Gatwick Airport Northern Runway Project

Environmental Statement
Appendix 5.3.2: Code of Construction Practice Annex 11 – Outline Reptile Mitigation Strategy – Clean Version

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1 Introduction

1.1 Purpose of this Document

1.1.1 This report details the reptile mitigation measures that will be implemented as part of the Gatwick Airport Limited (GAL) Northern Runway Project. This Outline Reptile Mitigation Strategy is required to minimise risk to any reptile species present within the Order Limits. This includes grass snake *Natrix helvetica* which were confirmed to be present within parts of the Order Limits by reptile surveys undertaken in summer 2019 as set out in **ES Appendix 9.6.2 Ecology Survey Report** [APP-125, APP-124, APP-126, APP-127, APP-128, APP-129, APP-130].

1.1.2 This Outline Reptile Mitigation Strategy is an Annex to the CoCP [REP4-007] and secured by Draft Development Consent Order (DCO) Requirement 7 [REP7-005].

1.2 Reptile Survey and the role of the Ecological Clerk of Works

1.2.1 The role of the Ecological Clerk of Works (ECoW) is set out in the CoCP and they will carry out an initial walkover in any area before there is vegetation clearance as part of their role. In doing so the ECoW will consider, among other things, whether, in their expert opinion, there is any potential for reptiles to be present in that area. If so, the ECoW will instruct a full reptile survey to be carried out to tell the ECoW and the contractors if there are in fact any reptiles present in that area. The reptile survey will comprise a seven-visit presence/absence reptile survey within areas of suitable habitat in accordance with good practice guidelines outlined in the Herpetofauna Workers' Manual (JNCC, 2003) and Froglife, Advice Sheet 10 (1999).

1.2.2 The reptile survey will use artificial refugia mats (1m x 0.5m rectangles of heavy-duty roofing felt), as these provide shelter and basking opportunities for reptiles. These provide shelter and basking opportunities for reptiles, which can be recorded on or under the refugia during suitable weather conditions, i.e., avoiding periods of strong wind, heavy rain, or extreme temperatures; typically, surveys are undertaken when the air temperature is between 9 and 18°C.

1.2.3 Refugia will be left to bed down for a minimum of two weeks, during which time they develop favourable conditions (e.g., suitable humidity and temperature gradient) and the reptiles become more familiar with them. For each survey visit, all reptile species present will be recorded. Upon survey completion, the refugia will be collected and removed from survey area.

1.2.4 If reptiles or reptile habitats are found by the reptile survey then the ECoW will instruct that a Reptile Management Plan for that particular area must be prepared to set out how the reptiles/ reptile habitat will be managed during the works. The Reptile Management Plans will be submitted to Crawley Borough Council (CBC) for approval (and in consultation with Mole Valley District Council and Reigate and Banstead Borough Council to the extent that they are the relevant planning authority) before the vegetation clearance takes place. This Strategy sets out the principles which will be considered in preparing the Reptile Management Plans.

1.2.5 This Outline Reptile Mitigation Strategy relates specifically to the construction phase impacts on grass snake populations identified in Section 9.9 of the **ES Chapter 9: Ecology and Nature Conservation** [APP-034].

1.2.6 Potential impacts on grass snake arising from other aspects of the development are addressed separately in the Construction Code of Practice (CoCP) [REP7-022]. Specifically, these work elements not included here are:

- localised disturbance during preconstruction surveys including ground investigations and archaeological excavations; and
- clearance of smaller areas of lower value reptile habitat outside of such as the drainage ditches and tree lines around and within car parks.

1.3 Relevant Legislation

1.3.1 All native reptile species in the UK are protected by the Wildlife and Countryside Act 1981 (as amended) under part of Section 9(1) prohibiting the intentional killing, and injuring; and under Section 9(5): prohibiting the sale.

1.3.2 Grass snake are also listed as of principal importance for conservation in England under the Natural Environment and Rural Communities Act 2006.

1.4 Summary of Reptile Survey Results

1.4.1 Two populations of grass snake were identified within the Project site boundary during the 2019 survey: a ‘low’ population within the grassland areas in the east of the Project site and a ‘good’ population in North West Zone (NWZ) in the west of the site associated with the wetland and grassland habitats along the corridor of the River Mole. Juvenile grass snakes were recorded in both areas indicating two separate breeding populations.

