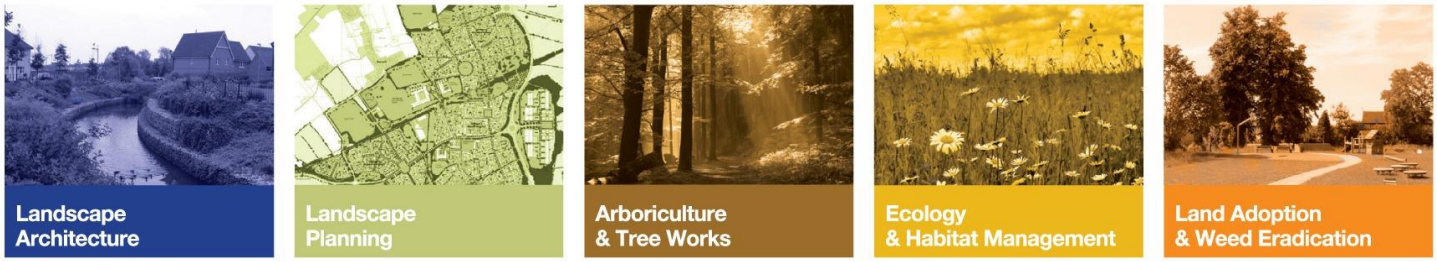

James Blake Associates Ltd

Reptile Mitigation Strategy

for

The Covered Reservoir at Gondar Gardens, West Hampstead

on behalf of

LifeCare Residences

October 2017

Over 25 Years of Service, Value and Innovation

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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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Executive Summary

Reptile surveys of The Covered Reservoir at Gondar Gardens in West Hampstead were carried out in 2008, 2013 and the most recent survey was undertaken in 2016.

The majority of the site was neutral grassland and included the grassed roof of the underground reservoir plus rough grassland to the north, south and east. A good population of slow worms was found to be using the grassland, mostly to the southern boundary.

The development proposals involve residential housing and associated infrastructure along the frontage with Gondar Gardens road and within the bowl of the former reservoir.

To the east, and along the northern and southern boundaries, the rough grassland is to be retained and enhanced for reptiles. These areas are proposed to be used as a receptor area for a good population of slow worms translocated from within the development footprint. A temporary reptile exclusion fence around the receptor area boundary will ensure that reptiles cannot re-colonize the construction area from surrounding habitats throughout the construction phase.

The receptor area will be managed as a mosaic of tussocky grassland and hibernacula and log piles will be created within the receptor area to enhance the suitability of the site for reptiles.

It was considered that by following this mitigation strategy, the development could proceed with minimal risk of harm to the good population of slow worms using parts of the site.

1 Introduction

Background

1.1 James Blake Associates were commissioned by LifeCare Residences to prepare a Reptile Mitigation Strategy for a proposed development site at a decommissioned covered reservoir site, Gondar Gardens, West Hampstead (TQ 248 853). This document is an update to a previous Reptile Mitigation Strategy compiled by James Blake Associates in 2015 and takes into account the results of further reptile survey work from 2016.

1.2 The method statement details all survey work to date and proposes mitigation methods for the slow worms which were found to be utilising part of the proposed development site. The implementation of this Reptile Mitigation Strategy is subject to agreement between the developer and Local Planning Authority. The development proposals are for residential housing with associated parking, landscaping and access.

1.3 Slow worms are protected from killing and injury under Schedule 5 of the Wildlife and Countryside Act 1981. They are a UK Species of Principle Importance listed in Section 41 of the Natural Environment and Rural communities (NERC) act and as such, are a material consideration under the National Planning Policy Framework (NPPF), 2012. They are also a local biodiversity action plan (LBAP) species.

