Allocated Housing Site Off Lime Road

Little Dene, Yarnell's Hill
Oxford

Site location plan

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P04
Little Dene, Yarnell's Hill, Botley, Oxford, Oxfordshire

Badger Survey Report & Mitigation Strategy

Revised
November 2014
1 Introduction

1.1 Site Description

Little Dene is a detached dwelling located to the south side of Yarnell's Hill to the southern edge of Botley in Oxfordshire (see Appendix 2 for location plans). The approximate Ordnance Survey grid reference for the property is SP 488 050.

The property is built on a slope and has a retaining wall along its eastern side which supports a raised patio and the dwelling itself. The retaining wall is located approximately 1-1.5m from the eastern boundary of the property, where there is a loose hedgerow marking the boundary with the neighbouring garden (the garden of Wycliffe Lodge). A paved path runs along the base of the retaining wall, allowing pedestrian access along the eastern boundary. There are sloping gardens to the north and south sides of the dwelling.

A badger sett is known to be present within the neighbouring property (Wycliffe Lodge) to the eastern side of Little Dene, within the garden to the south side of the neighbouring dwelling. The sett is long-established and it is considered to be a main sett. There are several active sett entrances located just outside the eastern boundary of Little Dene, close to the retaining wall of the property.

1.2 Aims of Study

The aims of the study are to survey Little Dene and the gardens of the neighbouring property to the east (Wycliffe Lodge) for badger setts and evidence of badger activity. The study aims to map current patterns of badger activity, particularly the presence of active sett entrances, and to determine where badgers might be tunnelling underground. The results of the survey are used to inform a strategy to undertake repairs to Little Dene under the legal protection afforded to badgers under the Protection of Badgers Act 1992.

1.3 Badger Ecology

Badgers live in family or social groups of related mature and young adults and cubs, often referred known as ‘clans’. Badgers live in an underground home called a sett which comprises a network of subterranean tunnels and chambers. Their home ranges consist of feeding grounds and one or more setts. Setts are usually situated within undisturbed areas where there is good vegetation cover, such as small woodlands, areas of dense scrub or copses.

A simple sett is made up of a single tunnel with a sleeping chamber at the end. However, most setts have several entrance holes with a series of tunnels which link up with each other underground. Well-established main setts can have many entrances, some in use and some disused, with large and substantial spoil heaps outside the entrances from years of digging and removal of soil. Badgers tend to create setts in soils which are friable and easy to excavate. Sandy soils tend to be favoured as they are easy to dig, and stay relatively dry. Slopes and banks are also favourite burrowing sites. Badger setts have been categorised into four broad types, depending on their size and use:

- Main setts
- Annex setts
- Subsidiary setts
- Outlier setts

Main Setts

Main setts tend to be where the badger clan breeds and they can be made up of a large number of entrances with significant spoil heaps. Bedding (vegetation, straw, hay etc.) is often present outside the sett entrances, indicating the presence of breeding chambers underground. The entrances are usually linked by well-used paths which lead to and from the sett and between sett
entrances. Main setts can be used for many years and are often made up of a number of active and inactive entrances.

**Annex Setts**
Annex setts tend to be close to the main sett (usually less than 100m away), and are often strongly connected to the main sett by one or more obvious, well-worn paths. The sett can be linked by paths overground, as well as tunnels underground. They tend to consist of a small number of entrances (less than the main sett) and are not necessarily in use all the time, even if the main sett is very active.

**Subsidiary Setts**
Subsidiary setts can often be made up of a single hole, or a very small number of entrances. They tend to be further away from the main sett (>50-100m), although are often linked to the main sett (and other subsidiary setts) by obvious trackways. Subsidiary setts can be used infrequently, becoming active according to the season or according to the availability of a local food resource.

**Outlier Setts**
Outlier setts usually comprise only one or two entrances and have little spoil or other signs of activity. They tend to be used sporadically and often have no pathways or tracks leading to the entrances or linking them with other setts.

