Reptile Mitigation Method Statement

Environmental Statement - Annex 11

Gondar Gardens Reservoir Site
London, NW6

On behalf of
Linden Wates (West Hampstead) Limited

January 2011

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Revision	Purpose	Originated	Checked	Authorised	Date
		OLR	**AMM**		**6/4/10**
Rev A	Minor amendments/ update	**OLR**	**AMM**		**5/11/10**
Rev B	Name changes (Linden Homes to Linden/Wates); 'a third' changed to 'approximately a half' the site managed for wildlife.	**OLR**	**RH**		**17/1/11**
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1.0 Introduction

1.1 James Blake Associates were commissioned by Linden Wates to prepare a Reptile Mitigation Method Statement for a proposed development site at a decommissioned covered reservoir site, Gondar Gardens, Camden (TQ 248 853). This document details the results of previous survey work and proposes mitigation methods for the slow worms which were utilising part of the proposed development site. The implementation of this method statement is subject to agreement between the developer and Natural England/Local Planning Authority.

1.2 The site was surveyed for reptiles during three seasons: September 2008 (10 visits) and May to July 2009 (10 visits), by Entec UK Ltd. Four slow worms were recorded on two survey visits (May and July), which equates to a 'low' population size, as defined by Froglife guidelines (Froglife 1999). James Blake Associates carried out ten survey visits during August and September 2010, using a higher than recommended number of refuges: no slow worms were recorded during two of the survey visits; a single slow worm was recorded on six of the visits; two slow worms were recorded on the other two visits. Of the ten slow worm sightings, only one was a juvenile. This, again, equates to a 'low' population size, and does not classify the site as a 'Key Reptile Site' (Froglife 1999).

1.3 The site was mainly grassland (mown to the reservoir top, and rougher, longer grass to the marginal banks). All slow worms were recorded on the southern banks of the site (James Blake Associates 2010).

1.4 The majority of the site is open grassland which is mown, unsheltered and sparsely vegetated, and hence of reduced value to reptiles. However, the rough grassy banks to the south and east of the site have more structure, a good aspect and are highly suitable for slow worms. It is here that the slow worms were recorded during the 2008 – 2009 surveys. Beyond the south, north and eastern boundaries are residential gardens which are also likely to support features suitable for reptiles (hibernating, foraging and basking opportunities).

1.5 Both the Wildlife and Countryside Act 1981 and Habitat Regulations 1994 provide mechanisms to protect species, their habitats and sites occupied by the species.

As a UK Biodiversity Action Plan priority species, slow worms need to be considered at an early stage of the development to ensure the integrity of their population is maintained. There are several options;

(i) Maintain the slow worm population in place within the development.

(ii) Re-locate the slow worm population to a suitable area within the development site boundary.

(iii) Translocate all slow worms off site.

1.6 Proposed Development

The proposed development involves 16 four-bedroom houses and associated infrastructure. The construction will lie within the footprint of the existing reservoir structure. The remaining, undeveloped, part of the site (approximately a half of the site area) will be managed as a nature reserve, and enhanced specifically for grassland diversity and slow worms.

1.7 Aim of the Translocation

The main aim is to protect the slow worm population present on site from any harm that might arise during the development work. This will be facilitated by capturing and relocating them to a safe receptor area, to the southern boundary of the site, thus ensuring there is no net loss to the local slow worm conservation status.

