MVV Environment Devonport Ltd
Energy from Waste Combined Heat and Power Facility
North Yard, Devonport
Reptile Survey Report

April 2011

Prepared for

MVV Environment Devonport Ltd

Revision Schedule

Reptile Survey Report
April 2011

Rev	Date	Details	Prepared by	Reviewed by	Approved by
01	6 October 2010	Draft Report for Comment	**Paul Gregory** Senior Ecologist	**Ian Roach** Principal Environmental Consultant	**Ian Roach** Principal Environmental Consultant
02	15 April 2011	Final following client comments	**Paul Gregory** Senior Ecologist	**Ian Roach** Principal Environmental Consultant	**Ian Roach** Principal Environmental Consultant

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1 Introduction

1.1 Background

1.1.1 Through a competitive tendering process, MVV Environment Devonport Limited (MVV) has been awarded the South West Devon Waste Partnership's (SWDWP) residual waste treatment and disposal contract. The SWDWP is a collaboration that has been established between Plymouth City Council, Torbay Council and Devon County Council to provide a long term solution to deal with the waste from the southwest Devon area left over after re-use, recycling and composting.

1.1.2 MVV's proposal is to construct and operate an Energy from Waste Combined Heat and Power (EfW CHP) facility on land currently situated in the north east of Her Majesty's Naval Base (HMNB) Devonport, Plymouth.

1.1.3 Scott Wilson Limited has been employed by MVV as planning and environmental consultants and is undertaking the necessary environmental studies to support the planning application.

1.1.4 Scott Wilson Limited has undertaken a Reptile Survey to support the ecology chapter of the Environmental Statement. The objective of the Reptile Survey was to determine the status of reptile population/s within the proposed development site; the results of the survey are detailed in this report.

1.2 Limitations

1.2.1 The findings and recommendations presented in this report are based on the information available at the time of writing (initially in September/October 2010 and updated in April 2011) and the site conditions pertaining at the time the survey was undertaken (May – September 2010).

1.3 Site Description

1.3.1 The surveyed area is centred on national grid reference: SX 446 573; only about 1.9ha of the surveyed area is suitable as reptile habitat. The site access is via the Camel's Head entrance into Her Majesty's Naval Base (HMNB) Devonport, located *c.* 4 km north west of Plymouth city centre. The site lies in the north of the naval base / dockyard complex. The surrounding landscape is dominated by the urban environments of the city of Plymouth, mainly industrial and residential buildings. The Tamar estuary is located *c.* 500m to the west of the site. A location plan is provided as Appendix 9.1.

1.3.2 Until recently the site was used by a firm called Ashcroft to process demolition rubble, created from different construction projects throughout the Naval Base and dockyard. Semi-natural broadleaved woodland, known as Blackies Wood, occurs towards the north and north western areas of the site, whilst semi-improved grassland and mudflats, associated with the estuarine tributaries, occur towards the east of the site.

1.3.3 The land to the west of the site is currently used as a car park, whilst to the east is the Devonport Distribution Facility (DDF), which stands approximately 8m high. The DDF is

bordered to the north and south by large areas of tarmac which are currently used as loading bays and service yards. Directly to the south of the site is Weston Mill Lake naval dock.

1.4 Development Description

1.4.1 As detailed in paragraph 1.1.1, MVV proposes to construct and operate an EfW CHP facility at the site. The land requirement is *c.* 3.4 ha. This includes the EfW CHP facility itself, buildings, ancillary equipment, storage areas, office and amenity buildings, weighbridges, site access and landscaping. The facility will be located on the open land formerly used by Ashcroft; the broadleaved woodland to the north and west of the facility will remain with the exception of the felling of two trees which are of local landscape value and have negligible potential to support roosting bats (see Appendix 7.2). Woodland management will be undertaken for the benefit of biodiversity.

2 Legislation and Policy

2.1 Legislation

2.1.1 All four common species of reptile, namely common (or viviparous) lizard (*Lacerta vivipara*), slow- worm (*Anguis fragilis*), adder (*Vipera berus*) and grass snake (*Natrix natrix*), receive limited protection under Section 9 (1) and (5) of the Wildlife and Countryside Act, 1981 (as amended). Under this legislation it is an offence to intentionally and recklessly kill, injure or take any species of reptile.

2.1.2 Additional species protection and habitat protection is afforded to the smooth snake (*Coronella austriaca*) and sand lizard (*Lacerta agilis*) under the Conservation (Natural Habitats, &c.) Regulations, 1994 (as amended). However, these species are not recorded within this particular geographical location.

2.2 Biodiversity Action Plans

2.2.1 The UK Biodiversity Action Plan (BAP) is the UK Government's response to the Convention on Biological Diversity (1992). It describes the country's important biological resources and has resulted in the production of detailed plans for the protection of key habitats and species.

2.2.2 Through Section 40 of the Natural Environmental and Rural Communities Act, 2006, local planning authorities now have a duty to consider habitats and species listed within the national BAP (priority species and priority habitats) and local BAPs when considering a planning application.

2.2.3 The Devon Local BAP 2005 ensures that the targets and priorities within the UK BAP are implemented at local level for those habitats and species present in Devon. The Local BAP lists species and habitats that are to be considered during planning applications.

2.3 Planning Policy Statement 9

2.3.1 Protected species are a material consideration in the planning process under Planning Policy Statement 9 (PPS9). PPS9 sets out planning policies on the protection of biodiversity and geological conservation through the planning system. PPS9 (including the explanatory notes provided in ODPM Circular 06/05) highlights that *"development proposals provide many opportunities for building-in beneficial biodiversity … as part of good design. When considering such proposals, local planning authorities should maximise such opportunities in and around developments".*

2.3.2 The Government's objectives are:

"***to promote sustainable development****: ensuring that biological and geological diversity are conserved and enhanced as an integral part of social, environmental and economic development, so that policies and decisions about the development and use of land integrate biodiversity and geological diversity with other considerations.*

to conserve, enhance and restore the diversity of England's wildlife and geology*: sustaining, and where possible improving, the quality and extent of natural habitat and*

geological and geomorphological sites; the natural physical processes on which they depend; and the populations of naturally occurring species which they support.

