



PRELIMINARY ECOLOGICAL APPRAISAL (PEA)

CUSTOM HOUSE

GRAVESEND

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1. SUMMARY

- S.1 This report details a Preliminary Ecological Appraisal (PEA) undertaken in respect of proposed development at Custom House, The Terrace, Gravesend, DA12 2BL.
- S.2 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.
- S.3 A PEA site visit was undertaken by Native Ecology on 10th November 2022.
- S.4 The application site is located adjacent to the River Thames, upstream of the Thames Estuary and Marshes RAMSAR, SPA and SSSI. Due to the distance and connection to the Statutory Sites, the Local Planning Authority is recommended to consult with Natural England during the planning process.
- S.5 A small area of coastal vegetated shingle, a Habitat of Principal Importance, is present within the Site.
- S.6 Further survey work is recommended to determine the presence / likely absence of roosting bats and to inform suitable mitigation (detailed in Section 10).
- S.7 Mitigation, without the requirement for further survey work, is recommended for nesting birds, hedgehog and Thames coastal habitat (detailed within Section 11).
- S.8 Section 12 includes recommended appropriate biodiversity enhancement measures which could be included within development proposals.
- S.9 Potential enhancement measures to the shingle beach are limited, both due to the existing moderate condition of the habitats present and also physical limitations of vegetation creation in this area of the Thames.
- S.10 It is recommended that a management regime, including regular litter picking, is secured to ensure that the coastal vegetated shingle habitat is protected on completion of development.
- S.11 It is recommended that the results of the PEA report and any other further ecological survey work is incorporated into an Ecological Impact Assessment (EclA) report, which should be submitted with the planning application. The EclA report should assess the impacts of proposed development on ecological features and provide an Ecological Mitigation Strategy details the measures that will be implemented to avoid, minimise and compensate for impacts.
- S.12 Appendix 1 gives an overview of relevant legislation, which should be read in conjunction with this report.
- S.13 Appendix 2 provides a summary of the suitability assessment for bat roosting habitat.
- S.14 Appendix 3 provides a plan of nearby designated sites and Appendix 4 provides a habitat plan.

2. INTRODUCTION

- 2.1 This report details a Preliminary Ecological Appraisal undertaken in respect of proposed development at Custom House, The Terrace, Gravesend, DA12 2BL (site centred TQ 65194 74362).
- 2.2 Figure 1, Section 3 provides a site location plan.

COMMISSION

- 2.3 Native Ecology was commissioned by Custom House (Gravesend) Limited in November 2022 to undertake a Preliminary Ecological Appraisal within the site.

APPLICATION SITE

- 2.4 The application site, hereafter referred to as 'the Site', comprises 7no. buildings, a small garden, an area of beach and an access road with parking. The Site extends to approximately 0.4ha.
- 2.5 Figure 2, Section 4 provides an existing site plan.

PROPOSED WORKS

- 2.6 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.
- 2.7 Figure 3, Section 5 provides a proposed site layout plan.

PURPOSE OF REPORT

- 2.8 This report aims to provide general advice on ecological constraints associated with proposed development within the site and includes recommendations for mitigation and further survey work, where required.
- 2.9 The objectives of the report are to:
- Describe the current ecological conditions present within the site.
 - Identify any key ecological constraints to the proposed development both with regards protected species and sites.
 - Identify where mitigation will allow significant ecological effects to be avoided or minimised wherever possible.
 - Identify any further ecological surveys required in order to assess the possible impact on protected and important / notable species.
 - Recommend ecological enhancements to be incorporated into the development proposals.

3. SITE LOCATION PLAN



Figure 1. Location of development site. Reproduced from OS Explorer 163 1:25,000 Ordnance Survey © Crown copyright and database rights [2015] (Site centred TQ 65194 74362).

5. PROPOSED SITE LAYOUT



Figure 3. Proposed site layout plan (Company Turner Jackson + Day Associates, Drawing No. 050, dated April 2021).

6. METHODOLOGY

DESK STUDY

Zone of Influence

- 6.1 The 'zone of influence' for a project is the area over which ecological features may be subject to significant effects as a result of the proposed project and associated activities (CIEEM, 2017a). This report provides an assessment of the effects of a proposed development on protected or ecologically valuable sites, habitats or species where these effects extend beyond the development boundary of the site.

Designated sites

- 6.2 Potential impacts to designated sites, including Natura sites and SSSIs, have been considered.
- 6.3 The Multi Agency Geographic Information for the Countryside (MAGIC) website was used to obtain information about statutory designated sites of international importance such as Special Protection Areas (SPA) within 7.2km of the Site.
- 6.4 Information was obtained about statutory designated sites of national importance such as Sites of Special Scientific Interest (SSSI) and National Nature Reserves (NNR) within 2km of the Site and ancient woodland within 500m of the Site.
- 6.5 Kent Landscape Information System (KLIS) was used to identify Local Sites, such as Local Wildlife Sites (LWS), located within 1km of the Site.

Data search

- 6.6 Records were obtained from the Kent Reptile and Amphibian Group (KRAG) within 1km of the Site in November 2022.
- 6.7 Ordnance survey maps, the Multi Agency Geographic Information for the Countryside (MAGIC) website and aerial images were used to identify waterbodies within 250m of the Site boundary. MAGIC Map was also used to obtain information on locations where European Protected Species Mitigation (EPSM) Licences for great crested newt have been issued by Natural England within 1km of the Site.

FIELD STUDY

- 6.8 A Preliminary Ecological Appraisal site visit was undertaken by Cali Tardivel BSc MSc QCIEEM & Miriam Anderson BSc (Hons) of Native Ecology on 10th November 2022.

Table 1. Survey details

Survey date	10th November 2022
Surveyor	Cali Tardivel BSc MSc QCIEEM & Miriam Anderson BSc (Hons)
Time on site	11:00-13:00
Weather	15°C, 100% cloud cover, gentle breeze, no rain, ground dry

UK Habitat Classification

- 6.9 Habitats within the Site were mapped and classified in accordance with the The Professional Edition of the UK Habitat Classification.
- 6.10 There are 5 levels of hierarchy, which provide an increasing level of detail. For the purpose of this assessment, habitats have been mapped for Primary Habitats up to Level 4.
- 6.11 Secondary codes have been assigned, where appropriate. These Secondary Codes allow recording of additional information, linked to the Primary Habitats. In some cases, habitat types are defined by a Secondary Code only, where Primary Habitats do not sufficiently represent the habitat present.

