavilion, 1st Floor
Botleigh Grange
Office Campus
Hedge End
Southampton
Hampshire, SO30 2AF

Biodiversity Enhancement Strategy

Frog Island

S.Walsh and Son Limited

Legend

- Site boundary
- h3d - Bramble scrub
- h3h - Mixed scrub
- u1b - Developed land, sealed surface
- Urban individual trees
- Japanese knotweed
- Bird box
- Insert house

Notes:

Drawn by: ROSIE.DURHAM
Checked by: FM
Office: Southampton

Figure No. 2
Revision No. A
12 April 2024

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

British National Grid
NGR: 551272E 180892N

TETRA TECH

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APPENDIX A: REPORT CONDITIONS

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

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APPENDIX B: RELEVANT PLANNING POLICY

National Planning Policy Framework

National Planning Policy Framework (NPPF) is the top tier of planning policy. The Framework provides guidance to local authorities and other agencies on planning policy and the operation of the planning system. Section 15 relates to 'Conserving and enhancing the natural environment'.

Relevant policies in relation to planning application include Paragraphs:

"180. Planning policies and decisions should contribute to and enhance the natural and local environment by:

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate; d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

185. To protect and enhance biodiversity and geodiversity, plans should: a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and

local partnerships for habitat management, enhancement, restoration or creation; and b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

186. When determining planning applications, local planning authorities should apply the following principles: a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused; b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest; c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate." .– see here for full details:

https://www.gov.uk/guidance/national-planning-policy-framework

The London Plan (Greater London Authority, 2020) Policy G6

"Sites of Importance for Nature Conservation (SINCs) should be protected. B Boroughs, in developing Development Plans, should:

1) use up-to-date information about the natural environment and the relevant procedures to identify SINCs and ecological corridors to identify coherent ecological networks

2) identify areas of deficiency in access to nature (i.e. areas that are more than 1km walking distance from an accessible Metropolitan or Borough SINC) and seek opportunities to address them

3) support the protection and conservation of priority species and habitats that sit outside the SINC network, and promote opportunities for enhancing them using Biodiversity Action Plans

4) seek opportunities to create other habitats, or features such as artificial nest sites, that are of particular relevance and benefit in an urban context"

The Havering Local Plan (London Borough of Havering, 2016) Policy 30 states

"The Council will protect and enhance the borough's natural environment and seek to increase the quantity and quality of biodiversity in Havering by:

i. Ensuring developers demonstrate that the impact of proposals on protected sites and species have been fully assessed when development has the potential to impact on such sites or species. Appropriate mitigation and compensation measures will also need to be identified where necessary. If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission will normally be refused;

ii. Not permitting development which would adversely affect the integrity of Specific Scientific Interest, Local Nature Reserves and Sites of Importance for Nature Conservation except for reasons of overriding public interest, or where adequate compensatory measures are provided; If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission will normally be refused;

iii. Supporting proposals where the primary objective is to conserve or enhance biodiversity;

iv. Encouraging developments where there are opportunities to incorporate biodiversity in and around the development;

v. Supporting developments that promote the qualitative enhancement of sites of biodiversity value, (by supporting proposals that improve access, connectivity and the creation of new habitats. Measures include maintaining trees, native vegetation, and improving and restoring open spaces and green infrastructure for the benefit of wildlife;

vi. Working with partners and local conservation groups to improve conditions for biodiversity in the borough"

Joint Waste Development Plan for the East London Waste Authority Boroughs (JWDPD) Policy W5 states

"The information supporting the planning application must include, where relevant to a development proposal, assessment of the following matters and where necessary, appropriate mitigation should be identified so as to minimise or avoid any material adverse impact and compensate for any loss including… the loss or damage to significant biodiversity conservation interests".

