MVV Umwelt
Energy from Waste Combined Heat and Power Facility
North Yard, Devonport

Extended Phase 1 Habitat Survey

July 2010

Prepared for

MVV Umwelt

Revision Schedule

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July 2010

Rev	Date	Details	Prepared by	Reviewed by	Approved by
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1 Introduction

1.1 Background

1.1.1 MVV Umwelt GmbH is bidding for the South West Devon Waste Partnership (SWDWP) residual waste treatment PFI contract. MVV proposes to construct and operate an Energy from Waste Combined Heat and Power (EfW CHP) facility at the Devonport site.

1.1.2 Scott Wilson Limited is providing planning and environmental advice to assist MVV in its bid and as such has prepared this Phase I Habitat Survey report. The work involved an ecological walkover survey to assess the potential to support protected and/or notable species, utilising the Phase I Habitat Survey methodology (JNCC, 2007). The purpose of this survey was to provide an ecological evaluation of the site and to provide recommendations for any further surveys and/or mitigation that may be required.

1.2 Site Description

1.2.1 The surveyed area occupies *c.* 9 ha of land centred on national grid reference: SX 446 573. 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 Figure 1 in Appendix A.

1.2.2 Ashcroft currently uses the central part of the site to process demolition rubble, created from different construction projects throughout the dockyard. The southern part of the site is currently used as a storage compound for a variety of containers and skips. Semi-natural broadleaved woodland 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 west of the site.

1.2.3 The land to the south-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.

1.3 Development Description

1.3.1 As detailed in paragraph 1.1.1, MVV proposes to construct and operate an EfW CHP facility at the site. The land requirement is 3.4 ha. This will include the EfW CHP plant itself, buildings, ancillary equipment, storage areas, office and amenity buildings, weighbridges, an ash recycling plant, on site access and landscaping.

2 Methodology

2.1 Desk Study

2.1.1 Various organisations were consulted and website searches undertaken. The websites www.natureonthemap.org.uk and http://www.magic.gov.uk were searched for any conservation designations on or within 2 km from the centre of the site. The website www.plymouth.gov.uk was consulted regarding statutory Local Nature Reserves (LNR) and non-statutory conservation designations such as County Wildlife Sites (CWS) and Sites of Local Importance for Nature Conservation (SLINC). Existing data on protected and notable species were also obtained from the National Biodiversity Network Gateway website (http://data.nbn.org.uk). A full desk study utilising the Biological Records Centre was not requested at this time (but will be as part of the Environmental Impact Assessment in due course).

2.2 Field Survey

2.2.1 The walkover baseline survey was undertaken in September 2009 and updated in June 2010 to take account of an amended site boundary. Both surveys were undertaken during the optimum season for vegetation surveys (optimum season *c.* April – September). A list of botanical species found on the site is contained within Appendix B. Photographic records are located in Appendix C.

2.2.2 The surveys were undertaken in accordance with the standard Phase I Habitat Survey methodology (JNCC, 2007). The scope of the surveys was extended according to the methodology described by the Institute of Environmental Assessment (now the Institute of Environmental Management and Assessment) (1995) to include targeted searches for signs of protected and/or notable species.

2.2.3 The Phase I Habitat Map is located in Appendix D with associated target notes in Appendix E. The potential for protected and/or notable species was assessed on the basis of the habitats present on the site and on their suitability to support those species of conservation concern.

2.2.4 Botanical nomenclature used throughout this report follows Stace, 1997. The surveyed area includes the area within the boundary of the site (Figure 1). Survey results were recorded on field maps with a hand-held GPS unit used to record grid references for specific locations of interest.

2.2.5 It should be noted that the survey is not intended to provide a comprehensive list of floral and faunal species, rather it is to characterise the habitats present and determine the potential to support protected and/or notable species that might be associated with the site.

2.2.6 During the survey the following ecological assessments were undertaken:

- Habitat descriptions and species list;
- Identification and location of invasive alien plant species;
- Identification of suitable habitat potential for, and presence of, reptiles;
- Identification of suitable habitat potential for, and presence of, amphibians;
- Identification of suitable habitat potential to support bats;

- Identification of suitable habitat potential to support water voles (*Arvicola terrestris*);
- Identification of signs of badger (*Meles meles*) activity;
- Identification of suitable habitat for the potential to support common or hazel dormouse (*Muscardinus avellanarius*); and
- Identification of suitable habitat for the potential to support breeding and wintering birds.

Habitats

2.2.7 All of the major components of vegetation were identified and floral species recorded. A full botanical species list recorded on the site at the time of survey is contained within Appendix B.

Invasive Alien Plants

2.2.8 The site was surveyed for invasive alien species such as Japanese knotweed (*Fallopia japonica*) and giant hogweed (*Heracleum mantegazzianum*). Targeted searches for other invasive alien species such as Himalayan balsam (*Impatiens glandulifera*), rhododendron (*Rhododendron ponticum*) and cherry laurel (*Prunus laurocerasus*) were also undertaken.

Reptiles

2.2.9 An assessment was undertaken to evaluate the potential of the on-site habitats to support reptile species. Any 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.

Amphibians

2.2.10 An assessment was undertaken to evaluate the potential of the on-site habitats to support amphibian species. Any water bodies and wetland that supported aquatic, emergent and marginal vegetation were recorded suitable as 'breeding pools'. Any terrestrial habitats, such as 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 terrestrial habitat.

Bats

2.2.11 The site was assessed for the potential to support suitable habitat for bats. Any linear features such hedgerows, tree lines, standard trees, woodland edges and rides were recorded as suitable habitat for foraging/feeding bats. No formal tree and building roosting potential survey was undertaken. However, trees on the site were qualitatively assessed as suitable or unsuitable for roosting bats.

