



Water vole & Otter survey report



Adderley Mill,
Brookhouse Rd.
Cheadle, Staffordshire.
ST10 2NJ

June 2019

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Client / Architect Details:
Mr. & Mrs. D. Craven
Application area:
Adderley Mill, Brookhouse Rd. Cheadle Staffordshire ST10 2NJ
Postcode/ OS Grid Ref:
ST10 2NJ / SJ991439
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Principal Ecologist

Surveyor capability

Ecological assessment and report preparation has been conducted by a qualified ecologist and member of the Chartered Institute of Ecology and Environmental Management (MCIEEM), and an associate member of the Society of Biology (AMRSB). The ecologist holds a First-Class Honours degree in Conservation Biology, and a Vice Chancellors award for academic excellence. He has undertaken protected species surveys for over five years, and is actively involved in scoping, presence/absence surveys, and Natural England licence applications with regard to planning and the law. The actions of the surveyor on site and during the production of written reports are undertaken in accordance with the Code of Professional Conduct for the Chartered Institute of Ecology and Environmental Management (CIEEM).



NON-TECHNICAL SUMMARY

○ *Report rationale*

1. To support a proposed planning application at the former Adderley Mill, Brookhouse Road, Cheadle, Staffordshire, ST10 2NJ (NGR: SJ991439); water vole and otter surveys were carried out on behalf of Mr. and Mrs. D. Craven. The objectives of this report are to inform the client of any known or potential impact the development may have on water vole and/or Otter, and to outline any recommendations on how to proceed with the works in a legal and ecologically sensitive manner. All surveys were carried out by an experienced ecologist in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Practice.

○ *Proposed works*

2. The proposed planning application will entail demolition of all existing buildings onsite and erection of seven open market residential dwellings, comprising of four semi-detached and three detached buildings with a combined footprint area of 480m². The development will also entail removal of selected vegetation and tree removal.

○ *Site description*

3. The site is situated in a semi-rural greenbelt ca. 1.8km NW of Cheadle in the Staffordshire Moorlands. The site is accessed off Brookhouse Road, which runs immediately adjacent to the eastern boundary. The proposed development area comprises of former industrial/mill buildings and associated hard-standing with a total footprint area of 1226m². A narrow, running watercourse runs immediately parallel to the western boundary of the site, being fed by the River Tean and Mobberly Brook ca. 2km SE.

○ *Pre-survey data*

4. The surrounding area is known to be one of the most important breeding sites for water voles in Staffordshire, with Cecilly Brook Local Nature Reserve noted for its populations ca. 2.5km SE in Cheadle, whilst SER data provides a further ten records of Water vole within a 1km radius (burrow recorded ca. 282m SE of the site and breeding colonies also confirmed ca. 750m SW at Blakehall Fisheries). SER provide no date of Otter within a 1km radius, although the surrounding habitat and still water fisheries provide good potential for this species also.

○ *Survey results*

5. The watercourse and associated riparian habitat was considered as having high potential for water vole and Eurasian Otter. Conversely, no evidence of any burrows / holts were recorded along the 92m section adjacent to the proposed development area itself. By-and-large the bank system was composed partly of hard-core revetments supporting the existing hard standing area onsite. However, minor evidence of water vole droppings were recorded above the water-line adjacent to the proposed development, confirming movement of this species along its corridor; whilst two water vole burrows were recorded just outside the 200m survey section downstream. No evidence of otter was recorded ≤ 200m upstream and downstream of the proposed development area.

○ *Impacts and mitigation*

6. No immediate displacement to any individual water voles and/ or loss to any active burrows is predicted under the proposed scheme. In addition, no alteration or re-routing of this water course is intended with no habitat loss / fragmentation considered. The development will temporarily affect a 92m long section of watercourse, which equates to less than 1% (92m) of the habitat available to water vole populations in the wider area.
7. Conversely, in the absence of mitigation it is anticipated that there will be a general increase in the levels of noise, vibration and lighting during pre and post construction phases, which may affect dispersal potential for water vole (and otter), with potential contamination of the watercourse also predicted.
8. A number of preliminary non-licensable mitigation recommendations have therefore been outlined in this report to support a separate Water vole Habitat Management strategy plan as part of any discharge of licensing conditions considered by the LPA. Key aspects should consider: Retention and protective buffer zone; Care and vigilance during works; Habitat enhancement and creation; Remediation of pollution and surface water quality of watercourse and a Post-monitoring scheme.