Protected species and habitats

- 6.12 During the survey the species and habitats identified within the Site were recorded. An assessment was also made as to the presence or potential presence of protected, important or Nationally Rare species.
- 6.13 Protected species and habitats considered include those listed under the Schedules of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and of the Wildlife and Countryside Act 1981.
- 6.14 In addition, an assessment has been made as to the possible impacts of the proposed development on nature conservation interests, in accordance with information relevant to the National Planning Policy Framework and Local Planning Policy.

Bats

Preliminary Roost Assessment (bats)

- 6.15 A systematic search of the exterior and interior of buildings within the site was undertaken to identify potential bat access points and roosting places and to locate any evidence of bats such as bat droppings, urine staining and fur-oil staining. The inspection included exterior features of the buildings, such as sills, window panes, walls and the ground beneath potential access points to look for signs of bats, such as droppings.
- 6.16 The suitability of roosting habitat and foraging and commuting habitat within the site was assessed following recommendations provided within Bat Surveys for Professional Ecologists: Good Practice

Guidelines, 3rd edition, Bat Conservation Trust (Collins, 2016) (see Appendix 2 for suitability assessment and survey effort required for structures and trees).

Badger

- 6.17 During the site survey any badger field signs observed were recorded and mapped. These included; sett entrances, latrines, pathways, snuffle holes, footprints, and push-throughs.

Reptiles

- 6.18 The suitability of habitats within the Site to support reptiles was assessed during the Preliminary Ecological Appraisal site visit. Any incidental sightings were recorded.

Great crested newt

- 6.19 The level of survey effort and data collection required to support a Planning Application or European Protected Species Mitigation (EPSM) Licence for great crested newts is relative to the potential impact. For EPSM Licence applications, typically ponds within 250m of the construction zone are surveyed for the presence (and population assessment) of great crested newts.
- 6.20 Following the guidance of Natural England (2021) waterbodies located beyond 250m from the development are only surveyed if all of the following conditions are met:
- ponds have potential to support a large great crested newt population;
 - the development footprint contains particularly favourable habitat, especially if it constitutes the majority available locally;
 - the development would have a substantial negative effect on that habitat; and
 - there is an absence of dispersal barriers.
- 6.21 Based on the listed criteria above, a proportionate survey area for the Site includes the assessment of any ponds within 250m of the construction zone.

Habitats and Species of Principal Importance

- 6.22 An assessment was made as to the likely presence of Habitats and Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and birds on the Red and Amber lists of birds of conservation concern.

LIMITATIONS

- 6.23 This report aims to provide general advice on ecological constraints associated with the development of the site, it does not include detailed information on particular species or species groups but instead makes recommendations for further, species-specific surveys required.
- 6.24 In accordance with CIEEM guidance, consideration should be given to the validity of survey data after a period of 12 month from the date of the survey. This may require a site visit to assess whether ecological conditions within the site have changed and may require further ecological survey work due to the transient nature of some protected species.

7. CURRENT ECOLOGICAL CONDITIONS

DESIGNATED SITES

Statutory Sites of International Importance

7.1 There is one Special Protection Area (SPA) and one RAMSAR site located within 7.2km of the Site.

Table 2. Details of Statutory Sites of International Importance within 7.2km of the site boundary.

Designation	Site name	Distance and direction from site	Qualifying features
RAMSAR	Thames Estuary and Marshes	2.2km east	Qualifies under Criterion 2 for supporting one endangered plant species and at least 14 nationally scarce plants of wetland habitats. The site also supports more than 20 British Red Data Book invertebrates. Qualifies under Criterion 5 for supporting large assemblages of waterfowl of international importance in winter. Qualifies under Criterion 6 for supporting species/populations of wetland birds that occur at levels of international importance (JNCC, 2000).
SPA	Thames Estuary and Marshes	2.9km east	Article 4.1 of the Habitats Directive for supporting populations of European importance of over wintering hen harrier (<i>Circus cyaneus</i>) and breeding avocet (<i>Recurvirostra avosetta</i>). Article 4.2 of the Habitats Directive for supporting dunlin (<i>Calidris alpina alpina</i>), red knot (<i>Calidris canutus</i>), black-tailed godwit (<i>Limosa limosa islandica</i>), grey plover (<i>Pluvialis squatarola</i>) and redshank (<i>Tringa totanus</i>). The site regularly support on passage common ringed plover (<i>Charadrius hiaticula</i>). Article 4.2 of the Habitats Directive for supporting an internationally important assemblage of birds (JNCC, 2015).

Statutory Sites of National Importance

7.2 There is one Site of Special Scientific Interest (SSSI) located within 2km of the survey area.

Table 3. Details of Statutory Sites of National Importance within 2km of the site boundary.

Designation	Site name	Distance and direction from site	Qualifying features
SSSI	South Thames Estuary and Marshes	1.9km south-east	The site consists of an extensive mosaic of grazing marsh, salt-marsh, mudflats and shingle characteristic of the estuarine habitats of the north Kent marshes. Freshwater pools and some areas of woodland provide additional variety and complement the estuarine habitats. The site supports outstanding numbers of waterfowl with total counts regularly exceeding 20,000. Many species regularly occur in nationally important numbers and some species regularly use the site in internationally important numbers. The breeding bird community is also of particular interest. The diverse habitats within the site support a number of nationally rare and scarce invertebrate species and an assemblage of nationally scarce plants (Natural England, 1981).

7.3 Statutory Sites are considered further in Section 9.

Non-statutory sites

Local Sites

7.4 There are no non-statutory sites, such as Local Wildlife Sites (LWS) located within 1km of the Site. No further assessment or mitigation is required.

Ancient Woodland

7.5 There are no parcels of ancient woodland located within 500m of the site boundary. No further assessment or mitigation is proposed in relation to ancient woodland.

HABITATS WITHIN THE SITE

Habitats of Principal Importance

Coastal vegetated shingle

7.6 Within the northern portion of the Site three small areas of coastal vegetated shingle are present, totalling approximately 30m². Vegetation is dominated by sea couch grass with other indicator species including sea purslane, goose tongue and sea beet. The habitat is in moderate condition (according

the Biodiversity Net Gain Metric 3.1 Habitat Condition Assessment) with a mosaic of vegetation typical of the habitat type.

