



Jah Jireh Charity Homes

Merthyr Tydfil

Reptile Survey

November 2020

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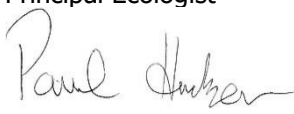
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DOCUMENT CONTROL

Jar Jireh Charity Homes, Merthyr Tydfil Reptile Survey				
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Executive Summary

Site Location	Acer Ecology Ltd was commissioned by Jah Jireh Charity Homes to conduct a reptile survey at the Jah Jireh site, Merthyr Tydfil, CF440LX, within the boundary of Merthyr Tydfil County Borough Council (Ordnance Survey Grid Reference centred at: SO 0053 0742).
Survey Methods	The survey consisted of two different techniques: the use of artificial cover objects and direct observation. Artificial refuges were placed throughout the site on the 25th August 2020, in areas considered to be suitable for reptiles. The refuges were then left for two weeks prior to commencing the survey to allow reptiles to grow familiar with, and then utilise, them. The survey consisted of seven separate visits. During each visit, the terrestrial habitat was checked for reptiles, as well as each artificial cover object. The artificial cover objects or refuges were first checked from a distance for basking reptiles, before being checked below for sheltering individuals.
Survey Results	The maximum number of adult reptiles recorded across the site was 13 common lizards which falls into the 'medium population' category. No other species of reptile were recorded. The majority of the lizards were recorded outside of the area of the site which will be directly impacted by the development, but a few individuals were recorded inside the development footprint. The area of habitat within the development footprint is somewhat less suitable for reptiles than other parts of the site where grasses are rank, and vegetation more varied, scrubby and contains more suitable basking opportunities. Nonetheless, reptiles are likely to occasionally occur within the development footprint.
Predicted Impacts of Development on Reptiles	Without mitigation, the development could potentially cause direct harm to common lizards, including the possibility of killing or injury. The development would also result in the loss of an area of suitable habitat of approximately 0.2ha. These impacts are considered to be significant at site level.
Proposed Mitigation	Mitigation to prevent harm to common lizards will be achieved by the species deterrence and displacement measures. Further mitigation will involve on-site habitat retention and enhancement to increase the carrying capacity of the retained habitat.
Required Actions	Detailed recommendations are given in Section 6.

1. Introduction

Acer Ecology Ltd were commissioned by Jar Jireh Charity Homes to carry out a reptile survey of land at the Jah Jireh site, Merthyr Tydfil, CF44 0LX, within the boundary of Merthyr Tydfil County Borough Council (Ordnance Survey Grid Reference centred at: SO 0053 0742). The purpose of the reptile survey was to determine the presence or likely absence of reptiles on the survey area, which comprises the red boundary line of the site shown on Plan 1.

1.1 Site Description

The 3.06 hectares site is situated along the western boundary of Merthyr Tydfil Borough Council. The site proposed for development comprises mainly semi-improved neutral grassland that dominates throughout the survey area and runs along the southern boundary and central areas of the site. Other habitats include amenity grassland, dense scrub (*Rosa canina agg*), tall ruderal vegetation, and scattered trees such as sycamore (*Acer pseudoplatanus*) and beech (*Fagus Sylvatica*). To the north of the site lies the Brecon Beacons National Park. The immediate boundary comprises several SINC's, mostly fields of marshy grassland. This also applies to the western boundary of the site that is intersected by the A465 Heads of the Valleys road; the A465 also comprises the immediate southern boundary of the site. Mature woodland runs parallel to the western boundary and The Hardstaff Group industrial site lies 250m to the north-west of the site.

1.2 Proposed Works

A planning application has been sought (reference: P/20/0094) for a variation of condition 1 of planning consent P/15/0105 (for the erection of a two-storey building providing 17 two-bedroom sheltered accommodation flats), to allow a further 5 years in which to commence development. The proposed works are shown in plan 3.

1.3 Site History

Acer Ecology Ltd undertook a Preliminary Ecological Appraisal (PEA) of the site on 12th June 2020. The PEA report should be read in conjunction with this report.

1.4 Legislation

There are four widespread species of British reptile comprising grass snake (*Natrix helvetica*), slow-worm (*Anguis fragilis*), adder (*Vipera berus*) and common lizard (*Zootoca vivipara*). These species are protected under the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000. They are given so called 'partial protection', which prohibits the intentional or reckless killing or injuring of individuals of any of the above species. Notes on the habitat preferences of the four common

reptile species are contained within Appendix 1. In addition, these species of reptiles are also listed in Part 1 Section 7 of the Environment (Wales) Act 2016 which is a list of the living organisms of principal importance for the purpose of maintaining and enhancing biodiversity in Wales.

