



Firestone Site Wrexham Industrial Estate Ecological Mitigation and Habitat Restoration and Enhancement Costs (TEP Report Ref: 3544.009)

January 2013
Version 3

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1.0 EXECUTIVE SUMMARY

- 1.1 Broadway Malyan (of which TEP is part of the consulting team) was commissioned in July 2012 by Wrexham County Borough Council (WCBC) to assist in progressing the development of the former Firestone site on Wrexham Industrial Estate (WIE).
- 1.2 This document follows on from two previous ecological reports:
- Firestone Site, Wrexham Industrial Estate. Ecological Baseline Assessment (TEP Report Ref: 3544.001 October 2012 Version 4); and
 - Firestone Site, Wrexham Industrial Estate. Ecological Method Statement and Management Plan (TEP Report Ref: 3544.006 October 2012 Version 3).
- 1.3 It has the objectives of providing preliminary cost estimates for ecological mitigation and follow-up monitoring works, habitat creation and enhancement works, habitat maintenance and a further pre-development grizzled skipper survey. All costs shown are excluding VAT.
- 1.4 A summary of the preliminary cost estimates is provided in Table 1. In respect of ecological mitigation costs, Table 1 contains a “menu” as follows:
- Newt Clearance of the whole 23 ha development area in one pass (costed for a 35 or a 65 night trapping period, which will need to be negotiated with Welsh Government/CCW as a licence condition)
 - Newt clearance in 3 phases of approximately 7.5 ha each (again costed for 35 or 65 night trapping periods).
- 1.5 It should be noted that Table 1 does not cover the ecological mitigation (newt licencing, fencing and clearance) costs for the F Lloyd Penley development. However, the habitat restoration and enhancement costs are to mitigate for the whole development, including the FLP development.
- 1.6 Table 1 also excludes any costs associated with:
- Habitat or SUDS provision related to the development footprint itself;
 - Investigation and decontamination or decommissioning of the water supply pipe that outfalls into Pond 2.

Table 1. Summary of Preliminary Costs for Ecological Mitigation and Management of the Firestone Site

ACTIVITY	ACTIVITY BREAKDOWN	COST
ECOLOGICAL MITIGATION COSTS		
Great Crested Newt clearance from whole site (35 trap nights)	WG licence application and administration, contractor fencing, amphibian capture and translocation (35 trap nights), vegetation clearance, follow-up monitoring for great crested newt, grizzled skipper, breeding birds, other invertebrates	£175,679
<i>Great Crested Newt clearance from whole site (65 trap nights)</i>	<i>WG licence application and administration, contractor fencing, amphibian capture and translocation (65 trap nights), vegetation clearance, follow-up monitoring for great crested newt, grizzled skipper, breeding birds, other invertebrates</i>	<i>£188,029</i>
3-Phase Great Crested Newt clearance from whole site (35 trap nights)	WG licence application and administration, contractor fencing, amphibian capture and translocation (35 trap nights), vegetation clearance, follow-up monitoring for great crested newt, grizzled skipper, breeding birds, other invertebrates <u>and repeat three times</u>	£284,382.50
<i>3-Phase Great Crested Newt clearance from whole site (65 trap nights)</i>	<i>WG licence application and administration, contractor fencing, amphibian capture and translocation (65 trap nights), vegetation clearance, follow-up monitoring for great crested newt, grizzled skipper, breeding birds, other invertebrates <u>and repeat three times</u></i>	<i>£303,717.50</i>
Ground Clearance using soil scrape and herbicide (following GCN clearance)	Remove 50mm soil and redistribute, herbicide spray 2 times a year (will require detailed re-pricing once a development contractor is appointed and costs may be reduced)	£134,690
HABITAT RESTORATION AND ENHANCEMENT COSTS		
Restoration and enhancement costs	Site fencing, pond restoration, new pond (with hibernacula and butterfly scrapes), GCN hibernacula creation, grassland restoration/enhancement, butterfly banks/ hibernacula, dense scrub clearance, path creation, interpretative displays, consultant ecologist input, planning application costs	£138,915
HABITAT MAINTENANCE COSTS		
Habitat maintenance Costs	Habitat management prescriptions, management of contractors, liaison with managing agent, WCBC, updating management plan, community engagement	£23,157.97
GRIZZLED SKIPPER SURVEY COSTS		
Pre-construction grizzled skipper survey	Walk weekly transects in grizzled skipper flight period and produce report.	£3,000

