



ECOLOGICAL ENHANCEMENT AND MANAGEMENT PLAN

CUSTOM HOUSE

GRAVESEND, KENT

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1. INTRODUCTION

- 1.1 This report details an Ecological Enhancement and Management Plan produced in respect of proposed development at Custom House, The Terrace, Gravesend, Kent, DA12 2BL (site centred TQ 65194 74362).
- 1.2 Figure 1, Section 2 provides a Site location plan.

COMMISSION

- 1.3 Native Ecology was commissioned by Custom House (Gravesend) Ltd. in January 2024 to produce an Ecological Enhancement and Management Plan.

PROPOSED WORKS

- 1.4 Proposals include the redevelopment of the application site including the demolition of the southern section of building B2 , the conversion of the existing buildings and the construction of a new three storey building to provide 27no. residential units with associated landscaping and parking.
- 1.5 Figure 3, Section 4 provides a Proposed Site layout plan.

PREVIOUS ECOLOGY SURVEY WORK

- 1.6 A Preliminary Ecological Appraisal site visit was undertaken by Native Ecology on 10th November 2022. Further survey work, including bat emergence surveys, were undertaken between July and September 2023.

Table 1. Summary of survey results

SURVEY	RESULTS
Bats	3no. emergence surveys were undertaken between July and September 2023. A single emergence survey was undertaken for buildings B2 and B7 based on the low suitability of the structures. Two emergence surveys were undertaken for buildings B1, B5 and B6 based on the moderate suitability of the structures. No bats were recorded emerging from any buildings within the Site. Low foraging activity was recorded, mainly by a small number of common pipistrelle bats.

PURPOSE OF REPORT

- 1.8 This report has been produced to address Condition 8 of Planning Application 20210757 (Gravesham Borough Council), which states:

“No development approved by this planning permission shall commence until a landscape management plane detailing how the shingle beach habitat and other envisaged ecological enhancements within the site will be maintained has been submitted to, and approved in writing by, the Local Planning Authority. The Landscape management plan shall be carried out as approved and any subsequent variations shall be agreed in writing by the Local Planning Authority.

Reason: To ensure the protection of wildlife and supporting habitat and to secure opportunities for enhancing the site's nature conservation value in accordance with Policy CS12 of the Gravesham Local Plan Core Strategy (September 2014) and paragraph 174 of the National Planning Policy Framework (2023)."

1.9 The Ecological Enhancement and Management Plan details how the Site will be maintained to provide suitable habitat for protected and notable species associated with the Site and surrounding area, as well as enhancement measures to maximise the overall biodiversity value of the Site post-development.

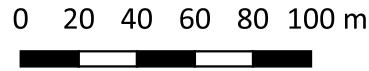
1.10 The objectives of the report are to:

- Detail ecological enhancements which will be incorporated into the development plans.
- Detail the management that will be undertaken for enhanced habitats within the site.

STRUCTURE

1.11 The Ecological Enhancement and Management Plan is divided into five sections:

- The current ecological status of the Site;
- The selection and evaluation of management features;
- Prescriptions for management actions, including SMART objectives for each Management Feature which will be phased over Years 1-5. Measurable targets on which to base monitoring and any required remediation measures;
- A Management and Monitoring Schedule which summarises all management measures and indicates the year they will be carried out, along with the appropriate responsibilities. The Schedule also outlines the monitoring to take place within the Site in Years 1-5 in order to measure the success of habitat management; and
- Outline of the legal and funding mechanisms by which long-term implementation of the plan will be secured.



 native ecology PROMOTING BIODIVERSITY INTEGRATION	
Site location plan	
Custom House Gravesend, Kent DA12 2BL	
Drawing ref:	Figure 1
Revision:	-
Date:	15/02/2023
Scale:	1:20,000 (Main canvas)
Paper size:	A3

3. EXISTING SITE PLAN



Figure 2. Existing site plan (Turner Jackson + Day Associates, Drawing No. 001, dated Feb'21).

4. PROPOSED SITE LAYOUT



Figure 3. Proposed site layout plan (Turner Jackson + Day Associates, Drawing No. 050, Revision A, dated April '21).

5. ECOLOGICAL CONSTRAINTS AND OPPORTUNITIES

THE SITE

- 5.1 The Site is situated within the urban town of Gravesend. Habitats within the Site include areas of hard standing, 7no. disused buildings, a small garden area and a small area of shingle beach along the northern boundary. Surrounding habitats comprise residential and commercial developments. The River Thames bounds the northern boundary of the Site, upstream of the Thames Estuary and Marshes Ramsar, SPA and SSSI.