Water Vole

2.2.12 The site was assessed for the potential to support suitable habitat for water voles. A general search was undertaken to identify the presence of any watercourses on the site that might support water voles. This involved identification of evidence of activity including: latrine sites, feeding stations and lawns, runways and prints.

Badgers

2.2.13 A general search was undertaken to identify the presence of badgers on the site. This was achieved by systematically walking the site and looking for badger setts and associated signs (dung pits, latrines, bedding, footprints, foraging scrapes, paths or runs and hairs on fences and vegetation).

Dormouse

2.2.14 Woodland and scrub habitats were surveyed to evaluate the potential to support hazel dormice. Evaluation was based on interconnectivity of arboreal and hedgerow habitats, along with seasonal food and its abundance, as well as nesting material resource availability. Searches were also made for the remains of, or discarded, hazelnut shells where appropriate. Dormice feed in a definitive way on hazelnuts leaving distinctive marks and scrapes that are indicative of this species.

Birds

2.2.15 The site was surveyed for the potential to support breeding and wintering birds. Habitats such as scrub, woodland, standard trees and adjacent open vegetated areas were recorded as suitable habitat for breeding and wintering birds.

3 Results

3.1 Desk Study

Statutory and Non-Statutory Sites

3.1.1 There are three statutory designated sites within 2 km of the site:

- Plymouth Sound and Estuaries Special Area of Conservation (SAC), located approximately 500m to the west;
- Tamar Estuaries Complex Special Protection Area (SPA), approximately 2km to the north-west; and
- Tamar-Tavy estuary Site of Special Scientific Interest (SSSI), approximately 2km to the north-west.

3.1.2 There is one non-statutory formerly designated Site of Local Importance for Nature Conservation (SLINC) which covers land to the east of the site, the eastern part of 'Blackie's Wood'. This was designated under the Plymouth Local Plan 1996 but is no longer an extant designation; nevertheless, it is still of wildlife interest. The location of the SLINC is shown on the map in Appendix F.

3.1.3 Blackie's Wood is also shown in the Plymouth Local Development Framework Core Strategy 2007 as a Biodiversity Network Feature. The location of this is shown on the map in Appendix F.

Protected or Notable Species

3.1.4 House sparrow (*Passer domesticus*) was recorded within 2km of the site. Anecdotal evidence (Ministry of Defence (MoD) British Trust for Ornithology (BTO) bird recorder) suggests that black redstart (*Phoenicurus ochruros*) use the site during the winter.

3.2 Field Survey

Habitats

3.2.1 Bare ground, continuous scrub, rank semi-improved neutral grassland, ephemeral/short perennials, tall ruderals, semi-natural broadleaved woodland, hard standing and aggregate spoil represent the dominant habitats on the site (see Appendix D).

3.2.2 The continuous scrub (target notes 3 and 4 on the Phase I Habitat Map in Appendix D) is dominated by butterfly-bush (*Buddleja davidii*), blackthorn (*Prunus spinosa*), sycamore (*Acer pseudoplatanus*), goat willow (*Salix caprea*), elder (*Sambucus ebulus*), common hawthorn (*Crataegus monogyna*), and pedunculate / English oak (*Quercus robur*) with components of dog rose (*Rosa canina*), bracken *(Pteridium aquilinum*), bramble (*Rubus fruticosus agg.*), European gorse (*Ulex europaeus*) and traveller's-joy (*Clematis vitalba*).

3.2.3 Rank semi-improved grassland (target note 8) 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*).

3.2.4 Ephemeral/short perennial habitat (target notes 1 and 7) includes species such as common ragwort (*Senecio jacobaea*), greater plantain (*Plantago major*), oxeye daisy (*Leucanthemum vulgare*), ribwort plantain (*Plantago lanceolata*), selfheal (*Prunella vulgaris*), wild carrot (*Daucus carota*), moss (*Moss sp.)* and winter heliotrope (*Petasites fragrans*).

3.2.5 Tall ruderals (target note 1) consist of teasel (*Dipsacus fullonum*), hogweed (*Heracleum sphondylium*), creeping thistle (*Cirsium arvense*), spear thistle (*Cirsium vulgare*), foxglove (*Digitalis purpurea*), common nettle (*Urtica dioica*), broad-leaved dock (*Rumex obtusifolius*), white melilot (*Melilotus albus*), perennial rye (*Lolium perenne*) and rosebay willowherb (*Chamerion angustifolium*).

3.2.6 Blackie's Wood (target note 11) consists of semi-natural broadleaved woodland dominated by pedunculate oak/English oak (*Quercus robur*) and common ash (*Fraxinus excelsior*), common hazel (*Corylus avellana*), common hawthorn (*Crataegus monogyna*) and blackthorn (*Prunus spinosa*) are abundant in the understory with frequent wild cherry (*Prunus avium*) and English Elm (*Ulmus procera*).

3.2.7 Perennial rye (*Lolium perenne*) dominates the amenity grassland (target note 12).

Invasive Plant Species

3.2.8 A stand of Japanese knotweed (*Fallopia japonica*) (target note 2) was recorded south west of the site adjacent to Weston Mill Lake. The stand was just outside the development site but within 7m of the zone of influence. The stand is *c.* 2m x 2m and had been previously treated with herbicide. A stand of Japanese knotweed was also recorded to the north of the site in Blackie's Wood. The stand consists of a few immature stems at present. Cotoneaster sp. (*Cotoneaster sp.*) is also present in Blackie's Wood.

3.2.9 Other non-native invasive plants recorded in Blackie's Wood, which are not listed under the Wildlife and Countryside Act, 1981 (see section 4.2 for details), include Himalayan honeysuckle (*Leycesteria formosa*), and snowberry (*Symphoricarpos albus*).