It should be noted that these categories are based on a very generalised model of badger activity and do not always reflect the nature of setts in the wild. In areas of low badger density, main setts may be relatively small, with only a few holes. Main setts do not always have annexes and in areas of poor badger habitat, a clan may have a very large home range with a single associated main sett. These factors must be taken into account when classifying a sett, and it is important to have an overall view of all the setts in an area before making a decision on the status of each sett.

Badger family groups usually remain loyal to their main setts unless they are frequently disturbed. Opening up new setts and maintaining and extending old setts is a constant occupation, with bursts of digging activity at certain times of the year. Activity and use of setts can change steadily over the years, or very quickly in response to short-term changes such as flooding or a food crop ripening nearby. In general, badgers are creatures of habit. They tend to use the same pathways to foraging areas and will continue to try to do so despite any obstacles that are placed in their way. New fences may be broken down and new roads crossed despite any difficulty or danger presented.

Badgers mate throughout the year but pregnancy starts around the end of November, or early December, when the previously fertilised embryos implant within the sow’s uterus. Often only the most dominant sow in a family group will produce cubs, usually two or three per litter. These are born underground, usually towards the end of January or beginning of February, emerging for the first time after about 8 weeks. The cubs remain dependent upon the sow for a further few weeks while they are weaned and learn how to fend for themselves.

2 **Survey Methodology**
A badger survey was undertaken on 21st March & 9th April 2014 by Dr Edward Bodsworth, MSc. The study site was surveyed for evidence of badger activity in accordance with standard methodology (Harris, Creswell & Jeffries, 1989). The survey involved a walkover of Little Dene and the neighbouring property (Wycliffe Lodge) to look for active and inactive badger sett entrances and evidence of badger activity including trackways, footprints, latrines/dung pits, badger hairs and foraging scrapes.
3 Results & Discussion

No badger sett entrances were found within the property of Little Dene, although sett entrances are present along the eastern boundary of the garden within the neighbouring property (please refer to Appendix 3 for a plan of badger activity). Evidence of badgers within the property of Little Dene includes foraging scrapes within the lawns to the south and north-eastern side of the dwelling and some digging along the western boundary of the garden. A badger trackway runs from the eastern boundary of the garden, around the south-eastern corner of the raised patio of Little Dene and into the gardens of the property. It should be noted that no active or inactive sett entrances were found within the boundary of Little Dene.

The badger sett to the eastern side of the boundary, within the neighbouring garden, numbered approximately 9 active entrances and 7 inactive entrances at the time of the surveys in spring 2014 (see Appendix 3 for a plan of badger activity and sett entrances). Three active entrances are present along the boundary with Little Dene, where there is a hedgerow marking the eastern side of the property. All three of these sett entrances have tunnels that appear to progress to the west, under the boundary with Little Dene. The nearest of these entrances is located approximately 2m from the retaining wall of Little Dene. A further three active entrances are located within 5m of the boundary, with the remaining active entrances (three entrances) all being located within approximately 15m of the boundary.

All of the 9 active entrances showed signs of recent digging and excavation and the sett is known to be well-established (local residents report having known about the sett for decades). Well-used trackways link the sett entrances above-ground, and the sett is considered to be a main sett. An outlier sett (of two entrances) is located approximately 60m to the south of the main sett, within the property to the east of Little Dene.

Given the proximity of the sett to the boundary of Little Dene, and the fact that some of the entrance tunnels appear to progress to the west, it seems likely that badger tunnels are present along the boundary of Little Dene and that these tunnels progress under the retaining wall of the property itself. A large crack in the eastern retaining wall of Little Dene indicates that there has been ground movement in this area and this may have been caused by the digging and tunnelling of badgers.

It is important to note that all of the inactive entrances are located to the eastern side of the active badger sett and that no active or inactive entrances are located within the property of Little Dene (with the exception of three active entrances along the eastern boundary). The disturbed nature of the ground to the east of the active sett entrances indicates that the sett may have spread several metres to the east in the past and that several active entrances were present to the east of the existing core area of activity (which tends to be very much along the boundary).

