



Land west of Anndel Road,
Angmering

Badger Survey Report and Mitigation Strategy (Confidential)

Prepared by
CSA Environmental

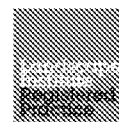
on behalf of
Gladman Developments

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CONFIDENTIAL

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1.0 INTRODUCTION

- 1.1 This report has been prepared by CSA Environmental on behalf of Gladman Developments. It sets out the findings of a Badger Survey of proposed development at Land west of Arundel Road, Angmering (hereafter 'the Site'). Residential/mixed development is proposed at the Site, for which outline planning permission will be sought, with all matters reserved apart from access.
- 1.2 The Site occupies an area of c. 9.1ha and is located around central grid reference TQ 065 053, to the north of Angmering. It consists of an arable field with an area of semi-improved grassland, bounded by mature hedgerows and woodland, and developed land to the east (both a residential plot and commercial units) (see Habitats Plan in Appendix A).
- 1.3 An initial desk study and extended Phase 1 Habitat survey were undertaken for the Site in September 2017. Suitable habitat was present, and field signs of badger were noted on site opportunistically during other survey visits. Subsequently, a badger survey was completed of the site and immediate surroundings in May 2018.

2.0 LEGISLATION, PLANNING POLICY & STANDING ADVICE

- 2.1 Badgers and their setts are protected under the Protection of Badgers Act 1992 therefore a Natural England licensing system exists to permit certain works that would otherwise be illegal. Works that require a license include direct impacts to badger holes and certain works within close proximity to a badger sett that may disturb badgers.

3.0 METHOD

3.1 A dedicated badger survey was conducted in April 2018 by Jessica Taft GradCIEEM, using standard survey methods, searching the Site and immediately adjacent areas for field signs of badger and mapping any present such as:

- Feeding signs such as snuffle holes made during foraging.
- Hairs caught on vegetation or fences.
- Latrines, usually positioned on territorial boundaries.
- Foraging tracks through vegetation or under fences.
- Badger setts.

3.2 When badger setts are found the number of holes are recorded as well as the level of usage. Recording this information gives an indication of the type of sett by categorising it according to the criteria listed in Table 1 below (Harris et al. 1989, Cresswell et al. 1990, Wilson et al. 1997).

Table 1. Criteria used to determine sett type.

Sett Type
Main Setts - These usually have a large number of holes with large spoil heaps, and the sett generally looks well used. There will be well-used paths to and from the sett and between sett entrances. Although normally the breeding sett is in continuous use, it is possible to find a main sett that has become disused due to excessive digging or some other reason; it should be recorded as a disused main sett. In the first survey, the average size of an active main sett was twelve holes (including all categories of use).
Annexe setts - They are often close to a main sett, usually less than 150 metres away, and are usually connected to the main sett by one or more obvious well-worn paths. They usually have several holes, but may not be in use all the time even if the main sett is very active. In the first survey the average size was five holes (including all categories of use).
Subsidiary setts - These often only have a few holes; four (including all categories of use) was the average number in the first survey. They are usually at least 50 metres from a main sett, and do not have an obvious path connecting with another sett. They are not continuously active.
Outlying setts - These usually have only one or two holes, often have little spoil outside the hole, have no obvious path connecting with another sett, and are only used sporadically. When not in use by badgers, they are often taken over by foxes or even rabbits. However, they can still be recognised as badger setts by the shape of the tunnel (not the actual entrance hole), which is usually at least 250mm in diameter, and is rounded or a flattened oval shape. Fox and rabbit tunnels are smaller and often taller than broad.
Hole Type
Well used holes - These are clear of any debris or vegetation, are obviously in regular use, and may or may not have been excavated recently.
Partially used holes - These are not in regular use and have debris such as leaves and twigs in the entrance, or have moss and / or other plants growing in or around the entrance. Partially used holes could be in regular use after a minimal amount of clearance.
Disused holes - These have not been in use for some time, are partially or completely blocked, and could not be used without a considerable amount of clearance. If the hole has been disused for some time, all that may be visible is a depression in the ground where the hole used to be, and the remains of the spoil heap, which may be covered in moss or plants.

4.0 RESULTS

- 4.1 Evidence of badger activity was recorded along the northern and western site boundaries. Two push-throughs were present along the northern boundary fence, leading into the woodland off-site. Badger guard hairs were found on the fence indicating use by badgers.
- 4.2 Thirteen tunnels were noted along the western site boundary which were of a shape and size characteristic of badger setts. Descriptions of the setts can be found in table 2 and locations on the badger survey plan (CSA/3467/121).

