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Unit 8 Dunley Hill Court
Dunley Hill Farm
Ranmore
Dorking
Surrey
RH5 6SX

Tel: 01483 282523
mail@fpcr.co.uk
www.fpcr.co.uk

Our ref: 8264 / JNHW

Christopher Pettit
Territory Project Manager
English Heritage
24 Brooklands Avenue
Cambridgeshire
CB2 8BU

16th January 2018

Dear Christopher,

KENWOOD HOUSE, HAMPSTEAD – REPLACEMENT OFSHAM BRIDGE – ECOLOGY REVIEW

The following letter has been prepared by FPCR Environment and Design Ltd on behalf of the English Heritage, for the demolition and reconstruction of Sham Bridge, Kenwood House, Hampstead (central OS Grid Reference TQ 273871).

This letter provides the details of a Phase 1 Habitat Survey undertaken during January 2018. The objective of the survey was to gain an understanding of the habitats present onsite site and immediate surrounding area; and to determine whether the site supports or has the potential to support protected, rare or otherwise notable species.

This survey information was collected to identify and advise any ecological constraints expected during the demolition and reconstruction of the Sham Bridge.

Site Context

The Sham Bridge is within Thousand Pound Pond, located in the northern extended Hampstead Heath Park area, Greater London. The pond itself lies within the Hampstead Heath Site of Metropolitan Importance for Nature Conservation (SMINC), and is partially bordered by the Hampstead Heath Woods Site of Special Scientific Importance (SSSI), designated for its high forest woodland community on free draining acidic soil. This area of mature and over mature tree species provides important habitats for Grass snakes *Natrix natrix,* daubenton's bat *Myotis daubentoni*, noctule bat *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus*, common pipistrelle *Pipistrellus pipistrellus*, as well as a variety of invertebrate species including the nationally rare, jewel beetle *Agrilus pannonicus*.

Methodology

A survey of the Application Site was undertaken on the 12th January 2018 based on the standard Extended Phase 1 Habitat Survey Methodology as recommended by Natural England[1], which was used to identify specific habitats and ecological features of interest. An inspection was also undertaken for the presence of any invasive species. During surveys of the site, observations, signs

[1] JNCC. (1990). Handbook for Phase 1 habitat survey – a technique for environmental audit. Peterborough: JNCC

of or suitable habitat for any species protected under Part 1 of the Wildlife and Countryside Act 1981[2] (as amended), the Conservation of Habitats and Species Regulations 2010[3] (as amended) and the Protection of Badgers Act[4] 1992 were noted.

Tree assessments were also undertaken from ground level, with the aid of a torch and binoculars (where appropriate). These surveys were by an experienced ecologist from FPCR. During the survey Potential Roosting Features (PRF) for bats. Trees were classified into general bat roost potential groups based upon the presence of these features.

Limitations

Access to the Thousand Pound Pond area and adjacent woodland habitat was restricted due to the health and safety and the ecologically sensitive nature of this area. The survey was limited to a visual assessment of the southern, eastern and western banks of the waterbody, from the northern bank area. Furthermore, the Sham Bridge and surrounding woodland habitats were visually assessed from the public footpath, east of the pond. Closer inspection of the Sham Bridge may be required during the initial works to ensure no further ecological constraints are present.

This extended Phase 1 habitat survey was undertaken outside of the optimal period, limiting the flora and fauna species recorded. However, the prevailing habitats were evident, allowing conclusions to be drawn from the data collected. This is further supplemented with background information on the Hampstead Heath designated areas.

Results

Habitats

Sham Bridge is located along the eastern bank of the Thousand Pound Pond, located in the northern extent of Hampstead Heath. The pond is approximately 0.4ha in area, with 2-4m high banks, gently sloping to gabions, supporting the bank at the water's edge. It is fed by a larger waterbody, Wood Pond, located adjacent to the western bank, as well as being a natural drainage basin, with a sloping, managed grassland southwards from Kenwood House north of the pond. Water drains from the eastern end of the pond, via a small stream into a wider area of inundation vegetation, before feeding into Stock pond. A 5m wide concrete track, runs parallel to the east bank, leading up to Kenwood house, while a smaller footpath runs through the woodland parallel to the south bank of the pond, both allowing limited views of the bridge and bank habitat.