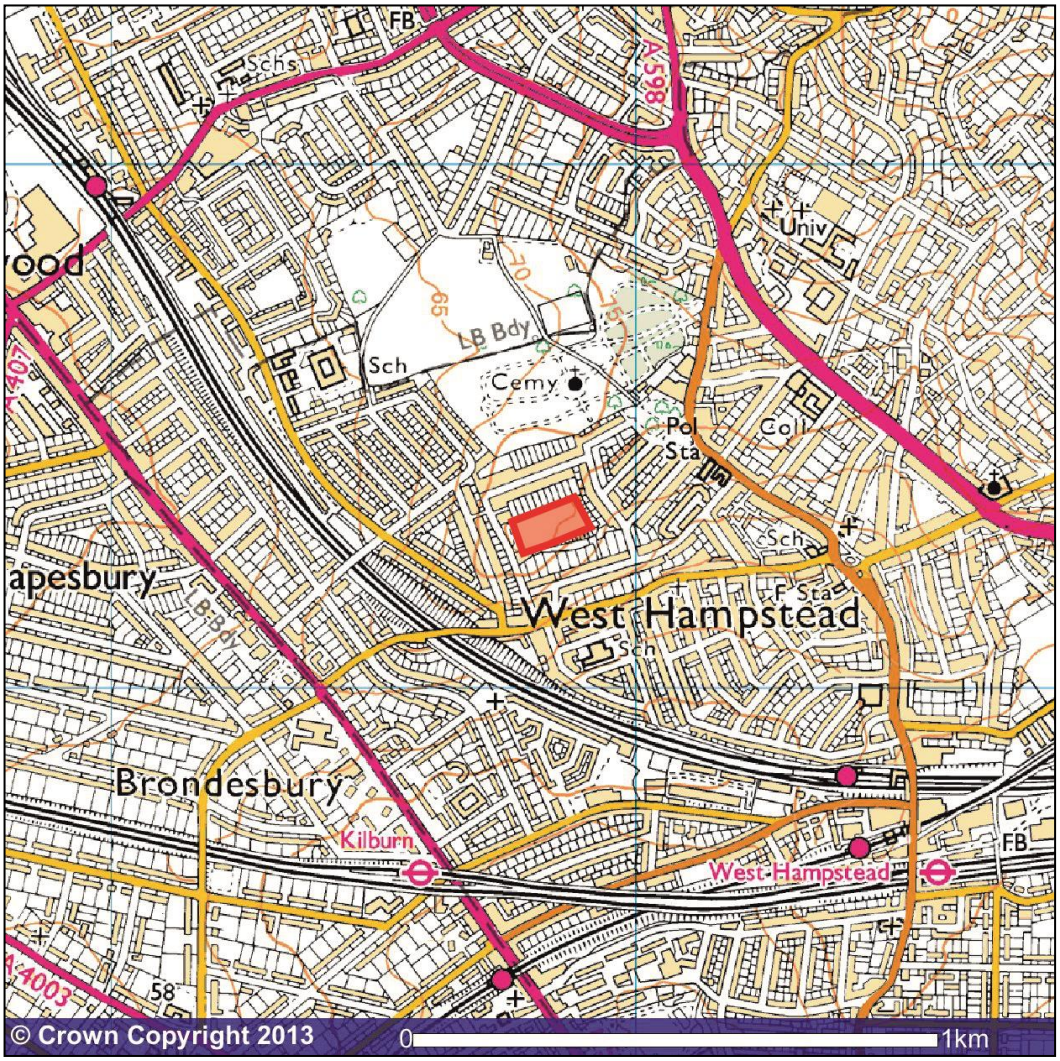
Site Description

1.4 The site is located to the west of Gondar Gardens in West Hampstead, London (Figure 1). The western boundary of the site lies adjacent to a residential street, Gondar Gardens. The site is 1.24 hectares in area, and consists mainly of neutral grassland with a rough grass bank and trees/scrub to the south-east and eastern boundaries. The site is surrounded by residential gardens and housing to the north, east and south.

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

1.6 The area proposed as the receptor area for the re-located slow worms, is located in the retained grassland within the development site boundary (Appendix A).

Figure 1: Site location: Gondar Gardens, West Hampstead



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Statutory sites within 2km of the proposed development

1.7 There is one statutory site within 2km of the site, Westbere Copse Local Nature Reserve, approximately half a kilometre to the west (Figure 2). Habitats within the reserve include woodland, scrub, meadows and a pond.

Figure 2: Statutory Sites within 2km

Previous Surveys

1.8 James Blake Associates carried out ten survey visits from 22nd July to 20th September 2010 (James Blake Associates, 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. This equates to a 'low' population. All slow worms were recorded on the southern banks of the site (James Blake Associates 2010).

1.9 Reptile surveys were carried out from the 4th September to the 2nd October 2013 (JBA, 2013). Peak counts of five adults and four juveniles/hatchlings were recorded on 30th September 2013, with slow worms being recorded on seven of the ten survey visits. This equates to a 'good' population as defined by Froglife guidelines (1999). Again the majority of the reptiles were recorded to the south of the site with one individual being found to the north east. (James Blake Associates 2013).

1.10 In 2016 reptile surveys were undertaken between the 29th July and the 28th September. Peak counts of thirteen adults and 12 juveniles were recorded on the 28th September and slow worms were recorded on nine of the ten visits. This equates to a 'good' population as defined by Froglife guidelines (1999).

1.11 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 in this habitat that the majority of slow worms were recorded. 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).

Aims and objectives

1.12 The aim of the mitigation strategy is to:

- Ensure that no individual reptiles are killed or injured during the construction works. This will be facilitated by capturing and relocating them to a safe receptor area, to the boundaries of the site.
- provide recommendations to enhance the site for reptiles post development, to ensure that the local conservation status of reptiles is maintained.