2.0 Site Description

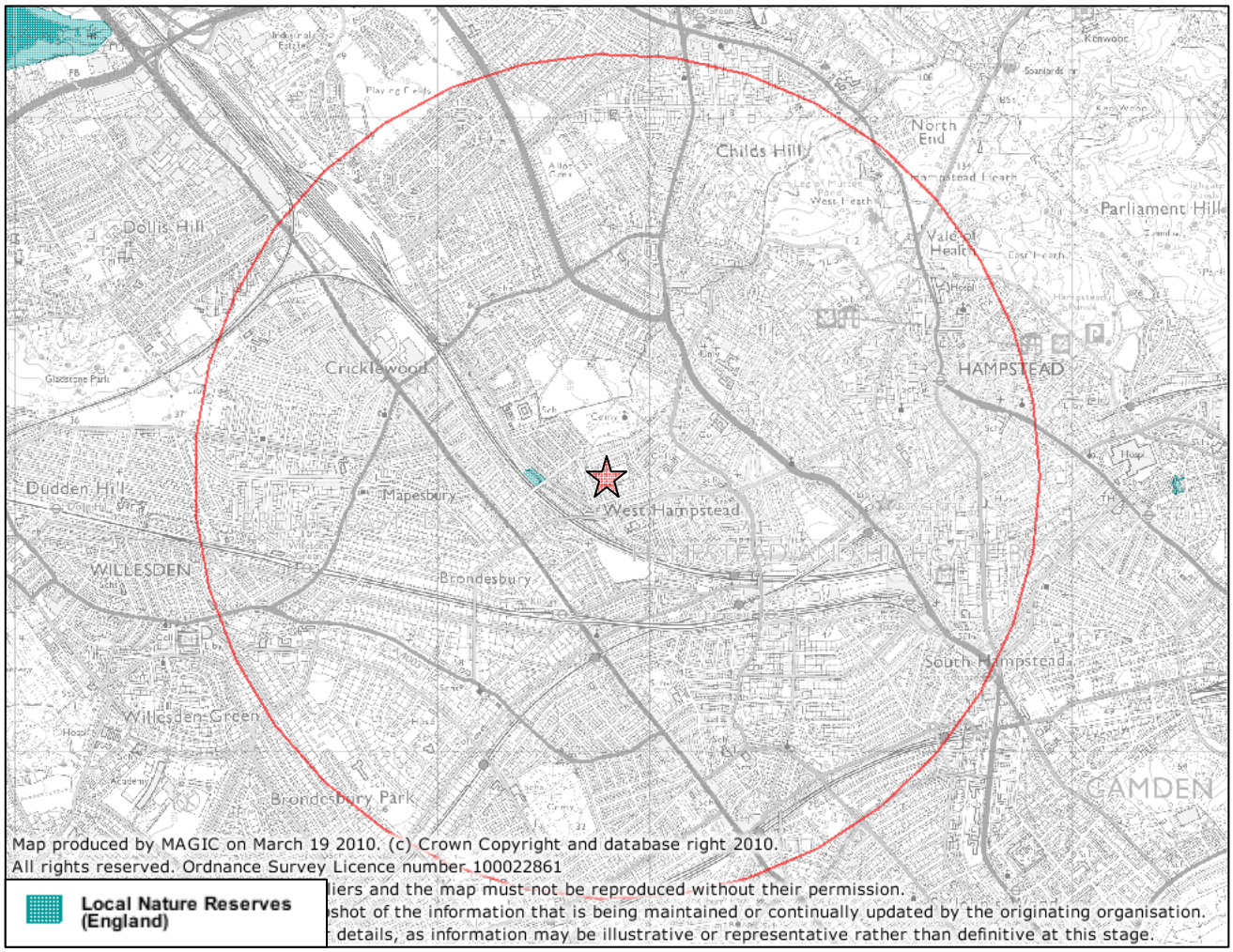

Figure 1: Statutory sites within 2km of the site:

There is one statutory site within 2km of the site: Westbere Copse Local Nature Reserve, approximately half a kilometre to the west.

The site is surrounded by residential gardens and housing to the north, east and south. To the west lies a quiet residential street (Gondar Gardens).

The reservoir site is 1.24 hectares in extent, and consists mainly of neutral grassland with a rough grass bank and trees/scrub to the south-east and eastern boundaries.

The site is a grade two listed Site of Nature Conservation Importance (SNCI). The designation specifies that the site is the only known location in Camden for slow worms.

The National Biodiversity Network (NBN) gateway holds one slow worm record from 1990 at North Acton Station (TQ 208820). This is approximately 8km to the south west of the site. Greenspace Information for Greater London (GIGL) holds a slow worm record from 2000, approximately 149m west of the site.

2.1 The slow worm (*Anguis fragilis*), appears on the Schedule 5 list of species protected under of the Countryside and Wildlife Act (1981) and Section 9(1) states that it is an offence to intentionally kill, injure or take any animal included in Schedule 5.

