

2	Elder (<i>Sambucus nigra</i>) and buddleia (<i>Buddleja davidii</i>) scrub with tall ruderal vegetation and a spoil and brash pile were located in the north west corner of site. Japanese knotweed (<i>Fallopia japonica</i>) was present in this area. Piles of rubble, tipped debris, materials and spoil were present elsewhere on site and have potential to be used by wildlife such as reptiles and hedgehogs.	
3	Japanese knotweed, a Schedule 9 species, was present at intervals along the west site boundaries. It was also present off site along the canal bank and was widespread on the Minet tip area. (Pictures show old and new growth.)	
4	A line of Lombardy poplars (<i>Populus nigra</i>) with woodpecker and natural holes were considered to have high bat potential. Piles of brash were present between the trees.	
5	A young ash tree <i>Fraxinus excelsior</i> with ash dieback disease (<i>Chalara fraxinea</i>).	

6	A hole was present in a boundary wall that led into a cavity space between two walls. This was considered to have bat roost and bird nesting potential.	
7	A rough semi-improved marginal grassland including Yorkshire fog and perennial rye grass (<i>Lolium perenne</i>). Forbs included dandelion (<i>Taraxacum officinale</i>), bittercress (<i>Cardamine impatiens</i>) and horsetail (<i>Equisetum arvense</i>). Mammal runs had been dug underneath the fence along this boundary, probably by foxes.	
8	A flat roofed prefab building with small gaps along bargeboards, potentially allowing bat access to gaps behind and into any roof void. This building was considered to have low bat potential.	
9	A flat roofed brick building attached to a prefab building with a metal corrugated roof. This had a broken window and broken ventilation brick that potentially allowed access into the building. An internal inspection of the building is recommended to ascertain bat roost potential.	

10	The security office had slipped/skewed soffit boards. These did not appear to lead into the roof void, but closer inspection at height is considered necessary to confirm this.	
11	A small building with a tiled roof had gaps at the roof apex and along the eaves that may allow access into the roof void or provide features for crevice roosting bats. Thus it was considered to have medium bat roost potential, and internal inspection is recommended.	
12	A waterbody (Pond1) with steep concrete sides that extended several metres above ground level, and was therefore considered inaccessible to amphibians.	
13	A fenced in area of semi-mature trees, primarily silver birch (<i>Betula pendula</i>). No access was possible on the day of survey. Aerial maps show a man made structure within the area, and closer inspection is recommended.	

14	An enclosed area related to the gas works containing two low water towers, an electricity substation and a water body. The towers are potentially suitable for roosting or hibernating bats. A low stone wall was present around the water body and could serve as an amphibian or reptile refuge. Habitat within the area included scrubby grassland mosaic and buddleia scrub. No access was possible on the day of survey, and further inspection is recommended.	
15	A prefab building with flat bitumen roof had gaps present under some barge boards, and there was a gap between the metal roof and the eastern brick wall. It was considered to have medium bat roost potential, and internal inspection is recommended.	
16	A line of trees along the southern site boundary behind fencing were predominately semi-mature London Planes (<i>Platanus × acerifolia</i>). One broken trunk had medium bat potential. Others do not appear to have bat roost potential but close inspection was not possible. An access gap had been dug underneath the fence along this boundary likely by foxes.	

17	Two mature pruned horse chestnut (<i>Aesculus hippocastanum</i>) and ash with short vegetation around trunks including bluebell (<i>Hyacinthoides</i> sp.), dove's-foot crane's-bill (<i>Geranium molle</i>), and red dead nettle (<i>Lamium purpureum</i>). The horse chestnut has two cavities in limbs with staining and is considered to have medium bat potential.	
18	Pollarded mature poplars along north east corner of site with holes, splits and loose bark were considered to have high bat potential. Piles of brash and stacked pallets were present in the corner. Young sycamore (<i>Acer pseudoplatanus</i>) and poplar were also present along the northern boundary.	
19	An enclosed area along northern boundary had ivy dominated the ground cover. Some spoil heaps were present. Multiple species of semi mature trees were present dominated by silver birch with frequent oak (<i>Quercus robur</i>). Mature trees had features that were considered to have high bat potential.	

20	Two 30's hanger style buildings with brick fronts and domed corrugated roofs. Roof lining ranged between unlined to the presence of a false ceiling and thus a large roof void. Access could potentially be gained at the eaves. The southern building also had a raised section of roof with wooden cladding, an internal inspection of this area is recommended. The buildings have low to medium bat potential.	
21	At the eastern tip of site were strips of land on either side of privately owned land. These were accessible from The Crescent and consisted of hardstanding, rough semi-improved grass, and scattered semi-mature trees.	
22	Offsite ditch along the tow path adjacent to the site's western boundary. Smooth newt eggs were found to be present.	
Minet Tip land		
23	An area of willow (<i>Salix sp.</i>) woodland. Within dry areas the understory was sparse, consisting of nettle (<i>Urtica dioica</i>) and lords and ladies (<i>Arum maculatum</i>). In wetter areas the vegetation included sedge (<i>Carex sp.</i>), lesser celandine (<i>Ranunculus ficaria</i>) and great willowherb (<i>Epilobium hirsutum</i>). A number of trees within the woodland had rot holes, woodpecker holes and cracks which provided roosting potential for bats.	

24	A large depression to the east of the proposed road route. The area was dominated by ruderal vegetation including nettle, hemlock (<i>Conium sp.</i>) and garlic mustard (<i>Alliaria petiolata</i>). A number of holes, potentially a badger sett, were recorded at the north west edge of the depression. A well worn track ran along the top of the bank however there was no fresh digging or bedding noted.	
25	The northern bank of the canal was steep sided and heavily vegetated. A number of tree species were recorded including blackthorn (<i>Prunus spinosa</i>), elm (<i>Ulmus sp.</i>), hawthorn (<i>Crataegus monogyna</i>) and oak. Frequent forbs included white dead nettle (<i>Lamium album</i>) and cow parsley (<i>Anthriscus sylvestris</i>). High levels of Japanese knotweed were recorded at a number of locations along the canal.	
26	Yeading Brook flowed through the site. The Brook was approximately 3-4m wide, approximately 1m deep and had moderate/good water quality. The banks of the brook were steep and vegetation was dominated by ruderals and scrub including bramble, nettles and Himalayan balsam (<i>Impatiens glandulifera</i>), a Schedule 9 species.	
27	An area of amenity grassland currently used as football pitches.	