1.4.2 Full details of the reptile surveys including survey method and results are provided in **ES Appendix 9.6.2: Ecology Survey Report** [APP-125, APP-124, APP-126, APP-127, APP-128, APP-129, APP-130].

2 Reptile Mitigation Strategy

2.1 Receptor Area Creation

2.1.1 Reptiles will be trapped and relocated from the affected development area to a dedicated reptile Receptor Site. The Receptor Site will be created and established prior to any works affecting the reptile trapping areas. Other receptor sites could be chosen, if the ECoW considered it necessary, and included within the relevant Reptile Mitigation Plan.

2.1.2 The proposed Receptor Site for the purposes of this Strategy will be located in the Museum Field Environmental Mitigation Area which forms part of Landscape Zone 3: River Mole Corridor as defined in the Outline Landscape and Ecology Management Plan (oLEMP) in **ES Appendix 8.8.1** [REP4-012, REP4-014, REP4-016]. The Receptor Site will be in an area of existing pasture bounded to the west by a mature hedgerow with trees and to the north by the tree-lined Man's Brook watercourse at the northern end of the Museum Field Environmental Mitigation Area. The location of the Receptor Site is shown in Figure 1.

2.1.3 It is anticipated that the Receptor Site will be created during advance planting for the Project as a whole in the year prior to construction starting.

2.1.4 The Receptor Site has good connectivity to offsite habitats along the Man's Brook corridor and connecting off-site hedgerows and to the Mole River corridor to the south. This will ensure good landscape connectivity is maintained, allowing translocated reptiles to disperse and into suitable adjacent habitats. This will also enable population mixing with grass snake able to move into the reptile Receptor Site from other local populations.

2.1.5 The existing habitat will be enhanced through the creation of mixed scrub and species-rich neutral grassland bounded by new broadleaved woodland planting. The new scrub and grassland will be created and managed during establishment to maximise their value for reptiles.

2.1.6 Species-rich neutral grassland will be created with a diversity of wildflowers and subject to low intensity management to maintain a tall sward with good ground cover for reptiles moving through the area.

2.1.7 New scrub planting will be in small stands and managed to provide a good ecotone around the edge with a graduation from grassland into dense scrub. This will provide cover / shelter adjacent to foraging habitat.

2.1.8 Outline specifications and performance requirements of new scrub planting and meadow grassland creation are described in more detail in the oLEMP [REP4-012, REP4-014, REP4-016].

