

Ecological Mitigation Strategy & Reptile Management Plan



Project: Land at Springfield Rise, Treharris

Instructed by: Merthyr Tydfil Housing Association

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1. Introduction

The applicant is seeking permission to develop a parcel of land to the north of Springfield Rise, Treharris. The proposed development site is centred at ST 09560 97306. The land within the proposed development boundary consists of scrub, semi-improved grassland, open mosaic habitat and bare earth.

1.1 Site Description

The proposed development site is triangular in shape and fairly flat to the west but rises steeply to the east. It appears that a large amount of engineering work has been completed on site previously as footings have been dug into the ground towards the west of the site. Springfield Rise is located to the south of the site and a small tarmac access track is present along the north west boundary. A field is present along the eastern boundary bounded by a stone wall with a lane to the west

The site is considered to be in a semi rural location on the northern outskirts of the town of Treharris. In the wider landscape, areas of woodland lie to the north east and north west with fields and tree lines to the north.

1.2 Previous Survey Work

A preliminary ecological appraisal (PEA) of the land within the proposed development boundary was completed on 18th September 2020 by Ecological Services Ltd. The potential for the habitats across the site to be used by reptiles throughout the year was highlighted during the site visit.

A refugia survey to assess the potential reptile population within the site boundary was undertaken. 30 reptile tins were laid out across the proposed development site on the 19th March 2021. The refugia were laid out across the site in areas thought suitable for use by reptiles such as the edge of different habitat types. Low numbers of common reptile species were observed, namely slow-worm and common lizard, with a maximum of one slow-worm and two common lizard seen during any one visit. A juvenile common lizard was sighted, inferring that breeding by this species may take place on site.

1.3 Planning Permissions

Full Planning Permission (Planning reference P/21/0416/FULL) has been granted to construct 23 affordable dwellings with associated drainage and access. A number of conditions have been added to the planning consent permitted for the site, two of which relate to reptile ecology. The details provided within this document are to help inform and discharge conditions 8 and 9.

Condition 8 states:

No development or site clearance shall take place until full mitigation details have been provided to compensate for the loss of open mosaic habitat, including the precise location of the proposed reptile hibernacula on the land outlined in blue on the site location plan (Drawing No. 0001 Rev P3) have first been submitted to and agreed in writing by the local planning authority. The reptile mitigation measures, including the construction of the reptile hibernacula shall be carried out in accordance with the details set in the Reptile Survey Report (dated 25.01.2022) prior to any works commencing on site.

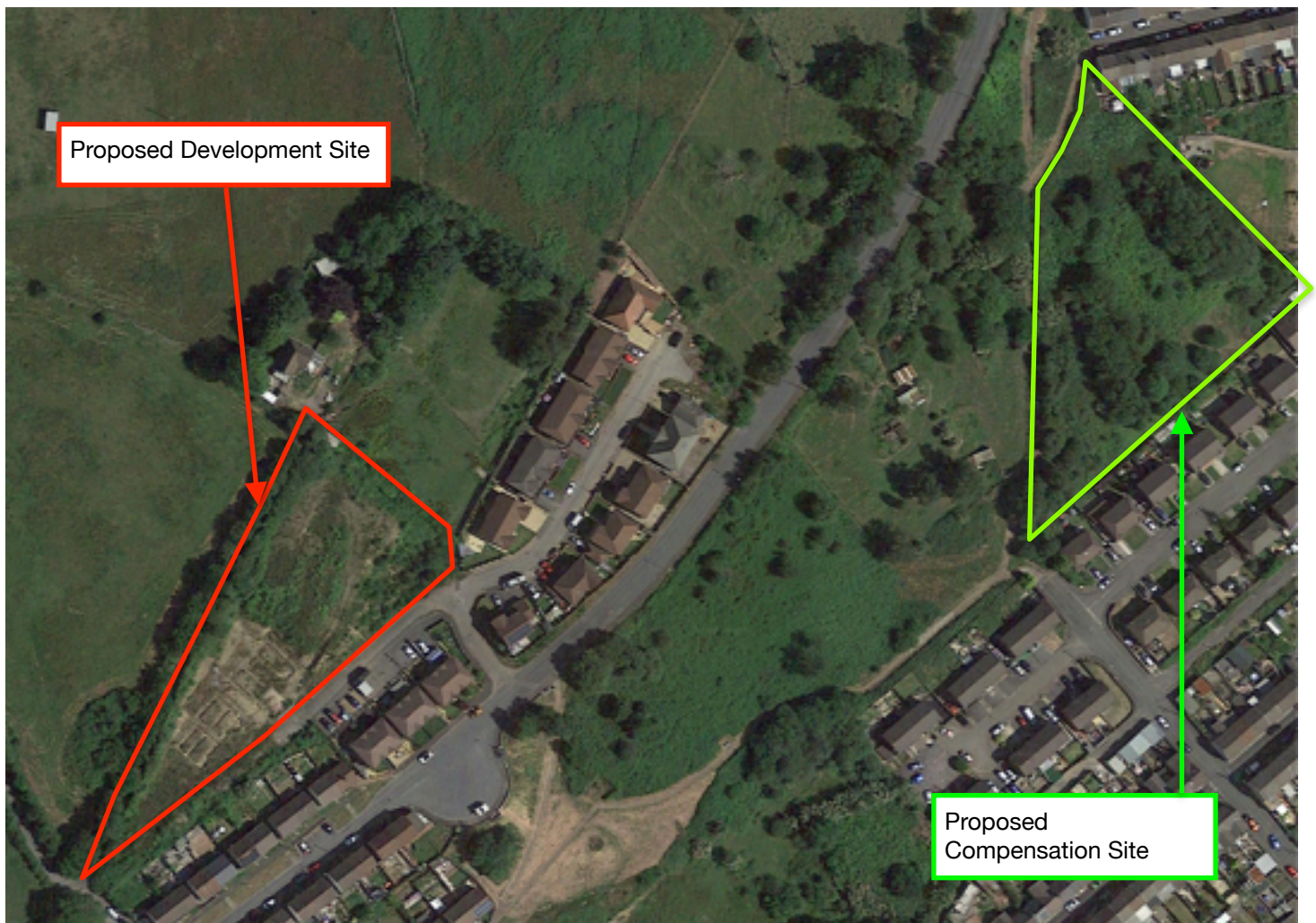
Condition 9 states:

Prior to any construction works commencing on site a reptile management plan for a period of at least 5 years, to ensure the success of the translocation of reptiles to the receptor site is appropriately managed, shall be submitted to and approved in writing by the local planning authority. The reptile management plan shall be implemented fully in accordance with the approved details.

2. Open Mosaic Habitat

The mosaic of habitats and historic disturbance of the proposed development site has created Open Mosaic Habitat (OMH). The presence of bare earth, short perennial vegetation, scrub and semi improved grassland with scattered trees within the development site combine to create OMH. OMH within the development site is considered to be approximately 3760m² (0.37ha).

OMH is a habitat type of principal importance to maintain and enhance for biodiversity purposes. It is listed on section 7 of the Environment (Wales) Act 2016. The habitat type was also a priority habitat for the UK Biodiversity Action Plan. For a habitat to be considered OMH it must be over 0.25ha, have a history of disturbance, the presence of successional communities and areas of bare earth.



As OMH is a priority habitat type in Wales any loss or impact to areas must be compensated for. Merthyr Tydfil Housing Association (MTHA) own an area of land to the east of the development site. The parcel of land is centred at ST 09825 97421 and sits to the north of residential housing on Brotalwg Road. Photographs of the site can be found in Appendix 1

and the land currently consists of bramble scrub and scattered trees. When studying aerial maps and historic site images it appears the compensation site was subject to vegetation clearance work approximately 10 years ago. Access into the proposed compensation site was not possible due to the dense bramble scrub present. It was possible to see into the site from the public footpath which runs along the north and western boundary. Species noted within the habitat compensation site include hawthorn, nettle, bramble, ivy, rosebay willow herb, ash and cocksfoot. The habitat compensation site is roughly triangular in shape and measures approximately 5750m² (0.57ha) in size. The site is flat for at least 3m in width along the footpath but slopes very steeply downwards to the east, towards housing.

The proposed habitat compensation site and works detailed below is required for the loss of OMH within the development site boundary. Habitats to be lost within the development site boundary include bare earth, short perennial vegetation, semi improved grassland, rubble piles. Scattered scrub and dense scrub. Habitats to be created and retained within the compensation site include scattered trees (retained and planted), dense scrub (retained), semi improved grassland (created), short perennial vegetation (created) and bare earth (created). An indicative plan is provided within Appendix 6 to demonstrate before and after the habitat works are undertaken.

The amount of habitat to be lost within the development site is approximately 3760m². Until habitat creation work within the compensation site starts it is difficult to give exact figures on the number of trees to be retained and certain habitat types to be created. However the entire parcel of land measures 5750m². It is thought likely that the habitat compensation site will have more grassland present than the within the development site. Smaller areas of bare earth will be created when compared to that present within the development site. However a mosaic of habitat with longer and shorter vegetation will be provided. Successional communities will be created. The long term management of the site by the housing association secures the habitats and benefits to local wildlife within the compensation site in the long term. Whereas the development site will not be managed and ultimately become unsuitable for OMH and the wildlife the habitat supports.