2.0 INTRODUCTION

- 2.1 Broadway Malyan (of which TEP is part of the consulting team) was commissioned in July 2012 by Wrexham County Borough Council to assist in progressing the development of the former Firestone site on Wrexham Industrial Estate. The commission is divided into two parts: Part 1 requires the preparation of a development framework and indicative masterplan for the site, based on ground condition, utility capacity and ecology; and Part 2, which is conditional on WCBC taking the proposals forward, will require further detailed analysis of landscape and arboriculture and an outline planning application.
- 2.2 This document forms part of the Part 1 ecology requirements and follows on from two previous reports:
- Firestone Site, Wrexham Industrial Estate. Ecological Baseline Assessment (TEP Report Ref: 3544.001 October 2012 Version 4); and
 - Firestone Site, Wrexham Industrial Estate. Ecological Method Statement and Management Plan (TEP Report Ref: 3544.006 October 2012 Version 3).
- 2.3 The objectives of this current document are to provide, exclusive of VAT:
- A preliminary cost estimate for the ecological (predominantly associated with great crested newt clearance) mitigation works for the 23 ha development platform; and follow-up monitoring for great crested newt, grizzled skipper, breeding birds and other invertebrates;
 - A preliminary cost estimate for habitat creation and enhancement works in the ecological mitigation area;
 - A preliminary cost estimate for habitat maintenance of the mitigation area; and
 - A cost estimate for a grizzled skipper survey, prior to development, as recommended in the previous reports.
- 2.4 The former Firestone site is situated to the south-east of Wrexham Industrial Estate, adjacent to Bridge Road, and comprises 44.6 hectares (110 acres) of brownfield land of high ecological value. The site is bounded by Bridge Road to the north-west, industrial units to the south-west and north-east boundaries and by the River Clywedog floodplain to the south-east. The approximate central grid reference is SJ 378 489 (Figure 1).

Figure 1: Location of former Firestone site and surrounding area



Former Firestone site

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3.0 ECOLOGICAL MITIGATION COSTS

- 3.1 Table 2 provides a breakdown of the preliminary ecological mitigation costs, based on the whole development site, an area of approximately 23 hectares, being cleared of great crested newts in one operation, under one licence, as described in Ecological Method Statement and Management Plan (TEP Report Ref: 3544.006 Version 3). This would take place according to the timeline presented in Chapter 4 of TEP Report Ref: 3544.006 Version 3, with the WG licence application commencing in Spring/ Summer 2014 and the site cleared ready for development by Autumn/ Winter 2014. Alternative costs are included depending on whether trapping is required for 30(+5) days or 60(+5) days. NB the (+5 days) is a contingency allowance should bad weather slow the progress of trapping.
- 3.2 The breakdown of the costs excludes VAT but includes mileage charged at 0.50p/mile and assumes an average 70 mile round trip to visit the site for supervision and trapping requirements.

Table 2. Breakdown of Preliminary Ecological Mitigation Costs for Clearance of Whole Site

ACTIVITY	ACTIVITY BREAKDOWN	COST
WG Licence Application	WG licence method statement; WG licence reasoned statement; habitat management and monitoring plan/ statement; application pack, paperwork and liaison during determination; licence return to WG	£2,323
WG Licence Administration	Licence administration during amphibian trapping period; licence administration during construction (assume 2 year build)	£4,525
Contractor Fencing	Fenceline preparation; installation of rigid plastic perimeter fencing, internal drift fencing and pitfall traps; removal of temporary internal fencing and traps; removal of perimeter fencing; maintenance during construction	£81,822.50
Licensed Ecologist Amphibian Capture and Translocation (35d)	Supervision of site set up and fencing installation; trapping (allow for 35 consecutive nights); supervision of pitfall trap and fencing removal	£17,212.50
Licensed Ecologist Amphibian Capture and Translocation (65d)	Supervision of site set up and fencing installation; trapping (allow for 65 consecutive nights); supervision of pitfall trap and fencing removal	£28,062.59
Contractor Scrub/ vegetation Clearance	Scrub/ vegetation clearance from development area (to 150mm)	£11,200
Licensed Ecologist Follow-up Monitoring Surveys	Follow-up population surveys for great crested newts (Yrs 1 – 3 and Yr 5)	£18,804
Follow-up Monitoring Surveys	Grizzled skipper transect surveys (Yrs 1 – 3 and Yr 5)	£11,020
Follow-up Monitoring Surveys	Other invertebrates (UKBAP butterflies and moths) – transect surveys. (Yrs 1 – 3 and Yr 5)	£13,780
Follow-up Monitoring Surveys	Breeding birds – standard breeding bird survey methodology (Yrs 1 – 3 and Yr 5)	£5,492
Contingency (35 trap nights)	For additional survey and fence repair due to unforeseen circumstances	£9,500

ACTIVITY	ACTIVITY BREAKDOWN	COST
<i>Contingency (65 trap nights)</i>	<i>For additional survey and fence repair due to unforeseen circumstances</i>	<i>£11,000</i>
TOTAL (35 trap nights)		£175,679
TOTAL (65 trap nights)		£188,029

3.3 Table 3 below provides indicative costs based on the site being developed in three phases, requiring three licence applications and three phases of newt fencing and trapping. Phase 1 would commence in Spring/ Summer 2014 with the assumption that Phase 2 might start in Spring/ Summer 2017 and Phase 3 in Spring/ Summer 2020. Costs are listed at 2012 prices.

