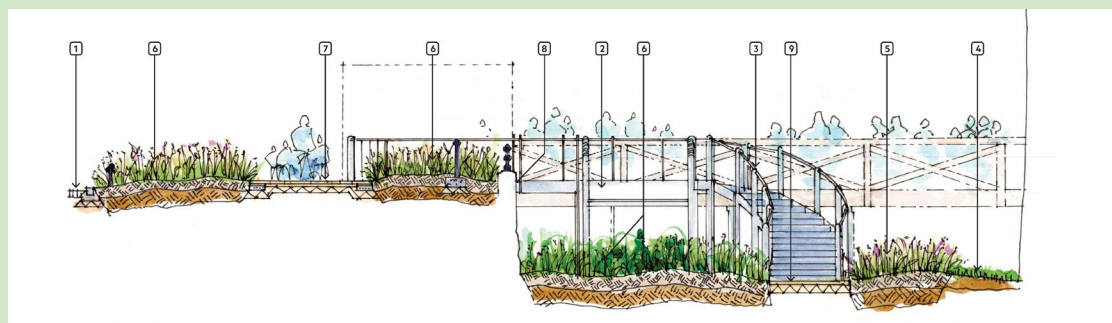


TOWER OF LONDON: NEW MOAT ACCESS RAMP AND ASSOCIATED LANDSCAPE



ECOLOGICAL APPRAISAL

01st July 2025

Rev 3.0_issue

EXECUTIVE SUMMARY

Proposals in Context

This report provides an ecological appraisal of proposals by Historic Royal Palaces (HRP) for a new permanent moat access ramp and associated landscape areas for the Tower of London.

Whilst the project stands alone as a coherent set of proposals, HRP intends that the project will eventually contribute towards the delivery of a long-term biodiverse *Legacy Landscape* for the moat, which is to be the subject of a separate planning application.

The proposals also relate to, and are designed to complement, the recently consented plans for a *Schools and Education Project* which will entail the refurbishment of the adjacent modern building on The Wharf (known as '*The Reveller*') as well as rooms integrated into the arches of the adjacent Tower Bridge Approach.

Designated Sites

There is negligible risk of any adverse effect of the project on any site designated for nature conservation.

Existing Habitats and Plant Species

The soft estate of the Application Site is entirely comprised of closely-mown lawn but varying in composition and species richness. Areas of lawn bordering a gravelled access path in the moat consist of Other Neutral Grassland (ONG) in '*Poor*' condition (according to the criteria in the Statutory Biodiversity Metric Condition Assessment).

Other areas of grassland were less species rich and generally more dominated by Perennial Rye-grass and were classified as Modified Grassland. The grassland on the Wharf and in the adjacent moat had been damaged by various ongoing site activities and hence assigned Moderate condition. The grassland west of the East Drawbridge had been more recently repaired and was in Good Condition.

In an area of flint gravels of ca. 1 m² under the steps leading down from the Sentry Box, just east of the East Drawbridge, ten specimens of the annual herb Jersey Cudweed *Laphangium (Gnaphalium) luteoalbum* were discovered in further botanical surveys in June 2025. This species is listed on Schedule 8 of the Wildlife and Countryside Act and hence fully protected. This species has expanded its range in the UK and is now widely dispersed across London including on green roofs. Survey in June 2025 revealed the presence of a further ca. 100 specimens growing in between the old cobbles of the Wharf and on old walls above Bobby's Pen. Over a quarter were in flower, despite heavy footfall above (the plants developing constrained growth forms). The small grouping of 10 individuals of Jersey Cudweed on the Application Site is afforded Local conservation importance.

The presence of Knotted Hedge-parsley *Torilis nodosa* — a native species defined as a ‘London Notable’ in terms of its occurrence as a native in fewer than 15% of the 400 tetrads in the Burton flora of London (Burton, 1983) — adds conservation interest to some of the lawn areas. It should be noted this flora is now over 40 years out of date and *Torilis nodosa*, however, has greatly expanded across Greater London in dry lawn area and waste places where its conservation status is not threatened. On a precautionary basis the lawn parcels supporting significant amounts of this species are accorded ecological importance at the Local level due to the presence of this species. This is true of the Other Neutral Grassland in the moat and of the Modified Grassland lawn on the Wharf. The other lawn areas with little or no *Torilis nodosa* were assessed as of ecological importance in the context of the Tower of London site given the general paucity of grassland in the local area and the contribution the Tower of London makes locally to grassland provision.

Protected and Priority Fauna

The present proposals pose negligible risk of harm to any protected or priority species of fauna.

Bat roost potential assessment was undertaken of all structures within the red line boundary and sufficiently near it to be of potential concern in terms, for e.g., of disturbance to bats. After various recent wall refurbishment and maintenance works and closure of access points to the Tower Bridge arches (following full inspections for bats that demonstrated their absence), the only feature assigned with more than negligible bat roost potential in the relevant vicinity is situated in the base of the Cradle Tower at the western edge of the site. During emergence survey of this feature on 8th May 2025 no bats emerged. No change in bat roost potential of this feature would occur following implementation of the proposals.

Survey through 2024 revealed that the moat and The Wharf are visited by modest numbers of light-tolerant bat species, mainly Common Pipistrelle *Pipistrellus pipistrellus* but also some Nathusius’ Pipistrelle *Pipistrellus nathusii* (all but one registration of the latter species being in September). The Application Site is currently generally very well-lit at night both by flood lights on the outer moat wall (which are directed across the moat to the inner moat wall) and by bright lights from nearby sites such as Tower Bridge. The present application proposes only local down-cowled and low-intensity light along the ramp. In this context any effects of this on the behaviour of the relatively light-tolerant bat species in question would be *de minimis*.

Mitigation and Net Enhancement for Loss of Grassland

Species-rich native Other Neutral Grassland is to be created on The Wharf and in the moat either side of the ramp. These areas will be managed to achieve Good Condition and Moderate condition respectively.

The area under the ramp will receive daylight directly through the mesh of the ramp walkway, as angled natural light from the sides, and as reflected natural light from the light stone walls of the moat. Accordingly, Other Neutral Grassland characteristic of native

hedgerow fringes is to be created under the higher parts of the ramp and under the part of the East Drawbridge, the component species being relatively shade-tolerant.

Overall, this represents a net enhancement in terms of the extent of grassland of a higher habitat distinctiveness and condition than is currently present.

Mitigation for Jersey Cudweed

The proposals, in keeping with other successful mitigation operations for the species in London, are to apply for a mitigation licence to Natural England to move the seedbank (and perhaps the plants, depending on timing of operations) to a specially prepared and designed receptor area just west of the East Drawbridge. This location should provide an ideal combination of shelter and solar gain to allow the species to thrive and be nurtured safely in the long-term. The successful establishment of the species in this space will be carefully monitored and management to encourage the species will be applied including any necessary weeding out of competition and perhaps watering in early stages of population establishment. As the seeds of Jersey Cudweed are wind-dispersed, the seed from the population on the adjacent Wharf is likely also to reach the proposed receptor area of the Cudweed in the prevailing south-westerly winds.

Maintenance staff and residents have already been alerted of the need to protect the plants. There should be many more opportunities for the expansion of the species in the envisaged Legacy Landscape redevelopment of the moat which will have many areas of nutrient poor gravel environments.

The long-term future of Jersey Cudweed on the Tower of London site would appear assured. Management of the Wharf and in the moat will now take cognizance of the presence of these plants which will not be removed in weeding operations. Herbicides will not be used on or near the sites where the species is present.

Mitigation for Knotted Hedge-parsley

An area of this species will be lost with the loss of just under 0.05 ha of mown lawn in which it occurs at a cover of ca. 25%. However, a band of over 0.01 ha Other Neutral Grassland is to be retained next to the inner moat wall and will continue to serve as a maintenance strip managed to encourage *Torilis nodosa* to thrive alongside other valued annual species in a species-rich but open grassland. The species will be encouraged to colonise and thrive in parts of the created mitigation area of Jersey Cudweed where it should reach a greater stature than permitted in the lawns. The species is also present in many other areas of the South moat (and locally in other areas of the moat) so that the area to be lost represents less than 15% of its best habitat within the areas under HRP management. Accordingly, the conservation status of *Torilis nodosa* on HRP's Tower of London site overall is not threatened by loss of habitat within the Application Site.

Additional Habitat Creation

There is to be a native species shade habitat of attractive ferns, grasses, and low flowering forbs under the lowest part of the ramp where there is still room for growth.

There are also to be new bands of biodiverse non-native planting (Flower bed) alongside a gravel access path through the moat running parallel to the ramp. These additions will increase the range of faunal species able to use the Application Site.

Additional Ecological Enhancements for Fauna

It is HRP's current intention to replace the moat lighting as part of the overall moat Legacy Landscape proposals currently being designed. Assuming these proposals are agreed and come to fruition, the general artificial light levels in the moat are likely to be notably reduced to the benefit of bats and other species. Artificial refuges for bats are to be integrated onto the supporting columns of the new ramp (on anti vibration mounts), providing new permanent roosting opportunities in what should become relatively dark conditions in future.

Refuges for common songbirds are also to be integrated under the new ramp and refuges for invertebrates within the new associated landscape.

Future Ecological Enhancements

Though outside of the remit of the present application, it is HRP's intention to use some of the seed bank for *Torilis nodosa* and any other valued annuals that may colonise to seed suitable habitat areas in the moat legacy landscape proposals to be presented in 2026.

Management

The created and retained habitats will be expertly managed in the long term by HRP's expert in-house estates management team, advised as and when required by professional consultants.

Residual Significance of Ecological Effects after Mitigation

The proposed project, with its integrated mitigation measures would have a net significant positive impact of relevance at the Local scale of the Tower of London Site and its near environs.

However, the project should also be seen as a potential first step toward creating a new moat Legacy Landscape—currently in design—that will support biodiversity and ecological amenity at a level of at least Borough Importance and will be submitted through a future planning application.

Analysis for Statutory Biodiversity Net Gain has been undertaken and is reported separately (see Biodiversity by Design, 2024c). The proposals will achieve a statutory net gain of notably more than 10%.

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1.0 INTRODUCTION

1.1 THE APPLICATION SITE

The Application Site forms part of the Tower of London World Heritage Site, which is situated in the far southwestern corner of the London Borough of Tower Hamlets and is managed by Historic Royal Palaces (HRP) (see **Figures 1.1 to 1.3**).

The Application Site comprises:

- The eastern corner of the south moat roughly between the northern end of the *Develin Tower* in the east and the eastern end of the Cradle Tower in the west.
- An area of amenity lawn located on *The Wharf* of the Tower of London, just west of a contemporary building known as '*the Reveller*'.

1.2 OUTLINE OF PROJECT PROPOSALS

The proposed project is described in detail in the *Design and Access Statement* and architectural, landscape plans and other submitted drawings accompanying the present application.

In summary, the aim is to construct a new permanent access ramp into the moat for public use, and, at the head of the ramp where it joins The Wharf, to create a new East Drawbridge sentry box, public moat entrance point, and visitor queuing area, all within an enhanced landscape setting.

Whilst the project stands alone as a coherent set of proposals, HRP intends that the project will eventually contribute towards the delivery of *a long-term biodiverse Legacy Landscape* for the moat, which is to be the subject of a separate planning application.

The proposals also relate to, and are designed to complement, the plans for a *Schools and Education project* (subject to a recently consented planning submission), which will entail the refurbishment of the adjacent Reveller building, as well as rooms integrated into the arches of the adjacent Tower Bridge Approach.

The proposed project is described in further detail in **Section 5.0**.



Figure 1.1: The Tower of London site as managed by HRP in the London borough of Tower Hamlets (blue boundary): source MapIT, UK.

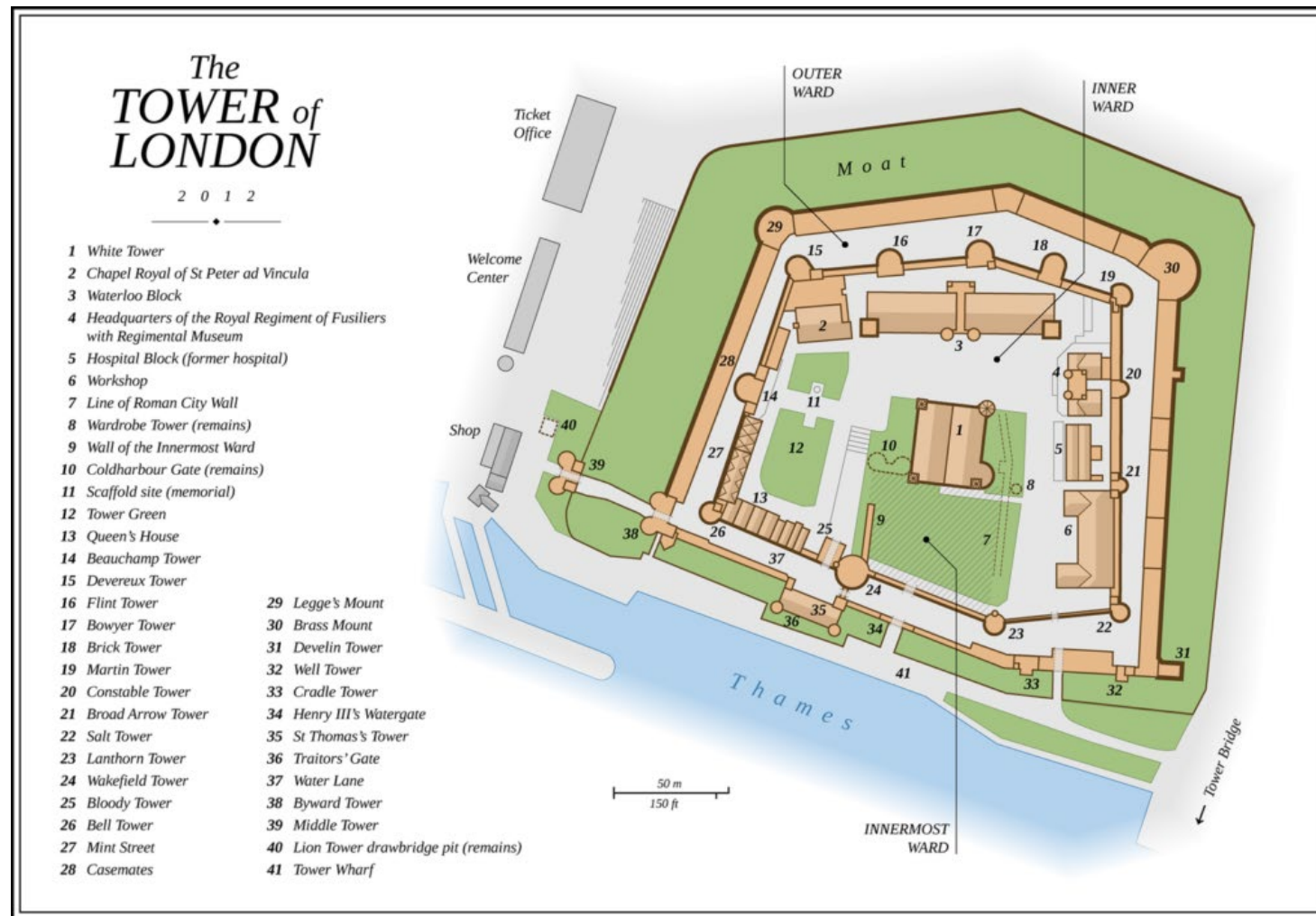


Figure 1.2: Tower of London site: nomenclature of key buildings and features.



Figure 1.3: The Application Site red line boundary in the context of the wider Tower of London Site.

1.3 SCOPE AND OBJECTIVES OF THE ASSESSMENT

The present appraisal has been undertaken:

- To assess whether any designated sites for nature conservation, irreplaceable habitat, or Habitats of Principal Importance, would be significantly affected directly or indirectly by the proposals.
- To assess for the presence of any species of nature conservation importance (most notably bats or nesting birds) or non-native invasive species subject to legal controls and to determine whether they could be significantly affected by the proposals.
- To inform proposals for avoidance, mitigation, compensation, and enhancement measures to meet legislative and best practice requirements.
- To inform the design of net enhancements for biodiversity and biodiversity-based amenity in keeping with planning policy.
- To provide the information required for assessment of Biodiversity Net Gain in line with the requirements of the Environment Act (2021) given that over 25 square metres of semi-natural habitat would be replaced through implementation of the proposals. The Biodiversity Net Gain Assessment is provided separately (Biodiversity by Design, 2025b).

2.0 POLICY AND LEGAL CONSIDERATIONS

2.1 GENERAL

The present appraisal has been undertaken with full reference to relevant legislation and policy concerning biodiversity. Further detail of the relevant legislation is provided in Appendix 1.0.

2.2 LEGISLATION

The primary biodiversity-related legislation of relevance to the present application is:

- Town and Country Planning Act, 1990 as amended by The Environment Act 2021 and various regulations relating to Biodiversity Net Gain (see Biodiversity Net Gain Report, Biodiversity by Design, 2025a).
- The Wildlife and Countryside Act 1981 (as amended).
- The Countryside and Rights of Way Act 2000 (CRoW Act, as amended).
- The Natural Environment and Rural Communities Act (2006) (NERC Act).
- The Conservation of Habitats and Species Regulations (2017).
- The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations (2019).

2.3 POLICY

Key policy documents and strategies relevant to the present application are:

- The National Planning Policy Framework 2024.
- The UK National Biodiversity Strategy & Action Plan (NBSAP) 2025. *Blueprint for Halting and Reversing Biodiversity Loss.*
- The UK Biodiversity Framework 2024.
- The goals of the National Character Area 112 (Inner London).
- London's Nature Improvement Areas strategy.
- The London Plan 2021.
- Tower Hamlets Local Plan 2031.
- Tower Hamlets Biodiversity Action Plan 2019-24.

3.0 METHODS

3.1 DESK STUDY

3.1.1 Greenspace Information for Greater London

A Greenspace Information for Greater London (GIGL) data search for protected and notable species and designated sites was completed (by Land Use Consultants) in 2022 for sites within 1 km of the HRP landholding at the Tower of London. This search was further supplemented by an updated desk study undertaken in January 2025 for areas within a 500 m radius of the centre of that landholding. Although the Application Site lies ca. 110 m from the centre of the wider Tower of London site, given the relatively small size and nature of the Application Site this was considered an adequately robust and current data search.

3.1.2 MAGIC Database

A search for designated sites within 2 km of the Application Site was undertaken on the Multi-Agency Geographical Information for the Countryside (MAGIC) online database.

3.1.3 Other Sources

Other data sources consulted included:

- Ordnance Survey (OS) mapping.
- Aerial photography (Google earth imagery).

3.1.4 Previous Surveys Relating to Bats

Surveys were carried out in the summer of 2024. These included:

- A preliminary bat roost potential assessment in and outside the moat within the areas of land under HRP control.
- Thorough bat foraging and commuting transect surveys through the summer, which included routes past the Application Site.
- Static detector survey, positioning detectors near the centre of the east, south, west, and north moats (for further details of methods, see **Appendix 5.0**).

3.2 FIELD SURVEYS IN 2025

3.2.1 Habitat Survey

An Extended Phase 1 Habitat Survey, i.e., a habitat survey combined with an assessment for use/potential use by protected and Priority Species was completed on 2nd February 2025 in accordance with best practice guidance (CIEEM, 2017 & 2019). The survey was undertaken by the highly experienced botanist and general ecologist Helen Saunders MCIEEM and the project's design ecologist, Dr Mike Wells FCIEEM.

A further verification / botanical survey visit was made by the same surveyors on the 11th June 2025, this time accompanied by Sharon Pilkington MCIEEM (former Botanical Society of the British Isles Vice-county recorder for Wiltshire) and a leading UK botanical surveyor (also the current national Recorder for the British Bryological Society).

Habitat types were categorised according to the UK Habitat Classification system (UK Hab, 2023). Where appropriate, habitat condition was assessed according to the Statutory BNG metric criteria (DEFRA 2024a and 2024b) and parcels in different conditions were separately mapped.

Visual inspection, identification, and mapping of different habitat types and parcels of the same habitat that were in different ecological condition (parcels being defined by the walls and path network as well as any evident break in habitat type), was carried out.

A series of transects were walked to cover each parcel, a note being made of as many higher plants as possible across the parcel noting general occurrence on the DAFOR scale (Table 3.1). Areas of bare ground were estimated within a larger area of approximately 2 × 2 metres at fixed distances along walked transects. Localised patches of bare ground were also noted and their approximate areas paced out. Where sward height varied within a parcel, the percentage of vegetation above and below 7 cm was estimated, using a metal ruler for verification where necessary, again taking and averaging measurements along walked transects. Damaged areas of the sward were roughly paced out and later compared to the total area of the parcels. Data from habitat parcels that were less than 25 square metres in extent and uncharacteristic of the main adjacent habitat parcels were not used in the analysis.

Data were also collected from 1 m² quadrats within various grassland habitat parcels to assess the condition of each habitat. As many different higher plant species were recorded in each quadrat as possible (identification to species not always being possible). The abundance of higher plant species in quadrats was recorded using the Domin scale (Table 3.2).

Table 3.1: DAFOR scale with approximate equivalence to percentage cover values

DAFOR descriptor	% cover
Dominant	>75%
Abundant	51-75%
Frequent	26-50%
Occasional	11-25%
Rare	1-10%

Table 3.2: Domin scale.

Domin scale	10	9	8	7	6	5	4	3	2	1
Range (%)	91-100	76-90	51-75	34-50	26-33	11-25	5-10	<4 (many individuals)	<4 (several individuals)	<4 (few individuals)

The entire extent of each habitat parcel was checked during the transect walks for invasive alien plant species and for species that are relatively uncommon in Greater London including some 'London Notables' (London Notables were defined by the London Wildlife Trust (see LWT, 2010) as those native species occurring in fewer than 15% of the 400 tetrads in the (now more than four-decade-old) Flora of the London Area (Burton, 1983). This flora is now almost half a century out of date and some neophyte species that were once uncommon have notably expanded their ranges since the flora was published. Accordingly, not all species that might be defined as notable under this criterion actually still merit that description.

3.2.2 Re-assessment of Potential for Bat Roosting

All parts of the Application Site and its potentially relevant environs were assessed in relation to their actual or potential use by roosting bats or breeding birds on 14th January 2025 by Sarah Dale MCIEEM (Natural England Class 2 2018-36720-CLS-CLS licensed bat ecologist and habitat surveyor). Dr Liat Wicks (BSc Hons; MSc; CEcol; MCIEEM; Natural England Bat Survey Licence Class 2 licence 2015-10211-CLS-CLS), bat specialist and Director of Sonar Ecology, undertook further inspections of the same features, on 10th and 19th March 2025.

The surveys included a thorough inspection Preliminary Roost Assessment of all structures potentially affected by the proposals. These were conducted in accordance with Collins *et al.* (2023), Reason & Wray (2023), and Mitchell-Jones & McLeish (2012), and involved both internal and external inspections. A ladder, high-powered torch, flexible endoscope, and close-focus binoculars were used. Any features of the structures potentially providing roosting opportunities or potential access into the interior were recorded and searched thoroughly where accessible. The interiors of the structures were assessed for potential and evidence of roosting bats. Evidence of roosting bats may include live/dead bats,

droppings, staining/ smooth surfaces around roost entrances, audible noise and feeding remains. Droppings were sampled and submitted for DNA analysis when necessary to confirm that they were not of bat origin.

The structures were classified for bat roost potential using the criteria set out in **Table 3.3**.

Information from the 2024 survey of the wider HRP-controlled Tower of London site, including the assessment of bat roost potential for all trees on The Wharf, was used to provide context. Trees were categorised in accordance with Collins *et al.* (2023) and BTHK (2020). A repeat inspection was carried out by Dr. Mike Wells FCIEEM on 14th March 2025 and again on 11th June 2025, following the same guidance, to check for any changes.

Table 3.3: Bat Roost Potential Categories: (Category descriptions drawn from Collins, 2023)

Roost Potential	Description
Confirmed	Confirmed signs of bat presence/ occupation (droppings, oily staining around entry points, insect remains, odour, scratching) or actual bat presence.
High PRF-M	A structure or tree with one or more PRF that are obviously suitable for use by larger numbers of bats and potential for longer periods of time (e.g. maternity colony) due to their size, shelter, protection, conditions and surrounding habitat. These include structures with points of access to the interior through degraded/missing mortar/brickwork and proximity to good foraging habitat such as woodland or water.
Moderate PRF-M	Features with some potential to support multiple roosting bats. Access points may include mortar cracks in brickwork or holes in soffits/fascias.
Low PRF-L	Few features of bat interest. A limited number of features which may support individual or low numbers of 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).
Negligible	Negligible potential for roosting and bats very unlikely to be present. Includes structures constructed from unsuitable materials e.g. prefabricated with steel with no entrance opportunities.

3.2.3 Bat Emergence Survey

As part of wider bat emergence survey work around the Tower of London moat, two Potential Roosting Features (O and N, both assessed as having Low Potential) in and near to Cradle Tower at the northern end of the Application Site, were subject to a dusk emergence survey by Sonar Ecology (led by Dr Liat Wicks, see **Section 3.2.2** above) on 8th May 2025.

The weather at the time of the survey was optimal: Temp – 12°C, 49% relative humidity (RH), dry, and no wind.

At this survey location, the surveyor used a handheld ultrasound acoustic detector and operated a Thermal Vision Ecology FLIR camera kit with a wide angle 95-degree lens focused on the potential roosting features (PRFs) including crevices on the moat wall and the chutes at the base of Cradle Tower. In addition, a static

detector (Elekon S2) was placed on the opposite side of the tower to capture any emergence from that aspect (see **Figure 3.1**). During the *Ceremony of the Keys*, all surveyors left their positions and departed site, although all devices were left recording continuously between 21:20-22:05, ensuring that any bat activity was captured.