***to contribute to rural renewal and urban renaissance by**: enhancing biodiversity in green spaces and among developments so that they are used by wildlife and valued by people, recognising that healthy functional ecosystems can contribute to a better quality of life and to people's sense of well-being; and ensuring that developments take account of the role and value of biodiversity in supporting economic diversification and contributing to a high quality environment."*

2.3.3 The statement gives advice to Local Planning Authorities to help ensure that the potential impacts of planning decisions on biodiversity and ecological conservation are fully considered. In particular the statement includes the following advice:

***"Sites of Special Scientific Interest (SSSI) -** Where a proposed development on land within or outside a SSSI is likely to have an adverse effect on a SSSI (either individually or in combination with other developments), planning permission should not normally be granted.*

***Regional and Local Sites -** Criteria based policies should be established in local development documents against which proposals for any development on, or affecting, regional or local sites will be judged.*

***Ancient Woodland and Other Important Natural Habitats -** Planning permission should not be granted for any development resulting in the loss or deterioration of ancient woodland unless the need for, and benefits of, the development outweigh the loss of the woodland habitat. Loss of aged and veteran trees should also be avoided and planning authorities should encourage conservation of such trees in development proposals. Local authorities should conserve (and identify opportunities to enhance and add to) other important natural habitats identified in the Countryside and Rights of Way Act 2000 Section 74 list through policies in plans.*

***Networks of Natural Habitats -** Local authorities should aim to maintain networks of natural habitats by avoiding or repairing the fragmentation and isolation of natural habitats through policies in plans. Such networks should be protected from development and, where possible, strengthened by or integrated within it.*

***Previously Developed Land -** Where previously developed sites have significant biodiversity or geological interest of recognised local importance, local planning authorities, together with developers, should aim to retain this interest or incorporate it into any development of the site.*

***Biodiversity within Developments -** When considering proposals, local planning authorities should maximise opportunities for building in beneficial biodiversity or geological features in and around developments, using planning obligations where appropriate.*

***Species Protection -** Local authorities must take measures to protect the habitats of wildlife species of principal importance for the conservation of biodiversity in England not already receiving statutory protection from decline, through policies in local development documents. Planning Authorities should ensure that these species are protected from the adverse effects of development, where appropriate, by using planning conditions or obligations. Planning authorities should refuse permission where harm to the species or their habitats would result unless the need for, and benefits of, the development clearly outweigh that harm."*

2.4 Plymouth City Council Local Development Framework

Core Strategy Development Plan Document

2.4.1 The Core Strategy sets out the overall planning vision and framework for the city from 2006 to 2021 and beyond. Key policies are as follows:

Policy CS 18 Plymouth's Green Space

2.4.2 *"The Council will protect and support a diverse and multi-functional network of green space and waterscape, through:*

1. *Identifying in the Site Allocations Development Plan Document and Area Action Plans a network of strategically and locally important Greenscape Areas. Development on or adjacent to these Greenscape Areas will not be permitted where it would result in unacceptable conflict with the function(s) or characteristics of that area.*
2. *Requiring development proposals to improve the quality and quantity of accessible green space, where appropriate.*
3. *Requiring development proposals to address local deficiencies in accessible green space, where appropriate.*
4. *Using its planning powers to safeguard important trees and hedgerows, and to secure provision for soft landscaping where appropriate as part of development."*

Policy CS 19 Wildlife

2.4.3 *"The Council will promote effective stewardship of the city's wildlife through:*

1. *Safeguarding national and international protected sites for nature conservation from inappropriate development.*
2. *Appropriate consideration being given to European and nationally protected and important species.*
3. *Maintaining a citywide network of local wildlife sites and wildlife corridors, links and stepping stones between areas of natural green space.*
4. *Ensuring that development retains, protects and enhances features of biological or geological interest, and provides for the appropriate management of these features.*
5. *Ensuring development seeks to produce a net gain in biodiversity by designing in wildlife, and ensuring any unavoidable impacts are appropriately mitigated for.*
6. *Supporting wildlife enhancements which contribute to the habitat restoration targets set out in the South West Nature Map and in National, Regional and Local Biodiversity Action Plans."*

3 Survey Methodology

3.1.1 The survey follows best practice guidance set out in the 'Herpetological Workers Manual' (Gent and Gibson, 1998). This involves placing artificial refugia, which are laid flush to the ground in suitable habitat, to entice reptiles to bask and/or shelter under. The artificial refugia used are comprised of corrugated black roofing-sheets approximately 0.5m x 0.5m in size.

3.1.2 At least twenty one artificial refugia were placed in specific locations that are attractive to reptiles (*e.g.* sunny areas adjacent scrub, south facing *etc.*) and left in-situ for 90 days (see Figure 1 Appendix 9.2 for locations of artificial refugia). A total of eight visits were undertaken during May, June and September/early October 2010. All artificial refugia were checked within a constant temperature range of between 10 - 20℃ and under suitable weather conditions. Rainy and windy conditions are usually unsuitable, although sunny spells after rain can be ideal (Froglife, 1999).

3.1.3 Each refuge was initially inspected from a suitable distance to identify any reptiles present, without causing disturbance. The refugia were then approached quietly and carefully, and lifted swiftly to examine the ground beneath; any reptiles present were noted. Hand searches for reptiles were also undertaken during survey visits and included searching beneath debris already occurring on site, including rubble piles, wooden planks and discarded roofing sheets.