ECOLOGICAL CONSTRAINTS

- 5.2 The ecological constraints and opportunities were assessed during a Ecological Impact Assessment (Native Ecology 2023), following a Site visit undertaken by Cali Tardivel BSc MSc & Miriam Anderson BSc in November 2022.

Table 2. Current Site status for protected and notable habitats and species.

Ecological feature	Details of constraints
Designated sites	The development Site is bounded to the north by the River Thames, upstream to the Thames Estuary and Marshes Ramsar, SPA and SSSI. The designated sites lie downstream from the development site and therefore, indirect impacts may occur if construction works result in pollution of the river. However, this habitat is separated from the development site by the flood defence wall which provides some protection from accidental damage.
Habitats of Principle Importance	Along the northern boundary is a small area of coastal vegetated shingle. This habitat will be retained as part of proposals and is separated from the development site by the flood defence wall which provides protection from accidental damage.
Bats	The Buildings B2 and B7 were assessed as providing low suitability for roosting bats. Buildings B1, B5 and B6 were assessed overall as providing moderate suitability for roosting bats. Bat surveys undertaken by Native Ecology between July and September 2023, confirmed the likely absence of roosting bats in buildings.
Hedgehog	The Site provides suitable foraging and commuting habitat for hedgehogs which may be present within the locality.
Birds	The buildings and small garden provide suitable nesting habitat for common and widespread bird species, as well as species listed as 'Amber' and 'Red' under the Birds of Conservation Concern.

6. SELECTION AND EVALUATION OF MANAGEMENT FEATURES

- 6.1 In accordance with the Site layout and landscape plan, appropriate habitat features have been selected for enhancement and management.

MANAGEMENT FEATURES

Management Feature 1 - Native Trees

- 6.2 Native tree species will be planted throughout the Site, to increase nesting habitat for birds and create additional foraging habitat for bird and bat species in the locality. Species will include oak (*Quercus robur*), hornbeam (*Carpinus betulus*), field maple (*Acer campestre*) and cherry (*Prunus avium*).

Management Features 2 - Nectar Rich and/or Native Shrubs

- 6.3 The existing shrubs within the Site will be retained and managed appropriately. Supplementary planting will include native shrubs such as common box (*Buxus sempervirens*), and nectar rich species including mexican orange blossom (*Choisya Aztec Pearl*), coneflower (*Echinacea* spp.), abelia (*Abelia x grandiflora*), peach blossom (*Escallonia*), big leaf hydrangea (*Hydrangea macrophylla*), gladwin iris (*Iris foetidissima*), black-eyed Susan (*Rudbeckia* spp.) and periwinkle (*Vinca* spp.). These areas, will support a wide variety of species groups, including invertebrates, small mammals and birds.

Management Feature 3 - Native Hedgerows

- 6.4 Mixed native species hedgerows will be created throughout the Site, along the eastern and western boundaries of the Site. Species within the planting schedule include beech (*Fagus sylvatica*), hawthorn (*Crataegus monogyna*), hornbeam (*Carpinus betulus*), privet (*Ligustrum vulgare*) and yew (*Taxus baccata*).
- 6.5 The inclusion of flowering species, such as hawthorn will provide opportunities for nectar feeding invertebrates, such as bumblebees, hoverflies and butterflies. Creation of hedgerows will also benefit bats by creating additional foraging habitat and commuting corridors within the Site.

Management Feature 4 - Native Coastal Plants

- 6.6 Mixed native species coastal plants will be planted along the north of the Site adjacent to the River Thames. Species within the planting schedule include marram grass (*Ammophila arenaria*), sea thrift (*Armeria maritima*) and sea kale (*Crambe maritima*).

Management Feature 5 - Other Habitat Measures

- 6.7 A number of habitat measures will be incorporated into the development.
- 6.8 These features include:

Bird boxes

- 4no. woodcrete exterior terrace boxes for house sparrows (such as Vivara Pro WoodStone House Sparrow Nest Box) will be incorporated onto buildings. Boxes will be located 2-4m in height and arranged so that loose colonies of house sparrows are encouraged;

- 2no. bird box suitable for hole nesting species (Schwegler 1B or similar) will be installed on retained trees within the Site.

6.9 Bird boxes will be installed predominantly on northerly to easterly aspects.

Bat boxes

- 2no. exterior bat boxes (Schwegler 2FE bat box, or similar) will be installed onto buildings. The boxes will be located at least 2m above ground level and preferably over 4m, as close to the eaves as possible and in a variety of aspects, predominantly south and west.