Figure 1. Reptile Trapping Area A and Receptor Site

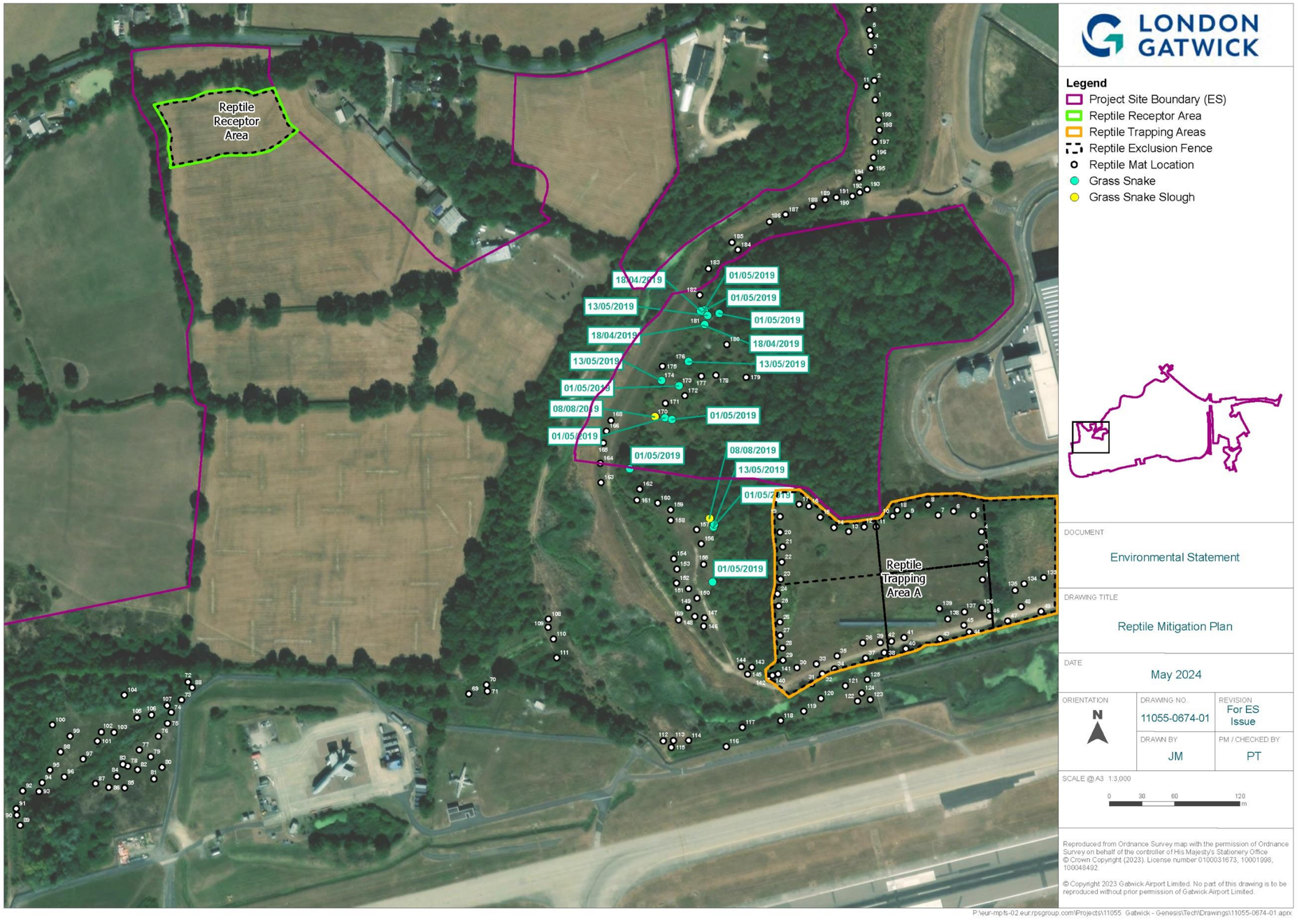
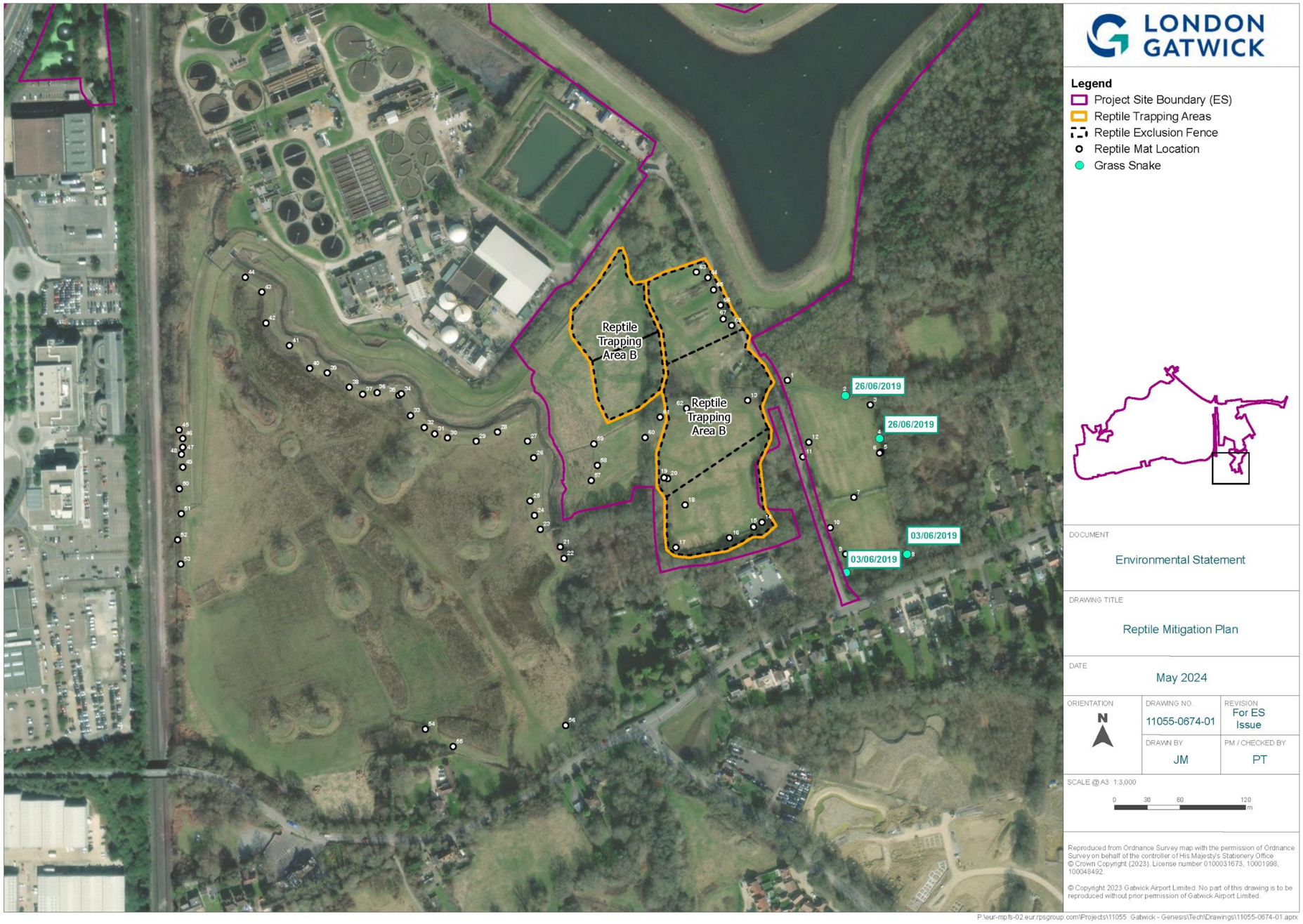