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1. INTRODUCTION

1. To support additional survey recommendations made in a Preliminary Ecological Appraisal (PEA) report (Charnia Ecology, 2019) at the former Adderley Mill, Brookhouse Road, Cheadle, Staffordshire, ST10 2NJ (NGR: SJ991439); water vole and otter surveys were carried out on behalf of Mr. and Mrs. D. Craven in relation to a proposed planning application
2. in accordance to current National Planning Policy Framework (NPPF) and UK Legislation, the objective of this report is to inform the client of any known or potential impact the development may have on water vole and/or Otter, and to outline any recommendations on how to proceed with the works in a legal and ecologically sensitive manner.
3. Two separate water and bank surveys for water vole (including otter) were undertaken on 21st April and 21st June 2019 along a running watercourse immediately adjacent to the SW boundary of the proposed development area to determine the following:
 - Presence/absence of Water Vole and Otter
 - Status of burrows and holts, if present
 - Whether additional surveys are required
 - Whether a European Protected Species (EPS) licence is required to ensure legal compliance
 - Which type of mitigation measures would need to be employed.



Figure 1. Location of proposed development area (arrow) in context to the wider landscape (source:OS Maps).

○ *Site description*

4. The site is situated in a semi-rural greenbelt ca. 1.8km NW of Cheadle in the Staffordshire Moorlands. The site is accessed off Brookhouse Road, which runs immediately adjacent to the eastern boundary. The proposed development area comprises of former industrial/mill buildings and associated hard-standing with a total foot print area of 1226m². The site is currently vacant, and last used for light industrial business. There is limited planning history relating to the site and the only application on record refers to proposed storage that was approved in 1979.

5. A narrow, running watercourse sits immediately adjacent to the western boundary of the site, being fed by the River Tean and Mobberly Brook ca. 2km SE. The watercourse and associated riparian habitat was considered as having high potential for water vole and Eurasian Otter, with breeding water vole colonies recorded within a 1km radius of the site (see Section 3).
- **Proposed works**
6. The proposed planning application will entail demolition of all existing buildings onsite and erection of seven open market residential dwellings, comprising of four semi-detached and three detached buildings with a combined footprint area of 480m². The development will also entail removal of a road side building to improve highway visibility and modification of existing vehicular access road (500m wide with 600m radius pavement kerbs at highway junction). Additional post-development tree, shrub and hedge planting is also intended.



Figure 2. Aerial view of Adderley Mill buildings + associated hard-standing areas and boundaries in relation to watercourse.

2. METHODOLOGY

- **Desk Study**
7. The survey which consisted of a desk study and a field survey where habitats were mapped and any potential to support protected species was target noted. This is based on the extended Phase 1 habitat survey guidelines (JNCC 2010).

- **Field study**

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Otters	Limited by vegetation cover and weather conditions rather than seasons											
Water voles	Low activity	Initial habitat survey	Habitat and field signs / activity surveys May be limited by vegetation cover and weather								Initial habitat survey	Low activity

8. Water vole field survey criteria followed the standard methodology as described in the '*Water Vole Conservation Handbook*' (Strachan & Moorhouse, 2006 revised 3rd Ed. 2011) and '*The Water Vole Mitigation Handbook*' (Dean *et.al.*, 2016).

9. Although no alteration or re-routing of a water course is intended under the proposed scheme, there is potential that works may temporarily affect more than 50m of watercourse. In accordance to survey guidelines by Dean *et. Al.*, (2016), two separate water and bank surveys for water vole (including otter) were undertaken $\leq 200\text{m}$ up-stream and down-stream from the proposed development area (400m total).
10. All surveys were carried out 2 months apart – one in the first half of the season (mid-April to end of June) and one in the second half of the season during clement weather, and carried out by an experienced ecologist in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Practice.