28	An area of elder scrub with occasional hawthorn and willow trees. The understory was dominated by nettle and ground ivy (<i>Glechoma hederacea</i>). In more open areas the vegetation was dominated by nettle. A number of elder and willow trees had potential for supporting roosting bats due to woodpecker and rot holes.	
29	A badger sett was recorded within the proposed footpath route at the north of the development site. The sett consisted of five holes with signs of recent digging and fresh latrines. Hairs were found at the entrances to a number of holes.	 

30	Drain from the canal with reinforced concrete banks. The drain was 0.5-1m deep, 2m wide and had good water quality. Bank vegetation was dominated by bramble, nettle and great willowherb with occasional immature trees. Giant hogweed, a Schedule 9 species, was recorded along the drain.	
31	Several mature oaks providing roosting potential for bats.	
32	Semi-improved grassland within the proposed road route at the west of the site. The sward height was approximately 15cm with shorter areas associated with tracks and paths. Grass species within the sward included Yorkshire fog, cock's foot (<i>Dactylis glomerata</i>) and sweet vernal grass (<i>Anthoxanthum odoratum</i>). Frequent forbs included ragwort (<i>Senecio jacobea</i>), bristly ox-tongue (<i>Picris echioides</i>) and goat's rue (<i>Galega officinalis</i>). Planted mixed/broadleaf woodland was present along the canal, trees within the woodland included Scot's pine (<i>Pinus sylvestris</i>), sycamore and silver birch. Areas of giant hogweed were also recorded within the woodland adjacent to the canal.	

Protected Species – Results and Evaluation

Flora and habitats

- 4.1 The majority of the main site comprised hardstanding. Scattered tall ruderal and scrub was present along the site boundaries and comprised common species and the invasive species Japanese knotweed (*Fallopia japonica*). Individual and lines of trees were present along the site boundaries which included mature pollarded poplar (*Populus sp.*). There was a small area of rough semi-improved, marginal grassland in the western portion of site and a longer area of rough semi-improved grassland at the eastern tip. Several areas of the site were behind fencing and were not accessible for close inspection. These included areas with semi-mature and mature trees, tussocky grassland with scrub, and areas associated with the gasworks that contained areas of semi-mature trees, scrub and grassland mosaic with an associated water body.
- 4.2 The Minet Tip land comprised three land parcels adjacent to the main site's western boundary. The western parcel was comprised mainly of willow and broadleaf woodland and scrub. An area of semi-improved grassland was present at the north end with a thin strip running southward under a telephone line. The central parcel was comprised mainly of broadleaf woodland with a small area of amenity grassland in the north. The majority of the eastern parcel was tall ruderal with scattered scrub and trees, and there was amenity grassland at the north and scrub at the south of this parcel. Yearding brook crossed and the Grand Union Canal ran along the southern boundary of each parcel. The canal also ran through the length of the western parcel. Japanese knotweed, giant hogweed (*Heracleum mantegazzianum*) and Himalayan balsam (*Impatiens glandulifera*) Schedule 9 species were recorded at areas adjacent to the Canal and Yearding brook.
- 4.3 No hedgerows were present on the main site or Minet Tip land.
- 4.4 No rare, BAP or protected plant species were recorded at the main site or on Minet Tip land during the survey.
- 4.5 The desk study highlighted records of 11 plant species that could be associated with the habitat types present at the Southall sites, most of which had records within the past 15 years. However, none of these were noted during the survey which was conducted at a time of year when these species would have been visible.
- 4.6 No further survey of the main site or Minet Tip land is necessary.

Bats

- 4.7 There were multiple mature trees along the main site boundaries including Lombardy poplar, horse chestnut, and poplar sp. (Target notes 4 & 16-19) and multiple mature trees within the areas of the Minet Tip land including willow, oak and elder (Target notes 23, 28 & 31) which were considered to provide medium to high roosting opportunities for bats, such as cracks, rot holes and woodpecker holes.
- 4.8 There were several buildings on the main site with low to moderate bat roost potential, these included the warehouses to the north of site, and office buildings at the centre of the site (Target Notes 8-11, 13,15 & 20). Access and potential roost features included gaps at roof eaves and under barge boards. A boundary brick wall along the canal with a hole leading into its cavity space (Target Note 6) and the gas work structures could potentially be used by bats.
- 4.9 There were no buildings within the Minet Tip land.
- 4.10 The residential buildings along the northern site boundary and along Randolph Road and The Crescent had pitched tiled roofs that were in fairly good condition. There were occasional small gaps near ridge tiles and chimneys that could be used by crevice roosting bats or allow access into the roof void.
- 4.11 The patches of scrub and waterbodies on the main site, the majority of the Minet Tip land and the canal along western site boundary provided good quality foraging habitat for bats. Trees along boundaries of the main site and along Yeading brook and the canal may provide suitable commuting routes for bats.
- 4.12 Bat species highlighted by the desk study were common pipistrelle, soprano pipistrelle, noctule and brown long-eared bat, all of which were most recently recorded in 2012 over 2km from site, and serotine bat recorded 2.5km away from site in 1994.
- 4.13 Further bat survey of the site is recommended. This will include:
- Dusk/dawn bat activity survey at the main site and Minet Tip land
 - Daytime internal and external inspection of building and structures on the main site and residential housing along the northern site boundary and along Randolph Road and The Crescent in order to inform any further survey.
- 4.14 Further, dusk/dawn emergence/re-entry survey is recommended if the mature trees at target notes 4 & 16-19 will be impacted by the proposed development. These surveys should follow BCT Best Practice Guidelines (2012), and can be carried out

between May and September. Outside this season, it may be possible for a bat-licensed tree-climber to assess the roost status of the trees.