Figure 2. Reptile Trapping Area B



2.2 Artificial Hibernacula and Refuge Creation

2.2.1 Three Artificial hibernacula will be created within the reptile Receptor Site to provide high value hibernation habitat as well as shelter during the main active seasons of spring through autumn.

2.2.2 The artificial hibernacula will be created on the southern half of the reptile Receptor Site to avoid the risk of winter flooding from Man's Brook. The hibernacula will be constructed on the edge of new woodland and scrub planting with a southerly or easterly aspect to provide good sun exposure and basking potential for animals emerging from shelter or hibernation.

2.2.3 Hibernacula will be constructed as follows:

- A shallow scrape will be created by removing turf in an area 2-3m wide and 3-5m long, with the turf set aside for later use.
- The scrape will be created with a shallow slope to match the local topography to prevent water pooling in the base of the hibernacula.
- The core of the hibernacula will be constructed of inert rubble or stone with a diameter of 20-30cm and cut logs around 30-50cm long and between 20cm and diameter.
- The core will be constructed to give a stable structure 1m high with a honeycomb of interconnecting spaces within.
- The core will be caped with topsoil to a depth of 20cm and capped with the removed turf, leaving small areas of exposed core around the edges to allow animals to enter the structure.

2.2.4 An indicative design for the reptile hibernacula is given in Annex 1.

2.2.5 Five log piles will also be created within the reptile Receptor Site to provide additional shelter for relocated reptiles during the spring through autumn outside of the hibernation period. Log piles will be constructed of cut logs at least 20cm in diameter and 30 to 50cm long and will measure at least 1.5m x1.5m in area and at least 60cm high to provide sufficient cover.

2.2.6 The precise locations of the artificial hibernacula and log piles will be determined alongside the detailed landscape proposals in the LEMP for the Museum Field Environmental Mitigation Area (Work No. 38). The LEMP will be prepared and submitted to CBC in accordance with requirement 8 DCO [REP7-005].

2.3 Exclusion Fencing

Reptile Exclusion Fence Specification and Location

2.3.1 The Receptor Site will be enclosed with reptile exclusion fencing to prevent reptiles from entering and ensuring the habitats have capacity to receive relocated animals. The fencing will remain around the Receptor Site until all construction activities relating to the Museum Field area (Work No. 38) have been completed.

2.3.2 Once the Receptor Site is completed and established sufficiently to receive reptiles (as determined by the ECoW), the reptile trapping areas will also be enclosed with reptile exclusion fencing to facilitate trapping and removal of reptiles.