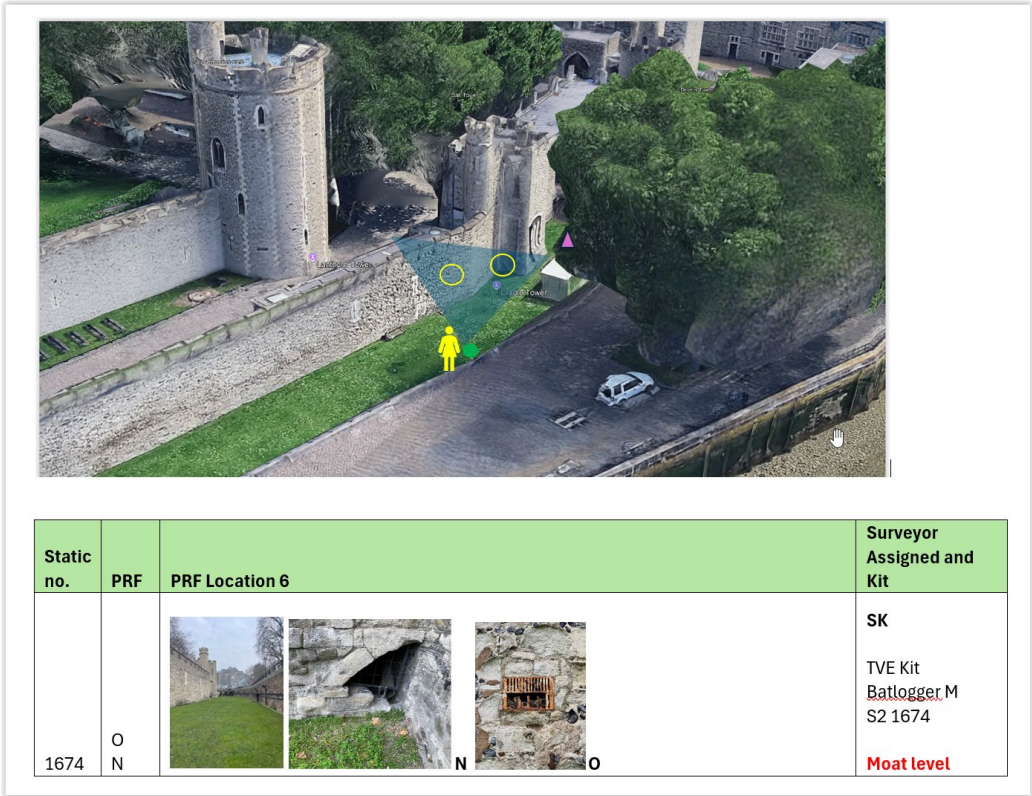


Figure 3.1: Deployment of bat detectors at the Cradle Tower. Key to symbols: Green circle = Thermal Vision Ecology FLIR camera kit; Pink triangle = (Elekon S2).

3.2.4 Breeding Birds

Checks for breeding birds were undertaken by Dr Mike Wells FCIEEM during visits carried out on the 2nd February and 16th March 2025. The Application Site was also surveyed for breeding birds by expert London-based ornithologist, Conrad Ellam, on the 30th April and 9th, 23rd and 30th May and 6th June 2025 as part of a survey covering the entire HRP-managed Tower of London site. This survey broadly followed Common Bird Census mapping techniques (Marchant, 1983). Survey visits commenced around dawn and lasted approximately four hours.

3.2.5 Assessment Limitations & Survey Reliability

Data search records depend on submissions from individual recorders and are therefore not exhaustive. As these records are typically not the result of systematic surveys, they cannot be used to confirm the absence of a species from

a given area. Additionally, flora and fauna occupy habitats in a dynamic and often seasonal manner, with patterns of use potentially changing from year to year as species colonise new areas. As such, ecological surveys represent only a 'snapshot' in time. Full access to the Application Site was made available to the surveyors and weather conditions were optimal on all occasions.

Although the initial habitat/botanical survey was undertaken in the winter months when vegetation is more difficult to identify to species, given the nature of the habitats (mown lawns) and the expertise of the surveyors, this was not considered to pose a significant constraint to the basic habitat definitions. However, a botanical verification survey was undertaken in June, so the final assessment of habitats and presence/absence of uncommon annual/biennial plants was further informed by confirmatory inspection at an optimal time of year in ideal weather conditions. This survey was also specifically intended to maximise chance of identification of rare and notable native plant species.

3.3 ECOLOGICAL ASSESSMENT METHODS

An assessment of potential ecological effects was undertaken in line with (CIEEM 2019).

4.0 RESULTS

4.1 STATUTORY SITES

A search of the DEFRA Magic Map Application found no sites with statutory designations for nature conservation within 2 km of the centre of the Tower of London site.

4.2 NON-STATUTORY SITES

4.2.1 General

The Greater London Authority and the London borough councils designate non-statutory, wildlife sites - Sites of Importance for Nature Conservation (SINCs) - using the following hierarchy:

- Sites of Metropolitan Importance (SMI) which contain the best examples of London's habitats.
- Sites of Borough Importance (SBI) (Grade 1 and 2), which are important at a borough perspective in the same way as the Metropolitan sites are important to the whole of London.
- Sites of Local Importance (SLI), which are of value to people nearby (such as residents or schools) and are particularly important in areas otherwise deficient in nearby wildlife sites.

Twelve SINCs or proposed SINCs (pSINCs) occur within ca. 1 km of the Site (see **Figures 4.1 & 4.2**); note that pSINCs are sites that have entered the Regulation 18 process (public consultation) but have not yet been adopted in a Local Plan.

Whilst none of these sites will be adversely affected by the present project, all provide context as regards the key habitats and species present in the wider vicinity.

4.2.2 Sites within 0.5 km

Sites of Metropolitan Importance

The River Thames and Tidal Tributaries SMI (M031) (ca. 20 m south of the Application Site at its closest point). This comprises the whole of the river and its tidal tributaries within the boundary of Greater London. In addition to the river itself, habitats within the SMI include shingle beach, mudflats, inter-tidal vegetation, islands, and the riverbanks.

Sites of Borough Importance

London Wall and the Wall of the Tower of London SBI Grade 2 (THB107) (ca. 200 m north of the Application Site). The outer wall along the north moat is designated as part of the old Roman wall of London. The wall once supported a long-established unique population of London Rocket *Sisymbrium irio*. However, survey by London Wildlife Trust in 2010 failed to find the species on this or any other of the moat walls. This species has not been recorded recently on HRP-managed land at the Tower, but may well still be present in the seedbank.

Sites of Local Importance

St Katharine's Dock SLI. (THL15) (ca. 65 m east of the Application Site). This site includes open water and supports wintering birds. Jersey Cudweed *Laphangium (Gnaphalium) luteoalbum* has been recorded (see **Appendix 5.0** for further details). The site provides good public access to common waterfowl species. Small numbers of common waterfowl, including Tufted Duck *Aythya ferruginea*, Coot *Fulica atra*, Mallard *Anas platyrhynchos*, and Moorhen *Gallinula chloropus*, are present throughout the year and probably nest in the marina.

Pepys Garden, Seething Lane and St Olave's Churchyard SLI (CiL01) (ca. 380 m northwest of the Application Site). **Pepys Garden and Seething Lane** comprises two small gardens with mature trees, though harbours no particularly uncommon native species. **The St Olave's** site is a fragment of a former larger churchyard with trees and shrubs and perhaps some interesting lower plants. (St Olave, Hart Street Churchyard is also listed as a proposed site CiL01.)

Proposed Sites of Local Importance

Portsoken Street Garden pSLI (pCiL09) (ca. 470 m north of the Application Site). A small park space with two small central ponds, bordering shrubberies with planted trees and a large green wall on the western side.

4.2.3 Sites within between 0.5 km and 1 km

Sites of Borough Importance

Pinchin Street Disused Railway SBI (THBII11). (ca. 720 m northeast of the Application Site). This is an open mosaic habitat of value to invertebrates.

Shadwell and Hermitage Basins, Wapping Canal and Wapping Wood SBI (THBII13). (ca. 490 m east south-east of the Application Site). This site is designated for its habitat diversity, aquatic plants, damselflies, breeding birds, wintering birds, open water, grassland, access to nature, and green corridor function.

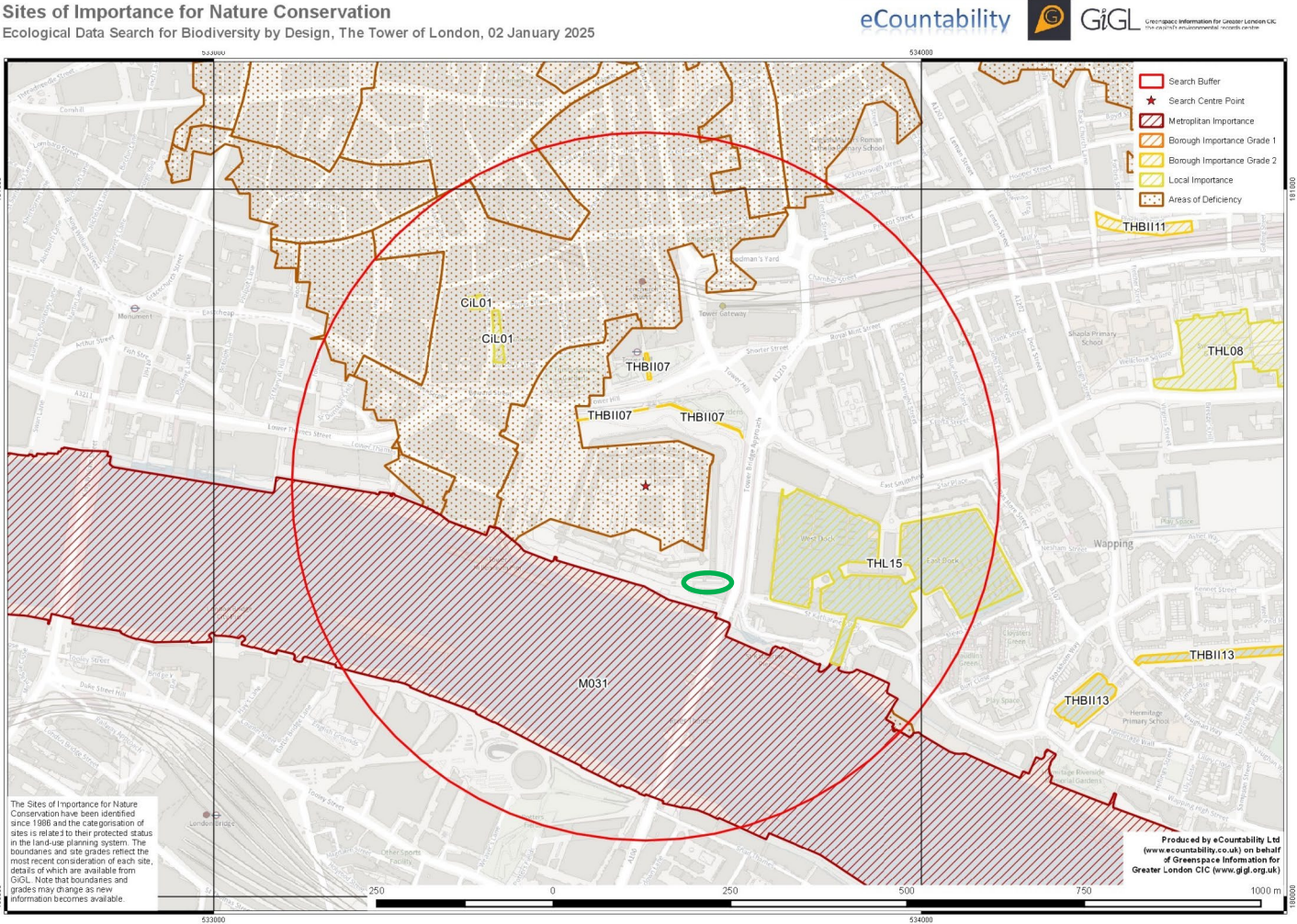


Figure 4.1: SINCs within 500 m of the Tower of London Site. The Application Site is shown approximately by the green oval.

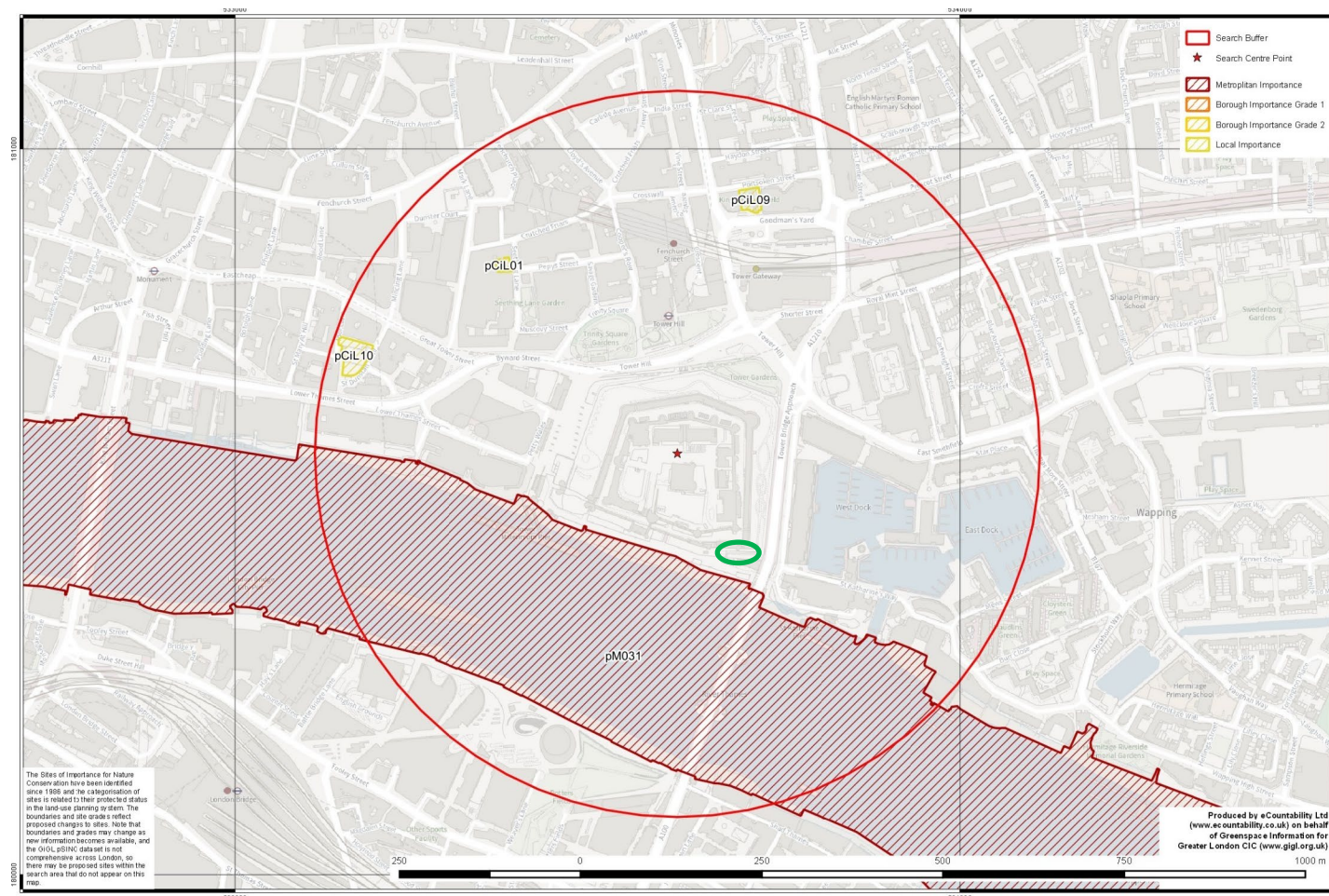


Figure 4.2: pSINCs within 500 m of the centre of the Tower of London Site the location of which is shown approximately by the green oval.

Sites of Local Importance

Swedenborg Gardens (THL08) SLI (ca. 660 m east-northeast of the Application Site). This site supports semi-improved neutral grassland, acid grassland, and a diversity of plants including the London rarity Toothed Medick *Medicago polymorpha*.

Snowsfield Primary School Nature Garden SLI (ca. 790 m southwest of the Application Site). This is a school nature garden with native trees and shrubs. Newts and frogs use the pond and pipistrelle bats forage and commute through the garden.

St Botolph's Church Grounds SLI (ca. 760 m north-northwest of the Application Site). This is a mature garden with trees, wide lawns, tall hedges, and some substantial areas of tall shrubbery.

Leathermarket Gardens and Community Park SLI. (ca. 880 m southwest of the Application Site). This is a park with amenity grassland, secondary woodland, and semi-improved neutral grassland.

Proposed Sites of Local Importance

St Dunstan in the East Church Garden SLI (pCiL10) (ca. 540 m west-northwest of the Application Site). A park with historical church ruins, surrounded by mature trees and planted shrubberies.

4.3 HABITATS AND FLORA

4.3.1 General

The habitats present in the Application Site are shown in **Figure 4.3**. The habitats are listed with their locations, condition (based on DEFRA [2024b]), and areas in **Table 4.1**. Quadrat locations are provided in **Appendix 2.0** and quadrat data in **Appendix 3.0**. Habitat condition assessments are provided in **Appendix 4.0**.

Table 4.1: Summary of habitats within the Application Site and their condition

Habitat	Location	Parcel	Condition	Area (ha)
Area habitats				
Modified Grassland (g4)	Moat	Mod Grass_M1	Good	0.0088
Modified Grassland (g4)	Moat	Mod Grass_M2	Moderate	0.0104
Modified Grassland (g4)	The Wharf	Mod Grass_W1	Moderate	0.0161
Other Neutral Grassland (g3c)	Moat	ONG_M1 and ONG_M2	Poor	0.0418
Unvegetated sealed and unsealed surface (u1b and u1c)	Moat and Wharf	-	N/A	0.0483
Small Building – Sentry Box (u1b5)				0.0003
Total Area of Application Site				0.1257

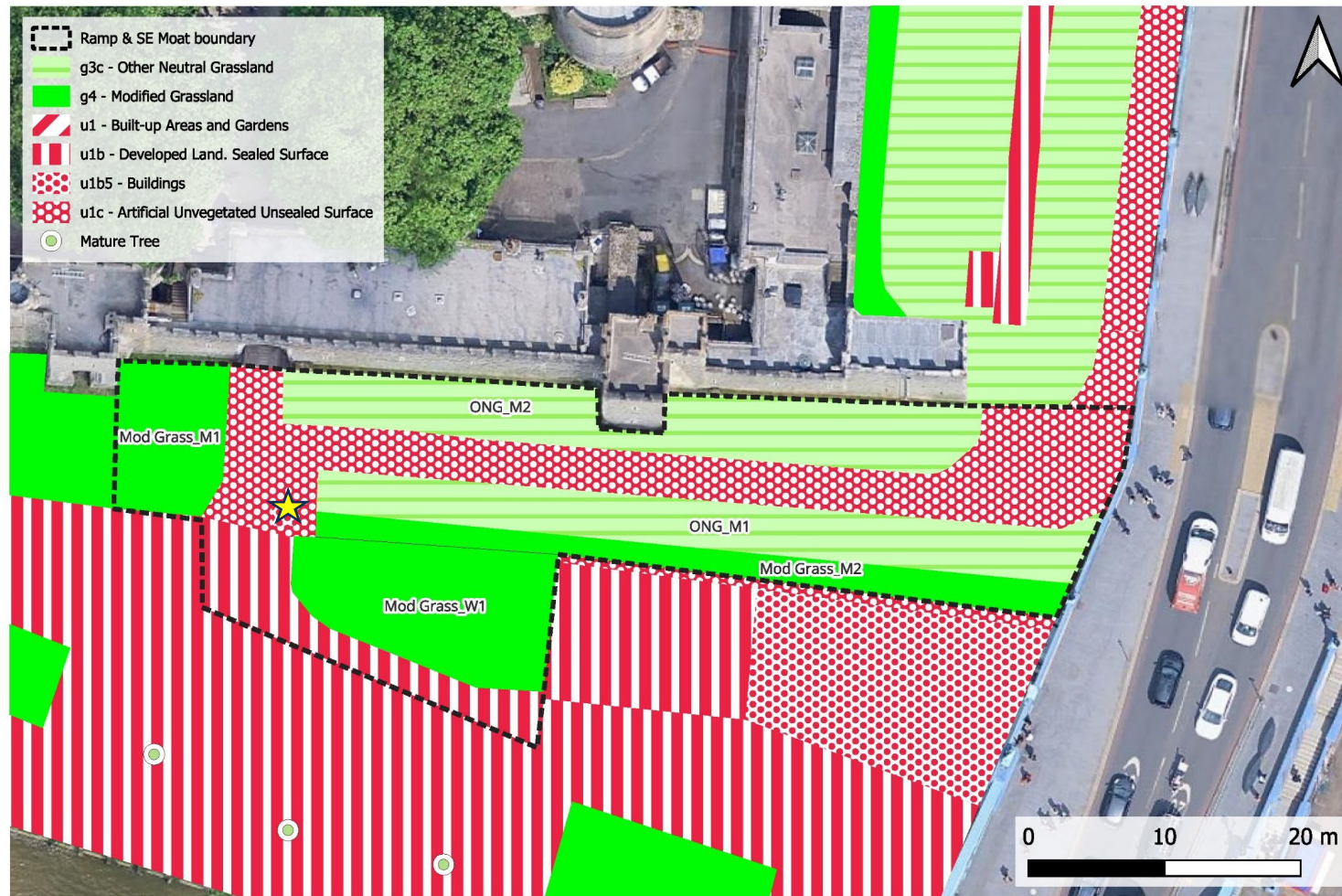


Figure 4.3: Existing habitats within the Application Site boundary (dotted black line) and its near environs with habitat parcel labels. Star indicates a small area of sparsely vegetated gravels (< ca. 1 m²)

4.3.2 Modified Grassland (UK Hab code: g4)

Locations of Modified Grassland were:

- Wharf west of the Reveller (Parcel Mod Grass_W1, see **Plate 4.1**);
- Moat west of the Eastern Drawbridge (Parcel Mod Grass_M1); and
- Moat next to the outer moat wall (Parcel Mod Grass_M2, see **Plate 4.2**).



Plate 4.1: Modified Grassland patch west of The Reveller (February 2025).



Plate 4.2: View of the moat section of the study area, looking east. The small patch of wall vegetation can be seen midway along the outer moat wall (February 2025).

Further photos are provided in **Appendix 3.0**.

Parcels Mod Grass_M2 and W1 were in '*Moderate*' condition according to the Statutory Biodiversity Metric condition assessment, due to local areas of bare

ground and sward damage (see **Appendix 4.0**). The lack of such evident damage and more recent overseeding of Parcel Mod Grass_M1 led to an assessment of 'Good Condition'.

Knotted Hedge-parsley *Torilis nodosa* - a London Notable species (see Sections **3.2.1** and **4.3.9**) – was of between Occasional and Frequent occurrence in parcel Mod Grass_W1, adding conservation importance to this parcel. The species was also of Rare occurrence in Parcel Mod Grass_M1.

4.3.3 Other Neutral Grassland (UK Hab code: g3c)

Either side of the gravel track is what might be referred to as a 'flowering lawn' - a lawn with above-average frequency of flowering forbs. The analysis of this in terms of UK Hab is presented in the quadrat records in **Appendix 3.0**. These lawn areas just qualify as Other Neutral Grassland condition by virtue of having:

- > 20 % cover broadleaved herbs and sedges.
- > 8 species per m² (including forbs, grasses, sedges, and rushes and excluding bryophytes) (average = 9.75 for ONG_M1 and 10.2 for ONG_M2).
- One or more grass species, not typically sown for agricultural production, are at least abundant.
- Cover of Rye grasses *Lolium* sp. and White Clover *Trifolium repens*, where present, is < 30%.

The parcel is, however, in 'Poor' condition according the Statutory Biodiversity Metric condition assessment (see **Appendix 4.0**). Annual wool aliens (imports from Australia that have become locally naturalised in the UK) including the neophyte Annual Buttonweed *Cotula australis* and the archaeophyte Musk Stork's-bill *Erodium moschatum* were locally present in number.

The relative species-richness character of these parcels is likely to be the result of the combined effect of hot summers and damp winters that keep the tightly-mown sward in an open dynamic equilibrium.

4.3.4 Unvegetated Sealed and Unsealed Surface (UK HAB Code: u1c and b)

The unvegetated hard surfaces on The Application Site are a combination of sealed surfaces on The Wharf, and both water-permeable gravel and water-impermeable Breedon Gravel in the moat. HRP currently weed these surfaces using a combination of hand weeding and various herbicides (mainly light inhibitors).

However, in one patch of ca. 1 m², just under the steps leading down from the Sentry Box east of the East Drawbridge, where a little soil had spread onto the flint gravels, ten individual plants of Jersey Cudweed *Laphangium luteoalbum*

were noted in June 2025 (see **Section 4.3.8** on valued flora) growing amongst a few individuals of Pellitory-of-the-Wall *Parietaria judaica*. The discrete location, obscured by the stairs, may have escaped weed maintenance.

4.3.5 Buildings (UK HAB Code: u1b5)

There is a small (< 3 square metre) sentry box at the eastern drawbridge entrance to the Tower complex (Plates 4.3a to c).

This is in a very good state of maintenance with no suitable niches for fauna or flora. The Eastern Drawbridge is of wood and metal construction with light penetration below. There is also an open wooden staircase into the moat from the sentry box.



Plates 4.3a to c: Sentry box and associated steps at the East Drawbridge (February 2025).

4.3.6 Mortared Wall (UK HAB Code: u1, 853)

In February 2025 the moat walls were largely bare but in very good condition, with excellent repair and pointing. A few crevices had been colonised by forbs, while one more densely vegetated patch (ca. 6 square metres in area) included some valued fern species (see **Section 4.3.9** below). A key section of the moat wall was under cover and conservation work in June 2025, so this surface vegetation has now been lost.

4.3.7 Nocturnal Light Environment

Existing light levels in the Moat and along The Wharf adjacent to the Reveller Building are relatively high as shown in **Plates 4.4 & 4.5**, taken in March 2025. Recent use of the Reveller Building as a venue was sometimes associated with significant lighting at the blue end of the spectrum as well as spot lighting attached to a retractable canopy frame next to the building (see **Plate 4.6**).



Plate 4.4: Nocturnal light environment of the southeast end of the moat – March 2025 looking west, with the interior lights of the Reveller Building and some of the adjacent terrace spotlights illuminated.



Plate 4.5: Nocturnal light environment of the southeast end of the moat – March 2025 looking west, with the existing interior lights of the Reveller Building and some of the adjacent terrace spotlights illuminated.

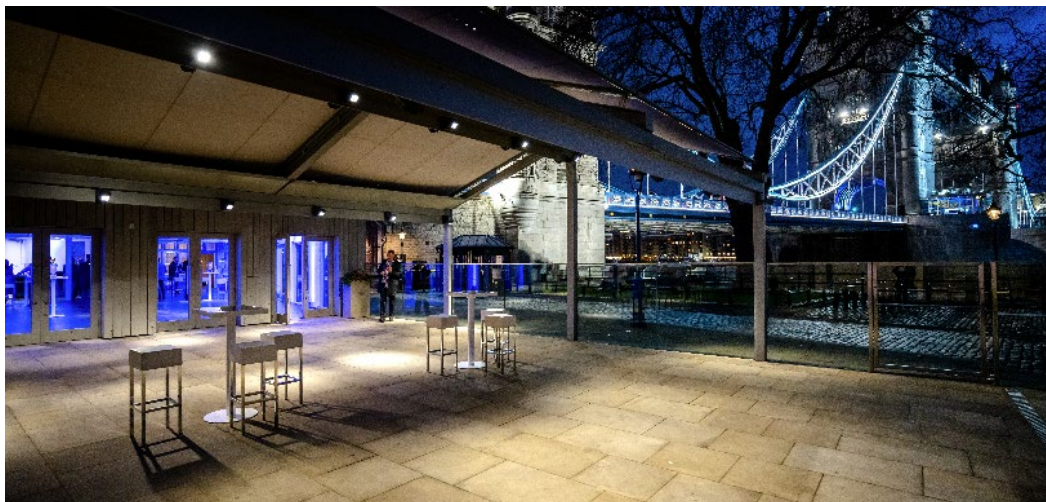


Plate 4.6: Recent lighting of the Reveller Building for an event, source: <https://www.alexanderandbjorck.com/at/toweroflondon-2/>

4.3.8 Valued Flora

Jersey Cudweed

As stated in **Section 4.3.4** in a patch of ca. 1 m² where the gravels just under the southern edge of the East Drawbridge had become lightly admixed with a little soil

and colonised by plants, ten individual specimens of Jersey Cudweed were found on 11 June 2025 (see Plate 4.7).