The northern bank supports a well-managed amenity grassland habitat, connecting to a larger expanse of amenity grassland sloping southwards from Kenwood house, north of the site. This grassland was dominated by perennial rye grass *Lolium perenne*, as well as supporting limited broadleaved herbs including daisy *Bellis perennis* and white clover *Trifolium repens*.

The eastern and western banks support a diverse, mature, broadleaved woodland including beech *Fagus sylvatica*, horse chestnut *Aesculus hippocastanum*, sweet chestnut *Castanea sativa,* silver birch *Betula pendula* and oak species *Quercus* sp. There is a mixed understorey of natural and ornamental species including yew *Taxus baccata*, cherry laurel *Prunus laurocerasus* and holly *Ilex aquifolium*. Large stands of rhododendron *Rhododendron ponticum*, an invasive shrub listed under schedule 9 of the Wildlife and Countryside Act 1981 (as amended), are also situated around these banks, notably on the eastern bank. In addition to this, the eastern bank is lined with semi-mature alder *Alnus glutinosa* trees, roots of which support the bank at the waters' edge, parallel to the bridge

[2] Act of Parliament, (1981). The Wildlife and Countryside Act 1981 (as amended), London: HMSO

[3] The Conservation of Habitats and Species Regulations (as amended 2012). [Online]. Available from: http://www.legislation.gov.uk/uksi/2010/490/contents/made

[4] The Protection of Badgers Act 1992 (as amended). London: HMSO [Online]. Available from: http://www.legislation.gov.uk/ukpga/1992/51/contents

structure. There is a small clearing in trees at the southern end of the bridge structure with gated access to the main footpath along the eastern boundary of the pond.

The southern bank supports broadleaved woodland as well as large stands of cherry laurel and rhododendron. Further south from the waters' edge, into the SSSI designated area, the woodland is dominated by mature oak tree species, some of which are dead and rotting away. There is a damp understory comprising holly, bracken *Pteridium aquilinum* and common bramble *Rubus fruticosus*, as well as a diverse ground flora including wood avens *Geum urbanum*, pendulous sedge *Carex pendula*, cleavers *Galium aparine* and rush species *Juncus sp.*.

Proposed Works

The proposed works involve the following steps which could impact on the surrounding wildlife and habitats;

- Temporary draining of the eastern bank of Thousand Pound Pond;
- The dismantling of the existing wood bridge structure by hand;
- The removal or existing stainless steel structural supports;
- Construct new bridge using old original material where possible;
- Painting of new bridge structure.

Constraints

Designated Areas

The Thousand Pound Pond is located within the designated Hampstead SMINC area and is further bordered by the Hampstead Heath Woods SSSI designated area on the southern bank. The SSSI area is protected under the Wildlife and Countryside Act 1981 (as amended) due to its unique habitats, notably a well establish mature broadleaved woodland on acidic soil. In order to preserve the integrity of this designated area the proposed works and associated welfare and storage compounds should be kept outside of this area.

The following measures should be put in place to prevent damage to the habitats located around the Thousand Island Pond:

- Prior to commencing works, suitable, secure areas for storing materials and welfare facilities should be located offsite where possible. Where this is not possible, areas of placement should be discussed with the ecologist to avoid compression to Root Protection Zones (RPZs) of the surrounding trees.
- All hazardous liquids e.g. oils, lubricants, chemicals and tins of paint are to be stored in a segregated area in a suitable locked COSHH container and in accordance with the products Safety Data Sheet. COSHH assessments will be available nearby for information in the event of a spillage.
- Re-fuelling activities will only be undertaken in designated areas (offsite), by suitably qualified persons. Toolbox talks will be communicated to site staff and contractors so that they are fully informed of refuelling procedures.
- Any removal of vegetation should be discussed with the ecologist prior to works. If vegetation is removed it should be taken offsite to be disposed.