3.2.10 Large amounts of butterfly bush (*Buddleja davidii*) were also recorded on the site growing on the bare rock and rubble.

3.3 Potential for Protected and Notable Species

Reptiles

3.3.1 Slow-worm (*Anguis fragilis*) was recorded on the site (target note 6). 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, such as slow-worm or common lizard (*Zootoca vivipara*).

Amphibians

3.3.2 No freshwater bodies or fresh standing water was recorded on or adjacent to the site. The site provides limited suitable habitats for amphibians, due to the openness of the site and no potential breeding ponds or pools.

Bats

3.3.3 The linear features of the continuous scrub on the site may provide foraging/feeding and/or commuting habitat for bats, since they are well structured and provide potential flight paths or corridors. The mature trees within Blackie's Wood may provide suitable roosting habitat for bats particularly since some of these trees provide suitable features, such as cracks, crevices, flaking bark and rot-holes. The woodland may also provide suitable habitat for foraging and feeding bats. There are no buildings that may support roosting bats within the development boundary.

Water Vole

3.3.4 No evidence of water vole was recorded on site during the field survey. The majority of habitats on the site were of limited potential to support this species. The geographical location also limits the potential to support this species.

Badgers

3.3.5 No signs of badger activity or badger setts were noted on site. The site is of limited potential to support this species.

Dormouse

3.3.6 No evidence of hazel dormice (*Muscardinus avellanarius*) was recorded on the site. The surrounding habitats were also recorded as low value for this species. The fragmented arboreal habitats had poor connectivity within the local landscape, limited food and nesting material resource availability.

Breeding and Wintering Birds

3.3.7 The continuous scrub on and adjacent to the site provide many suitable nesting and feeding habitats for a variety of small bird species, such as common blackbird (*Turdus merula*), wren (*Troglodytes troglodytes*), great tit (*Parus major*), greenfinch (*Carduelis chloris*) long-tailed tit (*Aegithalos caudatus*), wood nuthatch (*Sitta europaea*), common chiffchaff (*Phylloscopus collybita*) and European goldfinch (*Carduelis carduelis*). Anecdotal evidence (authors' observations) suggests that kingfisher (*Alcedo atthis*) is present on the site during the winter months and use the tributaries and creeks associated with Weston Mill Lake and the Tamar estuary for foraging/feeding. No formal breeding and wintering bird survey was undertaken as part of this Extended Phase 1 Habitat Survey.

4 Policy and Legislation

4.1 Introduction

4.1.1 The ecological assessment has taken into account legislation and guidance set out in national, regional and local plans (see sections below).

4.2 Legislation

The following national conservation legislation is relevant to species and habitats within, or adjacent to the site:

- The Wildlife and Countryside Act 1981 (as amended);
- The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended);
- The Countryside and Rights of Way Act 2000 (CRoW);
- The Natural Environment and Rural Communities Act 2006 (NERC);
- The Protection of Badgers Act 1992;
- The Hedgerows Regulations 1997;
- Mammals (Protection) Act, 1996; and
- Natural Environmental and Rural Communities Act, 2006.

4.2.1 The Wildlife and Countryside Act, 1981 provides protection to a number of animals (fauna) and plants (flora) as listed in the various schedules of the Act (Schedule 1 – birds, Schedule 5 – animals, and Schedule 8 – plants). This Act has been amended several times by Orders or primary legislation (e.g. Countryside and Rights of Way Act, 2000 and the Natural Environmental and Rural Communities Act, 2006).

4.2.2 The Conservation (Natural Habitats, &c.) Regulations, 1994 (as amended) has incorporated the European Directive 92/43/EC (the Habitats Directive) that provides additional protection to certain species listed in the Annexes to the Directive (e.g. bats, great crested newts). Additional specific primary legislation (e.g. Protection of Badgers Act, 1992) provides protection for specific species, but is primarily concerned with the prevention of cruelty rather than protecting features of nature conservation importance.

Invasive Alien Plants

4.2.3 Invasive alien species are listed under Schedule 9 of the Wildlife and Countryside Act, 1981, namely Japanese knotweed (*Fallopia japonica*) and giant hogweed (*Heracleum mantegazzianum*). It is an offence to plant or cause the spread of these species.

Reptiles

4.2.4 The more common reptile species, such as grass snake (*Natrix natrix*), adder (*Viper berus*), slow worm (*Anguis fragilis*) and common lizard (*Zootoca vivipara*) receive limited protection

under Section 9 (1) and (5) of the Wildlife and Countryside Act, 1981 (as amended), which makes it an offence to intentionally and recklessly kill, injure or take any species of reptile.

Amphibians

4.2.5 Under the Wildlife and Countryside Act, 1981 (as amended) the more common amphibian species, such as such as palmate newt (*Triturus helveticus*), common toad (*Bufo bufo*) and common frog (*Rana temporaria*) receive limited protection under Sections 9 (1) and 9 (5), which make it an offence to intentionally and recklessly kill, injure or take any species of amphibian.

Bats

4.2.6 All bat species are afforded protection under the Wildlife and Countryside Act, 1981 (as amended) and the Conservation (Natural Habitats &c) Regulations 1994. Under this legislation it is an offence to intentionally kill, injure or take a bat. It is also an offence to intentionally or recklessly damage, destroy or obstruct access to any place that a bat uses for shelter or protection.

Water Vole

4.2.7 The water vole is afforded full protection under Section 9 of the Wildlife and Countryside Act, 1981 (as amended). Under this legislation it is an offence to intentionally kill, injure or take water voles; possess or control live or dead water voles or derivatives; intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection; intentionally or recklessly disturb water voles whilst occupying a structure or place used for that purpose; sell water voles or offer or expose for sale or transport for sale; and publish or cause to be published any advertisement which conveys the buying or selling of water voles.

