

Hiremade Furbs and Fifers 11 Ltd

Gatewen Colliery, Wrexham

**GREAT CRESTED NEWT MITIGATION STRATEGY –
DELIVERY INFORMATION**

February 2009

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A MITIGATION AND COMPENSATION

A1 Summary of mitigation strategy

A1.1 A summary table has been provided (Table 1). For further details please refer to the relevant following section and supporting figures.

Table 1: Summary of Proposed Mitigation and Compensation Measures

Mitigation Strategy	
Reserve Area:	A reserve area within sub-optimal habitat shall be created near to Pond W2 during spring 2009. This area shall be enhanced to include tussocky grassland, hibernacula, log piles and areas of scrub.
Capture & Exclusion Works:	Temporary exclusion fencing and permanent fencing will be erected around the receptor site and the majority of GCN-suitable areas within 500 m of Pond W2. Bucket traps will be installed every 5-10 m along one-way exclusion fencing along the perimeter fencing. Thirty days of trapping continued until 5 consecutive days clear (no GCN's found) will take place followed by a destructive search in all GCN-suitable areas. Any newts captured will be placed within the reserve area. Small sections of GCN-suitable habitat between 400 and 500 m away from the known GCN pond shall be hand cleared.
Relocation of GCN's & other fauna:	Any GCN (and other wildlife including palmate newts <i>Triturus helveticus</i> known to be present on site) trapped/captured during any stages of the works shall be translocated to the reserve area.

Enhancement works:	Habitat creation within the reserve site to include four hibernacula. Habitat creation within the site area will include the creation of a new pond and tussocky grassland. The new waterbody will be planted with marginal and aquatic species.
Long-term management:	A 20 year management plan for all habitats associated with great crested newts is to be adhered to (provided in Appendix 6 of the Ecological Appraisal (FPCR December 2008)).
Monitoring programme:	4 survey visits per annum will be undertaken on the new and enhanced waterbodies within the site to determine presence/absence for a period of 2 years.

B WORKS TO BE UNDERTAKEN BY THE ECOLOGIST OR SUITABLY QUALIFIED PERSON

B1 Receptor site modification, enhancement or creation

B1.1 It is considered unlikely that any GCN are currently within the proposed section of the site to be used as the reserve area due to its sub-optimal nature and the perceived overall low density of GCN within the site. Habitat improvement works will increase the carrying capacity of the receptor site (Figure B5.1). Works shall be undertaken during spring 2009 under the supervision of a suitably experienced ecologist. The area proposed for the reserve area shall be thoroughly hand-searched prior to the erection of the temporary fencing. In the unlikely event that any GCN are observed during the site preparation works they are to be translocated to suitable terrestrial habitat to the east of the proposed reserve area (near to pond W2).

B1.2 The receptor site shall cover an area of approximately 0.18 ha and shall include four hibernacula (Figure B5.2). Within this area a number of trees shall be coppiced (without disturbing the ground) to provide additional clearings and the material for log piles. Within the cleared area approximately 100 m² of tussocky grassland shall be seeded interspersed with approximately 100 m² of scrub planting.

B2 Capture and exclusion

B2.1 Pre-Licence works

B2.1.1 As part of the proposed development cut and fill and storage works are required to be undertaken (Figure B5.3) within the area of tarmac/bare ground/spoil centrally located within the site (see below).



B2.1.2 Due to the extreme unsuitability of this area as potential GCN habitat it is considered that works can be conducted within this area without a licence being required. Within this section there are, however, small amounts of isolated scrub. These areas shall be hand searched by experienced ecologists during suitable weather conditions prior to the commencement of any works. In the unlikely event that GCN are discovered works will be halted immediately and a licence sought.

B1.2.3 Part of the proposed cut and fill works involve the storage of topsoil/rubble within this area. Whilst it is considered that very limited isolated suitable habitat currently exists, the addition of new material could potentially provide suitable resting habitat for GCN, which would be subject to frequent and intense disturbance. It is therefore considered prudent to surround this area with temporary amphibian fencing (TAF) prior to the start of works (Figure B5.4). The fencing shall be erected under the supervision of a suitably experienced ecologist and in the unlikely event GCN are discovered works will be halted immediately and a licence sought. A small section of the southern fencing shall be removed each morning to allow vehicular access before being re-instated each evening.

