CampbellReith
consulting engineers

Turing House Free School, Twickenham

Preliminary Ecological Appraisal

For

Turner and Townsend Project Management Limited

Project Number:

11677-14

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EXECUTIVE SUMMARY

Campbell Reith Hill LLP, have been appointed by Turner and Townsend Project Management Ltd. to undertake a Preliminary Ecological Appraisal (PEA) for the Proposed Development at the Turing House Site in Whitton, Twickenham, herein referred to as the 'Site'.

The purpose of the PEA is to gather data on the current conditions of the site, assess ecological features and recommend any further surveys if applicable.

The Proposed Development is for the Turing House Free School, to include the following: the main school building, plaza area, hard and soft informal social areas, three court Multi Use Games Area (MUGA), playing/sports fields, and landscaping including the provision of habitat corridors and habitat areas. A development option has been provided by Turner and Townsend, however the exact layout may be subject to change.

The desk study concluded three statutory sites (Local Nature Reserves LNRs) and 12 non-statutory sites (Sites of Importance for Nature Conservation SINCs) within a 2km search radius. The site itself has been designated as a Metropolitan Area of Open Land (MOL). It is recommended that the Local Planning Authority Ecological Officer should be contacted to discuss possible impacts on the identified SINC (adjacent to the northern boundary of the site) and MOL.

A Phase 1 Habitat Survey was undertaken in May 2017. The habitats on site include; scattered trees, hedgerows with scattered trees, semi-improved grassland, arable land, tall ruderal vegetation, scattered scrub, bare ground and other habitat (including the disused livestock paddock).

It is recommended that all trees are retained where possible. If the proposals consider the removal of trees then a Preliminary Bat Tree Roost Inspection will be required, to determine the bat roosting potential within the existing trees. If the inspection concludes potential bat roost features, then further emergence/re-entry surveys are required (May-August). Lighting impacts as a result of the development must be kept to a minimum and follow the Bat Conservation Trust – Bats and lighting in the UK (2009).

A botanical survey of the site is recommended to establish the level of ecological value. The site has been designated as a MOL, however the local records suggest the status of this site is in poor condition.

A badger walkover survey is recommended on the site. One potential badger sett was identified on the large embankment to the east of the site.

The site has potential to be suitable for reptiles. As the majority of the site is homogenised grassland this does not provide optimum habitats for reptiles. It is recommended that vegetation removal should be undertaken in a sensitive manner, during March-October when the reptiles are most active to allow them to disperse into the wider environment.

A toolbox talk is recommended prior to the construction stage to reduce any risk of injury to other mammals.

Development proposals should consider ecological enhancements to improve the biodiversity of the site post-development. These ecological enhancements could include bird boxes, bat boxes,

suitable habitats for invertebrates and native species planting. Further advice and detailed mitigation can be advised once the proposed development design has been finalised.

1.0 INTRODUCTION

1.1. Background

1.1.1. Campbell Reith Hill LLP, have been appointed by Turner and Townsend Project Management Ltd. to undertake a Preliminary Ecological Appraisal (PEA) for the Proposed Development at the Turing House Site in Whitton, Twickenham, herein referred to as the 'Site'.

1.1.2. The Proposed Development is for the Turing House Free School, to include the following: the main school building, plaza area, hard and soft informal social areas, three court Multi Use Games Area (MUGA), playing/sports fields, and landscaping including the provision of habitat corridors and habitat areas. The Proposed Development option can be found in Appendix A. CampbellReith were advised by Turner and Townsend that the layout of the preferred option may be subject to change.

1.2. Aims and Objectives

1.2.1. The purpose of this PEA is to gather data on the current conditions of the site and assess the ecological features. The aims of the survey and this report are to:

- Undertake a desk-study to identify the extent of protected and notable species and habitats within a 2km radius of the site;
- Prepare a habitat map which follows the JNCC (2010) Phase 1 Habitat Guidelines[1];
- Identify evidence of protected species on the site or within the site's Zone of Influence;
- Assess the potential impacts of the future development;
- Detail recommendations for further survey effort where required; and
- Identify and recommend biodiversity enhancements.

1.2.2. The PEA will indicate any likely significance of ecological impact as a result of future development proposals.

1.2.3. The definition of 'significance' is outlined in the recently updated *Guidelines for Ecological Impact Assessment in the UK and Ireland*[2]. The significance of an ecological effect can carry positive or negative weightings which should be related to a geographical context. If an ecological effect requires further survey, the significance is sufficiently important.

1.2.4. The PEA presents the initial stage of identifying ecological features and potential for protected species on site. If no ecological features or potential for protected species are present on site, this document alone will suffice for planning. However, if ecological features are identified and further survey work is identified, then this report will inform a formal Ecological Impact Assessment.

1.3. Site Location

1.3.1. The Site is located off Hospital Bridge Road, Whitton, TW2 6LH, see Figure 1.1 The National Grid Reference for the approximate centre of the Site is 513313E and 173581N.

[1] JNCC (2010) Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit
[2] CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal. 2nd ed.

1.3.2. The majority of the Site comprises grassland with scattered trees. The Site is not accessible for the public and is often used by the neighbouring garden centre for planting and storage. The Site is situated within the London Borough of Richmond Upon Thames and is located within a predominantly residential area. The Site is bounded to the north by residential gardens located off Redfern Avenue, to the north east by a railway line, to the east by Hospital Bridge Road and existing residential properties, to the south by residential properties and Heathfield Recreation Ground and to the west by Borough Cemetery. Whitton Station is located approximately 800m to the east of the Site.

1.3.3. A dry ditch is located to the north of the site, there are no water bodies within the Site boundary; the River Crane is located approximately 600m south of the Site.

1.4. Previous Survey Work

1.4.1. An internet search was undertaken on the planning portal. No previous survey work has been undertaken for the site[3].

[3] London Borough of Richmond Planning Portal: http://www2.richmond.gov.uk/plandata2/Planning_Search.aspx#results

2.0 METHODOLOGY

2.1. Desk Study

2.1.1. A desk study was undertaken in February 2017 to assess the Site and its surrounding land use within a 2km radius, see Figure 2.1.

Figure 2.1: Turing House Site Boundary. Image provided courtesy of Google 2016 via Google Earth Professional. ©Google

2.1.2. The Multi-Agency Geographical Information for the Countryside (MAGIC)[4] was consulted to identify any statutory or non-statutory land-based and marine-based designations, habitats and species within a 2km radius of the site. Statutory and non-statutory sites and priority habitat maps can be found in Appendix B.

2.1.3. CampbellReith's GISSMo ® database was consulted during the desk-study to search for environmental designations.

2.1.4. A data request was obtained from Greenspace Information for Greater London (GIGL) on the 16th February 2017 identifying the biological records within a 2km radius of the site. The results have been summarised to identify protected and notable habitats and species.

2.2. Survey

2.2.1. A site walkover and ecological assessment of the habitats on site was undertaken by Alice Hoy on Wednesday 31 May 2017 during dry and warm weather conditions.

[4] MAGIC (2016) Magic Map Application: http://www.magic.gov.uk/magicmap.aspx

2.2.2. The survey followed guidance and techniques outlined in the Handbook for Phase 1 Habitat Survey[5]. Habitats present were recorded on-site and appropriately mapped with informative target notes to provide supplementary information to inform current species presence and composition.

2.2.3. An Extended survey was undertaken whilst on site to assess the potential to support legally protected species. Any evidence of known invasive species listed in Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) was noted.

2.2.4. Since the completion of this survey, the red line boundary has changed slightly to include the entrance of the existing garden centre. The habitats within this small addition of land comprised hardstanding and a scattered tree offering the same level of ecological value as the habitats noted within the survey undertaken in May 2017.

2.3. Reporting

2.3.1. Following the desk-study and site survey, conclusions are drawn on the current ecological value of the site. The report follows the Preliminary Ecological Appraisal Guidelines[6] as well as the Ecological Report Writing Guidelines[7]. If ecological features are present on site, further survey effort required will be recommended.

2.4. Limitations

2.4.1. CampbellReith has endeavoured to assess all information provided to them during this assessment. The report summaries information from a number of external sources and cannot offer any guarantees or warranties for the completeness or accuracy of information relied upon.

2.4.2. Every effort has been made to ensure all habitats have been appropriately mapped. Scattered trees locations have been mapped as applicably as possible, however their location is an approximation and may differ from the exact location. The Phase 1 Habitat Survey and conclusions represent the site at the time of surveying.

2.4.3. Since the survey was undertaken, the redline boundary has increased slightly to include the entrance to the garden nursery directly south of the site. The habitats within this area comprised hardstanding and a scattered tree. Thomson Ecology (who carried out further surveys recommended in this report) confirmed the ecological importance of this additional habitat.

2.4.4. This report has been based on the assumption that it will inform the feasibility for the proposed Freeschool development. The report may have to be amended if the development plans significantly change.

[5] JNCC (2010) Handbook for Phase 1 Habitat Survey. A technique for environmental audit.
[6] CIEEM (2013) Preliminary Ecological Appraisal Technical Guidance.
[7] CIEEM (2015) Guidelines for Ecological Report Writing: updated December 2015

3.0 DESK STUDY

3.1. Introduction

3.1.1. An ecological desktop study was completed for the site and the surrounding 2km radius in February 2017. The study identified statutory and non-statutory environmental designations and protected species and habitats provided by MAGIC, CampbellReith's GiSSMo ® and Greenspace Information for Greater London (GIGL). The Statutory, Non-statutory and protected habitat maps can be found in Appendix B.

3.2. Statutory Sites

3.2.1. Three Statutory Sites, designated as a Local Nature Reserve, have been identified within a 2km search radius of the Site boundary, see Appendix B. A description of these sites have been summarised in Table 3.1.

