

Construction & Environment Management Plan (CEMP): Biodiversity

Island Road (West), Reading

Report ID 165-03

October 2017

REPORT

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1. INTRODUCTION

1.1. BACKGROUND

- 1.1.1. This report provides a Construction Environment Management Plan (CEMP): Biodiversity for proposals to develop a portion of derelict land in Reading, Berkshire known as Island Road (West). This CEMP: Biodiversity has been produced to comply with full planning permission for the proposals, specifically Condition 6, planning reference 170444 (Reading Borough Council).

Location

- 1.1.2. The applicant site is situated in Reading bordering south of the River Kennet centred at OS grid reference SU 706709. A location plan and site boundary are shown in Figure 1.
- 1.1.3. It is bordered to the north by the River Kennet which flows eastwards past the site. To the south it is bordered by Island Road. There is a commercial development to the east and the site is immediately adjacent to various drains to the west running north into the River Kennet.

1.2. DEVELOPMENT

- 1.2.1. Construction will comprise the erection of two no. employment use buildings (B1c, B2 and B8 Use Classes) totalling 11,067sqm (GIA) including ancillary offices and structures, servicing areas and access roads, carparking and landscaping. The permitted development is shown in Figure 2.
- 1.2.2. An area of woodland and a corresponding Root Protection Zone lies between the site and the River Kennet to the north.

2. DEVELOPMENT AND CONSTRUCTION

2.1. OVERVIEW OF THE PROPOSED DEVELOPMENT

- 2.1.1. Reading Borough Council have granted full permission for the development of two units with associated landscaping & lighting. Surface water run-off drainage is proposed to run into the River Kennet. The proposals are shown in Figure 2. The planning reference is 170444.
- 2.1.2. The planning application included an Ecological Assessment (EP 2017¹), which found that a small population of reptiles were present in the East of the site, which were relocated onto Fobney Island in 2016. This was completed on the 13th October 2016, moving 2 slow worms and 3 grass snake.

2.2. CONSTRUCTION PROGRAMME

- 2.2.1. The current expectation is full clearance of vegetation to be completed in February 2018. The enabling works package will commence quarter one 2018, the full construction programme then expected to be complete by December 2018.

¹ **Ecology Practice 2017.** Ecological Assessment, Island Road (West). Report Reference 165-03. March 2017.

