



Reptile Mitigation Strategy
For
The Gables, Kelvedon Road,
Tiptree, Colchester,
Essex

on behalf of
Marden Homes

February 2022

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Disclaimer

James Blake Associates Ltd. have made every effort to meet the client’s brief. However, no survey ensures complete and absolute assessment of the changeable natural environment. The findings in this report were based on evidence from thorough survey: It is important to remember that evidence can be limited, hard to detect or concealed by site use and disturbance. When it is stated that no evidence was found or was evident at that point in time, it does not mean that species are not present or could not be present at a later date: The survey was required because habitats are suitable for a given protected species, and such species could colonise areas following completion of the survey.

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0 Executive Summary

- 0.1 A Reptile Survey of land off Kelvedon Road, Tiptree, was carried out between the months of May and June, 2019.
- 0.2 The majority of the site is horse grazed paddocks and considered to be largely unsuitable for reptiles. However, it was determined that a 'low' population of common lizards (*Zootoca vivipara*) were using the central hedgerow and treeline within the site boundary.
- 0.3 Due to the retention of this central hedgerow and treeline, and adjacent proposed open space post development, it is recommended that a translocation effort is undertaken and all individuals transferred this central retained habitat as a receptor area during construction. A temporary reptile exclusion fence will ensure that reptiles do not re-colonize the site from surrounding habitat during the construction phase.
- 0.4 It was considered that by following this mitigation strategy, the development could proceed with minimal risk of harm to the populations of common lizards using parts of the site.
- 0.5 It is suggested that hibernacula be created along the southern boundary of the development site and within the central hedgerow and treeline. Areas of wildflower and tussocky grassland within the soft landscape plans will enhance the site for reptiles, enabling the site to be re-colonized, post-development.

1 Introduction

Background

- 1.1 James Blake Associates Ltd. (JBA) were commissioned by Marden Homes to design a Reptile Mitigation Strategy for land at The Gables, Kelvedon Road, Tiptree, Colchester, Essex. Ordnance Survey National Grid Reference; TL 88697 17014, taken from the centre of site.
- 1.2 The Ecological Assessment (including reptile survey data) produced by Eco Planning UK (2019) recommended that '*suitable mitigation for a successful retention on site – with the protection, enhancement and expansion of existing reptile suitable habitats.*' This will include a mitigation strategy to avoid harm to the populations of common lizards (*Zootoca vivipara*) which have been recorded on the site.
- 1.3 The proposed development will be providing a mixture of residential units, with areas of public open space and associated infrastructure.
- 1.4 Common lizards are protected from harm under Schedule 5 of the Wildlife and Countryside Act (WCA) 1981, as amended, under part of Section 9(1) and all of Sections 9(5). As such it is an offence to;
 - intentionally kill or injure an individual of these species; and
 - transport for sale or exchange or offer for sale or exchange a live or dead an individual or any part of an individual of these species.
- 1.5 They are a UK Biodiversity Action Plan Species, and as such, are a consideration under the National Planning Policy Framework (NPPF), 2021.

Site Description

- 1.6 The site itself consists of buildings, hardstanding and horse-grazed pasture, located south of Kelvedon Road (B1023) on the outskirts of the town of Tiptree, Essex. Adjacent habitats were similar, with commercial buildings further to the east and west. The wider landscape includes arable land, pockets of woodland, as well residential and commercial buildings of Tiptree to the southeast (see Figure 1).

Figure 1: Site location



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Previous Surveys

- 1.7 A reptile survey was carried out by Eco Planning UK between May and June 2019 (Ecological Assessment).
- 1.8 A 'low' population of common lizards were recorded during the survey (see Figure 2). All observations were made along the central hedgerow and tree line, which runs from the centre of site and joins the southern boundary and adjacent vegetation.

Figure 2: Lizard observations (red line)



Aims and objectives

- 1.9 The aim of the mitigation strategy is to:
- Ensure that no individual reptiles are harmed during construction works;
 - provide recommendations to enhance the site for reptiles post development, so that the local conservation status of reptiles is maintained.