APPENDIX C: SITE PLANS AND LANDSCAPING PLANS

Proposed Landscape Character & Visual Mitigation & Enhancement Measures

Frog Island

Biodiversity Enhancement Area

Weighbridge & Offices

Site Access / Entrance

Site Offices & Welfare Facilities

Truck Parking

Staff Parking

Fuel

Staff Parking

HGV Parking

Pallets

Containers

Sizing Screen

Covered Workshop

Store

Rinsing Screen

Impact Crusher

Containers

Trommel

Existing Defense Wall

Equipment

Silo

Storage Bays & Stockpiles

Jaw Crusher & Silo Blender

Stockpiles

Existing Defence Wall

RIVER THAMES

Existing Containers

Stores

FERRY LANE

ACCESS

Note. The average metres Above Ordance Datum level of the top of the shipping containers is 9.6mAOD

LEGEND

- Application Boundary
- Contours (1m Intervals) & Spot Heights *m aOD*
- Waterbodies & Watercourses
- Woodland, Trees & Scrub
- Buildings
- Containers within the Site
- Stockpiles
- Concrete Hardstanding
- Biodiversity Enhancement Area
- Additional Shipping Containers
- Proposed Linear Tree Planting

Proposed Additional Landscape Character & Visual Mitigation & Enhancement Measures:

a. Strengthening existing woodland / scrubland planting to eastern boundary of site facing Ferry Lane

b. Creation of landscape scrub block within the northern area of the site to enhance Biodiversity Net Gain (BNG)

c. Reorganisation of shipping containers located along the site's eastern boundary - to be:
- more uniform
- new netting
- unifying colour and finish to match that of the adjacent Easter Industrial Park steel structures
- where there are currently only a single storey of containers along the north eastern boundary, a second and third storey is to be added to screen offices and plant

d. Confirmation that stocks will not be higher that the enhanced "screening barrier"

e. A triple storey of shipping containers is to be placed along the southern boundary of the site. These are again to be painted mid grey to provide a unified screening structure to match the character of the Easter Industrial Park. A line of tree plantIng is to be established in front of these containers. This would provide both screning and greening up / landscape enhancement of the River Thames Corridor.

PLEASE SEE DRAWING NO. KD.FRG.2.D.010 FOR LANDSCAPE PLANTING PROPOSALS FOR ITEMS A, B & E

KEDD Limited

PROJECT:
Frog Island

TITLE:
Proposed Landscape Character & Visual Mitigation & Enhancement Measures

REF NO:
KD.FRG.2.D.007

DATE:
March 2024

SCALE:
1:1,250 @ A3

STATUS:
FINAL

N

Fox Studio, Much Wenlock, Shropshire TF13 6BL

LOCATION REFERENCE A

***AIM :** To help strengthen the green vertical "tree" street scene, to help break up the form of the potential shipping containers and provide additional screening of the site, tying into the existing landscape structure.*

***TYPE OF PLANTING** Trees*
***NUMBERS** 28*

PLANTING SCHEDULE

Species	Form	Size	Root Type	Number
Carpinus betulus Fastigiata - Fastigiate Hornbeam	Premium Standard Tree 12cm GRTH	3m	45L Pot	10
Quercus robur Fastigiata - Fastigiate Oak	Premium Standard Tree 12cm GRTH	3m	45L Pot	10
Pinus nigra corsicana - Corsican Pine	Feathered Tree	1.8m	20L Pot	8
			Total	**28**

To be planted in groups of 1's and 3's

LOCATION REFERENCE E

***AIM :** To add a green vertical element / landscpae structure to the River Thames corridor. To help integrate the site into its local setting*

***TYPE OF PLANTING** Trees*
***NUMBERS** 12*

PLANTING SCHEDULE

Species	Form	Size	Root Type	Number
Carpinus betulus Fastigiata - Fastigiate Hornbeam	Premium Standard Tree 12cm GRTH	3m	45L Pot	6
Pinus nigra corsicana - Corsican Pine	Feathered Tree	1.8m	20L Pot	6
			Total	**12**

To be planted in two groups of three and three groups of two.