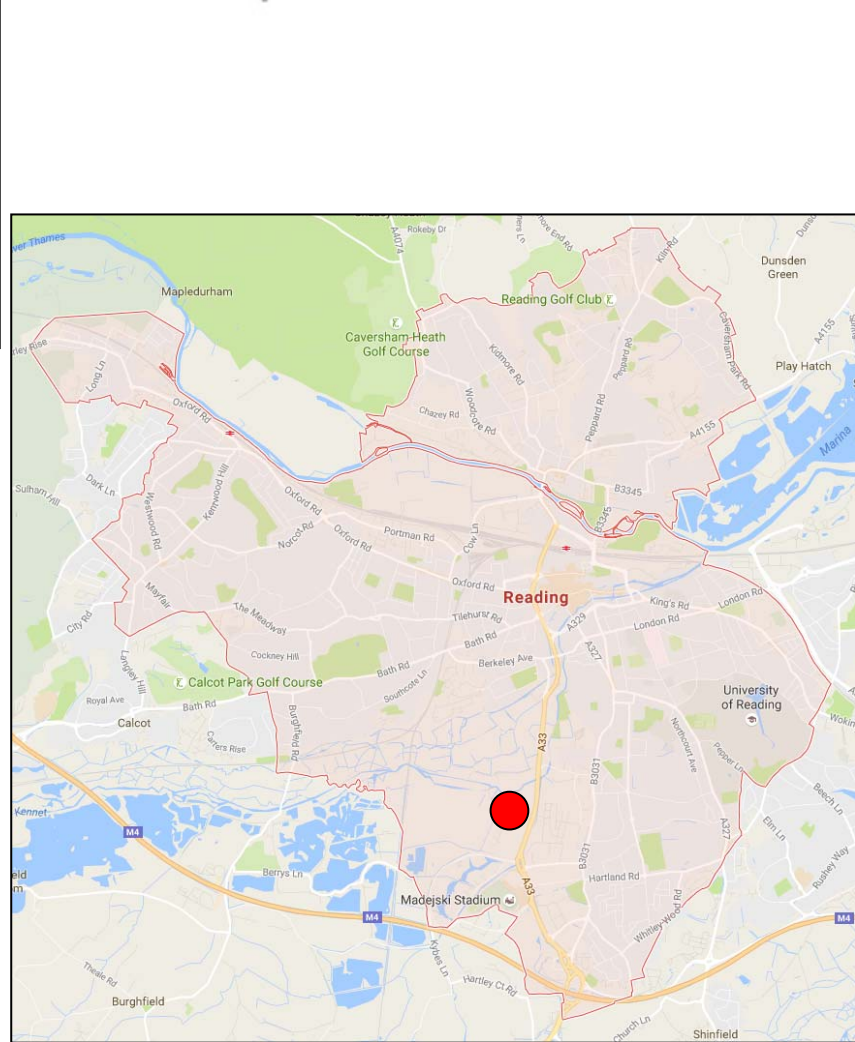
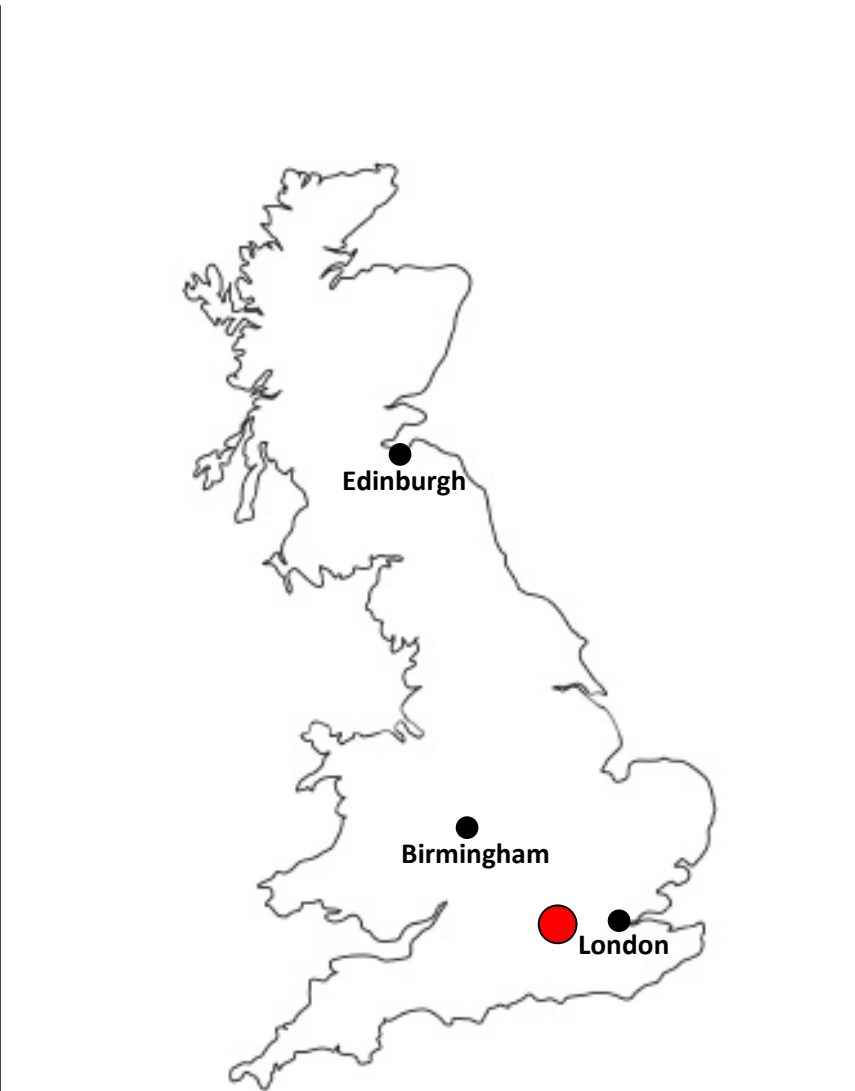