3.1.4 Reptile population size is established after all the survey data have been obtained.

3.1.5 Reptile population size is classed according to guidance set out in the 'Herpetofauna Groups of Britain and Ireland Advisory Note' (HGBI, 1998). These are classed as high, medium or low population assemblages. The size of the population is calculated by dividing the highest single count of each reptile species from one survey, by the size of the site, to determine the number of reptiles per hectare for each species (Table 1).

Table 1: Categories for establishing reptile population.

Species	High Population	Medium Population	Low Population
Slow-worm	>100 / ha	>50 / ha	<50 / ha
Common lizard	>80 / ha	>40 / ha	>20 / ha
Adder	>4 / ha	>2-4 / ha	<2 / ha
Grass snake	>4 / ha	>2-4 / ha	<2 / ha

4 Survey Results

4.1 Habitats

4.1.1 Suitable reptile habitat on site consists of continuous scrub, rank semi-improved neutral grassland, ephemeral/short perennials and tall ruderals. The continuous scrub is dominated by butterfly-bush (*Buddleja davidii*), blackthorn (*Prunus spinosa*), sycamore (*Acer pseudoplatanus*), and goat willow (*Salix caprea*). The rank semi-improved grassland is dominated by perennial rye (*Lolium perenne*), false oat-grass (*Arrhenatherum elatius*), Yorkshire fog (*Holcus lanatus*), cock's foot (*Dactylis glomerata*), red fescue (*Festuca rubra*), common daisy (*Bellis perennis*), and white clover (*Trifolium repens*) with components of bird's foot trefoil (*Lotus corniculatus*), black medick (*Medicago lupulina*) and creeping buttercup (*Ranunculus repens*).

4.1.2 Ephemeral/short perennial habitat includes species such as common ragwort (*Senecio jacobaea*), greater plantain (*Plantago major*), oxeye daisy (*Leucanthemum vulgare*), ribwort plantain (*Plantago lanceolata*), selfheal (*Prunella vulgaris*) and wild carrot (*Daucus carota*). Tall ruderals consist of teasel (*Dipsacus fullonum*), hogweed (*Heracleum sphondylium*), creeping thistle (*Cirsium arvense*), spear thistle (*Cirsium vulgare*), foxglove (*Digitalis purpurea*), common nettle (*Urtica dioica*), and broad-leaved dock (*Rumex obtusifolius*).

4.2 Reptile Survey Data

4.2.1 A minimum of seven adult slow-worms (*Anguis fragilis*), three juvenile slow-worms and one common lizard (*Zootoca viviparous*) were recorded on the site during the survey visits (Table 2.).

Table 2: Reptile Survey Results, (J) = Juvenile, (A) = Adult.

SURVEY	DATE	TIME	WEATHER	SLOW-WORM , COMMON LIZARD A = Adult, J = Juvenile		MAT
1	27/05/10	09:30	Sunny	2 (A) Slow-worm	0 (J)	40,26
2	04/06/10	09:30	Sunny/cloudy	2 (A) Slow-worm	1 (J)	39,36,26
3	08/06/10	09:30	Sunny	0 (A) Slow-worm	3 (J)	39
4	18/06/10	09:30	Sunny	2 (A) Slow-worm	1 (J)	39, 26
5	31/08/10	10:30	Sunny	7 (A) Slow-worm	0 (J)	48,49,14,26
6	07/09/10	15:00	Sunny	4 (A) Slow-worm, 1 (A) Common Lizard	0 (J)	40, 39
7	27/09/10	16:10	Sunny/showers	1 (A) Slow-worm	0 (J)	39
8	04/10/10	14:15	Sunny	2 (A) Slow-worm	1 (J)	11, 40, 39

5 Conclusions

5.1 Habitats

5.1.1 Areas that comprised dense vegetation (tussocky grassland or scrub edges) directly adjacent to open areas of rubble/rocks and/or short grassland were noted as an indication of suitable habitat. These provide both cover and basking habitats for reptiles.

5.1.2 The site is of medium value for slow-worm and common lizard. The open, undisturbed, well-drained nature of the site, presence of natural and artificial refugia, dense vegetation (tussocky grassland or scrub edges) and suitable south facing features make the site favourable for reptiles. These habitats provide both cover and basking habitats.

5.2 Reptile Population Size

5.2.1 The slow-worm population on the site has been determined as low, <50 / ha (HGBI, 1998). A minimum of seven adult slow-worms (*Anguis fragilis*) were recorded on the site during the survey visits. Slow worms are breeding on the site, since a minimum of three juveniles were recorded on the site during the survey visits. One common lizard was also recorded on the site. This equates to approximately ten slow-worms/ ha and one common lizard / hectare.

5.2.2 The population estimate also takes into consideration the size of the site (*c.* 1.9 ha in total as suitable habitat for reptiles). However, approximately 21% of the site offers suitable habitat for slow-worm and common lizard. The rest of the site, 79% consists of semi-natural broad-leaved woodland, waste ground, aggregate spoil and hardstanding.

5.2.3 Suitable habitat for reptiles consisting of rank tussocky grassland occurs adjacent to the site towards the east. This area is outside of the perimeter fence and will not be affected by the development.

6 Recommendations and Mitigation

6.1.1 The presence of reptiles within the site will require appropriate mitigation, in the form of translocation, to protect the species in relation to the proposed development. Slow-worm and common lizard receive protection under Section 9 (1) and (5) of the Wildlife and Countryside Act, 1981 (as amended). Under this legislation it is an offence to intentionally and recklessly kill, injure or take any species of reptile. The slow worm is also a Priority Species under the UK Biodiversity Action Plan (UKBAP).