B1.2.4 It is considered that these works can be undertaken outside of a Protected Species Licence due to the highly unsuitable nature of the present terrestrial habitat and the extremely limited potential for GCN resting places it provides. Furthermore, the inhospitable nature of this habitat is considered to be such a significant barrier to GCN dispersal that the erection of TAF within this area is not considered to provide any greater deterrent to movement than that currently present.

B2.2 Licensable Works

B2.2.1 It is anticipated that installation of fencing within the rest of the site and commencement of trapping, will be undertaken in June 2009.

B2.2.2 One-way TAF will be installed around the reserves area and the majority of GCN-suitable habitat within 500 m of Pond W2. All fencing (apart from around the reserve area will have bucket traps installed every 5 – 10 m (Figure 5.4)). The fencing will be inspected daily before 11.00am for a 30-day trapping period (during suitable weather conditions) to be continued until 5 consecutive trappings days without finding great crested newts.

B3 Temporary loss of breeding sites/resting places

B3.1 Aquatic

B3.1.1 Not applicable

B3.2 Terrestrial

B3.2.1 The works will result in the temporary loss of some areas potentially used as resting places by this species. However, a large reserve area is to be enhanced and additional grassland/scrub planting is to be undertaken to provide optimal terrestrial habitat which is considered to be more than sufficient terrestrial habitat compensation for the very low population size present on the site (a single individual caught within a single pond on a single occasion).

B4 Destruction of existing breeding sites/resting places

B4.1 Aquatic

B4.1.1 There are no confirmed breeding places within the site boundary. However, during the proposals the single permanent waterbody on site is to be lost and converted into a reedbed. A new waterbody is therefore to be designed specifically for GCN in its place. This follows the guidance offered within the Great Crested Newt Mitigation Guidelines (English Nature, 2001) which states that 'pond creation is preferable to pond restoration for mitigation schemes'. The proposed works will take place after the breeding season and the resultant pond shall be sufficiently established to provide optimal GCN habitat in time for the following breeding season. The works are therefore considered to have negligible affect upon the potential for this species to breed.

B4.1.2 During suitable weather conditions the on-site waterbody (W2) will be slowly drained, with a fine mesh box fitted over the drain pipe/pump mechanism to prevent any newts remaining being harmed. The pond bed will then be destructively searched. This will all be done under the supervision of a suitably experienced ecologist.

B4.1.3 The pond shall then be de-silted with all spoil spread over nearby GCN-free habitat (within the area terrestrially trapped (see below)) prior to inspection by an ecologist to ensure no amphibians are present. This pond shall then be modified to create a reedbed which shall be used as part of the surface water attenuation scheme for the site (whilst also providing additional foraging/resting habitat for GCN (and other wildlife)).

B4.2 Semi-Aquatic

B4.2.1 There are no confirmed breeding places within the site boundary. Destruction of pond W1 will take place immediately after the completion of trapping (July). This temporary waterbody has a maximum depth of 10 cm during the winter months and does not hold water during the majority of the year. It shall therefore be treated as terrestrial habitat and will be carefully destructively searched by hand. Section E1 provides details of the proposed timetable of works.

B4.3 Terrestrial

B4.3.1 Destructive searches of all trapped-out terrestrial areas will be undertaken by suitably qualified ecologists at the end of the trapping out period, prior to land being released for the proposed works. Any GCN (or other wildlife) caught or found during the trapping/searches will be relocated to the reserve area (providing that it has become sufficiently established). This potentially includes a moderate-sized population of palmate newts observed within the one permanent waterbody on site (W2). It is considered that any GCN caught in terrestrial habitat during June onwards will have finished breeding. Transfer to terrestrial habitat is therefore considered not to impact upon GCN breeding.

B4.3.2 A small section of sub-optimal terrestrial habitat was present between 400 and 500 m from W2 (Figure B5.5). This area comprised small areas of scattered scrub and low-density immature trees surrounded by bare ground. Due to the distance from the GCN pond and the poor-quality habitat present within this area it is considered that this area can be thoroughly hand searched prior to a destructive search without undergoing 30 days trapping. These precautionary measures are considered suitable to ensure a minimum risk to this species.