LOCATION REFERENCE B

***AIM :** Biodiversity enhancement Area - adjacent ot sites boundary with River Ingebourne*

***TYPE OF PLANTING** Native Scrub Vegetation*
***AREA** 197metres²*

PLANTING SCHEDULE

Species	Height (cm)	%	Root Type	Number
Crataegus monogyna - Hawthorn	20-30	20	Bare Root (BR)	40
Rosa canina - Dog Rose	2yrs	20	Bare Root (BR)	40
Corylus avellana - Hazel	30-45	20	Bare Root (BR)	40
Prunus spinosa - Blackthorn	30-45	20	Bare Root (BR)	40
Cornus sanguinea - Dogwood	30-45	20	Bare Root (BR)	40
			Total	**200**

SPECIFICATION: Tree Planting

Tree Planting
Trees shall conform to BS 3936 and be planted in tree pits of 900 x 900 x 450 . The bottom 250mmof the pit shall be dug and broken up. Backfill shall be imported topsoil as specified unless directed otherwise.

Compost for Planting Pits
Compost shall be a proprietary product, bark based incorporating fertilisers and improving additives.

Stakes for Trees
Stakes shall be peeled round softwood, pointed or minimum diameter 75mm. The stakes shall be driven into the base of the tree pit prior io placing the tree and Stakes shall in general have a clear height above the finished ground level as follows unless directed otherwise: 750mm (one tie). The stake shall be long enough to drive until they hold the tree firmly without rocking.

Tree Ties
Ties shall be approved nail-on type with cushioned spacer such as Toms, or other equal and approved, Nails shall be flat headed galvanised and shall hold the ties securely into the stake. Ties shall not be over tight on the tree stems.

Planting of Trees
The tree shall be set upright and at the same depth as grown in the nursery, the roots shall be spread out and the topsoil, or compost topsoil mixture, backfilled. Backfilling should be done to ensure close contact between roots and by firming in layers. The soil shall be left level and tidy, any subsoil clods, bricks or stones over 50mm arising, collected and carted off site.

Mulching
A 75mm compacted layer of medium grade pulverised bark, with a particle size of not more than 100mm and containing no more than 10% fines, shall be spread to form a continuous layer covering the whole of the bed, or in the case of standard tees shall be in the form of a circle of 600mm diameter around the base of the tree.

Watering
The site shall ensure that sufficient water is applied to maintain healthy growth.

Losses
Any losses are to be replaced.

SPECIFICATION: Scrub Planting

- Stock should be watered during any continuous dry spells in the first growing season.
- Weeding / spraying of herbicide in 1m diameter around the bases of the trees will be required to help combat competing vegetation through establishment.
- Following the 1st growing season, each winter an inspection of plant failures will be carried out, and a 'beating up' schedule produced, which will include recommendations for the replacement of dead / diseased or dying plant stock, replacement / straightening of tree guards and stakes, removal of herbaceous vegetation from tree guard as necessary, to ensure successful establishment.
- To control weeds and allow proper growth and prevent unwanted succession by invasive species, each spring, one application of an approved glyphosate will be applied (if required) by spot spraying of any unwanted vegetation.
- During years 1 to 3, three maintenance visits will be made per annum (February, May and September).
- During the May and September visits, any dead / diseased or dying species are to be taken out and removed off site and replaced during the following planting season (November to February), to ensure an 85% overall stock density by year 3.
- In September, encroaching vegetation is to be strimmed or removed by hand (as required). Otherwise vegetation between plants is to be left to become rank herbage. The edges of the establishing habitat will seek to maintain open edges and promote flowering herbs.
- The tree guards and canes should be inspected to ensure their integrity. Once the stock has matured, the tree guards must be removed.
- Post establishment, vegetation is to be cut back by 25% each year, in rotation, to diversify