6.1.2 The Natural Environmental and Rural Communities (NERC) Act, 2006 ensures that biodiversity including BAP habitats and species are taken into account during the planning process.

6.1.3 Section 7 of this report provides a Method Statement detailing the actions to be taken in respect of reptile translocation and pre-construction site clearance works. Figure 1 in Appendix 9.2 shows the proposed location of the reptile translocation in relation to the main site area. All works should be undertaken under ecological supervision.

7 Method Statement for Reptile Translocation and Pre-construction Site Clearance Works

7.1 Ecological Briefing 'tool-box talks'

7.1.1 A full ecological brief or tool-box-talk will be undertaken each day before any work begins. The installation of the reptile fencing and phased vegetation clearance will be disseminated to all contractors involved prior to each day's operation.

7.2 Receptor Site Scrub Clearance

7.2.1 The 'receptor' site is approximately 0.27ha in size and is composed of semi-improved grassland and scrub (see Figure 2, Appendix 9.3). Part of the receptor site (c. 0.06ha) will need to be cleared of scrub.

7.2.2 The creation of four hibernacula is planned within this area (see section 7.3). The creation of a wildlife pond and 'bee bank' is also scheduled to be included within this area at a later date.

7.2.3 A precautionary approach to vegetation clearance will be adopted. This will involve clearance in a phased and controlled manner using hand-held machinery and under ecological supervision. Ecologists will undertake a 'finger-tip' search for reptiles along a chosen route within the area to be cleared. This will encourage reptiles to vacate these areas of their own volition. Soil, stones, roots, mammal holes etc. will be checked for reptiles by hand investigation. If any reptiles are encountered they will be moved to a safe area within / adjacent to the existing site.

7.2.4 Hand strimmers or brush cutters will follow the ecologist/s lead and cut vegetation to a height of 100mm; the cut material will be hand raked to the sides of the area. All strimming will commence in the one corner working outwards towards the periphery of the development footprint to where areas are to be retained.

7.2.5 It is not envisaged that reptiles will be encountered during this operation; the action is precautionary but necessary. If any reptiles are encountered, works will need to cease and an ecologist will move the reptile/s to a safe area before recommencing works.

7.2.6 All clearance work should be undertaken during April to September in order to coincide with reptiles' active seasonal period and should be undertaken within a temperature range of 16°C - 24°C.

7.2.7 Areas of cleared scrub will be tilled and cleared of debris and a sown with a wild flower and grassland mix suitable to the area.

7.2.8 Trees that are to be retained adjacent the receptor site will need to have their crown's lifted or 'de-limbed' to avoid shading.

7.3 Habitat Enhancement – Hibernacula Creation

7.3.1 Reptile hibernacula will be created within the cleared part of the receptor site. All works will be undertaken under ecological supervision.

7.3.2 Four reptile hibernacula will be constructed within the 'receptor site' to enhance the habitat for the benefit of reptiles. Figure 2, Appendix 9.3 shows the locations of the proposed hibernacula.

7.3.3 Local quarried stone will be used to create the hibernacula. Construction should consist of two shallow excavations *c.* 0.5 -1 m deep lined with logs, brash, dead wood stone/rocks obtained from the site clearance works. Stones/rocks should be 'built-up' to a height of *c.* 0.5 – 1m and covered in a layer (*c.* 100mm) of earth. The hibernacula should have a dimension of *c.* 3 m by 2 m. Typical details for the hibernacula can be seen in Figure 3, Appendix 9.3.

7.3.4 The area will then be sown with an appropriate wildflower and grassland mix.

7.3.5 The grassland habitat within the receptor site will require maintenance to maintain its suitability for reptiles. A single cut to approximately 100mm once a year in November and the arising removed will achieve this.

7.4 Reptile Fencing Installation

7.4.1 The uneven terrain of the site makes it difficult to erect temporary (> 3 years) reptile fencing in the conventional way[1]. Therefore it is suggested that temporary reptile fencing is erected on the inside of the perimeter fence in the east of the site – see Figure 1, Appendix 9.2 and Figure 2, Appendix 9.3. This area is adjacent to the semi-improved neutral grassland habitat that is being retained post construction. The fencing should consist of a wooden post and rigid plastic sheeting construction *c.*1m height, buried to a depth of *c.* 15cm and back filled. The fencing will prevent reptiles from re-entering the 'donor site' once they have been translocated to the adjacent 'receptor site'.

7.4.2 Fencing will be installed using hand tools with the assistance of a small mini-digger. The mini digger's bucket will be fitted with 'tines' or teeth as this reduces the risk of killing or injury should a reptile be encountered. The ecological watching brief will check soil, stones, roots, mammal holes, *etc*, for the presence of reptiles along the route of the pre-fencing installation. If reptiles are found they will be relocated to the receptor site.

7.5 Reptile Trapping and Translocation

7.5.1 Due to the estimated size of the population with respect to slow-worms (ten/ha) and that the fencing is to be erected in an unconventional way, it is recommended that a minimum of 60 days of trapping will be required to translocate the reptiles[2].

7.5.2 One hundred artificial refugia - corrugated roofing 'bitumen' tins (*c.* 0.5 x 0.5m) should be used per hectare. These will be placed approximately five metres apart, concentrating on locations that are attractive to reptiles (*e.g.* sunny areas adjacent scrub, south facing *etc.*). The tins are used to attract reptiles for basking and shelter so they can be caught, removed and translocated.

7.5.3 If reptiles are caught they will be placed in large containers and translocated to the receptor site close to where they were originally captured.

[1] Gent, A.H. and Gibson, S.D. (eds.) (1998). Heptofauna Workers' Manual. Peterborough, UK: Joint Nature Conservation Committee. Peterborough, UK.
[2] Heptofauna Groups of Britain and Ireland advisory notes for amphibian and reptile groups (ARGs) (1998). Evaluating local mitigation/translocation programmes: Maintaining best practice and lawful standards. Halesworth, UK: HGBI, c/o Froglife. Unpublished Report.

7.5.4 The tins will left in-situ for over 60 days and checked once a day within a temperature range of between 10 - 16°C and under suitable weather conditions. All 'trapping' will be undertaken during April to August 2011.

7.6 Vegetation Clearance in Relation to Reptiles

7.6.1 Once the full trapping period is completed the 'donor' site should be cleared and any vegetation strimmed to height of 100mm. The clearance should be undertaken in a phased and controlled manner using hand-held machinery and under ecological supervision (as described in paragraphs 7.2.3 to 7.2.6).

7.7 Reptile Fencing Maintenance

7.7.1 Once the site has been cleared the reptile fencing should remain in-situ and in-tacked. Regular maintenance checks should be undertaken by an appointed member of staff or a member of the construction team for the duration of the project. This is to discourage any reptile re-entering the fenced areas prior to construction. Any damaged fencing should be repaired with the spare fencing or tape which is located on site.

7.7.2 If construction does not commence once the site has been cleared then regular maintenance of the grassland should be undertaken by a contractor so as not to let the grass/scrub grow beyond 100mm in height.

7.7.3 Once construction of the development is complete then the reptile fencing can be dismantled and removed.

8 References

8.1.1 Anon (2004) Reptiles: Guidelines for Developers. English Nature, Peterborough, UK.

8.1.2 Department for Communities and Local Government (2005). Planning Policy Statement 9: Biodiversity and Geological Conservation. The Statutory Office, London.

8.1.3 Froglife (1999). Froglife Advice Sheet 10: An introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife, Halesworth.

8.1.4 Gent, A.H. and Gibson, S.D. (eds.) (1998). Herpetofauna Workers' Manual. Peterborough, UK: Joint Nature Conservation Committee. Peterborough, UK.

8.1.5 Herpetofauna Groups of Britain and Ireland advisory notes for amphibian and reptile groups (ARGs) (1998). Evaluating local mitigation/translocation programmes: Maintaining best practice and lawful standards. Halesworth, UK: HGBI, c/o Froglife. Unpublished Report.

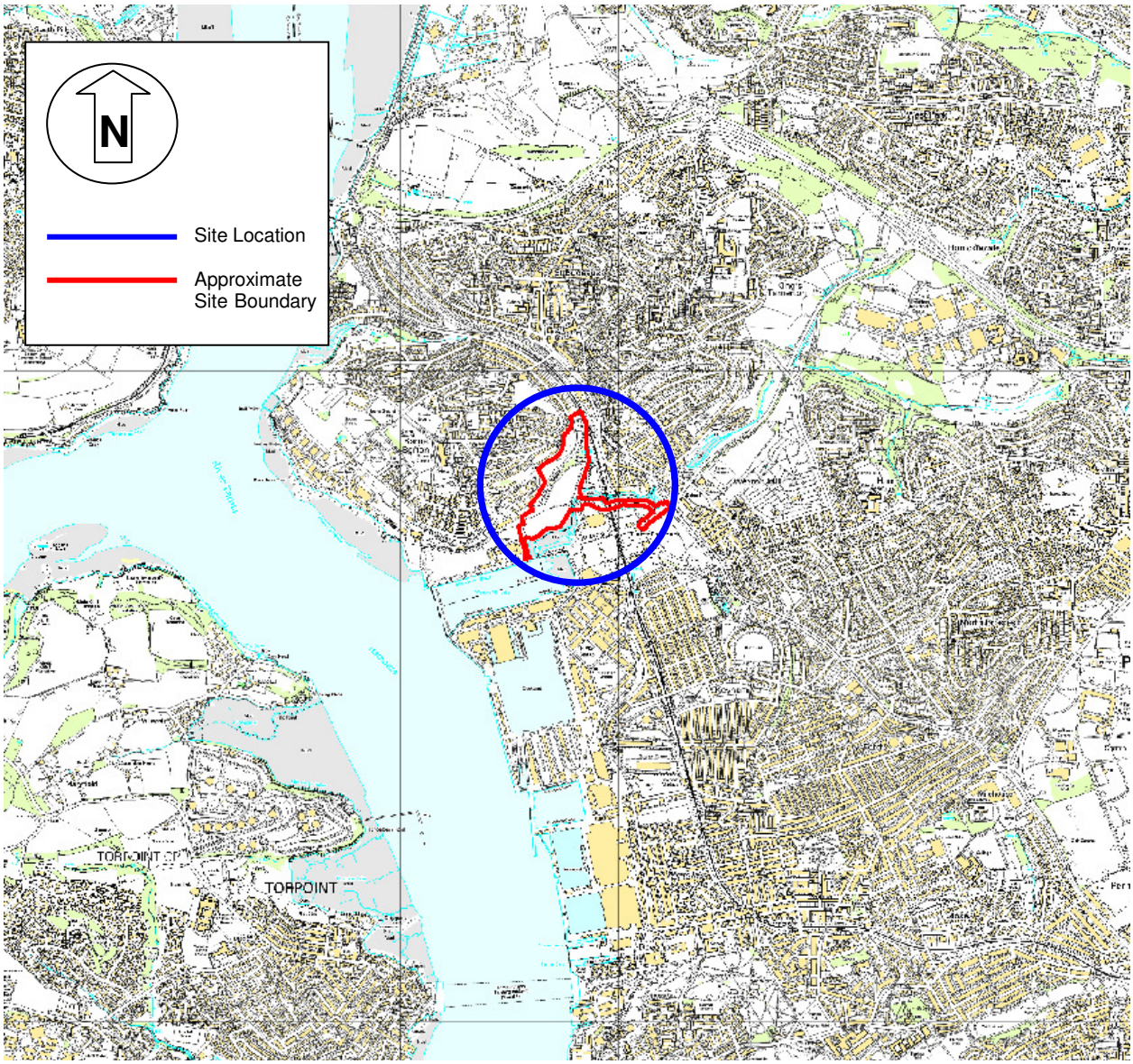
8.1.6 ODPM (2005). Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System. ODPM.

8.1.7 Reading C .J. and Jofré G. M. (2009) Habitat selection and range size of grass snakes Natrix natrix in an agricultural landscape in southern England. Amphibia-Reptilia 30:379-388.

8.1.8 UK Biodiversity Action Plan http://www.ukbap.org.uk/ Accessed 25th September, 2010.

9 Appendices

9.1 Location Plan



Site Location Plan
Not to Scale
Date 30.09.10
Project Title:
Devonport Dockyard: Reptile Survey

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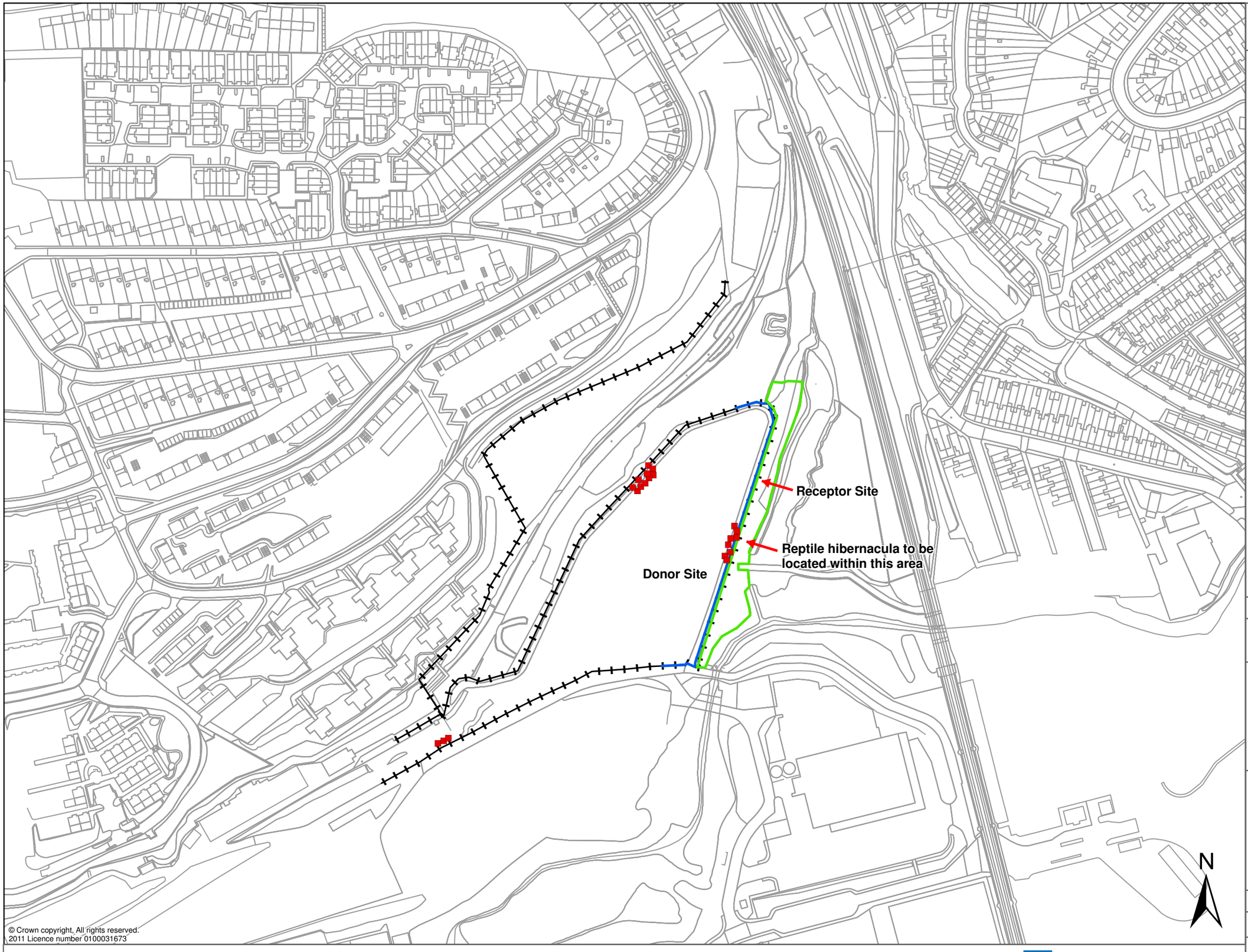
9.2 Figure 1: Reptile Mat and Fencing Locations



THIS DRAWING MAY BE USED FOR THE PURPOSE INTENDED AND ONLY WRITTEN DIMENSIONS SHALL BE USED

NOTES

Legend

- Reptile Mat
- Fence
- Receptor Site Boundary
- Reptile Fencing

Revision Details	By / Check	Date	Suffix

Drawing Status: PLANNING

Job Title: EfW CHP FACILITY, NORTH YARD, DEVONPORT

Drawing Title: REPTILE MAT AND FENCING LOCATIONS

Scale at A3: 1:2,500

Drawn	Approved
MP	PG

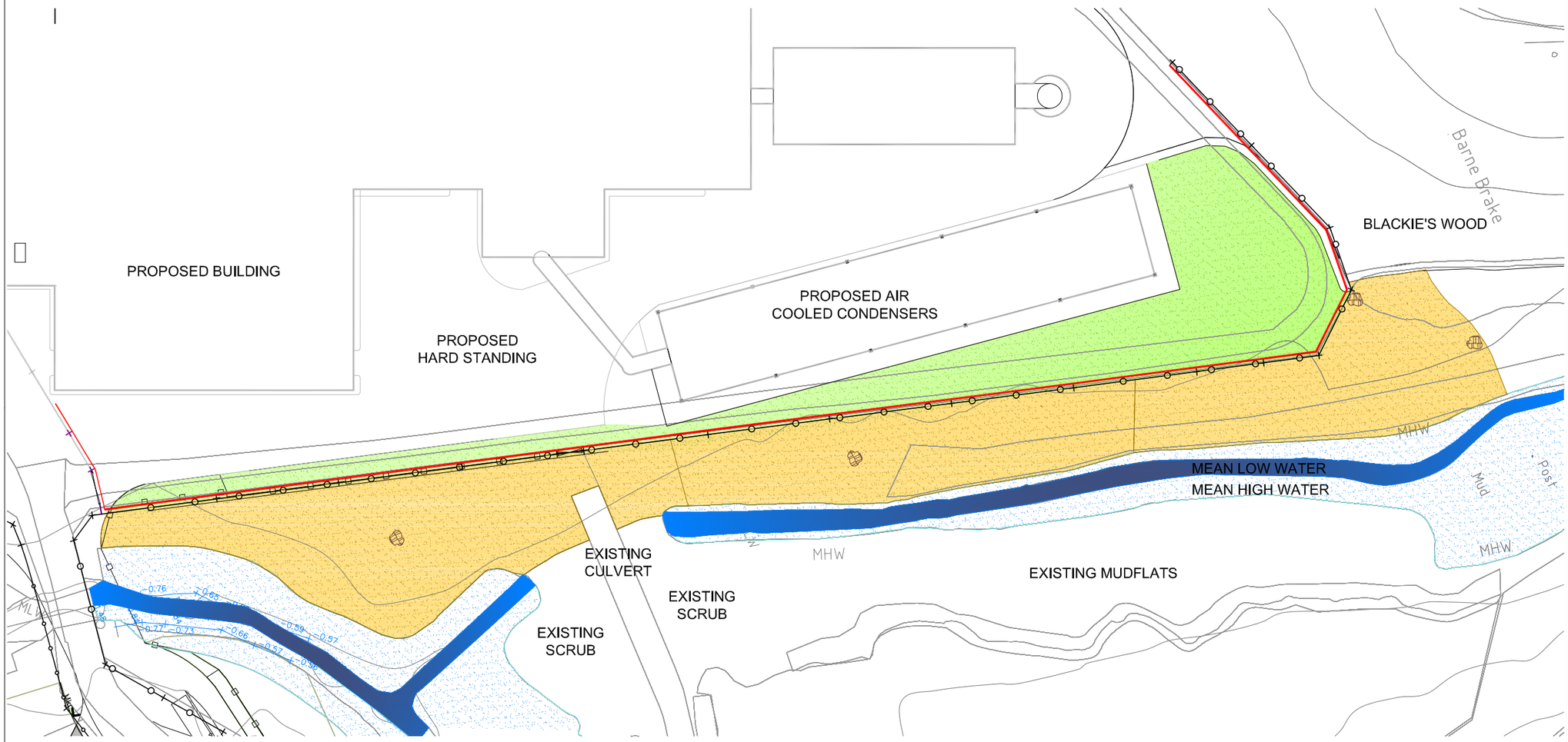
Stage 1 Check	Stage 2 Check	Originated	Date / Rev

Drawing Number: FIGURE 1

MVV Environment Devonport Ltd	Contractor to SWDWP
Scott Wilson	Environmental & Planning Consultant
MVV O&M	EPC Contractor
Envi Con Envi Con & Plant Engineering GmbH	General Designer
KIER	Civil Works
SC	Architect
Lab	Air Pollution Control
Ideas full of energy! Standardkessel Baumgarte	Boiler & Grate
SAR www.sar.biz	Electrical & Control
Imtech	Water Steam System

Filepath:

9.3 Figure 2: Translocation Plan



THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED AND ONLY WRITTEN DIMENSIONS SHALL BE USED

NOTES

KEY

- AREA FOR HABITAT ENHANCEMENT AND TRANSLOCATION
- AREA OF SPECIES RICH GRASSLAND PROPOSED FOLLOWING MAIN CONSTRUCTION
- 1.8m HIGH PALISADE FENCE
- PERMANENT REPTILE FENCE (DURING CONSTRUCTION PHASE ONLY)
- HIBERNACULUM (REFER TO FIGURE 3)

Updated drawing template drawing number	LB / SL	16.04.11	A
Revision Details	By / Check	Date	Suffix

Drawing Status
PLANNING

Job Title
EfW CHP FACILITY,
NORTH YARD,
DEVONPORT

Drawing Title
TRANSLOCATION
PLAN

Scale at A3
NTS

Drawn		Approved	
LB		SL	
Stage 1 check	Stage 2 check	Originated	Date
SL			01.04.11

Drawing Number
FIGURE 2
009/02/D123356 v 203

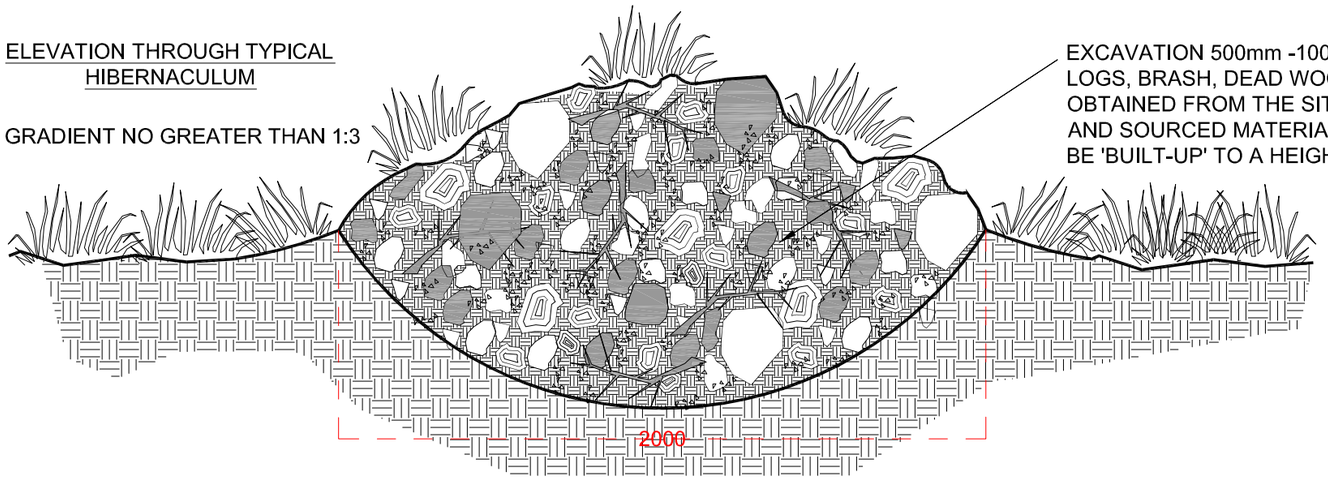
Rev
A

MVV Environment Devonport Ltd	Scott Wilson	MVV O&M	Envi Con Envi Con & Plant Engineering GmbH	KIER	SC	Lab	ideas full of energy! Standardkessel Baumgarte	SAR www.sar.biz	Imtech
Contractor to SWDWP	Environmental & Planning Consultant	EPC Contractor	General Designer	Civil Works	Architect	Air Pollution Control	Boiler & Grate	Electrical & Control	Water Steam System

9.4 Figure 3: Hibernaculum Elevation Detail

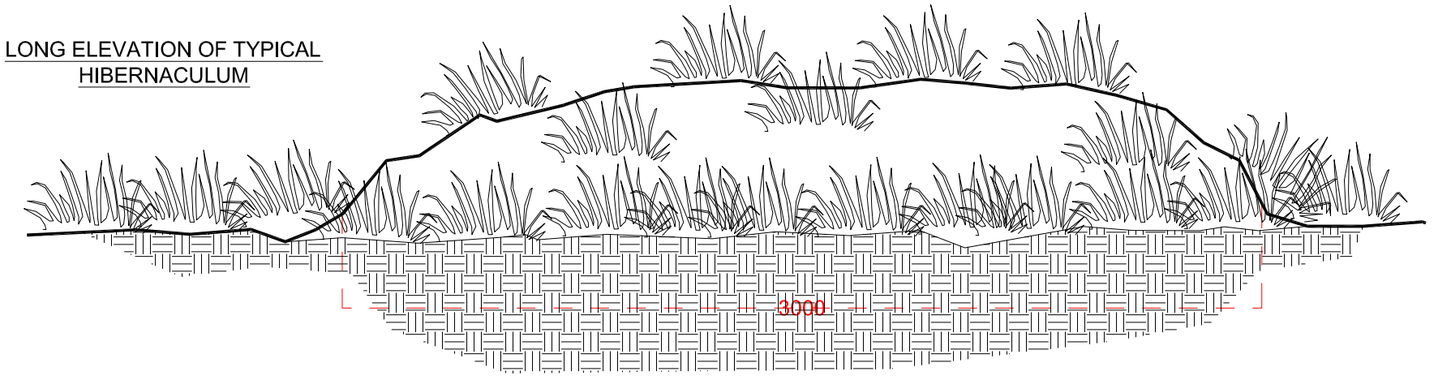
ELEVATION THROUGH TYPICAL HIBERNACULUM

GRADIENT NO GREATER THAN 1:3



EXCAVATION 500mm -1000mm DEEP LINED WITH LOGS, BRASH, DEAD WOOD STONE/ROCKS OBTAINED FROM THE SITE CLEARANCE WORKS AND SOURCED MATERIAL. STONES/ROCKS WILL BE 'BUILT-UP' TO A HEIGHT OF 500mm-1000mm

LONG ELEVATION OF TYPICAL HIBERNACULUM



THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED AND ONLY WRITTEN DIMENSIONS SHALL BE USED

NOTES

Revision Details	By / Check	Date	Suffix
Updated site boundary	LB / SL	16.04.11	A

Drawing Status

PLANNING

Job Title

EfW CHP FACILITY, NORTH YARD, DEVONPORT

Drawing Title

HIBERNACULUM ELEVATION DETAIL

Scale at A3
1:20

Drawn	Approved
MA/LB	SL

Stage 1 check	Stage 2 check	Originated	Date
SL			01.04.11

Drawing Number
FIGURE 3
009/02/D123356 - 200

Rev
A

Contractor to SWDWP	Environmental & Planning Consultant	EPC Contractor	General Designer	Civil Works	Architect	Air Pollution Control	Boiler & Grate	Electrical & Control	Water Steam System
MVV Environment Devonport Ltd	Scott Wilson	MVV O&M	Envi Con Envi Con & Plant Engineering GmbH	KIER	SC	Lab	ideas full of energy! Standardkessel Baumgarte	SAR www.sar.hu	Imtech

9.5 Photographic Images

1. Artificial reptile refugia being placed on site.

2. Checking artificial reptile refugia.

3. Artificial reptile refugia.

4. Slow-worm.