1.5 Survey Scope

The survey comprised a presence/likely absence reptile survey utilising a combination of artificial cover objects or refugia as they are also known and direct observation whilst walking across the site.

1.6 Reporting

The aims of the report are to:

- Outline the methodology used during the survey;
- Determine the presence or likely absence of reptiles at the site;
- Determine the population size class of reptiles if confirmed to be present;
- Provide an interpretation of the findings, in relation to the potential impacts of the development;
- Specify the legal and policy constraints relevant to reptile populations and individual reptiles which may affect the development; and
- Provide an indication of mitigation, compensation and enhancement measures that may be required.

2. Methods

2.1 Field Study

Surveys were undertaken to establish the presence or likely absence of reptiles on the site. Surveys were undertaken in accordance with the guidance outlined in the Herpetofauna Workers' Manual (Gent and Gibson 2003), Advice Sheet 10 – Reptile Survey¹ (Froglife, 1999), the Handbook of Biodiversity Methods: Survey, Evaluation and Monitoring (Hill et al., 2005), Reptiles: surveys and mitigation for development projects (Natural England and DEFRA 2015), the Reptile Mitigation Guidelines (Natural England 2011) and Survey Protocols for the British Herpetofauna (Sewell et al., 2013). This involved seven return visits in suitable weather conditions on non-consecutive days during September and October.

The surveys were undertaken by Ffion Jones²,. Froglife's Advice Sheet 10: Reptile Survey (1999) recommends that around 10 artificial cover objects or artificial cover objects per hectare are used during reptile surveys³. The site is 3.06 ha in size. A total of 160 were placed across the site which equates to 52 artificial cover objects per hectare. This considerably exceeds the density of artificial cover objects recommended by Froglife. The artificial cover objects (comprising sections of bituminised roofing felt and corrugated bitumen-based roofing felt) measuring at least 0.5m by 0.5m in size (in accordance with guidance within the Design Manual for Roads and Bridges, 2005), were installed on the site on the 25th of August 2020, in areas considered to have habitat suitable for supporting reptiles. For example south-facing positions, preferably concealed in or adjacent to vegetation cover, areas of neutral semi-improved grassland, dense scrub, hedgerow, woodland edge and a pile of building materials such as leaning tiles and plastic piping toward the centre of the site which could potentially act as natural refugia for reptiles. They were checked on each visit to the site.

The whole site was systematically surveyed where possible. However, some of the habitat in the west of the site was considered unsuitable for reptiles due to the short nature of the grassland and areas of it were managed weekly with a mower, and so these areas were not surveyed as other areas were deemed more suitable.

The location of the artificial cover objects is shown on Plan 2. The refuges were then left undisturbed on the site for two weeks prior to commencement of the survey, to allow the reptiles on the site sufficient time to find and start utilising them. Each refuge was then first checked for basking individuals from a distance before being slowly approached and searched for sheltering reptiles. Terrestrial habitat between artificial cover objects was also searched for reptile species on each visit. The location of each reptile sighting was then recorded to allow for analysis of population distributions across the site (see Plan 2).

¹ The Froglife Guidance is aimed conservation volunteers and not professional survey work.

² Ffion graduated with a degree in Conservation and Ecology at the University of Exeter. As part of her degree, she undertook an Ecological Consultancy module where she learnt about reptile ecology and survey methods. Further details of her qualifications and experience can be found at <https://www.linkedin.com/in/ffion-jones-17ab63197>.

³ This guidance is primarily aimed at monitoring schemes rather than presence/likely absence surveys

The timing of survey visits were undertaken in accordance with the guidelines (Natural England, 2011); in early autumn, between 09:00 and 11:00 and 16:00 and 18:00 and in late autumn, during the middle hours of the day approximately between 11.00 and 15.00 and when the air temperature is between 9°C and 18°C⁴, which is considered the optimal time to survey for reptiles (Froglife, 1999). Heavy rain and wind are deemed unsuitable conditions for reptile surveys (Froglife, 1999). As reptile activity is heavily dependent on weather conditions the following parameters were recorded during each survey visit: air temperature⁵, wind levels, rain levels, and the cloud cover. As recommended in the guidance (Froglife, 1999) surveys were not undertaken on consecutive days.