Plate 4.7: Jersey Cudweed growing just under the southern edge of the East Drawbridge.

Almost 100 further individuals of the species were found at multiple locations outside of the Application Site on The Wharf and near the Tower Hill gateway growing from between cracks in the old cobbles. These locations and other locations for the species on the Tower of London Site research are shown in **Appendix 5.0** along with further photographs and commentary.

This species is fully protected on Schedule 8 of the Wildlife and Countryside Act 1981 as amended. For many years, its only known British site was in sand dunes on the North Norfolk coast. However, in recent years it has appeared in many new sites and occurs across much of Greater London. It has been found in several places in Tower Hamlets (see Appendix 4.0). It tends to grow on bare, low-nutrient sandy areas and between cracks in brick paving.

It seems very likely that these populations have been accidentally introduced in landscape creation works. However, the plant is legally protected and moreover Historic Royal Palaces had already identified the species as a key target species within the proposals to develop a biodiverse Legacy Landscape towards the realisation of which the present project would contribute.

Valued Lawn Flora

Botanical surveys in the moat in the summer 2024 and before that by London Wildlife Trust (2010) identified the presence of several species that qualified as what the London Wildlife Trust describes as London Notable species. These are

native 'lawn annuals' which were noted in the south moat either side of Traitors' Gate pool and in the lawns of the Inner Ward and some lawns on the Wharf. These included Knotted Hedge-parsley *Torilis nodosa*, Common Stork's-bill *Erodium cicutarium* and Small-flowered Crane's-bill *Geranium pusillum*. Due to climate change, these species are becoming increasingly common in lawns/short grass across the capital, making Burton's 1983 flora clearly outdated. Therefore, the conservation importance of these species should not be overstated.

Knotted Hedge-parsley was found to be present at a cover between Occasional and Frequent in ONG_M1, ONG M2 and Mod Grass W1. It also occurred rarely in MOD Grass M1. This species is an annual that thrives in sparsely grassy habitats, bare and waste ground, and dry soils. It is commonly found on grassy banks around coastal regions, and increasingly as a weed in urban environments. It prefers neutral to basic soil and can tolerate disturbed areas. Knotted Hedge-parsley primarily spreads through its seeds, which have very small, hooked spines that readily attach to animal fur and clothing, facilitating dispersal over distances. The species also readily self-seeds, and its fibrous root system helps it to establish and spread, especially in disturbed areas and along lawn margins.

While *Torilis nodosa* (Knotted Hedge-parsley) has seen a decline in many inland areas in the UK, particularly as an arable weed, it is also showing a recent increase in urban areas and away from traditional arable land, according to the BSBI Online Plant Atlas 2020.

It is expanding its range across Greater London (see map in **Appendix 6.0**) and there are multiple other occurrences of this species in the Tower of London Site including the inner ward main lawn and most of the lawn areas along the south moat and on the Wharf (see plan of occurrences known as of June 2025, in **Appendix 6.0** with an image of the species flowering).

No specimens of Common Stork's-bill were noted in the Application Site. The key location for this species on the Tower of London site appears to be in the mown lawns east of Traitors' Gate Pool. One flowering specimen of *Geranium pusillum* was found in the northern half of Parcel ONG_M1 (to be retained). This is an annual of cultivated land, roadsides and waste places and open summer-droughted grasslands. There has been little change in the UK distribution of this species since the early 1960s.

Wall Flora

A small section of the outer moat wall just east of the Eastern Drawbridge supported a patch of vegetation growing in the mortar joints (see **Plate 4.8**). This vegetation includes the following ferns that qualify as London Notables in terms of frequency in the Burton flora:

- Wall-rue *Asplenium ruta-muraria*.

- Maiden-hair Spleenwort *Asplenium trichomanes* (not previously recorded by London Wildlife Trust).

Hart's-tongue *Phyllitis scolopendrium* and Pellitory-of-the-wall *Parietaria judaica* were also noted.

These patches were removed to permit essential building maintenance works to the World Heritage Site and were no longer present in June 2025.

There are plans to mitigate such ongoing losses of ferns in the moat Legacy Landscape scheme, soon to be brought forward to planning, through the creation of a permanent fernery.



Plate 4.8: Small patch of wall flora including some London Notable ferns in February 2025. This patch has now been removed as part of essential monument conservation works

4.3.9 Offsite Habitats and Features

Trees

On The Wharf some 10m south of the Application Site is a row of six mature London Plane Trees, the easternmost tree being a veteran tree (irreplaceable habitat). Whilst the root protection area of this tree slightly overlaps the Application Site (see **Plate 4.9** and **Figure 4.5**), this relates to hard standing only where no below-ground works are planned. The areas of proposed habitat modification on The Wharf do not overlap the root protection area of this tree.



Plate 4.9: Mature London Plane trees on The Wharf near to the Application Site.

The Reveller Building

The adjacent Reveller Building (**Plate 4.10**) is a modern single-story wood-clad and flat-roofed building with negligible habitat value.



Plate 4.10: The Reveller Building on The Wharf adjacent to the Application Site.



Figure 4.5: Root protection areas of adjacent trees (courtesy of RH Tree Consultants). The Application Area red line boundary is shown and the lawn area on The Wharf that is to be modified by the present proposals is shown in opaque green. Tree T006 is a veteran tree and hence irreplaceable habitat.

4.4 INVERTEBRATES

In 2022, pre-Superbloom, surveys of the moat for invertebrates by the renowned entomologist, Richard Jones FRES, found an impoverished invertebrate assemblage of only 77 species. Such a limited tally was considered typical given the modified and relatively uniform nature of the habitat (Land Use Consultants, 2024).

Further survey of the moat, again by Richard Jones, in 2023 and 2024 recorded a significant increase in invertebrate species (bringing the running total to 237).

Jones concluded that this increase was due to the increase in floral diversity, but the overall assemblage was still considered relatively poor for a grassland site of this size – a fact he attributed to its young age and relative lack of habitat diversity.

The current invertebrate fauna of the Application Site — where no habitat creation occurred and only temporary disruption took place during installation of the access ramp — is likely more similar in character to the pre-Superbloom assemblage of the moat, though it likely supports even fewer species due to its smaller size.

4.5 BIRDS

Comprehensive bird surveys conducted in spring and summer 2021 recorded no nesting birds within the Application Site or its immediate surroundings (Land Use Consultants, 2024). The nearest nesting species were observed in the southeast corner of the moat — Wood Pigeon *Columba palumbus*, Feral Pigeon *Columba livia*, Lesser Black-backed Gull *Larus fuscus*, and Carrion Crow *Corvus corone* — as well as in the London Plane tree just to the south, where Blue Tit *Cyanistes caeruleus*, Goldfinch *Carduelis carduelis*, and Carrion Crow were recorded.

House Sparrow *Passer domesticus* and Starling *Sturnus vulgaris* (Red List species) also breed in the wider Tower of London site though not closer than 200 m distance from the Application Site.

On 15th March 2025 a pair of Wrens *Troglodytes troglodytes* was found nesting in a niche in the outer moat wall near to the East Drawbridge. This pair was allowed to complete nesting before repointing works filled the niche.

On five survey visits (on the 30th April, the 9th, 23rd and 30th May and the 6th June (see Methods **Section 3.2.4**), only one bird sighting of a Feral Pigeon was made. The surveys also showed that no Schedule 1 birds breed in the relevant vicinity of the Application Site.

4.6 BATS

4.6.1 Summary of Existing Records in the Wider Area

The GiGL search from 2022 identified records of Common Pipistrelle *Pipistrellus pipistrellus*, the closest of which was ca. 60 m from the site. There were also records of Daubenton's *Myotis daubentonii* (closest 453 m), Noctule *Nyctalus noctula* (closest 604 m), Nathusius' Pipistrelle *Pipistrellus nathusii* (closest 863 m), Serotine *Eptesicus serotinus* (closest ca. 1000 m) and Leisler's bats *Nyctalus leisleri* (closest ca. 1,000 m) within 1 km. The only update in 2025 was a record for Daubenton's Bat within ca. 400 m of the site.

4.6.2 Results of Bat Roost Potential Assessment in 2025

Walls of the Moat

During bat roost potential inspections of the entire moat undertaken on 15th March 2025, a loosely inserted stone was found in the outer moat wall within the Application Site, behind which was a 30 cm deep cavity. This was 1.5 m below the level of The Wharf at the eastern end of the Reveller Building. No bats or signs of bats were recorded in the cavity when it was inspected in further detail on the 19th March 2025. Access to the cavity was subsequently blocked to permit the ongoing rolling programme of repairs of the South Moat walls to proceed.

Prior to the repointing works, other crevices on the outer wall of the moat, mostly derived from failed and decayed mortar, were all found to be less than 5 cm depth and thus too shallow and exposed for roosting bats.

In conclusion, the moat walls within the Application Site and its relevant vicinity currently have **Negligible bat roost potential**.

East Drawbridge Sentry Box

The East Drawbridge Sentry Box, 20 m from the western end of the Application Site, controls access to the moat for staff and visitors (**Plate 4.11 a & b**). The Sentry Box is constructed of single-skinned wooden panels, glazed windows and a lead (or similar) hipped roof. The structure is in good condition and is entirely sealed, with **Negligible bat roost potential**.

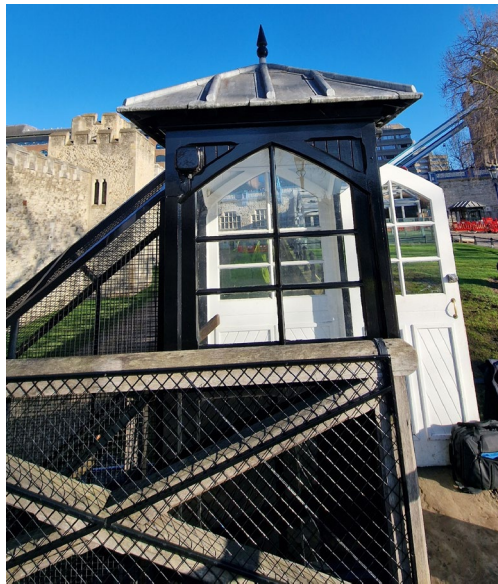


Plate 4.11a & b: Sentry box on The Wharf next to East Drawbridge. Negligible bat roost potential.

Eastern Drawbridge

The Eastern Drawbridge is constructed of brick, metal, and wooden beams (**Plate 4.12a & b**). There are possible very small gaps in the structure beneath the bridge, but, as the drawbridge has regular vehicular as well as pedestrian traffic, use of these gaps by bats for roosting is extremely unlikely. The structure was assessed to have **Negligible bat roost potential**.



Plate 4.12a and b: Some gaps in jointing of Eastern Drawbridge, ca. 20 m from the Application Site. Negligible bat roost potential.

Cradle Tower Alcove

This alcove at the Cradle Tower (inner wall of moat about 35 m from the Application Site: see **Plates 4.13a & b**) extended into an opening, but with significant ventilation and light from various points. There was a hole and chute in the Tower wall behind this feature. This chute was assessed as having **Low (PRF-I) bat roost potential**.



Plate 4.13 a & b: Alcove at the base of Cradle Tower, 35 m from the Application Site
Low bat roost potential.

4.6.3 Results of Bat Emergence Survey in May 2025

No bat emergence from the PRFs (O and N, see Methods **Section 3.2.3**) were recorded on the thermal camera in this location and none were seen visually.

Both the handheld detector and the static detector recorded very low numbers of Common Pipistrelle bats soon after dusk, suggesting roosting close by on site but not within the Cradle Tower walls. The earliest recordings were from 20:39, 4 mins after sunset.

4.6.4 Results of Bat Activity Surveys in Summer 2024

Transect and static bat detector surveys in Summer 2024 for the moat Legacy Landscape scheme (see methods) showed relatively low levels of bat activity in general within the Moat and outer areas of the Tower of London site managed by HRP – Tower Hill and Tower Gardens (see further detail in **Appendix 7.0**).

Four species were recorded including Common Pipistrelle, Soprano Pipistrelle *Pipistrellus pygmaeus*, Nathusius' Pipistrelle, and Noctule. There were also a small number of unidentifiable calls and likely pipistrelle social calls.

The main activity of interest was in Tower Gardens to the north of the North Moat and in the South Moat close to Traitors' Gate Pool.

This included a few registrations of Nathusius' Pipistrelle, a relatively uncommonly recorded species in Central London (though due to historical conflation with other pipistrelle species is likely to be notably under recorded). This species favours foraging near water. All except one Nathusius' Pipistrelle call were recorded during September, indicating likely passage along the River Thames during the migration period before hibernation.

There were relatively few passes (just 1.6% of the total) on static bat detector recordings within 20 minutes of sunset or sunrise (the timeframe which would strongly indicate roosting activity at or in the immediate vicinity of the Tower). However, the data indicated at least occasionally-used individual roosts close to the moat. For example, a Common Pipistrelle pass 1 minute after sunset on 17th June recorded on a static detector in the heart of the west moat; and a Nathusius' Pipistrelle pass 36 minutes before sunrise on 13th September recorded on a static detector in the heart of the south moat.

4.7 OTHER FAUNA

No other faunal species of conservation importance are known to occur in the Application Site. Brown Rat *Rattus norvegicus* and House Mouse *Mus musculus* may occur as they are present in the wider Tower of London site.

4.8 ECOLOGICAL IMPORTANCE

The lawns – present as Other Neutral Grassland in parcels: ONG_1, ONG2 and Modified Grassland in W1 are evaluated as being of **Local** importance (i.e. below Borough value) due to their forming part of good local population of the London Notable **Knotted Hedge-parsley**. The presence of 10 individuals of **Jersey Cudweed** near the East Drawbridge comprise about 10% of a local population in the Tower of London site that should probably be considered to be of ecological importance at the Borough level and as such the small group of plants within the Application Site is afforded **Local importance**. The rest of the habitats are important **in the context of the Tower of London site** – as green space for foraging bats etc. These evaluations are summarised in **Table 4.2**.

Table 4.2: Ecological importance of existing habitats and assemblages

Feature	Importance
Other Neutral Grassland in parcels: ONG_1, ONG2 and Modified Grassland in W1	Local (below Borough)
Modified Grassland Parcels Mod Grass M1 and Mod Grass M2	Within the context of the Tower of London Site only
1 m ² patch with 10 specimens of Knotted Hedge-parsley	Local (below Borough)

5.0 THE PROPOSED PROJECT

5.1.1 Demolition and Structural Modifications

The sentry box and steps leading from it are to be removed. These structures currently have negligible habitat value. No modifications are proposed to the Eastern Drawbridge. Some modifications to the top of a section of the Wharf wall will be required to permit ramp attachment.

5.1.2 Habitats Proposed Within the Application Site

For the reasons explained in **Section 1.0**, the habitats being created in the present project are elements of the palettes being developed for the long-term wider moat Legacy Landscape.

The habitats that will be present within the Application Site in the operational phase are shown in **Figure 5.1**, mapped in accordance with the UK Habitat Classification.

Habitat areas are shown in **Table 5.1**.

5.1.3 The New Access Ramp

The new permanent access ramp will provide the eastern end of a pedestrian circulation loop for public visits to the moat landscape (the other point of public entry to the moat being the existing ramp in the west moat). The new ramp will be roughly similar in scale to a temporary ramp that was in approximately the same place during the '*Superbloom*' event, a largely non-native floral display created in the moat in 2023 to celebrate Her late Majesty Queen Elizabeth II's Platinum Jubilee. The temporary ramp was also present through part of 2024 (hereafter referred to as the '*Echo phase*' of the Superbloom event) before being dismantled and removed. The permanent ramp will be situated closer to the inner moat wall than the former temporary ramp.

The new ramp will have an open structure beneath allowing angled light or light reflected from the light-coloured moat walls to reach the ground. Moreover, the ramp walkway will be a grille structure that allows some light directly through from above (see **Figure 5.2**).



Figure 5.1: Habitats after project implementation, with parcel labels.

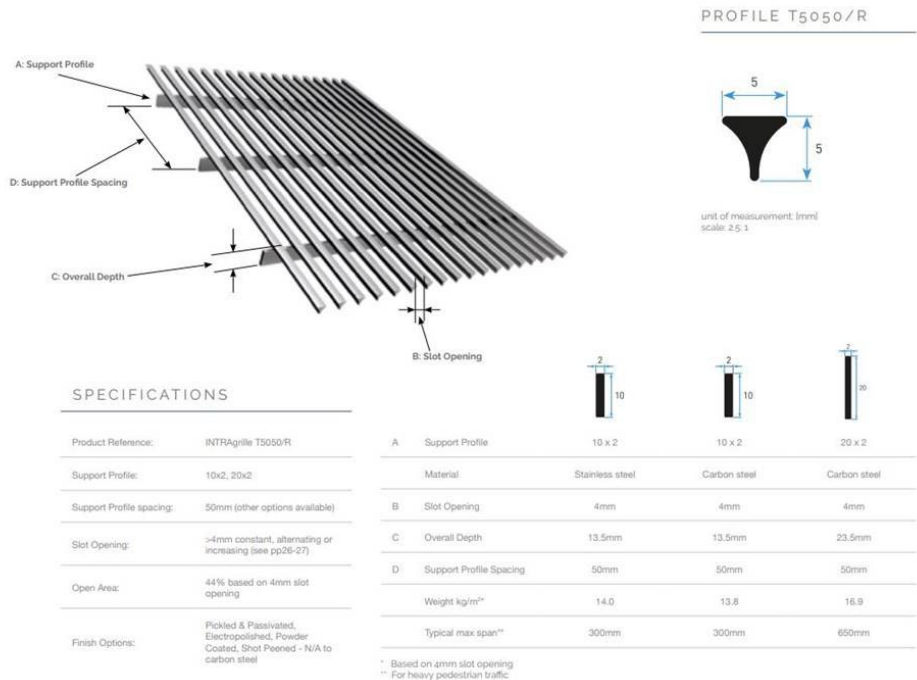


Figure 5.2: New Moat Access Ramp. Proposed grille.

Accordingly, habitat tolerant of semi-shade will be created below the ramp where space allows.

5.1.4 Grasslands

Other Neutral Grassland (ONG) – UK Hab g3c - of three types will be created on an imported layer at least 20 cm thick of low-nutrient subsoil. There will be local variants in the seed mixtures used:

- The grassland areas on The Wharf will be sown with Emorsgate special meadow mix EM3 with some native cornfield annuals as a nurse crop (mix EC1); or similar approved native seed mixtures. This is a high-quality mixture of over 30 native lowland meadow species appropriate to the location. This will be supplemented by the native annual Yellow-rattle *Rhinanthus minor*, a grass parasite, that will help to maintain the balance of grasses and forbs.
- The linear parcels on either side of the ramp and west of the Eastern Drawbridge, as well as those flanking the new informal path in the grassland on The Wharf west of the Reveller, will be sown with Emorsgate EM3 wildflower mix, blended with up to 20% (by volume)

of a mixture very similar to Emorsgate hedgerow mix EH1— an herbaceous seed mix tolerant of light shade, but one lacking Cow Parsley *Anthriscus sylvestris* (which is a negative indicator of Other Neutral Grassland condition in the Biodiversity Metric). This will again be supplemented by the native annual Yellow-rattle. Some cornfield annuals will also be sown as an initial nurse crop (Emorsgate mix EC1).

- Under the ramp – where there is a clearance of 1.5 m or greater - a mixture very similar to EH1 (see above) will be sown. The hedgerow mix, including a few species more characteristic of deeper shade, should grow well here, representing the transition from open to shadier conditions.

The parcel of Other Neutral Grassland in 'Poor' condition currently used as a maintenance access route around the inner wall of the moat will be retained and managed to promote the continued presence of London Notable annuals including Knotted Hedge-parsley.

All grassland swards will be expertly managed long-term (see below and draft *Habitat Management and Monitoring Plan*) to achieve the best possible condition matched to location.

5.1.5 Planting Beds

A mixed band of native and non-native planting (classified in UK Hab terms as 'Urban/Flower Bed' u1, 846) will be created along the southern edge of the retained grassland next to the inner moat wall. This will be a nectar-rich assemblage with varying flowering morphologies and prolonged flowering times. Shade-tolerant species will be selected where the habitat extends under the Eastern Drawbridge.

A further shade tolerant mix (native) will extend under the ramp where clearance is greater than 1.5 m. Where the ramp clearance is less than 1.5 m, a specific mix of native woodland grasses and low herbs and ferns will be sown. This will be exclusively native and include non-competitive grasses (see Design and Access Statement).

A 12 m² area of the planting beds will be designed as a low nutrient substrate area and will be incorporated into the proposed planting bed in the zone west of the East Drawbridge. This location should permit provision of the best possible growth conditions for Jersey Cudweed enabling it to grow with enough solar gain to set seed. This planting bed will be seeded with the gravels-with-soil substrate from the existing small group of specimens under the East Drawbridge. It may also be sown with seed collected (under licence) should these specimens flower.

Table 5.1: Summary of habitats within the Application Site and their conditions after implementation and maturation of the proposed project.

Habitat	Location	Habitat Parcel Names	Target Condition	Area (ha)	Management of Risks in habitat retention/ creation.
Habitats Retained					
Other Neutral Grassland (g3c)	Next to the inner curtain wall	ONG_M2 (part)	Poor	0.0103	This retained area will be kept mown as a maintenance strip. This will be subject to supplementary seeding with native fine grasses and forbs and other measures as appropriate to maintain its cover and habitat for less common native annual species.
Modified Grassland (g4)	West of the East Drawbridge	Mod Grass_M1 (part)	Good	0.0057	This retained area will be kept mown. This will be subject to supplementary seeding with native fine grasses and lawn forbs as appropriate.
Habitats Created					
Other Neutral Grassland (g3c)	The Wharf	ONG_W1 and_W2	Good	0.0101	This habitat at the 'gateway to the moat' will be very well managed and maintained – and repaired rapidly as and when needed, protected if required, and watered <i>in extremis</i> if the benefits of watering to the biodiversity are considered likely to exceed any disbenefits.
Other Neutral Grassland (g3c)	Either side of the proposed ramp	ONG_M3, ONG_M4, ONG_M5	Moderate	0.0252	This habitat will also be very well maintained but due to the shape of the strips and adjacency of other shade habitats the precautionary target condition is 'Moderate' rather than 'Good'.
Other Neutral Grassland (g3c) (Semi-shade of ramp, 1.5m clearance)	Under ramp and East Drawbridge (and gap between) with over 1.5 m clearance	ONG_Ramp 1	Moderate	0.0112	This parcel will gain sufficient light through the grid of the ramp and angled direct and reflected light from the moat walls for the growth of a varied sward, but possibly with some bare ground.
Built-up Areas and Gardens, Flower Bed (u1, 846)	Under ramp with at least 1 m clearance	Shade Bed	N/A	0.0060	This will be a native shade-tolerant sward. The parcel will be expertly maintained by the horticulturally skilled staff of the Tower. Some 0.0002 ha of this will be dedicated to creation of the Jersey Cudweed mitigation area, on low nutrient substrates.
Built-up Areas and Gardens, Flower Bed (u1, 846)	North of main path in moat	Flower Bed	N/A	0.0117	This parcel will be expertly maintained by the horticulturally skilled staff of the Tower. Some 0.0002 ha of this will be dedicated to creation of the Jersey Cudweed mitigation area, on low nutrient substrates.
Unvegetated sealed and unsealed surface (u1b and u1c)	Other areas within the red line boundary		N/A	0.0455	
Total Area of the Application Site				0.1257	

5.1.6 Artificial Refuges for Fauna

The proposed locations of artificial refuges for fauna are shown in **Figure 5.3**. The refuges envisaged for installation will be bespoke and designed fully to integrate with the aesthetics of their surroundings in a manner fitting for the World Heritage Site. Examples of commercially available refuges which will be used to help specify the bespoke refuges are illustrated in **Plates 5.1a to e**).



Plate 5.1a: Potential model for the proposed invertebrate towers.



Plates 5.1b to e:

Potential models for the refuges for birds and bats (actual refuges will be integrated bespoke designs). Clockwise from top left: Schwegler 1FF Flat Bat Box; Woodstone Bilbao 32mm Oval Hole Nest Box: for House Sparrows (and Great Tits); WoodStone® Starling Nest Box; WoodStone® Seville 28mm Nest Box (Grey)) for Blue Tits, Coal Tits and Great Tits. The bat refuges would be installed with vibration dampening to minimise any effect of public use of the ramp.