2.3.3 The reptile exclusion fencing around the reptile trapping areas will be protected throughout construction activities in the wider Museum Field Environmental Mitigation Area with Heras fence. This will be positioned between the reptile exclusion fence and the working area and fixed to the ground to prevent movement.

2.3.4 The reptile exclusion fence will be constructed from robust vandal-resistant materials which should only require low levels of maintenance for the fence to function as a continuous barrier to the movement of reptiles. An indicative design for the reptile exclusion fencing is given in Annex 1.

2.3.5 In addition to the permitter exclusion fence, the trapping areas will also be subdivided into compartments using the same exclusion fence to improve efficiency of trapping. The indicative location of exclusion fencing is show on Figures 1 and 2.

Reptile Exclusion Fence Installation

2.3.6 Installation for the exclusion fence will require a working corridor of approximately 4m width to accommodate trenching machinery. The following measures will be implemented to minimise risk of harm to reptiles during fence installation:

- The exclusion fence will be installed during suitable weather when reptiles are active and able to escape harm (dry with daytime temperatures above 10ºC).
- An ECoW will supervise fence installation to provide guidance and if necessary to remove any reptiles.

- The ECoW will undertake a walkover of the proposed fence line to identify any areas where reptile may be present such as long herbaceous vegetation, scrub or features in which reptiles could shelter such as mammal burrows.
- Any potential refuge features will be inspected by the ECoW and if necessary excavated or dismantled by hand with fingertip searches for reptiles.
- If feature cannot be designated or excavated by hand they may be excavated using an excavator with a small, toothed bucket and under the guidance of the ECoW.
- Any reptiles present will be carefully removed by the ECoW and kept temporarily in a suitable container such as a pillowcase or in a deep bucket with herbaceous vegetation and a lid with breathing holes to be released into cover in the receptor area.
- Following removal of potential refuge features, vegetation within the fencing installation working area will be removed in a two-stage process. In the first stage the vegetation will be cut to no less than 150mm above ground and the arisings removed to one side. Following the first cut the ECoW will undertake a walkover of the area to confirm reptiles are absent before a second cut to ground level under ECoW supervision. Following the second cut, all arisings will be removed or dispersed to leave no piles in which reptiles could shelter.

2.3.7 Once the working corridor has been prepared, fence installation will proceed using a small, tracked trenching machine to dig the trench into which the fence base will be installed before back filling and compacting the back fill.

Reptile Exclusion Fence Checks

2.3.8 The reptile exclusion fence will be subject to daily checks to ensure it remains intact and functional in excluding reptiles from the trapping areas. Checks will comprise a daily walk of the fence line during the trapping period, with any damage made good on the same day as it is discovered, to ensure reptiles do not breach the fence.

2.3.9 Vegetation will be periodically cut back from both sides of the exclusion fence around the reptile trapping areas during the growing season to prevent excessive growth bridging the fence and enabling reptiles to cross. Vegetation will be cut using a method that does not damage the fence structure such as a plastic wire bladded strimmer.

2.4 Reptile Trapping and Relocation Procedure

Trapping and Relocation

2.4.1 Reptiles will be trapped from trapping areas A and B (as shown on Figures 1 and 2) and relocated to the reptile Receptor Site (Figure 1).

2.4.2 Reptile trapping and relocation will be carried out in accordance with guidelines established by the Joint Nature Conservation Committee (Gent and Gibson, 2003), Natural England and the Herpetofauna Groups of Britain and Ireland (HGBI, 1998). The capture and relocation programme will consist of an extended period of trapping, capture and safe transport to a release location in dense cover within the Receptor Site, gradual habitat degradation, and destructive searches.

2.4.3 The trapping period will run for a minimum of 30 days of suitable weather. Days with poor or unsuitable weather will not count towards the 30 days trapping total. Trapping will cease after five consecutive trapping days in suitable weather conditions and with no reptiles being trapped (allowing for the minimum of 30 days trapping).

2.4.4 The capture programme will be undertaken by experienced and trained personnel in order to ensure the welfare of the reptiles.