B4.3.3 Upon completion of the destructive searches and the subsequent construction works of the road infra-structure semi-permanent fencing is to be erected around areas of the site remaining to be developed to ensure these areas remain GCN-free (Figure B5.6). Furthermore, once the trapping period has been completed and the new waterbody (created adjacent to W2) has become sufficiently established, the fencing around the majority of the reserve area shall be removed. This will take place prior to the 2010 breeding season and will give any GCN access to the newly-created GCN-suitable pond.

B5 Scaled maps/plans

B5.1 Figure B5.1 Reserve Site Location

B5.2 Figure B5.2 Receptor Site Enhancements

B5.3 Figure B5.3 Proposed Cut and Fill and Storage Works

B5.4 Figure B5.4 Capture and Exclusion Measures Pre-Construction

B5.5 Figure B5.5 Map to Show Impacts

B5.6 Figure B5.6 Capture and Exclusion Measures Pre-Construction

C WORKS TO BE UNDERTAKEN BY THE DEVELOPER/LANDOWNER

C1 Compensation

C1.1 Aquatic

C1.1.1 A new pond adjacent to the existing W2 is to be created as part of the proposals. The area to be used is to be cleared during the initial terrestrial trapping period. The sides of the pond shall provide shallow-sloping areas where appropriate and native marginal and aquatic planting shall be introduced. This (and the provision of artificial egg-laying strips for the first year) will ensure the establishment of suitable GCN breeding habitat. See Figure C1.3.1 for details.

C1.1.12 Native aquatic plants will be planted to provide potential egg laying substrate as quickly as possible, species to be used will include:

<i>Myosotis scorpioides</i>	Water forget-me-not
<i>Potamogeton natans</i>	Broad-leaved pond weed
<i>Rorippa nasturtium aquaticum</i>	Water cress

Planting of marginal areas will include the following species:

<i>Caltha palustris</i>	Marsh marigold
<i>Filipendula ulmaria</i>	Meadow sweet
<i>Glyceria maxima</i>	Reed sweet grass
<i>Iris pseudocorus</i>	Yellow flag iris
<i>Juncus effusus</i>	Soft-rush
<i>Lythrum salicaria</i>	Purple loostrife
<i>Sparganium erectum</i>	Branched bur reed

C1.1.3 The newly created aquatic habitat on site will provide a surface area of approximately 250 m² (approximately 30 m² greater than the size of the existing W2). Margins will be shallow to maximise productivity and the potential for wildlife, and have shelves of low gradients, gently shelving to a depth in excess of 1.5 m. The design for all ponds will include scalloped edges.

C1.1.4 Whilst being used predominantly for surface water attenuation purposes the newly-created reedbed will provide approximately 220 m² of additional GCN-suitable habitat in which this species (and many others) can forage and rest.

C1.2 Terrestrial

C1.2.1 Terrestrial habitat creation in the receptor area will include shrub planting, log piles and four hibernacula. Terrestrial habitat creation in the wider site area includes the enhancement of an area of terrestrial habitat currently considered to provide sub-optimal habitat for GCN. The secondary woodland area shall be subjectively coppiced with additional scrub and grassland planting taking place. The native species to be used shall include:

<i>Achillea millefolium</i>	Yarrow
<i>Agrostis capillaris</i>	Common bent
<i>Arrhenatherum elatius</i>	False oat-grass
<i>Betula pendula</i>	Silver birch
<i>Centaurea nigra</i>	Black knapweed
<i>Corylus avellana</i>	Hazel
<i>Crataegus monogyna</i>	Hawthorn
<i>Cynosurus cristatus</i>	Crested dog's-tail
<i>Festuca pratensis</i>	Meadow fescue
<i>Galium verum</i>	Lady's bedstraw
<i>Hypochaeris radicata</i>	Cat's-ear
<i>Ilex aquifolium</i>	Holly
<i>Leontodon autumnalis</i>	Autumn hawkbit
<i>Leucanthemum vulgare</i>	Oxeye daisy
<i>Phleum pratense</i>	Timothy
<i>Poa trivialis</i>	Rough meadow-grass
<i>Pulicaria dysenterica</i>	Common fleabane
<i>Rosa canina</i>	Dog-rose
<i>Viburnum opulus</i>	Guelder rose

C1.2.2 Table 2 shows an overview of the areas of habitat loss/gain resulting from the proposed development works.