Badgers

4.2.8 The badger (*Meles meles*) is afforded protection under the Protection of Badgers Act, 1992. Certain works undertaken within the vicinity of an active sett need to adhere to the Protection of Badgers Act, 1992 and may be confounded by distance from the sett entrance. Construction or preparation work should not be undertaken near an active sett that may cause disturbance to badgers. Any works resulting in ground penetration, vibration or noise near an identified badger sett entrance/s may require a licence from Natural England and as a result an ecologist should be consulted if any such works are necessary. If disturbance to an active sett is probable then a licence may need to be sought from Natural England before any works commence.

Dormouse

4.2.9 The common or hazel dormouse (*Muscardinus avellanarius*) is fully protected under the Wildlife and Countryside Act, 1981 (as amended) and the Conservation (Natural Habitats, &c.) Regulations, 1994. It is a Species of Principal Importance under Section 74 of Countryside and Rights of Way Act, 2000 and is a Priority Action Plan Species nationally. It is in long-term decline due to habitat loss and fragmentation throughout the UK and internationally.

Birds

4.2.10 All species of wild bird in the UK (apart from certain pest species) are protected under Part 1 Section 1(1) of the Wildlife and Countryside Act, 1981 (as amended). However, all species are protected during the breeding season. Wild birds are protected against intentional killing, injuring or taking as well as taking, damaging or destroying nests in use or being built, and taking or destroying eggs. In addition to general protection for birds, certain species listed in Schedule 1 of the Wildlife and Countryside Act, 1981 are afforded additional protection in relation to disturbance whilst nesting.

4.3 Biodiversity Action Plans

4.3.1 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.

4.3.2 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.

4.3.3 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 determination of planning applications.

4.4 Planning Policy Statement 9

4.4.1 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".*

4.4.2 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."

4.4.3 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."

4.5 Plymouth City Council Local Development Framework

Core Strategy Development Plan Document

4.5.1 The Core Strategy sets out the overall planning vision and framework for the city from 2006 to 2021 and beyond. Plymouth's Core Strategy was formally adopted by Full Council on 23 April 2007.

Chapter 11: Environment – Core Strategies CS18 and CS19

Policy CS 18 Plymouth's Green Space

4.5.2 *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

4.5.3 *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.*

5 Evaluation

5.1 Statutory Sites and Non-statutory Sites

5.1.1 The proposed development will not directly impact on the statutory sites of nature conservation importance, as all works will be confined within the site boundary.

5.1.2 However, at present it is not known whether the development will encroach into Blackie's Wood. Part of the woodland, located to the east of the site, was formerly designated as a Site of Local Importance for Nature Conservation (SLINC). The whole woodland is now shown as a Biodiversity Network Feature in the Plymouth Local Development Framework Core Strategy 2007.

5.1.3 Due to the site's proximity to the adjacent surface waters, the water quality of these surface waters could be negatively affected by contaminants introduced to the site during the construction, operation and decommissioning phases. This risk is particularly significant at this site during the construction phase due to the likely presence of existing contaminants within the made ground. Further work would be required, in consultation with Natural England and the Environment Agency, to identify a suitable approach to the assessment of potential effects on the Tamar Estuary and the smaller watercourses via surface water run-off and groundwater flow pathways.

5.1.4 To mitigate against these potential effects during the construction phase all site contractors would be required to ensure that their construction activities are undertaken in accordance with the pollution prevention guidelines (PPG) published by the Environment Agency, particularly PPG5 (Works in, near or liable to affect watercourses). Water pollution risks from the operational site can be avoided through the implementation of a suitably designed drainage system, incorporating Sustainable Urban Drainage Systems (SuDS) as appropriate.

5.2 Habitats

5.2.1 The bare ground, continuous scrub, rank semi-improved neutral grassland, ephemeral/short perennials, tall ruderals, semi-natural broadleaved woodland, hard standing and aggregate spoil represent the dominant habitats on the site. The continuous scrub has been left fairly unmanaged with occasional semi-mature trees. This habitat is of moderate value to breeding/roosting birds. However, this habitat is well represented within the general landscape.

5.2.2 The rank semi-improved neutral grassland, ephemeral/short perennials, and tall ruderal habitats are of medium value to reptiles, such as slow-worm and common lizard. The open, undisturbed, well-drained nature of the site and presence of natural and artificial refugia provides suitable resting, basking and hibernation sites for reptiles. The rank semi-improved neutral grassland, ephemeral/short perennials, and tall ruderal habitats are also well represented within the general landscape.

5.3 Protected and / or Notable Species

Amphibians

5.3.1 The site is of low to negligible value for amphibians with no freshwater bodies represented on site. All waterbodies on and adjacent to the site are tributaries and creeks associated with the Tamar estuary and the salinity of the waterbodies makes them unsuitable for amphibians. The desk study revealed no records of amphibians within 2 km of the site boundary.

5.3.2 During the field survey newt species were recorded breeding in a settling pool at Bullpoint northeast of the site. However, the settling pool is over 500m away from the site and is separated by roads, hardstanding and well maintained amenity grassland.

Reptiles

5.3.3 The site is of medium value for reptile species. 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 slow-worm or common lizard (*Zootoca vivipara*). These habitats provide both cover and basking habitats for reptiles. The desk study revealed no records of reptiles within 2 km of the site boundary. However, slow worm were recorded on the site during the survey.

Bats

5.3.4 The continuous scrub on the site is of low to negligible value for bats. The majority of trees on the site were semi-mature, with no evidence of any cracks or crevices. The linear features of the continuous scrub on the site may provide foraging/feeding and/or commuting habitat for bats roosting of the site, since they are well structured and provide potential flight paths or corridors. The mature trees within Blackie's Wood may provide suitable roosting habitat for bats particularly since some of these trees provide suitable features, such as cracks, crevices, flaking bark and rot-holes. The woodland may also provide suitable habitat for foraging and feeding bats.