Species and life stage and were also recorded, where animals were present, as well as environmental data. Non-target species, such as amphibians and small mammals, utilizing the artificial cover objects was also recorded during the surveys.

2.2 Constraints

2.2.1 Survey Timing

The surveys were undertaken in suitable weather conditions with the majority being undertaken during September. However, the last survey was undertaken in October when common lizards begin to hibernate, this may explain why no reptiles were recorded during the final survey. However, good numbers of common lizards were recorded during the earlier surveys, therefore this is not considered to be a significant constraint.

⁴ Natural England's Reptile Mitigation Guidelines recommend that the temperature is between 10-20°C.

⁵ Minimum and maximum temperature in the shade was measured during the survey using an ETI digital thermometer.

3. Results

3.1 Desk Study

A data search undertaken as part of the PEA returned six records of reptiles within 1km of the site (SEWBRc). This included six common lizards. The nearest record is approximately 0.59km away towards the north-west of the site.

3.1.1 Site Context

Mature woodland surrounds the site to the east and extends to the north-west and south-west of the site. Marshy grassland surrounds the site to the north and east of the site, the latter is encompassed by the A465 Heads of the Valleys road. The site is enclosed on all sides by woodland, roads, and grassland. The surrounding landscape is well suited to allow reptile migration to and from the proposed development site.

3.2 Field Survey Results

The survey results and weather conditions of each survey are summarised below:

Table 1: Survey Weather Conditions

Survey	Date	Start Time	Air Temperature (Min and Max °C)	Rain	Wind Speed (Beaufort)	Cloud Cover (Oktas)
1	9/9/2020	18:00	13	0	2	0/8
2	17/9/2020	10:00	15	0	1	0/8
3	19/9/2020	11:00	15	0	2	2/8
4	25/9/2020	12:30	12	0	3	2/8
5	27/9/2020	14:00	14	0	0	0/8
6	29/9/2020	11:30	14	0	1	3/8
7	14/10/2020	11:15	12	0	3	5/8

Table 2: Survey Results

Survey	Date	Records		
		Species	Adults	Juveniles
1	9/9/2020	Common Lizard	4	1
2	17/9/2020	Common Lizard	9	0
3	19/9/2020	Common Lizard	13	11
4	25/9/2020	Common Lizard	6	2
5	27/9/2020	NA	0	0
6	29/9/2020	Common Lizard	3	0
7	14/10/2020	NA	0	0

Plan 2 shows the areas of the site where reptiles were recorded. The common lizards were recorded mainly in the north and north-east of the site. Toads (*Bufo bufo*) (a priority species) and wood mice (*Apodemus sylvaticus*) were also recorded during the surveys.

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4. Interpretation of Survey Results

Reptile populations can be classified into three classes, based on the maximum number of adult reptiles seen on any one survey visit, as shown in the table below (Froglife 1999 and Natural England (TN102)). It should be noted that Froglife's guidance (1999) recommends that around 20 visits⁶ may be required to assess population size.

Table 3: Reptile Population Size Classes

Species	Natural England Guidance (TN102)			Froglife Guidance (1999)		
	Small Population	Medium Population	Large Population	Low Population	Good Population	Exceptional Population
Adder	<5	5-10	>10	<5	5-10	>10
Grass Snake	<5	5-10	>10	<5	5-10	>10
Common Lizard	<5	5-20	>20	<5	5-20	>20
Slow Worm	<10	10-40	>40	<5	5-20	>20

Table 4: Reptile Population Size Classes Recorded During Survey

Survey	Date	Records			
		Species	Total Number	Population Class (NE Guidance)	Population Class (Froglife Guidance)
1	9/9/2020	Common lizard	4	Small	Low
2	17/9/2020	Common lizard	9	Medium	Good
3	19/9/2020	Common lizard	13	Medium	Good
4	25/9/2020	Common lizard	6	Medium	Good
5	27/9/2020		0		
6	29/9/2020	Common lizard	3	Small	Low
7	14/10/2020		0		

The results of the surveys indicate that the site supports a medium/good population of common lizard. However, it should be noted that the number of artificial cover objects used greatly exceeds the number recommended per hectare by Froglife's guidance (5-10 per hectare) for surveying reptiles. Therefore, the results from the current reptile survey cannot be directly compared to Froglife's population estimates.