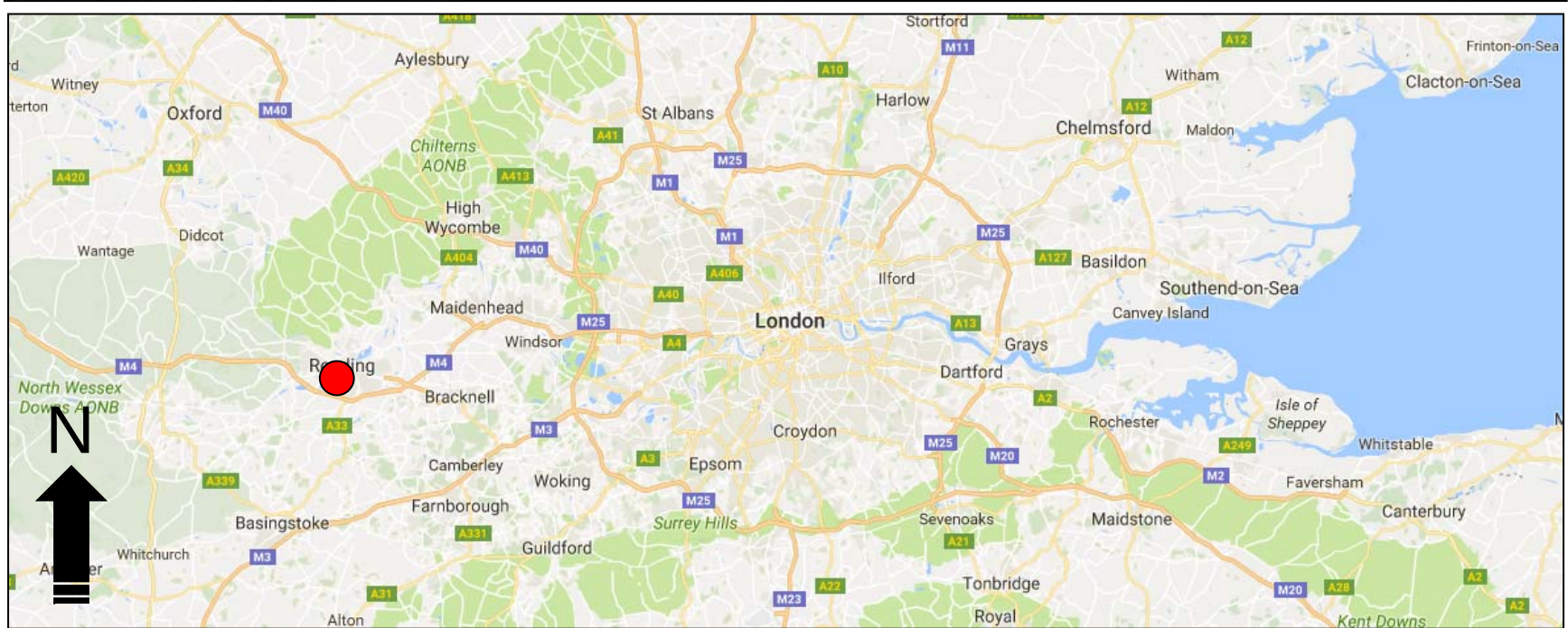