2 Reptile ecology

- 2.1 Common lizards are a species of reptile native to the UK. Unlike birds and mammals, reptiles are unable to internally generate heat and regulate their body temperature. Instead, ambient temperature and the absorption of heat energy from the environment influence body temperature. Activity is not possible for reptiles until a critical minimum threshold temperature has been achieved, therefore reptiles are inactive when they are too cold and become dormant during the winter months ('hibernation'). Conversely, reptiles can become too hot and reach a critical maximum temperature threshold. During spells of very hot weather these reptiles seek shelter and become inactive, a state known as aestivation.
- 2.2 For reptiles to reach a critical minimum temperature, they will often seek out basking spots or refuges. Basking spots allow reptiles to receive the maximum heat from the sun's rays to warm up their internal body temperature and therefore allow them to forage. Basking in the open however increases the risk of predation. Basking behaviour is often adopted by common lizards. On breezy days, the wind chill can reduce the effectiveness of basking and on these days reptile species will often use refuges to warm their body temperatures instead.
- 2.3 Reptiles require habitats with suitable basking spots, a good food supply and places to shelter. Typically, suitable habitats are often south facing inclines with rough grassland, heaths and woodland edges. Man-made habitats such as railway cuttings and embankments, road verges, old industrial sites, overgrown gardens are also suitable. Sheltered sites are needed for night time refuge (when animals are inactive) and during the winter when animals hibernate. Dense vegetation, ground crevices and piles of vegetation, logs and rubble are used for shelter.
- 2.4 Reptiles are protected from intentional killing and injury by The Wildlife and Countryside Act 1981 (as amended). A licence from Natural England is not required

for mitigation work but best practice and lawful standards should be followed. Methods follow standards set out by the Herpetofauna Groups of Britain and Ireland (HGBI, 1998).

3 Rational for mitigation

3.1 Both the Wildlife and Countryside Act 1981 and the Conservation of Habitats and Species Regulations 2017 provide mechanisms to protect species, their habitats and sites occupied by the species. As a UK Species of Principle Importance (SPI), common lizards need to be considered at an early stage of the development to ensure the integrity of their population is maintained. There are several options;

- Maintain the common lizards population in place within the development by using avoidance measures. Avoidance measures can include changing the layout of the development site.
- Re-locate the common lizards population to a suitable area within the development site boundary.
- Translocate all common lizards off-site to a suitable receptor within 1km of the proposed development site. Reptiles should not be moved further than 1km from the proposed development site.

3.2 Reptile specific survey identified common lizards as present on the site, hence the need for a mitigation strategy.

3.3 All mitigation methods are based on the population size of common lizards being present when mitigation works are undertaken. The most recent surveys, undertaken in 2010, identified the population as being 'low' under Froglife guidelines (1999).

3.4 As an area on site is to be retained, the most appropriate form of mitigation is to allocate this as a safe receptor area and to relocate (also known as 'translocate') any common lizards found in the construction zone to the receptor area.

4 Mitigation Methods

4.1 On approval of the mitigation strategy by the Local Planning Authority (LPA) and/or local Wildlife Trust (in this case, Essex Wildlife Trust (EWT)), temporary reptile exclusion fencing will be erected along majority of the site boundaries (with the

exception of the northern boundar) and excluding the retained central hedgerow and tree line from the construction zone. Adjacent to the northern boundary is Kelvedon Road and residential properties; it is considered unlikely that reptiles would re-colonise from this direction so this boundary will not require fencing.

- 4.2 Temporary reptile exclusion fencing location is presented in Appendix A, with the fence specification shown in Appendix B. The fence will be at least 0.80m high with 0.20m buried below ground and will be constructed from tough polythene sheet held in place with wooden stakes. The fence construction will be carried out, or supervised, by a suitably qualified ecologist, and inspected for integrity prior to the reptile translocation commencing on site, and periodically during construction works.

Translocation process

- 4.3 Artificial refuges will be positioned across the development site as recommended in Froglife (1999) and HGBI (1998) guidance. The refuges will comprise 0.4mm corrugated iron, carpet and sheets of high-grade roofing felt, all measuring approximately 0.5m². The refuges will be spread across the translocation (i.e. development) site with increased density in areas with optimal habitat for common lizards.
- 4.4 The refuges will be left for at least 7 days prior to the commencement of the translocation to allow them to 'settle in' and for the reptiles to locate them. Capture and translocation of reptiles will only commence when reptiles are active (March/April to October) during suitable weather conditions.
- 4.5 Plastic containers will be used to transport reptiles between the proposed construction zone and receptor areas. The containers will have air vents and will be lined with leaf litter and grass to reduce the stress placed upon reptiles during the translocation.
- 4.6 The translocation of the reptile population will be undertaken over a period of at least 30 days and will continue until five 'clear' capture days (of optimal weather conditions) are recorded when no reptiles are captured or observed.
- 4.7 For each visit, the refuges will be approached quietly and any lizards basking on the top of the refuge will be carefully captured and placed in a container. The refuge will then be gently turned over and any reptiles found underneath will be carefully collected and placed in a container.