Water Vole

5.3.5 There were no signs of water vole activity and the majority of habitats on the site were of limited potential to support this species. The geographical location also limits the potential to support water vole. No records of water vole were found on the desk study. The site is of low to negligible value for this species.

Badgers

5.3.6 There were no signs of badger activity or badger setts and the majority of habitats on the site were of limited potential to support this species. The site is surrounded by security fencing, allowing no access/egress points for badgers. There were no records of badger in the desk study.

Dormice

5.3.7 No evidence of hazel dormice was recorded during the desk study or field survey. The surrounding habitats were also recorded as low value for this species. The fragmented arboreal habitats had poor connectivity within the local landscape, limited food and nesting

material resource availability. The urban and industrial environment of the surrounding landscape renders the area unsuitable for dormice.

Breeding and Wintering Birds

5.3.8 The continuous scrub on the site and adjacent to the site is of moderate value for breeding and wintering birds. The desk study revealed house sparrow (*Passer domesticus*) recorded within 2 km of the site. Bird species recorded during the survey included common blackbird (*Turdus merula*), great tit (*Parus major*), greenfinch (*Carduelis chloris*) and European goldfinch (*Carduelis carduelis*). These common bird species prefer more open agricultural land, urban gardens and scrub habitats, which are well represented within the surrounding landscape and adjacent to the site. The tributaries and creeks associated with Weston Mill Lake and the Tamar estuary are of medium value to kingfisher and are used for feeding and foraging during the winter. No formal breeding and wintering bird survey was undertaken as part of this Extended Phase 1 Habitat Survey.

6 Recommendations and Mitigation

6.1.1 Based on the survey of the habitats identified on site and information received from the desk study, the following recommendations and mitigation are proposed.

6.2 Design

6.2.1 Opportunities should be taken with any landscaping to further increase the habitat diversity relative to that currently present on site. The landscape design should incorporate native tree and shrubs into the landscaping and planting screens wherever possible. Species selected should represent those of the existing landscape character. Preferably the sourced tree species should be of local provenance as these are more suited to the climatic and soil conditions, more disease resistant to bacterial and fungal infections and of similar genetic stock to those within the local area. Suitable species would include English oak (*Quercus robur*), common ash (*Fraxinus excelsior*), blackthorn (*Prunus spinosa*), common alder (*Alnus glutinosa*) and common hazel (*Corylus avellana*). Borders should be planted with native shrub species and include species such as, alder buckthorn (*Frangula alnus*), common hawthorn (*Crataegus monogyna*), crab apple (*Malus sylvestris*), wild privet (*Ligustrum vulgare*) and spindle (*Euonymus europaeus*). These will supply food for insects during the summer and food for birds during the autumn and early winter.

6.2.2 It would be more beneficial to wildlife to seed amenity grassland areas with a native grassland and forbs mix, rather than the perennial rye grass dominated lawn mixes that are commonly used. Examples would be those for neutral soils or a basic wildflower mix. These mixes contain 20% wild flora and 80% grasses by weight and are commercially available from a reputable supplier.

6.3 Prior to Planning Application

Bats

6.3.1 The mature trees within Blackie's Wood may provide suitable roosting habitat. The woodland may also provide suitable habitat for foraging and feeding bats. Therefore if trees or scrub need to be removed as part of the development then a tree survey for the potential to support roosting bats should be undertaken. This should be undertaken during the winter months (November – February).

Reptile Survey

6.3.2 The site hosts suitable habitat to support the more common reptile species, such as slow worm and common lizard. The southern half of the site that is dominated by rank semi-improved neutral grassland, ephemeral/short perennials and scrub may be of particular importance. Therefore in order to manage the potential risk to nationally protected species effectively, it is recommended that a reptile survey be undertaken.

6.3.3 The reptile survey should consist of eight visits between April/May and September. The first visit would consist of laying artificial refugia (pieces of tin or roofing felt) within areas of suitable habitat at a minimum rate of 10/ha. This would be followed by a 10 day period of "settling in", which would in turn be followed by a further seven visits during either morning or early evening

on each of which the refugia will be lifted and the species, number, age and sex of any reptiles found recorded.

Breeding Bird Survey

6.3.4 A breeding bird survey should be undertaken. The survey would follow the method developed by the British Trust for Ornithology (BTO), the Royal Society for the Protection of Birds (RSPB) and the Joint Nature Conservancy Council (JNCC) (Gilbert *et al.* 1998[1]). This survey method was introduced to monitor bird activity and population density. The breeding bird survey records the species and numbers when first noted in four distance categories from the transect:

- within 25m either side of the transect line;
- between 25 and 100m either side of the transect line;
- more than 100m either side of the transect line; and
- birds in flight at any distance.

6.3.5 The breeding bird survey methodology requires three visits to be undertaken between March and July. However, it is standard practise to undertake five visits when the results will contribute to an Environmental Impact Assessment. The survey visits are timed to be approximately four weeks apart. The breeding bird survey will also include surveying for kingfishers.

Invasive Plant Species

6.3.6 The stand of Japanese knotweed found south west of the site adjacent to Weston Mill Lake has already been treated with herbicide.

6.3.7 There was also a stand of Japanese knotweed found north of the site in Blackie's Wood. Should the proposed development encroach into Blackie's Wood and in particular the location of this stand of Japanese knotweed, a report should be produced for its control/eradication and disposal/removal. The report will include options for disposal that are concurrent with the Environment Agency's best practice guidance.