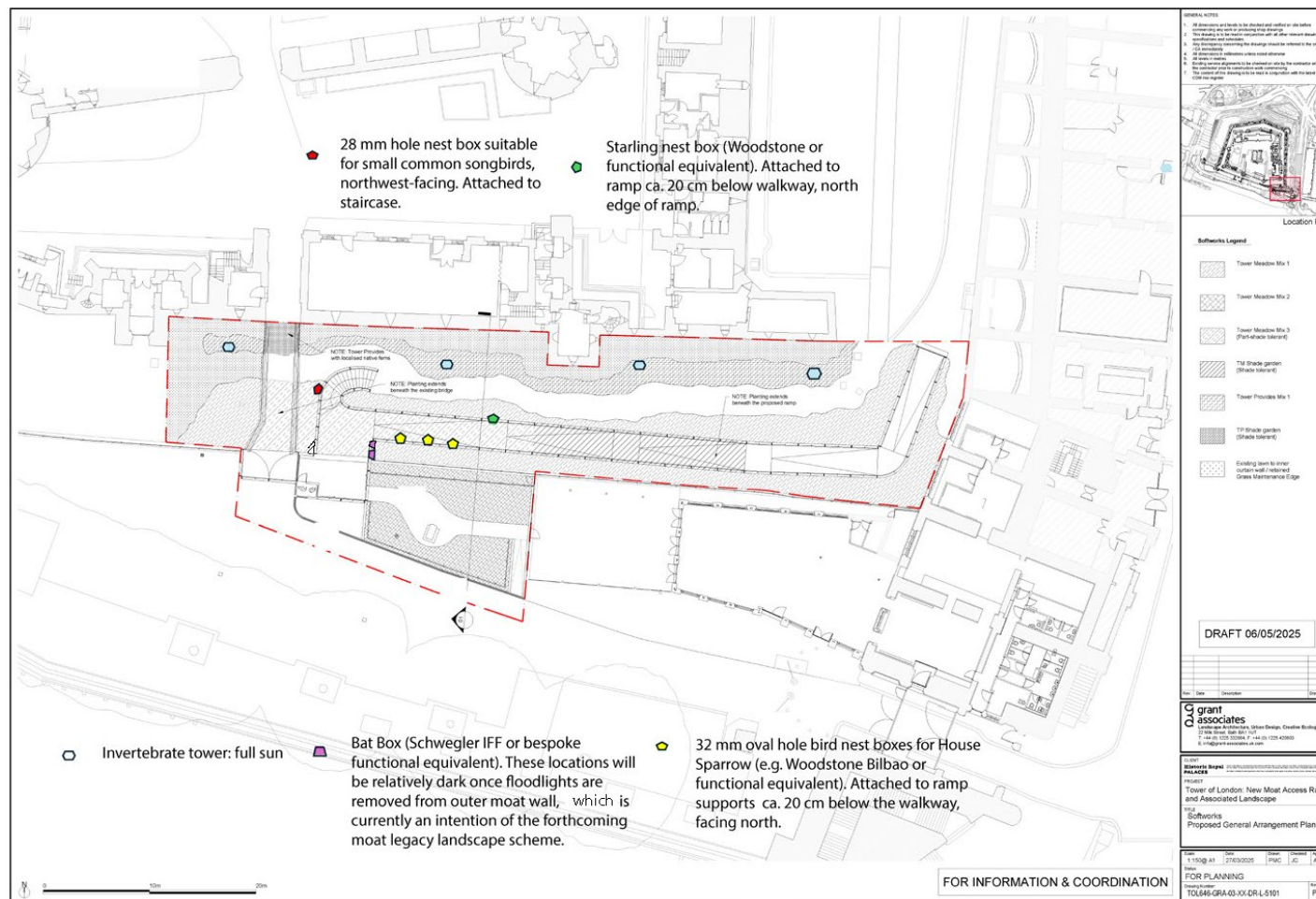


Figure 5.3: Proposed faunal refuges installations, subject to heritage approvals.

6.0 PREDICTED ECOLOGICAL IMPACTS & PROPOSED MITIGATION MEASURES

6.1 CONSTRUCTION PHASE

6.1.1 Designated Sites

Potential Impacts

The construction of the ramp will entail importing of construction materials and use of powered and fuelled machinery.

There will be some noise associated with the construction of the ramp that might reach waterfowl on the River Thames, but this will be small-scale, localised and short-lived and set against a backdrop of urban traffic and other construction noise. It is therefore predicted that any effects on the conservation status of any fauna associated with the Thames SMI would be *de minimis*.

Drainage from the Application Site enters the eastern moat culvert, which also receives polluted road runoff from Tower Bridge approach. If unmitigated, there is some potential for works to increase discharge of pollution into the Thames Estuary and Tributaries SINC Site of Metropolitan Importance.

Mitigation

Mitigation of construction works in the moat will include:

- All construction staff will be briefed relating to the environmental sensitivity of the nearby River Thames.
- Any water that needs to be removed from construction excavations will be directed to settlement tanks before discharge to the existing culvert network that currently receives untreated road runoff from Tower Bridge Approach.
- All material used will be subject to suitable COSHH evaluation.
- Refuelling of plant in the moat will be either prohibited or strictly controlled to avoid any risk of spill of fuel or lubricants.

These measures, taken together, should avoid significant pollution discharges to the River Thames. No other specific mitigation measures are proposed in relation to the Thames Estuary and Tributaries SINC.

There would be no risk of significant impacts on any other sites designated for nature conservation.

6.1.2 Grassland Habitats and Important Plant species

Potential Impacts

All existing soft estate within the Application Site will be removed, except for ca. 100 square metres of the Other Neutral Grassland verge (in Poor Condition) located along the inner moat wall.

There is risk of harm to the grassland areas to be retained during construction.

Other Neutral Grassland

The retained band of lawn (poor condition Other Neutral Grassland) near the inner wall will be clearly demarcated as off-limits to construction activity and the workforce.

If necessary, protective boarding will be laid temporarily to permit use of the retained grassland by horticultural staff to plant up adjacent habitat.

Jersey Cudweed

The species grouping on the Application Site is part of a thriving population on the wider Tower of London site that is probably of Borough level importance. The loss of the 10 specimens of Jersey Cudweed on site would be of ecological significance at some level below Borough (Local). Though forming part of a thriving population on the wider Tower of London site of Borough level importance, the survival of that population will not depend on the survival of the small peripheral patch of individuals in the Application Site.

The mitigation proposals for this species on site are summarised in **Appendix 5.0** in the form of a draft application for Natural England licensing. They involve creating a mitigation area for the species within ca. 6 m of the site of loss to ramp construction.

Historic Royal Palaces has listed Jersey Cudweed as a target species to attract to the Legacy Landscape of the moat (proposals currently under development). Accordingly, the pre-existence of the species on the land holding is considered a very positive finding – and there will be great attention to detail to ensure that the mitigation /receptor area is successful and indeed further opportunities for colonisation of this species are provided elsewhere in the envisaged moat landscape.

Knotted Hedge-parsley

Whilst Knotted Hedge-parsley may or may not still merit the designation of 'notable' in Greater London where it has expanded in distribution, it is a relatively interesting species that HRP wishes to preserve on site. The 480 m² area of lawn to be lost to the project namely across parcels Mod Grass W1, ONG M_2 and part

of ONG_M1 all support this species at an occurrence level of 'Occasional to Frequent' (ca. 25% cover on average).

It is proposed that turfs with the plants and seedbank be taken from key areas of this species within Parcel Mod Grass W1 and ONG_M2 before their full topsoil strip as part of site enabling works for the proposed habitat creation. These turfs will be moved to the HRP nursery and maintained as turf area in sunny conditions. Cutting will be undertaken to create a varied sward, with shorter areas to encourage seed germination and somewhat longer areas for the plants to flower and seed more profusely.

Plants or samples of soil with the seedbank will be used to reinforce the population of the species in the retained areas of Parcel ONG_M1 and Mod Grass_1. They will also be added locally to the mitigation area created for Jersey Cudweed (see **Appendix 5.0**) where the plants should reach a greater stature than in mown lawns.

Management prescriptions for these receptor areas will thereafter preclude any use of fertilisers or herbicides. The cutting regime will be adjusted to maintain colonisation opportunities for annuals, including raking in autumn if necessary.

Whilst the moat Legacy Landscape project has yet to be submitted for planning, the present scheme will complement it in terms of ecological enhancement of the moat. Habitat for Knotted Hedge-parsley is to be integrated into the Legacy Landscape design and this would be partly seeded with the stored seed from implementation of the present project.

6.1.3 Breeding Birds and Bats

Potential impacts

Construction of the project will not cause direct or indirect adverse ecological impacts on nesting birds or roosting bats as no suitable features are either being removed or modified or are sufficiently close to be at risk.

There is the potential for some effect on foraging and commuting bats due to artificial light required at times during construction.

Mitigation

All construction staff will be briefed relating to the (very low) risk of occurrence of breeding birds or roosting bats and the required courses of action should they be encountered.

In the highly unlikely event evidence of nesting birds or roosting bats were to be found within the working areas or in the relevant vicinity, all works would cease and a suitably qualified ecologist contacted for advice.

If bird nesting were to be encountered within the Application Site, works would be modified in space or time to permit any breeding birds to complete their nesting activity.

The presence of roosting bats could instigate the need for modification to works in space or time to avoid disturbance to the roost, further survey and perhaps Protected Species Licensing.

Best practice is to be followed for noise suppression of all hand-held power tools or other plant.

Any use of construction lighting will be short lived and directed towards the works.

6.2 OPERATIONAL PHASE

6.2.1 Designated Sites

There will be no significant operational ecological effects of project operation on the Thames SMI, nor on any other sites designated for nature conservation.

6.2.2 Long-term Management of Habitats and Species

Created habitats will be managed to maturity by dedicated and expert maintenance staff employed by Historic Royal Palaces. For further detail, please see the *Draft Habitat Management and Monitoring Plan* (Biodiversity by Design, 2024b), which is being submitted separately. This documents also sets out how risks to habitats will be managed in the long-term.

Grassland is to be cut according to meadow establishment and long-term maintenance regimes with removal of arisings.

Any damage to grassland habitats and littering by the public are to be addressed rapidly, for e.g., through the installation of signage, local protective fencing, and reseedling as required to maintain their appearance and ecological integrity as well as the setting of the World Heritage Site.

The created site for Jersey Cudweed is to be managed long-term to promote the growth and flowering and seeding of the species; and interpretation will be provided to indicate its interest and importance.

Detailed briefing notes for management of the non-native herbaceous swards will be prepared by the design team to guide the expert estate management team. The aim will be to maximise value to native biodiversity whilst meeting other aesthetic functions enshrined in the project brief for the Legacy Landscape.

6.2.3 Bats

Potential Impacts

The bats currently using the moat and Wharf (in very low numbers) for foraging and commuting are relatively light-tolerant species. The local environment at night is lit by floodlights mounted on the outer wall of the moat that point towards the inner wall. There is also considerable general lighting from Tower Bridge itself (see previous). The Wharf is lit by tall streetlights.

This said, any increase in nocturnal levels of artificial lighting is considered generally undesirable for bats, even for those species that sometimes feed opportunistically at luminaires (see ILP, 2023). There will be a minor net increase in nocturnal light levels (along the ramp's outer handrail). This should, however, be set within the context of wider Legacy Landscape proposals that will enhance the Tower of London site for bats and other wildlife.

Mitigation

The integrated lighting on the ramp will consist of down-cowled, low-intensity LED lights with a 2700K warm white colour temperature, offering good colour rendering and a wavelength greater than 550 nm. This complies with the ILP (2023) guidance regarding bats and lighting.

The overall change in nocturnal light levels after project implementation compared with the former use of The Reveller Building will be *de minimis* and negligible effects on foraging or commuting patterns by bats currently using the moat are anticipated.

Proposals to modernise and improve the lighting of the moat, while significantly reducing overall light levels, are being developed and will be included in a future planning application for the Moat Legacy landscape.

7.0 SIGNIFICANCE OF RESIDUAL ECOLOGICAL EFFECTS

7.1 CONSTRUCTION PHASE

Designated Sites

Any impacts of construction on designated sites will be of **negligible ecological significance**.

Jersey Cudweed

The mitigation proposals for the loss of a 1 m² area of flint gravels supporting 10 specimens of Jersey Cudweed will be implemented carefully with subsequent thorough follow-up monitoring and management. The main mitigation relates largely to creation of habitat for the species in the scheme – and hence applies within the scheme’s operational phase. The site chosen will provide the species with great habitat security in the long-term and better overall growth conditions. Historic Royal Palaces has listed Jersey Cudweed as an internal target species for conservation and habitat creation measures in the Legacy Moat Landscape project. HRP management has already been adapted to protect the larger assemblage of individuals that have colonised the ancient Wharf of the Tower and to increase vigilance for further occurrences of the species across the wider Tower of London site under HRP stewardship.

Residual Significance – Negligible to positive in a Local context

Grasslands Supporting Knotted Hedge-parsley

The loss of compartments ONG_M1, Mod Grass W1 and part of ONG M_2, which support significant amounts of the London Notable Knotted Hedge-parsley will be mitigated by the focussed management for the species in the retained lawn areas. Efforts will also be made to establish the species in the related but barer habitat of the Jersey Cudweed mitigation area (see below).

It is estimated that the area of lawn supporting the species at a cover of ca. 25% that will be lost is less than 15% of such habitat over the wider Tower of London site under HRP control. The loss due to the present proposals, therefore, is not predicted to significantly adversely affect the local conservation status of the species within the Tower of London Site as a whole.

Whilst not crucial to the consenting of the present proposals it is also highly relevant to note that HRP intend (within the context of the wider forthcoming Moat Legacy Landscape project), to create new habitats for this species in various locations across the moat landscape. These areas can and will be seeded with the seedbank taken from the lawns to be lost to the present project.

Residual Ecological Significance – Negligible.

Fauna

As the only valued fauna 'within the site' are small numbers of light-tolerant foraging and commuting bats, any residual impacts of the construction of the scheme on valued fauna will be short-term and mitigated by good construction practice.

Residual Significance – Negligible

7.2 OPERATIONAL PHASE

The net effects of the operational phase of the project will be positive and of Local significance in the context of the Tower of London Site.

The project is fully in accordance with National and Local policy as regards biodiversity. It complies with London Plan Policy (see Appendix 1.0) Policy D.OWS3 – Open Space and Green Grid Networks in that:

- It provides essential facilities for public access to the moat, thereby increasing its accessibility.
- It increases open space in creating a new level of ramped public access above habitat below - and a higher quality of open space through provision of new habitats of greater ecological importance.
- It will not result in any net adverse impacts on the existing ecological, heritage or recreational value of the open space or the flood risk levels within and beyond the boundaries of the site.
- It will secure the long-term conservation status on the site of both Jersey Cudweed and Knotted Hedge-parsley.
- It is an outdoor and recreational space or facility, the recreational benefits of which would greatly outweigh any harm caused by minor loss of soft estate under hard estate.

Moreover, the new habitats constitute a first phase in the Legacy Landscape project for the moat, to come forward in 2026, which it is hoped will produce net ecological benefits of significance in a Borough context.

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APPENDIX 1.0: LEGISLATION AND POLICY

LEGISLATION

Statutes

The Conservation of Habitats and Species Regulations 2017 transposed the requirements of the European Habitats Directive (Council Directive 92/43/EEC) and Birds Directive (Council Directive 2009/147/EC on the Conservation of Wild Birds, replacing Directive 79/409/EEC) into UK law, enabling the designation of protected sites and species at a European level. These regulations were amended two years later by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations (2019) in accordance with Schedule 7 to the European Union (Withdrawal) Act 2018, maintaining the protection status in UK law after the UK's departure from the EU.

The Wildlife and Countryside Act 1981 (as amended) forms the key piece of UK legislation relating to the protection of habitats and species.

The Countryside Rights of Way Act 2000 provides additional support to the Wildlife and Countryside Act 1981; for example, increasing the level of protection for certain species of reptiles.

The Wild Mammals (Protection) Act 1996 sets out the welfare framework in respect to wild mammals, prohibiting a range of activities that may cause unnecessary suffering.

Species and Habitats of Principal Importance for Conservation in England and Wales and priority habitats are species which are targeted for conservation. The government has a duty to ensure that involved parties take reasonable practical steps to further the conservation of such species under Section 41 of the Natural Environment and Rural Communities Act 2006. In addition, the Act places a biodiversity duty on public authorities who *'must, in exercising their functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'*. Criteria for selection of national priority habitats and species in the UK include international threat and marked national decline.

Bats

All British species of bat are listed on the Wildlife and Countryside Act 1981 (as amended) Schedule 5. It is an offence to:

- deliberately kill, damage, take (Section 9(1)) a bat;
- intentionally or recklessly disturb a bat whilst it occupies a place of shelter or protection (Section 9(4)(b)); or to

- deliberately or recklessly damage, destroy or obstruct access to a bat roost (Section 9(4)(c)).

All British bats are listed on the Conservation of Habitats and Species Regulations 2017, Schedule 2. Regulation 43 strengthens the protection of bats under the 1981 Act against deliberate capture, injuring or killing (Regulation 43(1) (a)), deliberate disturbance (Regulation 43 (1) (b)) and damage or destruction of a resting place (Regulation 43(1) (d)).

A bat roost is defined as any structure or place which is used for shelter or protection, irrespective of whether bats are resident. Buildings and trees may be used by bats for several different purposes throughout the year including resting, sleeping, breeding, raising young and hibernating.

Use depends on bat age, sex, condition and species as well as the external factors of season and weather conditions. A roost used during one season is therefore protected throughout the year and any proposed works that may result in disturbance to bats, and loss, obstruction of or damage to a roost are licensable.

Nesting Birds

Birds and their nests are protected by the Wildlife and Countryside Act 1981 (as amended). This Act gives protection to all species of bird as regards killing and injury, and to their nests and eggs as regards taking, damaging and destruction. Certain species listed on Schedule 1 of the Act, are afforded additional protection against disturbance and persecution.

Plants

Plants on Schedule 8 of the Wildlife and Countryside Act (1981) as amended are protected against:

- intentional picking, uprooting or destruction (Section 13 1a);
- selling, offering for sale, possessing or transporting for the purpose of sale (live or dead, part or derivative) (Section 13 2a); and
- advertising (any of these) for buying or selling (Section 13 2b)

A Natural England Licence is required for seed / soil bank collection, plant collection, destruction or disturbance.

POLICY

The National Planning Policy Framework 2024

The National Planning Policy Framework 2024 (NPPF) establishes a presumption in favour of 'sustainable' development. For development to be sustainable there should be at least no-net-loss of ecological resources. The NPPF prescribes that plans and developments should seek to minimise impacts on biodiversity and

provide net gains in biodiversity where possible. Biodiversity enhancements should contribute to the Government's commitment to sustainable development by improving biodiversity, including through the restoration and enhancement of Priority Habitats, the protection and recovery of Priority Species (see above), and by establishing coherent ecological networks that are more resilient to current and future pressures.

Of key relevance to the landscape modifications suggested in the present document, the NPPF stipulates that:

'Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating and drought from rising temperatures.'

'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.'

With respect to World Heritage Assets the NPPF states:

"Local planning authorities should look for opportunities for new development within Conservation Areas and World Heritage Sites, and within the setting of heritage assets, to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to the asset (or which better reveal its significance) should be treated favourably."

The UK National Biodiversity Strategy & Action Plan (NBSAP) 2025 - Blueprint for Halting and Reversing Biodiversity Loss

This strategic plan relates mainly to protection of biodiversity key sites and biodiversity enhancement in rural areas of the UK but also aims to reduce pollution from all sources to levels that are not harmful to wildlife. The Plan has 23 targets, those of greatest relevance to the present application being (in summary):

- Target 4: Halt human induced extinction of known threatened species and for the recovery and conservation of species, in particular threatened species.
- Target 5: Eliminate, minimise, reduce and/or mitigate the impacts of invasive alien species on biodiversity and ecosystem services.

- Target 7: Reduce pollution risks and the negative impact of pollution from all sources by 2030, to levels that are not harmful to biodiversity and ecosystem functions and services.
- Target 8: Minimise the impact of climate change and ocean acidification on biodiversity and increase its resilience through mitigation, adaptation and disaster risk reduction actions, including through nature-based solutions.
- Target 9: Ensure that the management and use of wild species are sustainable.
- Target 11: Restore, maintain and enhance nature's contributions to people, including ecosystem functions and services.
- Target 12: Significantly increase the area and quality, and connectivity of, access to, and benefits from green and blue spaces in urban and densely populated areas sustainably, by mainstreaming the conservation and sustainable use of biodiversity, and ensure biodiversity-inclusive urban planning, enhancing native biodiversity, ecological connectivity and integrity, and improving human health and well-being and connection to nature, and contributing to inclusive and sustainable urbanisation and to the provision of ecosystem functions and services.
- Target 20. Capacity building and technology transfer for the conservation and sustainable use of biodiversity.
- Targets 22 & 23: Ensure representative benefit through Local Communities and minority groups of access to the benefits provided by biodiversity (amongst other goals).

National Character Areas: Area 112 – Inner London

National Character Areas (NCAs) divide England into 159 distinct areas. Each is defined by a unique combination of: landscape, biodiversity, geodiversity, history, cultural and economic activity. NCA boundaries follow natural lines in the landscape, not county or district boundaries. Of relevance to the present project, the Government recommends that NCAs be used to inform choices about landscape change and guide actions to achieve nature recovery.

The Tower of London site is at the eastern end of Character Area 112. Of particular relevance to the present project the environmental opportunities listed in the profile for this Character Area include to:

- *'Protect and enhance the landscape of the River Thames and its tributaries....*
- *Protect and enhance the network of Inner London's green spaces so that it provides services where people need*

them, promotes recreational and educational opportunities, supports biodiversity, reinforces local character and is resilient to future challenges such as climate change... e.g. by:

- *Conserving, enhancing, restoring and creating features of wildlife value ..*
- *Improving the management of green spaces to increase the quality and range of services such as recreation, wildlife value, climate regulation and flood alleviation.*
- *Improving the management of green spaces... to increase the value to local character.*
- *Ensuring that development and regeneration demonstrate long-term funding for the creation, improvement and management.*
- *Reconnect people with nature by providing opportunities and access to engage with nature close to where they live, work and play, reinforcing sense of place, improving recreation and providing benefits for biodiversity and climate regulation. e.g. by:*
 - *Improving access to nature by enhancing the nature value of accessible sites, opening access to restricted sites and, where feasible, creating new sites within which to experience nature.*
 - *Building capacity and supporting local communities to develop and deliver projects for the enhancement of local landscapes and provision of habitat such as river restoration, tree planting, growing food and green space improvement.*
 - *Building capacity and support for local communities to recognise the value of natural landscape features in neighbourhood planning and exploring opportunities for managing local green spaces.*
 - *Promoting the use of green infrastructure to benefit health and wellbeing, for example through health walks.*
 - *Developing and supporting volunteering for biological recording, conservation, green*

space management and monitoring and control of invasive species.

- *Building capacity within local communities for protection and enhancement of local green spaces through neighbourhood planning and community ownership and management.'*

The UK Biodiversity Framework 2024

This UKBF sets out the objectives for shared work across the four countries of the UK illustrating key themes, all being relevant to the moat Legacy Landscape proposals vis:

- Protecting and restoring nature;
- Sustainable use and resource management; and
- Mainstreaming and finance — harnessing private sector (alongside government) funding to enable transformational change in response to biodiversity loss and climate change.

London's Nature Improvement Areas

The Greater London Authority (GLA) is preparing a Local Nature Recovery Strategy (LNRS) for London and in doing so has already identified the Tower of London as a site where '*opportunity is for General Habitat Improvement of Mixed Habitat*' (see **Figure App 1.1**). This is interpreted in the context of the present project to mean that the creation of any Tower Hamlets Local Biodiversity Action Plan habitats would be favoured; but that even species-poor lawn areas in this highly urban context are valued a part of 'mixed habitat'.

London Plan 2021 & Tower Hamlets Local Plan 2031 & associated Biodiversity Action Plans

Synopsis

The London Plan 2021 and Tower Hamlets Local Plan 2031 set out strategic frameworks for the sustainable development and growth of London and Tower Hamlets respectively, addressing various key issues including environmental sustainability. Biodiversity-related policy is set out in the Green Infrastructure and Natural Environment chapter of the London Plan – specifically as Policy G6 Biodiversity and Access to Nature. In the Tower Hamlets Local Plan Policy D. ES3 Urban greening and biodiversity, Policy S.OSW2 Enhancing the network of water spaces, and Policy S.ES1 Protecting and managing our environment and Policy D.OWS3 Open space and Green Grid networks are particularly relevant to biodiversity preservation and enhancement, with the aim of meeting the objectives of the latest Tower Hamlets Local Biodiversity Action Plan and Thames River Basin Management Plan.

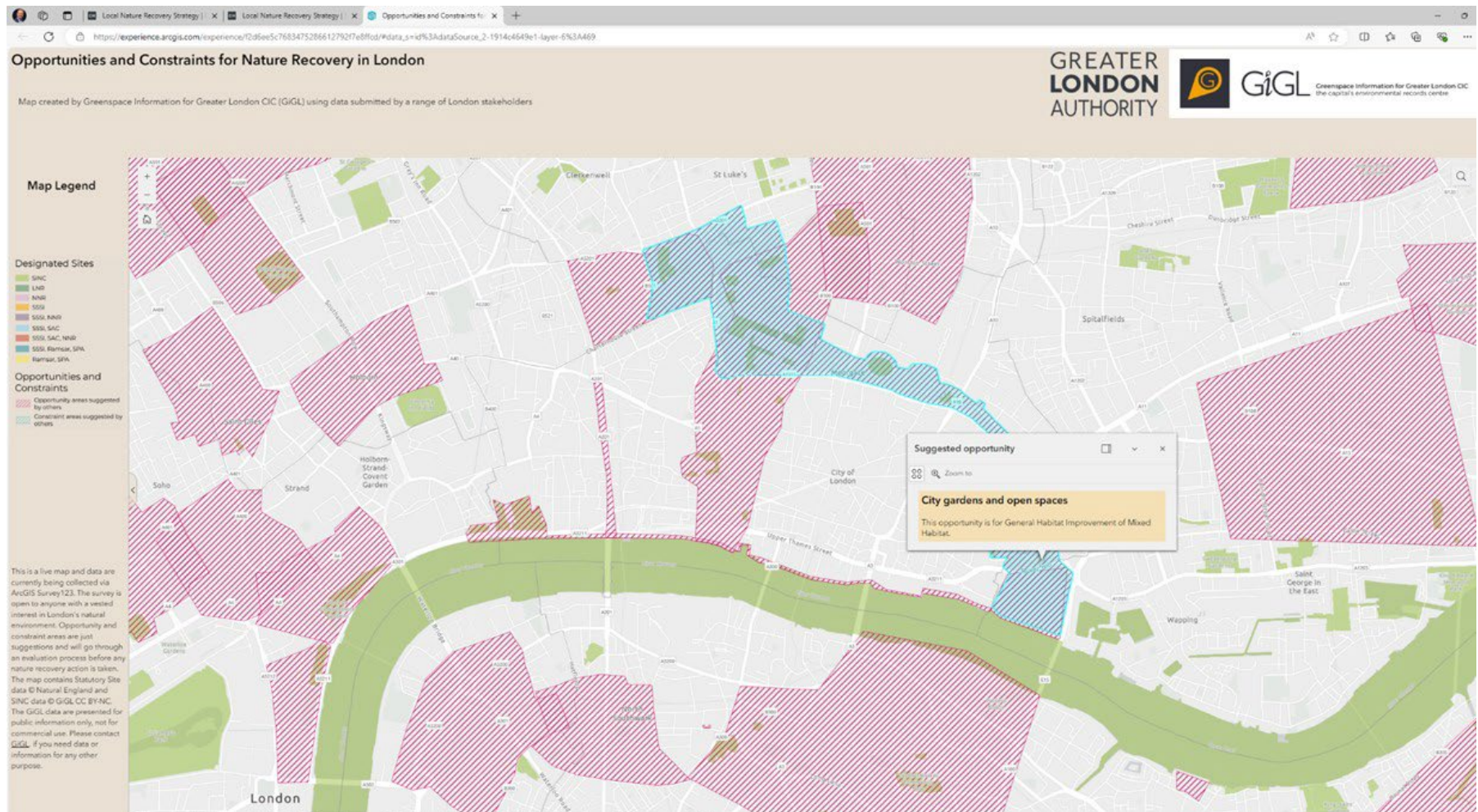


Figure App 1.1: Nature Improvement Areas covering the Tower of London Site and environs. The opportunity already identified is for General Habitat Improvement of Mixed Habitat.