It is proposed to undertake the below works within the habitat compensation site, as detailed below:

- Create a hibernaculum measuring 2m in width and 3m in length;
- Clearance of the bramble scrub across the entire compensation site leaving a band of scrub along the east and southern boundary 2m in width. All trees present within the site will be retained;
- All brash and cuttings from the scrub will be raked, collected and removed from the Compensation Site. This will help prevent a dense thatch of cuttings, restricting vegetation,

growth of grass and other species. The bare earth and stubble can also benefit invertebrates;

- Ongoing management of the cleared scrub habitat to allow grassland to establish and be retained.
- The provision of 8 hawthorn and 8 blackthorn root ball trees along the east and south boundary of the site. The tree will be planted during the appropriate planting season (November to March) during suitable weather and temperatures. Root ball trees will be used to help ensure establishment of the trees.
- The provision of 4 hawthorn, 6 rowan and 4 blackthorn root ball trees along the west boundary of the site. The tree will be planted during the appropriate planting season (November to March) during suitable weather and temperatures. Root ball trees will be used to help ensure establishment of the trees.
- A total of 30 native trees will be planted. All planting will be inspected during on site maintenance works. Any failed planting will be replaced within the next planting season. Any stakes and ties will be removed once the trees have established and 3 years from the time of planting.
- The creation of Open Mosaic Habitat (OMH) to add habitat diversity to the Compensation Site.

Due to the likely presence of nesting birds within the scrub and trees at the Compensation Site, vegetation clearance and enhancement measures will be undertaken from the 1st September 2022 - 1st March 2023. The habitat compensation site will not be used as a reptile receptor site at any point.

2.1 Reptile Hibernacula

A hibernaculum will be created within the Compensation Site. A hole will be excavated and backfilled, at least 2m in width and 3m and 0.5m deep. The excavated area will be filled with layers of debris, namely broken bricks, brash, soil and logs, which will be gathered from around the development site. Pipes partially backfilled into the structure will provide accessibility for herptiles. The internal material of the hibernaculum will then be covered over with soil and seeded with Basic General Purpose Meadow Mixture EM1 from Emorsgate Seeds. Details of hibernaculum creation are provided within Appendix 2. The hibernaculum will be created under direct ecological supervision to ensure it is suitable.

Whilst the Compensation Site in its current format is considered to have limited potential for reptile use, once cleared and grassland areas allowed to establish, it will become more

suitable for such species. It is considered likely the site will be colonised by reptiles in the near future and a reptile hibernaculum will be an additional beneficial feature.

2.2 Grassland Creation

The area of cleared bramble scrub, including the reptile hibernaculum, will be managed to create an area of grassland which reptiles can use for basking and foraging. The adjacent dense bramble scrub can also be used by a variety of local species and creates structural diversity within the site. The below management measures will be incorporated into the Estates Team for MTHA management plan for the area and will be undertaken. Year 0 will be 2022 when the scrub is first cut.

- For the first 2 years after the bramble scrub is removed, the cleared areas will be subject to two cuts per year to prevent bramble scrub and tall ruderal vegetation dominating the land. The vegetation will be cut in March and September in year 1 and year 2.
- From year 3 onwards 50% of the land will be cut in March each year. The portion of the site cut each year will alternate. This will ensure the receptor site will always have an area of shorter grassland, longer grassland and a scrub edge.

2.3 Creation of Scrapes & Management

The loss of OMH from the development site requires compensation. Fifteen areas measuring at least 1m by 2m will be chosen across the area of cleared vegetation within the Compensation Site by the supervising ecologist. A bare earth scrape will be created in the agreed locations with a small area of loose stone from the development site deposited to reduce soil fertility and the vegetation that will colonise the scrape. The aim will be to create small areas of bare earth and short perennial vegetation within the wider grassland to mimic the structural diversity and disturbance of the OMH.

Every 3 years the scrape will be re-dug / scarified to re-instate the bare earth and short perennial vegetation. The management measures will be incorporated into the Estates Team for MTHA management plan for the area and will be undertaken.

3. Reptile Mitigation Strategy

A data search was undertaken via Aderyn to support the PEA report which found the nearest record for reptiles is approximately 640m away from the site and is a record for slow worm.

Habitats across the development site comprise a mixture of grassland, scrub, bare earth and short perennial vegetation which provides diversity and structure to the vegetation which has potential for use by reptiles. Such habitats can be used for foraging, commuting and basking purposes. There are a small number of rocky areas and rubble piles across the site which have potential for use by reptiles for hibernation purposes.

The Herpetofauna Groups of Britain and Ireland (HGBI) Advisory note and Froglife Advice Sheet 10 would assess the population of slow worm and common lizard within the development site as low. **It is not anticipated that more than 5 animals of any reptile species will be found during the works.**

3.1 Legislation

Reptiles such as the slow worm, common lizard, adder and grass snake are protected under the Wildlife and Countryside Act 1981 (as amended). They are protected from killing, injuring and sale. In Wales, sand lizard, smooth snake, adder, grass snake, slow worm and common lizard are listed in section 6 of The Environment (Wales) Act 2016 which makes them key species to sustain and improve biodiversity.