⁶ It should be noted that the requirement to undertake 20 surveys on the HGBI guidance to provide a population class is aimed at conservation volunteers and not professional survey work.

5. Assessment of Potential Impacts on Reptiles

The potential impacts on reptiles are based on the development proposals at the time of writing. This impact assessment may need to be reviewed and amended as necessary in light of any alterations to the development proposals.

5.1 Potential Direct Impacts

Low numbers of common lizard were present within the proposed works area (see Plan 2). The development has potential to result in the following direct impacts:

- Death or injury of any individuals present at the point of site clearance;
- Habitat loss through land-take and the removal of reptile habitat;
- To a small extent, population isolation may occur through habitat fragmentation; and
- Possible reduction in quality of reptile habitat around the proposed development footprint.

5.2 Potential Indirect Impacts

The development has the potential to result in the following indirect impacts:

- Increased disturbance on site;
- Potential for persecution and/or collection by humans; and
- Potential disturbance to neighbouring populations of reptiles with the increased human presence and noise and vibrations from the works.

5.3 Planning Requirements

The presence of reptiles on a site does not typically preclude development provided adequate measures can be taken to avoid an offence being committed. Adverse impacts to reptiles can be acceptably mitigated (as detailed in Section 6).

5.4 Mitigating the Impacts

A medium/good population of common lizard was recorded on the site as a whole, but reptiles were not recorded within the majority of the area proposed for development. The adjacent habitat around the development footprint, around the wider site, and in habitat outside of the site boundary is suitable for reptiles. Mitigation to prevent harm to common lizards from construction and clearance works will be required through species deterrence and displacement measures whereby individuals are encouraged to move into suitable retained habitats in advance of site clearance. In addition, habitat enhancement for reptiles will be undertaken on the wider site to increase its carrying capacity (see Section 6).

6. Required Actions

The following recommendations will be implemented to ensure that the common lizard population on site is protected, and to ensure the retained habitat is enhanced to increase its carrying capacity to support any reptiles.

6.1 Species Deterrence and Displacement Measures

6.1.1 Timing of Works

The grassland within the development footprint will be cleared during the active reptile season (i.e. between March to October inclusive, when reptiles are not in hibernation during the winter months).

6.1.2 Site Induction/Toolbox Talk

Clearance and construction personnel will be briefed by the suitably qualified ecologist about the confirmed presence of reptiles on the site and the necessary course of action if any reptile is encountered.

6.1.3 Vegetation Clearance Within the Development Footprint

Clearance and construction personnel will be briefed as to the possible presence of reptiles on the site and the necessary course of action if any reptile is encountered i.e. stopping clearance works and allowing the reptile to migrate voluntarily away into the retained habitat. An appropriately qualified ecologist will be present on site to supervise the clearance works.

Clearance of vegetation will involve species deterrence and displacement measures ahead of other site work. This will be undertaken to encourage and compel individual reptiles that may be present in the works area to migrate away voluntarily from the works area and into the adjoining areas not subject to the works. Appropriate measures will include the following:

- Clearance of the site will be undertaken in a piecemeal fashion, the main clearance of site will commence from the west (directly adjacent to the carpark) and proceed eastwards, slowly working across the development footprint (i.e. clearance will occur towards the retained areas of habitat). Clearance will be spread over several hours to allow reptiles time to disperse out of the immediate works area into safe habitats at the site periphery;
- Taller vegetation in the areas to be cleared will initially be strimmed or brush cut to a height of no less than 15cm and raked away so as to reduce its attractiveness for amphibians and other wildlife and as to not act as a refuge within the development footprint. This will be undertaken 24 hours in advance of the clearance work. Strimmed vegetation will be raked to the edge of the works area. Any reptiles (or other wildlife encountered) will be allowed to vacate the works area voluntarily, or will be carefully collected and removed to safety;

- Immediately prior to the commencement of other site works (i.e. 24-48 hours ahead), the area to be cleared will be strimmed a second time, cutting the vegetation to 5cm with the cut vegetation again being raked away. A suitably qualified ecologist will supervise the second cut before works can commence;
- Raked or cut vegetation will either be removed entirely from the site or piled in areas which will not be affected, i.e. the retained habitat, as the piles may otherwise act as a focus for refuge by displaced fauna; and
- The services of an appropriately qualified reptile consultant will be available on an 'on-call' basis at all stages of the future works to deal with any unexpected encounters with reptiles or other wildlife.