Specifically with respect to the Biodiversity Action Plan the Local Plan states that:

'The latest Tower Hamlets Local Biodiversity Action Plan should give details of priority habitats and/or features for priority species (see Parts 1 and 2). Features of biodiversity or ecological value include:

- a. Linear corridors, such as watercourses, hedgerows and buffer zones*
- b. Veteran trees*
- c. Old hedges*
- d. Habitats or species identified as local, London, or national priorities, and features which might support such species'*

In summary, these plans requires that development should seek to minimise adverse impacts on biodiversity and leave biodiversity overall in a better state than before implementation of the development, i.e., achieve a net gain for biodiversity, which is in keeping with the requirements of the Environment Act (2021). The approach should include, wherever possible, contributing to establishing coherent ecological networks that are more resilient to current and future pressures.

The entire moat of the Tower of London and the peripheral areas are defined as Public Open Space (see **Figure App 1.2**).

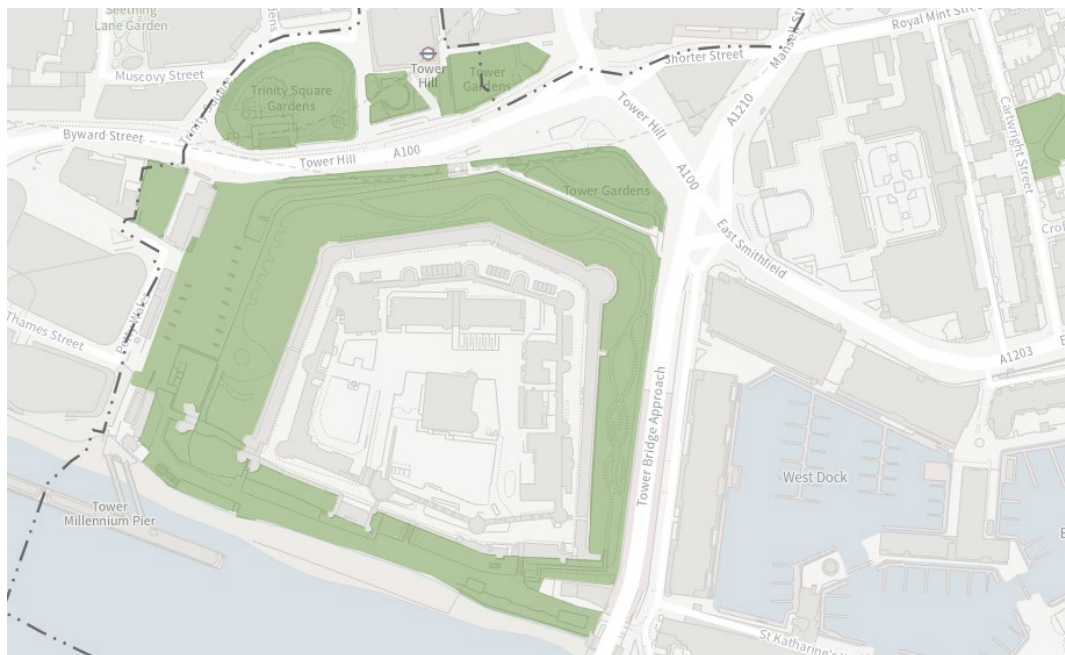


Figure App1.2: Publicly Accessible Open Space (mid green shading) according to the London Borough of Tower Hamlets Local Plan 2031 Adopted Policies Map, adopted 2020.

The Local Plan also formally defines the Green Grid network for London. Elements of the All-London Green Grid connect Trinity Square Gardens to the north west of The Tower of London Site down through the treelines of Tower Hill and The Wharf (see **Figure App1.2**). The whole of the Tower of London Site (including the Application Site) is therefore located

within the Green Grid Buffer Zone. The All London Green Grid policy framework comprises the London Plan policies on green infrastructure and urban greening - and those relating to open spaces, biodiversity, trees & woodland, and river corridors - plus the All London Green Grid Supplementary Planning Guidance and a series of ALGG Area Frameworks. The ALGG aims to:

- Increase access to open space.
- Conserve landscapes and the natural environment and increase access to nature.
- Adapt the city to the impacts of climate change.
- Make sustainable travel connections and promote cycling and walking.
- Encourage healthy living.
- Promote sustainable food growing.
- Enhance visitor destinations and boost the visitor economy.
- Promote green skills and sustainable approaches to design, management and maintenance.

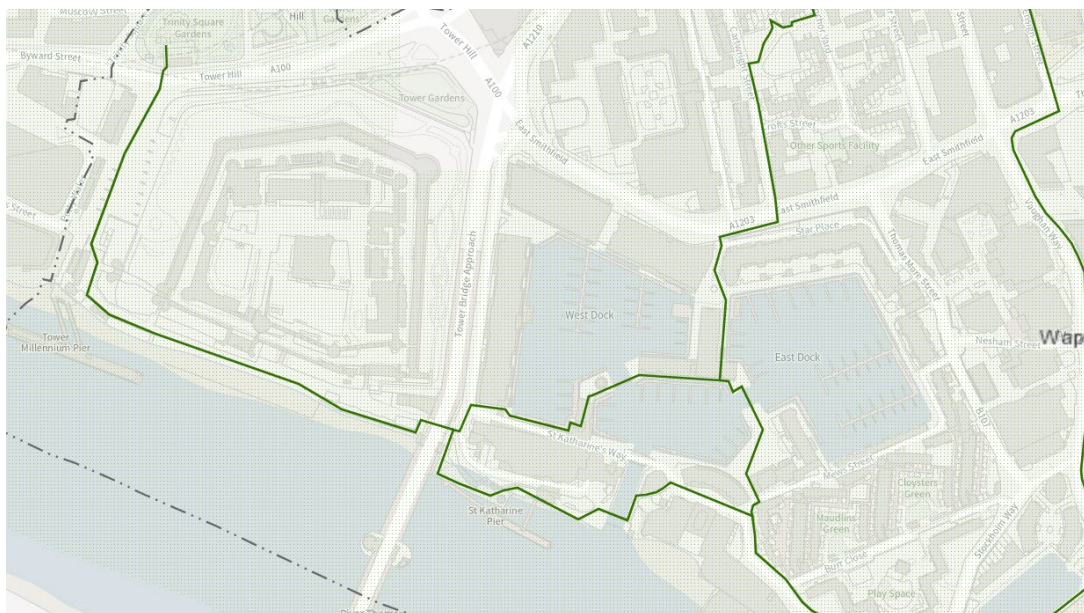


Figure App 1.2: Location of the *All-London Green Grid* (dark green lines) and *Green Grid Buffer zone* (green stippling) according to the *London Borough of Tower Hamlets Local Plan 2031 Adopted Policies Map*, adopted 2020 in relation to the *Tower of London site*.

Of key relevance here is Policy D.OWS3 – Open space and Green Grid networks; emphasis added (as boldening of text), where of particular relevance to the present proposals:

‘Development on areas of open space (excluding Metropolitan Open Land) will only be supported in exceptional circumstances where:

a. it provides essential facilities that enhance the function, use and enjoyment of the open space (e.g. ancillary sport facilities to the playing field use), or

b. as part of a wider development proposal, both an increase of open space and a higher quality of open space can be achieved, and

c. in any of the circumstances described in Parts 1(a) and (b), it is demonstrated that it will not result in any adverse impacts on the existing ecological, heritage or recreational value of the open space and the flood risk levels within and beyond the boundaries of the site, and

d. it is an outdoor sport and recreational space or facility, the sporting and recreational benefits of which would outweigh the harm resulting from its loss

2. Strategic development should contribute to the delivery of new publicly accessible open space on-site which should:

a. be visible and accessible from the public realm surrounding the site

b. be of a high quality and inclusive design and provide facilities to promote active recreation and healthy lifestyles

c. be well-connected and way-marked to other open spaces, in accordance with the Green Grid Strategy and Open Space Strategy

d. contribute towards meeting the demand that they generate through the provision of on-site sport facilities and/or providing additional capacity off-site

e. incorporate soft landscaping and sustainable urban drainage systems, and

f. enhance biodiversity, contributing to the objectives identified in the Local Biodiversity Action Plan.

3. Development should not solely rely upon existing publicly accessible open space to contribute towards on-site communal amenity space and child play space.

4. Development should not adversely impact on the public enjoyment, openness, ecological and heritage value of the borough's publicly accessible open spaces.

5. Development adjacent or in close proximity to the green grid network (i.e. 200 metres) is required to demonstrate that it will not have adverse impacts on the access, design, usability, biodiversity and recreational value of the green grid network. It should also contribute to the expansion and the enhancement of green grid links to connect communities to publicly accessible open spaces and water spaces as well as other main destination points, such as town centres, schools, health facilities and transport hubs.

6. Development of community allotments, gardens and pocket parks will be encouraged, particularly where they bring into use vacant developable land on a temporary basis.

Explanation

13.35 This policy aims to ensure that development does not negatively impact on the existing network of publicly accessible open space and contributes to its expansion and enhancement. It also seeks to maximise the opportunities for delivery of new open space and for enhancing accessibility and connectivity to the wider network, which is considered crucial to addressing the borough's open space deficiency...

13.36 Development on areas of open space will be resisted unless in the circumstances specified in Part 2(a) and (b). The types of development that are considered to be acceptable in principle within areas of open space include changing rooms, play equipment and seating. They should be of a scale and function proportionate to the open space in which they are to be located and should be purely ancillary to it...

13.46 Development sites located adjacent to or in close proximity to the green grid (i.e. within the Green Grid Buffer Zone, (as shown on the Policies Map) – including the Lee Valley Regional Park, Lea River Park, Thames Path National Trail and canal towpaths - will be required to contribute to linking and improving the connectivity of green grid links in accordance with the Green Grid Strategy and the Mayor of London's All London Green Grid Supplementary Planning Guidance. This should be supported with adequate signage and facilities for visitors and tourists. '

Flood Risk

The flood risk map on the UK government website indicates the Site lies within Flood Zone 3 (see **Figure App 1.3**). However, the Site is protected from fluvial flooding by the flood defences of The Wharf and the Thames Barrier.

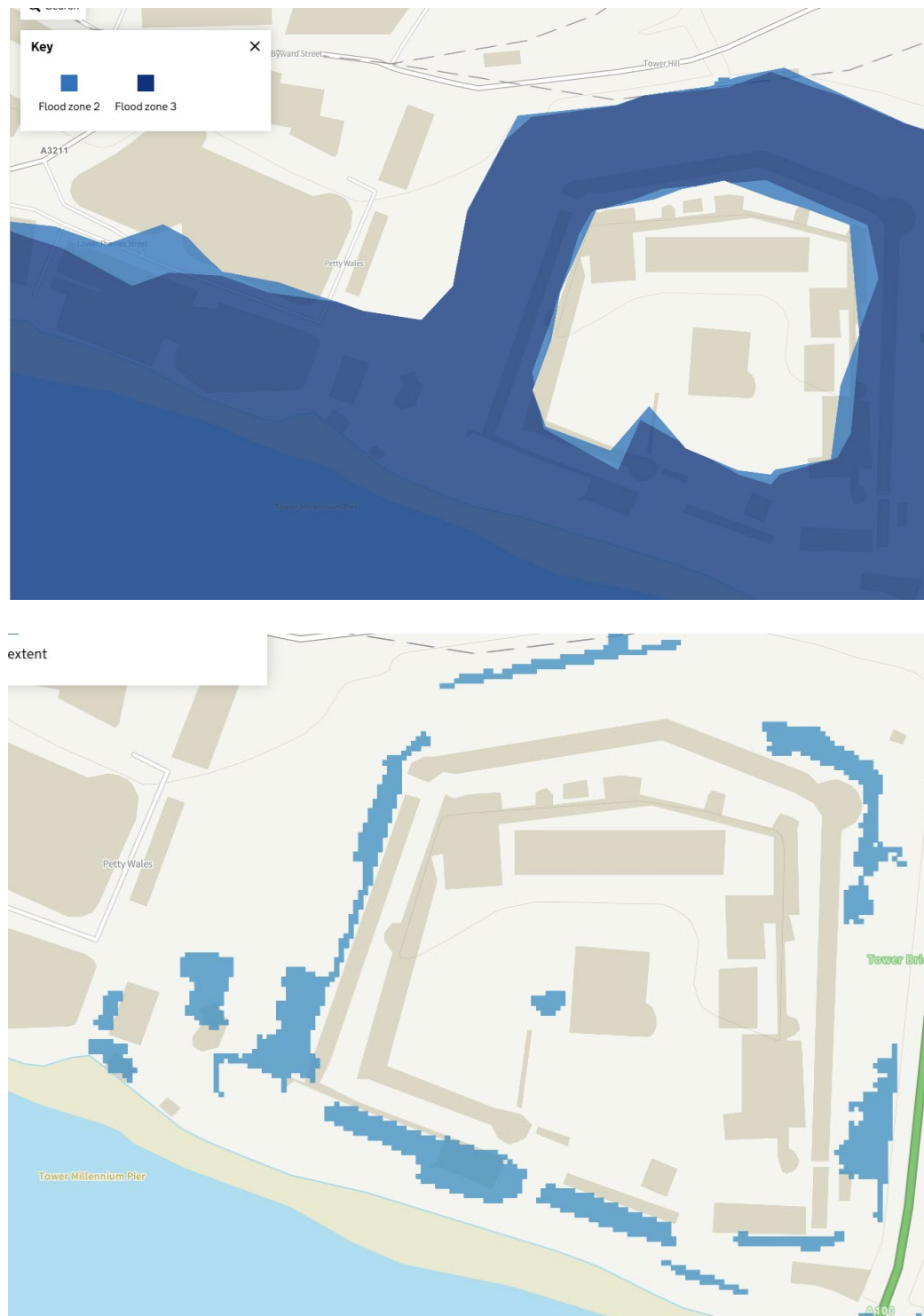


Figure App 1.3: Flood risk area at the Tower of London. Top: Fluvial Bottom: Surface Water.

Priority Habitats & Species

Habitats

The London Plan 2021 states (emphasis added):

“Development Plans should support the protection and conservation of priority species and habitats that sit outside the SINC network, and promote opportunities for enhancing them”.

Priority habitats and species not only refer to HPIs and SPIs as listed in the NERC Act (2006), but also those most relevant to London and Tower Hamlets, as listed in the London and Tower Hamlets BAPs (see below).

The Tower Hamlets Local Plan 2031 states (emphasis added):

“Proposals will be supported ... protecting and enhancing biodiversity, with the aim of meeting the objectives of the latest Tower Hamlets Local Biodiversity Action Plan ... Tower Hamlets Local Biodiversity Action Plan (2019-2024) identifies priority species and habitats to ensure the ongoing improvement of biodiversity across the borough”.

The Tower Hamlets BAP includes one priority habitat relevant to the present Application namely *Flower-rich grassland*. The Gardens and Ground Action Plan also promotes the provision of; *‘nectar-rich flowers to provide food for wild bees and other insects’*.

Species

The Tower Hamlets BAP also lists 18 species or species groups for priority conservation action. Of these those of likely relevance to the present application are:

- Bats (all species)
- House Sparrow *Passer domesticus*.
- All wild bee species.
- And to a lesser extent in terms of benefitting from a general increase in invertebrate biomass
- House Martin *Delichon urbicum*.
- Swift *Apus apus*.
- Sand Martin *Riparia riparia*
- Jersey Cudweed *Gnaphalium luteoalbum*

Policy encourages survey for, and the provision of new or enhanced habitats for these species including, where relevant, providing refuges.

World Heritage Site Setting

Concerning World Heritage Sites, the London Plan 2021 states:

'Development proposals in World Heritage Sites and their settings, including any buffer zones, should conserve, promote and enhance their Outstanding Universal Value, including the authenticity, integrity and significance of their attributes, and support their management and protection.'

The Tower Hamlets Local Plan 2031 has a similar policy and makes specific reference to the Tower of London.

Climate Change

On the topic of climate change the London Plan 2021 emphasises the importance of developing adaptive water management and flood risk solutions. Concerning drainage, the Plan states:

'Drainage should be designed and implemented in ways that promote multiple benefits including increased water use efficiency, improved water quality, and enhanced biodiversity, urban greening, amenity and recreation.'

The Tower Hamlets Local Plan 2031 also promotes policies for *"mitigating the risks of climate change ... maximising climate change adaptation measures"*. The urban heat island effect is also highlighted. Wetlands such as proposed under the present proposals, are particularly effective in mitigating this phenomenon. Furthermore, it states that *"London is an area of serious water stress ... [and that] Development must also address London's water stress by reducing water use"*.

Tower of London Strategies

The World Heritage Site Management Plan 2016

The *Tower of London World Heritage Site Management Plan 2016* cites the older *'Approaching the Tower' Conservation Plan 1999*, which outlines Historic Royal Palaces' policy regarding the designed landscape of the Tower. Conservation Policy 8 of the 1999 plan outlined the objective: *'To sustain and enhance ecologically important zones in and around the Tower of London, while balancing the needs of those interests with those of the built and buried heritage.'*

Gardens and Landscape Conservation Management Plan for the Tower of London 2012

The Gardens and Landscape Conservation Management Plan for the Tower of London 2012 (GLCMPTL) suggests that: *'the landscape strategy aims to diversify the grass sward within the moat to increase visual interest and increase the biodiversity value, particularly targeting solitary bees and other insects.'*

Her Majesty's Palace and Fortress: Tower of London Conservation Plan 2010

In this Plan Conservation Plan Policy ACC2 states that: *'HRP will continue to improve and enhance the provision of information and interpretation at the Tower and within its environs, maintaining an appropriate balance between accuracy and entertainment'.*

Conservation Plan Policy ESM3 states that: *'HRP will explore opportunities to establish rainwater harvesting and other forms of sustainable management. Automatic irrigation systems will be installed where required to the north of the causeway and other areas will be linked to harvested water supplies where possible'.*

Conservation Plan Policy ESM4 states that: *'HRP will give preference to selecting plant and tree species which are able to adapt to the changing climate'.*

APPENDIX 2.0: GRASSLAND QUADRAT LOCATIONS

The locations of grassland quadrats recorded for habitat condition assessment are show in **Figure App 2.1**.



Figure App 2.1:

Grassland (lawn) quadrat locations
– survey in February (yellow) and
June (green) 2025

APPENDIX 3.0: GRASSLAND QUADRAT DATA

OTHER NEUTRAL GRASSLAND

Parcel ONG_M1

General Description of Parcel

A mown lawn with above-average species richness and some species typical of other neutral grassland. The lawn habitat over the course of the year experiences both high soil moisture levels and high degrees of drought and insolation. The parcel may also have been affected over the past 4 years by seed spread and drift from Superbloom in the moat and the following Echo phase. The result is a species-rich lawn with numerous flowering 'lawn forbs'; and dominated by Red Fescue, not Rye-grasses.

Some 27 of higher plant were species noted, with *Festuca rubra*, *Bellis perennis*, *Achillea millefolium* abundant to locally abundant: *Agrostis capillaris*, *Agrostis stolonifera*, *Lolium perenne* and *Trifolium dubium* all Frequent to Occasional. Amongst the less common species was the London notable Knotted Hedge-parsley *Torilis nodosa* which was of Occasional to Frequent occurrence. Salad-burnet *Poterium sanguisorba* was also present but of Rare occurrence.

Other characteristics of the parcel were as follows:

Non-native plant species on Schedule 9 of the WCA:	None
Species per square metres excluding bryophytes	ca. 12 (ca. 11.2 excluding species indicative of poor condition, ca. 10.4 also excluding <i>Cotula</i>).
Grasses not sown for intensive agriculture:	<i>Festuca rubra</i>
Cover of broadleaved herbs and sedges	ca. 35%
Combined cover of rye-grass species and White Clover where present	ca. 20%
Cover of species indicative of suboptimal condition	< 2% <i>Trifolium repens</i> and <i>Plantago major</i>
Overall grass cover	ca. 70%
Forbs characteristic of medium, high and very high distinctiveness grassland	Salad-burnet, Yarrow, Ribwort
Sward height (cm)	All less than 7cm – close-mown
Cover of bare ground % of whole parcel including localized areas	ca. 5%
Physical damage e.g. excessive poaching damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	ca. 5 % = path edge

It could be argued that this habitat is Modified Grassland due to lacking sufficient species more typical of Other Neutral Grassland; but it clearly passes the definition of Other Neutral Grassland on three of the four criteria in UK Hab namely: > 20% cover of broadleaved herbs and sedges, > 8 species per square metre (excluding bryophytes), > 1 grass not generally sown for intensive agricultural production and cover of Rye-grasses and White Clover <30%.





Parcel ONG_M1 in late June 2025 after very tight mowing.





Damage to south end of Parcel ONG_M1 in June 2025.


Quadrat Records

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED - 1	TQ 33719 80440	South Moat. Eastern corner opposite The Reveller	03_02_25	Helen Saunders Dr Mike Wells
Parcel: ONG_M1		Photo		
Species Scientific Name		Species Common English Name	Domin Value	
<i>Achillea millefolium</i>		Yarrow	7	
<i>Bellis perennis</i>		Daisy	6	
<i>Prunella vulgaris</i>		Self-heal	6	
<i>Trifolium repens</i>		White Clover	4	
<i>Festuca rubra</i>		Red Fescue	5	
<i>Lolium perenne</i>		Perennial Rye-grass	5	
<i>Trifolium dubium</i>		Lesser Trefoil	5	
<i>Geranium molle</i>		Dove's-foot Crane's-bill	4	
<i>Trifolium repens</i>		White Clover	4	
<i>Cotula australis</i>		Annual Buttonweed (neophyte)	3	
<i>Cerastium fontanum</i>		Common Mouse-ear	2	
<i>Taraxacum officinale</i> agg.		Dandelion	2	
<i>Plantago major</i>		Greater Plantain	1	
Total species = T		12		
Species indicative of suboptimal condition = U Number in brackets includes other species particular to the site that might also indicate suboptimal conditions.		2(3) White Clover, Greater Plantain (Annual Buttonweed)		
Revised total species = T-U Number in brackets excludes other species particular to the site that might also indicate suboptimal conditions.		10 (9)		

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED - 2	TQ 33704 80439	South Moat. Eastern corner opposite The Reveller	03_02_25	Helen Saunders Dr Mike Wells
Parcel: ONG_M1		Photo		
Species Scientific Name		Species Common English Name		Domin Value
<i>Festuca rubra</i>		Red Fescue		9
<i>Bellis perennis</i>		Daisy		5
<i>Geranium molle</i>		Dove's-foot Crane's-bill		5
<i>Cardamine hirsuta</i>		Hairy Bitter-cress		4
<i>Cotula australis</i>		Annual Buttonweed (neophyte)		4
<i>Lolium perenne</i>		Perennial Rye-grass		4
<i>Poterium sanguisorba</i>		Salad-burnet		2
<i>Torilis nodosa</i>		Knotted hedge-parsley		2
<i>Trifolium dubium</i>		Lesser Trefoil		2
<i>Veronica sp.</i>		a speedwell		2
Total species = T		10		
Species indicative of suboptimal condition = U Number in brackets includes other species particular to the site that might also indicate suboptimal conditions.		(1) (Annual Buttonweed)		
Revised total species = T-U Number in brackets excludes other species particular to the site that might also indicate suboptimal conditions.		10 (9)		

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED - 3	TQ 33695 80442	South Moat. Eastern corner opposite The Reveller	03_02_25	Helen Saunders Dr Mike Wells
Parcel: ONG_M1		Photo		
Species Scientific Name		Species Common English Name	Domin Value	
<i>Festuca rubra</i>		Red Fescue	7	
<i>Agrostis stolonifera</i>		Creeping-bent	6	
<i>Trifolium dubium</i>		Lesser Trefoil	4	
<i>Bellis perennis</i>		Daisy	4	
<i>Cotula australis</i>		Annual Buttonweed (neophyte)	4	
<i>Erodium moschatum</i>		Musk Stork's-bill	4	
<i>Geranium sp.</i>		a crane's-bill	4	
<i>Lolium perenne</i>		Perennial Rye-grass	4	
<i>Poterium sanguisorba</i>		Salad-burnet	2	
<i>Veronica sp.</i>		a speedwell	2	
<i>Stellaria media</i>		Common Chickweed	1	
<i>Taraxacum officinale</i>		Dandelion	1	
Total species = T		12		
Species indicative of suboptimal condition = U Number in brackets includes other species particular to the site that might also indicate suboptimal conditions.		(1) (Annual Buttonweed)		
Revised total species = T-U Number in brackets excludes other species particular to the site that might also indicate suboptimal conditions.		12 (11)		

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED - 4	TQ 33686 80442	South Moat. Eastern corner opposite The Reveller	03_02_25	Helen Saunders Dr Mike Wells
Parcel: ONG_M1		Photo		
Species Scientific Name		Species Common English Name	Domin Value	
<i>Bellis perennis</i>		Daisy	6	
<i>Agrostis stolonifera</i>		Creeping-bent	5	
<i>Veronica sp.</i>		a speedwell	5	
<i>Agrostis capillaris</i>		Common-bent	4	
<i>Prunella vulgaris</i>		Self-heal	4	
<i>Trifolium dubium</i>		Lesser Trefoil	4	
<i>Agrostis capillaris</i>		Common-bent	4	
<i>Festuca rubra</i>		Red Fescue	3	
<i>Cotula australis</i>		Annual Buttonweed (neophyte)	2	
<i>Taraxacum officinale</i>		A dandelion	2	
<i>Cardamine hirsutum</i>		Hairy bitter-cress	1	
<i>Geranium sp.</i>		a crane's-bill	1	
Total species = T		11		
Species indicative of suboptimal condition = U Number in brackets includes other species particular to the site that might also indicate suboptimal conditions.		1 (Annual Buttonweed)		
Revised total species = T-U Number in brackets excludes other species particular to the site that might also indicate suboptimal conditions.		11 10]		

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED-22 Q43 of June	TQ 33715 80439 GPS_ID - 560	South Moat. Eastern corner opposite The Reveller	11_06_25	Sharon Pilkington Dr Mike Wells
Parcel: ONG_M1		Photo		
Species Scientific Name		Species Common English Name	Domin Value	
<i>Festuca rubra</i>		Red fescue	7	
<i>Prunella vulgaris</i>		Self-heal	5	
<i>Achillea millefolium</i>		Yarrow	4	
<i>Agrostis stolonifera</i>		Creeping Bent	4	
<i>Bellis perennis</i>		Daisy	4	
<i>Poa humilis</i>		Spreading Meadow-grass	3	
<i>Cerastium glomeratum</i>		Sticky Mouse-ear Chickweed	2	
<i>Geranium molle</i>		Dove's-foot Crane's-bill	2	
<i>Torilis nodosa</i>		Knotted Hedge-parsley	2	
<i>Plantago major</i>		Greater Plantain	1	
<i>Poa annua</i>		Annual Meadow-grass	1	
<i>Trifolium dubium</i>		Lesser Trefoil	1	
<i>Trifolium repens</i>		White Clover	1	
<i>Veronica arvensis</i>		Wall Speedwell	1	
<i>Veronica serpyllifolia</i>		Thyme-leaved Speedwell	1	
Total species = T		15		
Species indicative of suboptimal condition = U Number in brackets includes other species particular to the site that might also indicate suboptimal conditions.		2 (Greater Plantain, White Clover)		
Revised total species = T-U Number in brackets excludes other species particular to the site that might also indicate suboptimal conditions.		13		

Parcel ONG_M2

General Description

A mown lawn habitat that over the course of the year experiences both high soil moisture levels and high degrees of drought and insolation. The parcel may also have been affected over the past 4 years by seed spread and drift from Superbloom in the moat and the following Echo phase. For over 3 years until 2024 this parcel experienced a different shade environment to ONG_M1 from the temporary Superbloom ramp.