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11. Water vole Otter survey criteria identified any of the following field signs:

- **Latrine sites** – distinct piles of water vole droppings found near nest sites, at the ranges of territorial boundaries and where the animals enter and leave the water;
- **Feeding stations** – areas with distinct neat piles of chewed lengths of vegetation along pathways or haul out platforms along the water's edge;
- **Burrows** – burrow entrances are typically wider than high with a diameter between 4-8cm. Generally, these burrow entrances are located at the water's edge;
- **Lawns** – short grazed areas at the entrances to burrows;
- **Prints** – identifiable prints in soft margins of the watercourse;
- **Runways** – low tunnels that are pushed through the vegetation and often leading to burrows or feeding stations.

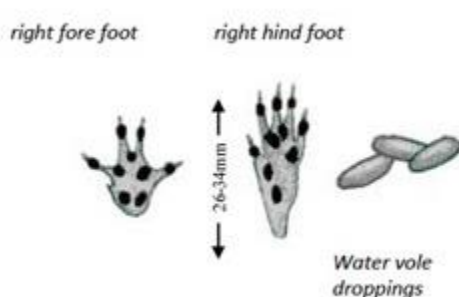


Figure 2. Water vole prints and droppings.

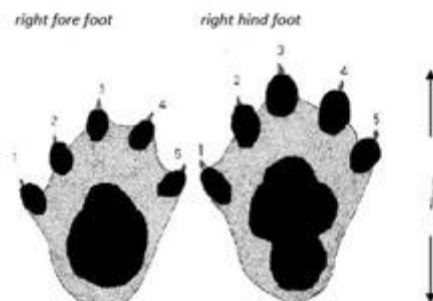


Figure 3. Otter footprints.

12. Otter survey criteria followed the standard methodology as described and adapted from Chanin (2003), which require the identification of the following field signs:
 - **Spraints** – characteristic sweet-smelling, black tar-like (where fresh/relatively recent i.e. within a few weeks) or grey crumbly (when old) faecal deposits usually containing fish scales, bones and occasionally invertebrate exoskeleton and bird feathers.
 - **Footprints** – In good substrate typically asymmetrical and showing five toes arched around a large pad and, depending on substrate, webbing and claw marks. Poorer, generally coarser substrates do not often enable the identification of otter footprints.
 - **Feeding remains** – feeding remains may include partially eaten fish, frogs, piles of mussel shells or crayfish remains;

- **Slides/haul-outs** – Routes into and out of the water, which are usually associated with terrestrial routes such as short cuts around meanders or along traditionally, used otter paths/routes;
 - **Couches/hovers** – above ground resting place. Usually associated with cover such as dense scrub, rushes or reed, flood debris or fallen trees. Many couches are rarely used whilst other more so. Difficult to prove use without radio tracking;
 - **Holts** – below ground resting site usually associated with sprainting. Sometimes used with greater frequency than couches and can be important for breeding (natal holts) where other signs are usually absent. Notoriously difficult to find or prove without radio tracking.
13. Where water voles and/or otter are present, additional information may be required to assess the significance of the effects on the population, and to design appropriate mitigation.
- **Legislation and Status** (see also Appendix)
14. Water Vole and Eurasian Otter are both listed in Schedule 5 of The Wildlife and Countryside Act 1981 and as such receive protection under Section 9 making it a criminal offence to:
- intentionally kill, injure or take a wild Water Vole or Otter
 - be in possession of, or control, any live or dead wild Water Vole or Otter or part of, or anything derived from a wild Water Vole or Otter
 - intentionally or recklessly damage, destroy or obstruct access to any place that a wild Water Vole or Otter uses for shelter or protection
 - intentionally or recklessly disturb any wild Water Vole or Otter whilst it is occupying a structure or place that it uses for shelter or protection
 - transport for sale or exchange, or offer for sale or exchange, alive or dead, or any part of a Water vole or Otter.
15. Water Vole is also the subject of a Priority Species Action Plan under the UK Biodiversity Action Plan (UKBAP), due to significant declines in recent decades largely as a result from habitat loss and degradation, population fragmentation.
- **Invasive species**
16. Field surveys also recorded any evidence of invasive non-native American Mink *Neovison vison*, which are also known to predate on water vole and considered to be the second most important reason for the decline in the species, with agricultural land use being the first (Rushton et al. 2000). Research shows that in areas where otter are present, mink generally decline because of inter-specific competition, which results in mink having to find new territories to find sufficient prey.