PLEASE REFER TO DRAWING NO. KD.FRG.2.D.007 FOR THE LOCATION OF SOFT LANDSCAPE PROPOSALS

KEDD Limited

PROJECT:
Frog Island

TITLE:
APPENDIX F - Soft Landscape Planting Proposals

REF NO:
KD.FRG.2.D.010

DATE:
March 2024

SCALE:
1:1,250 @ A3

STATUS:
FINAL

N

Fox Studio, Much Wenlock, Shropshire TF13 6BL

APPENDIX D: SUGGESTED BIRD BOX MODELS

Bird box & specifications	Details	Photograph
Vivara Pro WoodStone Starling Nest Box Suitable for starling *Sturnus vulgaris* Height: 385mm Width: 220mm Depth: 215mm Entrance hole diameter: 45mm Weight: 7.4 Material: WoodStone	Position one within the north corner and another southeast corner of the site on a wooden post (not included) or tree at a height of at least 1.5m using an aluminium nail or screw (not included). Must be facing towards suitable habitat. Site near to vegetation if possible as this will provide additional protection and cover.	
1B Schwegler 26mm Nest Box Suitable for blue tit *Cyanistes caeruleus*, marsh tit *Poecile palustris*, coal tit *Periparus ater* and wren *Trogolodytes trogolodytes*. All other species are prevented from using the nest box due to the smaller entrance hole. Dimensions: Height: 23cm Diameter: 16cm Weight: 3.6kg Material: Woodcrete Supplied with galvanised steel hanger and aluminium nail Entrance hole size: 26mm	Position along the north to southeast boundary on a wooden post (not included) or tree at a height of 1.5 metres or higher. These boxes are likely to attract bird species that are territorial. They should be positioned separately as a result.	
1B Schwegler 32mm Nest Box Suitable for: great tit, blue tit, marsh tit, coal tit, nuthatch *Sitta europaea*, tree sparrow *Passer*	Position along the north to southeast boundary on a wooden post (not included) or tree at a height of 1.5 metres or higher.	

Bird box & specifications	Details	Photograph
montanus and house sparrow *Passer domesticus*. Dimensions: height: 23cm, diameter: 16cm Weight: 3.6kg Material: Woodcrete Supplied with galvanised steel hanger and aluminium nail Entrance hole size: 32mm	These boxes are likely to attract bird species that are territorial. They should be positioned separately as a result.	

APPENDIX E – HABITAT CREATION AND RETENTION

The table below habitat creation and enhancements measures are based on the required management to fulfil the habitat conditions as per the Defra Technical Document (Defra, 2024). Habitat management is subject to change based on any dynamic management recommendations provided after monitoring. Monitoring is to be completed by a suitably qualified ecologist in the five years stated to ensure the habitat is meeting the required UKHab category and condition.

Summary of conditions required and associated management for created and retained habitats

Habitat type	Habitat measure	Target Condition	Time to target condition (years)	Habitat condition sheet	Condition criteria	Ecological monitoring years
Mixed scrub	Creation	Poor	1	Scrub	Target condition is 'Poor' in 1 year. In order to achieve this, 2 or fewer criteria can be met: • Habitat is representative of UKHab description. There are at least 3 woody species, with no one species comprising more than 75% cover; • -There is a good age range – all of the following are present: seedlings, young shrubs and mature shrubs; • Absence of non-native species (as listed on Schedule 9 of WCA, 1981) and undesirable species make up less than 5% of ground cover; • The scrub has a well-developed edge with scattered scrub and tall grassland and/or herbs present between the scrub and adjacent habitat(s), and;	Scrub should be monitored at 6 months & annually from years 1 – 3.

Habitat type	Habitat measure	Target Condition	Time to target condition (years)	Habitat condition sheet	Condition criteria	Ecological monitoring years
					• There are clearings, glades or rides present within the scrub, providing sheltered edges.	
Urban tree	Creation	Poor	1	Urban tree	Target condition is 'Poor' in 1 year. In order to achieve this, 2 or fewer criteria can be met: • The tree is a native species (or at least 70% within the block are native species); • The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion); • The tree is mature (or more than 50% within the block are mature); • There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height; • Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark, and;	Urban trees should be monitored at 6 months and years 1 -3.

Habitat type	Habitat measure	Target Condition	Time to target condition (years)	Habitat condition sheet	Condition criteria	Ecological monitoring years
					• More than 20% of the tree canopy area is oversailing vegetation beneath.	
Bramble scrub	Retained	N/A	0	N/A	This condition is pre-set in the metric	N/A
Urban – Developed land; sealed surface	Retained	N/A	0	N/A	This condition is pre-set in the metric	N/A