Table 3. Breakdown of Preliminary Ecological Mitigation Costs for Clearance of Site in Three Phases

ACTIVITY	ACTIVITY BREAKDOWN	COST
PHASE 1		
WG Licence Application	WG licence method statement; WG licence reasoned statement; habitat management and monitoring plan/ statement; application pack, paperwork and liaison during determination; licence return to WG	£1,523
WG Licence Administration	Licence administration during amphibian trapping period; licence administration during construction (assume 2 year build)	£4,525
Contractor Fencing	Fenceline preparation; installation of rigid plastic perimeter fencing, internal drift fencing and pitfall traps; removal of temporary internal fencing and traps; removal of perimeter fencing; maintenance during construction	£27,274
Licensed Ecologist Amphibian Capture and Translocation (35d)	Supervision of site set up and fencing installation; trapping (allow for 35 consecutive nights); supervision of pitfall trap and fencing removal	£9,517.50
Licensed Ecologist Amphibian Capture and Translocation (65d)	Supervision of site set up and fencing installation; trapping (allow for 65 consecutive nights); supervision of pitfall trap and fencing removal	£14,942.50
Contractor Scrub/ vegetation Clearance	Scrub/ vegetation clearance from development area (to 150mm)	£3,750
Contingency (35 trap nights)	For additional survey and fence repair due to unforeseen circumstances	£3,200
Contingency (65 trap nights)	<i>For additional survey and fence repair due to unforeseen circumstances</i>	<i>£4,220</i>
	Phase 1 Total (35 trap nights)	£49,789.50
	Phase 1 Total (65 trap nights)	£56,234.50
PHASE 2	As for Phase 1 costs (35 nights trapping)	£49,789.50
	As for Phase 1 costs (65 nights trapping)	£56,234.50
PHASE 3	As for Phase 1 costs (35 nights trapping)	£49,789.50
	As for Phase 1 costs (65 nights trapping)	£56,234.50

ACTIVITY	ACTIVITY BREAKDOWN	COST
Licenced Ecologist Follow-up Monitoring Surveys	Follow-up population surveys for great crested newts (Yrs 1 -11 to account for different phases of development)	£51,711
Follow-up Monitoring Surveys	Grizzled skipper transect surveys (Yrs 1 -11 to account for each phase of development)	£30,305
Follow-up Monitoring Surveys	Other invertebrates – transect surveys, sweep netting. (Yrs 1 -11 to account for each phase of development)	£37,895
Follow-up Monitoring Surveys	Breeding birds – standard breeding bird survey methodology (Yrs 1 -11 to account for each phase of development)	£15,103
TOTAL (35 trap nights)		£284,382.50
TOTAL (65 trap nights)		£303,717.50

- 3.4 The costs associated with grizzled skipper mitigation relate to habitat creation and enhancement measures and are detailed in Chapter 4.
- 3.5 Indicative costs for clearing the site by undertaking a soil scrape of 50mm and then regular (for example twice times a year) spraying with glyphosate to prevent vegetation regrowth are shown in Table 4. These costs are indicative and likely to be highly negotiable depending on the interest of earthworks contractors, which can vary from year to year. Hence, TEP does not suggest a differential between costs for 'whole site' and a 'phased' approach.

Table 4. Indicative Costs for Site Clearance by Soil Scrape and Herbicide

ACTIVITY	ACTIVITY BREAKDOWN	COST
Soil Scrape to Clear Site	Scrape 50mm soil from surface of site. Redistribute in specified areas within site (e.g. for levelling) as removal from site will be more costly	£122,445
Glyphosate application	Mechanised spraying of glyphosate 2 times per year to prevent recolonisation of vegetation	£12,245
TOTAL		£134,690

4.0 HABITAT RESTORATION AND ENHANCEMENT COSTS

- 4.1 The following indicative costs have been based on the habitat restoration and enhancement recommendations for the mitigation area outlined in the Ecological Method Statement and Management Plan (TEP Report Ref: 3544.006 Version 3). Further detailed design and revision of the layout of the mitigation area is likely to be required once the detailed landscape and arboricultural work is undertaken, in order that findings can be incorporated, and once a nature conservation organisation is appointed to take over management of the site. The costings allow for the provision of some public access along a gravel-type path, with appropriate perimeter fencing and signage. Although not strictly required for nature conservation purposes, it is considered that the existing and predicted level of public access is such that it is better to provide some managed access rather than deal with trespass. Once the detailed design of the mitigation area is undertaken, revision of the costs will be required.
- 4.2 Table 5 provides a breakdown of the preliminary habitat restoration and enhancement costs, including mileage (at 50p/mile, to cover site visits by licenced ecologist within a 35 mile radius). The costs are based on landscape contractor rates derived from TEP's database of landscape tender prices, as at 2012; combined with an estimate of time required by a contractor to carry out certain operations. Costs exclude VAT.
- 4.3 Timber edging is recommended for creation of the gravel path as the ground is quite wet and soft in places around the mitigation area. Timber edging would prevent spreading of the gravel and higher maintenance costs in the long-term. Costs could be reduced once detailed design takes place by identifying firmer ground within the site where timber edging would not be required.