Slow worms are also UK Biodiversity Action Plan (BAP) priority species. There are local and national action plans to protect populations and also policy guidelines to ensure that development schemes do not affect the integrity of their populations.

2.2 The area proposed as a receptor area for the re-located slow worms, is located to the southern boundary of the proposed development site (Appendix 3)

3.0 Reptile Ecology

3.1 Slow-worms, commons lizards and grass snakes are all species of reptile native to the UK. Reptiles, unlike birds and mammals, 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.

3.2 In order 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 suns 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 grass snakes and 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. This behaviour is also favoured by slow-worms.

3.3 Reptiles require habitats with suitable basking spots, a good food supply and places to shelter. Typically suitable habitats are often south facing inclines comprising predominantly of ground cover, such as 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.

3.4 Reptiles are protected (see Appendix 4: Legislation affecting reptiles) from accidental killing and injury by The Wildlife and Countryside Act 1981 *(as amended).* A license is not required for mitigation work but best practice and lawful standards have to be followed. Methods follow standards set out by the Herpetofauna Groups of Britain and Ireland (HGBI, 1998).

4.0 Rational for Mitigation

4.1 Reptile specific surveys identified slow worms to be present on the site, hence the need for mitigation.

4.2 All mitigation methods are based on a small to medium sized population of slow worms being present when mitigation works are undertaken. All surveys undertaken have identified the population as being 'low' under Froglife (1999) guidelines.

4.3 As the area in which slow worms have been recorded is to be retained, the most appropriate form of mitigation is to allocate this as a safe receptor area and to relocate any slow worms found outside this area to within the receptor area.

Receptor Site

4.4 The area to which the reptiles will be translocated is shown in Appendix 1.

4.5 The receptor area, includes the south-facing bank on which all the slow worms were recorded during the most recent survey. The receptor area, will be enhanced, pre-translocation, to improve the suitability of the area for slow worms. Habitat management will include: removal of any scrubby vegetation from the banks; creation of hibernacula; and creating a mosaic of grass heights for basking/cover during different weather conditions.

4.6 These enhancements will encourage the establishment of structured hummocky grassland that will be suitable for slow worms.

4.7 Post-development habitat management will be crucial to the success of the translocation. It is important that scrub and ruderal vegetation is not allowed to dominate the area. It is proposed that the wildlife area is managed by an experienced conservation organisation, such as the London Wildlife Trust, to ensure appropriate and sustained long-term management.

5.0 Translocation Methodology

5.1 The receptor area, to which the reptiles will be moved, will undergo enhancement works to improve the habitat for slow worms (see section 6.0 for details).

5.2 Temporary reptile exclusion fencing will be installed as shown on the plan in the appendix: This will prevent any slow worms within the gardens straying into the construction zone, and retain the slow worms within areas which will be unaffected by construction activities. This fence will extend around the receptor area (as shown in Appendix 1) to contain any slow worms currently using the area, and any slow worms which are relocated into this area. The fence will be at least 0.50m high with 0.20m buried below ground (see specification, appendix 5). The fence will be constructed from 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.

5.3 Artificial refuges will be positioned across the 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 both measuring approximately 0.5m^2. The refuges will be spread across the translocation site with increased density in areas with optimal habitat for slow worms (Appendix 1).

5.4 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.

5.5 Plastic containers will be used to transport reptiles between the donor 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.

5.6 For each visit, the refuges will be approached quietly and any slow worms basking on the top of the refuge will be carefully captured and placed in container. The refuge will then be gently turned over and any reptiles found underneath will be carefully collected and placed in a container.

5.7 For each reptile translocated, the age, sex and position within the site will be recorded.

5.8 All field workers undertaking the translocation will be suitably qualified ecologists with sound knowledge of reptile ecology and experience in handling reptiles.

5.9 The translocation of the reptile population will continue until five clear capture visits are recorded (when no reptiles are found).

5.10 On completion of the translocation, any brash, rubble or logs piles within the development site will be hand searched and removed by an ecologist. A thorough destructive search (using a digger – supervised by an ecologist) will ensure that any last remaining reptiles are removed from the development area and moved to the receptor area.