Suitable foraging habitats for badgers include the gardens of Little Dene and Wycliffe Lodge, as well as other gardens to the east. Also to the east is an area of woodland, with further woodland and parkland to the north-east within Raleigh Park (see Appendix 2 for an aerial photograph of the immediate surrounding area). The majority of the well-worn badger paths progress to the south and east sides of the garden of Wycliffe Lodge and badgers appear to move to the south and east when foraging. There is some evidence of foraging within the garden of Little Dene, but little evidence to suggest that badgers regularly disperse to the west, beyond Little Dene, in search of food.
4 Legislation

Badgers and their setts are protected under the Protection of Badgers Act 1992, which makes it illegal to kill, injure or take badgers or to interfere with a badger sett. The term ‘badger sett’ is normally understood to mean the system of tunnels and chambers, in which badgers live, and their entrances and immediate surrounds. Under the Act it is an offence to:

- wilfully kill, injure, take or attempt to kill, injure or take a badger
- cruelly ill-treat a badger
- interfere with a badger sett by:
  - damaging a sett or any part thereof;
  - destroying a sett;
  - obstructing access to a sett;
  - causing a dog to enter a sett; and
  - disturbing a badger while occupying a sett.

The Act specifically defines a sett as “any structure or place which displays signs indicating current use by a badger”. Interference with a sett includes blocking tunnels, infilling of the sett and/or damaging the sett in any way.

There is, however, provision within the legislation to permit activities affecting badgers or their setts where there is suitable justification and a problem cannot be resolved by alternative means. Such activities are authorised under licences issued by Natural England. Licences can be issued with regard to development as well as damage to property.

5 Mitigation Strategy

On 19th June 2014, a badger licence was issued by Natural England (licence reference no. 2014-745-SPM-WLM) to undertake works to prevent badgers from causing damage to the property of Little Dene. The licence allowed for the exclusion of badgers from tunnels/chambers under Little Dene and for the closure of three sett entrances that appear to lead under the property. Works to implement this licence would be undertaken wholly within the landholding of Little Dene, with no need to access neighbouring land. The licence covered the period 1st July to 30th November 2014.

The Badger Mitigation Strategy includes the following measures to avoid and minimise potential impacts on badgers and the sett:

- Hand digging will be undertaken inside the boundary of Little Dene to expose badger sett entrances that lead under the foundations of the building. Digging will be undertaken in the presence of an ecologist.
- Once the sett entrances have been exposed, one-way badger gates will be installed (opening outwards) over the three sett entrances; these will allow badgers to exit but not re-enter these set entrances.
- If necessary, heavy gauge chain-link netting or similar material will be pegged down over the surface of the ground surrounding the gated entrances to prevent the re-entry of badgers. Chain-link netting will be galvanised wire of 2.5mm gauge.
- Ramps for badgers to move out of the excavated area will be provided.
- The sett will be visited for a period of at least 21 days to check that badgers have exited and not re-entered. The sett will be visited at intervals of no more than three days to inspect the gates and to ensure that they open and close freely, and to check for signs of badgers having regained access.
- Badger activity at the one-way badger gates will be monitored, for example, by placing small sticks in front of and/or behind the gate, tying a fine thread across the front of the gate, or smoothing the soil or sand in front of the gate in order to detect badger footprints. If sticks are used, care will be taken that they do not obstruct access or prevent closure of the gate if disturbed.
• Measures to exclude badgers will remain in place until immediately before sett destruction or proofing is carried out.
• Once there is confidence that badgers are no longer present within those parts of the sett that occur under Little Dene, the tunnels and sett entrances will be permanently closed.
• The sett entrances/tunnels will be closed by digging back all tunnels as far as possible and backfilling with appropriate inert materials, e.g. soil, concrete/rubble.
• After the sett tunnels have been in-filled, the area will be proofed against re-entry by badgers by erecting suitable fencing. Badger-proof fencing will be more effective if partly buried (to a depth of 1.5 metres) and constructed of chain link netting (galvanised wire of 2.5mm gauge) or weldmesh material.
• The above works will only be undertaken between the period 1st July and 30th November in any given year.
• It should be noted that all works carried out under this strategy would be undertaken wholly within the landholding of Little Dene.