7. MANAGEMENT OBJECTIVES AND PRESCRIPTIONS

- 7.1 This section sets out the objectives for each management feature, divided when appropriate into individual features within the Site.
- 7.2 The required outcome or condition for each feature is described, following SMART (specific, measurable, achievable, relevant, time-based) objectives.
- 7.3 The management actions/prescriptions required for the delivery of the objectives are outlined, along with the performance indicators that will be monitored to provide evidence on which to determine whether favourable condition is being met (Alexander, 2010).

Management feature	Objectives	Management action/prescription	Measurable targets	Monitoring
Feature 1 - Native Trees	1. Planted trees become established.	1. Plants to be sourced from a good supplier to ensure they are from British provenance. 2. Trees to have rabbit guards and be appropriately staked. 3. All tree work will be to BS3998:2010 recommendations. 4. All tree works to be undertaken outside of the bird nesting season. 5. Any arisings from tree management utilised within the site to provide log and brash piles around the base of hedgerows. 6. A buffer at the base of trees planted within grassland should be maintained free of vegetation for the first five years of establishment. 7. Any dead or dying back trees will be replaced.	T1. Planting is becoming established within 2-5 years. T2. Appropriate cutting regime (timetable provided by site owner). T3. Any failed planting replaced.	1. Walkover survey by Ecological Clerk of Works on Years 1, 3 and 5 post development between May and September to assess the trees within the Site. 2. Letter issued by ECoW to those responsible for management with findings of walkover survey, photographic record and any remedial measures or alteration to management required / recommended.

Management feature	Objectives	Management action/prescription	Measurable targets	Monitoring
Feature 2 - Nectar Rich and/or Native Shrubs	1. New shrubs are planted and begin to successfully establish.	1. Prior to planting the shrubs, prepare the ground by stripping off any existing vegetation. 2. Plants to be sourced from a good supplier. 3. Appropriate bare root or container grown plants to be sourced and planted with rabbit guards and staked. 4. Base of newly planted sections of scrub to be kept clear of weeds. 5. Monitor and replace failed planting with equivalent plants between November and March.	- T1. Planting is becoming established within 2-5 years. - T2. Any failed planting replaced.	1. Walkover survey by Ecological Clerk of Works on Years 1, 3 and 5 post development between May and September to assess the vegetation structure of shrubs within the Site. 2. Letter issued by ECoW to those responsible for management with findings of walkover survey, photographic record and any remedial measures or alteration to management required / recommended.
Feature 3 - Native Species Hedgerow	1. Hedgerow is planted and begins to successfully establish.	1. Prior to planting the hedgerow, prepare the ground by stripping off any existing vegetation to at least 1m wide. 2. Plants to be sourced from a good supplier to ensure hedge plants are from British provenance. 3. Appropriate bare root or container grown plants to be sourced and planted with biodegradable rabbit guards and staked. 4. Base of newly planted sections of hedgerow to be kept clear of weeds. 5. Pruning to encourage the development of a dense hedge with a wide base. 6. Once established, hedgerow to be trimmed between November and February (ideally in January or February to allow berries to be eaten by birds). 7. Cut hedgerow ideally in a two - three year rotation allowing a 2m wide uncut zone from the middle of the hedge. 8. Monitor and replace failed planting with equivalent plants between October and March.	- T1. Planting is becoming established within 2-5 years. - T2. Appropriate cutting regime (timetable provided by Site owner). - T3. Any failed planting replaced.	1. 1no. daytime walkover survey by Ecological Clerk of Works in Years 1, 3 and 5, between May and September to assess the development of planting and functionality as a hedgerow. 2. Timetable of previous years cutting regime provided to the ECoW. 3. Letter issued by ECoW to those responsible for management with findings of walkover survey, photographic record and any remedial measures or alteration to management required / recommended.