3.2 Development Site

The topography and location of the development site make it difficult to develop. In order to make the site economically viable and meet the unit requirements of the housing association, the developer needs to provide the proposed number of units within the site boundary. The majority of habitats within the site boundary will be lost to allow the proposed development to be created. **A band of vegetation runs along the eastern edge of the site and a hedgerow runs along the western edge of site, these features will be retained throughout the development works.**

The site is surrounded on three sides by a road/lane with a stone wall separating the site from the adjacent property to the east. A well grazed field sits adjacent to the eastern boundary of the site with limited suitability for reptiles. As such it is not feasible to push the reptiles towards adjacent suitable habitat using species deterrent measures. Therefore mitigation measures will require translocation of reptiles found within the site. This will entail carrying out a fence, trap and clear of the site with any reptiles caught transferred to a suitable receptor site.

Prior to trapping works commencing on the proposed development site, a receptor site must be agreed and made suitable for the reptile population moved from the development site. The trapping and translocation of reptiles to the receptor site will not commence until the supervising ecologist has inspected and agreed in writing that the measures within the document have been implemented and are suitable for reptiles. The phased vegetation cutting, fence, trap and clear operations within the development site will be undertaken under ecological supervision or directly by ecologists.

Once the development site has been deemed clear of reptiles by the supervising ecologist, development work may commence. If there is any delay between clearance works and on site construction work commencing the development site must be maintained in a state that is unsuitable for reptile use. It is the responsibility of the land owner to ensure the development site is kept unsuitable for reptiles via habitat manipulation.

3.3 Reptile Receptor Site



The requirement for a suitable receptor site has been discussed at length within the development team. Ideally a receptor site for a translocated population of reptiles needs to be within the local area. Discussions were held between CCHA and Merthyr Tydfil County Borough Council (MTCBC) regarding a reptile receptor site. A parcel of land owned by MTCBC at Taff Bargoed Community Park was suggested as being possibly suitable for use as a receptor site. The receptor site is centred at ST 10286 97484 and is a portion of land between the recreational fields to the west and the B4255 to the west.

A reptile refugia survey was undertaken within the proposed receptor site. MTHA put 30 artificial refugia out across the site on the 25th July 2022. The tins were allowed to bed in for a minimum of a minimum of 16 days prior to checks commencing. 6 survey visits were completed at site during suitable times of day when it is expected that reptiles would be present and also in favourable weather conditions. The survey started on the 22nd of April and finished on the 20th August 2022.

Date	Conditions	Results	Comments
25/07/2022			30 Refugia set out across site
10/08/2022	18.1°C, 80% cloud, no wind.	0	-
16/08/2022	16.1°C, 90% cloud cover, sunny & dry	- 0	-
20/08/2022	15.2°C, 35% cloud cover, breezy, dry.	0	-
23/08/2022	17.5°C, 65% cloud cover, sunny.	0	-
24/08/2022	17.6°C, 5% cloud cover, sunny spells, dry.	0	-
25/08/2022	18.0°C, 75% cloud, dry.	1 adult male slow worm	-

A single male slow worm was found on the sixth site visit on the 25th August. As the presence of reptiles within the receptor site was confirmed no further survey visits were undertaken.

The management of the receptor site has recently changed from close mown grassland to a relaxed mowing regime and longer sward. Given that the site has only recently become more suitable for reptile use and that a single slow worm was found during the survey visits, it is thought likely only a small population of reptiles are currently present. As it is anticipated that no more than 5 reptiles will be found during the development site clearance, the current receptor site is considered suitable for translocation of the reptile population from the development site.

Should more than 10 reptiles be found during the development site clearance works, detailed in section 5 of this report, further discussion with the MTCBC ecologist will be undertaken. An additional reptile receptor site has been agreed with Craig Watkins of MTCBC Parks Department. The second receptor site sits to the north east of a car park at Taff Bargoed Community Park. The parcel of land is centred at ST1024297663 and measures approximately 3166m². Should more than 10 reptiles be found during site clearance works, Area 7 will be used as a reptile receptor site for any additional reptiles found.



4. Development Site Strategy

The below measures will be implemented at the development site. The first stage vegetation cut work will be undertaken **from the 1st September 2022 - 15th September 2022.** This will avoid the bird nesting season and potential impacts to nesting birds.

4. 1 Installation of Reptile Fencing

Reptile proof fencing will be required around the entire perimeter of the development site. The location of the reptile fencing is provided in Appendix 5 and will be installed by an independent contractor. In order to install the fencing the vegetation along the path of the fencing will need to be cut.