Figure 1

Location

Island Road (West), Reading

Legend

Site boundary

Reading Borough

Site location

Boundaries and other extents are indicative. Please refer to Architect drawings for accuracy.

Exton Estates

Exton Estates (Three)

Drawing No: 16503-01 Rev: A

A	B	C	D
26/08/16			

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Figure 2

Final Layout

Island Road (West), Reading

Legend

-  Applicant Site
-  Existing Woodland
-  Existing Scrub
-  Existing watercourse
-  Thicket planting
-  Emorsgate EW1 & EP1 grassland
-  Ornamental Shrub
-  Tree planting
-  Tree removal
-  Schweglar 1FF/2F type Bat boxes
-  Schweglar 2H/2HW type Nest boxes

For full legend details refer to
BCA CAD file 1736-17-01.dwg



Exton Estates

Exton Estates (Three)

Drawing No: 16503-22 Rev: A

A	B	C	D
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3. BIODIVERSITY PROTECTION DETAILS

3.1. RISK ASSESSMENT OF POTENTIALLY DAMAGING DEVELOPMENT ACTIVITIES

Table 1: Risk resolution

Activity	Risk			Mitigation	Residual		
	LxS=RR				LxS=RR		
Site clearance							
Removal or pruning/cutting of trees, shrubs and ground vegetation (e.g. during bird breeding season);	5	5	25	Carry out removal 1 st September - 1 st March	0	0	0
Removal of soil, rubble and other materials	5	1	5	Use dedicated haulage route and public highways	0	1	0
Demolition of buildings and structures;							
Removal of rubble and other materials.	5	5	25	Burning piles moved on day of burning.	0	0	0
				Clear habitat to 30cm from the ground and leave for one night prior to clearance	1	5	5
Site set up							
Location of site offices, site huts, temporary latrines (including their drainage);	5	4	20	Welfare facilities to be self-contained and emptied off-site	0	0	0
				All associated works restricted to within the heras fencing	0	0	0
Temporary storage areas and stockpiles for soils, materials, spoils and waste;	5	3	15	All associated works restricted to within the heras fencing	0	0	0
Site lighting spillage onto neighbouring habitat	5	2	10	Avoid illumination of maintained habitat	0	1	0
Areas for plant maintenance and for storage of oils, fuels and chemicals;	5	2	10	Provide Construction Phase Environmental Management Plan	0	0	0
Establishment of haul roads (e.g. construction of rubble or concrete temporary roads);	5	2	10	Provide Construction Phase Environmental Management Plan	0	0	0
Site fencing (e.g. disruption/severance of animal runs and paths).	5	1	5	Provide egress underneath (200mm x 200mm) at animal path route locations	0	0	0
				Ecologist to advise path route	0	0	0

Activity	Risk			Mitigation	Residual		
	LxS=RR				LxS=RR		
Groundworks							
Ground investigations, foundations, excavations and piling, temporary earthworks, tunnelling (including the necessary space to operate cranes and large machinery);	5	2	10	Leave escape from trenches	0	2	0
Installation of underground services (e.g. pipes, electricity, gas, telecommunications cables, foul and surface water drains);	5	2	10	Leave escape from trenches	0	2	0
Temporary diversion of watercourse, and/or water abstraction and/or dewatering from and/or discharge to a receiving water body.							
Assembly areas for dry trades (e.g. Steel works and reinforcements);	5	1	5	All associated works to be restricted to within the heras fencing	0	0	0
Assembly areas for wet trades (e.g. Concrete pours and batching).	5	3	15	All associated works to be restricted to within the heras fencing	0	0	0
				Concrete to be delivered ready-mixed	1	2	2
Marine works							
Piling or other works relating to foundations.	5	5	25	Concrete to be delivered ready-mixed	1	2	2
				Noise limited to <70dB (for protected bird communities, when <10m from badger setts [main only])			
				No ground vibration within 10m of water vole burrows (Survey evidence ≤12 months old)	0	1	0
Construction - general							
Increase in traffic movements	5	1	5	Driver awareness	0	1	0
There may be damage or destruction of maintained trees or woodland	5	4	20	Maintain Tree Root & Construction Exclusion Protection Zones	0	0	0
Neighbouring habitat outside the development footprint may be adversely affected.	5	5	25	Heras fencing will delineate the construction footprint	1	5	5
General construction may impede animal movement throughout the site	3	2	6	Maintain an un-obstructed perimeter easement of 1-2 metres	1	1	1
				Works limited to daytime hours	1	1	1

Activity	Risk			Mitigation	Residual		
	LxS=RR				LxS=RR		
Construction - Drainage							
Drainage may decrease off-site water quality	2	4	8	Measure water quality	1	2	2
There may be insensitive destruction of waterside habitat to provide outfall(s).	4	5	20	Ecology survey within 48 hours of construction	1	2	2
Environmental Incidents							
Vandalism	4	4	16	24-hour security	0	0	0
Fires and burning of wastes	1	5	5	Burning piles moved on day of burning	0	0	0
Pollution (air, water and ground);	5	5	25	Provide Construction Phase Environmental Management Plan	0	0	0
Erosion and sediment run-off;	4	5	20	Provide Construction Phase Environmental Management Plan	0	0	0
				Measure water quality	0	0	0
Accidents (e.g. Fuel leaks and spills).	5	5	25	Provide Construction Phase Environmental Management Plan	1	5	5
Final Site Works							
Disposal of wastes, removal of site offices and final site clearance after Construction	5	2	10	Provide Construction Phase Environmental Management Plan	0	0	0

L = Likelihood; S = Severity; RR = Risk Rating

3.2. BIODIVERSITY PROTECTION ZONES

Wildlife sites

River Kennet

- 3.2.1. The development footprint is adjacent to the River Kennet Wildlife Site, as shown on Figure 3.

Other Sensitive Areas

Woodland

- 3.2.2. A woodland sits within the site to the north between construction footprint and the River Kennet and is a DEFRA Priority Habitat and therefore a key BAP habitat in Reading (refer to 5.4 of EP 2017).