Table 3.1: Statutory Sites within a 2km search radius

Site Name	Designation	Grid Reference	Description
Crane Park Island	Local Nature Reserve	TQ 128 727 (670m south west of site)	Crane Park Island comprises several habitats such as grassland and areas of concrete and brickwork which are colonised by wasteland species. The site is predominantly used for community involvement and educational use.
Hounslow Heath	Local Nature Reserve	TQ 123 743 (520m north west of site)	The LNR consists of woodland, neutral grassland, acidic grassland communities and several small ponds. The site is important for birds, 102 species have been recorded. The site is also important for slow worms, viviparous lizard an d grass snake.
Pevensey Road	Local Nature Reserve	TQ 120 733 (1km west of site)	The site is an important ecological link in the Crane Valley Green Chain. The site supports a wide range of breeding birds, particularly warblers.

3.3. Non-statutory Sites

3.3.1. There are 12 Non-statutory sites within the 2km search radius, see Table 3.2. There are three tiers of importance for these sites; Sites of Metropolitan Importance, Sites of Borough Importance and Sites of Local Importance.

3.3.2. A map showing the location of these SINCs can be found in Appendix B.

3.3.3. Feltham Railsides make up a collection of green corridors throughout the area. The site abuts a railway line to the north of the site, providing an ecological corridor through to Hounslow Heath LNR located north-west of the site.

Table 3.2: Non-statutory sites within a 2km search radius

Site Name	Grid Reference	Tier	Description
Feltham Marshalling Yards	TQ 118 735	Metropolitan	The Marshalling Yards comprises extensive wasteland with habitats including tall herb communities, acid grassland, scrub and woodland. The site has an established lichen community. The site is important for butterfly communities, bees, ants and wasps.
Crane Corridor	TQ 113 743	Metropolitan	This corridor stretches over 5km bordering habitats such as woodland, pasture, heathland and areas of open water. The Crane Corridor is the most natural river within London are provides optimal conditions for uncommon aquatic plants. The habitats present favourable conditions for aquatic avifauna as well as water voles.
Hounslow Heath	TQ 121 744	Metropolitan	A large area of grassland, valuable for birds, reptiles and rare plants. The site is favoured by the local people. The site is important for lichens, breeding birds and reptiles. The site is important for educational uses.
Hanworth Park and Longford River	TQ 117 723	Borough Grade I	Hanworth Park contains acid grassland, a small willow wood and a stretch of river. The park and river are important for invertebrates, butterflies, amphibians, grass snakes and bats.
Duke of Northumberland's River north of Kneller Road	TQ 151 743	Borough Grade I	The river comprises good aquatic and marginal vegetation. The vegetation provides good habitat for birds, fish and invertebrates. The site is particularly important for its banded demoiselle (*Calopteryx splendens*).
Hounslow Loop Railsides	TQ 167 774	Borough Grade II	The railsides are uniform with vegetation including rank grassland, bramble and tall herbs. Japanese Knotweed is present along the railsides. This area is an important ecological corridor for mammals and other animals that are present within this urban area of Hounslow.
Feltham Railsides	TQ 117 736	Borough Grade II	The collection of railsides designated as SINCs make up important green corridors within the Hounslow Borough. The railside is open throughout most of its length with rough grassland, bramble and thorn and scattered deciduous trees. Muntjac deer are known to use this corridor for moving between larger sites.
Longford River in Richmond	TQ 135 715	Borough Grade II	This stretch of river extends over 2.7km, the river supports a diverse range of vegetation. The water is classified as clean supporting fennel-leaved pondweed and hornwort. The rive holds good populations of fish, including chub, roach, dace and gudgeon. Adjacent ditches support further wetland plants and adjacent habitats include rough grassland and hedges.
Fulwell and Twickenham Golf Course	TQ 138 719	Borough Grade II	These golf courses contain fine acid grassland and heather, woodland and scrub and several wet ditches and ponds. The pond provides habitats for frogs, newts, water birds, dragonflies and damselflies. Many ant hills are present within the grassland providing food for the woodpecker.
Duke of Northumberland's River south of Kneller Road	TQ 150 737	Borough Grade II	This stretch of river is straight and shallow with a gravelly bed. Arrowhead, which is an uncommon plant in London emerges along this stretch of river. Kingfishers are commonly seen, feeding on the abundant fish population, which includes chub and the scarce stone

Site Name	Grid Reference	Tier	Description
			loach.
Hounslow, Feltham and Whitton Junctions	TQ 131 740	Borough Grade II	This triangle of railway land includes three railway junctions and the land immediately on either side. The site includes a large area of wildlife habitat including hawthorn scrub and bramble. The railway lines contain strips of rough grassland and tall her communities.
Twickenham Cemetery	TQ 137 731	Local	The cemetery is important due to its size and diversity of habitat structure. The site contains grassland, hedges and scattered trees. The site provides valuable habitat for birds including goldcrest and jay. Butterflies are also common within this SINC.

3.4. Designated Priority Habitats

3.4.1. There are no designated priority habitats within the Site boundary (as per MAGIC). Areas of deciduous woodland are located to the south of the site along the River Crane. Hounslow Heath also comprises areas of deciduous woodland as well as Lowland Heathland.

3.5. Local Biological Records

3.5.1. It must be noted that absence of species from the biological records does not suggest that that species may not occur within the site.

3.5.2. The GIGL records returned multiple records of bat sightings within a 2km search radius, see Table 3.3. The majority of bat sightings were recorded to the north of the Site.

Table 3.3: Returned records of bat species within a 2km search radius

Species	Date of record	Distance and bearing	Total number of occurrences
Daubenton's Bat (*Myotis daubentonii*)	2014	1713m; North	8
Lesser Noctule (*Nyctalus leisleri*)	2014	1713m; North	2
Noctule Bat (*Nyctalus noctula*)	2014	1713m; North	3
Pipistrelle Bat Species (*Pipistrellus*)	2002	668m; South West	21
Nathusius's Pipistrelle (*Pipistrellus nathusii*)	2012	1764m; West	1
Common Pipistrelle (*Pipistrellus pipistrellus*)	2014	1713m; North	38
Soprano Pipistrelle (*Pipistrellus pygamaeus*)	2014	1713m; North	37
Brown Long-eared Bat	2014	1713m; North	2

3.5.3. The GIGL data returned records of amphibians within a 2km search radius, see Table 3.4. The data did not return any records of great crested newts within the search radius.

Table 3.4: Returned records of amphibians within a 2km search radius

Species	Date of record	Distance and bearing	Total number of occurrences
Common Toad (*Bufo bufo*)	2012	1962m; North	16
Common Frog	2012	1962m; North	219

3.5.4. The GIGL data returned records of reptiles within the 2km search radius, see Table 3.5.

Table 3.5: Returned records of reptiles within a 2km search radius

Species	Date of record	Distance and bearing	Total number of occurrences
Slow-worm (*Anguis fragilis*)	2013	1340; North West	9
Grass Snake (*Natrix natrix*)	2013	1340; North West	7
Common Lizard (*Zootoca vivipara*)	2013	1340; North West	19

3.5.5. The GIGL data returned records of mammals (exc. Bats) within the 2km search radius, see Table 3.6.

Table 3.6: Returned records of other mammals within a 2km search radius

Species	Date of record	Distance and bearing	Total number of occurrences
European Water Vole (*Arvicola amphibious)*	2013	400m; North	36
West European Hedgehog (*Erinaceus europaeus*)	2010	1,763m; North	204
Eurasian Common Shrew	2002	843m; South West	7

3.5.6. GIGL did not return records of badgers, dormouse, otters, great crested newts, White-Clawed Crayfish within a 2km radius of the Site.