- **First Stage Cut** - The vegetation along the route of the reptile fencing will be cut to 150mm using hand tools. The topography and soil conditions of the site will make the installation of fencing and vegetation cutting difficult. It is anticipated that the first stage cut will be undertaken using hand tools only. The cut material will be raked and removed from the site boundary.
- The supervising ecologist will be present for the first stage cut to ensure contractors follow the fencing route and the retained vegetation is not affected.
- **Second Stage Cut** - After 24hrs from the first stage cut, the vegetation along the route of the reptile fencing will be cut to a maximum height 50mm using hand tools. The cut material will be raked and removed from the site boundary.
- Once the two stage vegetation cut has been completed contractors will be able to install the one way reptile fencing as shown in Appendix 4. The fencing will be installed around the entire perimeter of the site but inside of the retained vegetation to the east and north west of the site, and the Public Right of Way which runs along the southern boundary of the site. Secure heras fencing will be run along both sides of the reptile fencing to prevent vandalism.
- The fencing will be erected in accordance with published specifications such as that contained in *DMRB (Volume 10(4)(7) HA116/05 Nature Conservation Advice in Relation to Reptiles and Roads (withdrawn)*. Superseded in 2020 by *DMRB 10.4.7 LD118 Biodiversity Design*. The fencing will be required to extend 250mm below ground level and be at least 600mm high.
- Once installed the reptile fencing must be checked each day to ensure it is intact. Any breaches will be repaired within 12 hours of being identified. Heras fencing will be erected along the reptile fencing to help prevent damage to the fencing.

4.2 Vegetation Clearance

- **First Stage Cut** - All vegetation within the reptile fencing will be cut to 150mm using hand tools. It is anticipated that the first stage cut will be undertaken using hand tools only. The cut material will be raked and removed from the site boundary.
- Once the first stage vegetation cut has been undertaken artificial reptile refugia will be laid across the land encompassed by the fencing. At least 50 reptile refugia will be placed across the site by the supervising ecologist.
- The refugia will be left to bed in for at least 1 week. Trapping of the development site will take place from the 16th September 2022 - 31st October 2022 dependent on temperature conditions.

4.3 Reptile Trapping

- The trapping activity will involve a daily check of all reptile refugia within the development site. Trapping will only commence once the receptor site has been agreed as being suitable and the reptile refugia have been down for at least 7 days.
- Daily checking will be undertaken for at least 30 days and until no reptiles are caught for 5 consecutive days. Consecutive days will be when the temperatures are above 9°C, dry or after a period of rainfall.
- It is acknowledged that the HGCB advisory note request 60 days of trapping for small reptile populations. However it is imperative that the trapping exercise is completed before the reptile hibernation period. In order to compensate for a reduced trapping time supervised destructive searching and vegetation manipulation will be used.
- Vegetation will be controlled and the fencing will remain in place and be maintained in a good condition until the proposed development at the site commences. This will be the responsibility of the client and their contractors. Removal of the fencing will only be undertaken once site clearance and construction works are complete.

4.4 Vegetation Clearance

- **Second Stage Cut** - Once at least 5 days of no consecutive reptile finds has been achieved within the development site, the remainder of the vegetation within the site can be cut. Vegetation will be cut to a maximum height 50mm using hand tools or machinery with an adjustable height flail. The cut material will be raked and removed from the site boundary.

- Destructive searching of the ground may be required in some areas within the development site. Once the second stage vegetation clearance has been completed the supervising ecologist will walk the site. Any areas of dense thatch or rubble still remaining will be subject to destructive searching directly supervised by an ecologist.
- A JCB or similar machine with a toothed bucket attachment will be used to gently rake over the top 10cm of soil in areas identified as still having potential . The JCB will work in vertical lines across the translocation site under the direct supervision of an ecologist.
- Scraped material will be set in vertical lines as the machine works across the site to allow any animals the chance to relocate of their own accord as destructive searching progresses. The scraped material will then be removed from the translocation site or tracked back into the ground depending on the suitability of the material, e.g. rubble will not be tracked into the ground.
- Scraped material and the tracking of material into the ground (where applicable) will be completed at the end of each days work to prevent recolonisation by reptiles. The areas targeted for destructive searching will be left as bare ground unsuitable for reptile use.
- Any reptiles found during the targeted destructive searching works in the development site will be captured and immediately moved to the receptor site.