- i) The woodland benefits from a Tree Preservation Order (Order 5/16). The LPA must be notified of any works to affect any part of any tree and provide their permission in writing in advance.
- ii) The woodland is protected from all construction activities (except the formation of a drainage channel) and is therefore the subject of both Root Protection Areas and a Construction Exclusion Zone. Refer to 5.3.6/7 of EP 2017 and Figure 3.

Watercourses

- 3.2.3. The green Park Flood Relief channel lies on the western boundary. The channel is a DEFRA Priority Habitat and therefore a key BAP habitat in Reading (refer to 5.4 of EP 2017).
 - i) There must be no direct or indirect adverse impacts and no obstruction to its flow.
 - ii) The channel contains floating pennywort. It is unlawful to cause it to propagate therefore even though it is off-site every effort must be taken to avoid inadvertently transmitting this species off-site.
 - iii) There is an 8m easement that must be maintained to allow Environment Agency maintenance access.

Construction Exclusion Zone / Tree Root Protection Areas

- 3.2.4. A Construction Exclusion Zone has been established which lies up to 15m south of the tree canopy. Its southern limit is delineated in Figure 3. All construction is prohibited north of this line, with the exception of works associated with the formation of bunds, swales and drainage courses.
- 3.2.5. Tree root protection areas (RPAs) have been identified by the Tree Survey. They are delineated in Figure 3, and more accurately aligned to the topographical survey by the Tree Survey drawings. All construction activities are prohibited in these areas: the RPAs are sacrosanct.

3.3. PRACTICAL MEASURES TO AVOID IMPACTS DURING CONSTRUCTION

Siting and timing of all construction activities

- 3.3.1. Refer to 3.4.

Erection of fences & warning signs

- 3.3.2. Refer to 3.8.

Erection of wildlife exclusion barriers

- 3.3.3. N/A

Security & other construction lighting

- 3.3.4. Security/construction lighting will be directed away from surrounding natural habitat, and avoid illuminating any trees, except where health & safety requires illumination. Refer to 3.9.

Monitoring of destructive activities

- 3.3.5. N/A.

Species rescue and translocation

- 3.3.6. A small population of slow worm and grass snake were translocated from the site in Autumn 2016. There are therefore no further constraints.

Provision of temporary wildlife shelters

- 3.3.7. N/A

Invasive species

- 3.3.8. A drawing showing the locations of all invasive species within the construction site is shown as Figure 4.

Japanese knotweed

- 3.3.9. Japanese Knotweed has been identified at the Site, therefore, specific mitigation and remediation measures will be required to ensure that all plant materials and soils contaminated with Japanese Knotweed are identified, segregated and appropriately treated to prevent further spread.

Management & Treatment

- 3.3.10. Prior to any further vegetation clearance works the impacted areas will be identified by a specialist, surveyed and fenced off (including a 7m buffer zone around vegetative growth) and appropriate hazard signage in place.
- 3.3.11. Vehicles must be prevented from tracking across potentially impacted areas.
- 3.3.12. Where Knotweed is located within areas of the Site that will be affected by the earthworks this will require removal prior to commencement of the works. It is recommended that impacted soils are carefully excavated under the supervision of a specialist contractor prior to off-Site disposal at an appropriately licensed facility.
- 3.3.13. The Contractor will need to prepare a specific risk assessment and method statement which identifies a safe system of work to handle potential Japanese Knotweed impacted soils, including transport on or off-Site and ensuring all vehicles are cleaned after use to ensure no rhizome or plant material remains.

Floating pennywort

- 3.3.14. This schedule 9 plant is located to the west of the site, in the Green Park Flood Relief Channel. There should be no access to this channel for all construction activities.
 - i) Note a small dredged amount is left within the landowners site but outside the construction site. This should be untouched by all construction activities.
 - ii) When entering the River Kennet for planned drainage outfall works, contractors should ensure all clothing and footwear is free of spoil & vegetation. The clothing should be freshly worn attire each day, with worn clothing being dispensed for washing at the end of each day.
 - iii) On no occasion should personnel enter more than one water feature with the same clothing/boots. This applies to all utensils and all other equipment.

Himalayan balsam

- 3.3.15. This schedule 9 plant is located mainly in the northern areas of the site in association with the River Kennet. Refer to Figure 4. Being listed on Schedule 9 of the Wildlife and Countryside Act in England and Wales it is an offence to plant or otherwise cause to grow these species in the wild.
- 3.3.16. There will be some removal of the plant required to construct the drainage channel through the woodland to reach the River Kennet. The location next to the River Kennet means extra care should be taken.
- i) During site clearance, when removing the plant, care should be taken to avoid letting seeds or plant material into the water course;
 - ii) Strimming or cutting is an effective control. Ensure all stems are completely severed below the lowest node or joint. Pulling or uprooting is also a very effective control. However, as some seedlings can mature as late as November, the site must be closely monitored, and any late emerging plants pulled.
 - iii) Cut or pulled plants can be safely left on site to decompose, though this must be done in a dry open area.
- 3.3.17. There will be wider site operational requirements due to the amount of plant on the site and the possibility of the drainage channel contributing to the plants spread. An eradication specialist should be employed to advise further.

Biosecurity protocol

- 3.3.18. When working with water, contractors should ensure all clothing and footwear is free of spoil & vegetation. The clothing should be freshly worn attire each day, with worn clothing being dispensed for washing at the end of each day. On no occasion should personnel enter more than one water feature with the same clothing/boots. This applies to all utensils and all other equipment.

Inspections

- 3.3.19. Inspections to ensure that wildlife does not become trapped in pipes, excavations or machinery shall regularly be carried out at the start of each day and items such as trenches will contain a means of escape for wildlife where left overnight.

Training and awareness

- 3.3.20. The Principal Contractor should acknowledge the contents of this CEMP.

Procedures to avoid pollution incidents

- 3.3.21. No oil, bitumen, cement or other material likely to cause an adverse effect shall be stored or discharged within 10 metres of a tree or hedgerow.
- 3.3.22. The site is surrounded by watercourses; no such material will be stored or discharged uphill from a watercourse.

Reporting of unexpected occurrence of protected species

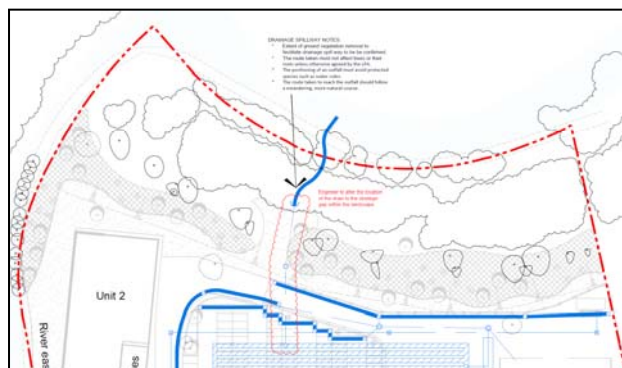
- 3.3.23. The Ecological Clerk of Works will be informed should a previously unrecorded protected species such as a reptile be found during construction/implementation. The Ecological Clerk of Works will be The Ecology Practice 01989 770457.

3.4. LOCATION AND TIMING OF SENSITIVE WORKS TO AVOID HARM TO BIODIVERSITY FEATURES**Timing**

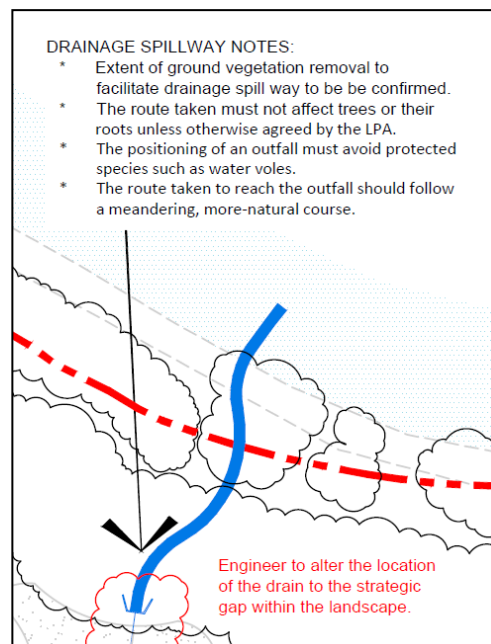
- 3.4.1. All habitat of value to biodiversity which is required to be removed for development will be removed prior to the bird breeding season (i.e. before 1st March or after 31st August). Where this is not possible and habitat must be removed during the bird breeding season, such removal will follow guidance from an Ecological Clerk of Works and be subject to local authority approval.
- 3.4.2. Works must not disturb hibernating species where they have been identified in the Ecological Assessment.

Location

- 3.4.3. Where **piling and other vibrating works** are carried out this must not cause disturbance to riverine species. An ecologist will survey the banks of any water course to ensure there are no protected species within 10m, and the survey will be carried out no later than the preceding season.
- 3.4.4. Where an **outfall structure** is to be installed in the banks of any watercourse the location must be advised by an ecological survey to ensure the outfall location and any associated works avoid protected species and their places of shelter by at least 10m either side. The survey must be carried out within the same week as ground clearance for the structure(s).
- 3.4.5. Any **drainage channel or other essential structure** which routes through the woodland zone must be located to avoid trees and their roots. A root protection zone will be established by way of heras fencing in on-site liaison with both the ecologist and the arboriculturalist. Refer to Box 1.



Box 1: Spillway schematic



3.5. TIMES DURING CONSTRUCTION WHEN SPECIALIST ECOLOGISTS NEED TO BE PRESENT ON SITE TO OVERSEE WORKS

- 3.5.1. During the construction of the spillway and construction of the outfall.
- 3.5.2. During the post-construction installation of bat and bird boxes (refer to Figure 2).

3.6. RESPONSIBLE PERSONS AND LINES OF COMMUNICATION

- 3.6.1. To ensure that the project team and interested parties know who to liaise with, please contact the Ecology Practice, as follows:

Willowgate, Welsh Newton Common, NP25 5RT

07867 580491 or 01989 580491

3.7. THE ROLE AND RESPONSIBILITIES ON SITE OF AN ECOLOGICAL CLERK OF WORKS (ECOW)

- 3.7.1. N/A

3.8. USE OF PROTECTIVE FENCES, EXCLUSION BARRIERS AND WARNING SIGNS

Location

- 3.8.1. All areas outside the construction zone including and especially Biodiversity Protection Zones listed in 0 (except the CEZ), will be protected by fencing to prevent disturbance from construction activities, and appropriate hazard signage used. Refer to Figure 3.

Type

- 3.8.2. Generally temporary security and protective fencing will consist of a typical heras fence such as that shown in Box 2.
- 3.8.3. The use of plastic tape, etc., instead of fixed fencing will be avoided.

Timing

- 3.8.4. Protective fencing will be erected before any materials or machinery are brought onto the whole or part of a site where a risk has been identified, and before any demolition, development or removal of soil or vegetation commences. Once erected, barriers will

not be removed or altered without prior recommendation by an ecologist and approval in writing by the decision-maker.

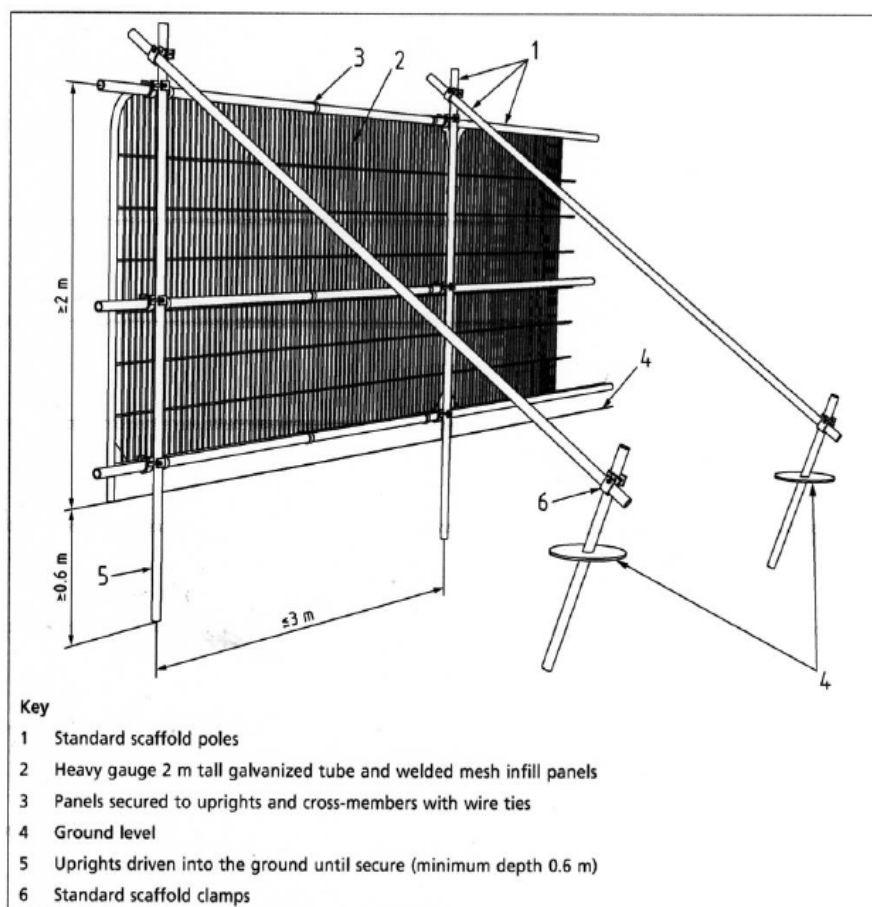
Signage

- 3.8.5. Appropriate signage will be installed on this fencing in appropriate numbers and locations to inform people of the importance of the features it protects and the need to avoid moving the fencing without authorization.

3.9. LIGHTING TO BE USED DURING THE CONSTRUCTION PERIOD, ENSURING THAT SENSITIVE AREAS REMAIN UNILLUMINATED

All temporary lighting used during construction will ensure low emission are below 3 lux at ground level, to avoid disturbance to bat flight paths (BCT 2007²). Directional lighting (e.g. cowls, baffles and shields) will be used to ensure there is no light spill towards natural habitat.

Box 2: Typical heras fencing



² BCT 2007. Bats and Lighting in the UK (*Bats and the built environment series*). Bat Conservation Trust.

Biodiversity Protection Zones

Legend

-
- The site plan illustrates the layout of a development. Unit 1 is a large rectangular building at the bottom, with a parking area and a row of trees (23no. ToGS) along its southern boundary. Unit 2 is a smaller building to the left of Unit 1, with an adjacent parking area and trees. The plan includes various landscaping features, such as tree pits (e.g., 2no. AcSW, 1no. AcSW, 2no. Bp, 1no. Bu-J, 2no. Bp, 2no. Ac, 23no. ToGS) and a drainage channel (River easement) along the western boundary. A note indicates that Heras fencing is required on either side of the drainage channel during construction, with the route to be defined by an Ecologist on-site. The plan also shows a parking area with 10 spaces and a row of trees (10no. ToGS) along the eastern boundary.

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Construction Zone Invasive Species

Legend

-
- Map of the Koro River area showing various vegetation and disturbance zones. Key features include:
- Floating Pennywort dumped on river bank (FP-1)**: Located near the top of the map.
 - Japanese knotweed (JK-A) off site 232m2**: Located on the right side of the map.
 - Himalayan balsam (HB-2) straddling boundary on & off site**: Located on the right side of the map.
 - Scattered Japanese knotweed, plants, canes and rhizome amongst bund, vegetation and tyres (JK-1) = 108m2 on site**: Located in the lower central part of the map.
 - Disturbed bund FP-A**: Located on the left side of the map.
 - Other labeled zones**: HB-1, HB-2, HB-3, HB-4, HB-5, HB-6, HB-7, HB-8, HB-9, HB-10, HB-11, HB-12, JK-1, JK-2, JK-3, JK-4, JK-5, JK-6, JK-7, JK-8, JK-9, JK-10, JK-11, JK-12, JK-13, JK-14, JK-15, JK-16, JK-17, JK-18, JK-19, JK-20, JK-21, JK-22, JK-23, JK-24, JK-25, JK-26, JK-27, JK-28, JK-29, JK-30, JK-31, JK-32, JK-33, JK-34, JK-35, JK-36, JK-37, JK-38, JK-39, JK-40, JK-41, JK-42, JK-43, JK-44, JK-45, JK-46, JK-47, JK-48, JK-49, JK-50, JK-51, JK-52, JK-53, JK-54, JK-55, JK-56, JK-57, JK-58, JK-59, JK-60, JK-61, JK-62, JK-63, JK-64, JK-65, JK-66, JK-67, JK-68, JK-69, JK-70, JK-71, JK-72, JK-73, JK-74, JK-75, JK-76, JK-77, JK-78, JK-79, JK-80, JK-81, JK-82, JK-83, JK-84, JK-85, JK-86, JK-87, JK-88, JK-89, JK-90, JK-91, JK-92, JK-93, JK-94, JK-95, JK-96, JK-97, JK-98, JK-99, JK-100.

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