2.4.5 Artificial refuges or mats (1m x 0.5m rectangles of heavy-duty roofing felt) will be placed in suitable locations within the trapping areas. A high density of refuges (at least 100 per hectare) will be used to maximise capture rates. The mats will be allowed to bed in for at least two weeks prior to starting mat checks, to allow reptiles to locate and begin to use the mats.

2.4.6 The mats will be checked daily during the trapping period by an ecologist during the main active period for reptiles (March to September / early October) and in suitable weather (air temperatures between 10°C and 19°C and avoiding strong wind or rain). The ecologist will slowly approach mats checking for reptiles basking on or near the mat before carefully lifting it from one corner to check for reptiles beneath.

2.4.7 Any reptiles present will be recorded, captured and placed immediately in a suitable container such as a pillowcase or in a deep bucket with herbaceous vegetation and a lid with breathing holes. Juveniles will be held in a separate container to adult snakes. All caught animals will be released within 30 minutes of capture.

2.4.8 Caught reptiles will be released into dense herbaceous vegetation cover close to the artificial refuges in the Receptor Site, providing them the opportunity to seek cover before re-orienting to new surroundings.

Habitat Degradation

2.4.9 After 15 days, if reptiles are being caught in low numbers, or after 30 days if reptiles are being caught in high numbers, selective habitat degradations will be carried out to increase capture rates.

2.4.10 Habitat degradation will involve removal of vegetation cover to increase the likelihood of reptiles using artificial refuges. Vegetation such as bramble, long grassland and tall herbaceous vegetation would be cleared in a two-stage process as described in paragraph 2.3.6. Cutting will be under the direction of the ECoW, and would be systematic, working towards the site boundaries with the aim of creating small islands of cover where reptiles will be concentrated and therefore use of mats will be increased.

Destructive Clearance

2.4.11 Once trapping is complete (after 5 consecutive days of no captures in suitable weather conditions) the remaining vegetation cover within the trapping areas will be cleared using the same two stage process described above.

2.4.12 Following the final vegetation clearance, the ECoW will do a site walkover to identify any features where reptiles could shelter such as mammal burrows or shrub/ tree root systems. Any such features will be subject to destructive clearance as follows.

2.4.13 The ground around burrows and root systems would be stripped in shallow layers using an excavator with a small, toothed bucket. A few centimetres depth would be stripped in each sweep with the ground checked by the ECoW before the next shallow excavation. Cavities and tunnels exposed by the excavator would be checked for reptiles and if necessary excavated using hand tools before further excavator stripping. Particular care will be taken when emptying the excavator bucket in case any reptiles are dug up with the soil (HGBI, 1998).

Exclusion Fence Removal

2.4.14 Following completion of reptile relocations, the compartment exclusion fencing, the exclusion fencing around the reptile receptor area and that around the trapping areas other than adjacent to the woodlands will be removed under ecological supervision to leave only the permitter exclusion fencing around the trapping areas. This fencing will be maintained through the duration of

construction with regular checks to ensure the fence integrity is maintained, and regular removal of vegetation alongside the fence (see paragraph 2.3.8 and 2.3.9).

2.4.15 The permitter exclusion fence around the reptile trapping areas will only be removed once all construction, landscaping and other works are completed in these areas. The reptile exclusion fencing will then be removed under an ECoW watching brief.

Post Translocation Reporting

2.4.16 Once translocation is complete for a particular area, a report setting out the number of animals moved and trapping days/conditions etc. will be submitted for information to the relevant Local Authority within eight weeks of completion of the translocation.

3 Habitat Management and Monitoring

3.1 Habitat Management

3.1.1 Management of the habitats that will be created within the reptile receptor area is described in Annex 2 of the oLEMP and will be provided in full detail in the subsequent LEMP for the Museum Field Environmental Mitigation Area approved by CBC under DCO Requirement 8.

3.2 Reptile Monitoring

3.2.1 Reptile populations in the reptile Receptor Site will be monitored in years 1, 3 and 5 following the successful completion of reptile relocation. Monitoring surveys will be carried out in the reptile Receptor Site following best practice survey guidelines (Froglife, 1999; 2016).

3.2.2 The survey will assess the presence / absence of reptiles within the reptile Receptor Site to confirm the establishment of relocated reptile populations.

3.2.3 The monitoring surveys will use the same density of mats as was used in the 2019 reptile surveys so that peak counts are comparable to preconstruction surveys enabling a comparison of pre and post construction reptile density.

