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Proposed Traveller Site
Former Stanton Wick Colliery

Preliminary Ecological Appraisal

SLR Ref: 402-00934-00021

October 2012

Rev01

**Bath & North East
Somerset Council**

NON TECHNICAL SUMMARY

SLR was commissioned by Bath and North East Somerset Council to undertake a preliminary ecological appraisal of the former Stanton Wick Colliery, near Pensford, Somerset. The appraisal was commissioned to identify potential ecological constraints to development of a proposed traveller site of approximately 1ha in extent.

Most of the former colliery site (now a spoil heap plateau and slopes) lies within the Pensfold Site of Importance for Nature Conservation (SNCI) which is designated for its range of plants and invertebrates (the works area is excluded from the SNCI). It is apparent that the SNCI boundaries are rather arbitrary and some stands of species-poor ephemeral / tall ruderal vegetation could perhaps be excluded, mainly on the grounds of limited species-richness. Given the anticipated contained nature of the proposed development, the special interest of the remainder of the SNCI is unlikely to be affected.

The survey area comprised the former colliery spoil heap and adjacent 'works' area, which contains a number of mostly redundant buildings (Drawing 01). The spoil heap comprises an elevated level plateau dominated by tall ruderal plants and a mosaic of ephemeral vegetation and mesotrophic grassland. The works area comprises hard-standing, bare ground and sparse ephemeral vegetation. Habitats are better developed at the southern end of the site, where greater topographic variation and an extended period as the colliery was last worked have resulted in a valuable range of quite species-rich habitats developing; a pond is present here. The spoil heap plateau drops away steeply on three sides and oak-dominated woodland is developing on these slopes. Older stands of woodland support mature hazels; many of which are large and multi-stemmed and dormouse (a European protected species) could be present. A small badger sett was found in the woodland and other setts may have been overlooked.

The 'works' zone includes five largely redundant industrial buildings; most of which are unused. There is a disused tunnel just north of the site (the exact entrance position of which is not known) which reportedly supports small numbers of lesser horseshoe and individual greater horseshoe bats. The tunnel and buildings were inspected in late 2010 by Wessex Ecological Consultancy (WEC) who found no evidence of roosting in the buildings but found hibernating bats in the tunnel (Nb. the exact entrance to the tunnel was not specified in the WEC report but it is thought to lie at its eastern end). WEC considered the buildings to have low bat potential. Accessible buildings were re-inspected in 2012 and it was agreed that they had low potential as a result of their light interiors, general lack of roof space and few crevices. Notwithstanding, small numbers of bat droppings (probably from pipistrelles) being found in Building 5 during the 2012 inspection, and as the presence of bats (all of which are European Protected Species - EPS) cannot be ruled out, a dusk/dawn survey is recommended prior to any development. Survey is also recommended in line with the Bat Mitigation Guidelines in order to determine whether the nationally rare species greater horseshoe bat uses the wider site for feeding and / or commuting and if so, whether a Habitats Regulations assessment might be required on Special Areas of Conservation in the region designated for their bat interest. Building 1 supports breeding swallow and Building 5 supports roosting (but not breeding) barn owl.

Scrub and woodland are expected to support breeding birds including residents and summer visitors, and the open plateau may support breeding little ringed plover; this species favours large open sites but is scarce in the South West. A survey is recommended, as it is specially protected *via* a listing on Schedule 1 of the Wildlife and Countryside Act.

Where woodland abuts suitable habitat, reptiles cannot be ruled out; however unless the proposed development zone is extended to the north, a survey prior to development is unlikely to be required.

There are at least three ponds within 500m of the boundary that could support great crested newt (an EPS) and a survey of at least the on-site pond for amphibians would be needed in the event development falls within 500m of this (which is not the case at present). A Habitat Suitability Assessment (HSI) undertaken during the Phase 1 survey suggested that this species may occur here.

At least two small stands of Japanese knotweed, a legally controlled non-native invasive plant, were recorded in 2012.

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1.0 INTRODUCTION

1.1 Terms of Reference

SLR was commissioned by Bath and North East Somerset Council (BNESC) to undertake a preliminary ecological appraisal at the former Stanton Wick Colliery (hereafter referred to as 'the site') in Somerset. The site comprises a former colliery spoil heap (currently a more-or-less level plateau which stands some metres above adjacent land) and a level 'works' area to the west which contains five redundant, former industrial buildings. The spoil heap occupies most of the site.

The survey was commissioned to identify potential ecological constraints to a proposed 1ha traveller site; specifically with regard to wildlife, habitats and a designated site.

1.2 Site Context

The site is situated just north of the village of Stanton Wick and just south of Pensford, in Somerset, at OS Grid Reference ST 619 626 (the central point of the site). It lies in a rural landscape dominated by pasture farming and which supports well-developed hedges locally. The site is abutted on its western edge by the narrow Wick Lane, beyond which lies open pasture; to the east by a disused railway line and woodland; to the south by woodland and farmland and to the north by what appears to be a complex of woodland and scrub over grassland (possibly former colliery land). An industrial yard lies immediately south of the 'works' area, alongside Wick Lane.

The main part of the site comprises the level-topped former colliery spoil heap, which is dominated by ephemeral vegetation of open habitats; the works area comprises hard-standing, bare ground and developing ruderal and ephemeral vegetation.

The spoil heap plateau sits at a height of approximately 15m above the adjacent landscape and the edges fall away steeply on three sides, all of which are wooded. Older stands of woodland support mature hazel trees, many of which are large and multi-stemmed. A pond is present at the southern end of the site.

2.0 METHODOLOGY

2.1 Desk Study

The Multi-Agency Geographic Information for the Countryside (MAGIC) and National Biodiversity Network web resources were reviewed on the 8th August 2012 for statutory designated sites¹ and protected species records in the vicinity of the proposed development site.

Bristol Regional Environmental Records Centre (BRERC) was contacted by the local authority ecologist Karen Renshaw at the outset of the project for information on species of conservation concern²; data was requested from within a 5 km buffer from the site with respect to bats and a 0.5km distance with respect to all other taxa and protected sites.

¹ Designated sites include those protected under national or international legislation, such as Sites of Special Scientific Interest (SSSI), and local sites afforded protection under the planning system, such as County Wildlife Sites (CWS) and Regionally Important Geological and Geomorphological Sites (RIGS).

² This includes species protected under international and national legislation as well as species included in the UK and/or local Biodiversity Action Plans, Red Data Book taxa, and Red or Amber listed birds of conservation concern.

Karen Renshaw and Lucy Corner (also a local authority ecologist) both also kindly provided context on the site and on the Site of Nature Conservation Importance - SNCI) in which the majority of the site lies (the Pensford SNCI Complex).

A bat report prepared by Wessex Ecological Surveys in December 2010 was supplied by the site owner and this was reviewed as part of the desk study.

The Avon Bat Group (Mr David Brown) and Mr John Knight, a local bat worker, were contacted by phone (messages were left on Tuesday 7th August) in order to obtain information on bats in the locality and in particular on bats which roost in the small brick tunnel just north of the site boundary (OS Grid Reference ST 617 627). Note the exact entrance to the tunnel is not known, but it is thought to lie at its eastern end.

2.2 Field Survey

2.2.1 Flora

Habitats

The habitat survey and mapping exercise was carried out by Andrew McCarthy CEnv MIEEM, a Technical Director and experienced botanist with SLR Consulting on Tuesday 31st July and Wednesday 1st August, using standard Phase 1 habitat survey methodology (JNCC, 2007). Mr McCarthy is a Natural England licensed bat ecologist (NE Licence number 20114937) and also holds survey licenses for dormouse and great crested newt.

Plant Species

In addition to general habitat classification and mapping, a provisional botanical species list was also compiled³, with the abundance of each species being estimated for each main habitat-type (woodland, tall ruderal, ephemeral and pond vegetation) using standard 'DAFOR' codes, thus: **D**ominant, **A**bundant, **F**requent, **O**ccasional, **R**are (**L**ocally being used as a prefix as appropriate).