Rivers

- 7.7 The Site is situated directly adjacent to the southern bank of the River Thames and is close to the Thames estuary. The river is saline and tidal.
- 7.8 Habitats of Principle Importance are considered further in Section 9.

Other habitats

Buildings

- 7.9 There are 7 buildings present within the Site. Table 4 below provides photographs and building descriptions.

Table 4. Description of buildings within the Site.

Building no. & name	Description	Photograph
B1	A two-storey brick building, with clay hanging tiles on the upper northern elevations and a pitched gable clay tiled roof.	
B2	A single-storey brick building with pitched gable slate tiled roof. The building is separated into two sections (north and south sections), with the roof level changing with the sections. No roof void is present.	
B3	An octagonal shaped building, consisting of ship-lap cladding on all elevations with an octagonal pitched slate roof.	

Building no. & name	Description	Photograph
B4	A small, unlined garden shed consisting of wooden weatherboarding on all elevations and a wooden pitched roof.	
B5	A complex building consisting of an assortment of varying slate roof heights and structures, including skilion roofs and hipped roofs with parapets.	
B6	A four-storey brick building with a complex roof structure.	
B7	A small single-storey building consisting of brick elevations with a skilion slate roof.	

7.10 Table 5, overleaf, describes the habitats present within the Site in accordance with UK Habitat Classification.

Table 5. Habitat types present within the Site, including level (UKHab), size and description (continued overleaf).

HABITAT TYPE				DESCRIPTION
Level 2 label	Level 3 label	Level 4 label	Level 5 label / Secondary codes	
Urban (u)	Built-up areas and gardens (u1)	Developed land; sealed surface (u1b)	Buildings (u1b5)	For full building descriptions see Table 4 above.
			Other developed land (u1b6)	The Site consists predominately of hardstanding including the access road and large parking area. There is also a tall concrete wall between the residential area of the Site and the River Thames to the north with a small concrete walk way leading out over the River Thames.
		-	Garden (230)	Situated at the front and rear of building B6 are residential gardens that have been unmanaged and become overgrown. The species present consist of; holly (<i>Ilex</i>), cut leaved alder (<i>Alnus glutinosa</i> 'Imperialis'), <i>Prunus</i> sp., <i>Rhododendron</i> sp., <i>Catoneaster</i> spp., elder (<i>Sambucus</i> sp.), <i>Clematis</i> sp., hedge-bed sedge (<i>Cyperaceae</i> sp.), ivy (<i>Hedra helix</i>), dandelion (<i>Taraxacum officinale</i>), creeping buttercup (<i>Ranunculus repens</i>), bristly oxtongue (<i>Helminthotheca echioides</i>), bramble (<i>Rubus</i> sp.), white clover (<i>Trifolium repens</i>) and <i>Geum</i> sp.
Sparsely vegetated land (s)	Supralittoral Sediment (s3)	Coastal vegetated shingle (s3b)	-	Within the northern section of the Site there are three small areas of established vegetated shingle consisting predominately of couch grass (<i>Elymus repens</i>) with camomile daisy (<i>Chamaemelum nobile</i>), sea purslane (<i>Sesuvium portulacastrum</i>), ragwort (<i>Jacobaea vulgaris</i>), melilot (<i>Melilotus</i> sp.), <i>Catapodium maritimum</i> , annual meadow grass (<i>Poa annua</i>), goose tongue (<i>Plantago maritima</i>), sea beet (<i>Beta vulgaris</i> subsp. <i>maritima</i>) and basil-leaved pellitory (<i>Parietaria judaica</i> L.).
Marine inlets and transitional waters (t)	Littoral Sediment (t2)	Beach (t2h)	-	A beach is present along the northern boundary.

HABITAT TYPE				DESCRIPTION
Level 2 label	Level 3 label	Level 4 label	Level 5 label / Secondary codes	
Woodland and forest (w)	Broadleaved mixed and yew woodland (w1)	Other woodland; broadleaved (w1g)	Line of trees (w1g6)	Along the entrance to the Site on the western boundary is a line of mature trees including; sycamore (<i>Acer pseudoplatanus</i>), lime (<i>Tilia</i> sp.) and <i>Catoneaster</i> spp..

SURROUNDING HABITATS

- 7.12 The Site is situated within an urban area in the town centre of Gravesend. Surrounding habitats comprise residential and commercial development. The Site is bounded to the north by the River Thames.

PROTECTED AND NOTABLE SPECIES

Bats - Roosting habitat

- 7.13 According to MAGIC map application there have been no ESPM licences obtained for roosting bats within 1km of the Site.

Buildings - Preliminary Roost Assessment

Table 6. Results of Preliminary Roost Assessment

Building	Potential roost features	Suitability for roosting bats
B1	Multiple gaps beneath roof and hanging tiles could provide opportunities for crevice dwelling bats. Gaps may also provide access into the internal roof void for species such as brown long-eared bat.	High
B2	A few raised roof tiles provide suitable roosting locations for crevice dwelling bats.	Low
B3	There are no external features that could provide suitable roosting locations for bats.	Negligible
B4	There are no external features that could provide suitable roosting locations for bats.	Negligible
B5	Multiple gaps beneath roof tiles, timber cladding and lead flashing which could provide opportunities for crevice dwelling bats. Gaps may also provide access into the internal roof void for species such as brown long-eared bat.	High

Building	Potential roost features	Suitability for roosting bats
B6	Multiple gaps beneath roof tiles and lead flashing which could provide opportunities for crevice dwelling bats. Gaps may also provide access into the internal roof void for species such as brown long-eared bat.	High
B7	A small number of raised tiles and dense ivy growth on the external walls of the building could provide opportunities for crevice dwelling bats.	Moderate

7.14 No bats, or evidence of bats, was found during the internal inspection of the buildings.

7.15 Roosting bats in buildings are considered further in Section 9.

Foraging and commuting habitat

7.16 Habitats within the Site consisting predominantly hardstanding, with small areas of garden and tree line provide low suitability foraging and commuting habitat for bats. However, the site lies adjacent to the Thames which may provide a commuting corridor for some species of bat.

7.17 Foraging and commuting bats are considered further in Section 9.

Hazel dormice

7.18 There is no habitat suitable for hazel dormice within, or in close proximity the site. No further survey work or mitigation is required for hazel dormice.

Riparian mammals (Otter, beaver and water vole)

7.19 There is no suitable habitat within the Site for beaver or water vole; the river is saline and does not provide suitable vegetation or substrate for these species.