6.0 Pre and post-mitigation receptor site enhancement and monitoring

6.1 The receptor site will undergo enhancement works to improve the habitat for slow worms. This will involve:

1) **Scrub-clearance**: any encroaching scrub and ruderals 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, and to do this safely, require suitable hibernating habitat that gives them protection from severe frosts. Man-made hibernacula will be incorporated within the receptor site area. These can be created simply and cheaply, with no maintenance requirements. Hibernacula will be constructed as follows: holes will be dug in suitable areas of the receptor area. 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.

The plate below shows an example of a hibernaculum which was constructed at a site in Suffolk.

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

3) **Grassland mosaic**: A mosaic of short and long vegetation will provide a variety of thermal opportunities for the slow worms. Reptiles require areas within their habitat where they can bask to warm up, and south facing banks, such as the proposed receptor area, are preferred. Linkage with the adjacent gardens and the variable aspect within the receptor site should enable slow worms to move between areas of differing aspect, and find thermal niches to suit them at different times of day/year. A habitat management plan should be formulated that ensures the area is managed appropriately for reptiles in the long term.

6.2 **Post-development management**
By ensuring habitat around the perimeter of the site retains the features above through suitable enhancement and/or management, reptile species which remain in the area surrounding the site could potentially move into the new wildlife area and subsequently enhance the ecology of the site.

7.0 Conclusions

7.1 Through completing the above translocation and habitat enhancement for slow worms, it is envisaged that the species would suffer no net loss of suitable habitat in a local context. It is also considered likely that management of the habitat specifically for slow worms may facilitate an increase in population status in the local area. Such an increase in population status would contribute to the National Biodiversity Action Plan objectives for slow worms.

8.0 References

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

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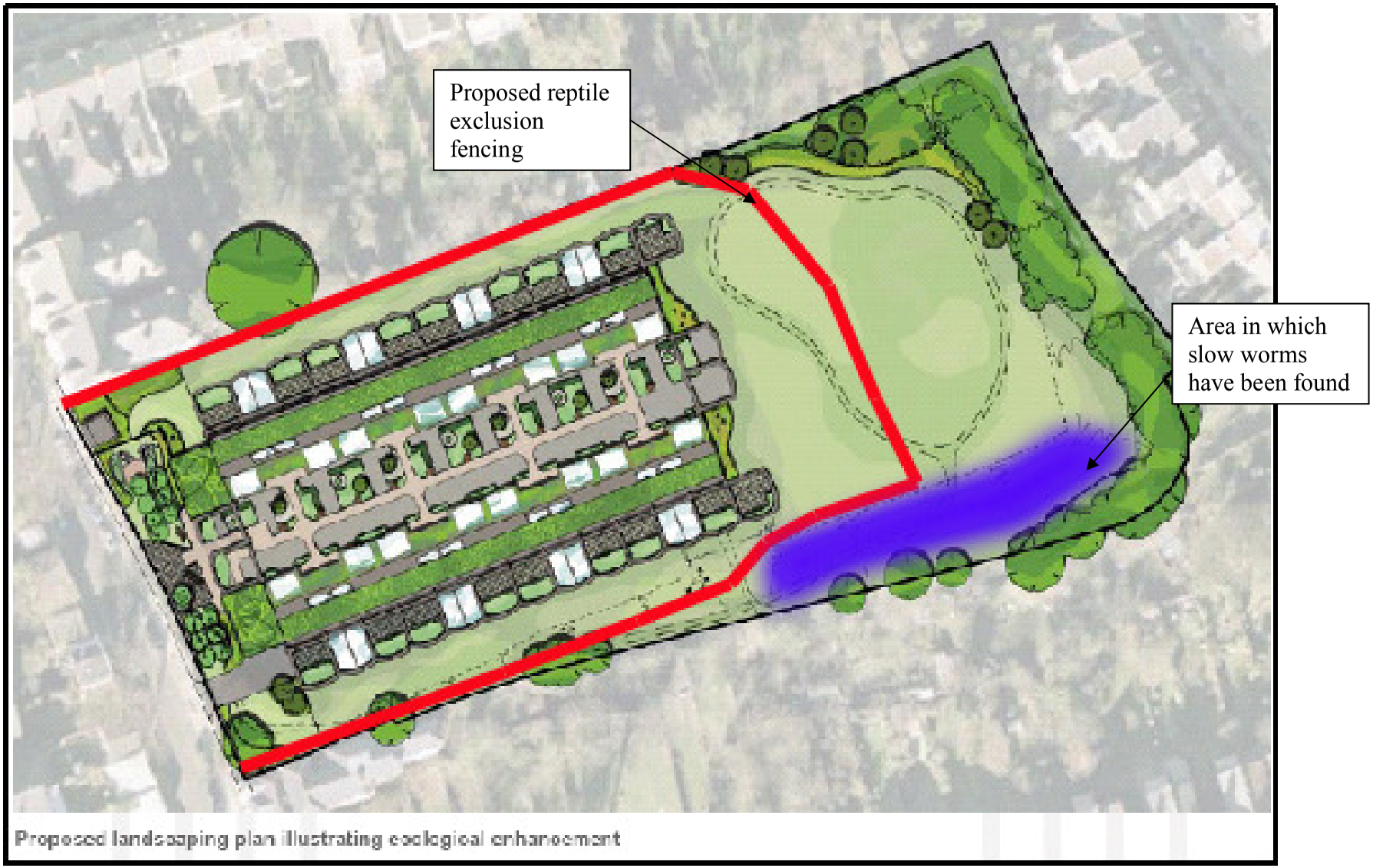
Appendix 1: Location of receptor area and proposed exclusion fencing.