6.4 Prior to Construction

Phased Clearance of Grassland Vegetation

6.4.1 Reptiles are known to be on site, so a precautionary approach to vegetation clearance should be adopted. This will involve clearance in a phased and controlled manner so as to avoid any contact with reptiles. Ecologists should 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. Hand strimmers will follow the ecologist/s lead and cut the grass to a height of 100mm and the cut material will be hand raked to the sides of the area. All

[1] Gilbert G, Gibbons DW and Evans J (1998) Bird Monitoring Methods. RSPB.

strimming will commence in the one corner of the marked area working outwards towards the periphery of the development footprint to where areas are to be retained.

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

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

7 References

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Appendix A: Site Location Plan

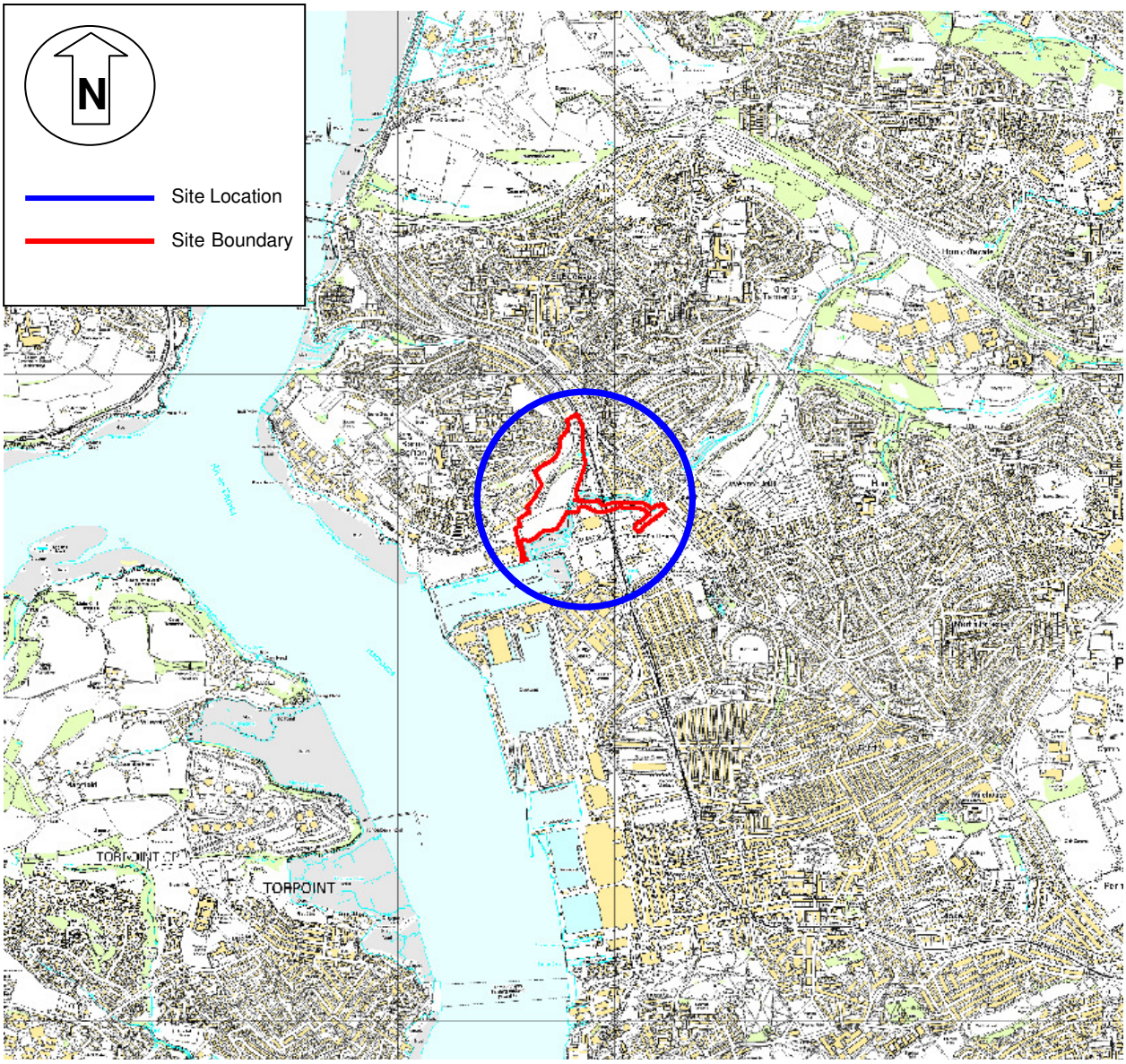

Figure 1. Site Location Plan
Not to Scale
Date 14.09.09
Project Title:
Devonport Dockyard: Phase 1 Habitat Survey

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Mayflower House
Armada Way
Plymouth
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Appendix B: Botanical Species List