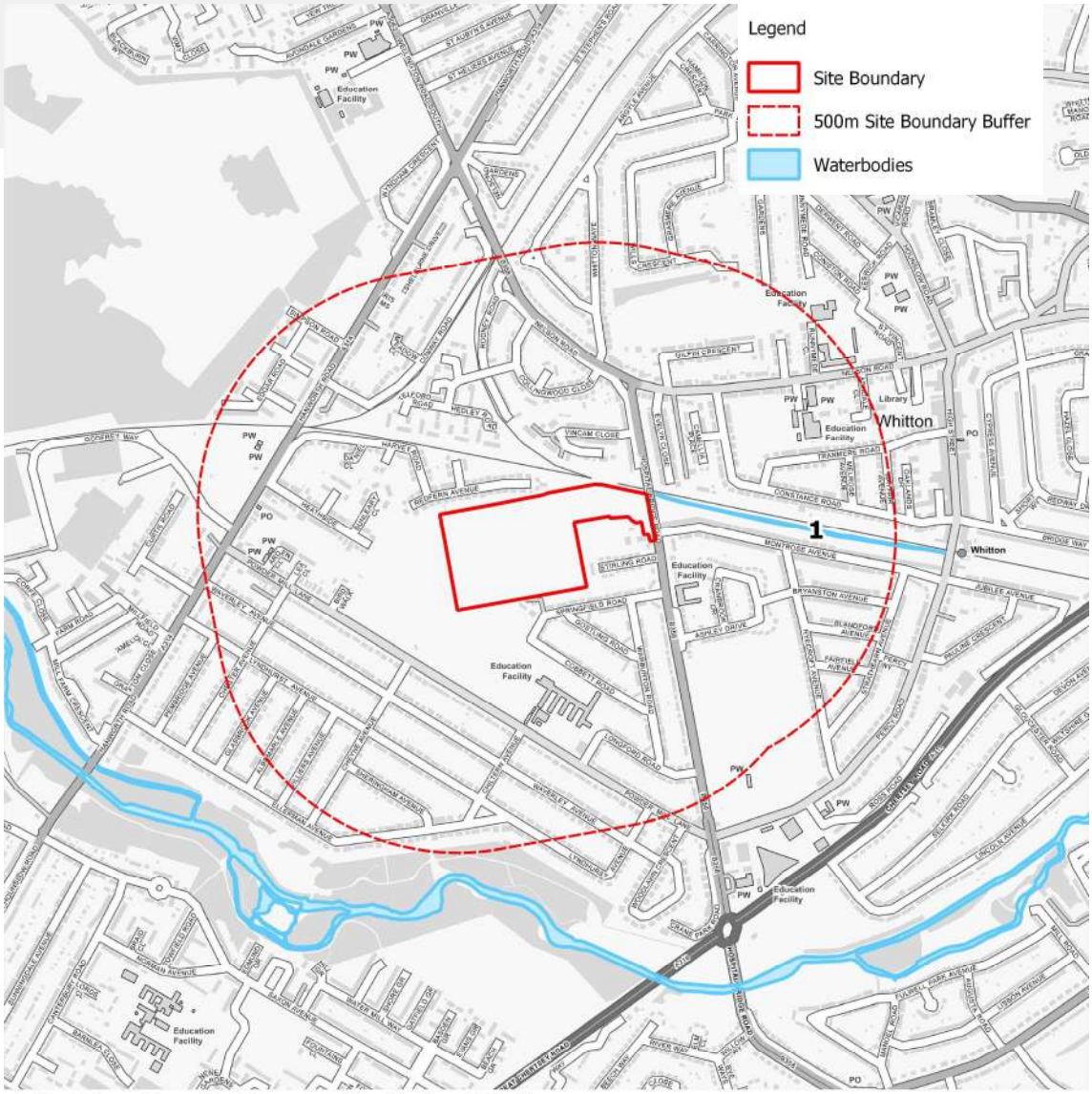
3.6. Water bodies within a 250m radius

3.6.1. The Great Crested Newt (GCN) conservation handbook[8] suggests adult newts will stay within 250m of breeding pond, however it is best practice to consider all ponds, surface water bodies and ditches within a 500m radius of the site.

3.6.2. Ponds with an area approximately 50-250m^2 should be highly considered as GCN prefer small to medium sized breeding ponds, with smaller ponds being used more successfully where they occur in clusters.

3.6.3. There are no permanent or semi-permanent water bodies on Site. Figure 3.1. shows the one surface water body identified within a 500m radius of the site. The GiGL did not return any records of GCN within a 2km search radius.

[8] Langton *et al* (2001) Great Crested Newt Conservation Handbook. Froglife.



3.6.4. During the site visit an additional ditch (which was not identified within the desk study) was located along the northern boundary of the Site. During the visit the ditch was overgrown and dry.

3.6.5. Due to the lack of surrounding water bodies, sub-optimum habitat on site and dry ditch noted on the Phase 1 Habitat Survey, GCN were not considered further within this appraisal.

4.0 RESULTS

4.1. Habitat Plan – Phase 1 Habitat Survey

4.1.1. The Phase 1 Habitat Survey was undertaken on Wednesday 31 May 2017 during dry and warm weather conditions. The ecological mapping produced as per the Phase 1 Habitat Survey Guidelines can be found in Appendix C.

4.1.2. The following habitats were identified during the survey and are described in detail below:

- Scattered Trees
- Hedgerow
- Semi-improved grassland
- Arable
- Tall Ruderal Vegetation
- Scattered Scrub
- Bare Ground
- Other

4.2. Habitats on Site

Scattered Trees and hedgerows

4.2.1. The majority of the scattered trees are located along the north, eastern and western boundary. Species include; pedunculated oak *(Quercus robur),* small-leaved lime (*Tilia cordata*), Lawson's cypress (*Chamaecyparis lawsoniana*), Hawthorne (*Crataegus monogyna*); Sycamore (*Acer pseudoplatanus*), Robinia, Cherry (*Prunus avium*), field maple (*Acer campestre*), ash (*Fraxinus excelsior*), Lombardy poplar (*Populus nigra*), Norway maple (*Acer platanoides*).

Throughout the semi-improved grassland were very young species of silver birch (*Betula pendula)* and hawthorn. These species were less than 750mm in diameter and are considered negligible in their ecological value.

Scattered trees were common throughout the hedgerow to the north of the site boundary. The understory of this hedgerow included bramble (*Rubus fruticosus*), stickyweed (*Galium aparine*), ivy (*Hedera helix*), hogweed (*Heracleum sphondylium*), cow parsley (*Anthriscus sylvestris*) and butterfly bush (*Buddleja*).

Since the survey was undertaken, the red line boundary has extended to include the entrance of the existing garden nursery. Two scattered trees were identified.

With the exception of the recently planted scattered tree species throughout the site, the remaining scattered trees and hedgerows are given local ecological value.

Semi-improved grassland

The site is not freely open to the public however the majority of the grassland is subject to management. Patches of longer SI grassland are present around the borders of the site and between the planting of young trees. The species composition comprised perennial rye (*Lolium perenne*), cock's foot (*Dactylis glomerata*), wild oat (*Avena fatua*), meadow foxtail (*Alopecurus*

pratensis), common bent (*Agrostis capillaris*), white clover (*Trifolium alba*), red clover (*Trifolium* hybridum), daisy (*Bellis perennis*), dandelion (*Taraxacum officinale*), creeping buttercup (*Ranunculus repens*).

A botanical survey is recommended to provide a full comprehensive species list of flora on site. This survey will determine the level of importance of the site in terms of ecological value. Metropolitan Open Land is given the same weighting as green belt land in terms of local value within the Local Plan, see Section 5.7.

Arable land

Areas within the grassland have been classified as arable land as they are currently used for planting nurseries and flower beds. Part of this arable land is used for storage of soils and gravels. The grassland species surrounding the flower beds were similar to that of the semi-improved grassland.

4.2.2. This habitat is considered to be of negligible ecological value as it is common and widespread both nationally and locally.

Tall ruderal vegetation

The majority of tall ruderal vegetation was found on the earth embankment towards the east of the site. Species included stinging nettle (*Urtica dioica*), sticky weed (*Galium aparine*), broad-leaved dock (Rumex obtusifolius), thistle (*Cynareae*).

4.2.3. This habitat is considered to be of negligible ecological value as it is common and widespread both nationally and locally.

Scattered Scrub

4.2.4. Scattered scrub was present along the perimeter of the site species included bramble (*Rubus fruticosus*), stinging nettles (*Urtica dioica*).

4.2.5. This habitat is considered to be of negligible ecological value as it is common and widespread both nationally and locally.

Bare ground

4.2.6. Areas of bareground were present to the east of the site providing vehicular access and footpaths into the site. The adjoining garden centre occupies the land immediately adjacent to them for storage, vegetation planting and disposal of crates and decaying (planted and removed) vegetation.

4.2.7. This habitat is considered to be of negligible ecological value as it is common and widespread both nationally and locally.

Embankments

4.2.8. Three earth embankments are located within the site boundary. The earth embankment to the east is the largest colonised by tall ruderal vegetation. This embankment is approximately 2.5m high with a 60 degree angle. Another embankment borders the eastern boundary and hospital road. A small embankment is located in the centre of the site, it is thought that waste soil material was left here and the vegetation left to colonise.

4.2.9. Species that colonised the larger earth embankment to the east of the site included; Common Poppy (*Papaver rhoeas*), tall rocket (*Sisymbrium altissimum*), Herb Robert (*Geranium*

robertianum), Dove's-foot Crane's bill (*Geranium molle*), Common mallow (*Malva moschata*). Hoary willowherb (*Epilobium parviflorum*), cow parsley (*Anthriscus sylvestris*), Hemlock (*Conium maculatum*), green alkanet (*Pentaglottis sempervirens*), oxeye daisy (*Leucanthemum vulgare*).

Other

4.2.10. The remaining habitats have been target noted (TN2) within the Phase 1 Habitat Plan, Appendix C. Disused barrels, piles of crates, a disused livestock paddock and shed are located towards the centre of the site.

4.3. Species

Bats

The GIGL data returned records of bats within a 2km search radius. Hounslow Heath and the River Crane are located within a 2km radius of the site and offer suitable habitats for bat species. It may be possible that bats forage along the trees that line the borders of the site.

Reptiles

4.3.1. The GiGL data returned records of Slow-worm, grass snake and common lizard within a 2km search radius. These sightings were recorded 1,340 north west which is located within Hounslow Heath. The railway to the north of the site provides an ecological corridor between this LNR and the site. Several piles of suitable refugia were located towards the north of the site bordering the dry ditch. This being said, the majority of the site is regularly maintained grassland which provides a more homogenous habitat. The perimeter of the site and earth embankment may provide suitable habitats for reptiles. During the survey, crates and rubble were lifted however no reptiles were observed.

Birds

4.3.2. The scattered trees, hedgerows, tall ruderal vegetation and scattered scrub provide suitable habitats for nesting birds. Target Note 2 commented on the birds nest located within the disused livestock paddock. Birds were found nesting in the embankment to the east of the site.

Mammals

4.3.3. Numerous animal trails encountered during the survey. The majority of them were found along the site boundary and across the earth embankment to the east.

4.3.4. The GIGL data returned record of European Hedgehog and Common Shrew. It is likely that the majority of these animal trails are those of urban foxes.

Amphibians

4.3.5. The GIGL data returned records of Common Toad and Common Frog located approximately 1,962m north of the site.

4.3.6. The areas of scattered scrub, tall ruderal vegetation and disused crates provide suitable habitat for amphibians. A drainage ditch lies to the north of the site however was noted as dry during the survey. Only one other water body (a drainage ditch to the west of the site) was noted during the desk study although the road provides a significant barrier between the site.

Badgers

4.3.7. Several gaps in the fence were noticed to the south of the site, adjacent to the cemetery. These gaps were checked for hairs, the surrounding area was checked for latrines. There was no evidence of snuffle holes across the grassland.

4.3.8. The large embankment to the east provided suitable habitat for badgers, a possible badger set was noted as Target Note 3. A further walkover of the entire embankment is recommended to confirm or discount any other potential badger setts.

Invertebrates

4.3.9. The GIGL records suggested that the habitats present within Hounslow Heath were suitable for a good population of invertebrate species. The railway to the north of the site provides an ecological corridor from the heath to the site. Although there is a known presence of invertebrate populations within the area, the habitats on site do not provide optimal habitats for invertebrates such as dead wood and decaying trees.

Great Crested Newt

4.3.10. The GIGL data did not return any records of GCN. The requirement for further survey was scoped out in Section 3.6. of this report on account of the lack of surrounding water bodies and sub-optimum habitats on site.

Dormouse

4.3.11. The GIGL data returned no records of Dormouse within a 2km radius of the site.

4.3.12. The site does not support suitable habitats for Dormice.

Water Vole

4.3.13. The GIGL data returned 36 occurrences of water voles in 2013 approximately 400m north of the site. There were no suitable habitats on site to support water vole populations. The ditch to north of the site was dry during the survey.

White-clawed crayfish

4.3.14. The GIGL data returned no records of White-clawed crayfish within a 2km radius of the site.

4.3.15. The site does not support suitable habitats for Otter.

Otter

4.3.16. The GIGL data returned no records of Otter within a 2km radius of the site.

4.3.17. The site does not support suitable habitats for Otter.

Non-native invasive species

4.3.18. There was no evidence of non-native invasive species on Site.

4.4. Target Notes

4.4.1. Table 4.1 illustrates the target notes to accompany the Phase 1 Habitat Survey, see Appendix C.

Table 4.1: Phase 1 Habitat Survey Target Notes

Target Note	Description	Photograph
T1	Young planted trees. Stem diameter less than 750mm	
T2	Arable land with disused livestock paddock with bird nest	

Target Note	Description	Photograph
T3	Potential badger sett	
T4	Largest earth embankment to east of site	

Target Note	Description	Photograph
T5	Fly tipping	

5.0 LEGISLATION AND PLANNING

5.1. National Planning Policy Framework (NPPF)

5.1.1. The NPPF is a high-level document outlining the Government's planning policies for England whilst providing a framework on how they are expected to be applied. This simplified approach to Government regulations address requirements for planning with a focus on relevance, proportionality and necessity.

5.1.2. Chapter 11: Conserving and enhancing the natural environment, is applicable to addressing issues raised within a Preliminary Ecological Appraisal. The following sections, in particular, are worth addressing:

- Section 109: The planning system should contribute and enhance the natural and local environment by: recognising the wider benefits of ecosystem services; minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.
- Section 113: Local Planning Authorities should set criteria...so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks.
- Section 117: To minimise impacts on biodiversity and geodiversity, planning policies should...promote the preservation, restoration and re-creation of priority habitats. Ecological networks and the protection and recovery of priority species populations.
- Section 118: When determining planning applications, the Local Planning Authorities should aim to conserve and enhance biodiversity by applying the following principles:
  - If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
  - Opportunities to incorporate biodiversity in and around developments should be encouraged.
- Section 119: The presumption in favour of sustainable development (paragraph 14) does not apply where development requiring appropriate assessment under the Birds or Habitats Directive is being considered, planned or determined.

5.2. Conservation of Habitats and Species Regulations 2010 (as amended)

5.2.1. Schedule 2 of the Conservation of Habitats and Species Regulations 2010 legally protects European Protected Species (EPS) such as Bats, Dormouse, Great Crested Newt and the Common Otter. Other species are protected but are particularly rare within the UK, for example; Wild Cat, Dolphin, Fisher's Estuarine. Refer to Schedule 2 for a full list of European Protected Species.

5.2.2. It is an offence to:

- Deliberately capture, injure or kill an EPS.

- Disturb an EPS or deliberately take and destroy their eggs
- Damage or destroy their breeding site or resting place.
- Impair their ability to survive, to breed or to reproduce, or rear or nurture their young
- Affect significantly the local distribution or abundance of the EPS.

5.2.3. A person guilty of the above offences is liable to fine and conviction.

5.3. Wildlife and Countryside Act 1981 (as amended)

5.3.1. The Wildlife and Countryside Act 1981 (as amended) affords protection to species listed under Schedule 1, Schedule 5, Schedule 6 and Schedule 8 in Great Britain.

- prohibits certain methods of killing or taking wild animals;
- amends the law relating to protection of certain mammals;
- restricts the introduction of certain animals and plants;

5.3.2. Species afforded protection under this act are Water Voles, Sand Lizard (*Lacerta agilis*), Smooth Snake (*Coronella austriaca*), Common Lizard (*Zootoca vivipara*), Adder (*Vivpera berus*), Slow Worm (*Anguis fragilis*), Grass Snake (*Natrix natrix*).

5.3.3. All active bird's nests, eggs and young are protection from intentional destruction.

5.3.4. Licensing from an appropriate public authority can legalise all prohibited actions as outlined in the legislation.

5.4. Natural Environment & Rural Communities Act (NERC,2006)

5.4.1. Natural England are the main body in exercising conservation, enhancement and management of biodiversity for the benefit of present and future generations, in order to contribute to sustainable development.

5.4.2. Section 40 of the NERC Act (2006) establishes that it is the duty of any Public Authority to exercise adequate responsibilities to conserve biodiversity in England.

5.4.3. Section 41 declares that the Secretary of State must publish a list of species and habitat types that are considered of Principle Importance.

5.4.4. Natural England has currently confirmed a total of 943 species and habitat types of Principle Importance.

5.5. The Protection of Badgers Act 1992 (as amended)

5.5.1. It is an offence to wilfully kill, injure or take, a badger.

5.5.2. It considered an offence if a person enacts cruelty to a badger, interferes with a badger sett, sells or is in possession of a badger, or marks a badger without an appropriate licence.

5.5.3. A licence may be granted for the purpose of any development as defined in section 55(1) of the Town and Country Planning Act 1990, to interfere with a badger sett within an area specified within the licence.

5.5.4. A 'badger sett' is defined as any structure or place which displays signs indicating current use by a badger.

5.6. The Protection of Mammals Act 1996 (as amended)

5.6.1. The Protection of Wild Mammals Act 1996 states that it is an offence to mutilate, kick, beat, nail or otherwise impale, stab, burn. stone, crush, drown or asphyxiate any wild mammal with intect to inflict unnecessary suffering.

5.6.2. A 'wild mammal' means any mammal which is not a domestic or captive animal.

5.6.3. Wild Mammals are therefore afforded a level of protection under this act, any person guilty of an offence is subject to a fine or imprisonment or both.

5.7. Local Policy

5.7.1. Table 5.1. details the policies within the London Borough of Richmond upon Thames Local Plan (publication version for consultation January 2017- February 2017).

Table 5.1: London Borough of Richmond Local Plan Policies applicable to the Proposed Development

Policy	Description
Policy LP 13 – Green Belt, Metropolitan Open Land and Open Green Space	The borough's Green Belt and Metropolitan Open Land will be protected and retained in predominantly open use. Inappropriate development will be refused unless 'very special circumstances' can be demonstrated clearly outweigh the harm of the Green Belt or Metropolitan Open Land. Appropriate uses within Green Belt or Metropolitan Open Land include public and private spaces and playing fields, open recreation and sport, biodiversity including rivers and bodies of open water and community uses including allotments and cemeteries. Development will be supported if it is appropriate and helps secure the objectives of improving the Green Belt and Metropolitan Open Land. Improvement to the existing open Green Land or Metropolitan area will be encouraged. Where a development proposal affects designated Green Belt of MOL, the applicant is required to submit an assessment that compares the floorspace of existing structures and buildings with the footprint and floorpsace of the proposed development. This will enable the Council to make an informed judgement in relation to the overall impact on, and potential loss of, designated MOL. Enhancement to the MOL, for example by landscaping, removal or replacement of inappropriate fencing and screening, and reduction of the visual impact of traffic and car parking as well as opening up the views to the MOL should be encouraged. The potential for wildlife
Policy LP 15 – Biodiversity	The council will protect and enhance the Borough's biodiversity by: 1.) Protecting biodiversity in, and adjacent to, the borough's designated sites for biodiversity and nature conservation importance (including buffer zones), as well as other existing habitats and features of biodiversity value. 2.) Supporting enhancements to biodiversity 3.) Incorporating and creating new habitats or biodiversity features, including trees, into development sites and into the design of buildings themselves where appropriate; 4.) Ensuring new biodiversity features or habitats connect to the wider

	ecological and green infrastructure networks and complement surrounding habitats; 5.) Enhancing wildlife corridors for the movement of species; 6.) Maximising the provision of soft landscaping, including trees, shrubs and other vegetation that support the borough wide Biodiversity Action Plan.
Policy LP 16 – Trees, Woodlands and Landscape	The council will require the protection of existing trees and the provision of new trees, shrubs and other vegetation of landscape significance that complement existing, or create new, high quality green areas, which deliver amenity and biodiversity benefits. Landscape plans will require the retention of important existing landscape features where practicable; require landscape design and materials to be of high quality and compatible with the surrounding landscape and character; and; encourage planting, including new trees, shrubs and other significant vegetation where appropriate.

6.0 RECOMMENDATIONS AND ENHANCEMENTS

6.1. Statutory Sites

6.1.1. Three statutory sites are located within a 2km search radius of the Site. The site, located 520m away, is connected to Hounslow Heath by the existing railway line. Due to the scale and nature of development, it is not considered that the proposed development will have a direct impact to the surrounding statutory sites.

6.2. Non-statutory sites

6.2.1. There are 12 non-statutory sites located within a 2km search radius. The site is bounded to the north by Feltham Railsides which make up a connection of SINCs within the borough. As a result of the close proximity of the non-statutory site, it is recommended that the Local Planning Authority Ecological Officer is consulted to discuss the impacts of the proposed development to these local non-statutory sites.

6.3. Metropolitan Open Land (MOL)

6.3.1. The GIGL local records identified that the site has been designated as 'Metropolitan Open Land', under the site name of Bridge Farm Nursery. The habitat type had been surveyed in 1998 as amenity grassland, scattered trees, native hedges and bare artificial habitat. Although the habitats differ slightly from those identified in 1998, the site is still offered a level of protection under the MOL designation. Section 5.7 of this appraisal highlights the policies associated with this designation. As a result, it is recommended that the Local Planning Authority Ecological Officer is contacted to establish appropriate proposed development plans and enhancement measures.

The majority of the Site contains semi-improved grassland, a botanical survey is recommended to establish the level of ecological value in terms of MOL.

6.4. Bats

6.4.1. If the development proposals require the removal of trees then a preliminary tree bat roost assessment is recommended. This does not include the removal of trees less than 750mm in stem diameter as these were considered as having negligible potential for bat roosts.

6.4.2. The existing site is currently not open to the public, and the site itself is exposed to minimal light pollution. The retained trees must not be directly impacted by lighting. The existing trees maybe suitable for roosting and foraging bat species so lighting proposed for the development should be installed in accordance with the Bat Conservation Trust – Bats and lighting in the UK (2009) which includes;

- Use of low pressure sodium lamps, LEDs or high pressure sodium instead of mercury or metal halide lamps.
- Lighting should be directed to where it is needed and light spillage avoided
- The height of lighting columns in general should be as short as possible.

6.5. Nesting Birds

6.5.1. The disused livestock paddock had been target noted as a birds nest was present. The removal of the paddock and shed, as well as the vegetation and earth embankment should be

undertaken outside of nesting bird season, March – August. If this is not feasible, then a nesting bird check should be undertaken to ensure no nesting birds occupy the nest.

6.6. Badgers

6.6.1. Target note 3 identified a potential badger sett. This was the only badger sett observed during the survey. There were no other signs of latrines, snuffle holes or hairs within the sett. Due to access restrictions the entirety of the embankment could not be surveyed, as such it is recommended that a further walkover of the embankment is undertaken to establish any further setts. It is recommended that development avoids areas where badgers are known to be occupying setts, if the development cannot avoid this area then a badger survey which can be undertaken at any time of the year is recommended.

6.7. Reptiles

6.7.1. The majority of the site occupies a homogenous stretch of well-maintained semi-improved grassland. Areas of longer swards, located around the perimeter of the boundary, mainly towards the north and northwest of the site, provide suitable habitat for reptiles. It is therefore recommended that a method statement is prepared outlining sensitive vegetation removal to reduce any disturbance to potential reptiles occupying the site. The crates and rubble also provide potential habitat for reptiles. Prior to construction this material should be removed in a sensate manner to reduce any harm to potential reptiles. Removal of vegetation should be undertaken when reptiles are most active during March – October. The vegetation should be removed in a successional manner towards the railway line in the north to allow dispersal for the reptiles into the wider habitat.

6.8. Mammals

6.8.1. Animal trails were present along the boundary of the site and across the earth embankment. The site provided suitable habitat for hedgehogs and foxes. Prior to construction, a toolbox talk is recommended reduce any risk of harm to these animals during the construction phase of the development.

6.9. Enhancement Opportunities

6.9.1. In order to maximise the ecological enhancement for the site, the development proposals should be discussed with the Local Planning Authority Ecological Officer. It is recommended that all trees are to be retained where possible. The Proposed Development Plans should seek to enhance the connectivity to the adjacent SINC.

6.9.2. The GIGL records highlight that although the site has been designated as a MOL, the habitats are classified as an area of deficiency. There is potential for the development to improve the existing site through biodiversity enhancements subject to agreement with the Local Ecological Officer.

6.9.3. Development proposals should consider ecological enhancements to improve the biodiversity of the site post-development. These ecological enhancements could include bird boxes, bat boxes, suitable habitats for invertebrates and native species planting. Further advice and detailed mitigation can be advised once the proposed development design has been finalised.

7.0 CONCLUSION

7.1.1. The purpose of the PEA was to gather data on the current conditions of the site, assess ecological features and recommend any further survey if applicable.

7.1.2. The Proposed Development is for the Turing House Free School, to include the following: the main school building, plaza area, hard and soft informal social areas, three court Multi Use Games Area (MUGA), playing/sports fields, and landscaping including the provision of habitat corridors and habitat areas.

7.1.3. The desk study concluded that there three statutory sites (LNR) located within a 2km search radius of the site. Their location and proximity to site, together with the nature and scale of development, it is not considered that the proposed development will have a significant impact on these LNRs. 12 non-statutory sites are located within a 2km search radius. A SINC is located along the northern boundary of the site. As a result, the LPA Ecological Officer should be contacted to discuss possible impacts on the identified SINC.

7.1.4. The site itself is classified as a Metropolitan Area of Open Land (MOL). This designation is given the same value as Green Belt Land. Planning policy LP 13 of the London Borough of Richmond Local Plan states that appropriate uses within MOL include playing fields, open recreation and sport areas. The policy states that improvement to the existing open MOL will be encourage. It is recommended that the proposals are discussed with the LPA Ecological Officer to determine possible enhancement opportunities whilst facilitating the development.

7.1.5. The habitats on site include; scattered trees, hedgerows with scattered trees, semi-improved grassland, arable land, tall ruderal vegetation, scattered scrub, bare ground and other habitat (including the disused livestock paddock).

7.1.6. It is recommended that all trees are retained where possible. If the proposals require the removal of trees then a Preliminary Bat Tree Roost Inspection is recommended to determine the bat roosting potential within the existing trees. The optimum period to undertake this survey is November-March, although they can be undertaken year-round. If the inspection concludes potential bat roost features, then further emergence/re-entry surveys are required (May-August).

7.1.7. The existing site is currently not open to the public, and the site itself is exposed to minimal light pollution. The retained trees must not be directly impacted by lighting. The existing trees maybe suitable for roosting and foraging bat species so lighting proposed for the development should be installed in accordance with the Bat Conservation Trust – Bats and lighting in the UK (2009).

7.1.8. A botanical survey of the site is recommended to establish the level of ecological value. The site has been designated as a MOL, however the local records suggest the status of this site is in poor condition. This conclusion was made in 1998 therefore the further survey will conclude its current status.

7.1.9. A potential badger sett was identified on the western side of the large embankment. A further badger walkover survey will conclude whether any other setts are located within the embankment. The conclusions of this survey will recommend, if necessary, the requirement for

further survey. If the proposed plans do not require the removal of this embankment then a 30m buffer is required from the development to the embankment.

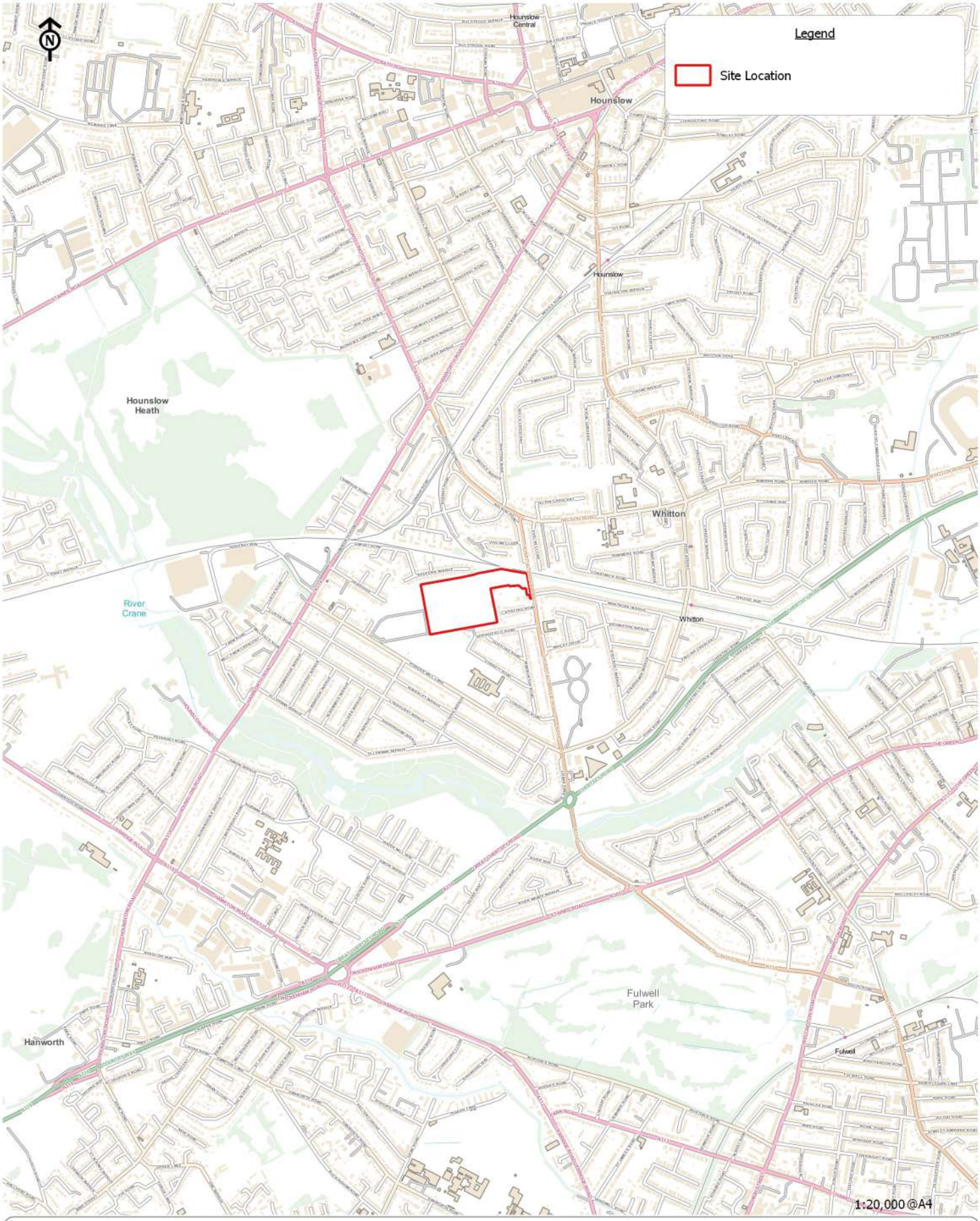
7.1.10. The site has potential to be suitable for reptiles. As the majority of the site is homogenised grassland, this does not provide optimum habitats for reptiles. It is recommended that vegetation removal should be undertaken in a sensitive manner, during March-October when the reptiles are most active to allow them to disperse into the wider environment.

7.1.11. A toolbox talk is recommended prior to the construction stage to reduce any risk of injury to other mammals.

7.1.12. The GIGL records highlight that although the site has been designated as a MOL, the habitats are classified as an area of deficiency. There is potential for the development to improve the existing site through biodiversity enhancements subject to agreement with the Local Ecological Officer.

7.1.13. Development proposals should consider ecological enhancements to improve the biodiversity of the site post-development. These ecological enhancements could include bird boxes, bat boxes, suitable habitats for invertebrates and native species planting. Habitats should be maximised within the scheme. Further advice and detailed mitigation can be advised once the proposed development design has been finalised.

Appendix A: Site Boundary and Proposed Masterplan



Turing House Free School, Twickenham

Client: Turner and Townsend Project Management Ltd

Figure 1:
Site Location Plan

Scale:	1:20000@A4
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Contains Ordnance Survey data	© Crown copyright and database right 2016.
Job Number:	11677-14
Drawn by - Checked by:	LB - SMB
Drg No - Status/Revision:	GIS001 - B
File location:	//lo-data1/gis-data/11500 - 11749/11677 L - Free Schools Framework/14 - Turing House, Housnlow/Project_Workspaces (pdf in Outputs)
Date (Revision History):	

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Notes

1. Drawing not to be scaled for construction or setting out purposes'.
2. To be read in conjunction with Project Risk Register REF: XXX
3. To be read in conjunction with all other Landscape Architect"s drawings

KEY

(A) Entrance Plaza

(B) Car Parking
45no. Total Spaces
3 Disabled Bays
10 Active Electric Charging Points
10 Passive Electric Charging Points
Deliveries / Coach Bay

(C) New Site Entrance

(D) Deliveries and Maintenance Gate

(E) Habitat Area
Planting species designed to encourage insect and bird habitats and enhance the ecological corridor

(F) Pedestrian Boulevard

(G) Hard Informal Social Area

(H) 6th Form External Social Space

(I) External Canopy

(J) Cycle Parking
136no. Pupil Spaces
10no. Visitor Spaces
10no. Staff Spaces

(K) 3 Court MUGA

(L) Playing/Sports Field
A Space design to maximise the amount of sports played by the school. The North/South orientation results in 3no. pitches

(M) Boundary Fence
a 2.4m boundary fence with hedge planting to provide screening

(N) Grassland & Habitat Creation
Area seeded with species rich grass and planting with trees to create habitat zones and habitat creation

(O) Habitat Corridor
The existing avenue of trees retained and grassland managed to reinforce the habitat corridor, providing habitat corridor between the rail line, cemetary and retained fallow land

(P) Pupil Access
Propsoed pupil access from Heathfield Recreation Ground. A low lit self bind gravel path weaving through the habitat area to the school.

ID	RISK	MITIGATION	Date Mitigated

RESIDUAL PROJECT RISKS

DATE	SUITABILITY	REV	DESCRIPTION OF REVISION	DRAWN BY	APPROVED BY
13.11.18	S2	P02	Highways entrance and adjacent area updated	HT	LA

REVISIONS

SUITABILITY
S2 - For Planning

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CLIENT :
Bowmer and Kirkland

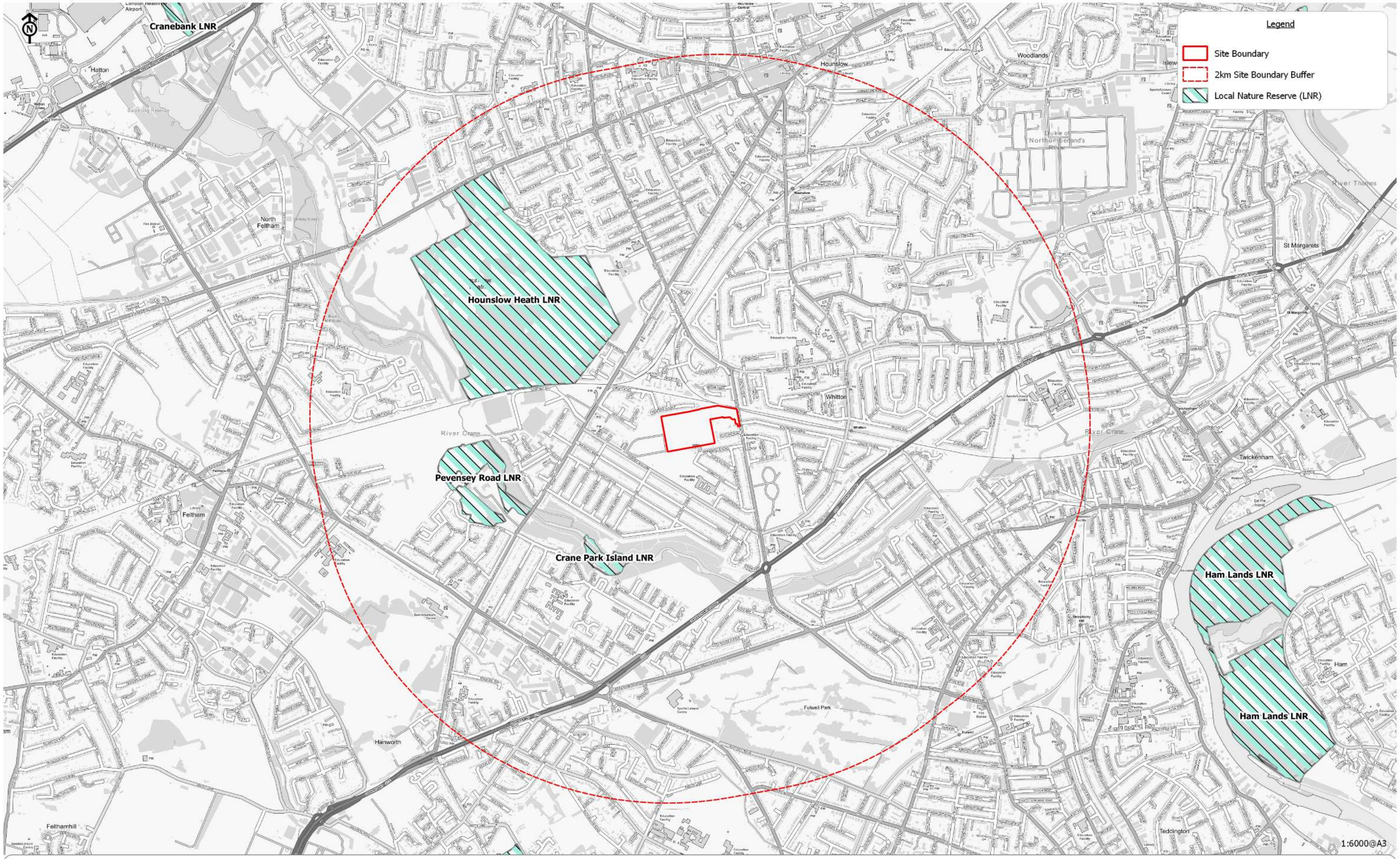
PROJECT TITLE :
Turing House School

DRAWING TITLE :
Illustrative Masterplan

DRAWING SCALE :	DRAWN BY :	DRAWN DATE :
1:1000	EC	02.03.2018
PAPER SIZE :	APPROVED BY :	
A1	LA	

DRAWING NUMBER :	SUITABILITY :	REVISION :
EFATH-ALA-00-XX-DR-L-0003	S2	P02

Appendix B: Statutory and Non-Statutory Designated Sites & Priority Habitat Maps



Turing House Free School, Twickenham

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Statutory sites within 2km of site

Scale:	1:6000@A3
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File location:	N:\11500 - 11749\11677 L - Free Schools Framework\14 - Turing House, Housnlow\Project_Workspaces\PEA (pdf in Outputs)
Date (Revision History):	06/09/2017 (A, First Issue, 01/03/17, RP; B, Boundary Amendment, 06/09/17, RP)

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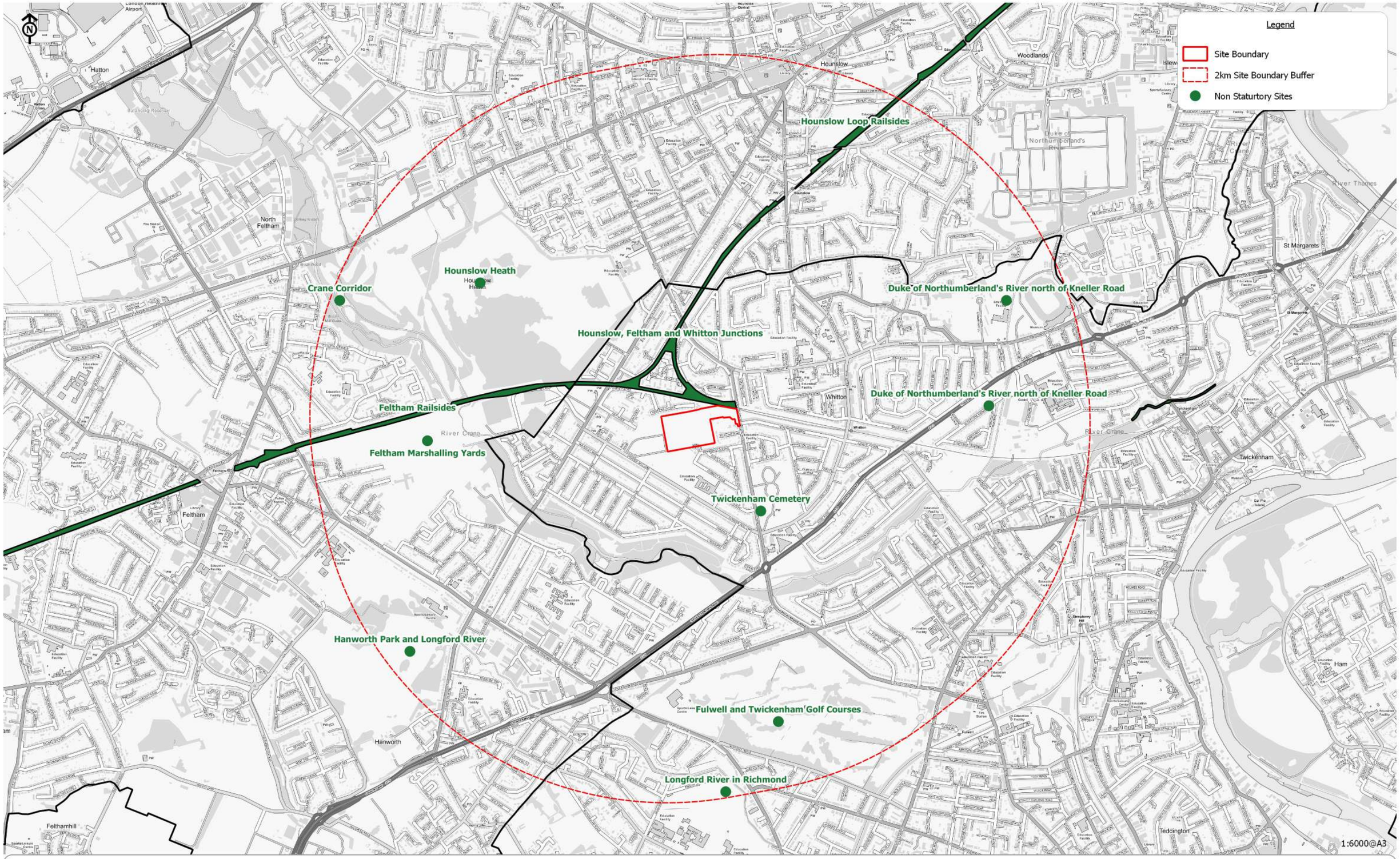

Turing House Free School, Twickenham

Client: Turner and Townsend Project Management Ltd

Non Statutory sites within 2km of site

Scale: 1:6000@A3

Job Number: 11677-14
Drawn by - Checked by: RP - AH
Drg No - Status/Revision: GIS005 - C
File location: N:\11500 - 11749\11677 L - Free Schools Framework\14 - Turing House, Housnlow\Project_Workspaces\PEA (pdf in Outputs)
Date (Revision History): 05/12/2018 (A, First Issue, 01/03/17, RP; B, Boundary Amendment, 06/09/17, RP; C, Non Statutory Rail boundaries added, 05/12/18,

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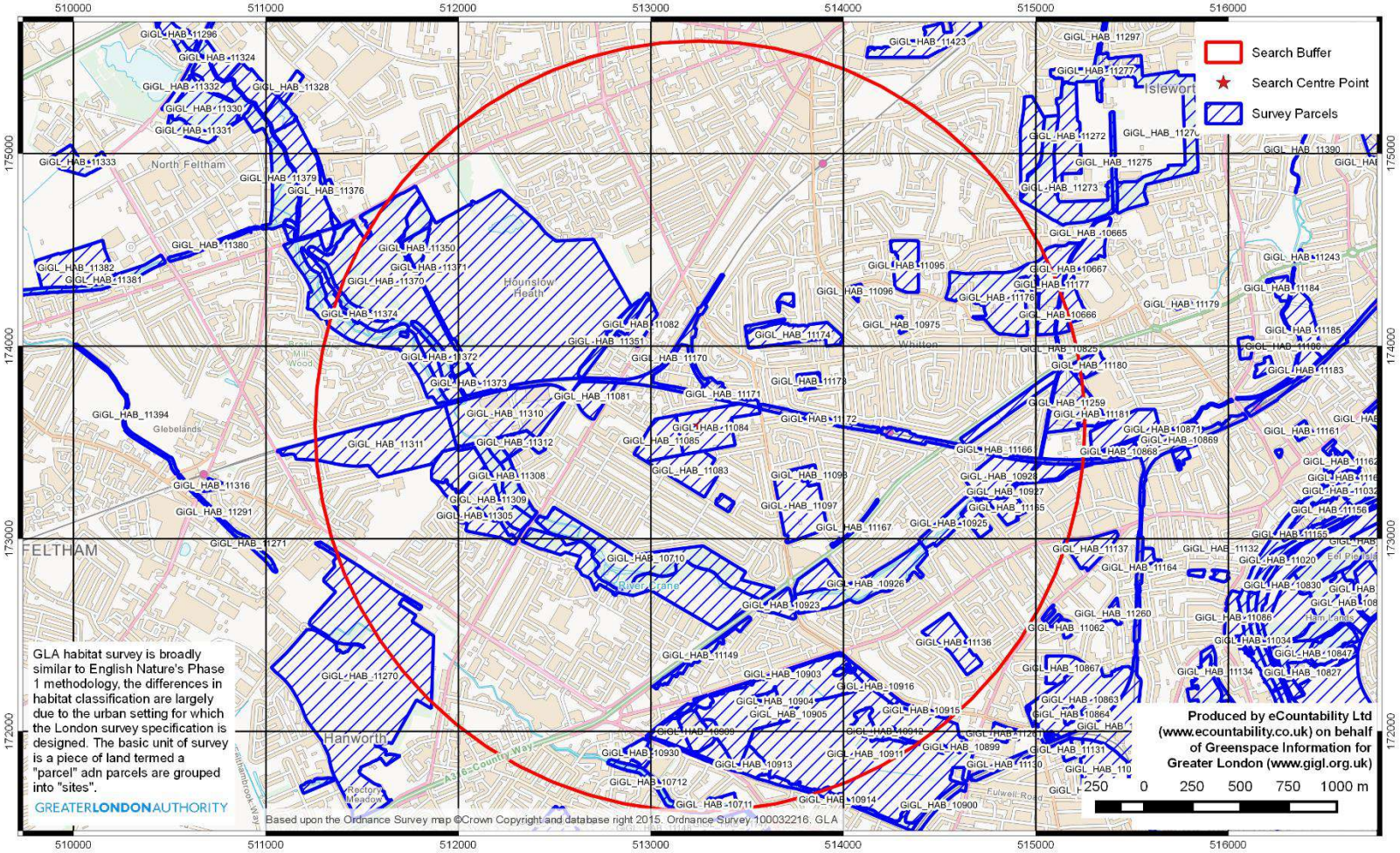
Habitat Survey Parcels

Ecological Data Search for Campbell Reith Hill LLP
Turing House, Hounslow, 16 February 2017