3. RESULTS

○ *Pre-survey data*

17. Cecilly Brook Local Nature Reserve 2.5km SE in Cheadle is known to be one of the most important breeding sites for water voles in Staffordshire. SER data provides a further ten records of Water vole within a 1km radius, with a burrow recorded ca. 282m SE of the site and breeding colonies also confirmed ca. 750m SW at Blakehall Fisheries. SER provide no date of Otter within a 1km radius, although the surrounding habitat and still water fisheries provide good potential for this species also.



Figure 3. Water vole records in relation to Adderley Mill (red outline).

○ *Habitat assessment*

18. Assessment of the watercourse both 200m up-stream and downstream of the proposed development, finds a slow to moderate flowing water channel running in a NW to SE direction. Width of the channel ranged from between ca. 1.2m to 3m wide, with a mean depth of ca. 30–60 cm and of slightly turbid but reasonably stable water-flow and quality.



Figure 4. Site in relation to watercourse.



Figure 5. Arable land adjacent to watercourse.

19. Topographically, the water channel sits ca. 2m below the proposed development area, ranging from between ca. 1-3m in distance from the site along its western boundary. The 200m section up-stream runs adjacent to Adderley Mill Industrial Estate, and is therefore prone to an increase in noise and lighting disturbance. Arable farmland is present to the adjacent bankside with rough grassland margins.
20. The watercourse comprises of a number of shallow riffles and deeper pools (500mm), and runs parallel to Brookhouse Road and crosses under a bridge ca. 70m due SE downstream. A small drainage culvert/ weir also enters the watercourse ca. 50m downstream of the site. No embankments or resting places for either water vole or otter were recorded under these structures.



Figure 4. Bridge culvert side tributary.



Figure 5. Main bridge underpass and weir.

21. The watercourse is buffered by a woodland carr strip on both-sides, with scattered trees and dense vegetation. Subsequently sections of the water channel were partially to fully shaded by the surrounding canopy, with only minor 'river cliff' exposures and sloping embankments above water level present along the surveyed section.



Figure 4 & 5. Running water channel adjacent to western boundary of Adderley Mill.

22. Minor evidence of water vole droppings were recorded in the watercourse adjacent to the site, No evidence of any burrows were recorded along this section itself. By-and-large the bank system adjacent to the development area has less than suitable substrate for water voles to burrow into, with sections of hard-core revetments present to support the bankside below the existing hard standing within the proposed development area.



23. Conversely two water vole burrows were recorded > 200m downstream.



Figure 5. Running water channel adjacent to western boundary of Adderley Mill.

24. No evidence of otter was recorded $\leq 200\text{m}$ upstream and downstream of the proposed development area.

4. IMPACTS AND MITIGATION

25. Although no displacement to any individual water voles and/ or loss to any active burrows is predicted under the proposed scheme; based on local distribution records, the section of water channel abutting the western boundary of the proposed development was considered as being a migratory corridor for water vole, with burrows recorded $\leq 200\text{m}$ upstream and downstream of the site, whilst colonies are also present at Blakehall Fisheries ca. 780m SW. Water voles are able to rapidly colonize suitable habitat where the source population is strong (Strachan & Moorhouse, 2011).



26. The development will temporarily affect a section of watercourse that equates to less than 1% (92m) of the habitat available to water vole populations in the wider area, with no alteration or re-routing of a water course intended under the proposed scheme, and no long-term habitat loss / fragmentation considered. It is anticipated that there will be a general increase in the levels of noise, vibration and lighting during pre and post construction phases, which may affect a migratory conduit for water vole (otter also considered) dispersal.
27. In-order to avoid, reduce and offset any long-term effects to water vole populations in the surrounding catchment area, the following non-licensable mitigation strategy has been outlined, which should be made a condition of any planning consent:

Retention and protective buffer zone

- Retain watercourse in its current location as part of the development;
- Retain a protective buffer zone of 3-5m from toe of bank and intended development area (Based on the degree of hard-standing present along the adjacent watercourse, exclusion fencing is not considered possible);
- NO destabilizing of existing banks - Contractors not allowed entry beyond this protective buffer zone, including storage of materials and heavy plant machinery.