The creation of an artificial sett is not proposed and it is hoped that the excluded badgers will move to other parts of the sett that will remain in situ on adjacent land. The remainder of the badger sett will not be directly affected by the works described above and will remain in its current state and location.

The above method is that which was approved by Natural England through the issuing of badger licence number 2014-745-SPM-WLM in June 2014. To date, the badger licence has not been implemented.

The above method covers the exclusion of badgers from sett entrances and tunnels that appear to progress under Little Dene. The strategy will be put in place to prevent the collapse of tunnels whilst badgers are in occupancy and thus prevent injury or killing of badgers. A badger licence will be necessary to derogate from the legal protection afforded to badgers with regard to sett interference and sett damage and destruction. Such a licence could be issued for the prevention of damage to property (as is the case with the current licence) or to allow for development of the site. If a ‘development’ licence is to be issued, Natural England will require that planning consent for the development has been granted by the Local Planning Authority.

A badger licence will also be required for any works to remove the existing foundations of Little Dene and to create new foundations, particularly where excavation and digging is required. Such a licence would have to be issued for the reasons of development (a ‘development’ licence) as opposed to preventing damage and would have to be supported by full planning consent. The badger licence would provide derogation from the legal protection to badgers which protects from ‘interference’ of the badger sett through disturbing a badger when it is occupying a sett.

It is considered likely that disturbance to the remaining sett will occur during such works since all of the remaining sett is located within 15m of the boundary with the property of Little Dene, and thus within approximately 15m of any works to remove existing foundations or to dig new ones. Indirect impacts of disturbance may occur through increased noise and vibration to the ground. Direct impacts such as tunnel destruction are not predicted, given that badgers will have already been excluded from those tunnels that progress under or near the foundations of Little Dene.

Therefore, the badger licence that will cover the development of Little Dene will include the following elements:

• Works to remove existing foundations and to dig new foundations will only be undertaken between the period 1st July and 30th November in any given year.
• Works to remove existing foundations and create new foundations will be supervised by an ecologist.
• Deep excavations which could pose a pit-fall hazard to badgers will be covered at night and shallow excavations will be provisioned with ramps to allow badgers to escape if necessary.
• Fires and chemicals will not be used within 20 metres of the sett (i.e. the eastern site boundary).
• Trees will be felled so that they fall away from active setts.
• Disturbances, such as loud noise or vibrations, that might agitate badgers occupying a sett will be avoided or limited to areas well away from the sett (beyond 20m).
• No further sett exclusion/closure is proposed.
• No measures that will affect neighbouring areas of land beyond the site boundary will be undertaken.

It should be noted that ‘above-ground’ works such as the removal of the existing dwelling (not including foundations) and the creation of new buildings are unlikely to cause disturbance to badgers and thus, would not need to be covered by a badger licence.

6 Conclusion

In conclusion, the Badger Mitigation Strategy can be roughly separated into two parts: measures to avoid killing/injury to badgers whilst occupying tunnels under the property of Little Dene and measures to exclude badgers and close sett entrances that may be directly affected by the works. As discussed, this element of the strategy may be undertaken under a ‘damage’ licence or a ‘development’ licence, and Natural England has already issued a ‘damage’ licence in accordance with the above strategy. The second part would be to undertake any development works under a ‘development’ licence to derogate from the legal protection afforded to badgers that prevents sett ‘interference’; in this case through disturbance to badgers whilst they are in occupancy of the sett. The main mitigation measure covered by such a licence would be timing of excavation and digging works.

7 References


Appendix 1. Photographs

Photograph 1. An active sett entrance along the eastern boundary of Little Dene. The spoil in the foreground is within the garden of Wycliffe Lodge. The arrow indicates the wire fence marking the boundary between the two properties.

Photograph 2. A general view of the main sett within the garden of Wycliffe Lodge.

Photograph 3. Former badger earth workings to the central and eastern side of the garden of Wycliffe Lodge.

Photograph 4. Crack within the retaining wall of Little Dene (indicated by arrow), viewed from the garden of Wycliffe Lodge.

Photograph 5. The paved path at the foot of the retaining wall of Little Dene.