6.2 Building Compounds and Storage Areas

Building compounds and storage areas will not be sited on areas of habitat which are to be retained. Similarly, no equipment, machinery or materials will be brought into the areas of retained habitat. Building compounds and storage areas will be sited on existing areas of hard standing.

6.3 Habitat Enhancement of the Remaining Site

An area on the site will be set aside and continually managed as reptile habitat. This area is shown on Plan 2, where the majority of the most optimal reptile habitat is situated. The area is already well connected to the surrounding countryside, and therefore suited to encouraging continued reptile migration to and from the site. As this area already contains a moderate reptile population, no significant changes in management are recommended. However, further recommendations are set out below.

6.3.1 Grassland Management

The areas semi-improved grassland (see Acer Ecology's PEA report for the site) will be mown in autumn, as this timing allows plants to flower and set seed which will not only increase the floristic diversity of the site, but will also benefit invertebrates that require nectar sources and roosting locations during spring and summer. Ideally, the sward will be cut to a height of about 8 to 10cm.

The majority of the semi-improved grassland on the site will be mown once or twice annually, after flowering, with cuttings taken off-site in order to reduce nutrient levels, with no application of fertiliser/herbicides/insecticides etc. This will create a meadow and reduce the impact upon species which might currently use the grassland set for clearance for the proposed development.

6.3.2 Artificial Hibernacula

Four artificial hibernacula will be created within the retained habitats, in parts of the site which are most attractive to reptiles. The hibernacula will be created prior to the clearance works.

The hibernacula will measure approximately 4m in length, 2m in width and 1m in height. They will comprise bricks, stone and/or timber. The banks will run from east to west. The southern side of the banks will be

finished with topsoil and left to re-seed naturally. The northern side will be left with the rubble exposed to allow reptiles to enter cavities within the bank. The artificial bank should be situated to maintain connectivity between habitats that remain on site. This enhancement measure will be implemented within the proposed enhancement site prior to the commencement of the development and will be suitably checked by an ecologist to ensure the quality and installation of the hibernacula are suitable. Confirmation that the hibernacula were installed correctly on site will be forwarded to the Local Planning Authority ecologist.

The proposed locations of the hibernacula are shown on Plan 2 and 4. Appendix 3 provides a visual representation of these artificial hibernacula.

6.3.3 Future Development

Ideally, the remaining habitat outside of the current development footprint will not be subject to further development. Any future development proposals will need to be very carefully considered with regards to reptiles, to update the population size estimate, and to inform a suitable mitigation strategy.

6.4 Longevity of Report

If development works do not begin within eighteen months to two years of the date of this report, an update survey is likely to be required in accordance with guidance from Natural Resources Wales (NRW)⁷, (CIEEM, 2019) and BS 42020:20138, to determine if conditions have changed since those described in this report.

⁷ As set out in Point 5 of the NRW *Bat Surveys - Frequently Asked Questions* and Point 4 of the guidance included within the NRW European Protected Species Development Application Form.

⁸ As set out in Section 6.2.1, point 7 which states that ecological information should not normally be more than two/three years old, or as stipulated in good practice guidance).