Management feature	Objectives	Management action/prescription	Measurable targets	Monitoring
Feature 4 - Native Coastal Plants	1. New coastal plants are planted and begin to successfully establish.	- Plants to be sourced from a good supplier to ensure coastal plants are from British provenance. - Monitor and replace failed planting with equivalent plants between November and March. - Shingle area kept free of refuse and litter with regular inspections.	T1. Planting is becoming established within 2-5 years. T2. Any failed planting replaced. T4. Area kept free of refuse and debris.	- Walkover survey by Ecological Clerk of Works on Years 1, 3 and 5 post development between May and September to assess the vegetation structure of shrubs within the Site. - Letter issued by ECoW to those responsible for management with findings of walkover survey, photographic record and any remedial measures or alteration to management required / recommended.
Other Bird boxes	1. Provide additional nesting opportunities for bird species.	4no. house sparrow terrace boxes (or similar) to be installed on a northern or easterly aspect at a height of at least 2m at the soffits/eaves level. 2no. bird boxes of a suitable design, such as the Schwegler 1B Nest Box or similar, to be installed on trees within the Site. - Boxes will be hung at a height of at least 1.5 metres and will be angled so that they face away from the prevailing wind (usually a south-westerly wind). - Physical condition of bird boxes to be maintained as appropriate. - Bird boxes replaced as appropriate outside of nesting season (nesting season: March - September).	T1. 4no. bird boxes suitable for house sparrows integrated into the house. T2. 2no. box suitable for hole nesting species installed on trees in appropriate position. T3. Repairs or replacements carried out when required.	1no. daytime walkover survey by Ecological Clerk of Works in Years 1, 3 and 5, to confirm the location and condition of bird boxes. - Letter issued by ECoW to those responsible for management with findings of walkover survey, photographic record and any remedial measures or alteration to management required / recommended.

Management feature	Objectives	Management action/prescription	Measurable targets	Monitoring
Other Bat boxes	1. Provide additional roosting opportunities for bat species.	1. 2no. exterior bat boxes (Schwegler 2FE bat box, or similar) to be installed into the external fabric of building. 2. Physical condition of bat boxes to be maintained as appropriate. 3. Bat boxes replaced as appropriate.	T1. Physical condition of bat boxes to be maintained as appropriate. T2. Bat boxes should need little maintenance. If boxes are to be checked, this should be undertaken by a licenced bat ecologist due to the legal protection afforded to bats.	1. 1no. daytime walkover survey by Ecological Clerk of Works in Years 1, 3 and 5, to confirm the location and condition of bat boxes. 2. Letter issued by ECoW to those responsible for management with findings of walkover survey, photographic record and any remedial measures or alteration to management required / recommended.

8. MANAGEMENT RESPONSIBILITIES AND REVIEW

MANAGEMENT RESPONSIBILITIES

- 8.1 Management will be secured through planning to ensure that landowners follow the prescriptions set out in this report.
- 8.2 It is recommended that management works are implemented by those with sound ecological knowledge to ensure that specific objectives are met with the required flexibility.

MANAGEMENT PLAN REVIEW

- 8.3 In order to ensure that the management specifications remain relevant to the development and management of habitats and species within the Site, a review will be undertaken after the first, third and fifth year of habitat management works for each Management Feature.
- 8.4 Following a Site visit and assessment of Management Features in relation to the specific objectives and prescriptions, a report will be issued to those responsible for undertaking the management actions to detail any recommendations for remedial measures or alterations to management prescriptions as required.
- 8.5 The management and monitoring schedule will be reviewed as part of ongoing monitoring for a period of five years. On review, the management and monitoring schedule will be appropriately amended to reflect the ongoing objectives detailed within the Ecological Enhancement and Management Plan. Amendments may be required as a result of remedial action, environmental factors and specific on-site management requirements.

9. MANAGEMENT AND MONITORING SCHEDULE

HABITAT FEATURES	MANAGEMENT ACTION / PRESCRIPTION	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Native trees	Plants to be sourced from good supplier to ensure hedge plants are from British provenance.	✓				
	Appropriate bare root or container grown plants to be sourced and planted with rabbit guards and staked.	✓				
	Base of newly planted sections of trees to be kept clear of weeds in first year of establishment.	✓				
	Monitoring & replace failed planting.	✓	✓	✓	✓	✓
	Replacement plants to be source from a good supplier to ensure hedge pants are from British provenance.	✓	✓	✓	✓	✓
Native shrubs	Plants to sourced from a good supplier to ensure they are from British provenance.	✓				
	Appropriate bare root or container grown plants to be sourced and planted with biodegradable rabbit guards and staked - ideally planted from late autumn to mid winter.	✓				
	Base of newly planted shrubs to be kept clear of weeds in first year to aid establishment.	✓				
	Monitor and replace failed planting with equivalent plants between October and March	✓	✓	✓	✓	✓
Native hedgerows	Prior to planting the hedgerow, prepare the ground by stripping off any existing ground vegetation to at least 1m wide.	✓				
	Plants to be sourced from good supplier to ensure hedge plants are from British provenance.	✓				
	Appropriate bare root or container grown plants to be sourced and planted with rabbit guards and staked.	✓				
	Base of newly planted sections of hedgerow to be kept clear of weeds.		✓	✓	✓	✓
	Pruning of new plants to encourage the development of dense hedge with a wide base.			✓		✓
	Once established, trim hedgerow between November and February (but ideally in January or February to allow berries to be eaten by birds). Ideally in two to three year rotation allowing a 2m wide uncut zone to develop from the middle of the hedge.	✓	✓	✓	✓	✓
	Monitoring & replace failed planting.	✓	✓	✓	✓	✓
	Replacement plants to be source from a good supplier to ensure hedge plants are from British provenance.	✓	✓	✓	✓	✓
Native coastal plants	Plants to be sourced from good supplier to ensure coastal plants are from British provenance.	✓				
	Shingle area to be kept free of refuse and debris with regular inspections	✓	✓	✓	✓	✓
	Monitoring & replace failed planting.	✓	✓	✓	✓	✓
	Replacement plants to be source from a good supplier to ensure coastal plants are from British provenance.	✓	✓	✓	✓	✓