Alexanders (*Smyrnium olusatrum*)
Alder (*Alnus glutinosa*)
Alder buckthorn (*Frangula alnus*)
Beech (*Fagus sylvatica*)
Barren brome (*Anisantha sterilis*)
Bird's foot trefoil (*Lotus corniculatus*)
Blackthorn (*Prunus spinosa*)
Black bryony (*Tamus communis*)
Black medick (*Medicago lupulina*)
Bramble (*Rubus fruticosus agg.*)
Broad-leaved dock (*Rumex obtusifolius*)
Broad-leaved Willowherb (*Epilobium montanum*)
Bluebell (*Hyacinthoides non-scripta*)
Butterfly-bush (*Buddleja davidii*) *non-native
Cleavers (*Galium aparine*)
Cock's foot (*Dactylis glomerata*)
Colt's foot (*Tussilago farfara*)
Common ash (*Fraxinus excelsior*)
Common daisy (*Bellis perennis*)
Common figwort (*Scrophularia nodosa*)
Common hawthorn (*Crataegus monogyna*)
Common hazel (*Corylus avellana*)
Common nettle (*Urtica dioica)*
Common mouse ear (*Cerastium fontanum*)
Common ragwort (*Senecio jacobaea*)
Common sorrel (*Rumex acetosa*)
Cotoneaster sp. (*Cotoneaster sp.)* *non-native
Cow parsley (*Anthriscus caucalis*)
Crab apple (*Malus sylvestris*)
Creeping buttercup (*Ranunculus repens*)
Curled dock (*Rumex crispus*)
Dandelion (*Taraxacum officinale*)
Dog rose (*Rosa canina*)
Dog's mercury (*Mercurialis perennis*)
English Elm (*Ulmus procera*)
European gorse (*Ulex europaeus*)
False oat-grass (*Arrhenatherum elatius*)
Fennel (*Foeniculum vulgare*)
Germander speedwell (*Veronica chamaedrys*)
Great mullein (*Verbascum thapsus*)
Greater plantain (*Plantago major*)
Hawkweeds (*Hieracium agg.*)
Hart's-tongue fern (*Phyllitis scolopendrium*)
Herb-Robert (*geranium robertianum*)
Hedge bedstraw (*Galium mollugo*)
Hedge bindweed (*Calystegia sepium*)
Hedge woundwort (*Stachys arvensis*)
Himalayan honeysuckle (*Leycesteria formosa*) *non-native
Hogweed (*Heracleum sphondylium*)
Holly (*Ilex aquifolium*)
Honeysuckle (*Lonicera periclymenum*)
Ivy (*Hedera helix*)

Japanese knotweed (*Fallopia japonica*) *non-native
Lesser celandine (*Ranunculus ficaria*)
Lesser stitchwort (*Stellaria graminea*)
Lords-and-ladies (*Arum maculatum*)
Moss sp. (*Moss sp.)*
Navelwort (*Umbilicus rupestris*)
Oxeye daisy (*Leucanthemum vulgare*)
Pedunculate oak/English oak (*Quercus robur*)
Pendulous sedge (*Carex pendula*)
Perennial rye (*Lolium perenne*)
Perennial sow-thistle (*Sonchus arvensis*)
Pignut (*Conopodium majus*)
Primrose (*Primula vulgaris)*
Purple Toadflax (*Linaria purpurea*)
Ramsons (*Allium ursinum*)
Red clover (*Trifolium pratense*)
Red fescue (*Festuca rubra*)
Ribwort plantain (*Plantago lanceolata*)
Rosebay willowherb (*Chamerion angustifolium*)
Sallow sp (*Salix sp*)
Scaly male fern (*Dryopteris affinis*)
Selfheal (*Prunella vulgaris*)
Smooth sow-thistle (*Sonchus oleraceus*)
Snowberry (*Symphoricarpos albus*) *non-native
Soft shield fern (*Polystichum setiferum*)
Spanish bluebell (*Hyacinthoides hispanica*)
Spear thistle (*Cirsium vulgare*)
Sycamore (*Acer pseudoplatanus*)
Traveller's-joy (*Clematis vitalba*)
White clover (*Trifolium repens*)
White melilot (*Melilotus albus*)
Wild carrot (*Daucus carota*)
Wild cherry (*Prunus avium*)
Winter heliotrope (*Petasites fragrans*)
Wood avens (*Geum urbanum*)
Wood dock (*Rumex sanguineus*)
Yarrow (*Achillea millefolium*)
Yorkshire fog (*Holcus lanatus*)

Appendix C: Photographs

1. Slow worm (*Anguis fragilis*) found at the site

2. Ashcroft spoil storage area

3. Artificial reptile refugia

4. Artificial reptile refugia

5. Semi-improved neutral grassland and scrub habitat

6. Ephemeral/short perennial, grassland and continuous scrub habitat

Appendix D: Phase I Habitat Map

NOTES

- Target Note
- Fence
- A — Amenity Grassland
- Ephemeral Short Perennial
- Hard Standing
- Running Water
- Scrub
- SI — Semi Improved Grassland
- Semi natural broad leaved woodland
- S — Spoil

Revision Details	By / Check	Date	Suffix

Drawing Status: FINAL

Job Title: MVV Umwelt — EfW CHP FACILITY

Drawing Title: DEVONPORT SITE PHASE I HABITAT MAP

Scale at A3: 1:2,500

Drawn	Approved	Stage 1 check	Stage 2 check	Originated	Date
MP	PG				

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Drawing Number: **APPENDIX D/FIGURE 1** Rev

Date: 4th June 2010
Filepath: K:\Templates\Scott Wilson\Corporate March 2006\A3 Landscape Vertical Details.mxd

Appendix E: Target Notes for Extended Phase I Habitat Survey

Survey date and time: 8 September 2009 at 9:00 am (GMT).
Environmental conditions: Temperature 15°C; weather conditions light rain and cloudy.
Additional survey date and time: 1 June 2010 at 9:00 am (GMT)
Environmental conditions: Temperature 19°C; weather conditions sunny.

Target note 1. Rubble area with ephemeral/short perennial growth. With patches of tall ruderal vegetation. Dominant species include bird's foot trefoil (*Lotus corniculatus*), buddleia (*Buddleja davidii*) and white melilot (*Melilotus alba*).

Target note 2. Stand of Japanese Knotweed (*Fallopia japonica*) noted, just outside of the site boundary.

Target note 3. Area of dense continuous scrub. Dominated with butterfly bush (*Buddleja davidii)*.

Target note 4. Dense continuous scrub surrounding the ephemeral/short perennial habitat, with a well trodden path access of semi improved grassland continuing around the scrub. Field layer dominated with ribwort plantain (*Plantago lanceolata*), perennial rye (*Lolium perenne*) and ivy (*Hedera helix*).