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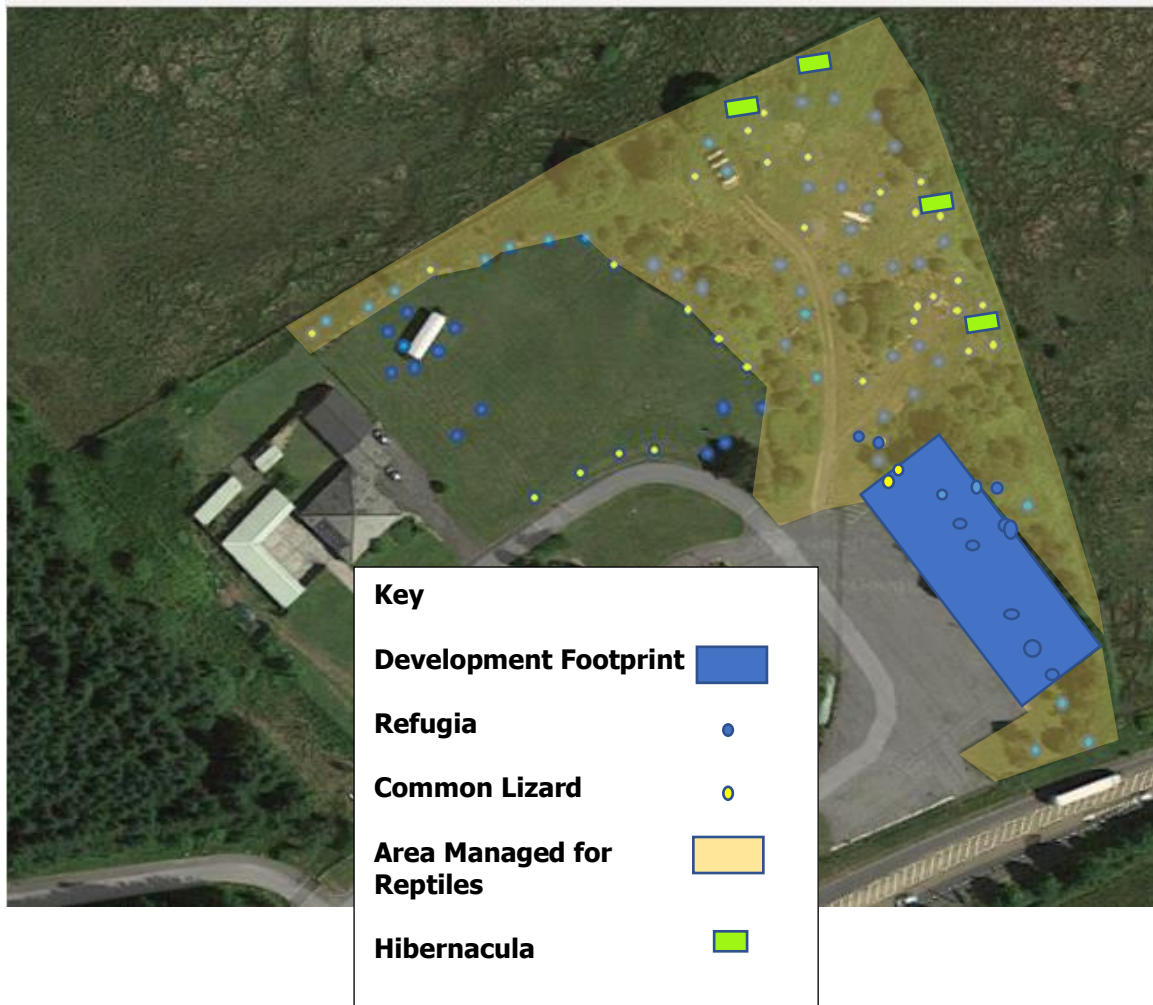
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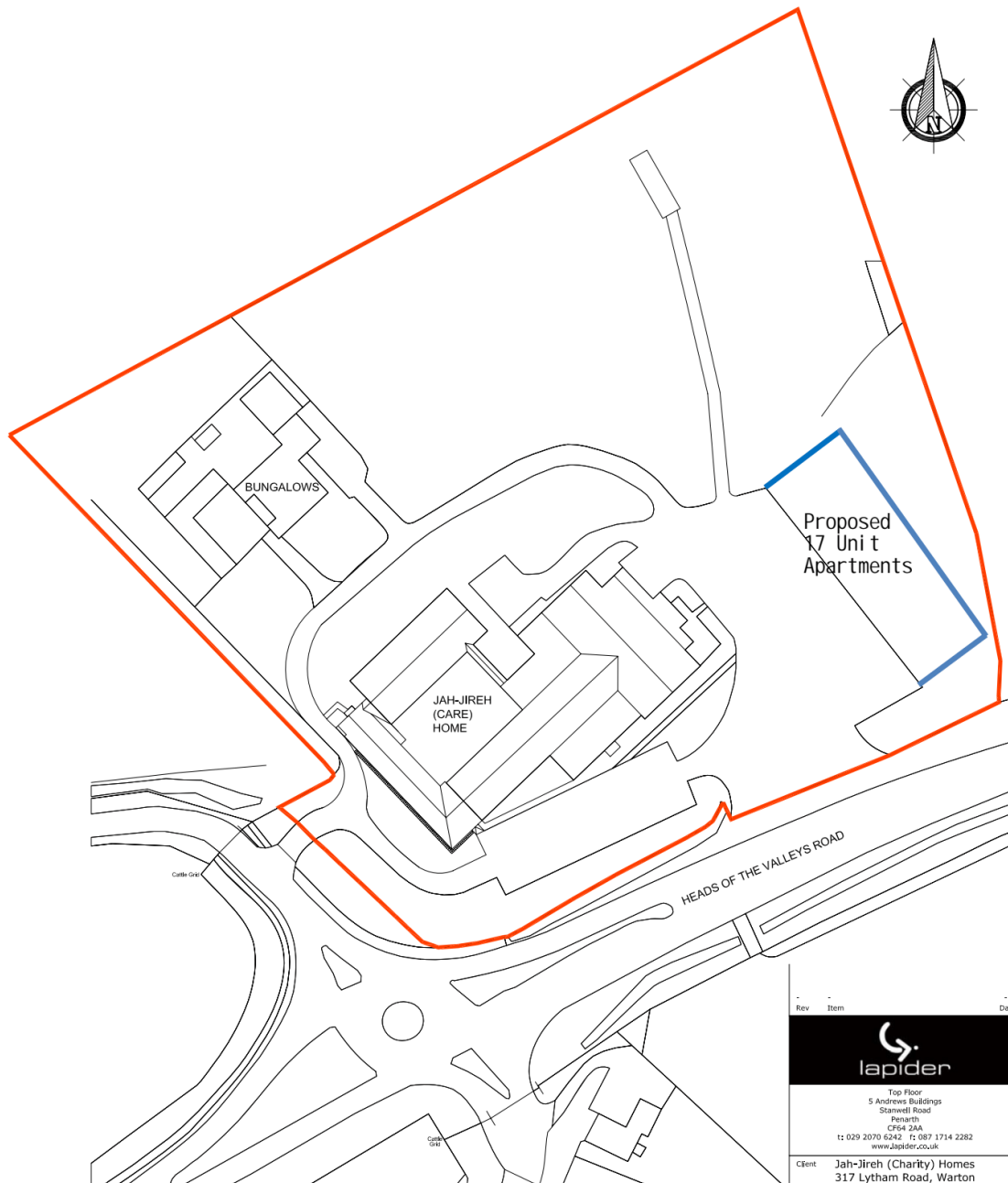
Plan 1: Location Plan