Reptiles

- 4.15 The majority of the main site (buildings and hard standing) provided poor quality habitat for reptiles, and had high levels of disturbance that negated any potential basking opportunities. The narrow strips of land at the site's eastern tip (mainly rough semi-improved grassland) provided moderate quality habitat for foraging and basking reptiles, and connected to potentially suitable reptile habitats off-site.
- 4.16 The fenced off scrubby and grassland areas of the site were suitable for foraging or sheltering reptiles and provide open areas for potential basking opportunities, and it is possible these areas may contain isolated populations of reptiles such as common lizards and slow worms.
- 4.17 The Minet tip land provided good quality habitat for reptiles. Woodland and scrub areas were suitable for foraging or sheltering reptiles and open grassland and scrublands provided potential basking opportunities. Yeading brook and the canal also provided foraging opportunities associated with grass snake.
- 4.18 Grass snake and slow worms were most recently recorded over 2km from site in 2012, with closer records, 500m away, of grass snake in 2005.
- 4.19 It is recommended that reptile surveys are undertaken to assess the presence or likely absence of reptile species within Minet Tip land.
- 4.20 As the development at the main site will involve clearance of the fenced areas of coarse grassland and scrub and the narrow strips of land at the site's eastern tip, it is recommended that reptile surveys are undertaken in these areas to assess the presence or likely absence of reptiles.
- 4.21 Reptile surveys can be undertaken between April and September, and involve seven visits to the site to survey previously laid artificial refuges. Surveys should follow current best practice guidelines (Froglife 1999).

Birds

- 4.22 Trees and scrub within and bordering the main site provided potential nesting and foraging opportunities for birds. The buildings on site and brick wall (Target Note 6) provided potential shelter and nesting opportunities for birds such as house sparrow and blue tit. The myriad of habitats, including woodland and grassland, within Minet Tip land provided potential nesting and foraging opportunities for birds such as

cuckoo and sky lark, while the canal corridor provides rich habitat for birds, particularly ones associated with waterways such as Kingfisher.

- 4.23 Bird species observed during the field survey included BoCC red listed species such as herring gull, house sparrow and song thrush, which were identified in the desk study.
- 4.24 Given the proximity of the main site to the canal corridor and the planned removal of sections of Minet Tip land as part of the development it is considered likely that protected, BAP or rare birds could be significantly impacted by the development, and further survey of both sites is recommended.
- 4.25 The residential buildings along the north of the main site, Randolph Road and the Crescent and their gardens were considered to have potential for nesting birds, and the following precautionary actions are recommended:
- Any trees/ hedgerows proposed for retention should be suitably protected from harm during the construction works following British Standard: BS5837 (2012).
 - Site clearance and works proposed to any buildings, trees or hedges should be conducted outside the main bird breeding season (which is March until September). If vegetation removal is necessary between these dates, an ecologist should survey the site for active bird nests immediately prior to works. If nests are identified, there may be a delay in the clearance of some vegetation until all young birds have fledged.

Amphibians

- 4.26 There were two waterbodies within the main site associated with the gas works. These ponds were man made and had vertical concrete sides that extended above the surrounding ground making them inaccessible to amphibians.
- 4.27 A ditch (Pond 2) was present offsite between the Canal towpath and the main sites western boundary (Target Note 22). While smooth newt eggs were present within this ditch on 20th May 2014, it had a HSI value of 0.39 indicating that it was of poor suitability for great crested newts.

	Pond 2	
	Field Score	SI Value
Location	A	1
Pond Area	15m ²	0.03

Pond Drying	Frequently	0.1
Water Quality	Poor	0.33
Shade (%)	90%	0.40
Waterfowl	Absent	1
Fish	Possible	0.67
Number of Ponds	1	0.69
Terrestrial Habitat	Moderate	0.67
Macrophytes	40%	0.71
HSI Score		0.39
Suitability to support breeding great crested newts		Poor

- 4.28 There were no ponds or waterbodies within the Minet Tip land. Woodland and scrub within the site were suitable for foraging or sheltering amphibians during their terrestrial stage.
- 4.29 A single large pond was present just within 500m north west of the main site boundary and 140m north east of the western parcel of Minet Tip land. This pond was large and likely to support fish due to being connected to Yeading Brook. Yeading Brook and the Grand Union Canal formed ecological barriers between the pond and the main site. The area of land containing the pond and Minet Tip land is isolated ecologically by major roads and the canal. Due to poor connectivity and the likely presence of fish the pond was considered to have poor suitability for great crested newts.
- 4.30 There were records of common toad as close as 1km to the site in 2007 and as recent as 2011 2.7 km from site. There were no records of great crested newts within the surrounding area.
- 4.31 The main site itself generally comprised poor quality habitat for amphibians, such as toads and great crested newts, during their terrestrial phase, and was isolated ecologically by the canal, railroad and urban environment, with the ponds on or near site unlikely suitable for great crested newts. While the Minet Tip land had good quality habitat for terrestrial amphibians, the suitability of the single pond within 500m was poor for amphibians and the area was ecologically isolated by the surrounding urban environment. Thus it was considered unlikely that amphibians would be present within the site, or would be impacted by the development. Therefore, further survey is not necessary.

Invertebrates

- 4.32 The majority of the main site was not suitable for invertebrates and while areas of rough grassland, scrub, tall ruderal vegetation and trees provided potential habitat for common invertebrates, these habitats were of limited extent and therefore considered unlikely to support a significant assemblage of principally important (NERC 41) or rare invertebrates.
- 4.33 The myriad of habitats on Minet Tip land provided potential habitat for common invertebrates and were considered extensive enough to potentially support a significant assemblage of principally important (NERC 41) or rare invertebrates.
- 4.34 The data search highlighted records for stag beetle (UK and Local BAP) 2.6km from site in 2009 and 1.1km from site in 2005, sawfly (UK BAP) 1km from site in 2004, white letter hairstreak butterfly (UK & Local BAP; JNCC red list – endangered), 2.3km from site in 2010, and small heath butterfly (UK & Local BAP; JNCC red list – near threatened) 800m from site in 2004 and 2.4km from site in 2010. There were also records for 35 species of moth (UK & local BAP) within the surrounding area within the past 17 years. Woodland habitats associated with stag beetle and weevils were present on Minet Tip land as well as caterpillar food plant grasses and basking and nectaring opportunities.
- 4.35 Yeading brook and the areas of canal within the Minet Tip land and along the main site had moderate/good quality water with ruderal and scrub vegetation along the bank. These areas alone were of good quality for aquatic invertebrate and taken as part of larger waterways have the potential to support a significant assemblage of principally important (NERC 41) or rare invertebrates.
- 4.36 Terrestrial habitats within the main site were not considered of suitable structure or diversity to support a significant assemblage of BAP, rare or protected invertebrates, and no further survey the main site is deemed necessary. However, terrestrial and aquatic habitats within Minet Tip land were considered of suitable habitat to support a significant assemblage of BAP, rare or protected invertebrates. Aquatic and terrestrial invertebrate survey of Minet Tip land and waterways is recommended to inform mitigation strategy.

Hedgehogs and badgers

- 4.37 The habitat on main site was not suitable for hedgehog or badger. No evidence indicating the presence of either species was recorded during the site visit, and no findings suggest that the gaps under fences were made by anything other than

foxes. It was considered unlikely that badgers or hedgehogs would be impacted by the development on the main site and no further survey is necessary.

- 4.38 Minet Tip land provided good quality habitat for foraging badgers and hedgehogs and the woodlands were considered to have suitable cover for badger sett creation. A badger sett was recorded within the proposed footpath route at the north parcel of Minet Tip land (Target Note 29), and a mammal track ran along the top of the bank to the east of the proposed road route (Target Note 24), however a full badger survey of the site was not carried out at the time.
- 4.39 There are records of hedgehog within the surrounding area from 2009 and of badger from 2012.
- 4.40 As the development will require ground works within the Minet Tip site, it is recommended that a full badger survey is undertaken to confirm the presence/absence of setts within the area. Evidence recorded during the survey also indicates that badgers are commuting through the site, therefore, it is recommended that the following measures are implemented during construction works (these will also safeguard the welfare of other mammals, and are standard good practice):
- 1) The covering of excavations overnight to prevent animals falling in, or the provision of an escape ramp (e.g. secured scaffold boards) allowing animals to climb out.
 - 2) Secure storage of all materials, fuels, wire fencing etc, that may harm badgers and other animals.
 - 3) Restricting access by site personnel to any adjoining buffer zones of trees and scrub.
 - 4) All boundary hedges to be fenced with heras fencing on the side of the construction zone to enable badgers to continue using these for commuting.

Water Vole and Otter

- 4.41 Yeading brook and the Grand Union Canal ran within the Minet Tip land and along the main site. The banks of these waterways were steep and heavily vegetated (Target note 25, 26 & 30) and were considered optimal habitat for water voles and otter. The majority of habitats within Minet Tip land were of good quality for foraging and nesting otters. Habitats within the main site were not suitable for otter or water vole.

- 4.42 Water vole were recorded approximately 2km of site in 2004. There are no records of otter within the surrounding area.
- 4.43 Given the suitability of the brook and canal, and the good quality habitat for water vole and otter on Minet Tip land further survey is recommended for these species.
- 4.44 While there is no suitable water vole and otter habitat on the main site, development works will be adjacent to the canal, therefore, it is recommended that during works water quality of the canal and brook are safe guarded.

Dormice

- 4.45 There was no suitable habitat within the main site for dormice: scrub on site was scattered or lacked the complexity necessary for dormice, and areas with mature trees were exposed and lacked under storey.
- 4.46 Habitat within Minet Tip land was sub-optimal for dormice: woodland lacked a mature canopy structure, and the understory was sparse. Further, the site itself was not connected to any woodlands within the larger landscape.
- 4.47 No records of dormice were provided in the data search and further survey is not considered necessary.

Other Protected, BAP or Rare Species

- 4.48 The main site and the Minet Tip land were not considered suitable to support any other protected, BAP or rare species, and the proposed development was considered unlikely to impact on any other protected, BAP or rare species.

4 Key Recommendations, Further Surveys and Precautionary Methods

- 5.1. Further surveys for birds, bats, badger, reptiles, water vole, otter and invertebrates, as detailed in Section 4 are recommended
- 5.2. Precautionary clearance of the site, buildings and trees will be necessary, as detailed in Section 4, to avoid infringing legislation which protects all nesting birds.
- 5.3. Precautionary welfare measures, as detailed in Section 4, to avoid infringing legislation which protects badgers.
- 5.4. Invasive species, such as Japanese knotweed, Giant Hogweed and Himalayan balsam, are listed on Schedule 9 of the Wildlife and Countryside Act 1981, as amended. It is an offence to plant or otherwise cause Schedule 9 species to grow in the wild, and as such, these plant species are classed as 'controlled waste' and must

be disposed of appropriately at a licensed landfill site according to the Environmental Protection Act (Duty of Care) Regulations 1991.

- 5.5. Surface water run-off rates should be limited through Conditions. Sustainable urban drainage systems can be used to regulate the surface water run-off rates and provide ecological habitat.
- 5.6. Current pollution prevention guidelines should be adhered to during all site works in the vicinity of water bodies to minimise the risk of contaminants entering the watercourses.
- 5.7. If recommendations following further surveys and the precautionary measures detailed in this report are followed, it was considered that the development could proceed with minimal impact on the local conservation status of any protected, principally important (NERC 41) or rare species within the area. The site could also be enhanced for wildlife if some of the following recommendations are implemented.

5 Enhancement Recommendations

- 5.1 The addition of bat boxes on the proposed buildings and retained trees within the site would provide additional roosting opportunities. Schwegler bat boxes are recognised as being suitable for roosting bats and long lasting. Bat boxes should ideally be located south facing (between south east and south west), above 5m and away from artificial light sources. Boxes such as Schwegler 1FF or integral bat tubes Schwegler 1FR suitable for pipistrelles would be suitable for this site.
- 5.2 The addition of bird boxes on the new buildings and retained trees on site to provide additional nesting opportunities for birds in the local area. Boxes should include a variety of designs including a range of hole sizes and open fronted designs, this will attract a greater diversity of birds to nest. Boxes should be located out of direct sunlight and close to, but not restricted by, vegetation. Swallow, swift and house martin boxes should be located under eaves.
- 5.3 Landscaping could incorporate native or wildlife attracting trees, shrubs, and wildflower areas as these would likely be of benefit to a variety of wildlife including, birds, bats and invertebrates. Trees and shrubs should be planted to encourage movement, enhancing the existing connections associated with the site. The landscape design could incorporate vegetative cover along the banks of the river to maintain this wildlife corridor.

- 5.4 The incorporation of reptile hibernacula into the landscape design will enhance the area for reptiles in the future. Hibernacula can be created by partially burring piles of wood/rubble and covering with earth.
- 5.5 Climbing plants could be planted against the boundary fences/sheds to create an area of green wall; these should be supported by a trellis system. Species should be native and/or wildlife attracting such as honeysuckle, clematis, jasmine and ivy.
- 5.6 Log piles or rockeries could be created to provide habitat for small mammals, invertebrates and other wildlife. Ideally wood from broadleaved trees should be used for log piles, particularly oak, beech or fruiting trees with bark still attached. These should be partially buried, vertically, in the soil in shaded areas and plants should be allowed to grow over them to retain the moisture.

6 Conclusion

- 7.1 The main site predominantly consisted of hardstanding and buildings with vegetation mainly along the boundaries. Mature trees, scrub, and buildings present on the site could provide suitable habitat for reptiles, bats and birds. Minet Tip land and the canal corridor are good examples of greenspace within the urban environment and comprise habitats suitable for a variety of protected species: birds, bats, reptiles, badger, water vole, otter and invertebrate. Accessible ponds on and within 500m of site were considered unsuitable for use by amphibians. Residential buildings along the north of the main site, Randolph Road and the Crescent were considered to have potential for roosting bats and nesting birds.
- 5.8. Further survey is recommended to determine if birds, bats, badger, reptiles, water vole, otter and invertebrates are using the site. If any mitigation or compensation recommended following these further surveys is carried out, and if the precautionary measures for badgers and birds detailed in this report are followed, it was considered that the development could proceed with minimal impact on the local conservation status of any protected, principally important (NERC) or rare species within the area.
- 7.2 It is also considered that with a sensitive landscape scheme, and by including some, or all, of the additional recommendations, the site could be enhanced for local wildlife post development.

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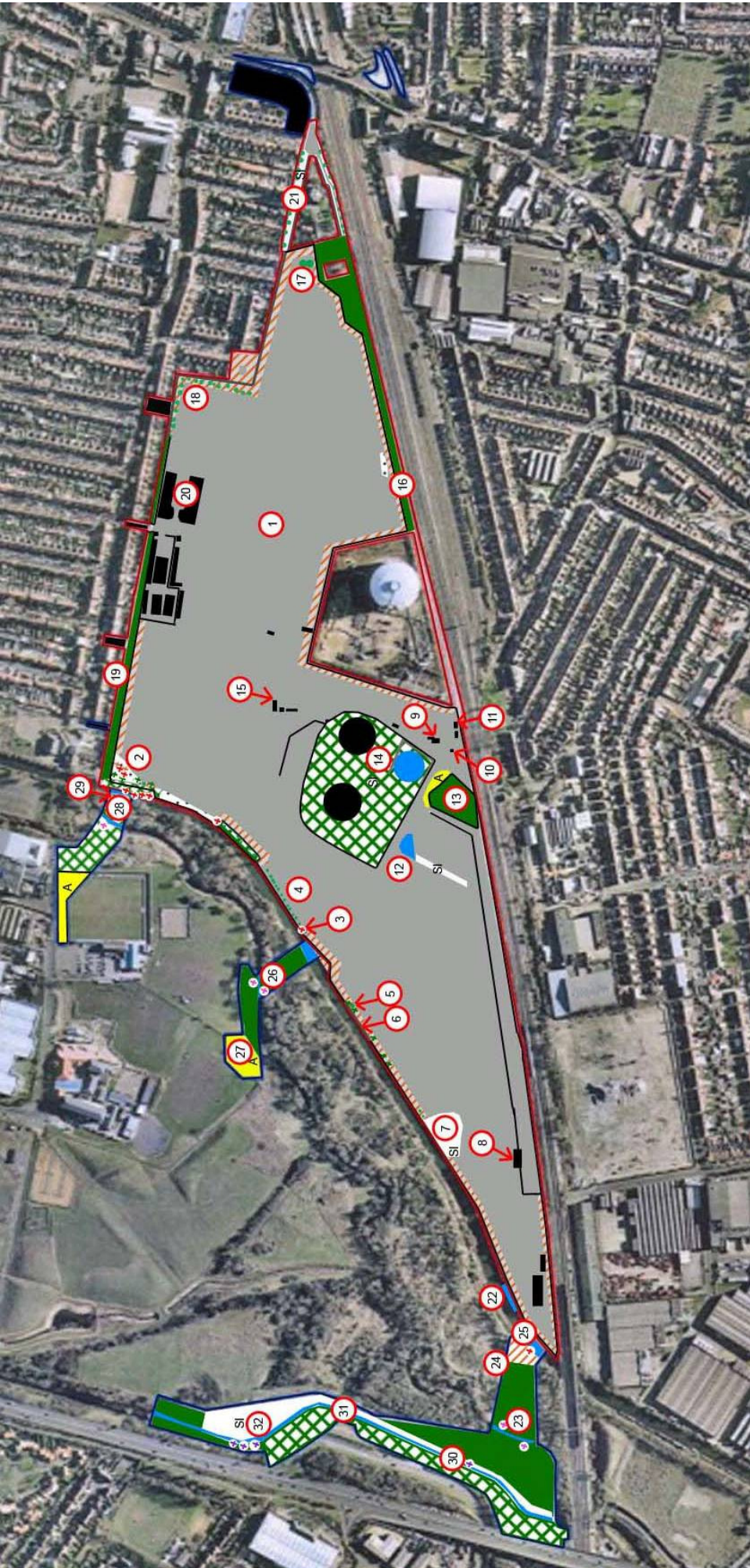
UK BAP www.ukbap.org.uk

London Local BAP www.lbp.org.uk

8 Appendices

Appendix A: Phase 1 habitat map

Key			
	Site boundaries		Wall
	Fence		Buildings, incl structures and residential
	Target Note		Hardstanding
	Semi-improved grassland		Woodland or dense tree lines
	Tall ruderal (scattered)		Tree
	Scrub (scattered)		Amenity grassland
	Spoil heaps		Water
			Areas of Schedule 9 plants Japanese knotweed, Himalayan balsam Giant hogweed