Target note 5. Area of Himalayan honeysuckle (*Leycesteria formosa*) located in Blackie's Wood.

Target note 6. Slow worm (*Anguis fragilis*) found under artificial refuge.

Target note 7. Second area of ephemeral/short perennial growth. A spoil heap located in this area has been mapped.

Target note 8. Areas of semi improved neutral grassland that is managed. Dominated with perennial rye (*Lolium perenne*), Yorkshire fog (*Holcus lanatus*), and false oat grass (*Arrhenatherum elatius*).

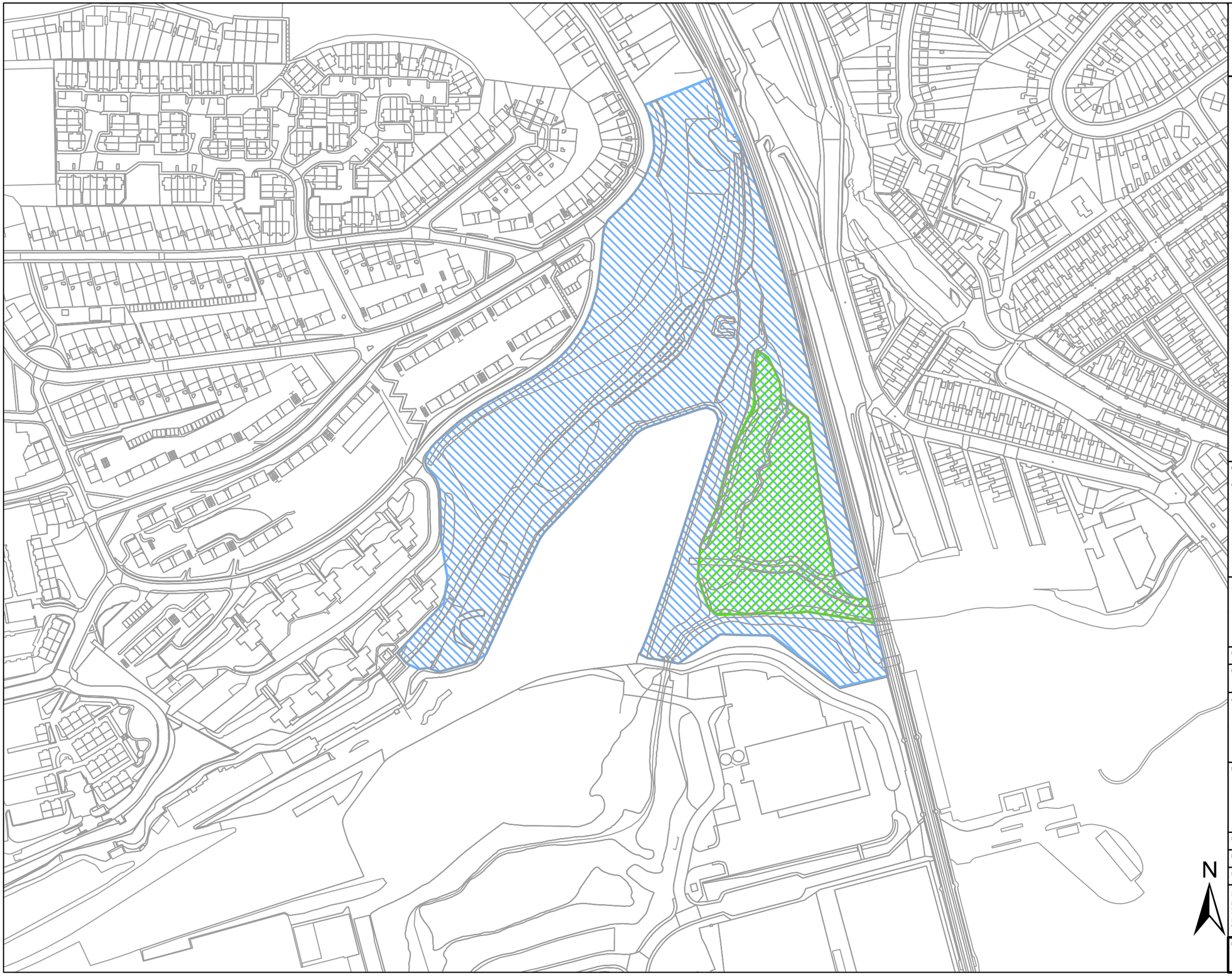
Target note 9. Hard standing concrete access road.

Target note 10. Sluice and culvert

Target note 11. Blackie's Wood - Semi-natural broadleaved woodland dominated by pedunculate oak/English oak (*Quercus robur*) and common ash (*Fraxinus excelsior*) abundant common hazel (*Corylus avellana*), common hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*) with frequent wild cherry (*Prunus avium*) and English Elm (*Ulmus procera*).

Target note 12. Area of perennial rye (*Lolium perenne*) dominated amenity grassland.

Appendix F: Location of BNF and Former SLINC



NOTES

SLINC

SLINC Boundary:
Digitised by hand from
The City of Plymouth
Local Plan First Alteration
Adopted 1996 Proposals Map

Biodiversity Network Feature

BNF Boundary:
Digitised by hand from
mapping provided by
Plymouth City Council

Revision Details	By / Check	Date	Suffix

Drawing Status: FINAL

Job Title: MVV Umwelt
EfW CHP FACILITY

Drawing Title:
DEVONPORT SITE
LOCATION OF BNF AND
FORMER SLINC

Scale at A3: 1:2,500

Drawn	Approved
MP	PG

Stage 1 check	Stage 2 check	Originated	Date

N

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Drawing Number: APPENDIX F/FIGURE 1

Rev

Date: 8th July 2010
Filepath: K:\Templates\Scott Wilson\Corporate March 2006\A3 Landscape Vertical Details.mxd