5. Management Responsibility

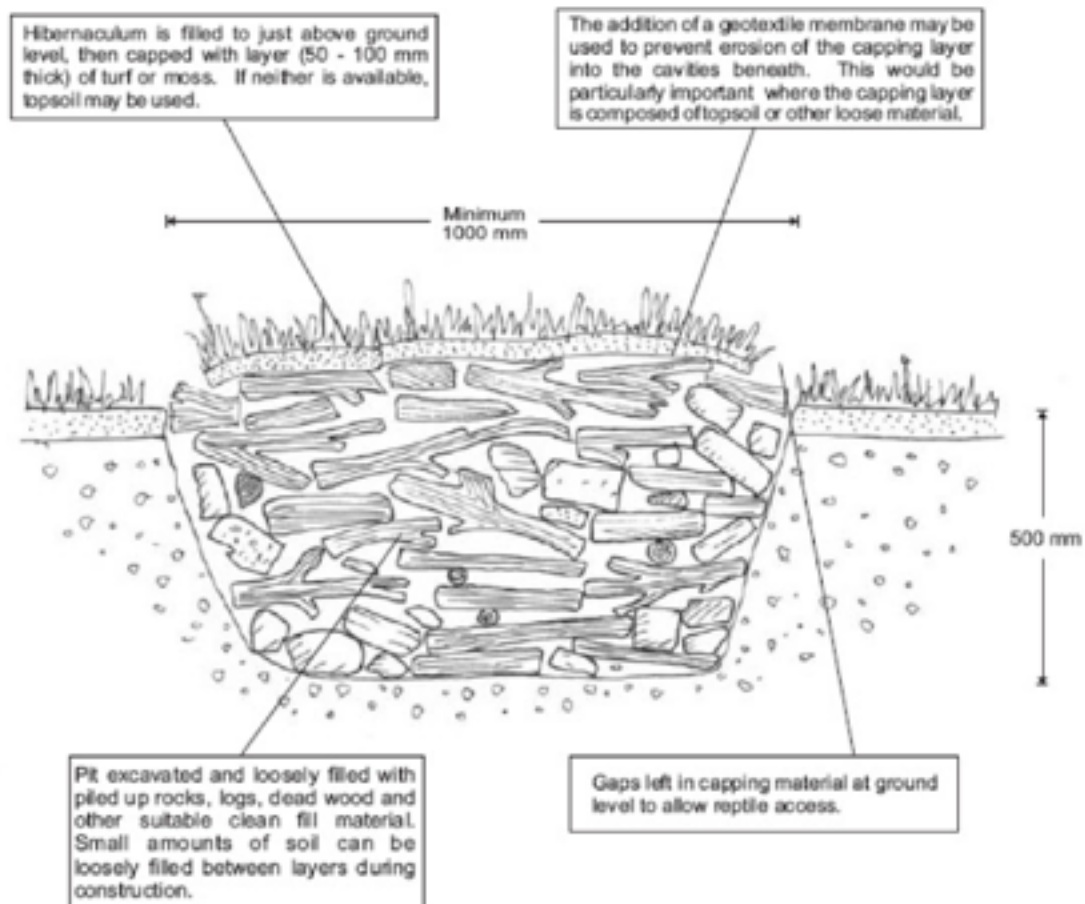
All ongoing management works at the development site and Open Mosaic Habitat Compensation Site will be implemented and undertaken by Merthyr Tydfil Housing Association (MTHA). Year 0 will be the year that on site vegetation clearance works commence. The management works will be adopted into the MTHA estates team management plan for the area.

The reptile receptor sites will be managed by MTCBC.

Appendix 1 – Management Table

		Month											
	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Open Mosaic Habitat Creation Site													
Scrub clearance	0												
Hibernacula Creation	0												
Scrape Creation for OMH	0												
Mowing 2x per year of entire site	1, 2												
50% of grassland cut (Alternate area each year)	3,4,5												
Scrape Creation for OMH	3												
Development Site													
1st Stage vegetation cut													
Install Reptile Fencing	0												
Reptile Trapping (at least 30days)	0												
2nd Stage Vegetation Cut	0												