Appendix B: Plant species list

Forbs

Common Name	Scientific Name	Main Site			Minet Tip Land		
		Amenity and SI Grassland	Tall Ruderal	Scrub	Tall Ruderal	Woodland and Scrub	SI grassland
Garlic mustard	<i>Alliaria petiolata</i>				✓		
Cow parsley	<i>Anthriscus sylvestris</i>		✓		✓		
Greater burdock	<i>Arctium lappa</i>				✓		
Lesser burdock	<i>Arctium minus</i>				✓	✓	
Lords and ladies	<i>Arum maculatum</i>					✓	
Hairy bittercress	<i>Cardamine hirsuta</i>				✓		
Narrow leaved bittercress	<i>Cardamine impatiens</i>		✓				
Black knapweed	<i>Centaurea nigra</i>						✓
Common mouse ear	<i>Cerastium fontanum</i>					✓	✓
Fat hen	<i>Chenopodium album</i>		✓				
Creeping thistle	<i>Cirsium arvense</i>		✓		✓	✓	
Common scurvy grass	<i>Cochlearia officinalis</i>				✓		
Hemlock	<i>Conium maculatum</i>				✓		✓
Bindweed	<i>Convolvulus arvensis</i>		✓				
Teasel	<i>Dipsacus fullonum</i>						
Great willow herb	<i>Epilobium hirsutum</i>			✓	✓	✓	
Horse tail	<i>Equisetum arvense</i>	✓	✓				
Upright spurge	<i>Euphorbia rigida</i>		✓				
Japanese knotweed	<i>Fallopia japonica</i>		✓		✓		
Goats rue	<i>Galega officinalis</i>				✓		✓
Cleavers	<i>Galium aparine</i>		✓	✓	✓		✓
Cut leaved cranesbill	<i>Geranium dissectum</i>						✓
Dove's-foot crane's-bill	<i>Geranium molle</i>		✓				
Small-flowered crane's-bill	<i>Geranium pusillum</i>		✓				
Ground ivy	<i>Glechoma hederacea</i>					✓	
Giant hogweed	<i>Heracleum mantegazzianum</i>				✓		
Hogweed	<i>Heraclium sphondylium</i>		✓		✓	✓	✓
Bluebell	<i>Hyacinthoides non-scripta</i>		✓				
Himalayan balsam	<i>Impatiens glandulifera</i>				✓	✓	
Flag iris	<i>Iris pseudacorus</i>				✓		
White dead nettle	<i>Lamium album</i>		✓		✓	✓	
Red dead nettle	<i>Lamium purpureum</i>		✓				✓
Hawkbit	<i>Leontodon sp.</i>		✓				
Hoary cress	<i>Lepidium draba</i>				✓		
Ox-eye daisy	<i>Leucanthemum vulgare</i>	✓					
Least mallow	<i>Malva neglecta</i>						✓
Bristly ox-tongue	<i>Picris echioides</i>		✓		✓		✓

Ribwort plantain	<i>Plantago lanceolata</i>						✓
Celandine	<i>Ranunculus ficaria</i>					✓	
Broadleaf dock	<i>Rumex obtusifolius</i>	✓	✓				
Dock	<i>Rumex sp.</i>				✓		
Groundsel	<i>Senecio vulgaris</i>			✓			
Ragwort	<i>Senecio jacobea</i>				✓		✓
Red campion	<i>Silene dioica</i>				✓		✓
Lamb's ears	<i>Stachys byzantina</i>		✓				
Chickweed	<i>Stellaria sp.</i>	✓	✓				
Dandelion	<i>Taraxacum officinale</i>	✓	✓		✓		✓
Reedmace	<i>Typhus latifolia</i>				✓		
Nettle	<i>Urtica dioica</i>		✓			✓	
Ivy-leaved speedwell	<i>Veronica hederifolia</i>		✓				
Field speedwell	<i>Veronica persica</i>						✓
Common vetch	<i>Vicia sativa</i>		✓				✓

Trees and shrubs

Common Name	Scientific Name	Main Site			Minet Tip Land		
		Amenity and SI Grassland	Tall Ruderal	Scrub or rows	Tall Ruderal	Woodland and Scrub	SI Grassland
?				✓			
Field maple	<i>Acer campestre</i>					✓	
Sycamore	<i>Acer pseudoplatanus</i>			✓		✓	
Horse chestnut	<i>Aesculus hippocastanum</i>			✓			
Silver birch	<i>Betula pendula</i>			✓		✓	
Buddleia	<i>Buddleja spp.</i>		✓	✓		✓	
Hornbeam	<i>Carpinus betulus</i>					✓	
Hawthorn	<i>Crataegus monogyna</i>			✓		✓	
Ash	<i>Fraxinus excelsior</i>			✓		✓	
Ivy	<i>Hedera helix</i>			✓			
Hop	<i>Humulus lupulus</i>					✓	
Holly	<i>Ilex aquifolium</i>			✓			
Apple	<i>Malus sp.</i>					✓	
Scots pine	<i>Pinus sylvestris</i>					✓	
London Plane	<i>Platanus × acerifolia</i>		✓	✓			
Lombardy poplar	<i>Populus nigra</i>			✓			
Poplar	<i>Populus sp.</i>			✓		✓	
Cherry	<i>Prunus avium</i>			✓		✓	
Blackthorn	<i>Prunus spinosa</i>					✓	
Oak	<i>Quercus robur</i>			✓		✓	
Staghorn sumach	<i>Rhus typhina</i>			✓			
Dog rose	<i>Rosa canina</i>					✓	
Rose	<i>Rosa sp.</i>			✓			
Bramble	<i>Rubus fruticosus</i>	✓		✓	✓	✓	✓
Goat Willow	<i>Salix caprea</i>			✓			
Willow	<i>Salix sp.</i>			✓		✓	
Elder	<i>Sambucus nigra</i>			✓		✓	
Elm	<i>Ulmus sp.</i>		✓			✓	

Grasses, sedges, rushes and ferns

Common Name	Scientific Name	Main Site			Minet Tip Land		
		Amenity and SI Grassland	Tall Ruderal	Scrub	Tall Ruderal	Woodland and Scrub	SI Grassland
Sweet vernal grass	<i>Anthoxanthum odoratum</i>						✓
Sedge (probable Cyperus sedge)	<i>Carex sp.</i> (<i>Carex pseudocyperus</i>)					✓	
Cock's foot	<i>Dactylis glomerata</i>						✓
Red fescue	<i>Festuca rubra</i>						✓
Yorkshire fog	<i>Holcus lanatus</i>	✓	✓				✓
Soft rush	<i>Juncus effusus</i>				✓	✓	
Perennial rye grass	<i>Lolium perenne</i>	✓	✓				✓
Timothy	<i>Phleum pratense</i>						✓

Appendix C: Relevant protected species legislation

Species	Relevant Legislation	Level of Protection
Badgers	- Protection of Badgers Act 1992 - Badgers are also protected by the Wild Mammals (Protection) Act 1996	The Protection of Badgers Act (1992) makes it an offence to intentionally or recklessly: - Damage a badger sett or any part of it - Destroy a badger sett - Obstruct access to, or any entrance of a badger sett - Disturb a badger whilst it is occupying a badger sett
Bats	- Full protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended - Classified as European protected species under Conservation of Habitats and Species Regulations 2010, as amended - Also protected by the Wild Mammals (Protection) Act 1996	Under the WCA (1981), it is an offence to: - intentionally kill, injure, or take any species of bat - intentionally or recklessly disturb bats - intentionally or recklessly damage destroy or obstruct access to bat roosts
Birds	Protection under the Wildlife and Countryside Act (1981) as amended	Under the WCA (1981), it is an offence to: (with exceptions for certain species): - Intentionally kill, injure or take any wild bird - Intentionally take, damage or destroy nests in use or being built (including ground nesting birds) - Intentionally take, damage or destroy eggs Species listed on Schedule 1 of the WCA or their dependant young are afforded additional protection from disturbance whilst nesting
Great crested newts	- Full protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended - Classified as European protected species under Conservation of Habitats and Species Regulations 2010, as amended	Under the WCA (1981), it is an offence to: - intentionally kill, injure, or take great crested newts - intentionally or recklessly disturb great crested newts - intentionally or recklessly damage destroy or obstruct access to any place used by the animal for shelter or protection
Otters	- Full protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended - Classified as European protected species under Conservation of Habitats and Species Regulations 2010, as amended - Otters are also protected by the Wild Mammals (Protection) Act 1996	Under the WCA (1981), it is an offence to: - intentionally kill, injure, or take otters - intentionally or recklessly disturb otters - intentionally or damage destroy or obstruct access to otter holts or any place used by the animal for shelter or protection
Widespread reptiles	Partially protected under Schedule 5 of the Wildlife and Countryside Act (1981) as amended.	Under the WCA (1981), it is an offence to: - intentionally kill or injure these animals - sell, offer for sale, advertise for sale, possess or transport for the purposes of selling any live or dead animals or part of these animals
Water vole	- Habitat protected by the Wildlife and Countryside Act (1981) as amended 1998. - Water voles are also protected by the Wild Mammals (Protection) Act 1996	Under the WCA (1981), it is an offence to: - Intentionally or recklessly damage or destroy or obstruct access to any place or structure which water voles use for shelter or protection - Disturb water voles whilst they are using such a place
White-clawed crayfish	Partially protected under Wildlife and Countryside Act 1981 (as amended); listed on schedule 5 and therefore afforded protection under Section 9 (1 and 5).	The WCA (1981) makes it an offence to: - Take white-clawed crayfish - Sell, or attempt to sell, any part of the species, alive or dead. Advertises that he buys or sells, or intends to buy or sell.

Appendix D: Non-statutory conservation sites within 3km of the site

Appendix 2

Southall Former Gasworks Western Access Clearance Letter Report

Rikki Lamb
St James West London Limited
Southall Project Office
169 Brent Road
Southall
Middlesex
UB2 5LE

Dear Rikki

SOUTHALL FORMER GAS WORKS WESTERN ACCESS CLEARANCE

Date 19/07/2016

Introduction

Ramboll Environ UK Limited (Ramboll Environ) was commissioned by St James West London Limited ('the Client') to provide ecological surveys at its Southall Waterside development ('the Wider Site'). Specifically, Ramboll Environ was instructed to assess the land associated with the Western Access ('the Study Area', as shown in Figure 1) for ecological constraints prior to vegetation clearance. The Western Access is located to the west of the former Gas Works ('the Main Site'), as shown in Figures 1. The Site benefits from planning consent from London Borough of Ealing (reference: P/2008/3981-S) and London Borough of Hillingdon (54814/APP/2009/430) for a residential-led redevelopment with associated access roads and landscaping. This is subject to a number of planning conditions, which include conditions relating to ecology.

Vegetation clearance is required to facilitate development of the Study Area. Ecological surveys of the Wider Site, including the Study Area, were undertaken in 2014 by JBA Consultancy Services Ltd and The Ecology Consultancy. These survey reports were reviewed by Ramboll Environ in January 2016 and the need for further surveys outlined (report reference LUK1121406_ECJan-01). The following update surveys were recommended:

- surveys for bats, reptiles, otters and water voles were recommended for vegetation clearance after mid-2017; and
- surveys for badgers, bats and nesting birds were recommended prior to clearance of vegetation and trees.

The purpose of this survey is to assess the ecological features present on the Study Area and to advise on the need for further surveys prior to clearance.

Method

Ramboll Environ undertook an ecological walkover survey of the Study Area on 6 July 2016. The survey was undertaken by Laura Sanderson CEnv MCIEEM and Alison Huggins AIEEMA.

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Ref LUK1121406_ECJulWestern
Access_1

Ramboll Environ UK Limited
Registered in England
Company No: 2331163
Registered Office:
Artillery House
11-19 Artillery Row
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SW1P 1RT

Ecological Site Inspection Work Proforma

Proforma Number	4		
Project Name	SOUTHWESTERN ACCESS	Date	02/02/2017
Ramboll Environ UK Project Code	CLEARANCE UKM 21406	Location/ Grid Reference	
Inspected by (Ecological Clerk of Works (ECOW))	JAMES FRASER	Contractor name	FM CONWAY & DEWIN GREY
Area Of Site Inspected (Provide Plan/Sketch if Necessary)	AREA WEST OF RIVER CRANE AND ADJACENT TO PUMP LANE	Plan/Sketch Reference	PLAN 4 02/02/2017
Purpose Of Inspection	ECOLOGICAL CLERK OF WORKS CHECKS DURING INITIAL SITE CLEARANCE WITH BRUSH CUTTERS.		
Activities Undertaken	CHECKS FOR NESTING BIRDS, HEDGEHOGS AND OTHER ECOLOGICAL FEATURES IN VEGETATION.		

COMPLETE EITHER SECTION 1 OR SECTION 2

Section 1	Complete if no protected/notable species and/or habitats identified
No evidence of protected/notable species or habitats was identified within the area inspected as marked on the attached plan/sketch. Site clearance and groundwork may be undertaken in this area within the next _____ days/weeks/months without the need for any subsequent ecological inspections. Beyond this time, the ECoW must be consulted prior to site clearance and groundwork in this area.	

Section 2	Complete if protected/notable species and/or habitats identified
Evidence of protected/notable species has been identified within the area inspected as marked on the attached plan/sketch. Site clearance and groundwork may only be undertaken in this area in accordance with the recommendations identified by the ECoW and detailed below:	

Item Ref (See Figure)	Affected species/habitat and necessary control measures	Supervision required by ECoW for activities in this area? [Y/N]	Proposed timing of further works and brief details
B1	Potential Bird Breeding Habitat Area represents potential bird nesting habitat. Clearance can be carried out mechanically, but must be carried out within the time specified on this proforma or the area will require further inspection by the ECoW.	Y	NO ACTIVE BIRDS NESTS IDENTIFIED. ECOW WORK TO RESUME ON MONDAY 06/02/17 WHEN MACHINE EXCAVATION

WORKS START

Item Ref (See Figure)	Affected species/habitat and necessary control measures	Supervision required by ECoW for activities in this area? [Y/N]	Proposed timing of further works and brief details
	Ensure that brash material is either removed from site or chipped to remove future bird breeding constraints. Chipped material should also be removed from site (or at least not added to valuable soils that are to be translocated).	~	BRASH TO BE REMOVED ASAP,
B2	High Potential Bird Breeding Habitat Area very likely to represent bird nesting habitat. Clearance can be carried out mechanically, but must be carried out within the time specified on this proforma or the area will require further inspection by the ECoW. Ensure that brash material is either removed from site or chipped to remove future bird breeding constraints. Chipped material should also be removed from site (or at least not added to valuable soils that are to be translocated).		
B3	Bird Nest Identified Bird nest identified and suitable buffer zone around it marked with tape. No work to be undertaken within this area until ECoW confirms nest is not active.		
HR	Hibernating Reptile Habitat Area where reptiles may be hibernating on the ground. Prior to the end of March, vegetation in this area can only be removed with minimal disturbance of the ground (i.e. using hand tools and/or the use of machines without widespread compaction or digging up of the ground), at the discretion of the ECoW.	~	NO REPTILES OR HERPES SUITABLE REPTILE HABITAT IDENTIFIED
RH	Active Reptile Habitat Area identified as likely to support reptiles. Targeted mitigation involving supervised removal of		

Item Ref (See Figure)	Affected species/habitat and necessary control measures	Supervision required by ECoW for activities in this area? [Y/N]	Proposed timing of further works and brief details
	vegetation, possibly including a capture operation, will begin in mid-late March prior to final site clearance at the discretion of the ECoW.		
BT1	Potential Bat Roost Tree Soft felling of tree to be supervised by licensed bat ecologist. Wherever possible, timber should be retained for log piles.	✓	ALL BAT ROOST TREES ALREADY FELLED
BT2	Area of Special Value for Bats Specific mitigation measures for bats required in this location. To be installed in presence of ECoW.		
O1	Potential Otter/Water Vole Habitat Immediate area to be cleared in presence of the ECoW, or following confirmation that otters/water voles are not present.	✓	NO SIGNS OF OTTER OR WATER VOLE OBSERVED.
O2	Otter Holt Otter holt identified. Works within 50m to be undertaken following consultation with Natural England and in presence of specified otter ecologist.		
W1	Watercourse Ensure pollution and sedimentation controls employed and any other location-specific measures in place to reduce the risk of contamination to watercourse.		
W2	Watercourse Fish rescue required prior to/during de-watering.		
BS	Badger Sett Works within 30m to be undertaken in presence of specified badger ecologist. Licence from Natural England required to allow closure of sett.	✓	N. BADGER SETT IDENTIFIED.
DM	Hedge/Woodland/Scrub used by Dormice		

Item Ref (See Figure)	Affected species/habitat and necessary control measures	Supervision required by ECoW for activities in this area? [Y/N]	Proposed timing of further works and brief details
	Removal of vegetation and earthworks to be undertaken under supervision of specified Ecologist.		
HH	Hedgehog Habitat Area suitable for use by hibernating/resting hedgehog identified. Vegetation clearance to be undertaken by hand in presence of ECoW.	Y	NO HEDGEHOGS OBSERVED ON SITE. CHECKS TO CONTINUE W/C 06/02/2017
PA	Protected Area Area of particular nature conservation value. A location-specific Method Statement has been/will be produced for this area. This should be implemented in full under supervision of ECoW.		
JK	Japanese Knotweed Fence off area and treat Knotweed according to Invasive Species Method Statement.		
O	Other Other constraint details and actions to be specified.		

Outstanding Actions	ALL SUITABLE AREAS CHECKED & STRIMMED BARRENS TWO BRAMBLE THICKETS IN THE N.W. OF SITE, ADJACENT THE PARKWAY. TO BE REMOVED WHEN TRAFFIC MANAGEMENT IS IN PLACE. ECoW CHECKS & SUPERVISION TO CONTINUE W/C 06/02/2017 WHEN		
Notes	DEER TRACKS IDENTIFIED ON BUND ADJACENT PUMP LANE. MAGPIE OBSERVED DISPLAYING NEUTING BEHAVIOUR WHEN FLYING OVER SITE		
	Print Name	Signature	Date
Ecologist Signature	JAMES FRAIER		02/02/2017
Site Manager Signature	JAMES COOK		02/02/17

MACHINE EXCAVATORS START CLEARANCE WORKS.

Note: Ecological site inspections and surveys provide a snapshot of ecological conditions and do not record plants or animals that may be present at different times of the year. The absence of a particular species cannot definitely be confirmed by a lack of field signs, and inspections and survey can only conclude that an indication of presence was not located during the survey effort.