- 4.8 For each reptile translocated, the age, sex and position of capture will be recorded.
- 4.9 All field workers undertaking the translocation will be suitably qualified ecologists with a sound knowledge of reptile ecology and experience in handling reptiles.

Destructive search

- 4.10 On completion of the translocation, any brash, rubble or log piles within the development site will be hand searched and removed by a suitably qualified ecologist.
- 4.11 Although no reptiles were found within the north-eastern field of ruderal vegetation, this field, and any other areas of tall vegetation within the construction work zone, should be cut to 20cm and a further cut should be undertaken two days later to ground level. The vegetation should be cut under the supervision of a suitably qualified ecologist.
- 4.12 A thorough destructive search should then be undertaken to ensure that any remaining reptiles are removed from the development area and moved to the receptor area. The destructive search will include the following steps:
- 1) Initially trim the vegetation to 20cm tall.
 - 2) Two days later, the vegetation will be trimmed to ground level.
 - 3) Any reptiles captured during the destructive search will be placed in plastic containers (with air holes and vegetation within to reduce stress to the animals) and released in the receptor site.
- 4.13 The destructive search should be undertaken between March and October, and during suitable weather conditions for common lizards to be active (between 10 and 20 °C).

Exclusion fence checks

- 4.14 The exclusion fences will be left in place until the development has been completed and will be checked on a monthly basis by an experienced ecologist and weekly by the construction site manager. A log of checks will also be kept by the site manager.
- 4.15 Any damages to the fence will be reported and will be fixed immediately to avoid any offsite reptiles getting onto site.
- 4.16 If the vegetation surrounding the fence grows too tall, reptiles could climb over the fence into the construction zone, therefore vegetation growth also needs to be monitored. If the vegetation is reported to have grown too tall it must be trimmed

within three days of being recorded.

Receptor Site Enhancement and Monitoring

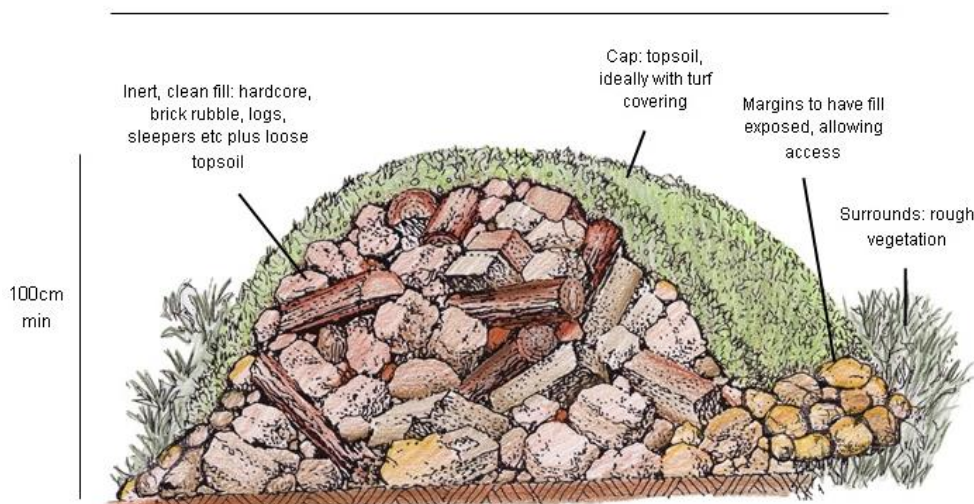
4.17 The receptor site will undergo enhancement works to improve the habitat for common lizards. This will involve:

1) Scrub-clearance: any encroaching scrub and ruderal vegetation within the area will be cleared to enable the grassland to develop naturally. Open areas of grassland should be networked to allow reptile species to disperse within the site and surrounding area.

2) Hibernacula: Reptiles hibernate during winter months. To do so safely, reptiles require suitable hibernating habitat that gives them protection from severe frosts. A man-made hibernaculum will be incorporated within the receptor site area. This can be created simply and cheaply, with no maintenance requirements. The hibernaculum will be constructed as follows: a hole will be dug by hand in suitable areas of the receptor area as determined by an ecologist. These will be filled with logs, bricks and stones. Cut vegetation will be placed on top, followed by a layer of soil or upturned turves. Figure 3 below shows an example of hibernaculum design and specification.

Construction of the hibernaculum will involve the excavation of a linear trench to a depth of 30cm that is then filled with inert demolition rubble and brash to a height of 80cm above ground level. The linear hibernaculum will then be capped with topsoil to a maximum depth of 25cm on top and 20cm toward the sides. These margins are to be left open to allow access to reptiles. A linear trench should only be used on free-draining soil, if soil is not free-draining then a trench should not be dug and the hibernaculum should be created at ground level.