Appendix 2 – Reptile Hibernacula



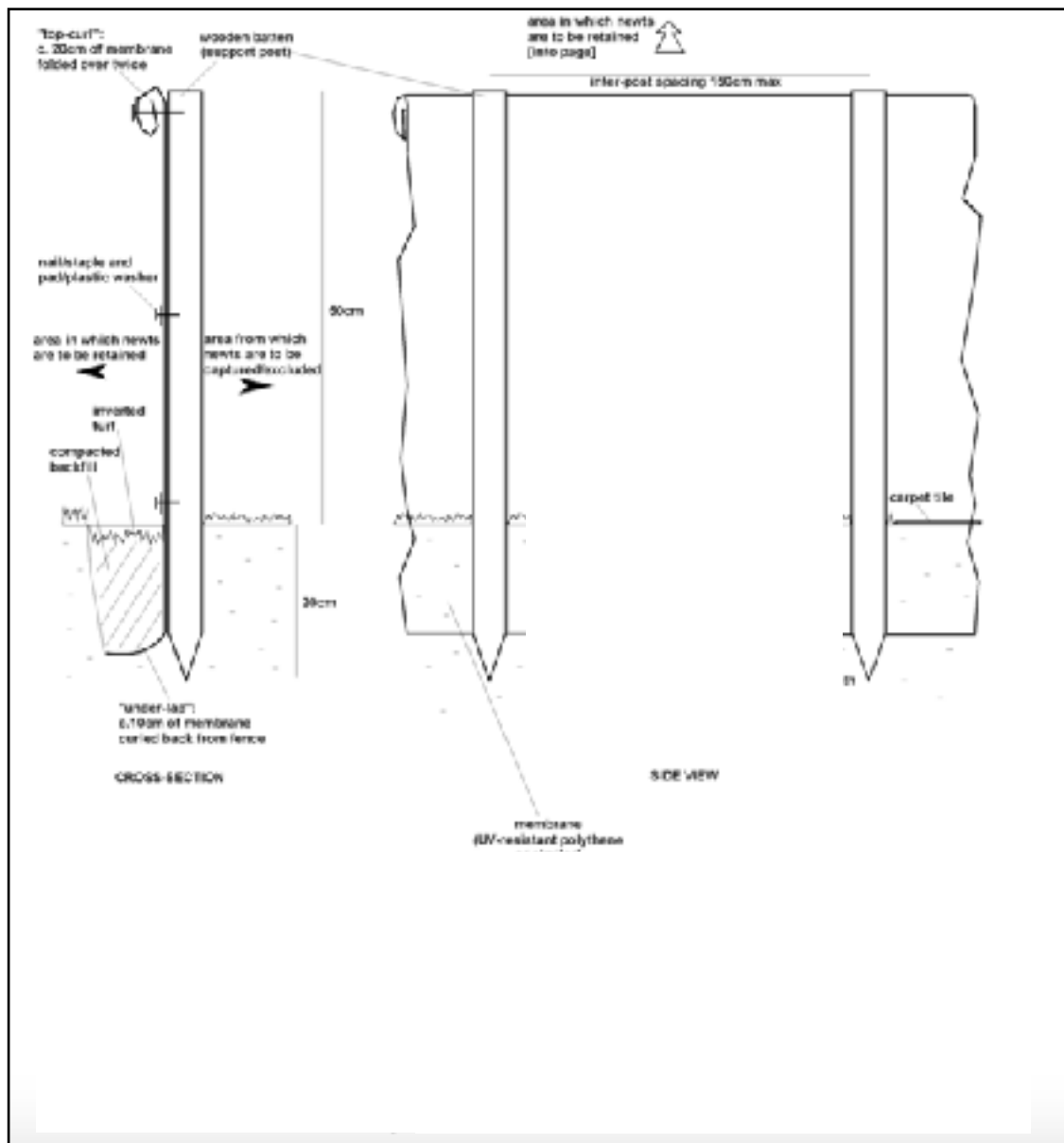
**Source: Highways Agency (2005) *Design Manual for Roads and Bridges: Volume 10*
Section 4 Part 7 – Nature Conservation Advice in Relation to Roads and Reptiles**