Care and Vigilance During Works

- Where low clearance of vegetation is intended – it is advisable to carry out maintenance tasks during winter months to reduce the impact on water vole populations.
- Where extensive clearance of vegetation is intended – it is advisable to carry out maintenance tasks during spring to allow for regrowth and reduce predation impact on water vole populations over an extended period of time.
- If necessary, reprofile existing revetments (by hand only) to allow potential access for voles into substrate behind;

Habitat Enhancement and creation

- Retain existing trees and shrubs where possible - remove some overhanging branches to reduce shading
- Only flail existing riparian vegetation if necessary, and then not to flail below 0.3m;
- If necessary, establish suitable bankside and marginal vegetation, using a range of native herbaceous species on the face of the abutting bank boundary and up to 2m back from the bank top to provide both food and cover for water vole throughout the year.
- Measures to control invasive, non-native species including Himalyan balsam (*Impatiens glandulifera*) through pulling or digging out along the adjacent watercourse section;
- Any artificial light spill should be avoided around the river corridor and intermediate buffer zone at all times during pre and post construction works.

Pollution and Surface Water Quality

- Standard good working practices to avoid damage to the banks and pollution of watercourses
- Suitable and appropriate measures or precautions to avoid any issues relating to fuel spillage.
- No concrete to be released into the river system;
- Any chemical and/or fuels on site are stored within a locked, sealed and bunded container at the furthest extremity away from water-bodies.
- Fugitive dust levels which may be deposited into the adjacent river channel should be kept to an absolute minimum, by-way-of spraying of water during construction to mitigate the escape of dust particles to the atmosphere, especially if construction work is carried out during the dry season;
- Haulage trucks must be covered or the aggregates sprayed with water before loading.

Post monitoring

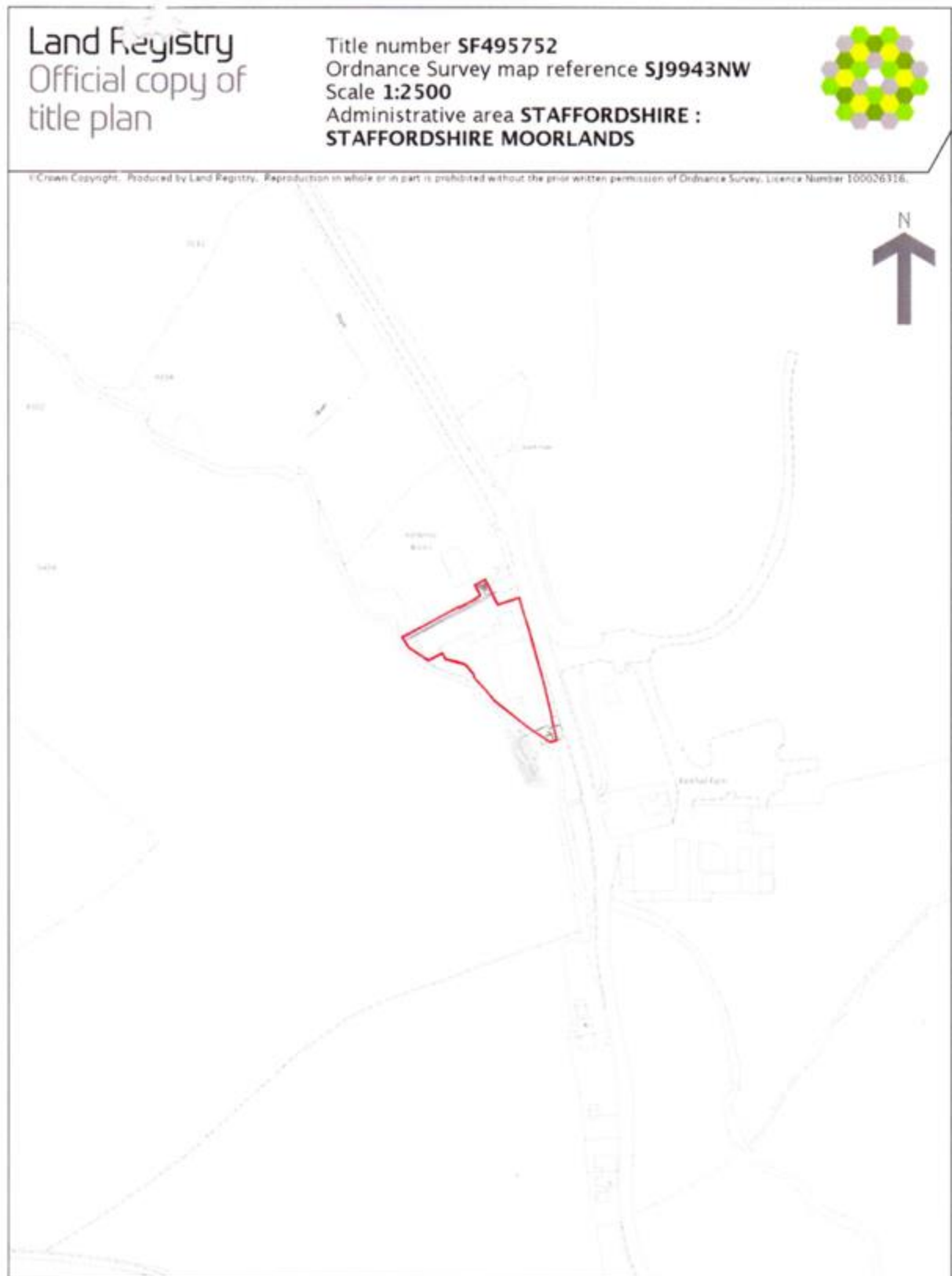
- Post monitoring scheme should be implemented and include two visits for two breeding seasons, at the start and end of each season.

6. REFERENCES

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7. APPENDICES:

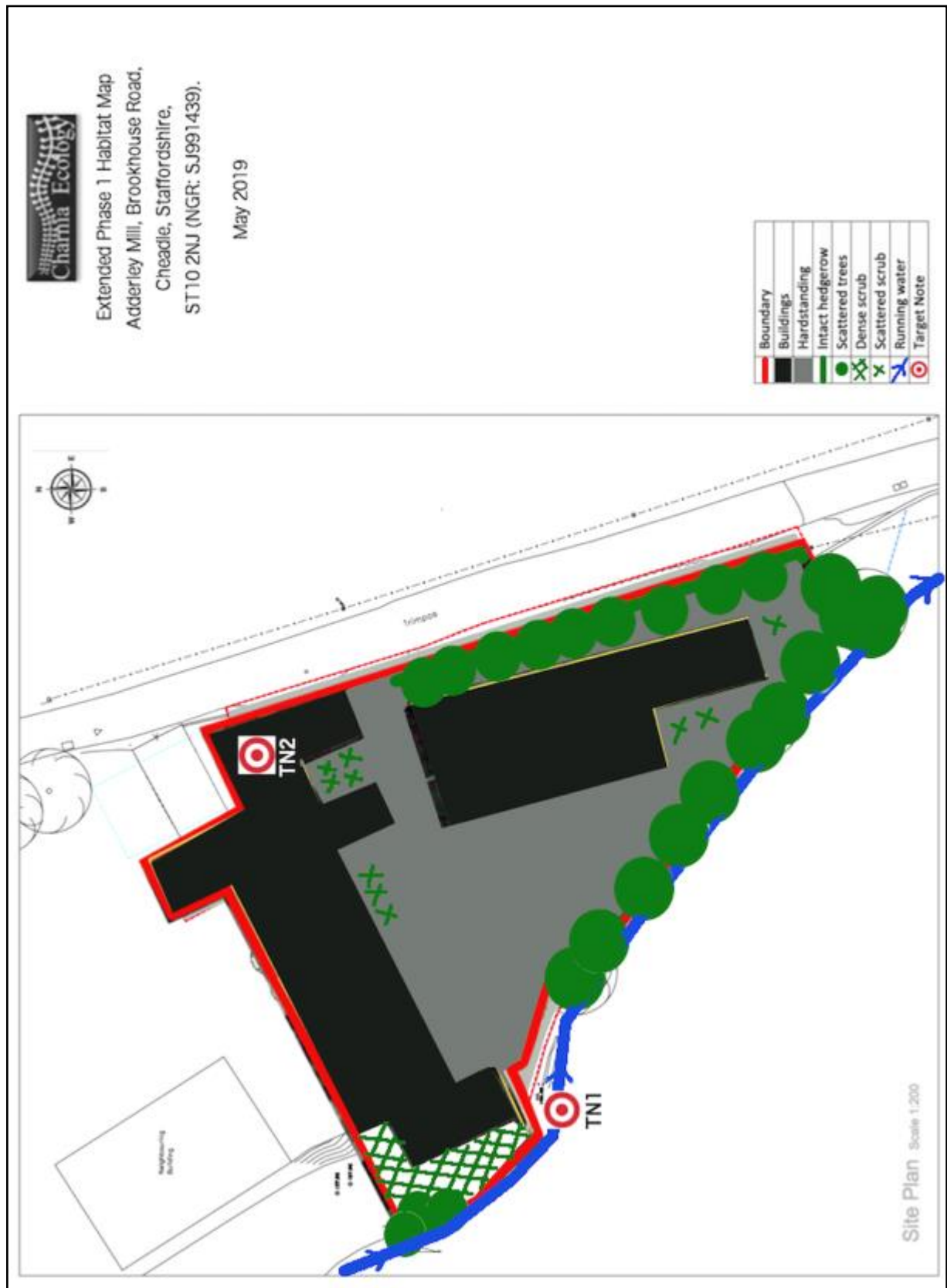
- *Maps & forms*



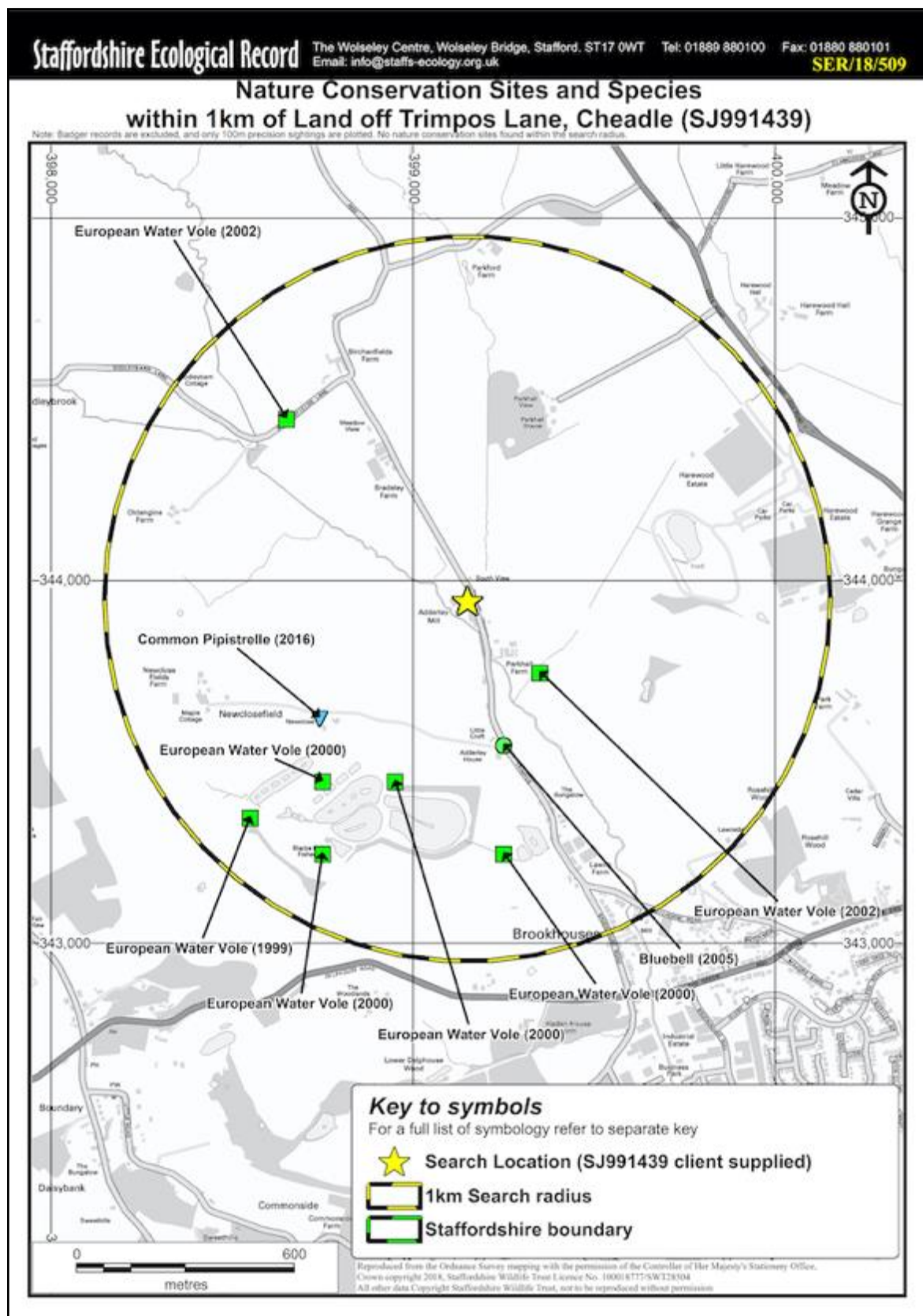
- **Proposed architectural drawings.**



○ **Extended Phase 1 habitat map**



○ **SER biological data records 1km**



○ *Legislation & Policy guidelines for Water vole*

The Natural Environment and Rural Communities (NERC) Act 2006 required the Secretary of State to publish lists of habitats and species of principal importance for the conservation of biodiversity in England and Wales, under Sections 41 and 42 of the Act, respectively. These lists are used to guide decision makers (such as planning authorities) in implementing their duty to have regard to the conservation of biodiversity when carrying out their normal functions (under Section 40 of the NERC Act). Water voles are listed as species of principal importance for the conservation of biodiversity in England and Wales, under Sections 41 and 42 of the NERC Act 2006, respectively.

Similar to Section 40 of the NERC Act, Section 1 of the Nature Conservation (Scotland) Act 2004 states that all public bodies and office holders have a duty to further the conservation of biodiversity in exercising its/their functions. Water voles are listed as a species of principal importance for the conservation of biodiversity in Scotland under Section 2 of the Act.