Plan 2: Location of Reptile Artificial Refugia and Results



Plan 3: Proposed Development Plan



EXISTING SITE PLAN SCALE 1:1250

Rev	Item	Date
Top Floor 5 Andrews Buildings Stanwell Road Penarth CF64 2AA t: 029 2070 6242 f: 087 1714 2282 www.lapider.co.uk		
Client: Jah-Jireh (Charity) Homes 317 Lytham Road, Warton Preston, Lancs Tel: 01772 633380		
Project: Jah-Jireh (Charity) Homes Heads of the Valley Road Merthyr Tydfil CF44 0LX		
Drawing Title: SITE PLAN		
Job Number: 231/PM/08		
Drawing Number: 231/100		Rev: -
Purpose of Issue: Information ☒ Tender ☐ Comment ☐ Construction ☐		
Scale: 1:1250/BA4		Date: April 2009
Drawn By:		Checked By:

Plan 4: Mitigation Plan



Appendix 1: Species Requirements of the Common Reptile Species

Notes on the habitat requirements of the four common reptile species is given below:

Slow-worms are widespread throughout England and Wales and occur in a variety of habitats including rough grassland, hedgerows, heathland, woodland edges, downs and moorland. They also occur in a wide variety of man-made habitats including railway and road embankments, gardens, churchyards, parks and allotments. Marshy and very arid habitats are usually avoided. Dense vegetation cover combined with sunny areas allowing thermoregulation is ideal. Habitats which allow the animals to burrow such as compost heaps or loose soils encourage their presence and they are often associated with piles of stones, rubble or pieces of tin or plastic (Beebee and Griffiths 2000). They are often found associated with anthills and these structures may also provide a convenient network of underground tunnels.

Common lizards occur in a wide range of habitats including roadside verges, uncultivated field edges, forest rides and glades, cliff edges and scree slopes, artificial embankments along railways and rivers, upland moors, heathlands and coastal sand dunes. Suitable habitat consists of undisturbed ground that is topographically diverse with fairly dense but short vegetation less than 0.5m high, open to the sun and with a few exposed areas that can be used for basking. The soil should be well drained and have adequate artificial cover objects for use in both summer and winter. South-facing slopes are preferred and humid sites often have the highest population densities.