Table 2. Results of badger survey at land to the west of Arundel Road, Angmering in April 2018

Hole no.	Sett type	Description
1	Main sett	Partially used
2		Well used with spoil and bedding present
3		Well used with spoil and bedding present
4		Disused
5	Annex sett	Partially used
6		Well used with large spoil heap
7	Subsidiary sett	Partially used
8		Disused
9		Disused
10	Outlier sett	Disused
11		Partially used
12	Outlier sett	Well used with large spoil heap
13		Well used with large spoil heap

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5.0 POTENTIAL IMPACTS IN THE ABSENCE OF MITIGATION

Overview

- 5.1 The potential impacts of both the construction and operational phase have been assessed in detail within the Ecological Impact Assessment (CSA/3467/01). The proposed development is shown on the Development Framework Plan (CSA/3467/103). A summary of those potential impacts is provided below.

Construction Phase

Construction Phase Description

- 5.2 The Construction Phase will comprise the following:
- Cessation of arable cultivation
 - Demolition of existing buildings
 - Removal of hedgerows H1, H4, H7 and H9 for vehicular and pedestrian access and to facilitate construction
 - Clearance of semi-improved grassland, amenity grassland, scrub, tall ruderal/ colonising ground vegetation, and a pond
 - Construction of residential dwellings, associated gardens, parking, access infrastructure, and a play area
 - The establishment of formal and informal Public Open Space (POS) including new tree, thicket and meadow planting, as well as recreational routes
 - Construction of a Sustainable Urban Drainage System (SUDS) including a large attenuation basin set within the POS to the north-west of the developed area
 - Strengthening of boundary vegetation with new native species planting

Potential Impacts

- 5.3 In the absence of mitigation, the construction phase has the potential to result in the following impacts to badgers:
- Pollution through production of dust, run-off and artificial lighting, which could negatively impact upon retained habitats, the nearby Decoy Ponds (ponds P5 and P6) and Black Ditch stream within the woodland to the north of the Site, and other habitats downstream of the Site;
 - Loss of all arable habitat onsite, which may provide a foraging resource for a range of invertebrates, mammals and birds;
 - Loss of three species-rich hedgerows (H1, H4, H9), a species-poor hedgerow (H7), and a small number of trees;
 - Minor permanent loss of semi-improved grassland, tall ruderal and scrub habitat to construct new dwellings, which will lead to a temporary loss of habitat for foraging bats, badgers and nesting birds

until planting matures, and a minor net loss in terrestrial habitat for reptiles and amphibians;

- Risk of killing / injury of bats, dormice, badgers, other mammals, nesting birds, reptiles and amphibians, during Site clearance and construction.

Operational Phase

Operational Phase Description

5.4 The Operational Phase will comprise the following:

- Occupation of new residential dwellings
- Increase in human activity, including use of vehicles and presence of domestic pets
- Increased artificial lighting and anthropogenic noise
- Management of habitats within POS

Potential Impacts

5.5 In the absence of mitigation, the operational phase has the potential to result in the following Impacts to badgers:

- Increase in ambient lighting, and subsequently decrease in suitability of habitats for bats and other light-sensitive species;
- Increased risk to wildlife from killing / injury through traffic collisions, becoming trapped drains and predation from domestic cats;
- Increased disturbance through recreational use of onsite habitats, which may deter some species from breeding successfully onsite.

6.0 IMPACT AVOIDANCE AND MITIGATION MEASURES

- 6.1 A large badger sett occurs along the hedgerow (H6) on the western margin of the Site. This appears to comprise a main sett (tunnels 1-4 shown on the Badger Survey Plan CSA/3467/121), an annex (tunnels 5 and 6)), and a complex of subsidiary / outlier setts (tunnels 7 to 3). Several push-throughs were also present along the northern boundary fence into the woodland, with badger guard hairs found on the fence.
- 6.2 The habitat on site used by badgers is to be retained and buffered by new planting as part of the proposed development, therefore impacts upon badgers are not currently anticipated. However, badgers are highly mobile and new setts could be created onsite at any time. As a precaution, a pre-construction check will be completed to confirm the absence of setts prior to the start of site clearance and construction works. Should any active setts be identified which would be impacted by the construction phase, appropriate mitigation (i.e. sett closure) would need to be undertaken under licence from Natural England before works could commence.
- 6.3 Precautionary measures to be implemented during the construction phase, to prevent any harm / injury to badgers which may cross the site, shall comprise the following and will be detailed within the CEMP:
- Where any pits/trenches are left open overnight, planks should be placed within these at an angle of no more than 45 degrees in order to provide a means of escape for any badgers.
 - In the event that badgers are found to be trapped or injured within the site no attempt should be made to approach the badger and the RSPCA should be contacted immediately.
 - Due to the inquisitive nature of badgers any litter, tools and machinery that could potentially cause harm should be kept away from badgers by appropriate overnight storage.
 - Avoid presenting new digging opportunities for badgers, e.g. by leaving stockpiled soil on the edge of the development for prolonged periods.

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Appendix A

Badger Survey Results Plan (CSA/3467/121)

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Mammal path



Badger tunnel and reference number

For habitats symbol key please refer to the Habitats Plan [CSA/3467/102]



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Project Land West of Arundel Road, Angmering

Drawing Title Badger Survey Plan

Client Gladman Developments Ltd.

Date: June 2018

Drawing No. CSA/3467/121

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