HABITAT FEATURES	MANAGEMENT ACTION / PRESCRIPTION	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Other - Bird boxes	2 no. bird box (woodcrete exterior terrace boxes) to be installed on building to specification.	✓				
	2no. bird boxes (such as the Schwegler 1B Nest Box or similar) to be installed on trees within the Site.	✓				
	Physical condition of bird boxes to be maintained as appropriate.	✓	✓	✓	✓	✓
	Bird boxes replaced as appropriate outside of nesting season.		✓	✓	✓	✓
Other - Bat boxes	2 no. exterior bat boxes (Schwegler 2FE bat box, or similar) to be installed into the external fabric of building.	✓				
	Physical condition of bat boxes to maintained as appropriate.	✓	✓	✓	✓	✓
	Bat boxes replaced as appropriate.		✓	✓	✓	✓

10. REFERENCES

- Alexander, M. (2010). A Management Planning Guide. CMS Consortium, Talgarth, Wales, UK.
- Native Ecology, 2023. Preliminary Ecological Appraisal report, Native Ecology, dated 10th February 2023. (Ref 1149_R01_REV B_PEA).
- Native Ecology, 2023a. Bat Survey report, Native Ecology, dated 14th September 2023. (Ref 1149_R02_REV A_Bat Survey Report).

11. APPENDIX 1: ECOLOGICAL ENHANCEMENT PLAN

(See overleaf)



Native hedgerows will be planted throughout the site. This will provide shelter, nesting and foraging habitat for birds, small mammals and invertebrates.



2no. bird boxes (such as the Schwegler 1B Nest Box or similar) will be installed on mature trees within the site. This will increase nesting opportunities for birds in the locality.



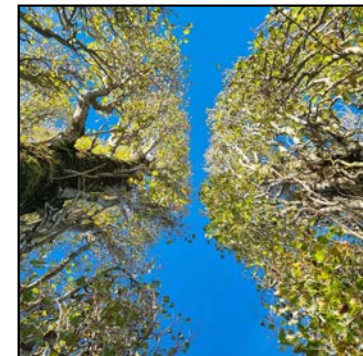
2no. exterior bat boxes (Schwegler 2FE bat box, or similar) will be installed on buildings within the site. This will increase roosting opportunities for bats in the locality.



Native coastal plants will be planted along the northern boundary on the vegetated shingle beach. This will enhance the area for birds, small mammals and invertebrates.



2no. exterior bat boxes (woodcrete exterior terrace boxes, or similar) will be installed on buildings within the site. This will increase nesting opportunities for birds in the locality.



Native trees will be planted throughout the site. This will provide shelter, nesting and foraging habitat for birds, bats and invertebrates.



Native shrubs will be planted throughout the site. This will provide shelter and nesting habitat for birds and invertebrates.

Legend

- ◆ Bird Box - Building Mounted (Woodcrete exterior terrace, or similar)
- ◆ Bird Box - Tree Mounted (Schwegler 1B, or similar)
- ◆ Bat Box - Building Mounted (Schwegler 2FE, or similar)
- Native Trees
- Native and/or Nectar Rich Shrubs
- Native Hedgerows
- Native Coastal Plants



Ecological Enhancement Plan

Custom House
Gravesend, Kent
DA12 2BL

Drawing ref:	1149_DR05
Revision:	-
Date:	15/02/2024
Scale:	DNS
Paper size:	A3