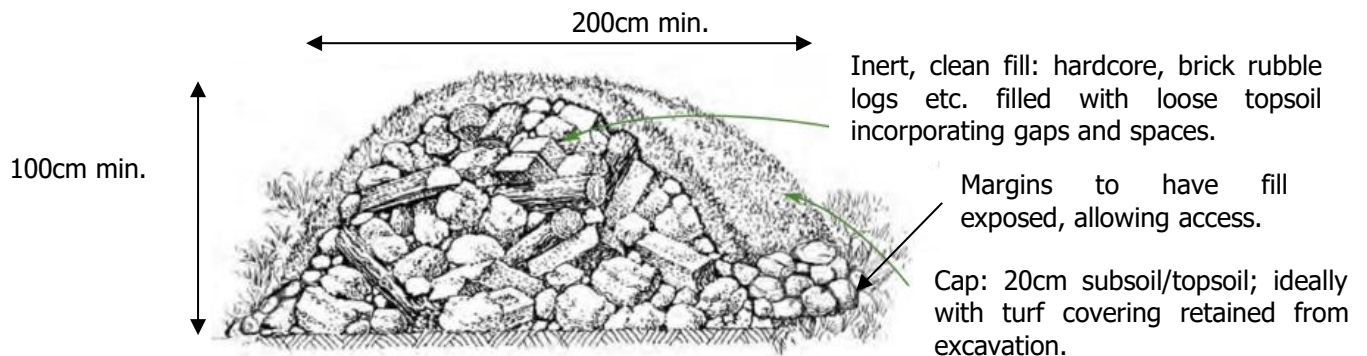
Grass snakes are highly aquatic and are usually associated with ponds, lakes, marshes, streams or ditches. They feed almost entirely on amphibians. They also occur in open woodlands, hedgerows and rough grassland. Drier habitats including heaths and moorlands are sometimes used. They require terrestrial habitat with an abundance of hiding places and access to sunshine. Open patches close to thick cover are frequently used for basking.

Adders occur in a variety of habitats including heathlands, moors, chalk downlands, woodland rides, coastal dunes, rough commons, overgrown quarries, along field edges and railway embankments. The main requirement is undisturbed sunny glades or slopes, usually in the vicinity of some thick cover. South-facing slopes are preferred in upland areas.

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Appendix 2: Artificial Hibernacula

A: Above Ground Hibernaculum for Impermeable Soils

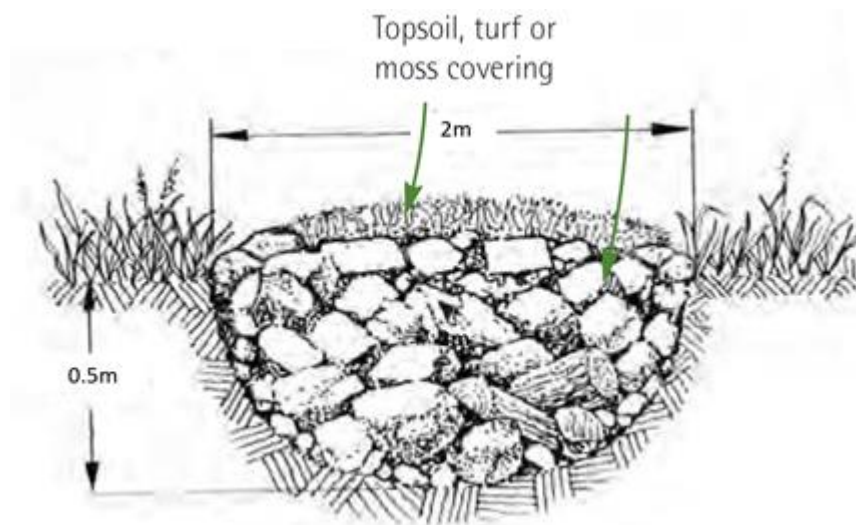


Notes: Ideally, the hibernaculum should be constructed on a gentle slope to prevent flooding.

A suggested minimum size is 4m long by 2m wide by 1m deep⁹.

The area around the hibernaculum should be managed as rough grassland.

B: Below Ground Hibernaculum for Free Draining Soils



A suggested minimum size is 4m long by 2m wide by 0.5m deep.

⁹ Baker, J., Beebee T., Buckley, J., Gent, A. and Orchard, D. (2011). Amphibian Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth