

TFL_PSF_9131 SITE INVESTIGATIONS: SMALL SITES INITIATIVE LAND AT BEECHWOOD AVENUE, BARNET, N3 3BB

Site Ref: 439

Ecological Assessment

OCTOBER 2017

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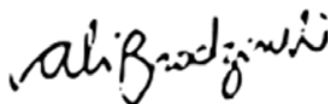


Land at Beechwood Avenue, Barnet, N3 3BB Ecological Assessment

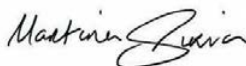
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01	June 2017	Brandon Murray	1 st Issue
02	September 2017	Brandon Murray	Amended for Japanese Knotweed discovery during site supervision
03	October 2017	Brandon Murray	Final Issue

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1 INTRODUCTION

1.1 Background

Arcadis (UK) Limited (Arcadis) was commissioned by Transport for London (TfL) to undertake an ecological assessment to support the feasibility for potential development at Land at Beechwood Avenue, Barnet, N3 3BB hereafter referred to as “the Site”.

TfL is aiming to divest a number of small sites to enable prospective regeneration. The objective of the Small Sites Initiative is to provide robust and pragmatic advice that sensibly de-risks each of the sites such that unreasonable “abnormal” development costs are not included by developers.

The objective of this report is to identify potential ecological development constraints due to current ecological conditions on site as based on the findings of a desk study and ecological constraints survey. The report outlines the ecological constraints associated with the Site with regards to biodiversity legislation and policy and provides advice on mitigation and enhancement opportunities, including requirement for any further assessment or licensing, if necessary.

1.2 Site Location & Setting

The Site is located north of the A406 North Circular Road, in the London Borough of Barnet. The Site is centred at grid reference of 525193, 189457 and around the postcode of N3 3BB.

It is approximately 0.57ha in area and is currently comprised of dense scrub with scattered broadleaved and coniferous trees. A denser area of trees and a row of roadside London plane trees are present to the east of the Site.

The immediate surrounding residential area is characterised by low rise housing. To the immediate south of the Site is the A406 main road, beyond which lies further residential housing.

The Site boundary for assessment is presented in Figure 2.

2 METHODOLOGY

2.1 Desk Study

Desk-based ecological information was collated from multiple sources.

The Multi-Agency Geographic Information for the Countryside (MAGIC) website¹ and other Natural England and Forestry Commission datasets were used to search for any statutory or non-statutory designated sites of nature conservation importance within a specific radius of the Site boundary, as follows:

- Special Protection Areas (SPAs) or Ramsar Sites designated for their bird interests (5km radius);
- Special Areas of Conservation (SACs) (5km radius);
- Sites of Special Scientific Interest (SSSIs) and all other statutory designated sites (2km radius);
- National Nature Reserves (NNR);
- Local Nature Reserves (LNR); and
- Woodlands registered on the Ancient Woodland Inventory (AWI).

Records of protected or otherwise notable species of conservation concern (that the Site has the potential to support) located 1km of the Site boundary were obtained from the following sources:

- Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006) Species of Principle Importance in England²;
- National Biodiversity Network Atlas³;
- London Biodiversity Action Plan⁴; and
- Local Biodiversity Action Plan.

In addition, the Local Plan was reviewed for citations of any non-statutory designated sites located within a 1km radius of the Site, including Local Wildlife Sites (LWS) and the locations of Sites of Importance for Nature Conservation (SINCs) were also obtained from London Borough of Barnet. No citations for these sites were obtained other than where information was publically accessible.

SINCs fall into three sub designations:

- Sites of Metropolitan Importance for Nature Conservation (SMINCs);
- Sites of Borough Importance for Nature Conservation (SBINCs) Grades I and II; and
- Sites of Local Importance for Nature Conservation (SLINCs).

Waterbodies located within 250m of the Site identified from OS mapping were assessed with regards to their connectivity to the Site and their potential suitability for supporting a population of breeding great crested newts (*Triturus cristatus*).

2.2 Field Survey

This survey was conducted by Brandon Murray in May 2017 (MCIEEM). Habitats were classified according to their JNCC Phase 1 habitat categories (JNCC 2010)⁵ and plants named after Stace (1997)⁶ and are presented on Figure 2.

Following the initial ecological walkover, minor vegetation clearance works were undertaken on the 2 August 2017 to enable ground investigation works to take place, this clearance was supervised by Ewan Gibson (GradCIEEM) to ensure that ecological policy and legislation were adhered to during the clearance. This clearance uncovered several stands of Japanese Knotweed (*Fallopia japonica*) within two areas of the Site.

¹ MAGIC (2002). MAGIC Map Search. [online] Available at <http://magic.defra.gov.uk> [Accessed May 2017]

² NERC Act (2006) Section 41 Species <http://www.nhm.ac.uk/our-science/data/uk-species/checklists/NHMSYS0020515439/index.html>

³ National Biodiversity Network <https://nbn.org.uk/> [Accessed May 2017]

⁴ London BAP (Reviewed 2007) <http://www.gigl.org.uk/london-bap-priority-species/> [Accessed May 2017]

⁵ Joint Nature Conservation Committee (2010), *Handbook for Phase 1 habitat survey - a technique for environmental audit*

⁶ Stace, C. (1997). *New Flora of the British Isles Second Edition*. Cambridge University Press

2.3 Limitations and Expectations

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This report has been compiled from a number of sources, which Arcadis believes to be trustworthy. However, Arcadis is unable to guarantee the accuracy of information provided by others. The report is based on information available at the time. Consequently, there is a potential for further information to become available, which may change this report's conclusion and for which Arcadis cannot be responsible.

Some areas within the Site were not fully assessed since they were inaccessible due to dense vegetation on Site. Further ecological constraints such as fox earths and or additional stands of Japanese Knotweed may be concealed within those areas.

3 SURVEY RESULTS

3.1 Reporting Outline

The results of the desk study and ecological constraints survey are described below, with Sites or features of particular nature conservation interest detailed as appropriate.

Supporting information to be read in conjunction with the results and subsequent discussion are as follows:

- Figure 1: Designated Sites within 2km of the Site centre (at the end of the report);
- Figure 2: Extended Phase 1 Habitat Map (with dedicated survey results and target notes) (at the end of the report);
- Table 1: Ecological Constraints and Mitigation Summary Table; and
- Table 2: Site photographs (at the end of the report).

Only information potentially relevant to the development of the Sites is included within the report other information is appended as follows:

- Appendix A: Desk Study Results;
- Appendix B: Bat Habitat Suitability Assessment and London Bat Population Status;
- Appendix C: Selected Legislation, Nature Conservation Status and Policy; and
- Appendix D: Japanese Knotweed Technical Note.

3.2 Desk Study Results

Only desk study results that are potentially relevant to the Site are presented within the report. Detailed status and protections conferred by the relevant designations below are presented in Appendix A and Figure 1. The relevant Site information is summarised below.

- There is negligible potential for significant impacts to any designated sites from development of this Site;
- There were records of Japanese knotweed and Indian (or Himalayan) balsam (*Impatiens glandulifera*) non-native invasive species listed on Schedule 9 of the Wildlife and Countryside Act (WCA)⁷ (1981, as amended), they are both also listed on the London Invasive Species Initiative (LISI)⁸: managed by the London Biodiversity Partnership;
- There were records of hedgehog (*Erinaceus europaeus*) within 1km of the Site which is a Section 41 and London BAP species;
- There is a record of stag beetle (*Lucanus cervus*) within 500m of the Site which is a London BAP species;
- There were records of fox (*Vulpes vulpes*) and grey squirrel (*Sciurus carolinensis*) within 1km of the Site which although not protected for conservation value are protected from inhumane killing or injury by the Wild Mammal Act (1996)⁹; and
- There were no relevant records of protected or notable reptiles, amphibians or birds or of badger.

3.3 Site Overview

The Site was dominated by dense scrub and a small area of young self-seeded woodland, with some scattered trees and introduced shrubs including Japanese Knotweed. The habitats on-Site were generally of poor quality due to the number of non-native invasive species, lack of positive management, fly tipping and potential illegal occupation by vagrants. However, these habitats are

⁷ Anon the Wildlife and Countryside Act (WCA), 1981 as amended. HMSO

⁸ London Invasive Species Plan (2012). Legislative and Information Exchange Framework. [online] Available at <http://www.londonisi.org.uk/tackling-inns/lisp/>. [accessed May 2017]

⁹ Anon The Wild Mammal Act (1996). HMSP

valuable in terms of general green infrastructure, likely performing important ecosystem services (such as water quality and volume attenuation, air quality attenuation etc.).

3.4 Habitats

Phase 1 habitat categories and descriptions of these habitats are presented below and the locations of these habitats are presented in Figure 2.

- **Dense scrub and Introduced shrub:** The majority of the Site was covered by dense scrub and introduced shrub. The scrub was predominantly bramble (*Rubus fruticosus* agg.), butterfly-bush (*Buddleja davidii*) (an invasive species listed on the LISI) and small saplings of ash (*Fraxinus excelsior*) and cherry (*Prunus* sp.) with a ground flora dominated by common ivy (*Hedera helix*), nettle (*Urtica dioica*) and garden escapee species such as columbine (*Aquilegia* sp.). Other species present included: perforate St John's wort (*Hypericum perforatum*), wood avens (*Geum urbanum*); meadow buttercup (*Ranunculus acris*); cleavers (*Galium aparine*); rose (*Rosa* sp.); hedge bindweed (*Calystegia sepium*); spear thistle (*Cirsium vulgare*); broadleaved dock (*Rumex obtusifolius*); ribwort plantain (*Plantago lanceolata*) and garlic mustard (*Alliaria petiolata*). Japanese knotweed which is a non-native invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) was recorded on Site. Other non-native invasive species on LISI were snowberry (*Symphoricarpos albus*) Spanish bluebell (*Hyacinthoides hispanica*) and green alkanet (*Pentaglottis sempervirens*) (also LISI).
- **Semi-natural woodland:** The small area of young woodland contained primarily sycamore (*Acer pseudoplatanus*), cherry, ash, tree of heaven (*Ailanthus altissima*) which is also on LISI, London plane (*Platanus × acerifolia*), elder (*Sambucus nigra*) and hawthorn (*Crataegus monogyna*). Other species present included leylandii (*Cupressus × leylandii*), privet (*Ligustrum* sp.), lilac shrub (*Syringa* sp.) and whitebeam (*Sorbus* sp.). The ground flora was dominated by ivy (*Hedera helix*).
- **Individual scattered trees:** A row of pollarded London plane trees were present along the roadside to the south of the Site, immediately adjacent to the woodland. Within the Site there were some scattered trees, including young hawthorn, ash, cherry (*Prunus* sp.), apple (*Malus* sp.) and pear (*Pyrus* sp.). Around the Site (outside of the boundary of the Site) was a London plane street tree and some large eucalyptus (*Eucalyptus* sp.) trees in an adjacent private garden, amongst other smaller trees.

3.5 Protected and Notable Species

The following protected or notable species have the potential to be present on the Site:

- **Nesting Birds:** There is potential for nesting birds to be utilising the trees and scrub on the Site, including species listed on the London BAP such as house sparrow (*Passer domesticus*). House sparrow and blackbird (*Turdus merula*) were observed on Site during the survey.
- **Bats:** Not all of the trees on Site were fully inspected for bat roosting potential (access was limited due to the dense scrub present). None of the trees on Site which were inspected had any evidence of potential roost features (PRF's). There is potential for bats to forage within the Site, however the Site is limited in area and larger areas of foraging habitat are present within areas to the south of the Site beyond the A406 North Circular Road.
- **Stag Beetle:** There is potential for stag beetle to be present on the Site. Piles of deadwood and waste suitable for this species were present on the Site and a record from within 500m from 2015 was returned by NBN Atlas.
- **Other mammals:** No mammal burrows were observed on the Site, however there was a strong smell of fox around the Site and there is potential that fox earths may be present within the inaccessible dense scrub area. The presence of fox earths within this area will need to be confirmed once some of the dense vegetation is cleared from the Site. No badger signs or clear paths were observed suggesting that this species is not present on the Site. There is potential for grey squirrels to be breeding within the vegetation on Site.

The Site offered no suitable habitat for reptiles, and no ponds were present within 500m of the Site with connectivity to the Site, so the presence of great crested newts is extremely unlikely. Overall, within the Site, there was limited potential for protected or notable species.

3.6 Invasive Species

Japanese Knotweed (JK) (*Fallopia japonica*) which is a non-native invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) was recorded on Site as several stands in two locations (shown on Figure 2).

Several species listed on LISI (London Invasive Species Initiative) were recorded on Site, including tree of heaven, butterfly-bush, snowberry, Spanish bluebell and green alkanet.

4 POTENTIAL ECOLOGICAL CONSTRAINTS

The potential ecological constraints and associated further works including mitigation is briefly presented below, further detail is presented in Table 1.

4.1 Habitats / Invasive Species

The habitats on Site are likely to be considered as “local” or ‘less than local’ value according to the CIEEMs *Guidelines for Ecological Impact Assessment* (CIEEM 2016)¹⁰. However, these habitats are valuable green infrastructure, likely performing important ecosystem services (such as drainage, air quality etc.).

There will be some ecological benefit from the removal of non-native and invasive species listed on LISI.

For JK in addition to being an offence to grow or to cause to grow this species in the wild due to its extremely invasive nature arisings and or cut material must be disposed of as a controlled waste. As an initial mitigation measure, any stand/s of JK should be demarcated to create an exclusion zone (a minimum of 7m). An accompanying risk register/ toolbox talk should be provided to the enabling team (or anyone undertaking ground breaking works or vegetation clearance on Site) so that operatives are aware of its presence and understand the limitations of work in the vicinity of JK. Site supervision during vegetation clearance is recommended so that ecologists may identify additional JK stands should they be revealed. No works will occur within the 7m exclusion without the appropriate management and mitigation precautions regarding bio-security and prevention of spread. Should any works be required within the vicinity of these stands, a specialist accredited JK contractor should be consulted (further information is included in Appendix D).

For any loss of trees, trees should be re-provisioned on the Site, of a suitable species, preferably native species of local origin appropriate to the sylvan culture of the area. An ecologist and arboriculturist should contribute to the evolution of the development and landscaping design to minimise biodiversity loss and to maximise the replacement green infrastructure with regards to biodiversity.

4.2 Protected and Notable Species

The following notable or protected species have the potential to be impacted by the works:

- **Nesting birds:** it is likely that nesting birds will utilise the Site, clearance of vegetation should be avoided during the nesting bird season (March to August inclusive) replacement nesting opportunities should be provided within any development;
- **Bats:** when further access is available, trees to be removed should be inspected from the ground to assess their potential to support roosting bats, should roosting potential be found in addition to further survey, replacement or additional roosts should be provided within the development, linear green corridors should be maintained within any development if possible; and
- **Stag beetle:** dead wood should be removed under Site supervision and should stag beetle be found a dead wood loggery should be provided on Site.

While not protected or notable for their conservation status the following species may be present that are protected against inhumane injury under the Wild Mammal Act (1996)

- **Fox:** a watching brief should be undertaken for vegetation clearance to ensure that any fox earths are excluded and destroyed humanely; and
- **Grey squirrel:** trees should be inspected from the ground for squirrel dreys before being excluded and humanely destroyed if present.

¹⁰ CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland Terrestrial, Freshwater and Coastal.

5 LEGISLATION AND KEY POLICY REQUIREMENTS

Potentially relevant Legislation and Policy are presented in Appendix C and further detail with regards to surveys and mitigation required are presented in Table 1.

5.1 Relevant Legislation

Development of the Site will require surveys and or mitigation to fulfil legislative requirements for the following protected species:

- WCA, as amended 1981, and the Conservation of Habitats and Species Regulations (2010, as amended) for bats: when access is possible, and the potential impact on trees is known, trees should be assessed for their potential to support roosting bats;
- WCA, as amended 1981, for nesting birds: works will need to be timed to avoid the nesting bird season (March to August inclusive) or supervised to prevent impacts to nesting birds;
- The Mammal Act (1996) for fox and grey squirrel: works will need to ensure that there are no inhumane killing or injury of fox or squirrel if present; and
- WCA as amended 1981 (Schedule 9) and the Environmental Protection Act (EPA) 1990¹¹ for Japanese knotweed: which makes illegal to spread and designates Japanese knotweed as a controlled waste, respectively.

Full details of subsequent works required are included within section 6, Table 1 below.

5.2 Relevant Policy

Elements of national, London and local policies and plans have the potential to be applicable to any development of the Site, these relate to:

- The safeguarding and replacement of trees to be lost to development;
- Creation and enhancement of biodiversity where possible;
- Material consideration of S41 species; and
- Invasive species with legal obligations were recorded on the Site (JK), there were also plants recorded listed on LISI. While there is no legal requirement to remove or control these LISI species (butterfly-bush, snowberry, Spanish bluebell, tree of heaven, green alkanet) it would be appropriate and beneficial to remove them as part of any future development.

An ecology report addressing the required design and construction mitigation for any proposed development will be required in support of planning.

5.3 Potential for Enhancement Within a Development

In addition to the recommended further works, enhancements should be considered within any development. For example, biodiversity roofs, rain gardens and other green infrastructure should be considered and the soft landscaping should be designed to maximise the biodiversity potential.

There are also opportunities for enhancements for London BAP species. Bird boxes for sparrows would be a valuable enhancement, along with bat roosting boxes.

¹¹ Environmental Protection Act 1990

6 SUMMARY OF ECOLOGICAL CONSTRAINTS AND MITIGATION REQUIRED

Table 1 Ecological Constraints and Mitigation Summary Table

Key Issues	Legislation/Policy	Assumption	Further Survey / input?	Seasonal Timing	Mitigation Required	Seasonal Timing	Programme Delay Risk	Survey/ Mitigation Cost Estimate*	Risk Rating
Nesting Birds									
<p>All green infrastructure listed below is suitable for nesting birds. These are likely to be removed for development.</p> <ul style="list-style-type: none">Dense scrub;Broadleaved woodland;Individual trees.	<p>WCA, 1981, as amended</p>	<p>Removed for development / Site investigation.</p>	<p>No (but see mitigation recommendations)</p>	<p>N/A</p>	<p>Remove any remaining trees and scrub vegetation outside the core nesting bird season (March to August inclusive) or vegetation removal will need to be supervised by an ecological watching brief.</p>	<p>September to February remove trees and shrubs</p>	<p>If vegetation removal is required during the nesting bird season and nest are found by the ecological watching brief, a delay of 6 weeks is likely to be required until chicks have fledged.</p>	<p>Mitigation £500 - £1000 per day for ecological supervision / nesting bird check. Design and replacement of green infrastructure not costed</p>	<p>Low</p>
Green Infrastructure/ Trees									
<p>The following trees / groups as present and may be impacted by development:</p> <ul style="list-style-type: none">Pollarded London plane trees (20-30 trees);Tree of heaven (one large specimen);Cherry tree saplings (many small saplings);Ash saplings (many small saplings);Hawthorn (small saplings);Sycamore (some trees and small saplings);Elder;Leylandii trees. <p>Large areas of scrub on Site which is likely to be removed prior to development or.</p>	<p>Potential TPOs although removal will be granted with planning permission national and local policy on no net loss</p>	<p>Trees and shrubs are likely to be removed or damaged due to development</p>	<p>Yes: BS 3857 2012 Tree survey</p>	<p>Removal of trees affected by bird nesting season see above.</p>	<p>Protection of trees to be retained and adjacent trees and replacement of trees and green infrastructure implemented via an Arboricultural Method Statement and Landscape Strategy</p>	<p>N/A</p>	<p>None</p>	<p>Survey: £1,900 Mitigation: £1,000 demarcation and bespoke Arboricultural Method Statement Design and replacement of green infrastructure not costed</p>	<p>Low</p>
Roosting Bats (Trees)									

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Key Issues	Legislation/Policy	Assumption	Further Survey / input?	Seasonal Timing	Mitigation Required	Seasonal Timing	Programme Delay Risk	Survey/ Mitigation Cost Estimate*	Risk Rating
Trees could not be fully assessed for roosting bat potential assessments due to the dense scrub preventing access to the trees.	Schedule 5 of the of the WCA, 1981, as amended The Conservation of Habitats and Species Regulations 2010	Assumption is that some trees may be felled for development and that there may be lighting effects on bats if present.	Yes - Further assessment once access is possible and there is greater knowledge around the potential impacts on trees. There are subsequent potential for requirements for ground and climbed tree inspections or emergence / re-entry surveys if potential roost features (PRFs) are observed.	Ground based tree assessments can be conducted year round as can climbed tree inspections. Emergence / re-entry surveys can be conducted May to September inclusive (weather dependant).	If bat roosts are found, mitigation could include tree felling in winter, potentially requiring a European Protected Species Licence	European Protected Species Licence takes 30 working days from submission (post planning) Exclusion of any bat roosts may be restricted to November to February inclusive dependent upon the species and roost type present.	6 months for the process from surveys to licence to exclusion (i.e. so that the tree can be removed).	Survey: Up to £4,500 Mitigation: Up to £3,500 for an EPS licence and Site supervision Design and replacement of green infrastructure not costed.	Low (due to likelihood of bat roosts being present)
Fox									
Fox earths potentially on the Site. Fox are protected against cruelty and killing in certain ways. Should fox earths be present the development could cause the inhumane killing or injury of a fox.	Wild Mammals Protection Act 1996 PR and reputational risk.	Vegetation clearance and or excavations could cause inhumane killing or injury.	No (but see mitigation recommendations)	N/A	Site supervision during vegetation clearance if fox earths are identified gating of earth to exclude foxes prior to earth destruction	N/A	None	Mitigation for Site supervision and gating £1,500	Low
Grey squirrel									
Trees on Site may contain squirrel dreys, removal of trees and vegetation may cause potential harm to squirrels. Although these are a non-native species care to avoid inhumane killing or injury.	Wild Mammals Protection Act 1996, PR and reputational risk.	Trees and scrub to be removed for development	No	N/A	Dreys should be removed when juvenile squirrels are unlikely to be present Avoidance of the 2 main breeding seasons when young are in the drey (February to October inclusive) is recommended.	Fell the trees in winter (November to January inclusive) or check the trees for dreys prior to felling. They are obvious large round untidy looking nests about the size of a football.	None	Mitigation £500- 1000 per day for Site supervision or drey removal during felling / vegetation removal if present	Low
London BAP species									
Stag beetle	Listed on London BAP and Section 41 NERC Act 2006.	The Site is suitable for stag beetle. Records of stag beetle from within the vicinity of the Site have been returned from 2015 by NBN Atlas.	No	N/A	Site supervision during vegetation clearance and relocation of habitat should stag beetle or larvae be found. Retention of stag beetle habitat on Site	N/A	None	Mitigation £500- 1000 per day for Site supervision Design and replacement of green infrastructure not costed	Low
Non-native Invasive species									

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Key Issues	Legislation/Policy	Assumption	Further Survey / input?	Seasonal Timing	Mitigation Required	Seasonal Timing	Programme Delay Risk	Survey/ Mitigation Cost Estimate*	Risk Rating
Butterfly-bush, snowberry, Spanish bluebell, tree of heaven, green alkanet	London Invasive Species Index	Development could cause these species to spread	No	N/A	It would be good practice to remove these species during subsequent development and to implement mitigation to ensure they are not spread	N/A	N/A	N/A Can be undertaken with vegetation clearance for development.	Low
Japanese knotweed	Schedule 9 of the Wildlife and Countryside Act (1981, as amended) (WCA) and the Environmental Protection Act (1990).	Development could cause these species to spread	Site supervision of vegetation clearance is recommended.	N/A	Demarcation and exclusion of any works (a minimum of 7m). An accompanying risk register/ toolbox talk. Site supervision during additional vegetation clearance. Consultation with an accredited JK contractor.	Treatment in situ can be undertaken March to October and usually re-quire at least three seasons to be affective. Removal by an accredited specialist contractor can take place any time.	Dependant on treatment options	TBC depending on the treatment options to be confirmed by an accredited specialist contractor.	Medium

* Cost estimates only, actual costs would depend on the design and programme of any subsequent development and do not include costs for reports in support of planning application or any associated protected species licencing

7 CONCLUSIONS

There are no likely significant ecological constraints with regards to the development of this Site.



No Statutory or non-statutory designated sites (including ancient woodlands or woodlands listed on the Ancient Woodland Inventory (AWI)) were identified within the vicinity of the Site have the potential to be significantly impacted by development on the Site.

Constraints are listed below:

- The Site was dominated by scattered scrub and scattered trees. The habitats on Site were generally of poor due to the lack of positive management. However, these habitats have value in terms of green infrastructure, likely performing important ecosystem services (such as water quality and volume attenuation and air quality attenuation etc.).
- There is potential for nesting birds to be utilising the trees and scrub on the Site, including species listed on the London BAP such as house sparrow. Removal of all trees and scrub vegetation on the Site will need to be conducted outside of the bird nesting season (March – August inclusive) or under an ecological watching brief.
- JK, a non-native invasive species which is listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) was recorded on Site. Following the initial ecological surveys, minor vegetation clearance was undertaken on 2 August 2017 under supervision, which uncovered several stands of JK in two locations on the southern boundary of the Site. The non-native invasive species was previously obscured by the dense vegetation. The presence of the non-native invasive species on Site, prompted an exclusion zone of 7m around the two areas with JK and not further vegetation clearance was undertaken within the demarked areas.
- Not all of the trees on Site were fully inspected for roosting bat potential (access was limited due to the dense scrub present). None of the trees on Site which were inspected had any evidence of potential roost features (PRF's) for bats. Further tree inspections are recommended when access permits and when there is a greater level of information with regards to the potential impact on trees from the proposed development.
- No mammal burrows were observed on the Site, however there was a strong smell of fox around the site and there is potential that fox earths may be present within the dense scrub area. Foxes are protected against inhumane injury or killing, therefore site supervision is recommended during any site clearance so that recommendations to humanely remove fox earths can be provided if required.
- There is potential for the London BAP species Stag beetle to be present within the Site. Site supervision with regards to this species during site clearance is recommended and retention of an area of dead wood habitat on Site if stag beetle is confirmed to be present.
- There will be some ecological benefit from the removal of non-native and invasive species on LISI, which is likely to occur when the site is cleared for any construction. There is no legal obligation to control any of the LISI species recorded on the Site or to remove of them as controlled waste but it is good practice to remove them and to avoid their spread.
- Trees and other vegetation should be replaced within any proposed soft landscaping and these designs should be evolved in liaison with an ecologist and arboriculturist. In addition, rain gardens, biodiversity roofs and other green infrastructure should be considered within any development.
- There are also opportunities for enhancements for London BAP species. Bird boxes for sparrows would be a valuable enhancement, along with bat roosting boxes.

SITE PHOTOGRAPHS

Table 2: Land at Beechwood Avenue Site Photographs

Land at Beechwood Avenue Site photographs	
	
Photograph 1: Dense scrub which covers the majority of the Site.	Photograph 2: Woodland in the east of the Site.
	
Photograph 3: Dense scrub.	Photograph 4: View across dense scrub in the west of the Site.

Land at Beechwood Avenue Site photographs



Photograph 5: View of line of London plane trees in the south east of the Site.



Photograph 6: Access to Site.



Photograph 7: Fly tipping and illegal occupation on the Site.



Photograph 8: Japanese knotweed.

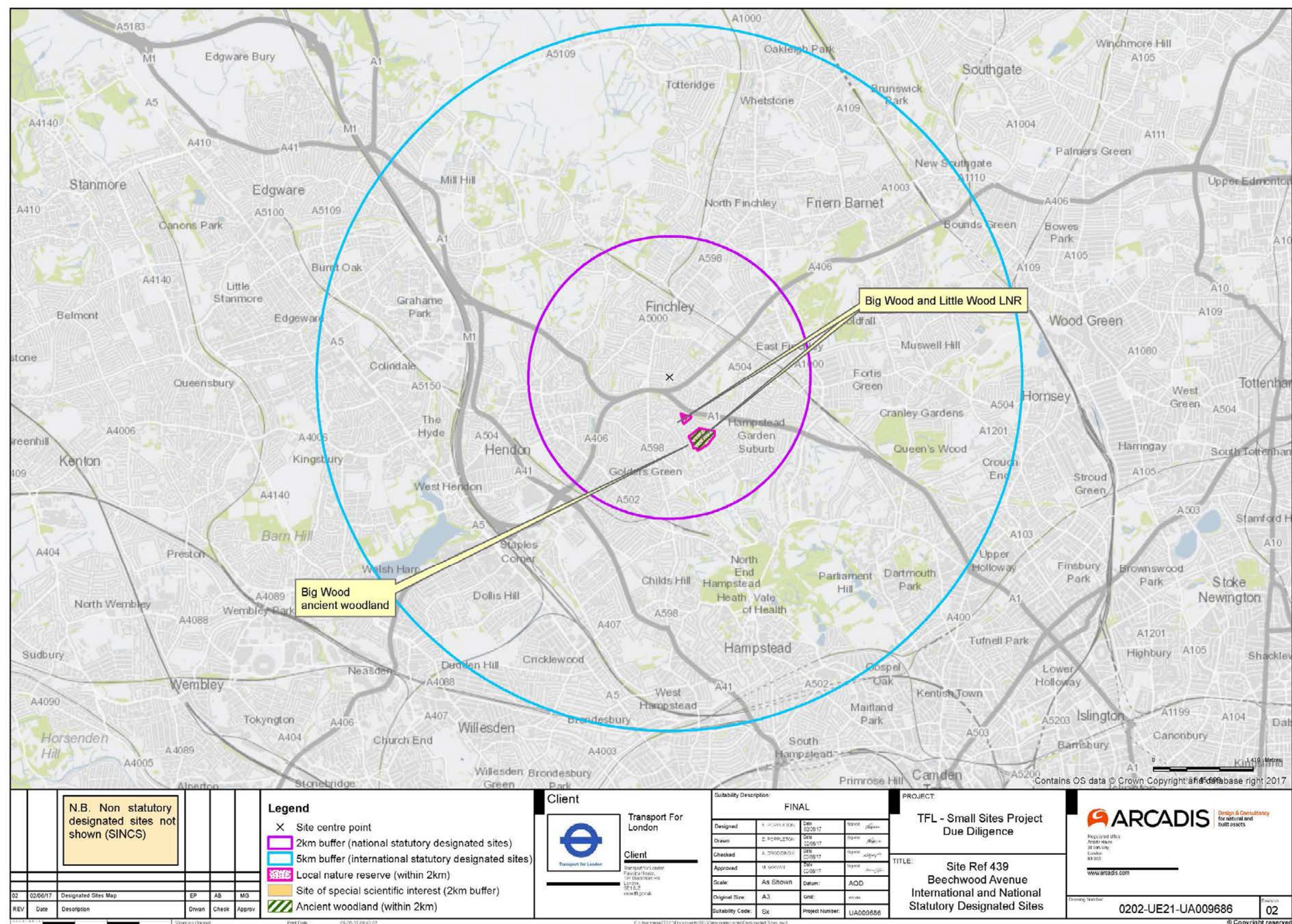


FIGURE 1: STATUTORY DESIGNATED SITES WITHIN 2KM OF THE SITE CENTRE



FIGURE 2: EXTENDED PHASE 1 HABITAT MAP (WITH DEDICATED SURVEY RESULTS AND TARGET NOTES)

Appendix A: Desk Study Review

Statutory Designated Sites

The desk study found no Natura 2000 sites (SPAs, SACs, Ramsar) within 5km of the site.

Within 2km of the Site are the following Statutory Designated Sites:

- Big Wood and Little Wood LNR, which is an area of woodland characterised by sessile oak, hornbeam and wild cherry.

Further detail is presented in Table A1. It was assessed that there was negligible potential for significant impacts to this Site from any development on the Site.

Non-Statutory Designated Sites

The desk study found the following non-statutory designated sites within 1km of the Site:

Sites of Borough Importance for Nature Conservation:

- Little Wood, Big Wood;

Sites of local importance for Nature Conservation:

- College Farm;
- Avenue House Gardens;
- East Finchley Cemetery;
- The Mutton Brook.

There is also a 'green chain' running through the Borough of Barnet which runs through Mutton Brook SLINC which is located approximately 150m south east of the Site.

It was assessed that there was negligible potential for significant impacts to these Sites from any development on the Site.

Woodlands registered on the Ancient Woodland Inventory (AWI)

One woodland registered on the Ancient Woodland Inventory was found within 2km of the Site, 'Big Wood', this is the same location as the LNR and SBINC above.

Further detail is presented in Table A2. It was assessed that there was negligible potential for significant impacts to this woodland from any development on the Site.

Statutory Designated Sites

Table A.1: Statutory Designated Sites

Site Name	Designation	Size (ha)	Distance (m)	Direction	Description
Local Nature Reserve - LNR					
Big Wood and Little Wood LNR	LNR	8.29	375m	South	Twin patches of woodland known as Big Wood and Little Wood. They are two of the few surviving remnants of the ancient Woodland that covered North London. As a relatively isolated patch of woodland, it attracts large numbers of birds now rarely seen in the rest of London, particularly owls and the Green Woodpecker.

Non-Statutory Designated Sites

Table A.2: Non-Statutory Designated Sites

Site Name	Designation	Size (ha)	Distance (m)	Direction	Description
Ancient Woodland					
Big Wood	Ancient & Semi Natural Woodland	7.26	675m	South	As above
Site of Importance for Nature Conservation - SINC					
Little Wood, Big Wood	SBINC	Unknown	375m	South	As above
College Farm	SLINC	Unknown	430m	North-west	Unknown
Avenue House Gardens	SLINC	Unknown	690m	North	Unknown
East Finchley Cemetery	SLINC	Unknown	125m	East	Unknown
The Mutton Brook	SLINC	Unknown	85m	South	The brook is confined in a concrete or wood channel along the whole of its length, and the water quality is often poor. The downstream section is lined by oak, ash and willow trees, providing a good habitat for birds, and grey wagtails often forage at its edge. The brook is surrounded by publicly accessible openspace where it passes by the Site.

Overview of Protected, Notable and Invasive Species in London

This section of this report outlines the status of protected and notable species in London. The status of these species on the Site is fully discussed in section 3. Relevant conservation status and legislation is presented in Appendix D and E.

Non-native invasive species in Greater London

London is an extremely urbanised area and is a major international port for both people and goods, this in addition to its climate and major levels of construction has encouraged the spread of a number of non-native invasive species that are becoming pests. Therefore, in addition to those species listed on Schedule 9 of the Wildlife and Countryside Act (WCA) **Error! Bookmark not defined.** (1981, as amended) there is a London Species Initiative (LSI)⁸: Managed by the London Biodiversity Partnership, which lists non-native invasive species that should be controlled in London. Species potentially relevant to the Site include those presented in A3.

Table A.3: Potential Schedule 9 (WCA 1981, as amended) or LSI species

Common Name	English Name	Status
Japanese Knotweed	<i>Fallopia japonica</i>	Schedule 9 and LSI
Cotoneaster (numerous)	<i>Cotoneaster</i> spp.	Schedule 9 and LSI
Rhododendron	<i>Rhododendron ponticum</i>	Schedule 9 and LSI
Indian (or Himalayan balsam)	<i>Impatiens glandulifera</i>	Schedule 9 and LSI
Virginia creeper	<i>Parthenocissus quinquefolia</i>	Schedule 9
Montbretia	<i>Crocsmia x crocosmiiflora</i>	LSI
Cherry Laurel	<i>Prunus laurocerasus</i>	LSI
False acacia	<i>Robinia pseudoacacia</i>	LSI
Green alkanet	<i>Pentaglottis sempervirens</i>	LSI
Butterfly-bush	<i>Buddleia davidii</i>	LSI
Snowberry	<i>Symphoricarpos albus</i>	LSI
Tree of heaven	<i>Ailanthus altissima</i>	LSI
Holm oak	<i>Quercus ilex</i>	LSI
Passion flower	<i>Passiflora caerulea</i>	LSI
Spanish bluebell	<i>Hyacinthoides hispanica</i> & <i>H. x massartiana</i>	LSI
Holm oak	<i>Quercus ilex</i>	LSI

Bats in Greater London

From previous Arcadis work in London and from data from the London Bat Group the most likely bats species to be present are common and soprano pipistrelle (*Pipistrellus pipistrellus* and *P. pygmaeus*) which are by far the more frequent, followed by Daubenton's (*Myotis daubentonii* in the vicinity of open water) noctule (*Nyctalus noctula*) and brown long-eared (*Plecotus auritus*). These are all London BAP species and S41 species with the exception of Daubenton's and common pipistrelle. Full details of the conservation status of these species and the results from the London Bat Group Species Action Plan Audit are presented in Appendix B Table B2 **Error! Reference source not found.**

In general, every borough will have bats present, as even in the inner boroughs there are usually some areas of suitable habitat that can provide feeding habitat for small numbers of common and light tolerant bat species such as soprano and common pipistrelles. In general, the outer boroughs with larger areas of more suitable habitat should be expected to have higher numbers of bats and a greater diversity of species.

Birds in Greater London

There are a number of bird species that although relatively common are in decline and have been highlighted section 41 or London Priority BAP species and/or birds of conservation concern that have the potential to be present (Table 2).

TableA:4: *Birds of conservation concern associated with London*

Common Name	English Name	Status	Typical London habitats
Black redstart	<i>Phoenicurus ochrurus</i>	L	Traditionally found on brownfield sites around the built environment in proximity to standing or tidal Thames water
Dunnock	<i>Prunella modularis</i>	S41:L:	Associated with dense scrub and trees in private gardens and pocket parks
Grey heron	<i>Ardea cinerea</i>	L	associated with tidal Thames and standing water
House sparrow	<i>Passer domesticus</i>	S41:L:R	Associated with dense scrub and trees in private gardens and pocket parks traditionally a species associated with nesting in buildings
Peregrine	<i>Falco peregrinus</i>	L	Tidal Thames and the built environment using tall buildings for roosting and nesting and foraging on other birds particularly pigeons
Song thrush	<i>Turdus philomelos</i>	S41:L:R	Associated with dense scrub and trees in private gardens and pocket parks
Starling	<i>Sturnus vulgaris</i>	S41:L:R	Built environment
Tree sparrow	<i>Passer montanus</i>	S41:L:R	Associated with dense scrub and trees in private gardens and pocket parks

Section 41 = S41: London BAP = L: R = Birds of Conservation Concern Red List

Reptiles in Greater London

Records from SARG (Surrey Amphibian and Reptile Group) and the London Biodiversity Action Plan show that the presence of European Protected Species of reptile in the London area is generally very unlikely. Common lizard (*Zootoca vivipara*) and Slow worm (*Anguis fragilis*) are the most likely reptiles to be present followed by Grass snake (*Natrix natrix*) with Adder (*Vipera berus*) being unlikely to be present these are all Section 41 and London BAP species.

Badger in Greater London

Badger is a London BAP species and can be found using private gardens, woodlands and parklands across London.

Amphibians including Great Crested Newts (GCN) in Greater London

GCN are Section 41 and London BAP species, that while uncommon are found breeding in ponds associated with private gardens, from data available from Froglife (2012), 71 Sites across Greater London were surveyed where historical GCN records were identified, of none of these sites were located within the London Borough of Barnet¹². Of the other amphibians that are London BAP species Common frog (*Rana temporaria*), palmate newt (*Triturus helveticus*) and Common toad (*Bufo bufo*), common toad is also a Section 41 species

Other Potentially Relevant S41 and London BAP species

There are a number of other species that have the potential to be relevant to the Site:

- Black poplar (*Populus nigra*);
- Mistletoe (*Viscum album*);
- Hedgehog (*Erinaceus europaeus*); and
- Stag beetle (*Lucanus cervus*), there was an NBN record within 500m of the Site.

Table A.5: Designated sites descriptions

Designation	Description
Special Areas of Conservation (SAC) Special Protected Areas (SPAs)	Sites designated under European law and are the most important sites for wildlife in the UK, along with Special Protected Areas (SPAs). SACs are designated under the European Habitats Directive (Council Directive 92/43/EEC). Both the Habitats and Birds Directives provide for the creation of a network of protected areas across the EU, to be known as 'Natura 2000'. The designations aim to conserve important or threatened species and habitats and provide them with increased protection and management
National Nature Reserve (NNR)	Statutory reserves established for the nation under the Wildlife and Countryside Act, 1981. NNRs may be owned by a relevant national body, e.g. Natural England, or by established agreement; a few are owned and managed by non-statutory bodies. NNRs cover a selection of the most important sites for nature conservation in the UK.
Sites of Special Scientific Interest (SSSI)	Are areas notified under the Wildlife and Countryside Act 1981 by Natural England as being of special interest for nature conservation. SSSI notification forms the statutory bedrock for site protection. Biological SSSIs form a national network of wildlife sites, with each site being of national significance for its nature conservation value. Consultation and some form of agreement with the national statutory conservation agency is mandatory before any listed, potentially damaging development or change in land use can be carried out
Local nature reserves (LNR)	These are land owned, leased or managed by Local Authorities and designated under the National Parks and Access to the Countryside Act. These are sites of some nature conservation value managed for educational objectives. In some cases it is managed by a non-statutory body (e.g. the London Wildlife Trust). Local Authorities have the power to pass bylaws controlling (e.g.) access, special protection measures.

¹² Capital Great Crested Newts Revisited (2012). Project report – Public Web Edition

Designation	Description
Sites of Metropolitan Importance for Nature Conservation (SMINCs)	These are sites that contain the best examples of London's habitats. These sites are of strategic significance and are therefore of the highest priority against damage or loss
Sites of Borough Importance for Nature Conservation (SBINCs) Grades I and II	Sites of Borough Importance for Nature Conservation (SBINCs) Grades I and II are important in the context of the borough. The nature conservation quality of these sites varies and so these sites are graded as I or II in relation to their nature conservation potential.
Sites of Local Importance for Nature Conservation (SINCs)	These are sites of particular importance to people nearby (such as residents and schools). Local sites are particularly important in areas otherwise deficient in nearby wildlife sites.

Appendix B: Bat Habitat Suitability and London Population Status

Table B: 1 BCT (2016) – Habitat Suitability Criteria

Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	<p>A structure with one or more potential roost sites that could be used by individual bats opportunistically.</p> <p>However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions^a and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).</p> <p>A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.</p>	<p>Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat.</p> <p>Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.</p>
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	<p>Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.</p> <p>Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.</p>
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	<p>Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.</p> <p>High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland.</p> <p>Site is close to and connected to known roosts.</p>

Table B: 2 Bat species status in London from the London Bat Species Action Plan Audit

Common Name	Latin Name	UK Status	London Status	Notes
Greater horseshoe bat	<i>Rhinolophus ferrumequinum</i>	Endangered BAP Priority	Extinct	Last Greater London record from Oxleas Wood in 1953.
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>	Endangered BAP Priority	Extinct	Last Greater London record from Abbey Wood (Woolwich) in 1952-3.
Whiskered bat	<i>Myotis mystacinus</i>	Vulnerable	Rare	Due to difficulty in separation, these are considered together. Occur rarely and in low numbers in outer London Boroughs such as Hillingdon, Richmond, Bexley and Bromley. One current known (winter) roost only.
Brandt's bat	<i>Myotis brandtii</i>	Vulnerable	Rare	
Natterer's bat	<i>Myotis nattereri</i>	Vulnerable	Scarce	Still relatively few records in Greater London. Most central locations are Highgate Wood and Hampstead Heath, otherwise Richmond and Hounslow and occasionally other outer London Boroughs. 8 current known roosts (mostly winter).
Daubenton's bat	<i>Myotis daubentoni</i>	Not Threatened	Locally frequent but declining	Relatively widespread and strongly associated with ponds, lakes & rivers. Occasional summer roosts have been found in trees on Wimbledon Common and in Ruislip Woods. Contrary to the national trend, this species is apparently declining in London and its sensitivity to increasing ambient light levels is a possible reason. 4 current known winter roosts.
Serotine	<i>Eptesicus serotinus</i>	Vulnerable	Rare; has declined	Serotines are found in outer London Boroughs, especially Bromley, Havering, Sutton and Richmond. 2 current known summer roosts, in Bromley and Teddington.
Noctule	<i>Nyctalus noctula</i>	Vulnerable; declining BAP Priority	Widespread but declining	The status of this large, wide-ranging bat is difficult to assess, but the past two decades have seen a rapid decline in the species and this mirrors the national trend. An exclusively tree-roosting bat; current known roosts number <10 London-wide.
Leisler's bat	<i>Nyctalus leisleri</i>	Vulnerable	Scarce	Leisler's bat has been recorded infrequently in London area, yet sightings have doubled in the last three years. New foraging sites for the species include the Barnes area, Wandsworth Common and Brent Reservoir. 3 current known roosts (Haringey, Bromley and Bexley).

Ecological Assessment

Common Name	Latin Name	UK Status	London Status	Notes
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	Not Threatened	Common	A widespread species, the common pipistrelle is believed to occur in all London boroughs. Roosts are still discovered relatively infrequently, however.
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	BAP Priority	Common	Also widespread and probably London's commonest bat. Apparently more associated with wetland habitats than its close relative, <i>P. pipistrellus</i> . Known roosts currently number 15-25?, but many more pass undetected.
Nathusius's pipistrelle	<i>Pipistrellus nathusii</i>	Rare	Rare	Only recently confirmed as a UK breeding species. Detector records from an increasing list of sites include Lesnes Abbey Woods, Chislehurst Ponds and the Wetland Centre at Barnes. 1 known current roost site in bat boxes in Hounslow.
Brown long-eared bat	<i>Plecotus auritus</i>	Declining BAP Priority	Scarce	Brown long-eared bats are fairly secretive and may be under-recorded in Greater London, although reasons for the national decline are also likely to affect London's population. Roosts have been found in Bexley, Bromley, Hillingdon, Wandsworth, Kensington & Chelsea, Barnet, and Richmond.

NB: This audit is based on data from the London Bat Project collected in the mid-1980s, as well as that collected since by the London Bat Group and is therefore not systematic. This audit is the best possible understanding of the status of bats in London that can currently be realised by the London Bat Group.

Appendix C: Selected Legislation, Nature Conservation Status and Policy

Legislation

Table C: 1 Legislation Summary

Receptor	Legislation
Nesting Birds	<p>The legislation relevant to the potential ecological constraints on site associated with nesting birds.</p> <p>All wild birds, their nests and eggs are protected under the Wildlife and Countryside Act 1981 (as amended)Error! Bookmark not defined.. Section 1 of the Act makes it an offence to:</p> <ul style="list-style-type: none"> intentionally kill, injure or take any wild bird; intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built; or intentionally take or destroy an egg of any wild bird. <p>It is also an offence to:</p> <ul style="list-style-type: none"> intentionally disturb any wild bird included in Schedule 1 of the Act while it is building a nest or is in, on or near a nest containing eggs or young; or disturb dependent young of such a bird. Species listed on Schedule 1 include the black redstart, barn owl (<i>Tyto alba</i>), Cetti's warbler (<i>Cettia cetti</i>) and kingfisher (<i>Alcedo atthis</i>). <p>There is no potential for Schedule 1 birds to be nesting on Site, the legislation regarding common nesting birds will be complied with due to the precautionary mitigation previously stated.</p>
Badgers	<p>Badgers are protected from inhumane killing or injury under Badgers Act (1992)¹³, this also protects their setts from damage and prohibits blocking access to their setts.</p>
Bats	<p>The legislation relevant to the constraint identified associated with bats.</p> <p>Bats are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010 (as amended)..</p> <p>Bats are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are subject to the provisions of Section 9 of the Act, which make it an offence to:</p> <ul style="list-style-type: none"> intentionally or recklessly disturb a wild animal listed on Schedule 5 whilst it is occupying a structure or place which it uses for shelter or protection; intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a wild animal listed on Schedule 5; sell, offer or expose for sale, or to possess or transport for sale alive or dead wild animal listed on Schedule 5 or any part of or anything derived from a wild animal listed on Schedule 5. <p>Bats are also listed on Schedule 2 (European protected species of animals) of the Conservation of Habitats and Species Regulations 2010 (as amended) and are subject to the provisions of Regulation 41 which makes it an offence to:</p> <ul style="list-style-type: none"> deliberately capture, injure or kill any wild animal of a European protected species; deliberately disturb wild animals of any such species (where disturbance is likely to impair their ability to survive, breed or reproduce, rear or nurture their young; or to

¹³ Protection of Badgers Act 1992 (as amended)

Receptor	Legislation
	<p>hibernate or migrate; or to affect significantly the local distribution or abundance of the species);</p> <ul style="list-style-type: none"> • damage or destroy a breeding Site or resting place of such an animal; or • be in possession of, control, transport, sell or exchange, or offer for sale or exchange any live or dead animal of such a species or any part of a wild animal or anything derived from an animal or any part of an animal of such a species.
Great Crested Newts	<p>Great crested newts are a European Protected Species (EPS), listed on Annex II and IV of the EEC Directive on the Conservation of Natural Habitats and Wild Fauna and Flora, receiving protection under The Conservation of Habitats and Species Regulations 2010. This species is also afforded full protection under the Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) (WCA 1981). Under such legislation it is an offence to:</p> <ul style="list-style-type: none"> • Intentionally or recklessly kill, injure or take a great crested newt; • Possess or control any live or dead specimen or anything derived from a great crested newt; • Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a great crested newt; and • Intentionally or recklessly disturb a great crested newt while it is occupying a structure or place which it uses for that purpose.
Reptiles	<p>The relevant legislation relevant to the constraint identified associated with reptiles All native British reptile species are protected under the Wildlife and Countryside Act 1981 (as amended). Reptiles are listed under Schedule 5 of the Act. The four more widespread species including common lizard, slow worm, adder and grass snake are subject to some of the provisions of Section 9 of the Act, which make it an offence to: *</p> <ul style="list-style-type: none"> • intentionally kill or injure a reptile; or * sell, offer or expose for sale, or • to possess or transport for sale alive or dead reptile or any part of, or anything derived from, a reptile.
Other Mammals	<p>Other mammals not protected by their own legislation are protected by the Mammal Act (1996). The Act makes provision for the protection of wild mammals from certain cruel acts.</p> <p>An offence is committed if any person mutilates, kicks, beats, nails, or otherwise impales, stabs, burns, stones, crushes, drowns, drags, or asphyxiates any wild mammal with intent to inflict unnecessary suffering.</p>
Non Native Invasive Species	<p>Numerous species are listed on Schedule 9 (of the Wildlife and Countryside Act 1981, as amended) whereby it is an offence to grow or to cause this species to grow in the wild. A species on Schedule 9 that commonly occurs in London is Japanese Knotweed (<i>Fallopia japonica</i>) which is also covered by the Environmental Protection Act (EPA) 1990 which designates this as a controlled waste.</p>

Nature Conservation Status

• Birds of Conservation Concern (BOCC) (2015)

The UK's leading bird conservation organisations worked together to produce The Population Status of Birds in the UK: Birds of Conservation Concern Four (BoCC).

Commonly referred to as the UK Red List for birds, this is the fourth review of the status of birds in the UK, Channel Islands and Isle of Man, and updates the last assessment in 2009. Using standardised criteria, 244 species with breeding, passage or wintering populations in the UK were assessed by experts from a range of bird NGOs and assigned to the Red, Amber or Green lists of conservation concern.

Table C: 2 Bird Population Status Criteria for Birds of Conservation Concern in the UK

Criteria	Status
Red list criteria	Globally threatened Historical population decline in UK during 1800–1995 Rapid (> or =50%) decline in UK breeding population over last 25 years Rapid (> or =50%) contraction of UK breeding range over last 25 years
Amber list criteria	Historical population decline during 1800–1995, but recovering; population size has more than doubled over last 25 years Moderate (25-49%) decline in UK breeding population over last 25 years Moderate (25-49%) contraction of UK breeding range over last 25 years Moderate (25-49%) decline in UK non-breeding population over last 25 years Species with unfavourable conservation status in Europe, termed Species of European Conservation Concern (SPEC) Five-year mean of 1–300 breeding pairs in UK > or =50% of UK breeding population in 10 or fewer sites, but not rare breeders > or =50% of UK non-breeding population in 10 or fewer sites > or =20% of European breeding population in UK > or =20% of northwest European (wildfowl), East Atlantic Flyway (waders) or European (others) non-breeding populations in UK
Green list	No identified threat to the population's status

Relevant Policy

National

The Site survey, assessment and recommended mitigation ensure compliance with the following policies, any additional enhancement measures would further comply with these policies:

- **The National Planning Policy Framework (NPPF 2012)**¹⁴ sets out how the planning system should protect and enhance nature conservation interests. Section 11 is concerned with conserving and enhancing the natural environment Opportunities to enhance biodiversity are also encouraged.
- **The Natural Environment and Rural Communities (NERC) Act 2006**¹⁵ places a duty upon public bodies to consider Section 41 lists flora, fauna and habitats (previously UK BAP habitats and species) as a material consideration in planning and to consider enhancement of biodiversity.
- **Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services**¹⁶ includes a list of Habitats of Principal Importance in England (HPIEs) and Species of Principal Importance in England (SPIEs). These were previously included as Priority Habitats and Priority Species in the UK BAP.

London

- **London Invasive Species Initiative (LISI)**¹⁷: Managed by the London Biodiversity Partnership, LISI lists non-native invasive species that should be controlled in London. Species relevant to the Scheme include Japanese Knotweed and Butterfly-bush.
- **London Biodiversity Action Plan (BAP)**¹⁸: Managed by the London Biodiversity Partnership (2006), the London BAP sets out priority habitats and species for the city. London BAP habitats relevant to the Scheme include reed beds, standing water and wasteland.
- **The London Plan (2011) Strategic Policy 7.19 Biodiversity and Access to Nature and Policy 7.21 Trees and woodlands) (updated with the Minor Alterations to the London Plan 2016)**¹⁹: Regional planning policy for London is presented in the London Plan: Spatial Development Strategy for Greater London. It contains various policies with regard to nature conservation in London, which include commitments to protect, enhance, create, promote, expand and manage the extent and quality of green infrastructure and biodiversity and to increase access to nature, the following elements of SP 7 are as follows:
 - **Strategic Policy 7.19 Biodiversity and Access to Nature and Policy:**
 - A) The Mayor will work with all relevant partners to ensure a proactive approach to the protection, enhancement, creation, promotion and management of biodiversity in support of the Mayor's Biodiversity Strategy.
 - B) Any proposals promoted or brought forward by the London Plan will not adversely affect the integrity of any European site of nature conservation importance.
 - C) Development Proposals should:
 - a) wherever possible, make a positive contribution to the protection, enhancement, creation and management of biodiversity
 - b) prioritise assisting in achieving targets in biodiversity action plans (BAPs), set out in Table 7.3, and/or improving access to nature in areas deficient in accessible wildlife sites
 - c) not adversely affect the integrity of European sites and be resisted where they have significant adverse impact on European or nationally designated sites or on the population or conservation status of a protected species or a priority species or habitat identified in a UK, London or appropriate regional BAP or borough BAP.

¹⁴ Anon (2012) The National Planning Policy Framework HMSO, London

¹⁵ Anon (2006) The Natural Environment and Rural Communities Act HMSO, London

¹⁶ Department for Environment, Food and Rural Affairs (2011) *Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services*

¹⁷ London Invasive Species Plan (2012). Legislative and Information Exchange Framework. [online] Available at <http://www.londonisi.org.uk/tackling-inns/lisp/>. [Available June 2016]

¹⁸ City of London (2009). *London Biodiversity Action Plan 2010 – 2015*

¹⁹ Greater London Authority (2011) *The London Plan Strategic Policy 7.19 Biodiversity and Access to Nature and Policy 7.21 Trees and woodlands) (updated with the Minor Alterations to the London Plan 2016)*

- D) On Sites of Importance for Nature Conservation development proposals should:
 - a) give the highest protection to sites with existing or proposed international designations¹ (SACs, SPAs, Ramsar sites) and national designations² (SSSIs, NNRs) in line with the relevant EU and UK guidance and regulations
 - b) give strong protection to sites of metropolitan importance for nature conservation (SMIs). These are sites jointly identified by the Mayor and boroughs as having strategic nature conservation importance
 - c) give sites of borough and local importance for nature conservation the level of protection commensurate with their importance.
- E) When considering proposals that would affect directly, indirectly or cumulatively a site of recognised nature conservation interest, the following hierarchy will apply:
 - 1 avoid adverse impact to the biodiversity interest
 - 2 minimize impact and seek mitigation
 - 3 only in exceptional cases where the benefits of the proposal clearly outweigh the biodiversity impacts, seek appropriate compensation.
- F) In their LDFs, Boroughs should:
 - a use the procedures in the Mayor's Biodiversity Strategy to identify and secure the appropriate management of sites of borough and local importance for nature conservation in consultation with the London Wildlife Sites Board.
 - b identify areas deficient in accessible wildlife sites and seek opportunities to address them
 - c include policies and proposals for the protection of protected/priority species and habitats and the enhancement of their populations and their extent via appropriate BAP targets
 - d ensure sites of European or National Nature Conservation Importance are clearly identified
 - e identify and protect and enhance corridors of movement, such as green corridors, that are of strategic importance in enabling species to colonise, re-colonise and move between sites.
- **Strategic Policy 7.21 Trees and Woodlands:**
 - A) Trees and woodlands should be protected, maintained and enhanced, following the guidance of the London Tree and Woodland Framework (or any successor strategy). In collaboration with the Forestry Commission the Mayor has produced supplementary guidance on Tree Strategies to guide each borough's production of a Tree Strategy covering the audit, protection, planting and management of trees and woodland. This should be linked to a green infrastructure strategy.
 - B) Existing trees of value should be retained and any loss as the result of development should be replaced following the principle of 'right place, right tree. Wherever appropriate, the planting of additional trees should be included in new developments, particularly large-canopied species.
 - C) Boroughs should follow the advice of paragraph 118 of the NPPF to protect 'veteran' trees and ancient woodland where these are not already part of a protected site.
 - D) Boroughs should develop appropriate policies to implement their borough tree strategy.
- **The London Plan (2011) , Housing Supplementary Planning Guidance (March 2016)²⁰:** With regards to housing, recently a dedicated supplementary planning guidance has been produced, the relevant elements of which are presented below
 - Standard 40 and Policy 7.19 "Biodiversity and access to nature promotes a proactive approach to the protection, promotion and management of biodiversity across the capital" and that "Proposals for development should give full consideration to their direct

²⁰ Greater London Authority (2016) *London Plan 2016 Implementation Housing Supplementary Planning Guidance adopted in March 2016*

and indirect effects on ecology. Ecological improvements can be achieved as part of Sustainable Urban Drainage Systems and incorporated into green or brown roofs, green walls and soft landscaping.”

- Policies 7.19 and 7.21 “supporting biodiversity, protecting London’s trees, ‘green corridors and networks”.
- Development proposals should also enhance provision of green infrastructure in the public realm, helping to mitigate and adapt to climate change (Policy 5.10 Urban Greening), extend tree cover (Policy 7.21), improve biodiversity (Policy 7.19).
- Public, communal and private open spaces should be protected and enhanced, and where possible new open spaces should be created. This is supported by Policy 2.18 Green Infrastructure, Policy 7.18 Protecting open space, Policy 7.19 Biodiversity and Policy 7.21 Trees and Woodlands.
- **The Mayor’s Biodiversity Strategy (2002)²¹:** Connecting with London’s Nature: The Mayor’s Biodiversity Strategy provides a statutory framework for the delivery of biodiversity policies in London. It seeks to ensure that there is no overall loss of wildlife habitats in London.
- **The London Plan (2011), Sustainable Design and Construction Supplementary Planning Guidance (April 2014)²²:**
 - Mayor’s Priority - Developments should contribute to the Mayor’s target to increase tree cover across London by 5% by 2025.
 - Mayor’s Priority - There is no net loss in the quality and quantity of biodiversity.
 - Mayor’s Priority - Developers make a contribution to biodiversity on their development site.
 - Mayor’s Priority - Any loss of a tree/s resulting from development should be replaced with an appropriate tree or group of trees for the location, with the aim of providing the same canopy cover as that provided by the original tree/s.

Local

- **Barnet Policy DM01: Protecting Barnet’s character and amenity (London Borough of Barnet 2012)²³**

Development proposals will be required to include hard and soft landscaping that:

 - i. is well laid out in terms of access, car parking and landscaping
 - ii. considers the impact of hardstandings on character
 - iii. achieve a suitable visual setting for the building
 - iv. provide an appropriate level of new habitat including tree and shrub planting v. make a positive contribution to the surrounding area
 - vi. contributes to biodiversity including the retention of existing wildlife habitat and trees
 - vii. adequately protects existing trees and their root systems.
 - k. Trees should be safeguarded. When protected trees are to be felled the council will require replanting with suitable size and species of tree where appropriate.
- **Barnet Policy DM16: Biodiversity (London Borough of Barnet 2012)**
 - a. When considering development proposals the council will seek the retention and enhancement, or the creation of biodiversity.
 - b. Where development will affect a Site of Importance for Nature Conservation and/or species of importance the council will expect the proposal to meet the requirements of London Plan Policy 7.19E.
 - c. Development adjacent to or within areas identified as part of the Green Grid Framework will be required to make a contribution to the enhancement of the Green Grid.

²¹ Greater London Authority (2002), *Connecting with Nature: The Mayor’s Biodiversity Strategy adopted in 2002*

²² Greater London Authority (2011), *The London Plan Sustainable Design and Construction Supplementary Planning Guidance adopted in April 2014*

²³ London Borough of Barnet 2012, *Barnet’s Local Plan (Development Management Policies)*.

Appendix D: Japanese Knotweed Technical Note

There are several species of plant that are considered to be invasive in the UK, including Japanese Knotweed. Japanese Knotweed can cause significant delays and costs to development of brownfield sites and can spread rapidly causing damage hard surfaces and buildings. It is therefore important that Japanese Knotweed is identified as early as possible so that an effective control programme can be implemented.

Japanese Knotweed is covered by two main pieces of legislation in the UK. The Wildlife and Countryside Act (Schedule 9) makes it unlawful to 'plant or otherwise cause Japanese Knotweed to grow in the wild' and under the Environmental Protection Act 1990 Japanese Knotweed is classified as a controlled waste and thus must be accompanied by the relevant Duty of Care documents when transported and, as such must be disposed of at a licensed landfill site.

The vigorous growth can damage buildings and hard surfaces. Once established underneath or around the built environment, it can be particularly hard to control. Japanese Knotweed produces a network of underground stems called a rhizome. Only a very small piece of Japanese Knotweed rhizome (less than a cm) is needed to start regrowth. It is important that the rhizome is not transported to other parts of the site or onto another site.

Demarcation and Exclusion Zones around JK

As an initial measure, any stand/s of Japanese Knotweed should be identified and demarcated to create an exclusion zone (a minimum of 7ms) and an accompanying risk register/ toolbox talk provided to the project team so that people are aware of its presence and understand that no ground breaking works can be undertaken in the vicinity without the appropriate management and mitigation. If Japanese Knotweed is identified as being present in the area appropriate specialist management advice must be sought

During any works around JK, rigorous contamination control must be implemented, that is, no cross contamination of machinery or personal protection equipment should be allowed. No soil material should be taken off site, wheel washing, spade cleaning and boot cleaning before movement of personnel or equipment off site must be undertaken

Further details around Japanese Knotweed management and eradication can be found in CIRIA report C679, 2008 '*Invasive species management for infrastructure managers and the construction industry*' and the Environment Agency '*Managing Japanese knotweed on development sites*' (version 3 amended in 2013). Possible methods for the eradication of Japanese Knotweed include:

Herbicide Treatment Programme

Foliar herbicide treatment (usually with glyphosate) provides a relatively low-cost and effective strategy to eradicate JK. However, to be effective the treatment needs applications during the growing season (April to September) over a number of years (usually at least 3 years) prior to any groundbreaking activities. As such, this treatment method may not be suitable where imminent development/ construction is required.

Stem injection of herbicide (again usually glyphosate) has a greater success rate than foliar application, this usually needs to be injected in August/September and eradication can be confirmed after 1 or 2 seasons.

Stockpiling of Excavated Material and Herbicide Treatment

TECHNICAL NOTE #8

Potentially suitable for larger development/ construction sites. The area impacted by JK can be excavated and stockpiled in another area of the site for subsequent herbicide treatment/ spraying. This allows the development of the originally contaminated area to proceed immediately. Treatment on site reduces costs e.g. transportation however, adequate space to stockpile the material on site for a minimum of a 12 month period (usually more) is required which cannot be located near a water course.

Excavation and Mechanical Segregation

Considered to be a more environmentally friendly treatment method as it does not require the use of herbicides to eradicate the JK; this method comprises the excavation and mechanical segregation/ sifting of the excavated soil to remove the JK material. This method requires a shorter timescale in the region of a weeks to a month however, as it is a labour intensive treatment the costs associated with the treatment can be high.

Excavation and Disposal Onsite

Where significant construction activities are taking place there is an opportunity to bury JK waste on site. This treatment method is quick and effective where appropriate.

Excavation and Disposal to Landfill

This treatment method is quick and effective at ensuring the JK is removed from site. However, JK is classed as 'controlled waste' under the Environmental Protection Act 1990 and the costs of haulage and disposal costs associated with this treatment method are high and is considered to be a less sustainable treatment method.

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