Planning policy – England, Wales and Scotland

In England, the National Planning Policy Framework (NPPF) 2012 includes policies relating to conserving and enhancing the natural environment. This requires local planning authorities to aim to conserve and enhance biodiversity by refusing planning permission for developments that would cause significant harm, unless it can be avoided, adequately mitigated or, as a last resort, compensated for. Water voles are therefore a material consideration in determining a planning application. The Government Circular on Biodiversity and Geodiversity (06/2005) sets out that it is essential that the presence or otherwise of protected species, and the extent to which they may be affected by a proposed development, is established before planning permission is granted. The NPPF also states that the planning system should deliver net gains for biodiversity where possible, and requires local planning authorities to encourage opportunities to incorporate biodiversity in and around developments.

Biodiversity Action Plans (BAPs) and the Post-2010 Biodiversity Framework – UK

The UK Biodiversity Action Plan was published in 1994, and included water voles as a 'Priority Species'. The UK BAP has now been succeeded by the UK Post-2010 Biodiversity Framework (July 2012) and biodiversity conservation work is now generally focussed on the individual countries and their species of principal importance for the conservation of biodiversity (see Section 2.3). Water voles are therefore considered a national priority for conservation in England, Scotland and Wales. They are also identified as regional or local priorities for conservation in BAPs produced at relevant geographical levels.

Water voles are also included as priority species for conservation in BAPs produced by water companies and government departments, such as Highways England.

○ **Conditions & disclaimers**



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- ✓ Every attempt has been made to provide an accurate ecological assessment under the current wildlife legislations at the time of surveying. The author cannot be made accountable for stochastic events over space and time.
- ✓ The author remains impartial to any decision making and attempts only to make recommendations in the interests of conserving protected species and biodiversity, whilst acknowledging sustainable development.