7.20 While otter may be present within the Thames, the Site does not provide suitable habitat for a holt. In addition, given the high level of disturbance and artificial lighting, otters are considered unlikely to be present in close proximity to the site.

7.21 No further survey work or mitigation is required for riparian mammals.

Badger

7.22 There is no habitat suitable for badger within, or in close proximity the site. No further survey work or mitigation is required for badger.

Hedgehog

7.23 Habitats within the Site and surrounding area provide low foraging opportunities for hedgehog, which may be present in the locality.

7.24 Hedgehog are considered further in Section 9.

Birds

- 7.25 Habitats present within the Site, including vacant buildings, unmanaged gardens and tree lines, provide suitable habitat for common and widespread bird species.
- 7.26 Coastal vegetated shingle, which is present in the northern portion of the Site, provides habitat for Schedule 1 species, including gulls, terns and waders. However, given the size and location of the habitat in an area with high disturbance, it is unlikely to support these species.
- 7.27 Birds are considered further in Section 9.

Reptiles

- 7.28 Data obtained from Krag include the following records for reptiles within 1km of the Site:
- 3no. records of grass snake. The closest and most recent record is 0.6km south of the Site in 2008.
 - 12no. records of slow-worm. The closest and most recent record is 1.0km south west in 2008.
- 7.29 There is no habitat suitable for reptiles within, or in close proximity the site. No further survey work or mitigation is required for reptiles.

Great crested newt

- 7.30 According to MAGIC map there have been no ESPM licences obtained for great crested newt within 1km of the Site.
- 7.31 According to Krag there are no recent records of great crested newt located within 1km of the Site.
- 7.32 There is one waterbody present within the Site.
- WB1 is the River Thames located at the northern boundary of the Site. The Site is located close to the Thames estuary and the water is tidal and saline, therefore unsuitable for amphibians.
- 7.33 According to OS maps, MAGIC map and aerial images, there are two waterbodies present within 250m of the site boundary.
- WB2 is a small pond located approximately 135m south-east;
 - WB3 is a pond located approximately 175m south-east.
- 7.34 Habitats within the Site, comprising predominantly hard standing, are unsuitable for great crested newt. In addition, the Site is isolated from the nearby waterbodies by surrounding development. Therefore great crested newt are unlikely to be present within the Site and no further survey work or mitigation is required for great crested newt.

Invertebrates

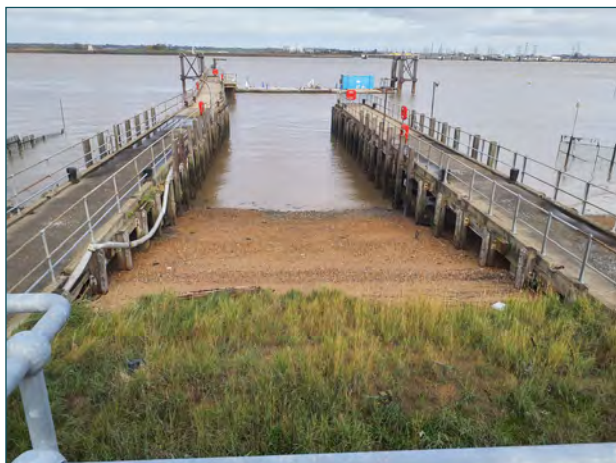
- 7.35 The majority of habitat within the Site, comprising hard standing, is unlikely to support protected or rare invertebrates.

- 7.36 White-clawed crayfish are known to be present in the upper River Thames. This species requires waterbodies with crevices and over-hanging rock formations and does not tolerate brackish water or pollution. The river adjacent to the Site does not provide suitable habitat, consisting of tidal, saline water with sand and shingle sediment. Therefore white-clawed crayfish are unlikely to be present.
- 7.37 No further survey work or mitigation is recommended for invertebrates.

Flora

- 7.38 Multiple stands of cotoneaster and rhododendron, both Schedule 9 invasive plant species, are present within the Site.
- 7.39 Flora is discussed further in Section 9.

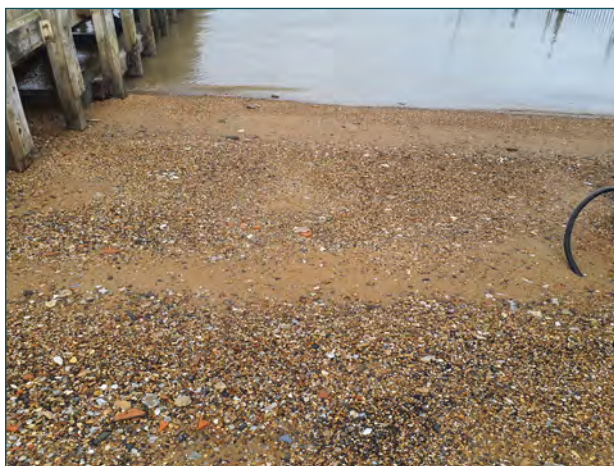
8. PHOTOGRAPHS



Photograph 1. The northern area of the Site bounding the River Thames.



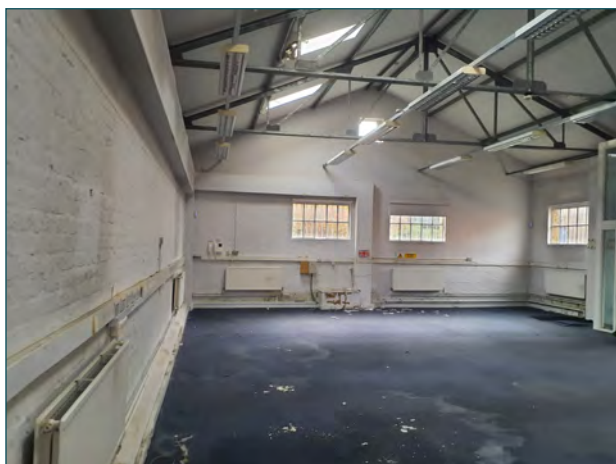
Photograph 2. Unmanaged garden at the rear of building B6.