Table 5. Breakdown of Preliminary Habitat Restoration and Enhancement Costs

ACTIVITY	ACTIVITY BREAKDOWN	COST
Site Fencing	Installation of post and rail fencing on boundaries where vehicular access may be possible (assumes 400m required)	£4,800
Pond Restoration	Restoration and enhancement of Pond 1, Pond 2 and the remaining section of ditch	£8,000
Pond Creation (+ associated hibernacula and butterfly scrapes)	Creation of three new ponds of approximately 150m ² , with associated hibernacula and butterfly scrapes	£15,000
Great Crested Newt Hibernacula	Construction of three great crested newt hibernacula associated with restored waterbodies.	£3,000
Grassland Restoration/ Enhancement	Removal of scrub encroachment, cutting of grassland to achieve desired structural diversity	£5,600
Butterfly Banks/ hibernacula	Creation of two butterfly banks / hibernacula	£6,000
Dense Scrub Clearance	Removal of dense scrub from specified areas	£11,200

ACTIVITY	ACTIVITY BREAKDOWN	COST
Path Creation	Creation of gravel path (excavate 250mm and replace with geotextile sheet, 200mm depth of MoT stone, 50mm self-binding gravel) with timber edging around the site (assume 1890m)	£63,315
Interpretative Displays	Production and installation of interpretative displays (assume 3)	£4,500
Consultant Ecologist	Contractor administration, site management, inspection and handover	£6,000
Planning Application	Design drawings, planning application documents and discussions with WCBC/CCW. Includes estimated planning fee of £500	£11,500
TOTAL		£138,915

5.0 HABITAT MAINTENANCE COSTS FOR MITIGATION AREA

5.1 Table 6 provides indicative costs for habitat maintenance of the mitigation area. The costs shown exclude VAT.

Table 6. Breakdown of Indicative Annual Habitat Management Costs

ACTIVITY	ACTIVITY BREAKDOWN	COST
Inspections and Cleansing	Annual risk assessment, monthly inspections, fly tipping removal	£4,710
Specialist surveys	Tree hazard and condition survey, inspection of waterbodies	£1,000
Natural Short Sward Grassland	Monitor to ensure retains short sward naturally, remove scrub encroachment	£368.35
Tall Grass	3 year rotation of annual cut, twice a year cut and 'fallow' year, scrub removed as part of cutting regime	£4,688.44
Removed Scrub / Restore Grassland	Annual brushcut to remove regrowth, reseed when necessary	£1,178
Dense Scrub Management	Cut back one third to required boundary annually, grade from grassland to tall scrub	£632.73
Ponds and Ditch - New and Existing	Third of bankside vegetation remove annually, 5 yearly aquatic vegetation removal, 10 yearly de-silting	£2,099.36
Butterfly Scrapes	Annual cut to 150mm, 5 yearly rescrap of 50%	£32
SUDS	Third of bankside vegetation removed annually	£44.44
Butterfly banks and Hibernacula	Annual cut to 150mm, periodic rescrap to create small areas of bare earth	£120
Fencing	Repair damaged fencing	£241.50
Footpaths (gravel)	Bi-annual herbicide spray to edges, repairs	£235.16
Himalayan Balsam	Annual hand pull	£585
Maintenance Contingency Costs	Extra repairs, unforeseen management requirements	£1,593.51
Personnel Management Costs	Management of Contractors, liaison with managing agents, WCBC, updating management plan	£2,629.30
Community engagement	Community newsletter, site visits	£3,000
	TOTAL ANNUAL COSTS	£23,157.97

6.0 GRIZZLED SKIPPER SURVEY

- 6.1 TEP has recommended that a survey of the Firestone site is undertaken for grizzled skipper, prior to development. This is required to understand the full extent of this species' distribution and use of the site prior to development and will enable revision of the habitat restoration and enhancement recommendations for the mitigation area where necessary.
- 6.2 The survey would be undertaken following the UK Butterfly Monitoring Scheme methodology which requires predetermined transects to be walked weekly in suitable weather conditions, in this case for the flight period of the grizzled skipper which is mid-May to mid-July.
- 6.3 The estimated cost for undertaking this survey and producing a report is **£3,000** including mileage but exclusive of VAT.