Figure 3: An example design for reptile hibernaculum
200cm min



Additional log/rubble piles could be created. These will not only provide safe hibernation locations but will also provide basking spots for the translocated common lizards.

3) **Grassland mosaic:** A low intensity management regime of the ecological corridor will be established to promote a varied structure within the sward, providing a variety of thermal opportunities for the common lizard. Different sections of the grassland will be cut on a two-year rotation to a height of 5cm. The cutting should take place in autumn. Only one half of the site will be cut in each year and the areas to be cut should be designed to create a mosaic of sward heights rather than two distinct areas. Reptiles require areas within their habitat where they can bask to warm up, and south facing banks are preferred. Linkage with the adjacent habitats and the variable aspect within the receptor site should enable common lizard to move between areas of differing aspect and find thermal niches to suit them at different times of day/year.

4.18 Table 1 below contains sequential details of the mitigation methods.

Table 1: Sequential Table of Mitigation Methods

	Works	Timing
1 st	Erection of reptile exclusion fencing.	On LPA/EWT approval of the Mitigation Strategy.
2 nd	Artificial refuges will be place within the site.	At the same time as reptile fence erection.
3 rd	Translocation of reptiles from the construction site to the approved receptor site (retained habitat on site and at the boundaries).	After the reptile fence is erected and refuges have been in place for at least seven days. Capture and translocation of reptiles will only commence when reptiles are active (March/April to October) during suitable weather conditions.
4 th	Hand search of existing refuges and debris by an ecologist.	On completion of the translocation.
5 th	Maintenance of the exclusion fencing.	For the duration of construction activities.
6 th	Removal of exclusion fencing.	On completion of construction.

5 Conclusion

5.1 A 'low' population of common lizard and were recorded to be using the central hedgerow and tree line within the site. By following the translocation detailed within this mitigation strategy, it was considered unlikely that reptiles would be harmed during

construction activities.

- 5.2 Furthermore, it was considered that through the creation of reptile habitat areas within the new development, that the current reptile populations will be maintained and potentially enhanced.
- 5.3 Translocation to retained habitats on site and at the site boundaries will maintain the local conservation status of this reptile species, in line with policy, and sensitive management of open space in the new development will encourage re-colonisation of the site by reptiles in the future.

6 References

Edgar, P., Foster, J., and Baker, J. (2010). *Reptile Habitat Management Handbook*. Amphibian and Reptile Conservation, Bournemouth.

English Nature (2004). *Guidelines for Developers*. English Nature, Peterborough.

Eco Planning UK (2019) *Ecological Assessment. Presence – Absence. Land to rear of Tower End, Kelvedon Road, Tiptree, Colchester, Essex.*

Froglife (1999). *Reptile survey: An introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice Sheet 10*. Froglife, Halesworth.

Gent, A.H. and Gibson, S.D., eds. 1998 *Herpetofauna workers' manual*. Peterborough, Joint Nature Conservation Committee.

Herpetofauna Groups of Britain and Ireland (HGBI). 1998. *Evaluating local mitigation/translocation programme: Maintaining Best Practice and lawful standards. HGBI advisory notes for Amphibian and Reptile Groups (ARG's)*. HGBI, c/o Froglife, Halesworth. Unpublished.

National Planning Policy Framework (2021).

7 Appendices

Appendix A: Approximate reptile exclusion fence location (blue line)



Appendix B: Reptile exclusion fence specification

Installation of polythene sheet barrier reptile fence, to exclude reptiles from a construction zone:

- 1) Excavate a trench to 200mm. Hand digging is preferable. The spoil should be placed along the outside line of the trench.
- 2) Lay the polythene in the trench with the outer edge to the outside of the site.
- 3) Backfill the trench and compact the soil, taking care to leave no gaps (to ensure that reptiles do not burrow underneath).
- 4) Fold the polythene back over to the outside of the site then drive in the stakes (spacing's should be no more than 1800mm).
- 5) Attach the polythene sheet to the posts using clout nails through a nylon washer (this spreads the load over a wider area).
- 6) Allow for a minimum 100mm underlap of polythene in the base of the trench. Along the top line, allow 150-200mm of polythene to create a top roll. This adds strength to the top fixing point, and creates an overlap which cannot be scaled by reptiles. The overall height of the fence should be approximately 800mm above ground level.
- 7) A minimum of two fixings per post with washers should be allowed for.