Photograph 6. A general view of the badger sett, looking east from Little Dene.
9 Appendix 2. Site Location Plans

Aerial plan showing the approximate boundary of Little Dene (red line) and the location/extent of the badger sett on the adjacent land (sett indicated by blue shading with white outline).

Ordnance Survey map showing approximate location of Little Dene to the southern side of Botley.
10 Appendix 3. Plan of Badger Activity
Planning
HEAD OF SERVICE: Adrian Duffield

EXTENSION GRANTED

CONSULTATION WITH
NORTH HINKSEY PARISH COUNCIL

PLEASE RETURN TO VOWH NOT LATER THAN 12 NOON ON 5 APRIL 2014

Application Reference: P14/V0428/FUL (Full Application)
Application Type (see definition over): Minor
Proposal: Demolition of existing dwelling. Erection of four-storey building containing 8 x 2 bed flats. Improved access from Yarnell's Hill including a turning area for service vehicles, parking for 12 cars, covered cycle storage and enclosed bin store.
Address: Little Dene Yarnells Hill Oxford OX2 9BG

NORTH HINKSEY PARISH COUNCIL:

FULLY SUPPORTS this application for the following reasons

has NO OBJECTIONS to this application

has NO OBJECTIONS to this application but wish the following comments to be taken into account:

OBJECTS to this application for the following reasons:

PLEASE SEE ABOVE

If you have a current Parish Plan does it support your view on this application?
If so, please give details of the relevant section below:


Signed on behalf of North Hinksey Parish Council

Date

PLEASE NOTE: We will display your comments on our website under 'consultations' in the specific application. If you have strong views on the application we encourage you to contact your local Ward

www.whitehorsedc.gov.uk
Demolition of existing dwelling. Erection of four-storey building containing 8 x 2 bed flats. Improved access from Yarnells Hill including a turning area for service vehicles, parking for 12 cars, covered cycle storage and enclosed bin store: Little Dene, Yarnells Hill, North Hinksey.

Councillors were concerned by the lack of reports in relation to the disposal of foul sewerage from the development. It is understood that the main sewer adopted by Thames Water has a maximum capacity for 10 properties and currently there are 9 properties connected to that sewer. There is therefore no spare capacity to accommodate the additional flats. The other properties on the gated community have their own septic tanks. Councillors also understood that Thames Water have issued a ‘Grampian Style’ condition in relation to the proposed development, whereby the developer has to come up with a solution to the sewerage problems. Councillors also believed that as a result of the recognised underground water issues the VWHDC should be seeking a SUDS report.

It is further understood that the Vale is currently investigating an established badger sett on the land of the adjacent property and running under the proposed site, which being on a steep hill and the need for heavy pile driving/ flattening of ground etc at the front of the garden for car parking, could lead to collapse of badger sett. Councillors noted the developer had filled in the planning application stating there were ‘No’ species in proximity to the site. The gated community is serviced by a small private road, which has no obvious turning points for any lorries delivering to the proposed development, other than by turning on residents privately own land.

Councillors are sceptical of the quoted increase in traffic movements of 2.5 times as they believe that the traffic generated by the 8 flats (and 4 allocated visitor spaces) will generate a greater volume of traffic on what is a narrow road. The plans presented are not accurate as there is a piece of land between Little Dene and the neighbour, shown as owned by Little Dene, but it is understood that this land is currently the subject of a land ownership dispute.

Councillors were also concerned that the proposed development will be approximately 3.5 times the size of other buildings and the window/balconies will directly overlook properties on both sides and because the garden land slopes away it will further increase the problems of overlooking. The building height and design will be visually out of character with local properties as there are no other flats in a road of large houses and gardens and it size will result in the overdevelopment of the site.

Due to the large number of issues on this application, councillors UNANIMOUSLY AGREED to OBJECT to the application.
Martin,

I have now looked through the Badger Survey Report and Mitigation Strategy (attached), I have also received a copy of a Badger Licence issued by Natural England in June 2014 and correspondence with the owner of Little Dene regarding badgers (also attached).