- No storing or burning of vegetation material should be undertaken in the working area.
- The temporary erection of barriers and drainage of the work area, should not impact the water course surrounding the Thousand Pound Pond. Where the water course is altered, temporary drainage will be required to prevent damage to the water course.
- Pollution measures should be created and maintained throughout site works to control dust, vibration, water, noise and lighting pollution where necessary.

Protected Species

The following protected species have been identified to be potentially present within local vicinity of the proposed, based on the habitats recorded. Further measures to prevent impact on these protected species is discussed below.

Reptiles

There are historic records of grass snake recorded within the Hampstead Heath SSSI. The habitats, including tussocky grassland, scrub and damp grassland/marsh areas, identified on Hampstead Heath are also conducive to support a large population of reptiles. In close proximity to the bridge, the woodland leaf litter and bramble under layer provide good foraging and hibernating habitat for reptiles, notably slow worms.

All common reptile species, including slow worm, common lizard and grass snake are partially protected under Section 9(1) and 9(5) of Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This legislation protects these animals from intentional killing and injury as well as selling, offering for sale, possessing or transporting for the purpose of sale or publishing advertisements to buy or sell a protected species.

It is considered that the likelihood of reptiles being affected by works is low, due to the following:

- Any areas of potential habitat where any temporary welfare units will be located will be carefully hand searched by the supervising ecologist prior to placement.
- Any refuelling of equipment or use of oil and chemicals, etc, will take place on hardstanding areas or other areas of unsuitable habitats that is located away from the nearby ponds.
- If any reptile species is found in the work area, the works should cease immediately and the ecologist should be contacted.

Great Crested Newt

The Hampstead Heath area contains a large number of suitable waterbodies to support Great Crested Newt (GCN) populations, as well as tussocky grassland and woodland habitats providing good terrestrial commuting corridors between the ponds. The Thousand Pound Pond supported no aquatic vegetation, required for breeding, although substantial leaf litter on the southern bank provides good terrestrial habitat. Furthermore, the adjoining Wood, located to the west, was found to support good aquatic and terrestrial vegetation capable of supporting a GCN population.

Great crested newts are afforded protection under the Wildlife & Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010 (as amended). Under this legislation it is an offence to intentionally or recklessly capture, kill, disturb or injure GCN, as well as damage, destroy or obstruct a place of shelter or protection. It is also an offence to possess, sell, control or transport live or dead GCN, or parts of GCN.

Considering the habitat conducive of supporting GCN in and around Thousand Pound Pond, we would recommend an addition eDNA survey to be completed before the works. This process involves the collection of a water sample from the ponds to be sent off for DNA analysis to confirm the likely presence of GCN in the waterbody.

Pending the results of the eDNA survey mentioned above we would further consider the following measures are put in place throughout the proposed works:

- Any areas of potential habitat where any temporary welfare units will be located will be carefully hand searched by the supervising ecologist prior to placement.
- Any refuelling of equipment or use of oil and chemicals, etc, will take place on hardstanding areas or other areas of unsuitable habitats that is located away from the nearby ponds.
- An ecologist should supervise the draining of the water around the bridge to identify any GCN present.
- Works will be completed at the appropriate time of year, avoiding the hibernation period and in suitable conditions.
- If a newt is found within the working area, the works should cease immediately and the ecologist should be contacted.

Breeding Birds

The Hampstead Heath area offers a variety of habitats for a range of bird species including many waterfowl. Suitable nesting habitats were identified around Thousand Pound Pond including scrub, woodland and vegetated banks. All birds, their nests and eggs are protected by the Wildlife and Countryside Act 1981 (as amended) making it an offence, to recklessly or intentionally kill take or injure a wild bird, to take, damage or destroy a nest of any wild bird while in use or being built and to take or destroy the egg of a wild bird. Furthermore, those listed on Schedule 1 of this Act are afforded protection from disturbance when on nest.