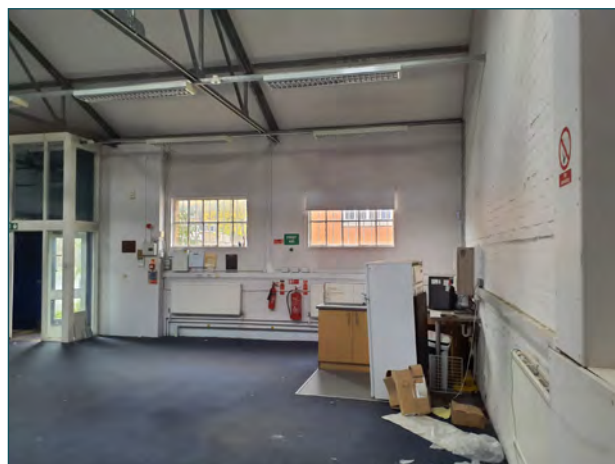
Photograph 3. Shingle and sand beach.



Photograph 4. Areas of hardstanding and coastal vegetation along the northern boundary.



Photograph 5. Building B2 internal image.



Photograph 6. Building B2 internal image.

9. ECOLOGICAL CONSTRAINTS

- 9.1 The potential impacts of the proposed development on those Ecological Features that have not been scoped out in Section 7 are considered below.

DESIGNATED SITES

- 9.2 The Site lies within 7.2km of the Thames Estuary and Marshes RAMSAR and SPA and within 2km of the Thames Estuary and Marshes SSSI.
- 9.3 Given the nature of the development, comprising the redevelopment of existing buildings, it is unlikely to result in either direct impacts to the Thames Estuary and Marshes RAMSAR, SPA and SSSI or the qualifying species or habitat associated with these Sites.
- 9.4 The designated sites lie downstream of the development Site and therefore indirect impacts may occur if construction works results in pollution of the river.
- 9.5 Precautionary mitigation to avoid pollution entering the river is outlined in Section 11.
- 9.6 In addition, according to the Impact Risk Zones for SSSIs shown on Natural England's MAGIC map application, the planning application type means there is a requirement for the Local Planning Authority to consult with Natural England during the planning process regarding statutory designated sites.

HABITATS OF PRINCIPLE IMPORTANCE

Coastal vegetated shingle

- 9.7 The Habitat of Principal Importance "coastal vegetated shingle" is present within the Site. The habitat is in moderate condition and has a range of flora typical of this habitat type.
- 9.8 The coastal vegetated shingle will be retained by proposals. The shingle is separated from the development site by the flood defence wall which provides some protection from accidental damage. However, construction works in close proximity to the coastal vegetated shingle may result in physical damage or pollution of this habitat.
- 9.9 Given the existing condition and sensitive nature of this habitat, no enhancement measures are recommended within this area.
- 9.10 Precautionary mitigation measures to avoid impact to coastal vegetated shingle are outlined in Section 11.

River

- 9.11 The river, which lies adjacent to the Site, will not be directly impacted by proposals. However, construction work in close proximity to the river may result in pollution which could have wide ranging impacts to habitats downstream.

- 9.12 Precautionary mitigation measures to avoid pollution of the river are outlined in Section 11.

PROTECTED AND NOTABLE SPECIES

Roosting bats

- 9.13 The buildings B1, B5 and B6 are assessed as providing high suitability for roosting bats. B7 is assessed to provide moderate suitability for roosting bats. B2 is assessed as providing low suitability for roosting bats. B3 and B4 do not provide suitable habitat for roosting bats.
- 9.14 Proposals include the demolition of the southern section of building B2 (low suitability). All other buildings will be retained.
- 9.15 Further survey work (detailed within Section 10) is recommended to determine the presence or likely absence of roosting bats within the section of building B2 which will be demolished.
- 9.16 It is understood that no external works will be undertaken to the retained buildings. Should external work be required, further surveys of these buildings should be undertaken.

Foraging and commuting bats

- 9.17 Habitats within the site comprising the garden and tree lines offer low suitability for foraging and commuting bats. The Site is small and relatively isolated from other larger areas of suitable habitat.
- 9.18 Proposals do not include the severance of any potential foraging or commuting corridors for bats. Therefore no further survey work is recommended.
- 9.19 Bats are nocturnal and rely on dark habitat corridors for foraging and commuting, therefore indirect impacts could occur through spillage of artificial lighting associated with parking and buildings within the Site post-construction
- 9.20 Precautionary mitigation to avoid impacts through the careful design of lighting is recommended within Section 11. Ecological Opportunities, outlined within Section 12, have the potential to improve the value of habitats within the Site for foraging and commuting bats.

Hedgehog

- 9.21 Development proposals are unlikely to impact on local hedgehog populations and therefore no further survey work is required. However, in the absence of suitable mitigation, individual hedgehogs may be harmed during works.
- 9.22 Precautionary mitigation to reduce the risk of killing or injuring individual hedgehog is detailed within Section 11.

Nesting birds

- 9.23 Given the area of suitable nesting habitat for birds within the Site, it is unlikely that development proposals will impact bird populations within the locality. No further survey work is recommended.

- 9.24 The mature trees, shrubs and buildings within the Site provide suitable nesting habitat for common and widespread bird species, as well as those listed as Red and Amber within the Birds of Conservation Concern such as song thrush (Red).
- 9.25 The buildings B1, B2(north section), B3, B4, B5, B6 and B7 will be retained as part of proposals.
- 9.26 The building B2 (southern section) will be demolished as part of development proposals and vegetation within the garden areas may be removed.
- 9.27 Mitigation measures to avoid impacts to nesting birds through the timing of works are outlined within Section 11.
- 9.28 Enhancement measures, outlined within Section 12, have the potential to improve the value of habitats within the Site for birds.

Flora

Invasive plant species

- 9.29 Cotoneaster and rhododendron are present within the Site.
- 9.30 To prevent the spread of cotoneaster and rhododendron from the Site into surrounding habitats, a specialist contractor should be commissioned to correctly remove and dispose of all invasive plants within the Site.

10. FURTHER SURVEY WORK

- 10.1 Further survey work for roosting bats is recommended to determine the presence or likely absence of bats within the building B2 (southern section) and to inform suitable avoidance, mitigation, compensation and enhancement measures.

ROOSTING BATS

Presence / likely absence surveys

- 10.2 Bat emergence / re-entry surveys are recommended to determine the presence or likely absence of roosting bats. Bat surveys should be undertaken in accordance with Bat Conservation Trust Good Practice Guidelines (Collins, 2016).
- 10.3 As building B2 provides low suitability, the following survey effort is required:

Survey effort and timing

- One dusk emergence survey between May and August.

11. MITIGATION MEASURES

ECOLOGICAL IMPACT ASSESSMENT

- 11.1 Following completion of the recommended further survey work, an Ecological Impact Assessment (EclA) report should be produced to support the planning application. The EclA report will detail the results of bat survey and any required mitigation that will be implemented prior to and during the construction phase and post development to ensure that potential ecological impacts are avoided, minimised and compensated for.
- 11.2 The mitigation measures detailed below should also be included within an EclA report and implemented as part of development proposals to minimise any potential impacts to Ecological Features.

HABITATS OF PRINCIPAL IMPORTANCE AND DESIGNATED SITES

- 11.3 To avoid physical damage or pollution of the Habitats of Principal Importance and nearby designated sites during the construction phase, the following mitigation should be implemented;
- Works should be carried out in consultation with the Environment Agency (EA).
 - At least one site worker and/or ecologist should provide the roles of Ecological Clerk of Works (ECoW) and will work with the site manager and contractors to ensure that all precautionary avoidance measures are adhered to during works.
 - All site contractors should be briefed by the ECoWs at the start of works as to the importance of avoidance measures to be undertaken during construction works.
 - No construction material should be stored within 15m of the coastal vegetated shingle or beach.
 - No refuelling, repairs or maintenance to vehicles or machinery that include engine fuel, hydraulic or lubrication systems should be undertaken within 30m of the coastal vegetated shingle or beach.
 - If appropriate, dust suppression measures should be employed throughout works.
 - A spill management plan should be in place throughout works.
 - Any waste materials should be safely stored and removed from the Site as soon as possible.
 - No planting or landscaping should be carried out within the Habitats of Principal Importance.
- 11.4 To avoid physical damage or pollution of the Habitats of Principal Importance post construction, the following mitigation should be implemented;
- The coastal vegetated shingle should be protected from access by the public and domestic animals to prevent damage to the habitat.

PROTECTED AND NOTABLE SPECIES

Foraging and commuting bats

Habitat retention and enhancement

- 11.5 It is recommended that measures are designed into a Landscape Strategy to enhance boundary habitat for foraging and commuting bats and increase connectivity within the surrounding habitat. This could include scrub creation and planting of native species hedgerow, outlined in Section 12.

Careful lighting design

- 11.6 In order to reduce a low potential, indirect impact on foraging and commuting bats to negligible, mitigation to reduce any effects of artificial lighting should be implemented, as far as possible and where applicable, in accordance with guidance issued by the Bat Conservation Trust and Institute of Lighting Professionals (ILP, 2018).
- The boundary vegetation should not be illuminated so that dark flight corridors for bats are retained.
 - The river and shingle habitats should not be illuminated.
 - Any external lighting should be operated with motion sensors, where health and safety allows.
 - Metal halide and fluorescent sources should not be used.
 - A warm white spectrum (ideally 2700Kelvin) should be adopted to reduce the blue light component.
 - LED luminaries should be used which have a sharp cut off and lower intensity to avoid light trespass.
 - Luminaries should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats.
 - Internal luminaries in close proximity to windows should be recessed, where possible, to reduce external glare and light spill.
 - Column heights should be as low as possible to avoid unnecessary light spill.
 - Luminaries should be mounted on the horizontal to avoid upward spill.
 - Accessories such as baffles, hoods and louvres should be used to further reduce any light spill and direct it to where it is needed.

Hedgehog

- 11.7 The following mitigation should be implemented for hedgehog during the clearance of any vegetation or log piles within the Site in order to avoid harm to individual animals:
- A toolbox talk to contractors prior to the start of works should be undertaken to inform site workers of the potential presence of hedgehog within the Site.
 - Care should be taken when clearing vegetation or log piles to avoid harming hedgehog that may be sheltering within the site:

- If a hedgehog is found (without young) within the site between April and October inclusive then it should be carefully relocated to an area outside the development site that offers immediate shelter.
- If a nesting hedgehog with young is found between May and October inclusive (breeding season) then an ecologist should be contacted immediately for advice.
- If a hibernating hedgehog is found between November and March inclusive (hibernation season) then an ecologist should be contacted immediately for advice.

11.8 The following mitigation should be implemented for hedgehog during the construction phase:

- All holes and excavations should be covered over each night to prevent animals from being trapped or injured.
- If this is not possible, a structure/plank should be placed into the hole to enable animals to escape.
- Any removal of building materials or other debris, should be undertaken with care to prevent harm to hedgehog.
- If any hedgehogs are found during the construction phase they should be carefully relocated to an area outside the development site that offers immediate shelter.

11.9 The following mitigation will be implemented for hedgehog post-development:

- Any close board fencing to be used will be fitted with small openings within gravel boards to allow hedgehogs access throughout the site. At least one entrance hole will be fitted into each boundary.

Nesting Birds

Habitat retention and enhancement

11.10 It is recommended that measures, such as native tree and shrub planting and grassland management regime, are designed into the Landscape Strategy to enhance habitat for nesting birds.

Avoid impact to nesting birds

11.11 The following mitigation should be implemented to avoid impact to nesting birds:

- Works to any vegetation and demolition of buildings should be undertaken outside of the bird nesting season where ever possible.

11.12 If impacts to vegetation/buildings are unavoidable between March and September, then the following mitigation will be undertaken:

- A nesting bird survey will be undertaken by a suitably experienced ecologist within at least 48hours prior to any impacts.
- A watching brief will be carried out by a suitably experienced ecologist during any works that impact suitable vegetation within the site.
- If nesting/nest-building birds are found, no works will commence/continue that are likely to damage or significantly disturb a nest until the young have fully fledged.

- 11.13** Works undertaken during the bird nesting season may result in significant delays to the development programme if activities need to cease due the presence of an active nest. It is important to note that many bird species, such as blackbirds and robins are multiple brooders and may therefore nest within the Site for a number of months.

12. ECOLOGICAL OPPORTUNITIES

- 12.1 It is recommended that ecological enhancement measures are included as part of development proposals. Possible habitat enhancement measures are outlined below.

INTERTIDAL ENHANCEMENT

- 12.2 Given the location of the Site near the mouth of the Thames estuary, enhancements such as coir or river garden planters are unsuitable due to the intensity of wave action and shingle substrate. In addition, enhancement of the coastal vegetated shingle could damage this sensitive habitat.
- 12.3 The piers are outside the red line boundary of the Site, and under separate ownership. Therefore they cannot be removed to extend habitat within the Site.
- 12.4 It is recommended that a management regime, including regular litter picking, is put in place to ensure that the coastal vegetated shingle habitat is protected when development is complete.