3.2.4 The results of the reptile monitoring surveys will be shared with CBC and local biological records centre.

3.2.5 Artificial hibernacula and refuges will be checked annually and repaired if they are deteriorating.

4 References

Froglife (2016) Surveying for reptiles. Froglife, Peterborough.

Froglife (1999) Froglife's Advice Sheet 10, Peterborough

Gent, A.H. and Gibson, S.D., eds. (2003). Herpetofauna Workers' Manual, 2nd edition. Joint Nature Conservation Committee, Peterborough.

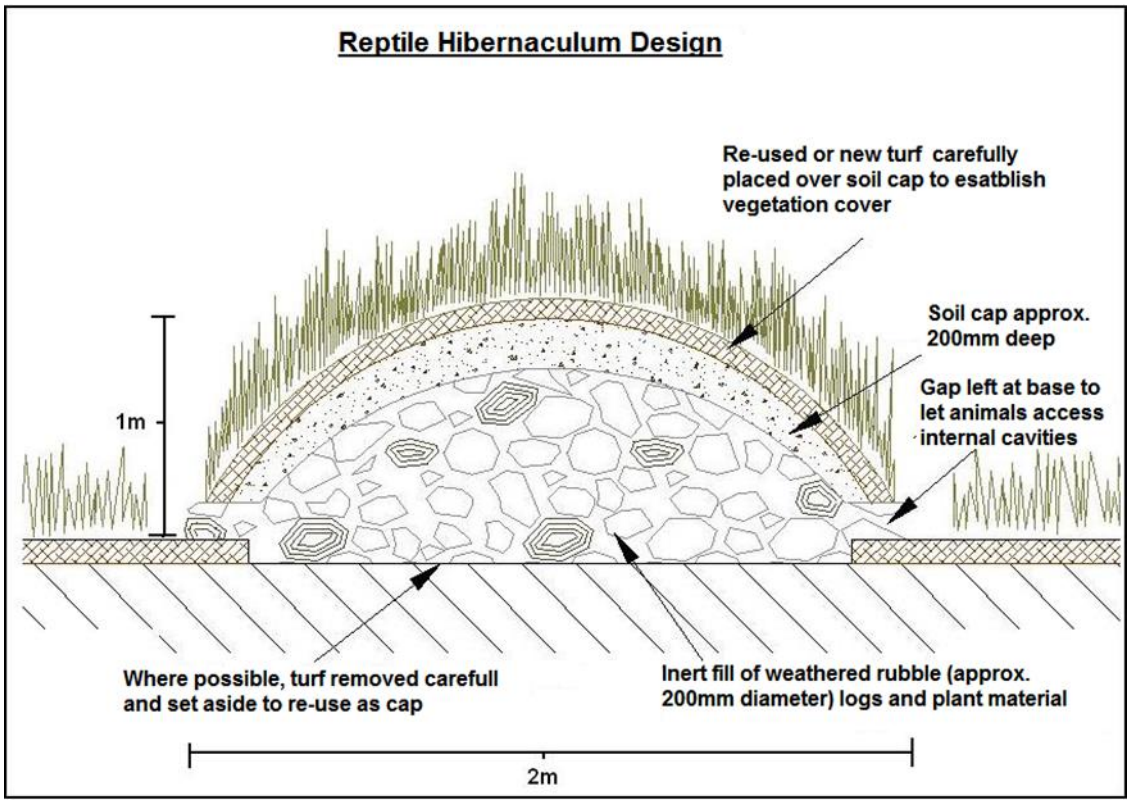
HGBI (1998) evaluating Local Mitigation/Translocation Programs: Maintaining Best Practice and Lawful Standards.

5 Glossary

Term	Description
CBC	Crawley Borough Counci
DCO	Development Consent Order
ECoW	Ecological Clerk of Works
ES	Environmental Statement
GAL	Gatwick Airport Limited
LEMP	Landscape and Ecology Management Plan
LERL	Land East of the Railway Line
m	Metre
NWZ	North West Zone
oLEMP	Outline Landscape and Ecology Management Plan

Annex 1

A1.1 Reptile Hibernaculum Indicative Design



A1.2 Reptile Exclusion Fencing Design