Appendix 3 – OMH Habitat Creation Site Photographs

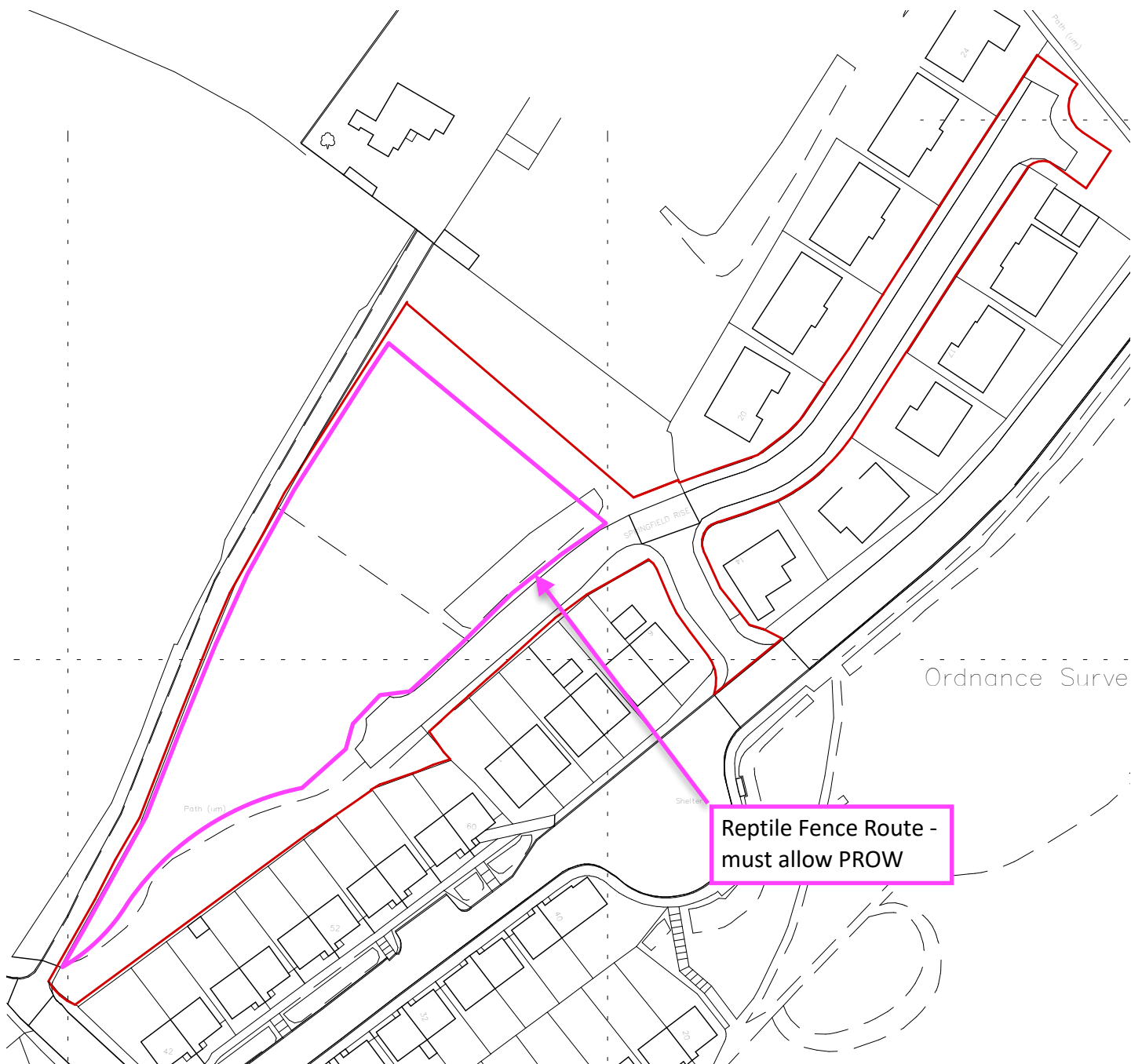




Appendix 4 – Reptile Fencing Design

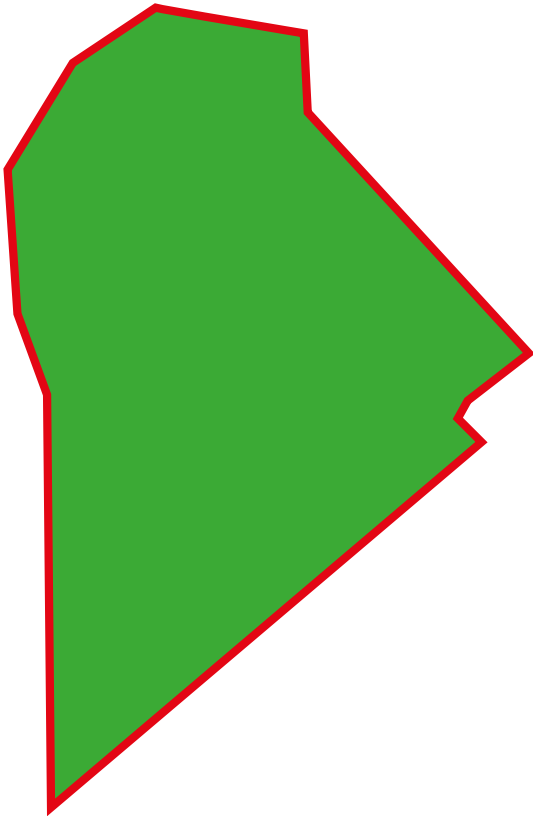


Appendix 5 – Reptile Fencing Route



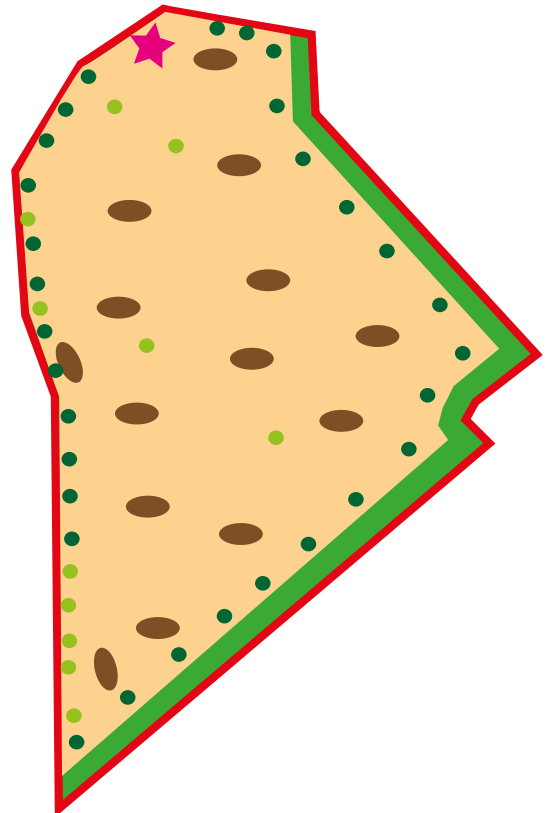
Appendix 5 – Before Vs After Open Mosaic Habitat Compensation Site

Habitat Compensation Site prior to vegetation clearance and planting



 Dense Scrub with scattered trees

Habitat Compensation Site after vegetation clearance and planting



-  Scrapes to be created
-  Approximate location of reptile hibernacula
-  Semi improved grassland to be created
-  Dense scrub retained
-  Planted Tree
-  Retained Tree

Appendix 6 - Aerial View of Development Site, Habitat Compensation and Reptile Receptor Areas