TREE PLANTING

- 12.5 Tree planting around the boundaries of the Site would benefit nesting birds and foraging bats, amongst other species. Trees that produce fruits, such as *Prunus* and *Sorbus* species, will provide additional foraging habitat for birds within the locality.

SHRUB RETENTION AND ENHANCEMENT

- 12.6 It is recommended that the shrubs located within the Site are retained and managed appropriately. Supplementary planting could include species such as rowan, dog rose and wild privet. This will ensure long-term nesting and foraging habitat is available for species groups such as birds and invertebrates.

HEDGEROW CREATION

- 12.7 Native species-rich hedgerows could be created along Site boundaries and around boundaries of properties. Species could include hazel, hawthorn, spindle, holly, yew, privet, field rose, dog rose and guelder rose.
- 12.8 Flowering species, such as hawthorn, privet and rose would provide opportunities for nectar feeding invertebrates, such as bumblebees, hover flies and butterflies. Creation of these habitat feature would also benefit bats by providing additional foraging habitat and birds through additional nesting habitat.

PLANTED GRASSLAND

- 12.9 The development provides an opportunity to enhance the area for invertebrates through the planting of grassland.
- 12.10 Appropriate management of the enhanced grassland will encourage plants such as common birdsfoot trefoil, red clover, white clover and creeping buttercup to flower, providing valuable nectar rich foraging habitat for invertebrates, including bumblebees and butterflies.

13. REFERENCES

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14. APPENDIX 1: SUMMARY OF PLANNING POLICY AND LEGISLATION

14.1 Species afforded protection under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 are also known as European Protected Species. European Protected Species include all species of bats, hazel dormice and great crested newt.

14.2 European Protected Species relate to those listed within the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and are afforded the highest level of protection. These species are also protected under the Wildlife and Countryside Act 1981. Taken together this level of protection makes it an offence to:

- deliberately capture, injure or kill any wild animal of a European protected species,
- deliberately disturb wild animals of any such species
- deliberately take or destroy the eggs of such an animal
- damage or destroy a breeding site or resting place of such an animal

14.3 Disturbance of animals includes in particular any disturbance which is likely:

- to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or
- in the case of animals of a hibernating or migratory species, impair their ability to hibernate or migrate
- to affect significantly the local distribution or abundance of the species to which they belong

14.4 The legislation requires that any derogation be dealt with by licencing through an appropriate licencing body (Natural England in England). In determining whether a licence can be granted the licencing body must apply the requirements of Regulation 53, and in particular, the three tests:

1. Regulation 55(2)(e) states: a licence can be granted for the purposes of “preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment”.

2. Regulation 55(9) states: The relevant licensing body must not grant a licence under this regulation unless it is satisfied—

- (a) that there is no satisfactory alternative; and
- (b) that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

PLANTS

14.5 A number of plant species are protected under Schedule 8 of the Wildlife and Countryside Act 1981. This Schedule lists plant species that are protected under Section 13, which protects from picking and sale of plants or parts of plants listed in Schedule 8.

BIRDS

14.6 All nesting birds are protected under the Wildlife and Countryside Act 1981. With certain exceptions, it is an offence to:

- Kill, injure or take wild birds;
- Take, damage or destroy the nest of wild birds while in use or being built;
- Take or destroy the eggs of wild birds;
- Intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

Birds of Conservation Concern

14.7 After reviewing the status of all bird species in the UK, the leading non-governmental bird conservation organisations agreed priorities for bird conservation. This led to the publication of a list of Birds of Conservation Concern. Bird species are either listed as red, amber or green, depending on their status and conservation objectives. Birds listed as red require urgent, effective conservation action.

BADGERS

14.8 Badgers are protected under the Protection of Badgers Act 1992. Under this legislation it is an offence to:

- Wilfully kill, injure or take a badger (or attempt to do so).
- Cruelly ill-treat a badger.
- Dig for a badger.
- Intentionally or recklessly damage or destroy a badger sett, or obstruct access to it.
- Cause a dog to enter a badger sett.
- Disturb a badger when it is occupying a sett.

COMMON REPTILES

14.9 All common and widespread reptiles, which include viviparous lizard, slow worm, grass snake and adder are protected under the Wildlife and Countryside Act 1981. This makes it an offence to:

- Intentionally or recklessly kill or injure reptiles
- Sell, offer for sale, possess or transport for the purpose of sale or publish advertisement to buy or sell any reptile.

INVERTEBRATES

14.10 A small number of invertebrates are protected under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, relating to the designation of SACs, including white-clawed crayfish and Desmoulin's whorl snail.

14.11 A number of invertebrate species also protected under the Wildlife and Countryside Act, such as the heath fritillary and fairy shrimp. Species listed under Schedule 5 are protected from one, some or all of the following:

- Intentional killing, injuring, taking
- Possession or control (live or dead animal, part or derivative)
- Damage to, destruction of, obstruction of access to any structure or place used by a scheduled animal for shelter or protection
- Disturbance of animal occupying such a structure or place
- Offering for sale, possessing or transporting for the purpose of sale (live or dead animal, part or derivative)
- Advertising for buying or selling live or dead animal, part or derivative

STATUTORY PROTECTED SITES

14.12 Special Protection Areas and Special Areas of Conservation are protected under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

14.13 Sites of special scientific interest (SSSIs) are protected under the Wildlife and Countryside Act 1981. Natural England is responsible for notifying SSSIs, ensuring they are managed appropriately and assessing and monitoring their condition.

14.14 National Nature reserves are created to protect important wildlife habitats, while also providing a resource for scientific research and recreation. Declared under the National Parks and Access to the Countryside and the Wildlife and Countryside Act 1981.

NON-STATUTORY PROTECTED SITES

Ancient Woodland

14.15 Land with continuous woodland cover since at least 1600AD. Ancient woods are recognised in UK planning policy, but do not have statutory protection.

NATURAL ENVIRONMENT AND RURAL COMMUNITIES (NERC) ACT 2006

14.16 Following consultation with Natural England, the Secretary of State identified species and habitats considered to be of principal importance for the conservation of biological diversity in England. These species and habitats are listed under Section 41 of the Act. The list is to be kept under review and revisions are made as necessary as part of the progress reports on the Biodiversity Strategy for England.