Appendix 2: Legislation affecting Reptiles

Legislation
All reptile species in Great Britain receive some legal protection from legislation in the Wildlife and Countryside Act 1981. More recently, further protection was afforded in Great Britain to species listed in the Habitat Regulations 1994. Both the Wildlife and Countryside Act 1981 and Habitat Regulations 1994 provide mechanisms to protect species, their habitats and sites occupied by the species. Native reptile species fit into two bands of protection:

European protected species receive all elements of protection in Section 9 of the Wildlife and Countryside Act 1981 and the Habitat Regulations 1994. Native species that receive this protection are:

- Sand lizards (*Lacerta agilis*)
- Smooth snakes (*Coronella austriaca*)

This legislation prohibits the following on any of the above species:

- Deliberately or intentionally killing and capturing (taking) or intentional injuring.
- Deliberately disturbing
- Deliberately taking or destroying eggs
- Damaging or destroying a breeding site or resting place or intentionally damaging a place used for shelter or protection.
- Intentionally obstructing access to a place used for shelter; and keeping, transporting, selling or exchanging; offering for sale or advertising.

Species that receive protection against intentional killing, injuring and sale only:

- Slow-worm (*Anguis fragilis*)
- Common lizard (*Lacerta vivipara*)
- Adder (*Vipera berus*)
- Grass snake (*Natrix natrix*)

Both the Wildlife and Countryside Act 1981 and the Habitat Regulations 1994 apply to all life stages of the protected species: eggs and spawn, larvae, juveniles and adults are all protected.

When is a licence required?
For European protected species that receive all elements of protection in Section 9 of the Wildlife and Countryside Act 1981, it is not only the reptiles themselves that are protected but also their habitat. A licence is therefore required for all activities that may damage the habitat or impede their use of certain parts of the habitat.
To ensure that acceptable mitigations levels are undertaken it is recommended that a licence is applied for on the basis of survey information and specialist knowledge. This will establish if the site could potentially be a breeding site or resting place for a European protected species and if the proposed activity (/development) is likely to result in offence.

When is mitigation required?
For European protected species as well as those that receive protection against intentional killing, injuring and sale only. A level of mitigation and compensation is required when development is permitted on reptile habitat. The time and effort needed for a successful mitigation exercise should not be underestimated. Often there is a need to enhance habitats on site or nearby, in advance of a lengthy reptile capture and exclusion activities.

Appendix 3: Fencing Specification

Specifications for installation of reptile exclusion fencing:

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

1) Excavate a trench to 200mm. Hand digging is preferable, otherwise use a machine that will cause minimum disturbance to the site. 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 newts do not burrow underneath).

4) Fold the polythene back over to the outside of the site then drive in the stakes (spacings 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 500mm above ground level.

7) A minimum of three fixings per post with washers should be allowed for.