2.2.2 Fauna

2.2.3 Habitats and features with potential to support protected and/or conservation priority fauna, together with field signs of such, were recorded on a field map using target notes (relevant details are reproduced on a digitised plan as Drawing 01). A particular search was undertaken where access was safely possible for field signs for protected or conservation priority taxa (see Bat Building Inspection

An inspection of the five buildings within the 'works' zone was undertaken in order to confirm the original assessment of 'Low suitability' by Wessex Ecological Surveys (WES) in 2010.

Readily accessible sections of each building were inspected in 2012, both externally and internally, for field evidence of roosting bats (and birds), including droppings, urine staining, feeding remains, potential roosting/access points and individual bats. Buildings are normally categorised as being of negligible, low, moderate or high potential (as appropriate) for bats using current Bat Conservation guidelines (Hundt, 2012) based on qualities of the building such as age, potential roost features, aspect and local environment (i.e. surrounding habitat, presence of alternative roost sites, nearby artificial lighting etc).

³ Botanical nomenclature follows Stace (2010).

2.2.4 Habitat Suitability Index

The pond at the southern end of the site was subject to a Habitat Suitability Index (HSI) assessment (Oldham et al, 2000). HSI assessments are carried out to determine the potential of ponds to support breeding great crested newt *Triturus cristatus*, using the following parameters:

- location;
- number of ponds within 1 km;
- pond area;
- annual drying;
- water quality;
- shade;
- presence / absence of water fowl and fish;
- quality of terrestrial habitat; and
- macrophyte coverage.

The parameters are used to produce a score for each pond between 0 and 1, where a score of 1 indicates a pond with the highest potential to support great crested newt whilst a score of 0 would result in an assessment at the lowest end of the scale.

Table 2-1 below).

2.2.5 Bat Building Inspection

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- macrophyte coverage.

The parameters are used to produce a score for each pond between 0 and 1, where a score of 1 indicates a pond with the highest potential to support great crested newt whilst a score of 0 would result in an assessment at the lowest end of the scale.

Table 2-1
Survey methodology for key habitats and/or field signs of protected / priority species

Taxon	Searches undertaken	Field Signs (in addition to sightings)
Bats (in particular greater horseshoe bat <i>Rhinolophus ferrumequinum</i>)	<p>A visual search was undertaken for evidence of bat roosts and bird nesting / roosting sites in accessible sections of the five buildings located within the works zone. The roof space within Building 3 was not accessed.</p> <p>Trees were not at this stage assessed in detail for potential to support roosting bats.</p> <p>The site was assessed in respect of its potential for bat foraging (especially for the nationally rare species greater horseshoe bat, as special survey requirements apply for this species); both in regard to habitat connectivity (i.e. presence of linear features and similar features across the site) and habitat quality (i.e. potential foraging value).</p>	<p>In or on potential roost sites:</p> <p>Droppings stuck to building walls; urine spotting; oil from fur staining round roost entrances; feeding remains (e.g. moth wings under a feeding perch) etc.</p> <p>Presence of habitat features such as tree lines, grazed habitats, ponds and other wet areas, sheltered corridors, scrub and woodland edge etc.</p>
Badger <i>Meles meles</i>	<p>The site margins were searched where readily accessible; steep slopes and dense summer vegetation precluded a thorough badger survey being undertaken at this time of year.</p>	<p>Excavations and tracks: sett entrances, latrines, hairs, well worn paths; prints; scratch marks on trees</p>
Birds	<p>Buildings were searched for evidence of nesting and roosting birds such as barn swallow <i>Hirundo rustica</i> and barn owl <i>Tyto alba</i>.</p> <p>Trees and scrub, hedgerows and other habitats were assessed for their potential to support bird assemblages or especially noteworthy species, both in respect of foraging and breeding.</p>	<p>Nests; disturbed adult and juvenile birds (during the breeding season); droppings (and in the case of owls regurgitated pellets) below nest / roost sites.</p>
Reptiles such as slow worm <i>Anguis fragilis</i> , common lizard <i>Zootoca vivipara</i> , grass snake <i>Natrix natrix</i> and possibly adder <i>Vipera berus</i> .	<p>Rough grassland, woodland/scrub edge and other similar habitats were assessed for their potential to support reptiles.</p>	<p>n/a</p>
Great Crested Newt <i>Triturus cristatus</i>	<p>Air photographs and OS maps were scrutinised for presence of ponds within 500 m of the site boundary. Suitable (terrestrial) habitat includes rough grassland, scrub and woodland, log and rubble piles and other debris, animal burrows.</p>	<p>n/a</p>
Dormouse <i>Muscardinus avellanarius</i>	<p>A limited search was undertaken under fruiting hazel trees in the south of the site for the characteristically gnawed nuts that would indicate deeding dormouse.</p>	<p>Characteristically gnawed nuts under fruiting hazel (<i>Corylus avellana</i>) trees.</p>
Invertebrates	<p>An assessment was made of habitat quality in respect of the likely invertebrate assemblage.</p>	<p>Casual records were made of the more conspicuous invertebrate species at the time of Phase 1 survey.</p>

2.3 Limitations to survey

2.3.1 Desk Study

Desk study data is rarely exhaustive and is intended mainly to set a context for such a study. It is therefore quite possible that protected species that were not identified during the data search do in fact occur, either on or in the vicinity of a proposed development site.

2.3.2 Field Survey

The botanical survey was undertaken at an optimal time of year. Notwithstanding, some plant species flower earlier and some later in the year and it is quite possible that some species were missed by the surveyor where their above ground parts had died back or had not yet fully developed. This is not considered a significant limitation, however, in respect of assessing nature conservation importance or in respect of making an initial appraisal of impacts (at least upon habitats).

Dense vegetation precluded a more thorough search for badger setts and a winter survey for evidence of this species is recommended once vegetation has died back.

2.4 Quality Assurance & Environmental Management

Andrew McCarthy is a full member of the Institute of Ecology and Environmental Management (IEEM) and followed the Institute's code of professional conduct when undertaking this baseline survey.

3.0 RESULTS

3.1 Desk Study

3.1.1 Designated Sites

Statutory sites

A single Site of Special Scientific Interest (SSSI) and Local Nature Reserve (LNR) is located within 2 km of the site (see below). A special Protection Area (SPA) and part of a Special Area of Conservation (SAC) are located within 10 km. Details of these statutory sites are provided in Table 3-1 below:

**Table 3-1
Relevant designated sites.**

Site Name	Designation	Reason for Designation	Distance from site
Folly Farm SSSI/LNR	SSSI & LNR	Natural grassland, wildflower meadows and ancient woodlands	2 km (S)
		A large, shallow, artificial reservoir with some fringing reed-bed, carr woodland and grassland.	
Chew Valley Lake SPA	SSSI & SPA	SPA qualifying feature is (non breeding); Northern shoveler <i>Anas clypeata</i>	4.5 km (SW)
Compton Martin Ochre Mine, Part of North Somerset & Mendip Bats SAC	SSSI & SAC	Compton Martin Ochre Mine is used as a hibernation site by greater horseshoe bats <i>Rhinolophus ferrumequinum</i> . The limestone caves of the Mendips provide a range of important hibernation sites for lesser horseshoe bats <i>R. hipposideros</i> and a hibernation & maternity site for greater horseshoe bats.	9.5 km (SW)

Ancient woodland

An area of Ancient Woodland (re-planted) forming part of Lord's wood is located approximately 1 km to the east of the site.

Non-statutory Sites

Most of the site (i.e. the spoil heap plateau and slopes) lies within the Pensfold Site of Importance for Nature Conservation (SNCI) which is designated for its wide range of plants and invertebrates (note that the works area is excluded from the SNCI). It is apparent that the SNCI boundaries are rather arbitrary and some stands of species-poor ephemeral and tall ruderal vegetation could perhaps be excluded on the grounds of low species-richness.

3.1.2 Protected Species

Key protected and conservation priority taxa that could present a significant constraint to development are listed in Table 3-2 below. Inclusion in this table is based upon:

- a) Presence of suitable habitat for a species and a national distribution which suggests its presence is likely;
- b) Records returned during the desk study, which confirmed the presence of the species in the local area; and

- c) Potential for the proposed development to have a significant adverse impact upon the species.

Table 3-2
Key protected species

Species	Legal Protection/ Conservation Priority Status ⁴	Desk study records
Bats		
Natterer's bat <i>Myotis nattererii</i>	HR, WCA, BNESBAP	Records between 0.5km and 5km, including several probable maternity roosts within 5km
Noctule bat <i>Nyctalus noctula</i>	HR, WCA, BNESBAP	Records within 0.5km
Lesser horseshoe <i>Rhinolophus hipposideros</i>	HR, WCA, UKBAP, BNESBAP	Records within 0.5km and known roosts within 5km of site, including a maternity roost of around 100 bats
Common pipistrelle <i>Pipistrellus pipistrellus</i>	HR, WCA, BNESBAP	Records within 0.5km
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	HR, WCA, UKBAP, BNESBAP	Records within 0.5km and known roosts within 5km of site, including a maternity roost over 300 bats
Brown long-eared bat <i>Plecotus auritus</i>	HR, WCA, UKBAP, BNESBAP	Records within 0.5km
Daubenton's bat <i>Myotis daubentonii</i>	HR, WCA, BNESBAP	Records within 0.5km
Serotine bat <i>Eptesicus serotinus</i>	HR, WCA, BNESBAP	Records within 0.5km
Bechstein's bat	HR, WCA, UKBAP, BNESBAP	Records of small roosts within 5km
Nathusius pipistrelle <i>Pipistrellus nathusii</i>	HR, WCA, Proposed BNESBAP	Records of small roosts within 5km
Whiskered bat <i>Myotis mystacinus</i>	HR, WCA, BNESBAP	Dead individual found within 5km
Other relevant mammals		
Badger <i>Meles meles</i>		Records within 0.5km
Reptiles		
Slow worm <i>Anguis fragilis</i>	WCA, UKBAP	Records adjacent to site in Wick Lane
Adder <i>Vipera berus</i>	WCA,	Records adjacent to site in Wick Lane as well as on site in past
Plants		
A number of locally scarce plant species have been recorded from the colliery spoil heap, including the following:		
Viper's bugloss <i>Echium vulgare</i>	Red listing based on 2001 IUCN guidelines - Lower risk - least concern	Recorded from site

⁴ See Section 4 on relevant legislation and policy for further information on the terms used here.

Continued

Little mouse-ear <i>Cerastium semidecandrum</i>	Red listing based on 2001 IUCN guidelines - Lower risk - least concern	Record from site
Pale toadflax <i>Linaria repens</i>	Red listing based on 2001 IUCN guidelines - Lower risk - least concern	Record from site
a bramble <i>Rubus leyanus</i>	Locally scarce	Recorded in immediate vicinity
Heath groundsel <i>Senecio sylvaticus</i>	Red listing based on 2001 IUCN guidelines - Lower risk - least concern	Record from site
Sand spurrey <i>Spergularia rubra</i>	Red listing based on 2001 IUCN guidelines - Lower risk - least concern	Record from site
Silver hair-grass <i>Aira caryophylla</i>	Red listing based on 2001 IUCN guidelines - Lower risk - least concern	Record from site
Small cudweed <i>Filago minima</i>	Red listing based on 2001 IUCN guidelines - Lower risk - least concern	Record from site or immediate adjacent area
Squirrel-tail fescue <i>Vulpia bromoides</i>	Red listing based on 2001 IUCN guidelines - Lower risk - least concern	Record from site
Spear-leaved willowherb <i>Epilobium lanceolatum</i>	Red listing based on 2001 IUCN guidelines - Lower risk - least concern	Record from site
<i>Invertebrates</i>		
A number of locally scarce invertebrate species have been recorded from the colliery spoil heap, or close by, including the following:		
White-legged damselfly <i>Platycnemis pennipes</i>	BNESBAP	Record in pond within 0.5km
A jewel beetle <i>Agrilus (Anambus) laticornis</i>	Rare and scarce species (not based on IUCN criteria) - Nationally Notable B	Recorded from site
Small garden bumblebee <i>Bombus (Megabombus) hortorum</i>	Proposed BRERC Notable 2011 as BNES BAP	Recorded from site
a leaf beetle <i>Cryptocephalus fulvus</i>	Local	Recorded from site
a leaf beetle <i>Cryptocephalus moraei</i>	Local	Recorded from site

Key to protection/status for above table:

- HR Habitat Regulations
- WCA Wildlife & Countryside Act
- UKBAP UK Biodiversity Action Plan
- LBAP Local (or Regional) Biodiversity Action Plan
- BNESBAP Bath and North East Somerset BAP

Note that the desk study also returned records of a number of notable bird species which relate to designated sites and associated habitats which are not present within the site.

No records of barn owl *Tyto alba* or little ringed plover *Charadrius dubius* were returned from within the search area (however barn owl does occur on site and the site owner has reported regularly seeing the species hunting nearby).

Wessex Ecological Surveys report (December 2010)

The Wessex Ecological Surveys report covered the tunnel to the north of the site and this states that the tunnel lies:

'...within a scrubby wooded slope approximately 30-40 m beyond the north-eastern corner of the site that is known to be used as a minor roost by small numbers of horseshoe bats. Three lesser horseshoe bats were present within this tunnel at the time of the survey (November 2010) and anecdotal reports suggest that up to 5 or 6 lesser horseshoe bats and at least 1 greater horseshoe bat are intermittently present.'

3.2 Site Survey

3.2.1 Habitat Descriptions

The results of the Phase 1 Habitat Survey are illustrated in map form in Drawing 01 with associated target notes being listed in Appendix A. All the plant species recorded during the field survey are listed in Appendix B under the main habitat-types.

Drawing 02 shows the potentially developable area (subject to the results of further survey and the desk study)⁵.

The site is illustrated in the following plates 1-13:

⁵ Note that the area marked as potentially developable on Drawing 01 sits in part across habitat mapped as 'Ephemeral Short Perennial' vegetation during the Phase 1 survey. This is a broad Phase 1 code that can encompass a wide range of vegetation types, including both floristically rich and poorer communities. In this instance, the area marked for potential development covers the less species-rich types of such vegetation.

Plate 1: Building 1 viewed from east



Plate 2: Building 1 internal

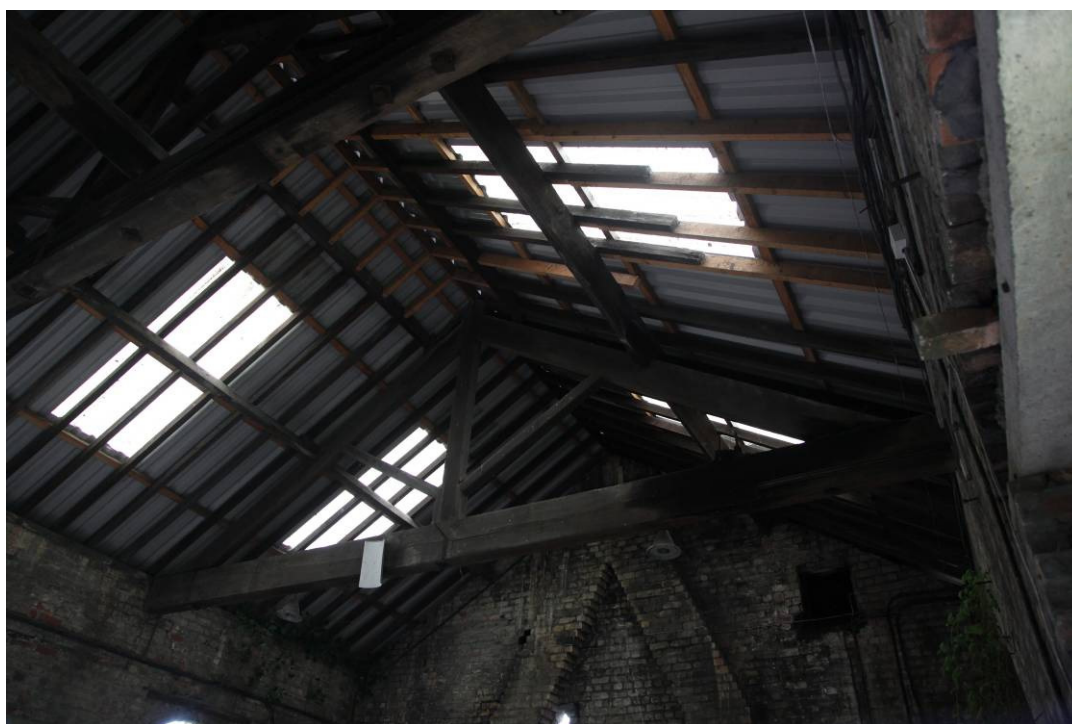


Plate 3: Building 2 viewed from south-west



Plate 4: Building 2 internal



Plate 5: Building 3 viewed from south-west



Plate 6: Building 3 viewed from north-west



Plate 7: Building 4 viewed from south-west



Plate 8: Building 4 internal



Plate 9: Building 5 viewed from south-east



Plate 10: Building 5 internal

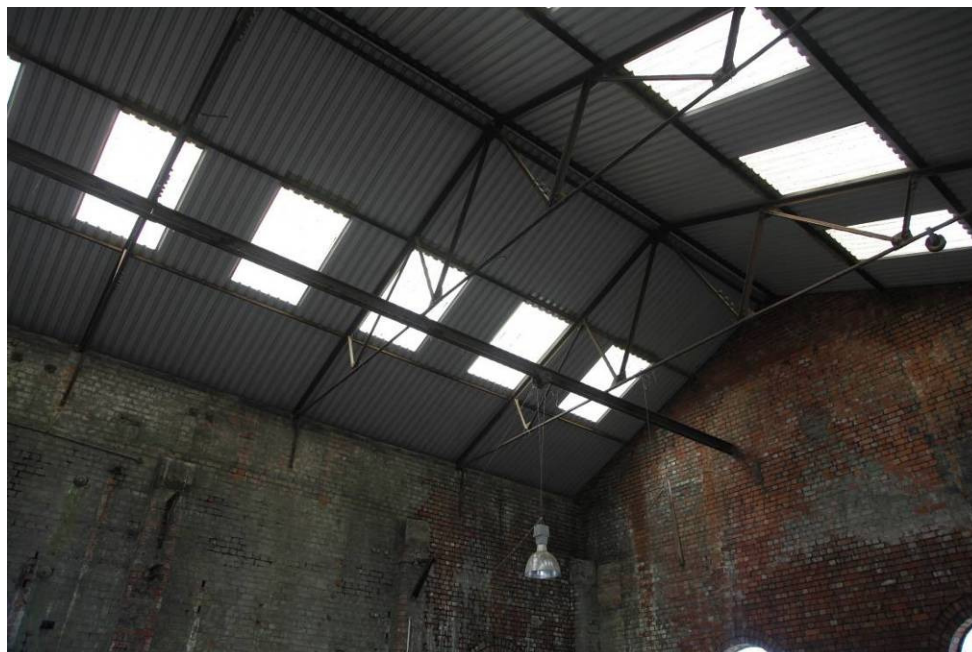


Plate 11: Sparse ephemeral communities developing on recently cleared spoil (see TN 9).



Plate 12: Better developed habitats on spoil in south of site (see TN 8).



Plate 13: Pond with *Phragmites australis* and mesotrophic grassland



3.2.2 Plant communities

Overview

Vegetation on some parts of the spoil heap (in particular at the southern end) is quite diverse and over 100 plant species were recorded during the 2012 survey, including a number scarce that are in the locality (several other scarce species have also been recorded in the past, but which were not found during the current survey). Most species-rich communities were identified as the better-developed mesotrophic grassland / scrub / ephemeral short perennial vegetation mosaics at the southern end of the site; topographic variation is greatest here, resulting in a locally elevated level of habitat and species diversity.

Woodland

The steep slopes on the western, eastern and on parts of the southern sections of the site support locally mature woodland dominated by pedunculate oak (*Quercus robur*), ash (*Fraxinus excelsior*) and occasional wild cherry (*Prunus avium*), with an under-storey of hawthorn (*Crataegus monogyna*), and locally hazel (*Corylus avellana*) (some trees of which are large and multi-stemmed). Blackthorn (*P. spinosa*) and elder (*Sambucus nigra*) also occur here. The shrub layer was tangled and complex in places; young silver birch (*Betula pendula*) occur and dense stands of bramble (*Rubus fruticosus* agg) make walking difficult on some of the steep slopes. Climbing honeysuckle (*Lonicera periclymenum*) occurs locally. Regeneration is patchy and mainly of ash. The woodland field layer is species-poor throughout, and dominated by ivy (*Hedera helix*), with grasses such as Yorkshire fog (*Holcus lanatus*), wood false-brome (*Brachypodium sylvaticum*) and extensive bare ground in places. Woodland mosses on soil, fallen logs and trees include *Hypnum cupressiforme*, *Eurhynchium striatum*, *Kindbergia praelongum*, *Fissidens* sp., and *Atrichum undulatum* (the latter being especially abundant).

The oak woodlands grade in places on the plateau top margins at the southern end of the site to stands of invading silver birch woodland.

Ephemeral short perennial vegetation and tall ruderal mosaic

The upper part of the spoil heap is level and comprises a large, open plateau several hundred metres long, which is fringed by woodland and scrub. This open area is dominated by a mosaic of tall ruderal vegetation and ephemeral short perennial vegetation which supports an abundance of flowering plants locally.

The first level plateau area encountered when walking eastward from the works zone is shown in **Plate 11**. This clearly shows the sparse, poorly developed character of the vegetation here; this vegetation extends up to about the middle of the main plateau. This community mostly comprises bare ground (over 90% in places) with a few early colonisers; common ragwort, weld (*Reseda luteola*), wild mignonette (*R. lutea*), occasional wild strawberry (*Fragaria vesca*), Viper's bugloss (*Echium vulgare*) and abundant scentless mayweed. Early colonising bryophytes such as *Polytrichum juniperinum*, a species which is abundant in the much better developed sands of vegetation further south alongside a greater range of herbs, are virtually absent here and the area is at a very early stage of succession. (It is this area, and the adjacent rather species poor, tall ruderal vegetation described below, that could potentially accommodate some development, depending on the outcome of recommended bat surveys).

The plant communities are even less varied toward the extreme northern end of the site. In this area (which is assumed to be rather more fertile than other areas in view of the species

present), a tall ruderal community has self-sown and is dominated by common nettle (*Urtica dioica*) and dense stands of self-sown oil-seed rape (*Brassica napra*), together with tall patches of hemp agrimony (*Eupatorium cannabinum*), abundant common ragwort (*Senecio jacobaea*) and dense stands of bramble.

The ephemeral / short perennial plant communities that occur in the southern half of the site appear to be the result of not only the age of the community (i.e. the period since last disturbance) but also the substrate over which they are developing. For example, some areas are typically dominated by species more frequently associated with acidic substrates (for example the moss *Polytrichum juniperinum*, which forms extensive, low mats in many areas), whilst others support species more typically associated with base-rich conditions, for example carline thistle (*Carlina vulgaris*). These communities, which are often bryophyte-dominated, are best developed at the southern end of the site (see **Plate 12**). Typical species here (other than *P. juniperinum*) include mosses *Pseudoscleropodium purum*, *Hypnum lacunosum* and *Calliergonum cuspidatum*, and herbs smooth hawk's-beard (*Crepis capillaris*), viper's bugloss, common cat's-ear (*Hypochoeris radicata*), common milkwort (*Polygala vulgaris*), wild carrot (*Daucus carotta*), wild strawberry (*Fragaria vesca*), common centaury (*Centaureum erythraea*), scentless mayweed (*Tripleurospermum inodorum*) and agrimony (*Agrimonia eupatoria*).

Mesotrophic grassland

A narrow corridor of mesotrophic grassland has developed below the south-eastern end of the main spoil plateau, where it forms a narrow 'ride' or glade between stands of oak woodland. This community is waterlogged in places, as evidenced by the local dominance of silverweed (*Potentilla anserina*) and creeping bent (*Agrostis stolonifera*), and it supports a number of plant species not found elsewhere on site, including spiked sedge (*Carex spicata*) and common knapweed (*Centaurea nigra*). A small stand of mesotrophic grassland abuts the pond in the south of the site.

Pond and environs

A pond is present at the southern end of the site (**Plate 13**). This was apparently excavated by the current owner in an existing wet area around seven years ago and it is now dominated by common reed (*Phragmites australis*). Associate species here include greater bulrush (*Typha latifolia*), soft-rush (*Juncus effusus*) and hard-rush (*J. inflexus*), as well as giant horsetail (*Equisetum telmatia*). The banks support quite a species-rich mesotrophic grassland / ephemeral short perennial vegetation community.

3.2.3 Protected Fauna Species

Bats

The 'works' zone includes five redundant industrial buildings and there is a disused tunnel just north of the site which has supported greater and lesser horseshoe bats in the past (WEC, 2010). The buildings and tunnel were inspected during late 2010 by WEC, who found evidence of roosting only in the tunnel; they assessed the buildings as having low bat potential and found no evidence of bats at that time.

Accessible sections of the five buildings were re-examined by Andrew McCarthy, a licensed bat ecologist, in July/August 2012 and it was concluded that the structures still had low potential as a result of their open, light interiors, poor condition, minimal number of (small) roof spaces and few crevices.

Small numbers of droppings (probably from pipistrelle bats) were found in Building 5 during the 2012 survey and as the presence of bats (all of which are European Protected Species) cannot be ruled out, a dusk/dawn survey is recommended in line with best practice (see recommendations section for more detail). No evidence of horseshoe bats using the buildings was found.

The WES report describes the buildings thus (numbering is as per this Phase 1 report; see Drawing 01):

- 1 *Large brick shed with a double-pitched, timber-framed roof fitted with a single layer of preformed metal sheeting with no underlay. The ridge is of metal and open below (ie does not contain significant crevices/voids). The bulk of the building is open to the roof. An upper floor is present in a small section at the southern end and a high ceiling (with a high roof void above) is present in a small central section. Brick work is single-skin and generally sound. Timber joints are tight. Timber gutter boards are set out from the walls (i.e. there is a substantial running gap behind them). There is potential flying access throughout. Currently appears disused.*
- 2 *Large, single-storey, concrete block shed with a double-pitched, metal-framed roof fitted with a single layer of preformed asbestos concrete sheeting with no underlay. The ridge is of asbestos concrete and open below (ie does not contain significant crevices/voids). The building is open to the roof. Block work is single-skin, sound and does not contain cavities. There are running, non-progressive gaps behind timber gutter boards. There is no apparent flying access. Currently used as a workshop and/or for ad hoc storage.*
- 3 *Small, single-storey, rendered block shed with a double-pitched, timber-framed roof fitted with a single layer of preformed asbestos concrete sheeting with no underlay. The ridge is a mix of asbestos concrete and clay tiles, appears secure from the outside and is mostly open below (though with a small number of small crevices above mortar etc). A single roof space approximately 2m high at the ridge is present throughout. Block work is single-skin, sound and does not contain cavities. There is flying access into the ground floor (via a broke window) but not into the roof space. There are numerous windows present. Gutter boards are flush. Previously used as office accommodation but now only for ad hoc storage.*
- 4 *On the east side - Small, single-storey, rendered block shed with a double-pitched, timber-framed roof fitted with a single layer of preformed asbestos concrete sheeting with no underlay. The ridge is of asbestos concrete and open below (ie does not contain significant crevices/voids). A single roof space approximately 2 m high at the ridge is present throughout. Block work is single-skin, sound and does not contain cavities. Gutter boards are flush. There are numerous windows present but no apparent flying access. Currently used as an ad hoc kennel.*
Adjacent to the west side - Small, single-storey, brick shed with a double-pitched, timber-framed roof fitted with a double-Roman clay tiles with no underlay. The ridge is clay-tiled and is mostly open below (though with a small number of small crevices above mortar etc). A reasonable number of roof and ridge tiles are missing and/or dislodged making the building very airy. The building is open to the roof. Brick-work is single-skin and contains a small number of generally non-progressive internal and external cracks. There is flying access via open doorways and broken windows. Some tatty, remnants of timber fascias remain. There are numerous windows present. Currently disused.
- 5 *Large brick shed with a double-pitched, timber-framed roof fitted with a single layer of preformed metal sheeting with no underlay. The ridge is of metal and open below (ie*

does not contain significant crevices/voids). The building is open to the roof. Brick work is single-skin and generally sound. Timber joints are tight. Fascias are flush. There is potential flying access throughout. Currently used for ad hoc storage. On the southern gable end there is a single-storey block addition with a double-pitched, timber-framed roof fitted with a single layer of preformed asbestos concrete sheeting with no underlay. The ridge is of asbestos concrete and open below (i.e. does not contain significant crevices/voids). The addition is open to the roof. Block work is single-skin, sound and does not contain cavities. There is potential flying access throughout. Currently appears disused.

Badger

A small two-hole badger sett was found in woodland on site and there may well be more setts present. The sett appeared in use at the time of survey. No other evidence of badger was found.

Dormouse

Older woodland stands support mature hazel trees, many of these are large and multi-stemmed and dormouse (a European protected species) could well be present here since the site is well-connected to the wider landscape and the species is known to be locally widespread in the region.

Great crested newt

The pond was assessed as being suitable for great crested newt (HSI score = 0.92, see Plate 14, below). Three ponds are present within 500m of the south-eastern boundary (based on Ordnance Survey and air photograph data) and adjacent habitat quality is excellent for newts in their terrestrial phase; the on-site pond is well connected to the wider landscape and it is possible great crested newts are present.

Plate 14: Habitat Suitability Index Results

Habitat Suitability Index			SI value	
SI1. Map location	A/B/C	A		1.00
SI2. Surface area	rectangle/ellipse/irregular	rectangle		
	length (m)	20		
	width (m)	20		
	OR estimate (m ²) if irregular			
	area (m ²) =	400		0.80
SI3. Dessication rate	never/rarely/sometimes/frequently	rarely		1.00
SI4. Water quality	good/moderate/poor/bad	good		1.00
SI5. Shade	% of margin shaded 1m from bank	10		1.00
SI6. Waterfowl	absent/major/minor	minor		0.67
SI7. Fish population	absent/possible/minor/major	absent		1.00
SI8. Pond density	number of ponds within 1km	3		1.00
SI9. Terrestrial habitat	good/moderate/poor/isolated	good		1.00
SI10. Macrophyte cover	%	100		0.80
			HSI =	0.92
			provisional	
			HSI =	0.91
<i>Use provisional HSI value if above 0.75</i>				
			Date undertaken	31 July 2012

Reptiles

Where woodland abuts suitable habitat, such as grassland and denser stands of ephemeral short perennial vegetation, common lizard, slow worm, adder (the latter two species have been recorded here in the past) and possibly grass snake (around the pond) cannot be ruled out. The most suitable habitat for reptiles is at the southern end of the site.

Nesting Birds

The wide range of habitats and in particular the open areas provide suitable conditions for a wide range of breeding birds, including both resident and migrant breeders, and a reasonable species assemblage is expected to be present. During the site visit a number of common species of woodland, scrub and built habitats were noted, namely: blackbird (*Turdus merula*), blue tit (*Parus caeruleus*), great tit (*P. Major*), robin (*Erithacus rubecula*), magpie (*Pica pica*), and wood pigeon (*Columba palumbus*). Building 1 was found to support breeding swallow and Building 5 supports roosting barn owl. However, the evidence suggests that the latter species does not breed on site.

The open plateau area could support little ringed plover; this species favours large open gravelly sites, but it is scarce in the South West of England. Barn owl is known to forage across open areas of the site (Tom Smart Pers. Comm.).

3.3 Other Species

Invertebrates

The herb-rich open communities that occur more frequently towards the southern end of the site are expected to be important for invertebrates, including local and national scarcities, as a result of the range of nectar-rich flowering plants present, but also because of the wide range of microclimates; there are abundant small patches of bare ground among the vegetation that are suitable for burrowing solitary bees and wasps, for example. Again, the best and most varied communities occur at the southern end of the site where there are warm south-facing slopes of varying aspect among the sheltered glades, as well as a wider range of plant communities than on the flatter spoil plateau further north.

Invasive species

Two small stands of Japanese knotweed were recorded within the tall ruderal vegetation on the plateau east of the 'works' area; more may have been present and overlooked.