14.17 Following the Biological Diversity in Japan, 2012, a new initiative in England, 'Biodiversity 2020', replaced the former UK Biodiversity Action Plan Species aiming to reinforce the protection of Section 41 habitats and species.

THE NATIONAL PLANNING POLICY FRAMEWORK

14.18 The National Planning Policy Framework was revised in July 2021 and sets out the Government's planning policies for England and how these are expected to be applied. Within this document, Chapter 15 is titled Conserving and Enhancing the Natural Environment.

14.19 Of particular relevance within this chapter are the following statements:

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

- *minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.*

To protect and enhance biodiversity and geodiversity, plans should:

- *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.*

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.

15. APPENDIX 2: SUITABILITY ASSESSMENT OF ROOSTING HABITAT (STRUCTURES AND TREES)

Table 7. Assessing potential suitability of roosting habitat (structures and trees) for bats and survey effort required. Adapted from Bat Surveys for Professional Ecologists, Good Practice Guidelines 3rd Edition (Collins, 2016).

Suitability	Description of roosting habitat	Survey effort* and timing
Negligible	Negligible habitat features on site likely to be used by roosting bats.	None required.
Low	A structure or tree with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).	Buildings/structures: One survey visit. One dusk emergence or dawn re-entry survey. Timing: May to August. Trees: None required.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey. Surveys should be spaced a minimum of two weeks apart. Timing: May to September with at least one survey undertaken between May - August.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn. Surveys should be spaced a minimum of two weeks apart. Timing: May to September with at least two surveys undertaken between May - August.

* Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures and trees.



Legend

-  Red Line Boundary
-  7.2km Buffer
-  2km Buffer
-  Ramsar sites
-  Sites of Special Scientific Interest
-  Special Protection Areas

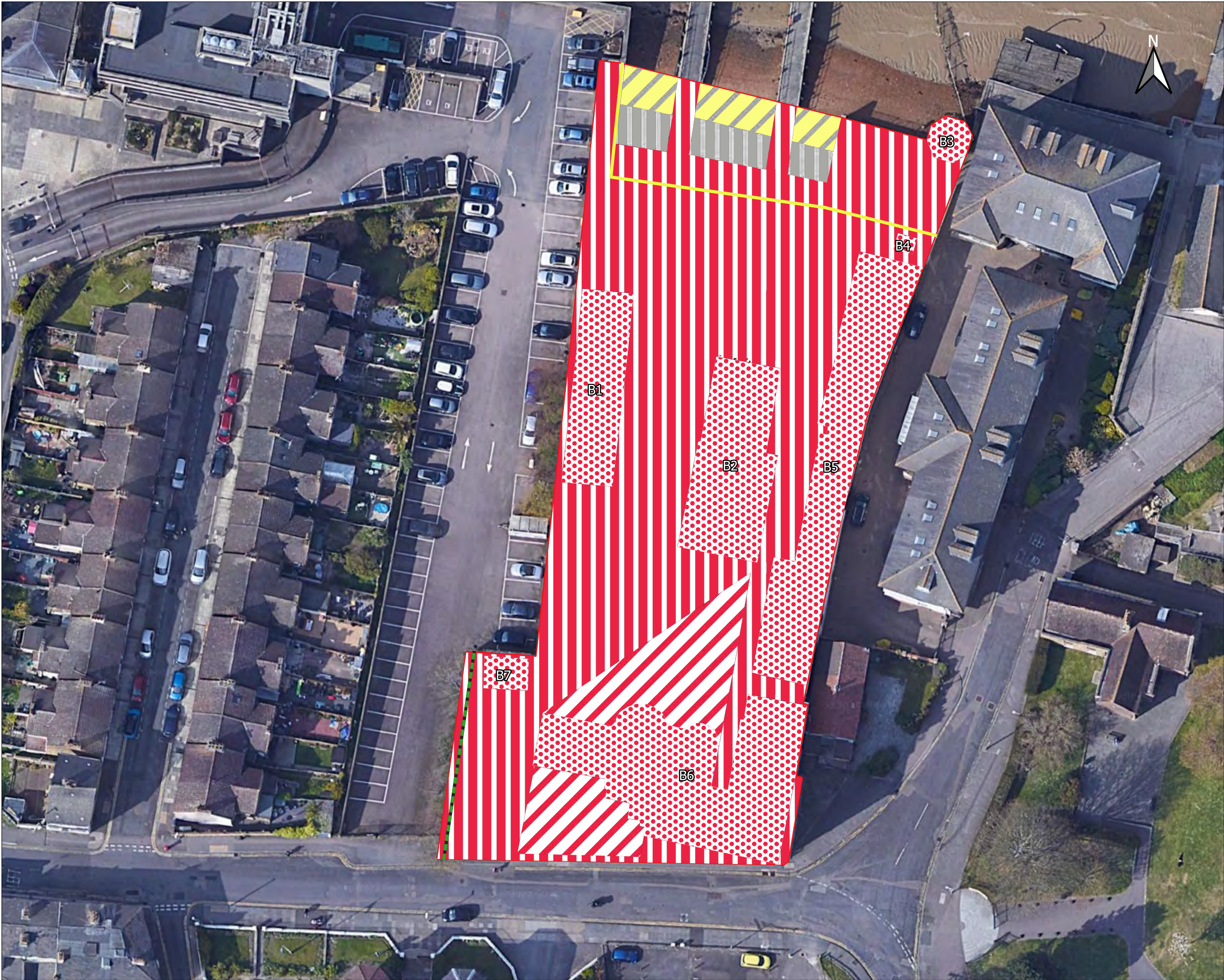


Designated Sites Plan

Custom House
Gravesend
Kent

Drawing ref:	1149_DR02
Revision:	-
Date:	17/11/2022
Scale:	1:40000
Paper size:	A3





Legend

-  Site boundary
-  u1 - built-up areas and gardens
-  u1b - developed land. sealed surface
-  u1b5 - buildings
-  t2h - Beach
-  s3b - coastal vegetated shingle
-  Sea wall
-  Line of trees

Note:
Habitats mapped by eye based on UK Habitat Classification following a site visit undertaken on 10/11/2022.

	
Habitat Plan	
Custom House Gravesend DA12 2BW	
Drawing ref:	1149_DR01
Revision:	-
Date:	11/11/2022
Scale:	1:500
Paper size:	A3