2 Rational for mitigation

2.1 Both the Wildlife and Countryside Act 1981 and Conservation of Habitats and Species Regulations 2010 (as amended) provide mechanisms to protect species, their habitats and sites occupied by the species. As a UK Species of Principle Importance, 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;

- Maintain the slow worm population in place within the development by using avoidance measures. Avoidance measures can include changing the layout of the development site.
- Re-locate the slow worm population to a suitable area within the development site boundary.
- Translocate all slow worms 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.

Proposed development

2.2 The proposed development is for residential housing and associated infrastructure along the frontage with Gondar Gardens road and within the bowl of the former reservoir. The remaining grassland area to the east and the grassy banks at the north and southern boundaries will be retained and enhanced as a wildlife area, specifically for grassland diversity and slow worms.

Reptile ecology

2.3 Slow-worms 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.

2.4 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.

2.5 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.

2.6 Reptiles are protected (see Appendix 4: Legislation affecting reptiles) from intentional 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 should be followed. Methods follow standards set out by the Herpetofauna Groups of Britain and Ireland (HGBI, 1998).

Rational for mitigation

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

2.8 All mitigation methods are based on the population size of slow worms being present when mitigation works are undertaken. The most recent surveys, undertaken in 2016, identified the population as being ‘good’ under Froglife guidelines (1999).

2.9 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 Area

2.10 The area to which the reptiles will be translocated is shown in Appendix A.

2.11 The receptor area includes all the retained grassland within the site boundary including the area to the south where the majority of slow worms were recorded during the surveys. 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.

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

3 Translocation Methodology

3.1 The receptor area, to which the reptiles will be moved, will undergo enhancement works to improve the habitat for slow worms (See section 4).

3.2 Temporary reptile exclusion fencing will be installed as shown on the plan in the appendix: This will prevent any slow worms within the gardens and retained grassland 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 A) 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 0.80m high with 0.20m buried below ground (see specification, Appendix B). The fence 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.

3.3 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.

3.4 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.

3.5 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. Plastic containers will have a lid to ensure that any slow worms do not escape from the container before they are released. If this is not possible, the slow worms should be placed in a small bag with a tie to transport them to the receptor area.

3.6 For each visit, the refuges will be approached quietly and gently turned over. Any reptiles found underneath will be carefully collected and placed in a container.

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

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

3.9 The translocation should be undertaken for a minimum of 60 days in suitable weather conditions. The translocation will continue until there are five consecutive days with no captures or sightings of reptiles.

3.10 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. Areas of tall vegetation within the construction work zone should be cut to 15cm and a further cut should be undertaken 2 days later to ground level. The vegetation should be cut under the supervision of a suitably qualified ecologist.

3.11 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 should be undertaken carefully, and undertaken with the use of a mini-digger with a toothed bucket. The destructive search should be undertaken under the supervision of a suitably qualified ecologist.

3.12 The destructive search should be undertaken outside the reptile hibernation period (November – February) so between March and October.

4 Pre and post mitigation receptor site enhancement and monitoring

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

1) Scrub-clearance: any encroaching scrub and 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, and to do this safely, require suitable hibernating habitat that gives them protection from severe frosts. Three 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 by hand 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.

Figure 3 below shows an example of a hibernaculum which was constructed at a site in Suffolk.

Figure 3: A reptile hibernaculum

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.

Post-development management

4.2 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.

4.3 Sequential Table of Mitigation Methods

	Works	Timing
1st	Erection of reptile exclusion fencing.	On LPA/WT approval of the Mitigation Strategy
2nd	Artificial refuges will be place within the site	At the same time as reptile fence erection
3rd	Translocation of reptiles from the construction site to the approved receptor site	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 (April to October) during suitable weather conditions for a minimum of 60 days until there are 5 clear days with no captures or sightings of reptiles in suitable weather conditions
4th	Hand search of existing refuges and debris by an ecologist, followed by a destructive search	On completion of the translocation.
5th	Maintenance of the exclusion fencing	For the duration of construction activities.
6th	Removal of exclusion fencing	On completion of proposed development
7th	Post-translocation monitoring of the reptile population at the receptor site	For two years following from the completion of the translocation

5 Conclusion

5.1 Through completing the above translocation and habitat enhancement for slow worms, it is envisaged that the risk of harm to reptiles during construction would be minimised and 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.

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7 Appendices

Appendix A: Plan of reptile fencing and receptor area

Appendix B: Reptile exclusion fence 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. 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.

Appendix C: Relevant protected species legislation

Species	Relevant Legislation	Level of Protection
Reptiles	○ Partially protected under Schedule 5 of the Wildlife and Countryside Act (1981) as amended.	Under the WCA (1981), it is an offence to: • intentionally kill or injure these animals • sell, offer for sale, advertise for sale, possess or transport for the purposes of selling any live or dead animals or part of these animals