4.0 RELEVANT LEGISLATION & POLICY6

4.1 Legislation

4.1.1 *Habitat Regulations*

The Conservation of Habitats and Species Regulations 2010 transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately capture, kill or disturb⁷ wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

4.1.2 *Wildlife & Countryside Act*

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CRoW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act; intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act; intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- Plant or otherwise causes to grow in the wild any plant included on Part 2 of Schedule 9 (non-native invasive plants). Japanese knotweed is listed under Schedule 9 of the Wildlife and Countryside Act (W&CA) 1981, as amended, which makes it an offence to plant or otherwise allow this species to grow in the wild.

4.1.3 *Protection of Badgers Act*

The Protection of Badgers Act 1992 makes it illegal to kill, injure or take a badger or to intentionally or recklessly interfere with a badger sett. Sett interference includes disturbing badgers whilst they are occupying a sett or obstructing access to it.

4.1.4 *Natural Environment & Rural Communities Act*

The NERC 2006 places a duty on authorities to have due regard for biodiversity and nature conservation during the course of their operations.

⁶ Please note that this legal information is a summary and intended for general guidance only. The original legal documents should be consulted for definitive information. Web addresses providing access to the full text of these documents are given in the References & Bibliography section.

⁷ Disturbance, as defined by the Conservation of Habitats and Species Regulations 2010, includes in particular any action which impairs the ability of animals to survive, breed, rear their young, hibernate or migrate (where relevant); or which affects significantly the local distribution or abundance of the species.

4.2 Policy

4.2.1 National Planning Policy Framework

Planning Policy Statement 9 (PPS9) was superseded by the National Planning Policy Framework (NPPF) in March 2012. The NPPF states that the planning system should 'contribute to and enhance' the natural and local environment by:

- Recognising the wider benefits of ecosystem services; and
- Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

Other key principles of the NPPF relating to biodiversity are:

- The conservation of International and National statutorily designated sites;
- Protection of ancient woodland and veteran trees;
- The creation, protection, enhancement and management of networks of biodiversity and green infrastructure;
- The preservation, restoration and recreation of priority habitats and ecological networks; and
- The recovery of priority species populations.

The UK Biodiversity Action Plan (UKBAP) (Anon, 1995) was organised to fulfil the Rio Convention on Biological Diversity in 1992, to which the UK is a signatory. A list of national priority species and habitats has been produced with all listed species/habitats having specific action plans defining the measures required to ensure their conservation. Regional and local BAPs have also been organised to develop plans for species/habitats of nature conservation importance at regional and local levels; those that may be relevant to the surveyed area include National and Local BAPs.

4.2.2 Local Biodiversity Action Plan Priorities

The Bath and North East Somerset BAP includes a number of priorities that are known to be, or may be (as a result of suitable habitat occurring on the site), relevant to this assessment. Some of these species and habitats have action plans associated with them:

Relevant Priority Habitats:

- **Broadleaf Woodland** includes all broadleaved and yew stands and mixed broadleaved and coniferous stands which have more than 20% of the cover made up of broadleaved and yew trees.
- **Post Industrial Sites** including disused railway lines (such as the one adjacent to the site to the east) and associated land, including coal spoil tips (known locally as 'batches').
- **Species-rich grassland** encompasses three UK priority habitat types which occur in Bath & North East Somerset – lowland meadows, commonly called neutral grasslands; lowland calcareous grasslands, commonly called calcareous grasslands, and lowland dry acid grassland, commonly called acid grasslands. The grassland habitats within the site are closest to Neutral Grassland in character, but some areas contain elements more closely associated with calcareous grassland.

Relevant Priority Species:

- Dormouse (Action Plan available);
- Great crested newt (Action Plan available);
- Red hemp nettle (Priority but no Action Plan available);
- Skylark (Priority but no Action Plan available); and
- All bat species (Priority but no Action Plan available)

4.2.3 Local Plan Policies

The following policies from the Bath and North East Somerset Council Local Plan are relevant:

NE4: Trees and Woodlands: Development will only be permitted where: i. it does not have an adverse impact on trees and woodlands of wildlife, landscape, historic, amenity, productive or cultural value; and ii. it includes the appropriate retention and new planting of trees and woodlands; and iii. it does not have an adverse impact on a veteran tree; In the case of an unavoidably adverse impact on trees and woodlands of wildlife, landscape, amenity, productive or cultural value, compensatory provision is made.

NE.5: Development in the Forest of Avon (in which this sites lies), as shown on the Proposals Map, will only be permitted where it: i. respects the existing and developing woodland setting; and ii. does not conflict with the objectives of the Forest Plan and has regard to its aims in the layout of development, including landscaping.

NE.8: Development which would adversely affect SSSIs, either directly or indirectly, will not be permitted unless; i. there are imperative reasons of national importance for the development; and ii. any harm to the nature conservation value of the site is minimised; and iii. compensatory provision of at least equal nature conservation value is made.

NE9: Development which would adversely affect, either directly or indirectly the nature conservation value of, Sites of Nature Conservation Importance, Local Nature Reserves or Regionally Important Geological and Geomorphological Sites, as shown on the Proposals Map, or any other sites of equivalent nature conservation value, will not be permitted unless: i. material factors are sufficient to override the local biological Geological / Geomorphological and community/amenity value of the site; and ii. any harm to the nature conservation value of the site is minimised; and iii. compensatory provision of at least equal nature conservation value is made.

NE.11: Development which would adversely affect a species of importance to Bath & North East Somerset or the habitat of such species, directly or indirectly, will not be permitted unless: (i) the importance of the development and its need for that particular location is sufficient to override the local value of the species; and (ii) any harm to the species and their habitats is minimised; and (iii) compensatory provision of at least equivalent nature conservation value is made.

NE.12: Development will only be permitted where it: i. retains features of the landscape such as trees, copses, woodlands, grasslands, batches, ponds, roadside verges, veteran trees, hedgerows, walls, orchards, and watercourses and their corridors if they are of amenity, wildlife, or landscape value, or if they contribute to a wider network of habitats; ii. provides,

where appropriate, for the creation of new features and habitats; and iii. makes appropriate provision for the management of such features and habitats where they are of major importance for wild flora and fauna. Where the loss of such features is unavoidable because the reasons for the development outweigh the need to retain the features: a. any harm to the features is minimised, and b. compensatory provision of at least equal value will be required.

5.0 DISCUSSION AND RECOMMENDATIONS

5.1 Development Proposals

It is understood that a proposal exists to locate a traveller's site within the former Stanton Wick Colliery, together with associated parking and access, providing ecological constraints do not prove significant. Any development, if it were to proceed, would cover an area of approximately 1ha (Richard Daone, Pers. Comm., 2012). The development would presumably include removal of the brick buildings; however it is unclear whether any tree felling would be required.

Drawing 01 shows a provisional area of around 1.5 ha which, based upon the results of this appraisal, could be suitable for development. Note however, that a final decision would only be possible following completion of specialist surveys, in particular for foraging and commuting horseshoe bats, foraging barn owls and for breeding little ringed plover.

If the site is ultimately considered suitable, then mitigation (and possibly ecological compensation in the form of replacement habitat provision) measures are likely to be needed; these would be developed in detail once all relevant ecological data had been gathered and a full impact assessment undertaken on the basis of a final design.

5.2 Protected Sites and their value

Some stands of species-poor ephemeral / tall ruderal vegetation close to the works area exist within the SNCI boundary which were not considered to contribute significantly to its ecological interest due to their limited species-richness. Given the anticipated contained nature of the proposed development, and given appropriate mitigation measures, the special interest of the remainder of the SNCI (primarily botanical and invertebrate diversity) is unlikely to be affected if the development, as currently described, were to proceed.

5.3 Protected Species

5.3.1 Bats

Greater horseshoe bats

Despite no records for greater horseshoe bat roosts being returned during the desk study, the region is in fact known to be a stronghold for lesser and greater horseshoe bats, and there are four SSSIs designated in the wider area as a result of the presence of their roosts.

Two of the large roosts at King's Wood and Brockley Hall Stables, as a complex, form one of the five UK candidate Special Areas of Conservation (cSACs), under the Conservation (Natural Habitats, etc.) Regulations 1994' and a number of other SAC's are present in the wider landscape. The closest and most relevant SAC is the North Somerset and Mendips Bats SAC; some 9.5km distant. Whilst Stanton Wick Colliery does not fall within the roost sustenance zone allocated to this (or any other) SAC, in reality, greater horseshoe bats range widely and may well use the Stanton Wick site for foraging or commuting across periodically. Notwithstanding this, it should be noted that the type of habitat within which the development would be sited if it were to proceed comprises mainly bare ground and ephemeral weeds at present, or tall ruderal herbs such as nettle and oil-seed rape. Greater horseshoe bats tend to favour unimproved landscape features (such as pasture) for foraging and the site is therefore likely to be suboptimal in this respect. The possibility of reasonable numbers of other foraging bats (including the nationally scarce species lesser horseshoe bat) cannot however be ruled out and there is a possibility of commuting greater and lesser

horseshoes in and around the periphery of the site; such activity could be negatively affected by development as a result for example of peripheral lighting and noise.

The presence of a known (albeit small) greater horseshoe roost adjacent to the site would trigger a suite of bat 'activity' surveys in line with the Bat Mitigation Guidelines (Mitchell-Jones, 2004) in order to determine whether this nationally rare species uses the wider site for feeding and or commuting. The guidelines state that **monthly surveys, between May and September**, are required if greater horseshoes roost within 4km of a site larger than 1ha. On balance, therefore, specific surveys are recommended, as the presence of significant activity from this species in particular may require consideration as to whether development here might have a significant impact upon the aforementioned bat SACs.

Notwithstanding that no detailed surveys have yet been undertaken for greater horseshoe bats, in view the lack of local records for this species and the very sub-optimal nature of habitat within the area proposed for development, it is considered unlikely that there would be a significant negative impact on any of the SAC special interests, in the event such a development were to proceed.

Potential building roosts

The brick buildings were visually assessed in 2012 as having 'low' roosting potential due to the few features suitable for use by bats and our assessment concurs with the conclusions in the WES 2010 assessment report.

In line with the latest 2012 best practice guidance (Hundt, 2012) a single dusk / dawn survey is recommended at an optimum time of year (ideally before the end of August), in order to assess use of the building by bats. (Such surveys can be undertaken between May and September, but are optimally undertaken between May and August). If following this survey, a roost is confirmed, a European Protected Species (EPS) licence may be required from Natural England in order that demolition of building conversion can proceed. Any application would need to include a detailed Method Statement describing how works would be undertaken (in a manner that would avoid harming bats) and the measures that would be taken to compensate for loss of the original roost/s.

On completion of the recommended surveys it will be possible to make a fuller assessment of use of the area by bats and thus propose a detailed mitigation strategy. Typical enhancements for bats include bat boxes of a variety of designs on adjacent trees and retained buildings and a lighting management strategy that seeks to retained dark areas for commuting and foraging.

5.3.2 Badger

A small badger sett was recorded during the survey, within adjacent woodland. However as badger activity can change on a site, sometimes quickly, and since the peripheral woodlands are currently challenging to survey in view of the dense summer vegetation present, a detailed winter survey is recommended to check for setts within the woodlands adjacent to the proposed development area as these could potentially be affected by the proposals.

5.3.3 Dormouse

Whilst dormouse could occur on site, unless suitable woodland and scrub habitat is likely to be affected (which does not appear to be the case at present) no formal survey would be needed. Unless the proposal area is to be extended to the south or into adjacent woodland, it is unlikely that a dormouse survey would be required at this stage.

5.3.4 Great Crested Newt

The on-site pond was assessed as having high suitability to support great crested newt and there are a number of other ponds in the adjacent landscape to the east which could also support this species. However, the current proposed development footprint is over 500m from any of these ponds and unless the proposal area is to be extended some distance to the south, it is unlikely that a great crested newt survey would be required at this stage.

5.3.5 Reptiles

There is some suitable habitat for common reptiles around the woodland margin, however, unless the proposal area is extended southwards towards better developed habitats, it is unlikely that a reptile survey would be required at this stage. If a more detailed impact assessment is taken forward, then a reptile survey may be prudent.

5.3.6 Birds

The open plateau area could support little ringed plover and is known to support foraging barn owl. Little ringed plover favours large open sites with sparse vegetation, but it is scarce in the South West of England. However, a survey is recommended as it is specially protected *via* listing on the Schedule 1 of the Wildlife and Countryside Act and it could breed in the hatched area shown in Drawing 02.

Operations that may disturb any potential bird nesting habitat, e.g. removal of fringing scrub and building demolition, should be undertaken outside the bird breeding season (which is generally taken to run from March to August inclusive, but can run into October for some species, notable swallows⁸). If this is not possible, a check for nesting birds by an experienced ecologist should be undertaken immediately prior to habitat removal. If the latter approach is adopted and nesting is shown to occur there is a risk of delay as an 'exclusion zone' may need to be set up around nests until young have fledged.

5.3.7 Non-native Invasive Species

Two small stands of Japanese knotweed (an invasive non-native plant listed on Schedule 9 of the Wildlife and Countryside Act 1981) was recorded on site. Since it is an offence to plant or otherwise cause to grow in the wild a Schedule 9 listed species it is recommended that appropriate control measures are put into place to prevent spread off-site or into new areas of the site. It would be prudent to obtain advice of a company specialising in control / eradication of invasive plant species beforehand, but appropriate techniques are likely to include repeated herbicide treatment.

5.4 Summary

No significant habitat-related constraints were identified that would prevent a carefully sited development proceeding (this would require a scheme that can demonstrate how it can proceed without harming the interests of the SNCI) and our preliminary assessment is that a development is likely to be possible as it is probable that potential impacts on the interests of the SNCI could be avoided and mitigated, and impacts on protected species mitigated.

⁸ This is a general guide only. The following points may apply depending on habitats on site and the proposed works: 1) Mild winters may encourage some species to nest earlier in the year; 2) Swallow and house martin can breed into early October; 3) Some species, such as pigeons, can breed throughout the year in suitable conditions. It is recommended that, where appropriate, any habitat clearance or building demolition works outside of the typical breeding season is preceded by a site evaluation by an ornithologist in order to prevent a potential breach of wildlife legislation.

Before a full impact assessment together with associated mitigation measures can be completed however, surveys will be required for several key species; most notable for bats in respect to the buildings and in respect of greater horseshoe (activity surveys) across the wider site.

If bat roosts are present in any of the buildings a Natural England licence may be required prior to destruction of roosts and to ensure that suitable compensation measures can be provided in the new scheme.

6.0 CLOSURE

This report has been prepared by SLR Consulting Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of Bath and North East Somerset Council; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

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(Accessed 9-8-12)

Nature on the Map: <http://www.natureonthemap.naturalengland.org.uk/map.aspx?m=sssi>
(Accessed 9-8-12)

Web addresses for access to full UK legislation and policy text:

Conservation of Habitats and Species Regulations 2010:

http://www.opsi.gov.uk/si/si2010/uksi_20100490_en_1

Habitats Directive:

www.europa.eu.int/eur-lex/en/lif/dat/1992/en_392L0043

Birds Directive:

eur-lex.europa.eu/LexUriServ/site/en/consleg/1979/L/01979L0409-20070101-en

Wildlife and Countryside Act 1981:

www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1981/cukpga_19810069_en_1

Countryside and Rights of Way Act 2000:

www.legislation.hmsso.gov.uk/acts/acts2000/20000037

Natural Environment and Rural Communities Act 2006:

http://www.opsi.gov.uk/acts/acts2006/ukpga_20060016_en_1

National Parks and Access to the Countryside Act 1949:

http://www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1949/cukpga_19490097_en_1

APPENDIX A – TARGET NOTES

Number	Note
1	Secondary woodland with occasional mature sometimes multi-stemmed ash and oak, an understory of hawthorn and multi-stemmed hazel. Sparse field layer.
2	Small badger sett (2 holes).
3	Pond dominated by common reed; steep sided with adjacent mesotrophic grassland and ephemeral short perennial communities.
4	Oak woodland on steep slope on western side of spoil heap. Well structured; with hazel and birch understory. Species poor field layer with abundant bramble.
5	Small stand of Japanese knotweed.
6	Small stand of Japanese knotweed.
7	A 'ride' dominated by species rich mesotrophic grassland and flanked by tall ruderal and oak woodland. Species such as silverweed, soft-rush, spiked sedge, common knapweed, wild carrot are abundant in a damp grassy sward.
8	A complex of bare patches, scrub, ephemeral short perennial and tall herb vegetation developing over an undulating ground over former soil heaps. Mats of mosses are locally dominant, and the area is quite herb rich, with hawk's beards, cat's-ear, common milkwort, wild strawberry, wild carrot, vipers bugloss, carline thistle etc. Likely to be valuable for invertebrates.
9	The open habitats comprise regenerating vegetation over mine spoil on the plateau top; there is generally little scrub. These ephemeral communities are moderately species-rich in places, with colonising mosses and herbs including common milkwort, wild strawberry, vipers bugloss, carline thistle locally. The area marked as potentially developable on Drawing 01 is located in a floristically less species-rich zone, which comprises mainly bare ground and sparse ephemeral vegetation.
10	Regenerating vegetation over mine spoil on plateau top; little vegetation; much bare ground. Dominated by bulky colonising ephemeral weeds such as weld, wild mignonette, common ragwort etc. Not especially species-rich.

APPENDIX B – BOTANICAL SPECIES LIST

<i>Species</i>	<i>Common name</i>	<i>Woodland/ scrub</i>	<i>Ephemeral short perennial/ grassland</i>	<i>Tall ruderal vegetation</i>	<i>Pond and margins</i>	<i>Whole site</i>
Trees and shrubs						
<i>Alnus glutinosa</i>	Alder	O				R
<i>Betula pendula</i>	Silver birch	LD				LD
<i>Buddleja davidii</i>	Butterfly-bush		O			LF
<i>Cornus sanguinea</i>	Dogwood	O				O
<i>Corylus avellana</i>	Hazel	LF				LF
<i>Crataegus monogyna</i>	Common hawthorn	LA				O
<i>Fallopia japonica</i>	Japanese knotweed			O		R
<i>Fraxinus excelsior</i>	Ash	LD				LD
<i>Ilex aquifolium</i>	Holly	LA				LA
<i>Prunus spinosa</i>	Blackthorn	LA				LA
<i>Quercus robur</i>	Pedunculate oak	LD				LD
<i>Rubus fruticosus agg.</i>	Bramble	LD		LA		LD
<i>Salix caprea</i>	goat willow	LA				LA
<i>Sambucus nigra</i>	Elder	LA				LA
<i>Ulex europaeus</i>	European gorse	O	O			O
Herbs						
<i>Achillea millefolium</i>	Yarrow		F			LF
<i>Agrimonia eupatoria</i>	Agrimony		O			O
<i>Anagallis arvensis</i>	Scarlet pimpernel		O			O
<i>Brassica napa</i>	Oilseed rape		LF	LD		LD
<i>Carlina vulgaris</i>	Carlina thistle		LF			O

<i>Centaurea nigra</i>	Common knapweed		O			R
<i>Centaureum erythraea</i>	Common centaury		R			R
<i>Cirsium arvense</i>	Creeping thistle		LF			LF
<i>Cirsium palustre</i>	Marsh thistle		LF			O
<i>Cirsium vulgare</i>	Spear thistle		LA			LA
<i>Clematis vitalba</i>	Traveller's-joy	O	O			O
<i>Crepis capillaris</i>	Smooth hawk's-beard		LF			R
<i>Daucus carota</i>	Wild carrot		LA			LA
<i>Digitalis purpurea</i>	Foxglove	O				R
<i>Echium vulgare</i>	Viper's bugloss		LA			LA
<i>Epilobium hirsutum</i>	Great willowherb				R	R
<i>Eupatorium cannabinum</i>	Hemp-agrimony				LD	LD
<i>Foeniculum vulgare</i>	fennel		R			R
<i>Fragaria vesca</i>	Wild strawberry		LA			LA
<i>Geranium robertianum</i>	Herb Robert		R			R
<i>Geum urbanum</i>	Wood avens	O				O
<i>Glechoma hederacea</i>	Ground-ivy	O	LD			O-LD
<i>Hedera helix</i>	Ivy	LA				LD
<i>Hieracium agg.</i>	Hawkweeds	R	R			R
<i>Hypericum perforatum</i>	Perforate St John's-wort		LF			LF
<i>Hypochaeris radicata</i>	Common cat's-ear		LF			LF
<i>Lamium purpureum</i>	Red dead-nettle		O			R
<i>Lonicera periclymenum</i>	Honeysuckle	LA				LA
<i>Lotus corniculatus</i>	Common bird's-foot trefoil		LA			LA
<i>Medicago lupulina</i>	Black medick		F			LF
<i>Mercurialis perennis</i>	Dog's mercury	O				O
<i>Odontites vernus</i>	Red bartsia		R			R

<i>Picris echoides</i>	Bristly ox-tongue		O			O
<i>Pilosella officinarum</i>	Mouse-ear hawkweed		LA			LA
<i>Plantago major</i>	Greater plantain		LF	O		O-LF
<i>Polygala vulgaris</i>	Common milkwort		F			LF
<i>Potentilla anserina</i>	Silverweed		LD	O	O	O-LD
<i>Potentilla reptans</i>	Creeping cinquefoil		LF			LF
<i>Prunella vulgaris</i>	Selfheal		LA			LA
<i>Reseda lutea</i>	wild migionette		O		O	O
<i>Reseda luteola</i>	Weld		O		O	O
<i>Rumex sanguineus</i>	Wood dock	O				R
<i>Senecio jacobaea</i>	Common ragwort		LA	LF		LF-LA
<i>Tanacetum vulgare</i>	Tansy		O	O		O
<i>Taraxacum agg.</i>	Dandelion		LF			LF
<i>Teucrium scorodonia</i>	Wood sage		O	LF		O-LF
<i>Trifolium campestre</i>	Hop trefoil		O			O
<i>Trifolium dubium</i>	Lesser trefoil		F			LF
<i>Tripleurospermum inodorum</i>	Scentless mayweed		LA			LA
<i>Tussilago farfara</i>	Colt's-foot		LF	LA		LF-LA
<i>Urtica dioica</i>	Common nettle			LD		LD
<i>Veronica chamaedrys</i>	Germander speedwell		O			R
<i>Veronica montana</i>	Wood speedwell	O				R
Grasses, sedges, rushes, ferns, horsetails etc						
<i>Agrostis capillaris</i>	Common bent	LD	LA	F		F-LD
<i>Arrhenatherum elatius</i>	False oat-grass	O	LD	LD		O-LD
<i>Agrostis stolonifera</i>	Creeping bent		LA			LA
<i>Brachypodium sylvaticum</i>	False brome	O				O
<i>Dactylis glomerata</i>	Cock's-foot		LA	LD		LA-LD

<i>Festuca rubra</i>	Red fescue		LA	O		O-LA
<i>Holcus lanatus</i>	Yorkshire fog	O	LD	LA		O-LD
<i>Phragmites australis</i>	Common reed				LD	LD
<i>Carex hirta</i>	Hairy sedge		O			R
<i>Carex pendula</i>	Pendulous sedge	LF			O	O
<i>Carex spicata</i>	Spiked sedge		LF	O		O-LF
<i>Juncus effusus</i>	Soft-rush		O			O
<i>Juncus inflexus</i>	Hard rush		O			O
<i>Dryopteris filix-mas</i>	Male-fern	O				O
<i>Equisetum telmateia</i>	Great horsetail				LA	LA
<i>Phyllitis scolopendrium</i>	Hart's tongue	O				O
<i>Pteridium aquilinum</i>	Bracken		O	O		O
<i>Typha latifolia</i>	Greater bulrush	O				R
Bryophytes						
<i>Atrichum undulatum</i>		LA				LA
<i>Dicranum scoparium</i>	R	O				R
<i>Eurhynchium striatum</i>		O				R
<i>Fissidens sp.</i>		LF				LF
<i>Hypnum cupressiforme</i>	LA					LA
<i>Hypnum lacunosum</i>		LA				LA
<i>Kindbergia praelongum</i>		O				LF
<i>Polytrichum juniperinum</i>			LD			LD
<i>Polytrichum formosum</i>		O	R			O
<i>Pseudoscleropodium purum</i>		LA				LA
<i>Calliergonum cuspidatum</i>		F				