Some 38 species of higher plant were noted, with *Festuca rubra* and *Achillea millefolium* abundant to locally abundant; *Prunella vulgaris*, *Bellis perennis*, *Cotula australis*, *Lolium perenne*, *Crepis biennis*, *Erodium moschatum* and *Geranium molle* all Occasional. *Poterium sanguisorba* was also present at low frequency. The 'London Notable' Knotted *Torilis nodosa* that appears to favour these extreme conditions that create some openness in the mown sward was present at a cover between Occasional and Frequent. *Erodium moschatum* is an Archaeophyte wool-alien, rather than a native plant, that again has found an ideal home in the moats' short grassland. *Malva neglecta* is another Archaeophyte of rough ground and waysides.

Other characteristics of the parcel were as follows:


Non-native plant species on Schedule 9 of the WCA:	None
Species per square metres excluding bryophytes	ca. 10.5 (ca. 10.1 excluding species indicative of poor condition, ca. 9.6 also excluding <i>Cotula australis</i>).
Grasses not sown for intensive agriculture:	<i>Festuca rubra</i>
Cover of broadleaved herbs and sedges	ca. 30%
Combined cover of rye-grass species and White Clover where present	ca. 15%
Cover of species indicative of suboptimal condition	< 1% <i>Plantago major</i>
Overall grass cover	ca. 60%
Forbs characteristic of medium, high and very high distinctiveness grassland	Salad-burnet, Yarrow, Ribwort
Sward height (cm)	All less than 7cm – close-mown
Cover of bare ground % of whole parcel including localized areas	ca. 7 % - along path edge and in patches
Physical damage e.g. excessive poaching damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	ca. 7 % = path edge and in patches





View of Parcel ONG_M2 — east end — in June 2025.


Quadrat Records


Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED - 5	TQ 33673 80447	South Moat. Eastern corner opposite The Reveller	03_02_25	Helen Saunders Dr Mike Wells
Parcel: ONG_M2		Photo	No image	
Species Scientific Name		Species Common English Name		Domin Value
<i>Festuca rubra</i>		Red Fescue		8
<i>Lolium perenne</i>		Perennial Rye-grass		5
<i>Bellis perennis</i>		Daisy		4
<i>Cotula australis</i>		Annual Buttonweed		4
<i>Bellis perennis</i>		Daisy		4
<i>Erodium moschatum</i>		Musk Stork's-bill		4
<i>Poterium sanguisorba</i>		Salad-burnet		4
<i>Taraxacum officinale</i> agg.		Dandelion		4
<i>Cerastium fontanum</i>		Common Mouse-ear		3
<i>Prunella vulgaris</i>		Self-heal		2
<i>Torilis nodosa</i>		Knotted Hedge-parsley		2
Total species = T		11		
Species indicative of suboptimal condition = U Number in brackets includes other species particular to the site that might also indicate suboptimal conditions.		(1) Annual Buttonweed		
Revised total species = T-U Number in brackets excludes other species particular to the site that might also indicate suboptimal conditions.		11 (10)		

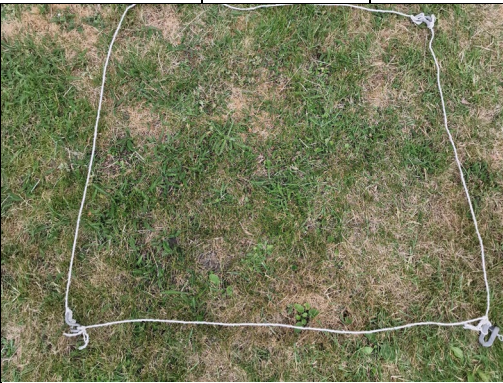
Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED - 6	TQ 33683 80449	South Moat. Eastern corner opposite The Reveller	03_02_25	Helen Saunders Dr Mike Wells
Parcel: ONG_M2		Photo		
Species Scientific Name		Species Common English Name	Domin Value	
<i>Cotula australis</i>		Annual Buttonweed	7	
<i>Erodium moschatum</i>		Musk Stork's-bill	5	
<i>Festuca rubra</i>		Red Fescue	5	
<i>Bellis perennis</i>		Daisy	4	
<i>Cerastium fontanum</i>		Common Mouse-ear	2	
<i>Epilobium hirsutum</i>		Great Willowherb	2	
<i>Poterium sanguisorba</i>		Salad-burnet	1	
<i>Conyza sumatrensis</i>		Sumatran Fleabane	1	
<i>Geranium</i> sp.		A crane's-bill	1	
<i>Lactuca</i> sp.		A sow-thistle	1	
<i>Poa annua</i>		Annual Meadow-grass	1	
<i>Taraxacum officinale</i> agg.		Dandelion	1	
Total species = T		12		
Species indicative of suboptimal condition = U Number in brackets includes other species particular to the site that might also indicate suboptimal conditions.		{1} Annual Buttonweed		
Revised total species = T-U Number in brackets excludes other species particular to the site that might also indicate suboptimal conditions.		12 {11}		

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED - 7	TQ 33700 80448	South Moat. Eastern corner opposite The Reveller	03_02_25	Helen Saunders Dr Mike Wells
Parcel ONG M2		Photo		
Species Scientific Name		Species Common English Name	Domin Value	
<i>Lolium perenne</i>		Perennial Rye-grass	5	
<i>Trifolium dubium</i>		Lesser Trefoil	5	
<i>Achillea millefolium</i>		Yarrow	4	
<i>Bellis perennis</i>		Daisy	4	
<i>Festuca rubra</i>		Red Fescue	4	
<i>Prunella vulgaris</i>		Self-heal	4	
<i>Torilis nodosa</i>		Knotted Hedge-parsley	4	
<i>Plantago lanceolata</i>		Ribwort Plantain	3	
<i>Poterium sanguisorba</i>		Salad-burnet	3	
<i>Cotula australis</i>		Annual Buttonweed	2	
<i>Geranium sp.</i>		A crane's-bill	2	
<i>Gallium album</i>		Hedge Bedstraw	1	
<i>Conyza sp.</i>		A fleabane	1	
Total species = T		13		
Species indicative of suboptimal condition = U Number in brackets includes other species particular to the site that might also indicate suboptimal conditions.		(1) (Annual Buttonweed)		
Revised total species = T-U Number in brackets excludes other species particular to the site that might also indicate suboptimal conditions.		13 (12)		

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED - 8	TQ 33710 80448	South Moat. Eastern corner opposite The Reveller	03_02_25	Helen Saunders Dr Mike Wells
Parcel ONG M2		Photo		
Species Scientific Name		Species Common English Name	Domin Value	
<i>Festuca rubra</i>		Red Fescue	9	
<i>Plantago lanceolata</i>		Ribwort Plantain	4	
<i>Malva neglecta</i>		Dwarf Mallow	4	
<i>Bellis perennis</i>		Daisy	4	
<i>Cotula australis</i>		Annual Buttonweed	2	
<i>Torilis nodosa</i>		Knotted Hedge-parsley	2	
<i>Achillea millefolium</i>		Yarrow	2	
<i>Taraxacum officinale</i> agg.		Dandelion	2	
<i>Erodium moschatum</i>		Musk Stork's-bill	2	
<i>Stellaria media</i>		Common Chickweed	1	
<i>Galium album</i>		Hedge Bedstraw	1	
Total species		11		
Species indicative of suboptimal condition = U Number in brackets includes other species particular to the site that might also indicate suboptimal conditions.		(1) (Annual Buttonweed)		
Revised total species = T-U Number in brackets excludes other species particular to the site that might also indicate suboptimal conditions.		11 (10)		

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED - 9	TQ 33719 80447	South Moat. Eastern corner opposite The Reveller	03_02_25	Helen Saunders Dr Mike Wells
Parcel ONG_M2		Photo		
Species Scientific Name		Species Common English Name	Domin Value	
<i>Festuca rubra</i>		Red Fescue	9	
<i>Bellis perennis</i>		Daisy	6	
<i>Poa annua</i>		Annual Meadow-grass	3	
<i>Taraxacum officinale</i>		A dandelion	1	
<i>Malva neglecta</i>		Dwarf Mallow	1	
<i>Achillea millefolium</i>		Yarrow	1	
<i>Torilis nodosa</i>		Knotted Hedge-parsley	1	
Total species		7		
Species indicative of suboptimal condition = U Number in brackets includes other species particular to the site that might also indicate suboptimal conditions.		0		
Revised total species = T-U Number in brackets excludes other species particular to the site that might also indicate suboptimal conditions.		7		

Quadrat Ref	GPS marker	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED - 20	557	TQ 33668 80417	East Moat / Reveller	11/06/2025	SP, HS
Parcel ONG_M2			Photo		
Species Scientific Name			Species Common English Name		Domin Value
<i>Festuca rubra</i>			Red Fescue		6
<i>Torilis nodosa</i>			Knotted Hedge-parsley		6
<i>Lolium perenne</i>			Perennial Rye-grass		4
<i>Plantago major</i>			Greater Plantain		4
<i>Taraxacum officinale</i>			Dandelion		4
<i>Bellis perennis</i>			Daisy		2
<i>Sherardia arvensis</i>			Field Madder		2
<i>Plantago lanceolata</i>			Ribwort Plantain		1
<i>Poa annua</i>			Annual Meadow-grass		1
<i>Poa humilis</i>			Spreading Meadow-grass		1
Total species			10		
Species indicative of suboptimal condition = U Number in brackets includes other species particular to the site that might also indicate suboptimal conditions.			1 (Greater Plantain)		
Revised total species = T-U Number in brackets excludes other species particular to the site that might also indicate suboptimal conditions.			9		

Quadrat Ref	GPS marker	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED- 21	558	TQ 33705 80449	South moat / Reveller	11/06/2025	SP, HS
Parcel ONG_M2			Photo		
Species Scientific Name			Species Common English Name	Domin Value	
<i>Festuca rubra</i>			Red Fescue	8	
<i>Achillea millefolium</i>			Yarrow	5	
<i>Bellis perennis</i>			Daisy	4	
<i>Poa humilis</i>			Spreading Meadow-grass	3	
<i>Agrostis stolonifera</i>			Creeping bent	2	
<i>Torilis nodosa</i>			Knotted Hedge-parsley	2	
<i>Crepis vesicaria</i>			Smooth Hawk's-beard	1	
<i>Plantago major</i>			Greater Plantain	1	
<i>Taraxacum officinale</i>			Dandelion	1	
Total species			9		
Species indicative of suboptimal condition = U Number in brackets includes other species particular to the site that might also indicate suboptimal conditions.			1(Greater Plantain)		
Revised total species = T-U Number in brackets excludes other species particular to the site that might also indicate suboptimal conditions.			9		

MODIFIED GRASSLAND

Parcel Mod Grass_W1

General Description of Parcel

A tightly mown lawn with low species richness and very patchily resown – with some patches dominated by *Lolium perenne* and others by finer leaved grasses such as *Festuca rubra*, *Agrostis canina* and *Agrostis capillaris*. The 'London Notable' Knotted Hedge-parsley *Torilis nodosa* that appears to favour these extreme conditions that create some openness in the mown sward was present at a cover between Occasional and Frequent.

Some 21 species of higher plant noted, grasses being dominant. *Achillea millefolium* is frequent, *Oxalis corniculata* and *Crepis vesicaria* occur as Occasionals, other species of rare occurrence. White Clover *Trifolium repens* whilst not captured in the quadrats covered more than 5% of the parcel.

Other characteristics of the parcel were as follows:

Non-native plant species on Schedule 9 of the WCA:	None
Species per square metres excluding bryophytes	ca. 7.4
Grasses not sown for intensive agriculture:	<i>Festuca rubra</i> , <i>Agrostis capillaris</i> , <i>Agrostis stolonifera</i>
Cover of broadleaved herbs and sedges	ca. 40% in peak summer
Combined cover of rye-grass species and White Clover where present	ca. 35-40%
Overall grass cover	ca. 75%
Forbs characteristic of medium, high and very high distinctiveness grassland	Very few.
Sward height (cm)	All less than 7cm – close-mown
Cover of bare ground % of whole parcel including localized areas	ca. 15%
Physical damage e.g. excessive poaching damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	ca. 15%

Due to the quantum of Rye-grass and White Clover taken together (exceeding 30% of the parcel) and the paucity of species (fewer than 8 species per square metre on average) – the habitat is defined as Modified Grassland – though it gains conservation importance due to the presence of *Torilis nodosa*.





Damage to modified Grassland on the wharf immediately west of the Reveller; February 2025





Damage to parcel Mod Grass _W1: further extended in June 2025 with new construction works in 2025


Quadrat Records

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED - 12	TQ 33686 80433	The Wharf just west of the Reveller	03_02_25	Helen Saunders Dr Mike Wells
Parcel: Mod Grass _W1		Photo		
Species Scientific Name		Species Common English Name	Domin Value	
<i>Lolium perenne</i>		Perennial Rye-grass	8	
<i>Torilis nodosa</i>		Knotted Hedge-parsley	7	
<i>Bellis perennis</i>		Daisy	4	
<i>Festuca rubra</i>		Red Fescue	3	
<i>Cerastium fontanum</i>		Common Mouse-ear	2	
<i>Geranium sp.</i>		A Crane'-bill	1	
Total species		6		

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED - 13	TQ 33674 80435	The Wharf just west of the Reveller	03_02_25	Helen Saunders Dr Mike Wells
Parcel: Mod Grass _W1		Photo		
Species Scientific Name		Species Common English Name		Domin Value
<i>Lolium perenne</i>		Perennial Rye-grass		8
<i>Bellis perennis</i>		Daisy		6
<i>Torilis nodosa</i>		Knotted Hedge-parsley		5
<i>Achillea millefolium</i>		Yarrow		4
<i>Trifolium dubium</i>		Lesser Trefoil		4
<i>Geranium</i> sp.		A crane'-bill		5
<i>Cerastium</i> sp.		A chickweed		2
Total species		7		

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED - 14	TQ 33680 80433	The Wharf just west of the Reveller	03_02_25	Helen Saunders Dr Mike Wells
Parcel: Mod Grass _W1		Photo		
Species Scientific Name		Species Common English Name	Domin Value	
<i>Lolium perenne</i>		Perennial Rye-grass	8	
<i>Torilis nodosa</i>		Knotted Hedge-parsley	6	
<i>Geranium</i> sp.		A crane's-bill	5	
<i>Bellis perennis</i>		Daisy	4	
<i>Cerastium</i> sp.		A chickweed	4	
<i>Taraxacum officinale</i> agg.		Dandelion	3	
<i>Epilobium montanum</i>		Broad-leaved Willowherb	1	
<i>Senecio squalidus</i>		Groundsel	1	
Total species		8		

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED - 24	TQ 33683 80434 GPS: 561	The Wharf just west of the Reveller	11_06_25	Sharon Pilkington Helen Saunders Dr Mike Wells
Parcel: Mod Grass _W1		Photo		
Species Scientific Name		Species Common English Name		Domin Value
<i>Agrostis stolonifera</i>		Creeping Bent		5
<i>Agrostis capillaris</i>		Common Bent		4
<i>Torilis nodosa</i>		Knotted Hedge-parsley		4
<i>Trifolium repens</i>		White Clover		4
<i>Festuca rubra</i>		Red Fescue		3
<i>Achillea millefolium</i>		Yarrow		2
<i>Lolium perenne</i>		Perennial Rye-grass		2
<i>Trifolium dubium</i>		Lesser Trefoil		1
<i>Veronica arvensis</i>		Wall Speedwell		1
Total species		9		

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED - 25	TQ 33687 80430 GPS: 562	The Wharf just west of the Reveller	11_06_25	Sharon Pilkington Helen Saunders Dr Mike Wells
Parcel: Mod Grass _W1		Photo		
Species Scientific Name		Species Common English Name		Domin Value
<i>Torilis nodosa</i>		Knotted Hedge-parsley		8
<i>Agrostis capillaris</i>		Common Bent		7
<i>Agrostis stolonifera</i>		Creeping Bent		3
<i>Festuca rubra</i>		Red Fescue		3
<i>Lolium perenne</i>		Perennial Rye-grass		3
<i>Bellis perennis</i>		Daisy		1
<i>Taraxacum officinale</i>		Dandelion		1
Total species		7		

Parcel Mod Grass_M1

General Description of Parcel

A tightly mown lawn used as a dog walking area by many residents of the Tower. Dog fouling is not permitted in the moat (faeces are returned to dog litter bins) but nutrient enrichment comes nonetheless from pet urine.

The part of this area within the project red line is somewhat sheltered and shaded by the East Drawbridge and north and south moat walls as well as the Lamhorn Tower to the north (see **Figure 1.2**) that marks the eastern edge of the parcel.

Some 18 species of higher plant were noted, grasses being dominant, with extensive cover of *Lolium perenne* but also patches where finer leaved grasses such as *Festuca rubra*, *Agrostis capillaris* predominate. Occasional species included *Bellis perennis*, *Erodium moschatum*, *Festuca rubra*, *Geranium molle*, *Poa annua* and *Trifolium repens*. Other species were of rare occurrence including *Torilis nodosa*.

Other characteristics of the parcel were as follows:

Non-native plant species on Schedule 9 of the WCA:	None
Species per square metres excluding bryophytes	ca. 6.6
Grasses not sown for intensive agriculture:	<i>Festuca rubra</i> , <i>Agrostis capillaris</i> , <i>Agrostis stolonifera</i>
Cover of broadleaved herbs and sedges	ca. 35 %
Combined cover of rye-grass species and White Clover where present	ca. 45%
Overall grass cover	ca 75%
Forbs characteristic of medium, high and very high distinctiveness grassland	None. <i>Torilis nodosa</i> is typically a species of arable and barish ground.
Sward height (cm)	All less than 7cm – close-mown
Cover of bare ground % of whole parcel including localized areas	ca. 3% (human access)
Physical damage e.g. excessive poaching damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	ca. 4% (human access))

Due to the quantum of Rye-grass and White Clover combined (exceeding 30% of the parcel) and the paucity of species (fewer than 8 species per square metre on average) – the habitat is defined as Modified Grassland.





General view of Parcel Mod Grass-M1 facing north towards the inner moat wall June 2025





General view of habitat of Parcel Mod Grass-M1 facing east towards the East Drawbridge June 2025

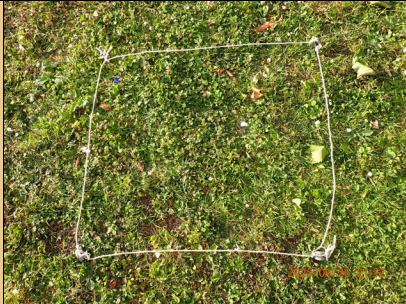
Quadrat Records

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED – 15	TQ33663 80449	South Moat: Sector M6	03/2/25	Helen Saunders Mike Wells
Parcel: Mod Grass _M1		Photo		
Species Scientific Name		Species Common English Name	Domin Value	
<i>Agrostis capillaris</i>		Common Bent	9	
<i>Lolium perenne</i>		Perennial Rye-grass	6	
<i>Bellis perennis</i>		Daisy	6	
<i>Achillea millefolium</i>		Yarrow	5	
<i>Oxalis corniculata</i>		Procumbent Yellow Sorrel (naturalised neophyte)	4	
<i>Geranium sp.</i>		a crane's-bill	4	
<i>Plantago major</i>		Greater Plantain	4	
<i>Trifolium repens</i>		White Clover	2	
Total species		8		

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED – 16	TQ 33606 80460	South Moat: Sector M6	03/2/25	Helen Saunders Dr Mike Wells
Parcel: Mod Grass _M1		Photo		
Species Scientific Name		Species Common English Name	Domin Value	
<i>Agrostis capillaris</i>		Common Bent	9	
<i>Trifolium dubium</i>		Lesser Trefoil	3	
<i>Torilis nodosa</i>		Knotted Hedge-parsley	3	
<i>Bellis perennis</i>		Daisy	2	
<i>Galium album</i>		Hedge Bedstraw	1	
<i>Trifolium repens</i>		White Clover	1	
<i>Achillea millefolium</i>		Yarrow	1	
<i>Veronica sp.</i>		a speedwell	1	
Total species		8		

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat		Date	Surveyor(s)
QED – 26		South Moat: Sector M6		26/6/25	Helen Saunders Dr Mike Wells
Parcel: Mod Grass _M1			Photo		
Species Scientific Name		Species Common English Name		Domin Value	
<i>Lolium perenne</i>		Perennial Rye-grass		6	
<i>Agrostis capillaris</i>		Common Bent		5	
<i>Erodium moschatum</i>		Musk Crane's-bill		5	
<i>Torilis nodosa</i>		Knotted Hedge-Parsley		5	
<i>Lepidium didymum</i>		Lesser Swine-cress		5	
Total species					

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED – 27		South Moat: Sector M6	26/6/25	Helen Saunders Dr Mike Wells
Parcel: Mod Grass _M1		Photo		
Species Scientific Name		Species Common English Name		Domin Value
<i>Lolium perenne</i>		Perennial Rye-grass		9
<i>Fescua rubra</i>		Red Fescue		5
<i>Torilis nodosa</i>		Knotted Hedge-Parsley		5
<i>Erodium moschatum</i>		Musk Crane's-bill		4
<i>Lepidium didymum</i>		Lesser Swine-cress		3
<i>Plantago major</i>		Greater Plantain		1
Total species		6		

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat		Date	Surveyor(s)
QED - 28		South Moat: Sector M6		26/6/25	Helen Saunders Dr Mike Wells
Parcel: Mod Grass _M1			Photo		
Species Scientific Name		Species Common English Name		Domin Value	
<i>Lolium perenne</i>		Perennial Rye-grass		9	
<i>Agrostis capillaris</i>		Common Bent		5	
<i>Trifolium repens</i>		White Clover		5	
<i>Bellis perennis</i>		Daisy		4	
<i>Plantago major</i>		Greater Plantain		2	
<i>Prunella vulgaris</i>		Self-heal		5	
Total species					

Parcel Mod Grass_M2

General Description of Parcel

A tightly mown lawn with low species richness and significant moisture content lying along the shade line of the inner moat wall and being at the lower end of this section of moat (nearest the River Thames)

Some 17 species of higher plant were noted, grasses being dominant, with extensive cover of *Lolium perenne* but also patches where finer leaved grasses such as *Festuca rubra*, *Agrostis stolonifera* and *Agrostis canina* predominate together. *Trifolium repens* is locally dominant. Other species were of rare occurrence.

Other characteristics of the parcel were as follows:


Non-native plant species on Schedule 9 of the WCA:	None
Species per square metres excluding bryophytes	ca. 7.3
Grasses not sown for intensive agriculture:	<i>Festuca rubra</i> , <i>Agrostis capillaris</i> , <i>Agrostis stolonifera</i>
Cover of broadleaved herbs and sedges	ca. 40 % overall- mostly White Clover
Combined cover of rye-grass species and White Clover where present	ca. 70%
Overall grass cover	ca 75%
Forbs characteristic of medium, high and very high distinctiveness grassland	Very few.
Sward height (cm)	All less than 7cm – close-mown
Cover of bare ground % of whole parcel including localized areas	ca. 15% - construction works in west of parcel associated with wall renovation (and previously from Superbloom temporary ramp)
Physical damage e.g. excessive poaching damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	ca. 15% - construction works in west of parcel associated with wall renovation (and previously from Superbloom temporary ramp)


Due to the quantum of Rye-grass and White Clover combined (exceeding 30% of the parcel) and the paucity of species (fewer than 8 species per square metre on average) – the habitat is defined as Modified Grassland. There are no notable species and the conservation importance of the parcel is low.




View of Parcel Mod Grass_M2 in June 2025.