Considering the protection afforded to breeding birds, it is recommended that any works should take place outside of the bird breeding season (March to August/September inclusive), to minimise the risk of disturbance to breeding birds. Where this is not possible, the following measure should be put in place to prevent impact to bird species throughout the proposed works;

- The habitats surrounding the bridge areas of works should be checked by a suitably experience ecologist before any works commence.
- If active nests are found, works should cease immediately and the ecologist should be contacted. Where possible, the vegetation should be left untouched and suitably buffered from works until all birds have fledged.

Bats

Several bat species have been recorded in the Hampstead Heath area, including a soprano pipistrelle roost supporting up to 300 individuals, located in the Dairy Cottage, northwest of the bridge. The mature woodland understory and waterbodies support a good assemblage of invertebrates, offering good foraging resource for bat species. Furthermore, the mature woodland surrounding the Thousand Pound Pond and the Sham Bridge itself offer a variety of roosting opportunities for bat species, notably Daubenton's bat, known for roosting and foraging over water.

All bat species and their habitats are protected under the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2010. In summary, these make it an offence to damage, destroy or obstruct any place used by bats for breeding and shelter, disturb a bat, or kill, injure or take a bat.

The following measures should be put in place throughout the works to ensure the impact to bat species in the area is kept minimal:

- Once drainage of the bridge work area has been completed an ecologist should inspect the bridge structure for bat roosting potential. If potential roosting features are discovered these should be checked for roosting bats prior to works commencing.
- If trees around the bridge need to the altered in any way to complete works on the bridge, these trees need to be assess for roosting potential prior to removal.
- The bridge structure should be de-constructed by hand. If a bat is found during de-construction, work should cease immediately and the ecologist should be contacted.
- Lighting should be minimised onsite to reduce disturbance to bat species. This includes the use of low intensity lighting (e.g. sodium lamps which should be directed towards the work area, to avoid spill on the surrounding habitats.
- All lighting should be turned off outside of operational hours, with the exception of safety and security lighting.

Badgers

The initial extended Phase 1 survey recorded no signs of badger foraging, commuting or resting places in close proximity to the Thousand Pound Pond. Furthermore, while the broadleaved woodland provides optimal habitat for badgers, commuting around the woodland is limited due to mesh fencing, bordering the footpaths.

Badgers are protected under the Protection of Badgers Act 1992. This act is based on the need to protect badgers from baiting and deliberate harm or injury and makes it an offence to:

- Wilfully kill, injure, take, possess or cruelly ill-treat a badger, or attempt to do so;
- To intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access routes.

A sett is defined as: "*Any structure or place that displays signs indicating current use by a badger*"

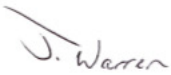
Due to the limited evidence of badger found around the proposed work area, we would suggest the following precautionary measures are put in place:

- During construction any pipes greater than 250mm in diameter will need to be capped if they are left open overnight, thereby preventing badgers from becoming trapped;
- Any steep-sided pits or trenches (e.g. drained pond area) will similarly need to be covered overnight, or left with a suitable means of escape, e.g. wooden plank;

- Operations shall be restricted to daylight hours, where possible, in order to reduce the potential for adverse effects through disturbance to badger (and other nocturnal and crepuscular wildlife);
- Construction offices, material compounds and security buildings will be located in appropriate locations away from retained habitats in order to reduce the potential for accidental damage to habitats or interruption to regularly used badger runs;
- All waste materials are to be appropriately stored, in particular domestic waste from construction site welfare units that may attract badgers should be stored in heavy duty bins with lids.

If should require further detail or guidance regarding the content outlined in this letter, please don't hesitate to contact us.

Yours Sincerely



James Warren
Assistant Ecologist
FPCR Environment and Design Ltd

james.warren@fpcr.co.uk