There are a number of issues involved:

1) The existing long established badger set is a main set with at least 3 tunnels (possibly more) which extend under the boundary with Little Dene. The proposals would damage the badger set and would be illegal without a mitigation licence from Natural England.

2) The proposed works have the potential to cause disturbance to badgers within the main set, the majority of which is situated under Wycliffe Lodge. Disturbance of a badger set is also illegal without mitigation and the prior grant of a licence from Natural England.

The applicant commissioned a badger survey and a Badger Survey Report and Mitigation Strategy has been produced which sets out the results of the survey and a proposed mitigation strategy. The mitigation strategy is in two parts which address the two issues I have highlighted above:

1) The owner of Little Dene has applied for and been granted a licence to close the parts of the badger set which lead under his property on the basis that the tunnels are causing damage. As the owner of Wycliffe Lodge is unwilling to allow works to be undertaken from their property the works to close the tunnels within Little Dene are to be completed within Little Dene only. The result of this is that a trench will have to be dug out alongside Little Dene along the boundary with Wycliffe Lodge. The trench will have to be up to 1.5 metres deep to ensure that all of the tunnels have been exposed and a permanent barrier installed between the two properties below ground to prevent badgers re-excavating once they have been excluded.

There are two issues with this which are relevant to consider;

a)  The licence is valid between 1 July and 30th November 2014 but as the licensed works have not been implemented this licence is effectively no longer valid however, on the basis that a licence has been granted it is likely that a licence would be granted again next year.

b) Digging a trench alongside the boundary with Wycliffe Lodge will effectively sever all of the roots of the existing hedgerow and any trees along the boundary. To avoid destabilising and eventually killing these plants it is likely that remedial works would have to be conducted to coppice the hedgerow. I do not know who the hedgerow belongs to but it will have implications for the proposed screening of the development from Wycliffe Lodge.

2) Once the tunnels leading under Little Dene have been closed and badgers excluded there will be no direct impact on the set however, the operations associated with the redevelopment of Little Dene, particularly excavations and demolition and removal of the foundations have the potential to cause disturbance to the main part of the set in Wycliffe Lodge. As a result it is likely that these operations will require a licence from Natural England. The Badger Survey Report and Mitigation Strategy contains proposals for mitigation measures designed to reduce the level of disturbance to badgers. The proposed mitigation relies mainly on avoiding conducting works during the breeding season (the most vulnerable time) between December and the end of June.

There is relatively little guidance available on what constitutes disturbance but it is known that badgers can tolerate a considerable amount of ‘disturbance’ whilst remaining faithful to their sets. The proposed mitigation does conform to the available guidance, particularly the Natural England Interim Guidance Document Badgers and Development (revised 12/11).
I do not believe that the long term viability of the set or the local badger population is at risk as a result of this proposal for the following reasons:

- The main foraging areas for the badger set will be maintained.
- The proposals will not disrupt the badger’s access to other sets in their territory or to their main foraging / watering areas.
- The development will not isolate the set from the surrounding territory.

Provided the applicant can obtain a development licence from Natural England which allows for the operations required to construct the new development then there is no reason why this development could not go ahead. The proposed mitigation complies with the available guidance referenced above and as a result it would appear that a licence would be granted for the disturbance to the set.

If permission is to be granted then the following Conditions should be used:

**Condition:**

The development hereby permitted shall be implemented in accordance with the Badger Survey Report & Mitigation Strategy Windrush Ecology, November 2014) submitted with the application in all respects. Any variation shall be agreed in writing by the Local Planning Authority before such change is made.

**REASON:** To protect the important species on the site, in accordance with the requirements of the NPPF.

In addition, as the implementation of this planning permission will be dependent on the applicant first obtaining a badger licence the following condition should be used:

**Condition:**

The following works including demolition, removal of foundations, excavation and piling shall not in any circumstances commence unless the Local Planning Authority has been provided with either:

a) a licence issued by Natural England pursuant to the Protection of Badgers Act 1992 authorising the specified activity to go ahead; or

b) a statement in writing from Natural England to the effect that it does not consider that the specified activity will require a licence.

**REASON:** To protect the important species on the site, in accordance with the requirements of the NPPF.

Dominic