Quadrat Records

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED -10	TQ 33692 80439	South Moat. Eastern corner opposite The Reveller	03_02_25	Helen Saunders Dr Mike Wells
Parcel: ONG-M2.		Photo		
Species Scientific Name		Species Common English Name	Domin Value	
<i>Festuca rubra</i>		Red Fescue	9	
<i>Bellis perennis</i>		Daisy	6	
<i>Trifolium dubium</i>		Lesser Trefoil	5	
<i>Agrostis</i> sp.		A bent grass	4	
<i>Lolium perenne</i>		Perennial Rye-grass	3	
<i>Prunella vulgaris</i>		Self-heal	2	
<i>Taraxacum officinale</i>		A dandelion	2	
<i>Geranium</i> sp.		A crane's-bill	1	
Total species		8		

Quadrat Ref	What 3 Words	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED -11	TQ 33710 80437		South Moat. Eastern corner opposite The Reveller	03_02_25	Helen Saunders Dr Mike Wells
Parcel: Mod Grass _M2			Photo		
Species Scientific Name			Species Common English Name		Domin Value
<i>Lolium perenne</i>			Perennial Rye-grass		9
<i>Bellis perennis</i>			Daisy		6
<i>Agrostis capillaris</i>			Common Bent		4
<i>Trifolium repens</i>			White Clover		3
<i>Prunella vulgaris</i>			Self-heal		2
Total species			5		

Quadrat Ref	Grid Reference	Location (verbal description) e.g. west moat, north moat	Date	Surveyor(s)
QED - 23	TQ 33710 80437 GIS: 559	South Moat. Eastern corner opposite The Reveller	11_06_25	Sharon Pilkington Helen Saunders Dr Mike Wells
Parcel: ONG-M2.		Photo		
Species Scientific Name		Species Common English Name		Domin Value
<i>Trifolium repens</i>		White Clover		9
<i>Festuca rubra</i>		Red Fescue		5
<i>Agrostis stolonifera</i>		Creeping Bent		4
<i>Prunella vulgaris</i>		Self-heal		3
<i>Lolium perenne</i>		Perennial Rye-grass		2
<i>Bellis perennis</i>		Daisy		2
<i>Taraxacum officinale</i>		Dandelion		2
<i>Holcus lanatus</i>		Yorkshire-fog		1
<i>Trifolium dubium</i>		Lesser Trefoil		1
Total species		9		

APPENDIX 4.0: GRASSLAND EXISTING CONDITION ASSESSMENTS

OTHER NEUTRAL GRASSLANDS

Condition Sheet: GRASSLAND Habitat Type (medium, high and very high distinctiveness)				
UK Habitat Classification (UKHab) Habitat Types				
Habitat Description				
Other Neutral Grassland				
<u>ukhab – UK Habitat Classification</u>				
On-site or off-site, site name and location	Tower of London grounds, The Wharf and the Moat	Surveyor names		Sharon Pilkington MCIEEM (SP) Helen Saunders MCIEEM (HS) Dr Mike Wells FCIEEM (MW)
Limitations (if applicable)	Winter survey but careful inspection by experienced botanists so still feasible to characterise the habitats. Then verification survey at ideal time in mid-June.	Habitat parcel reference		
		ONG_M1	ONG_M2	See habitat plan for locations of parcels
Condition Assessment Criteria		Date of Survey and Surveyors		
		03/02/25 HS, MW 11/06/25 SP/HS/MW	03/02/25 HS, MW 11/06/25 SP/HS/MW	
		Criterion passed (Yes or No)		
		Notes (such as justification)		
A	The parcel represents a good example of its habitat type, with a consistently high proportion of characteristic indicator species present relevant to the specific habitat type (and relative to Footnote 3 suboptimal species which may be listed in the UKHab description). ¹ Note - this criterion is essential for achieving Moderate or Good condition for non-acid grassland types only.	No ¹	No ²	1 and 2: alongside perennials, species tally comprises many annuals and herbs characteristic of lawns Some but not many characteristic ONG species present.
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for insects, birds and small mammals to live and breed.	No	No	Uniformly mown
C	Cover of bare ground is between 1% and 5%, including localised areas, for example, rabbit warrens ² .	No ¹	No ²	1 and 2: bare soil > 5 % of parcel

D	Cover of bracken <i>Pteridium aquilinum</i> is less than 20% and cover of scrub (including bramble <i>Rubus fruticosus</i> agg.) is less than 5%.	Yes	Yes	No Bracken in the moat.
E	Combined cover of species indicative of suboptimal condition ³ and physical damage (such as excessive poaching, damage from machinery use or storage, damaging levels of access, or any other damaging management activities) accounts for less than 5% of total area. If any invasive non-native plant species ⁴ (as listed on Schedule 9 of WCA ⁵) are present, this criterion is automatically failed.	No	No	
Additional Criterion - must be assessed for all non-acid grassland types				
F	There are 10 or more vascular plant species per m ² present, including forbs that are characteristic of the habitat type (species referenced in Footnotes 3 and 5 cannot contribute towards this count). Note - this criterion is essential for achieving Good condition for non-acid grassland types only.	Yes (mean = 11.2, 10,4 excluding <i>Cotula</i>)	Yes/No borderline (mean = 10.1; 9.6 excluding <i>Cotula</i>)	
Essential criterion for Good condition achieved (for non-acid grassland) (Yes or No)		No	No	
Number of criteria passed		2	1	
Condition Assessment Result	Condition Assessment Score	Score Achieved x/√		
Non-acid grassland types (Result out of 6 criteria)				
Passes 5 or 6 criteria including essential criterion A and additional criterion F	Good (3)			
Passes 3 to 5 criteria including essential criterion A	Moderate (2)			
Passes 2 or fewer criteria or passes 3 or 4 criteria excluding criteria A and F.	Poor (1)	✓	✓	
Notes				

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

Footnote 2 - For example, this could include small, scattered areas of bare ground allowing for plant colonisation, or localised patches not exceeding 5% cover.

Footnote 3 - Species indicative of suboptimal condition for this habitat type include: creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, curled dock *Rumex crispus*, broad-leaved dock *Rumex obtusifolius*, common nettle *Urtica dioica*, creeping buttercup *Ranunculus repens*, greater plantain *Plantago major*, white clover *Trifolium repens* and cow parsley *Anthriscus sylvestris*. There may be additional relevant species local to the region and or site.

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, by applying professional judgement.

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

MODIFIED GRASSLANDS

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)					
UKHabitat Classification Habitat Type		Modified Grassland (g4)			
Site Name and location		Tower of London: New moat access ramp and associated landscape Application Site.			
Surveyors and initials		Sharon Pilkington MCIEEM (SP) Helen Saunders MCIEEM (HS) Dr Mike Wells FCIEEM (MW)			
MCIE		Mod Grass_W1	Mod Grass_M 1	Mod Grass_M 2	
Date of Survey and Surveyors		3 Feb 2025 HS/MW 11/06/25 SP/HS/MW	3 Feb 2025 HS/MW 11/06/25 SP/HS/M W	3 Feb 2025 HS/MW 11/06/25 SP/HS/M W	
Survey constraints		Winter assessment, but mown lawn, expert surveyors and extra time taken, so reliable. Then verification survey at ideal time in mid-June.			
Condition Assessment Criteria		Criterion passed (Yes or No)			Notes
A	There are 6-8 vascular plant species per m ² present, including at least 2 forbs (these may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition. Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m ² (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet.	Yes (7.4)	Yes (6.6)	Yes (7.3)	<i>Torilis nodosa</i> present due to tight mowing regime. Character of <i>Lolium</i> -rich. species-poor sward is very much of Modified Grassland.
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	No	No	No	Closely mown
C	Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble <i>Rubus fruticosus</i> agg. may be present). Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Yes	Yes	Yes	Presence of woody plants not tolerated in the moat due to protection of buried heritage

D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	No ¹	Yes	No ²	1 and 2: sward damage exceeds 5% of parcel
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens) ² .	No ¹	Yes	No ²	1 and 2: bare ground exceeds 5% of parcel
F	Cover of Bracken <i>Pteridium aquilinum</i> is less than 20%.	Yes	Yes	Yes	No Bracken on site.
G	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴).	Yes	Yes	Yes	None noted.
Essential criterion achieved (Yes or No)		Yes	Yes	Yes	
Number of criteria passed		4	6	4	
Condition Assessment Result (out of 7 criteria)	Condition Assessment Score	Score Achieved ×/✓			
Passes 6 or 7 criteria including passing essential criterion A	Good (3)		✓		
Passes 4 or 5 criteria including passing essential criterion A	Moderate (2)	✓		✓	
Passes 3 or fewer criteria; OR Passes 4 - 6 criteria (excluding criterion A)	Poor (1)				
Footnotes					
<p>Footnote 1 – Creeping thistle <i>Cirsium arvense</i>, spear thistle <i>Cirsium vulgare</i>, curled dock <i>Rumex crispus</i>, broad-leaved dock <i>Rumex obtusifolius</i>, common nettle <i>Urtica dioica</i>, creeping buttercup <i>Ranunculus repens</i>, greater plantain <i>Plantago major</i>, white clover <i>Trifolium repens</i> and cow parsley <i>Anthriscus sylvestris</i>.</p> <p>Footnote 2 – For example, this could include small, scattered areas of bare ground allowing establishment of new species, or localised patches where not exceeding 10% cover.</p> <p>Footnote 3 – 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.</p> <p>Footnote 4 – Wildlife and Countryside Act 1981 (as amended).</p>					

APPENDIX 5.0: JERSEY CUDWEED *LAPHANGIUM (GNAPHALIUM) LUTEOALBUM* - KEY INFORMATION FOR NATURAL ENGLAND LICENSING (A05A) LICENCE APPLICATION

The key information required by a Natural England A05A licence to remove an existing site for a Schedule 8 plant species, is presented below in the form of a draft licence application. The text below follows the standard A05A template.

A *Executive Summary*

Historic Royal Palaces aims to enhance and increase the biodiversity on the land under its control at the Tower of London. As part of this there is a long-term Legacy Landscape vision for a highly biodiverse moat that becomes an attraction and educational resource for visitors. The soft estate around the new ramp is to be designed to complement the main moat Legacy landscape scheme to come, with native species-rich grasslands and other biodiverse plantings.

During a public celebration of her late Royal Highnesses Platinum Jubilee an installation of largely non-native flowers was created in the moat and called 'Superbloom'. For this a temporary access ramp from the Wharf into the eastern corner of the South Moat was created. The ramp was removed after Superbloom. The present project aims to replace its function with a permanent structure. The creation of this route is a vital part of HRP's plans for sustainable management of visitor pressures to what is the most highly visited tourist attraction in the UK.

Just to the east of this former ramp is an old sentry box which guards an open wooden staircase down into the South East moat (see elsewhere in the present report of imagery). In a 1 m² patch of flint gravels below this stair case, and roughly below its mid point, a small group of 10 individuals was found in June 2025.

Creation of the ramp will entail significant works to the outer moat wall and demolition of the Sentry box and staircase. The nature of the works and the intended landscape design render maintaining the small grouping of Jersey Cudweed *in situ* unfeasible.

The proposal is to create a purpose-made habitat for the species in the same substrate type ca. 6 metres away from its current location. The substrate of the existing Jersey Cudweed location is to be carefully removed, ideally with the plants flowering into the receptor area. If timings do not permit this, and as the species is an annual, substrate from an area of up to 4 square metres around the plant grouping will be carefully removed to a depth of 10 cm and stored in the HRP nursery for use in creation of the receptor area habitat.

The design of the receptor area will be such as to provide an enhanced habitat to that currently occupied by the species in the partial shade of the Sentry Box. Key goals of the design and management will include insuring access to water resources in a basal sand layer and minimising competition from other plants.

Active management of the receptor area is to be directed by the HRP Biodiversity & Sustainability Manager and undertaken by dedicated HRP ground staff and HRP consultants to ensure successful establishment and long-term survival of Jersey Cudweed in this mitigation site. Herbicides will not be used in the relevant vicinity of the receptor site. The nearby resource of flowering specimens

on the Wharf should ensure a continuous seed rain being blown in with the prevailing winds. With this measure there should be not net adverse effects on the status of Jersey Cudweed on the Application Site.

The current design for the Moat Legacy Landscape presents ample opportunity for further expansion of the Jersey Cudweed across the Tower of London site, consolidating its sustainable future and the role in supporting the conservation status of the species across Greater London.

B Introduction

B.1 Background to activity or development

Historic Royal Palaces aims to expand the biodiversity on the land under its control at the Tower of London. As part of this there is a long-term Legacy Landscape vision for a highly biodiverse moat that becomes an attraction and educational resource for visitors. Management of visitors requires that a new access ramp be built into the moat in the east side of the Tower. This will enable the creation of a circulation loop around most of the moat from the existing access ramp in the West Moat.

During a public celebration of her late Royal Highnesses Platinum Jubilee an event was stated in the moat – called Superbloom. For this a temporary access ramp from the Wharf into the eastern corner of the South Moat was created. The ramp was removed after Superbloom. The present project aims to replace its function with a permanent structure. The creation of this route is a vital part of HRP's plans for sustainable management of visitor pressures to what is the most highly visited tourist attraction in the UK.

B.2 Full details of proposed works on site that are to be covered by the licence:

Creation of a new permanent access ramp into the moat made of Steel, with replacement of the Sentry box and the creation of a new biodiverse landscape in the southeast corner of the moat. See Design and Access Statement. Planning consent is required for this new structure not least due to its location in the Tower of London World Heritage Site.

C Survey and site assessment

C.1 Pre-existing information on the species at the survey site

There had been no official records for the species for the Tower of London Site prior to June 2025.

C.2 Status of species at the local, county and regional levels.

Tower Hamlets

According to the Tower Hamlets BAP (2019 to 2024) and the Tower Hamlets Local Biodiversity Action Plan Annual Report 2018 the species has been found on bare ground and in paving cracks in the Borough at several sites including (with approximate distances from the Application Site):

- St Katharine's Dock (ca. 0.5km east)
- Poplar Dock Marina (4.7 km east)
- Millwall Inner Dock (ca. 4 km east, southeast)
- Silvocea Way (5.3 km east)
- Ben Johnson Lock Regents Canal in Mile end (3 km east, northeast)
- Bow Creek at Leamouth (5.3 km east, northeast)

The reports state that these populations are highly unlikely to be of native origin (although the legal protection still applies).

The records nearest to the Application Site are ca. 500 m to the east in St Katherines Dock. According to St Katherine's Dock SNCI Citation there were '*a few plants of Jersey Cudweed though this has not been seen since 2014.*' GiGI records for 2009 and 2013 are of between 2 and 3 specimens.

The site at Millwall Dock supported over ca. 500 specimens. This site has been lost to redevelopment, but this was the subject of an (apparently successful) mitigation project (biodiverse roof creation) according to the Above annual report from 2018.

Greater London

Latest data from the Botanical Society for the British Isles demonstrates the great expansion of the species across Greater London (from a handful of sites in the Breckland some decades ago (see **Figure App 5.1**). The clustering along the Thames corridor is quite evident.

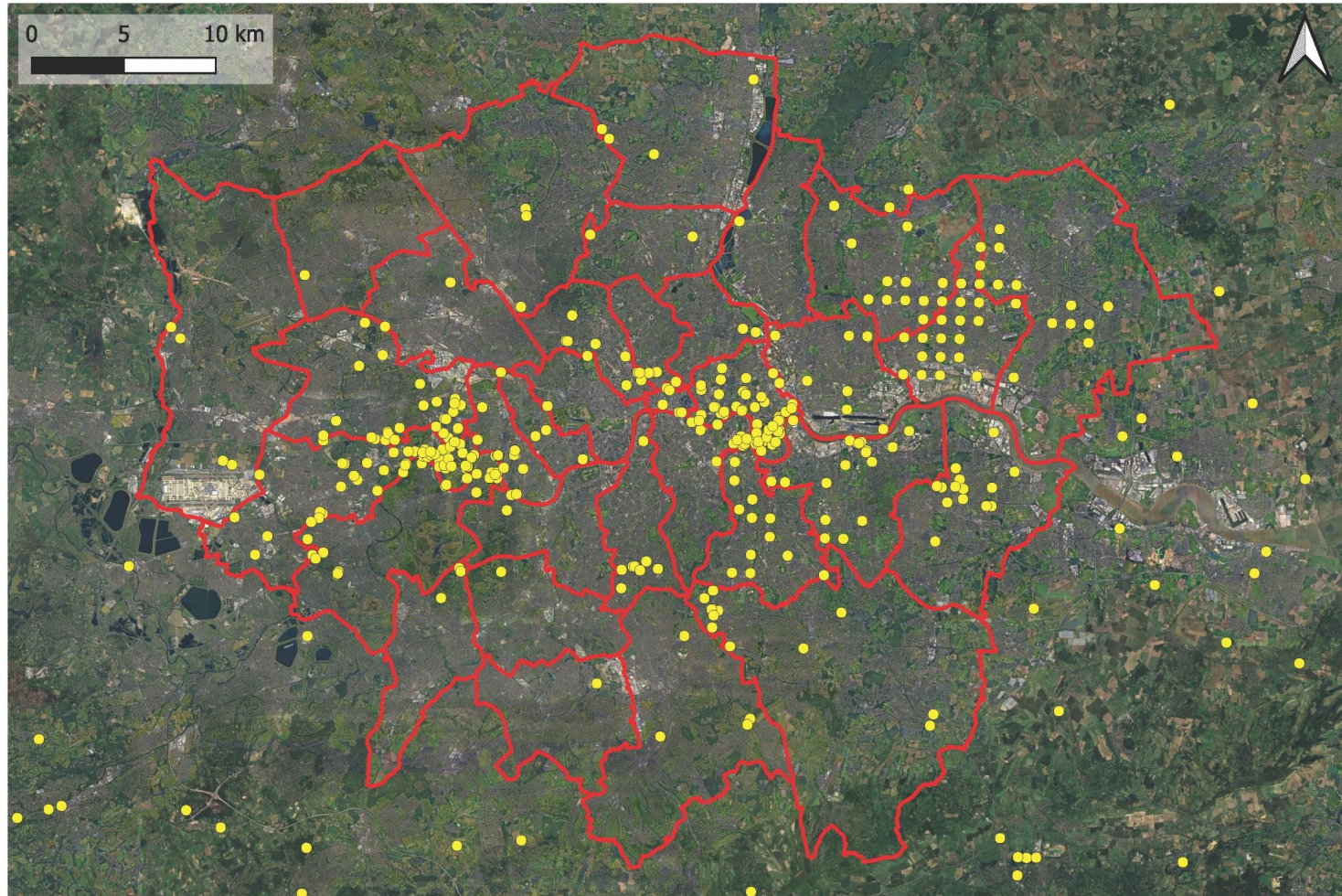


Figure App 5.1: Distribution map of Jersey Cudweed plants across Greater London and near environs based on the latest data held by the BSBI (1 km square occupancy in vice-counties 16-18, 20 and 21).

C.3 Objectives of the survey

A survey for uncommon and protected plants (and invasive alien plants) was undertaken in June and July 2025 of the moat and the Wharf as part of both general inventory update for the HRP estate and partly to ensure that the present submission for the new Moat Access Ramp could be assured to avoid net adverse impacts on the species.

C.4 Scaled plan or map of survey area

See **Figure App 5.2**.

C.5 Site or habitat description

The location where Jersey Cudweed occurs within the Application Site is an 1m² area of porous flint gravels located underneath an open wooden staircase of some antiquity leading down from a Sentry box into the moat. Please see C7. For further habitat details and images.

C.6 Field surveys

The survey was led by Sharon Pilkington MCIEEM – former BSBI vice-county recorder for Wiltshire and one of the country's leading botanists (also the National Bryophyte recorder). Accompanying were Helen Saunders MCIEEM and Dr Mike Wells – all experienced ecologists with a good knowledge of the UK flora. The survey area was slowly walked and all suitable niches for the species examined.

C.7 Survey results

See **Figure App 5.2** and **Plates App 5.1 to 5.6** below.

STATUS ON THE APPLICATION SITE

Grid Coordinates

51°30'25.62"N 0° 4'31.17"W

Grid Reference

TQ 33671 80443

No of individual specimens

- 10 on 11 June 2025.
- 10 on 27 June 2025 of which 7 in flower.



Figure App 5.2: Positions of Jersey Cudweed plants as assessed between 11 June and 1 July 2027. Note that the Inner Ward and Tower Hill Gardens have not yet been completely or systematically surveyed for this species.

Habitat

The habitat for the Jersey Cudweed at this site is based on a substrate of nutrient flint gravels with some soil accumulation - overshadowed partly by wooden staircase to the Sentry Box that sits at the top of a set of Wooden stairs into the East Moat.

Images

See Plates App 5.1 to App 5.6.



Plate App 5.1:

Jersey Cudweed as discovered on the Application Site on 11th June 2025 growing partly in and partly out of the shade of the Sentry Box steps. Just south of East Drawbridge at 51°30'25.61"N 0° 4'31.25"W, 11 June 2025; group 3 specimens.



Plate App 5.2: Jersey Cudweed location on the Application protected by cones, signage and fencing from construction works and activities of Tower residents (27th June 2025).



Plate App 5.3: Jersey Cudweed location on the Application protected from access from the west by fencing and warning cone.



Plate App 5.4: Jersey Cudweed location ca. 1 m² partially under the shade of the sentry box steps on 15th June 2025.



Plate App 5.5: Jersey Cudweed - main grouping of plants on site as they appeared on 15th June 2025.



Plate App 5.6: Specimen in Flower on 26th June 2025.

WIDER SURVEY AREA BEYOND NEW MOAT ACCESS RAMP AND ASSOCIATED LANDSCAPE APPLICATION SITE

Results of the survey of The Wharf and near environs on 1 July are presented in **Figure App 5.2** (above). A total of 97 plants were found scattered along the open sunny Wharf to the west of the Application Site (see **Plate App 5.7**).

Approximately a quarter of the plants were flowering on 1 July 2025 at pavement level – surviving and flowering below very intense public footfall.



Plate App 5.7: Jersey Cudweed – example flowering in between cracks in old cobbles on The Wharf, June 27th, 2025.

C 8. Interpretation/evaluation of survey results

There were no significant constraints to the survey other than occasional ones of vertical access to walls, though all could be readily scanned with binoculars.

Nearly 110 specimens of the species the local population at the wider Tower of London Site is of significance at the Borough level.

Populations of over 500 individuals on brownfield sites in the Borough have been reported in relation to mitigation actions (see Tower Hamlets, 2018, Tower Hamlets Local Biodiversity Action Plan. Annual Report 2018) – so the population at the Tower of London is good but not exceptionally large.

As the plants on the Wharf are successfully flowering under the footfall of millions of visitors and herbicides are not used on the Wharf the long-term status of the plant on this World Heritage Site seems secure.

The small grouping of ten plants in the moat within the Application Site gains importance as the vertical growth of the plants is not constrained by footfall. However, it represents less than a tenth of the population on the wider HRP as surveyed.

It is quite possible other specimens will be found when the full HRP land holding is surveyed for the species.

C.9 Best Practice Guidelines

Surveys have followed best botanical practice and been led by a nationally renowned botanist.

D Impact assessment in absence of mitigation

D.1 Short-term impacts: disturbance.

Up to the point at which construction site preparatory works necessitate the removal of the current grouping and associated habitat, the Jersey Cudweed will be remain undisturbed and unimpacted by people, pets or site management activities.

D.2 Long-term impacts: habitat loss or modification.

The loss of the small grouping of plants within the Application Site would be an adverse impact of significance only at the Local level.

D.3 Long-term impacts: fragmentation and isolation.

The loss of this small grouping of plants is not likely to lead to fragmentation or isolation of local populations of the species given the healthy population on the adjacent Wharf.

D.4 Post-development interference impacts

Not applicable as the current site within the Application Area would be lost due to development implementation.

D.5 Predicted scale of impact on species status at the site, local county, and regional levels.

If unmitigated the loss of these 10 individual plants of this annual species and the site supporting them (with associated seedbank) would be an impact of relatively minor scale (given the extent of flowering specimens in the near vicinity) and so would probably not adversely affect the local conservation status of the species in the Tower of London site.

There would be no significant impacts at County/Regional (Greater London) level given the spread of this species since its first scheduling.

E Mitigation and compensation

E.1 Summary of mitigation strategy

The mitigation strategy (see Design and Access Statement) is to create a bespoke, specifically managed and curated planting bed as a mitigation area for the Jersey Cudweed patch that will be lost due to construction. This is to be achieved by transferring substrate and seed bank (and if timing permits) – plants that have not yet flowered – into the area from the existing patch and substrate around the patch.

Considering:

- the proposed careful curation of the mitigation receptor site as part of an intended designed and interpretative landscape in the moat;
- the re-use of material from the donor site with its associated seedbank; and
- the close proximity of a breeding population of the species west by southwest of the mitigation site from which seeds can be dispersed to it readily by the prevailing winds

it seems reasonable to suggest that the long-term conservation status of the species both in the moat and wider Tower of London site will be assured.

E.2 Capture and exclusion (if applicable)

The precise approach taken will depend on timing of the construction and loss of the existing Cudweed site with respect to seasons.

If it proves possible to create the mitigation area early in the programme, then the substrate for ca. 2 m radius around the existing patch of Jersey Cudweed but not including the plants would be removed to a depth of ca. 10 cm and used in the creation of the mitigation substrate.

It might then be possible to take individual plants of the year (notwithstanding their status as annuals) with their roots in a core of substrate and plant them in the mitigation area directly and nurture them through the season through to flowering and setting seed in the new site.

If the construction programme were to render this approach unfeasible, then at some point before the main construction impact on the existing Jersey Cudweed site, the top ca. 10 cm of substrate from an area of ca. 2 x 2 square metres around and including the existing patch of Jersey Cudweed would be removed and transferred to a suitable holding location on the Tower of London Site, and then this substrate used in its entirety to create the top layer of the mitigation area substrate.

E.3 Habitat creation

E.3.1 In-situ retention of habitat

Not applicable.

E.3.2 Modification of existing habitat dimension details, scale drawings of the proposals.

Not applicable.

E.3.3 New habitat creation dimension details, location details, materials to be used (where applicable), aspect.

The new habitat area to be roughly 12x larger than the existing patch accommodating the existing 10 individuals.

The receptor site location is just west of a thriving assemblage of the species on The Wharf and as should capture some of the seed-fall of windblown seed from that population.

Full details of the mitigation receptor area would be developed post-planning consent, but would be based on received best practice in relation to the species and be likely to entail the installation for the following substrate profile layers (after initial excavation into the existing substrate to a depth of ca. 10 cm and removal of that substrate offsite:

- Waterproof membrane at base of substrate build-up to maintain above average soil moisture levels whilst avoiding waterlogging (water can drain laterally from the membrane to the wider moat soils).
- A layer some ca. 20 deep of sharp neutral sand with 5% weed free organic matter added (pH in the range 5.5 to 7.5). This layer should serve as a water reservoir and root zone to ensure good drainage avoid waterlogging of roots. This is much the same concept as the way the species grows in paved and cobbled areas making use of the underlying sand beds.
- A layer of thin ceramic tiles, lain with gaps, to reduce water loss from the sands but not prevent drainage.
- Top 10 cm of substrates (flint gravels and silts/sands and existing admixed soil) taken from the existing 'donor' site and containing the existing seed bank. This substrate would be lain, with undulations of up to 10 cm every metre along the length of the mitigation site, to provide local low-level wind protection.

E.3.4 Scaled maps or plans to show proposals or mitigation outlined above in relation to existing and proposed habitat features.

The proposed mitigation area is to be situated some 6 m to the north and west of the existing site, taking the end section of the 'Tower Provides' landscape area as it

passes under the East Drawbridge and re-emerges as a 10 m strip to the west of the East Drawbridge. The area will extend ca. 1 m under the drawbridge to provide the option of a varied shade condition as exists where the Jersey Cudweed is growing currently, see **Figure App 5.2**.



Figure App 5.2: Proposed mitigation receptor area for Jersey Cudweed - shown in purple. The current location of the species is indicated by the blue star.

E4. Post-development site safeguard

E4.1 Habitat or site management and maintenance

The mitigation area is to be an intentional part of a designed display landscape on the theme of the Tower of London as provider of life ('The Tower Provides'). As such it will be a part of very well and specifically managed semi-natural landscape patch. Specific management prescriptions for the Jersey Cudweed mitigation area will be drawn up that are likely to include:

- Proscription of use of herbicides in the relevant vicinity of the mitigation area.
- Proscription of use of fertilisers on nearby lawn areas and any reseeded with species of rye-grass.
- Watering during periods of extreme drought at least during initial establishment of the species.

- Selective weeding to ensure that the species is not outcompeted and seed-fall has best germination potential.
- Protection from footfall through advice notices to residents and visitors.
- Provision and updating of interpretation materials.

E4.2 Population monitoring - to include details of monitoring effort and timing.

The population is to be monitored annually through the flowering season and occasionally outside of this by Historic Royal Palaces aided by their selected expert sub-consultants and formally convened Moat Legacy Project Biodiversity Advisory Group as required.

The HRP Biodiversity & Sustainability Manager would oversee this monitoring and reporting thereof.

E4.3 Mechanism for ensuring delivery of post-development works

The mechanism for ensuring delivery of the mitigation could be either by Planning Condition (as HRP is both proponent and site manager) or Section 106 Agreement and will include details of who will undertake the population monitoring, habitat management and site maintenance work and reporting details. This work will be undertaken either directly by HRP and their biodiversity professionals or by selected and experienced sub-consultants.

F. Land ownership – mitigation sites (areas where any works will be done to offset development impacts, including development plot if applicable)

Not applicable.