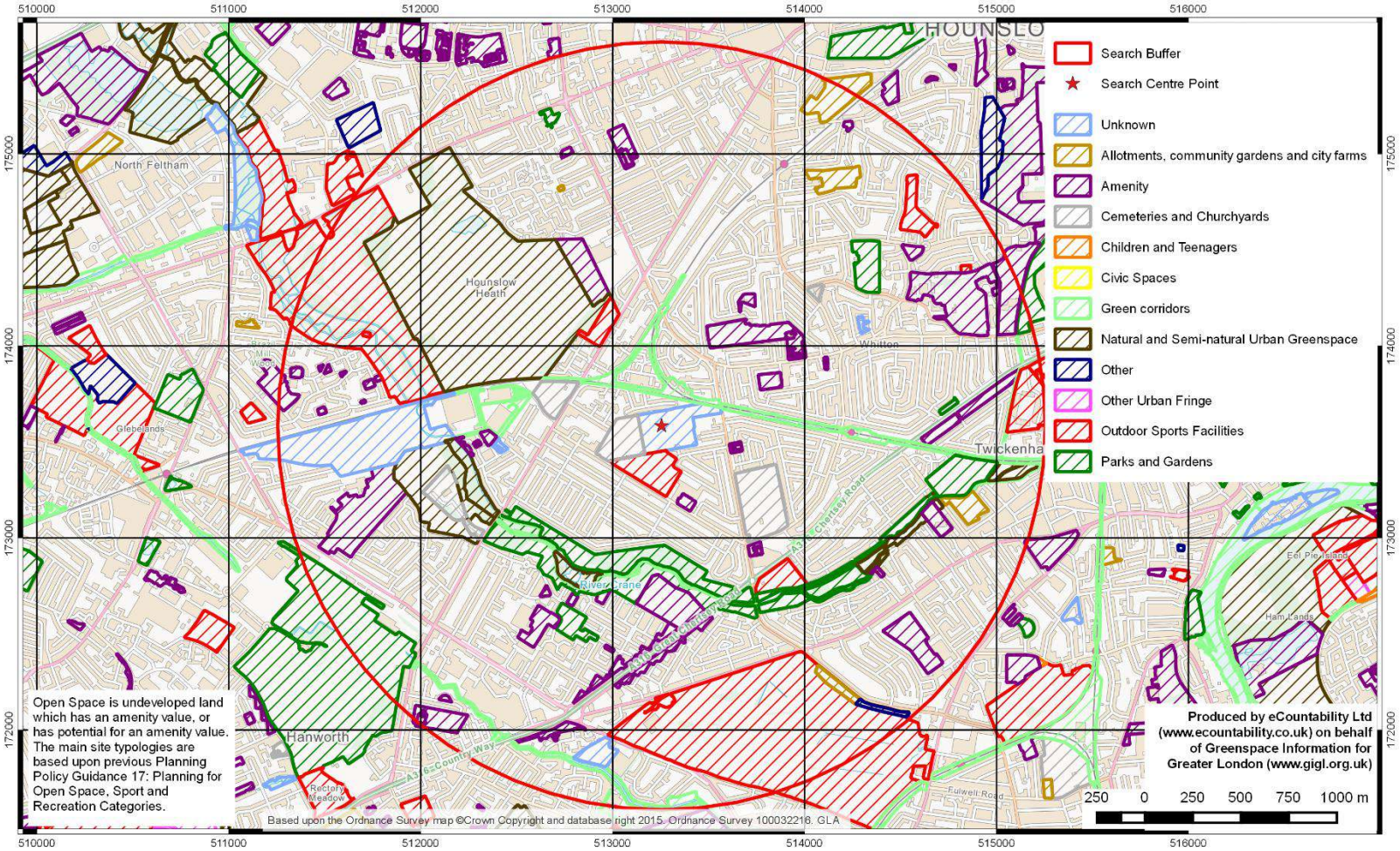
GiGL eCountability



Open Spaces

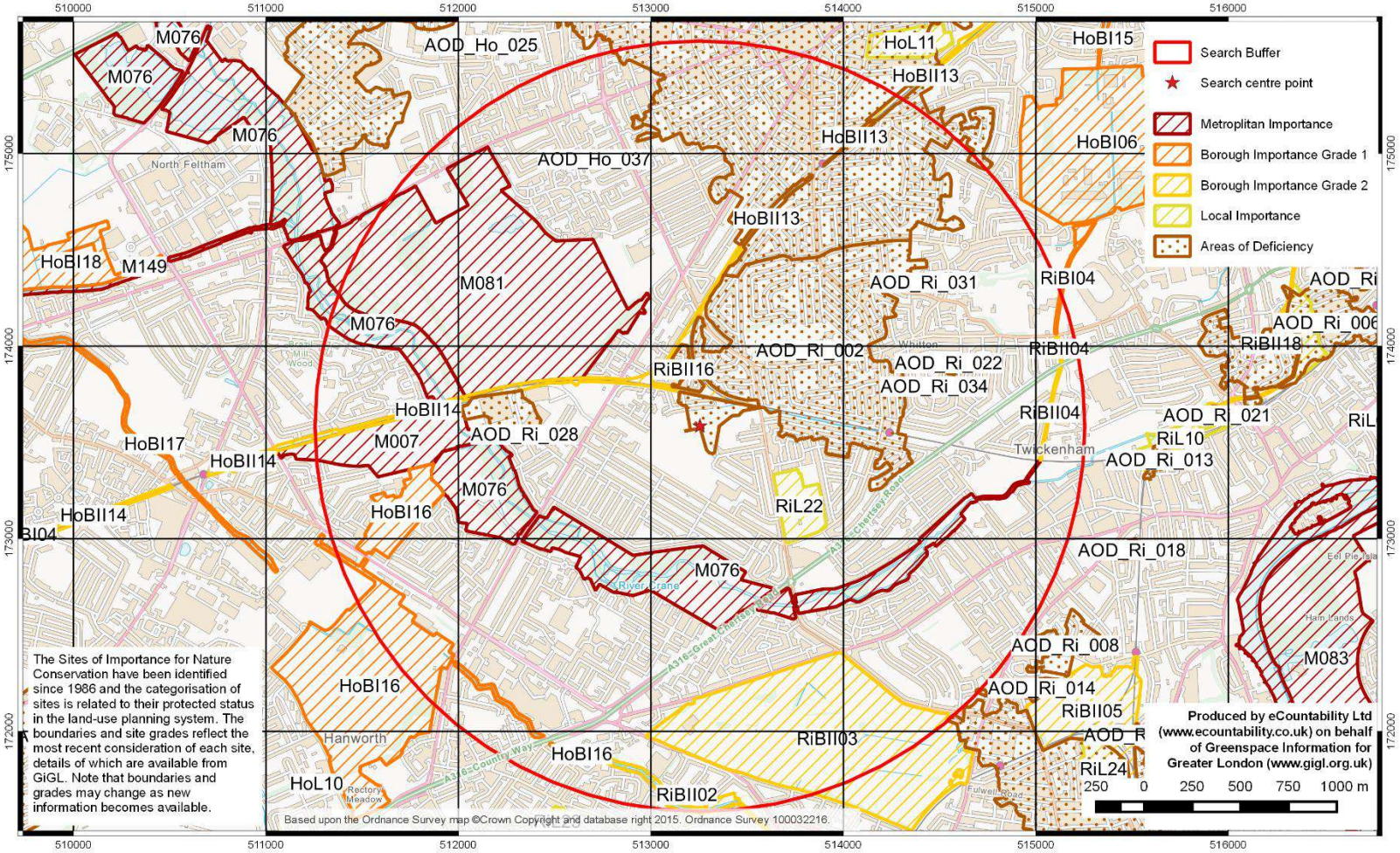
Ecological Data Search for Campbell Reith Hill LLP
Turing House, Hounslow, 16 February 2017

GiGL eCountability

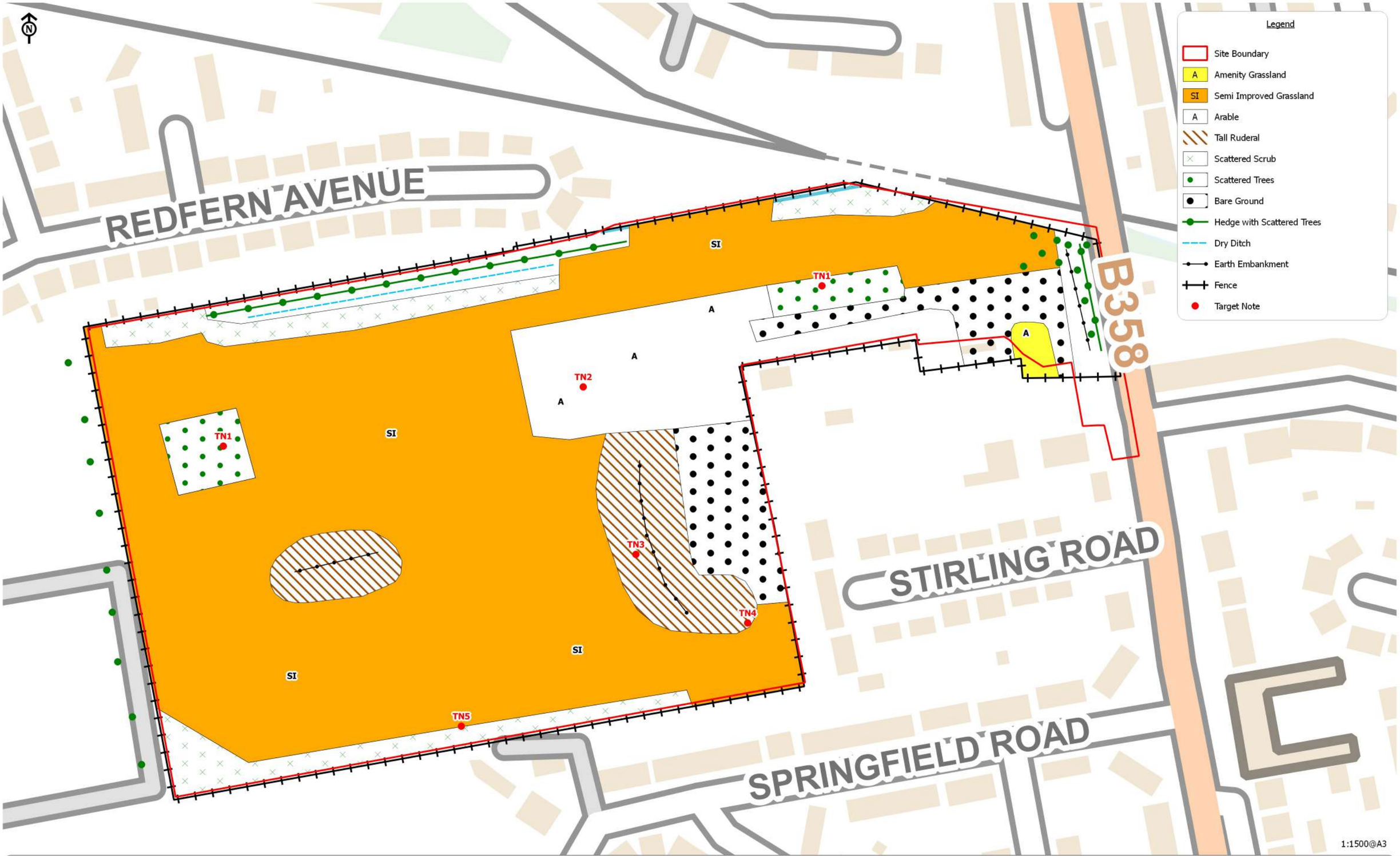


Sites of Importance for Nature Conservation

Ecological Data Search for Campbell Reith Hill LLP
Turing House, Hounslow, 16 February 2017



Appendix C: Phase 1 Habitat Survey



Turing House Free School, Twickenham

Client: Turner and Townsend Project Management Ltd

Phase 1 Habitat Survey

Scale: 1:1500@A3

Job Number: 11677-14
Drawn by - Checked by: RP - AH
Drg No - Status/Revision: GIS008 - B
File location: N:\11500 - 11749\11677 L - Free Schools Framework\14 - Turing House, Hounslow\Project_Workspaces\PEA (pdf in Outputs)
Date (Revision History): 06/09/2017 (A, First Issue, 16/06/17, RP; B, Boundary Amendment, 06/09/17, RP)

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