F.1 Mitigation site ownership: Provide details of who owns the land where mitigation is proposed.

The Application Site is part of the Tower of London World Heritage Site which is owned by the Crown and managed by the dedicated charity Historic Royal Palaces.

F.2 Declaration Statements: Include the following declarations within your method statement and highlight the appropriate answer – applications that do not include these 3 declarations will result in a 'further information request' response.

F.2.1 I confirm that relevant landowner consents has or have been granted to accept the species onto land outside the applicant's ownership

Not applicable.

F.2.2 I confirm that landownership consents has or have been granted to allow the creation of the proposed habitat compensation on land outside the applicant's ownership.

Not applicable.

F.2.3 I confirm that consents has or have been granted by the relevant landowners for monitoring and maintenance purposes on land outside the applicant's ownership –

Not applicable.

Unsecured consents statement:

If you have been unable to secure consents for any of the three declarations, please explain why and detail any plans you have in place to obtain the consents or provide details of any rights or agreements that will enable the lawful implementation of the proposed mitigation, compensation and monitoring.

Not applicable.

Important Note:

Failure to provide the appropriate landowner consents means that the method statement is unlikely to meet the requirements for this licensing test to be met. It is therefore in your interest to ensure that the appropriate consents have been secured before applying for a licence.

Not applicable.

G. Timetable of works

Timings of all mitigation and construction works are to be tabulated in detail soon after planning consent is obtained.

APPENDIX 6.0: DISTRIBUTION DATA ON KNOTTED HEDGE-PARSELY

UK

While *Torilis nodosa* (Knotted Hedge-parsley) has seen a decline in many inland areas in the UK, particularly as an arable weed, it is also showing a recent **increase in urban areas** and away from traditional arable land, according to the BSBI Online Plant Atlas 2020.

Greater London

The species is expanding across Greater London especially along the Thames corridor and in the East. See **Figure App 6.1**.

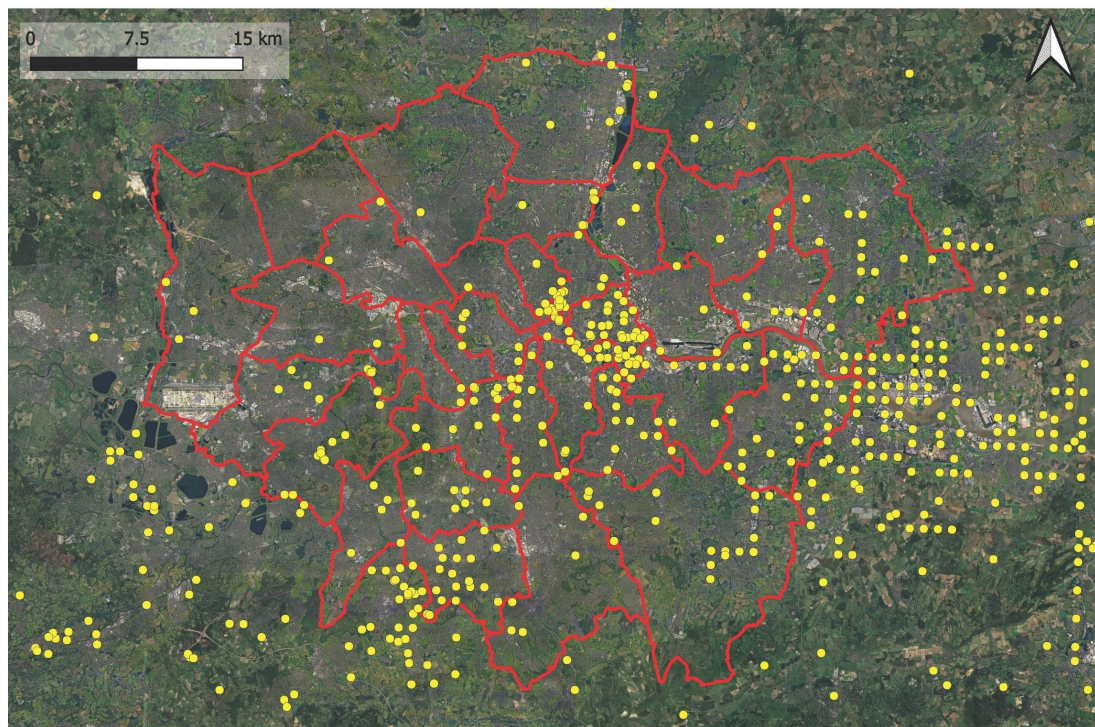


Figure App 6.1: Distribution map of Knotted Hedge-parsley across Greater London and near environs based on the latest data held by the BSBI (1 km square occupancy in vice-counties 16-18, 20 and 21).

Tower of London Site

The distribution of the species across the Tower of London Site as far as survey had progressed to date is shown in **Figure App 6.2**. As can be seen the species is quite widespread in the dry lawn areas (see also **Plate App 6.1**).

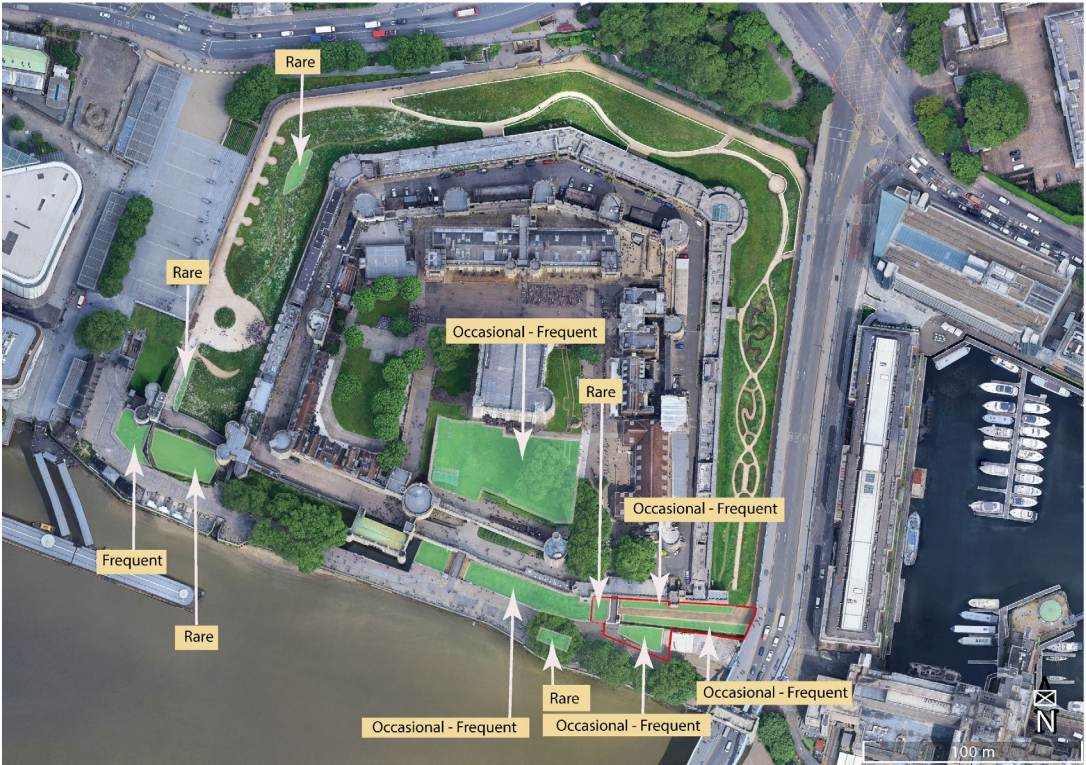


Figure App 6.2: Distribution map of Knotted Hedge-parsley across the Tower of London Site as of June 2025. Total area where it occurs at a range between Occasional and Frequent = 3350 square metres.



Plate App 6.1: Knotted Hedge-parsley flowering in the Application Site (Parcel Mod Grass_W1).

APPENDIX 7.0: BAT SURVEYS 2024 (WITH SOME VERIFICATION IN 2025)

RATIONALE FOR SURVEYS IN 2024

A series of bat surveys in the wider Tower of London site (but excluding the Central Complex within the inner moat wall) were undertaken in 2024, with some update survey in 2025, to contribute to general knowledge of the use of the HRP land holding by bats.

METHODS

Bat Roosting Potential

A daytime preliminary bat roost assessment was undertaken of all potential bat refuge habitats around the moat and outside it within land under HRP control. Surveys were undertaken by Sarah Dale MCIEEM (Natural England Bat Survey Licence Class 2 2018-36720-CLS-CLS) following best practice guidance as set out in Collins *et al.* (2023) and Reason & Wray (2023). Built structures were assessed on 12th June 2024. Reinspection of all Potential Roost Features (PRFs) in built structures following the same methodology was undertaken by Dr Liat Wicks (Natural England Bat Survey Licence Class 2 licence 2015-10211-CLS-CLS) of Sonar Ecology on 10th and 19th March 2025.

Ground Level Tree Assessment (GLTA) was undertaken on July 30th, 2024. Bat roosting potential was assessed in accordance with Collins *et al.* (2023) and the Bat Tree Habitat Key (BTHK, 2020). Features on trees may include woodpecker holes, decay cavities, crevices behind pruning wounds/callus rolls, significant areas of flaking bark and cracked limbs. Internal assessments of PRFs were not completed.

Bat Commuting and Foraging

Three Night-time Bat Walkover surveys were completed in June, August and September 2024 in accordance with the methodology set out in *Bat Surveys for Professional Ecologists – Good Practice Guidelines* 4th Edition (Collins *et al.*, 2023). Static observation points were included for at least 30 minutes at the start of the survey, with transects around the moat and wider landholding walked for at least two hours after sunset (see **Figure App 7.1**).

All recordings were analysed where necessary for species identification. Weather conditions were optimal for all surveys as shown in **Table App 7.1**. Conditions were often more sheltered in the moat than surrounding areas such as the bank of the River Thames.

Table App 7.1: NBW survey dates & weather conditions

Date	Weather Conditions					Time Start	Time End	Sunset
	Temp start	Temp End	Cloud cover (%)	Wind, Beaufort scale	Rain			
12/06/24	17°C	14°C	80	0-1B	Dry day	21:15	23:18	21:18
30/07/24	21°C	19°C	0	1B	Dry day	20:38	22:51	20:51
11/09/24	15°C	13°C	30	0-3B	Dry day	19:06	21:23	19:23

Static monitoring using remote Anabat Express bat detectors was completed using four sampling locations; one each in the North, East, South and West Moats (see **Figure App 7.2**). The detectors monitored bat activity in each location for a minimum of 66 nights between June and September 2024 (see **Table App 7.2**). None of the locations was within the Reveller redline boundary, but results of relevance have been considered.

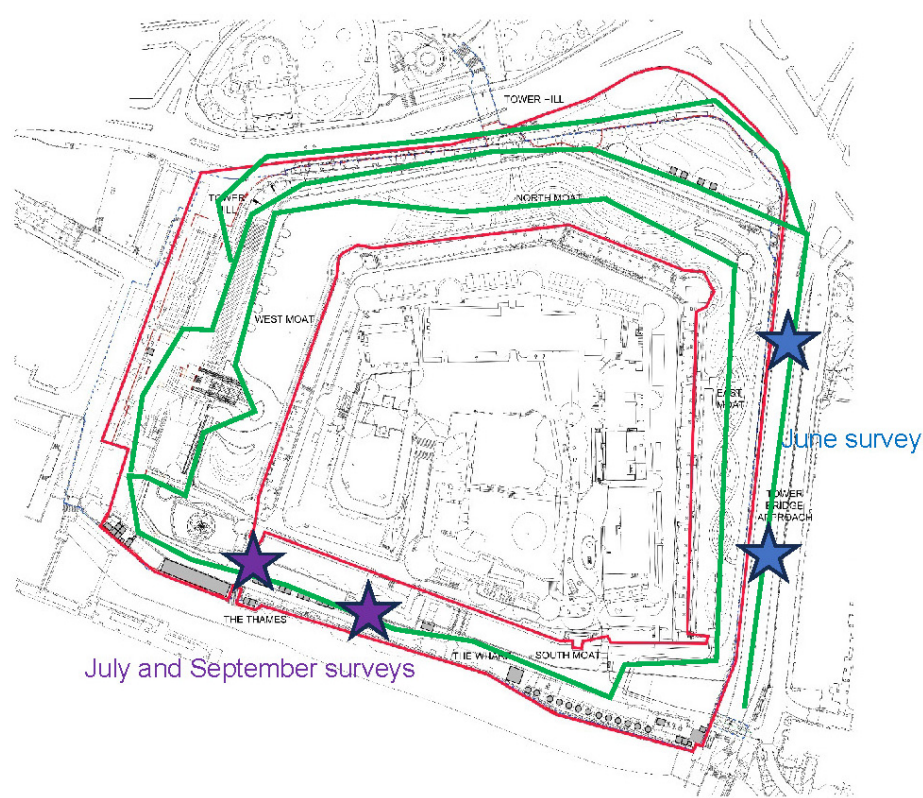


Figure App 7.1: Night-time Bat Walkover survey 2024: surveyor locations (purple & blue stars) & transect route (green lines).

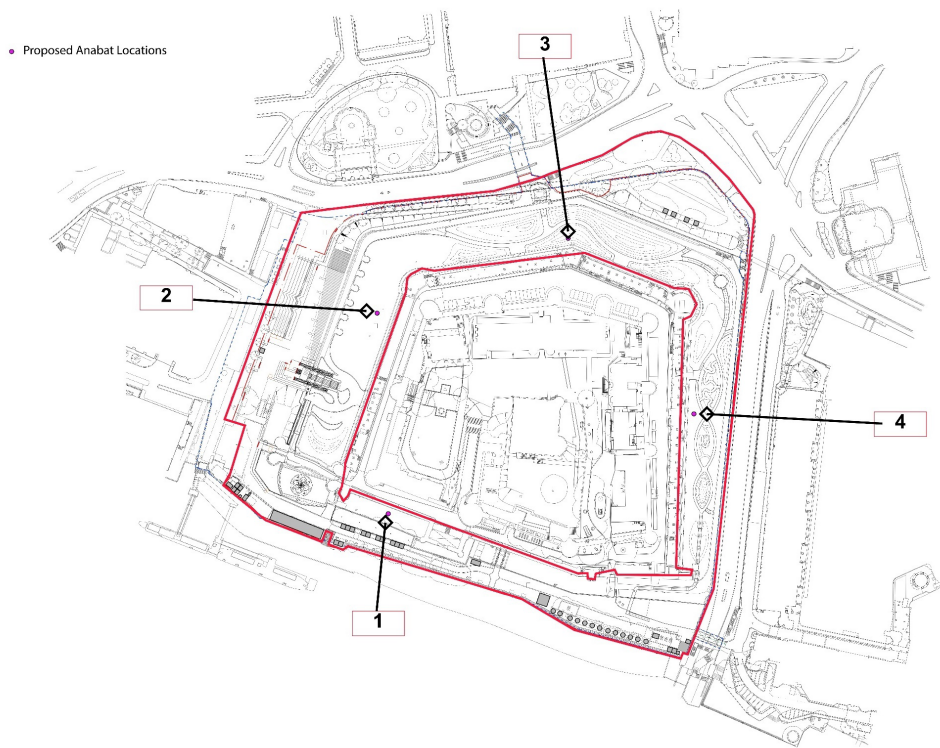


Figure App 7.2: Locations of static bat detectors in the surveys of summer 2024.

Table App 7.2: Recording periods for the static bat detectors.

ID	June dates	No. of Nights	July dates	No. of Nights	August dates	No. of Nights	Sept. dates	No. of Nights	Total Nights
1 South Moat	12-30	19	1-2 & 13-31	20	1 & 8-25	18	11-22	11	68
2 West Moat	12-30	19	1-2 & 13- 31	19	1 & 8-26	18	11-27	16	72
3 North Moat	12-30	19	1 & 13- 31	19	1-3 & 8-26	21	11-26	15	74
4 East Moat	12-30	19	1 & 13- 31	18	8-23	15	11-25	14	66

H. Night-Time Bat Walkover Surveys

No evidence of roosting bats was identified during the 30+ minute static listening point at the start of the Night-Time Bat Walkover surveys, although a Common Pipistrelle bat was recorded foraging around Traitors’ Gate at 19:48, 25 minutes after sunset on the 11th September. This bat was considered likely to have emerged close by, likely within the Tower grounds.

There were relatively few passes on static bat detector recordings (see below) within 20 minutes of sunset or sunrise – a total of 158 of 9595 passes (just 1.6%). If there had of been an unexpectedly large number of passes recorded in this specific timeframe, this would have strongly suggested presence of a roost nearby supporting multiple bats, which was not the case. However, the data do indicate at least occasionally-used individual roosts nearby for Common Pipistrelle bats in immediate proximity to the moat based on the following recordings:

- A pass 11 minutes after sunset on Static 1 (South Moat) on 13th June.
- Passes 1-4 minutes after sunset on Static 1 (South Moat) on 9th, 21st and 22nd August.
- A pass 4 minutes after sunset on 21st June on Static 3 (North Moat).
- A pass 7 minutes before sunrise on 19th July on Static 3 (North Moat).
- At least 11 passes within 5 minutes before sunrise on 18th August and 12 passes within 2 minutes before sunrise on 23rd August on Static 3 (North Moat).
- A pass 1 minute after sunset on 17th June on static 4 (West Moat).

There was also a Nathusius' Pipistrelle pass 36 minutes before sunrise on Static 1 (south moat) on 13th September, indicating a roost reasonably close by.

RESULTS

Foraging and Commuting - Transects

Results from the three transect surveys are as follows.

Survey 1: 12th June

The surveyors started the survey facing the chutes on Brass Mount, standing directly above crevices in the embankment of Tower Hill Road A100, which had previously been identified as having bat roost potential. No bats were recorded during the initial 30-minute listening period or during the walked transect.

Survey 2: 30th July

For the first 30-minute period at the start of the survey, the surveyors were facing the South Moat observing a small area of pitched, tiled roof to the east of Byward Tower and St Thomas' Tower/Traitors' Gate. No bats were observed during this time. A total of ten Common Pipistrelle passes were later recorded during the survey. The first pass was recorded at 21:36, 48 minutes after sunset. All but one of the passes were recorded within or close to Tower Gardens, which is noticeably darker than adjoining areas at night. At least one bat was seen foraging repeatedly in laps around Tower Gardens. The only other bat pass was a very brief commuting pass by Middle Tower at 22:34.

Survey 3: 11th September

Survey 3 was undertaken in the same area and followed the same approach as in Survey 2. Between 19:40-19:45, very faint pipistrelle passes were heard but not seen. The lights in the moat were not turned on until approximately one hour after sunset during this survey. From 19:48-19:55, a Common Pipistrelle bat was seen repeatedly foraging at 2 m over the water in front of Traitor's Gate. At least 15 passes were recorded. The evening was calm, and an accumulation of insects could be seen above the water. Later in the evening, only one pass was recorded, which was at 21:06. This was a Common Pipistrelle foraging in Tower Gardens, which was heard but not seen. There was no pipistrelle activity by Traitors' Gate when surveyors walked past this area later in the evening.

Summary

Relatively low levels of bat activity (all Common Pipistrelle bats) were recorded. Levels of artificial light pollution are very high throughout the moat and other parts of the surrounding estate.

Almost all bat activity recorded during transect surveys occurred in **Tower Gardens** (to the north of the moat of the Tower of London) which was the darkest area in the survey, unlit and with a notable area of tree canopy) or was associated with areas of tree canopy and Traitors' Gate pool adjacent the South Moat.

Foraging & Commuting - Static Detectors

The results from the static detectors are summarised in **Table App 7.3** and **Table App 7.4** and **Figure App 7.3** below.

A total of 9,595 bat passes were recorded: 949 in the East Moat (9.8%), 2817 in the North Moat (29.3%), 826 in the West Moat (8.6%), and 5,003 in the South Moat (52.1%). This fits with observations of regular pipistrelle foraging activity in Tower Gardens close to the North Moat and around Traitors' Gate/St Thomas' Tower. A total of four species were recorded, with most passes by Common Pipistrelle (9,453 passes in total, 98.5%). Very occasional passes by Soprano Pipistrelle were recorded; 75 passes in total (0.8%) across all detectors.

There were 31 Nathusius' Pipistrelle calls (0.3%), a species that is typically much less frequently recorded than Common or Soprano Pipistrelle bats (though certainly under-recorded through frequent conflation with other pipistrelle species). All calls except one were recorded in September, and mostly from the South or East Moats. This species is migratory, and it is possible that the calls indicate dispersal or mating behaviour along the River Thames corridor by migratory individuals.

There were six Noctule bat passes, and the remaining passes were either pipistrelle social calls or unidentified bat calls.

None of these species are particularly light-sensitive, although may still be displaced and actively avoid highly artificially illuminated areas.

Light spill may also cause a skew of invertebrate distribution in a locality, which may have adverse impacts on bat populations in some instances, although may also provide an accumulation to the benefit of light tolerant bat species e.g. pipistrelle species feeding around lights.

Table App 7.3: Summary of static bat detector data – passes total.

Static Detect or No.	Species	Month				All Months
		June	July	August	Sept.	
1	Ppip	1324	887	2358	365	4934
	Ppyg	1	6	7	0	14
	Pnat	0	1	0	17	18
	Other	1	2	12	10	25
No. of Hours		155.30	206.50	241.97	218.10	821.87
2	Ppip	122	400	349	44	915
	Ppyg	5	5	11	0	21
	Pnat	0	0	0	6	6
	Other	1	0	5	1	7
No. of Hours		140.35	170.82	202.24	184.78	698.19
3	Ppip	132	550	1684	425	2791
	Ppyg	6	2	13	0	21
	Pnat	0	0	0	4	4
	Other	1	0	0	0	1
No. of Hours		103.45	178.58	206.49	185.12	673.64
4	Ppip	96	231	204	276	807
	Ppyg	2	0	11	0	13
	Pnat	0	1	0	2	3
	Other	1	0	1	1	3
No. of Hours		125.63	143.80	170.94	172.78	613.15

Ppip – Common Pipistrelle, Ppyg – Soprano Pipistrelle, Pnat – Nathusius' Pipistrelle, Other – other bat species/unidentified bat calls/social calls.

Table App 7.4: Summary of static bat detector data – passes per hour.

Static No.	Species	Month				All Months
		June	July	August	Sept.	
1	Ppip	8.53	4.30	9.75	1.67	6.00
	Ppyg	0.01	0.03	0.03	0.00	0.02
	Pnat	0.00	0.00	0.00	0.08	0.02
	Other	0.01	0.01	0.05	0.05	0.03
2	Ppip	0.87	2.34	1.73	0.24	1.31
	Ppyg	0.04	0.03	0.05	0.00	0.03
	Pnat	0.00	0.00	0.00	0.03	0.01
	Other	0.01	0.00	0.02	0.01	0.01
3	Ppip	1.28	3.08	8.16	2.30	4.14
	Ppyg	0.06	0.01	0.06	0.00	0.03
	Pnat	0.00	0.00	0.00	0.02	0.01
	Other	0.01	0.00	0.00	0.00	0.00
4	Ppip	0.76	1.61	1.19	1.60	1.32
	Ppyg	0.02	0.00	0.06	0.00	0.02
	Pnat	0.00	0.01	0.00	0.01	0.00
	Other	0.01	0.00	0.01	0.01	0.00

Ppip – Common Pipistrelle, Ppyg – Soprano Pipistrelle, Pnat – Nathusius' Pipistrelle, Other – other bat species/unidentified bat calls/social calls

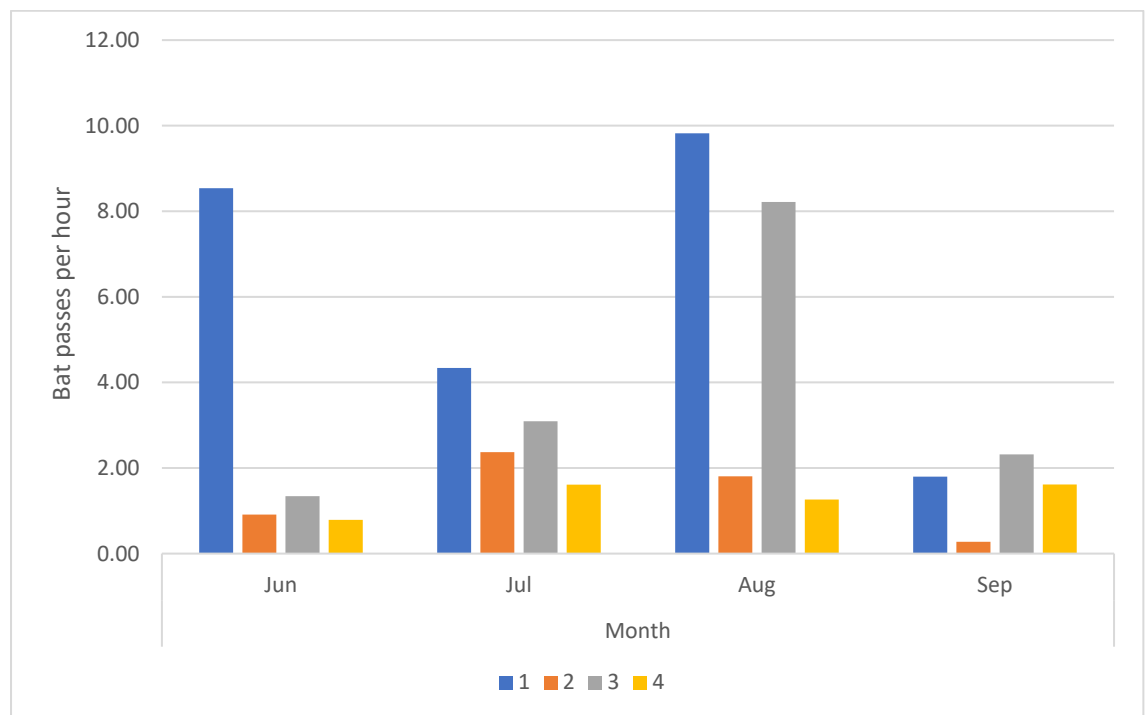


Figure App 7.3: Average bat passes per hour by static detector (1 in South Moat, 2 in East Moat, 3 in North Moat, 4 in West Moat).

PROJECT: TOWER OF LONDON
CLIENT: HISTORIC ROYAL PALACES
REPORT TITLE: NEW MOAT ACCESS RAMP AND ASSOCIATED LANDSCAPE
STATUS: Rev 3.0_issue

PREPARED BY:

PRINT NAME

Dr Mike Wells

POSITION

Director

SIGNATURE



CHECKED BY:

PRINT NAME

POSITION

SIGNATURE

APPROVED BY:

PRINT NAME

POSITION

SIGNATURE

REVISIONS:

Rev No.	Comments	Date
0.1-0.8	INTERNAL	13/04/2025 – 05/05/2025
1.0_issue	For HRP review	07/05/2025
2.0_issue	For HRP review	18/05/2025
3.0_issue	For HRP review and potentially for submission to LBTH.	01/07/2025

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