C1.3 Figures

C1.3.1 Figure C1.3.1 Illustrative Plan – Pond Specifications for the Newly-Created Waterbody

C1.3.2 Figure C1 3.2 Illustrative Plan - Overall Site Gain/Loss of Habitat Types

Table 2: Summary of Habitat Loss/Gain as a result of the proposed development

Habitat	Compensation		Impact	
	Area of suitable habitat retained (ha)	Area of suitable habitat enhanced (ha)	Area of suitable habitat lost (ha)	Area of unsuitable habitat lost (ha)
Area of immediate terrestrial habitat (<50 m from pond)	0.435	0.005	0.025	0
Area of intermediate terrestrial habitat (50-250 m from pond)	4.431	0.871	0.700	1.83
Area of distant terrestrial habitat (>250 m from pond)	7.707	0.182	2.042	2.98

C2 Suitable development design

C2.1 The overall population density of GCN on site is considered to be very low. However, to ensure the proposed development works do not cause an increase in mortality of this species (i.e. from site traffic) semi-permanent fencing is to surround all areas of site until the final construction works are complete. Once the proposed residential development is complete the fencing is to be removed. Whilst this could potentially result in an increase in mortality of this species from road traffic etc., it is considered that, based upon the extremely low density of this species across the site and the wide movement corridor surrounding the proposed working areas that these risks are minimal.

C3 Site management resources

C3.1 See C4.1

C4 Independent auditing scheme

C4.1 To ensure that all works are conducted as prescribed within the proposed licence application a watching brief shall be maintained by the ecologists responsible for the licence. Any works being undertaken within areas where GCN are potentially present shall be done under the supervision of a suitably experienced ecologist. Once the site has been cleared and the daily presence of an ecologist is not required, fortnightly checks of the site shall be made. This will be to ensure that the fencing remains intact throughout the proposed development works. Providing the fence is being maintained in a satisfactory manner these visits shall then be reduce to a bi-monthly occurrence.

C4.2 If during any stage of the work repairs are needed the client shall be contacted immediately and provided with a plan detailing the required maintenance. Failure to maintain the fence in a state that is fit-for-purpose could potentially result in all works being halted.

D POST-DEVELOPMENT SITE SAFEGUARD

D1 Habitat/Site Maintenance and Management

D1.1 A management plan for the site has been produced to ensure habitats retained / enhanced / created are managed to provide optimal habitats for use by great crested newts. Responsibility for undertaking the management prescriptions will be with the developer in the short term and then may be passed on to either the local council along with adoption of other areas or to a management company.

D2 Population Monitoring

D2.1 Population monitoring will be undertaken on all newly-created and enhanced waterbodies within the site boundary. The population size class assessments for the great crested newt population in the survey area has been described as 'low' with a single individual observed within a single pond on a single occasion. Therefore, monitoring will be undertaken for a period of 2 years with 4 surveys carried out annually in accordance with the Great Crested Newt Mitigation Guidelines.

D3 Mechanisms for Ensuring Delivery

D3.1 Provision of mitigation in relation to great crested newts is a condition of the current planning approval, therefore must be installed to satisfy the Local Planning Authority.

E1**TIMETABLE OF WORKS**

Provisional Timetable	Detail of Work
February 2009	Apply for Licence.
March/April 2009	Licence received.
March/April 2009 (during suitable weather conditions)	Pre-Licence works – The hand searching of extremely isolated scrub within the area of tarmac/bare ground/spoil and the erection of temporary amphibian fencing (TAF).
June 2009	One-way TAF with bucket traps every 5 – 10 m will be installed around the reserve area and the majority of areas within 500 m of Pond W2. The reserve area will then be enhanced. The fencing will be inspected daily before 11.00am for a 30-day trapping period (during suitable weather conditions) to be continued until 5 consecutive trappings days without finding great crested newts. Destructive searches will be undertaken by suitably qualified ecologists at the end of the trapping out period, prior to land being released for the proposed development works.
July to October 2009	Waterbody W2 shall be drained and cleared and converted to a reedbed. The new GCN-suitable waterbody shall be created adjacent to W2. Enhancement works within terrestrial site areas to remain unaffected by the proposed development shall be undertaken. Once completed the semi-permanent fencing shall be erected.
October/November 2009 (during periods of suitable weather conditions)	Once the semi-permanent fencing is in place the majority of fencing surrounding the reserve area shall be removed, allowing GCN access into the enhanced terrestrial habitat and the newly-created waterbody.

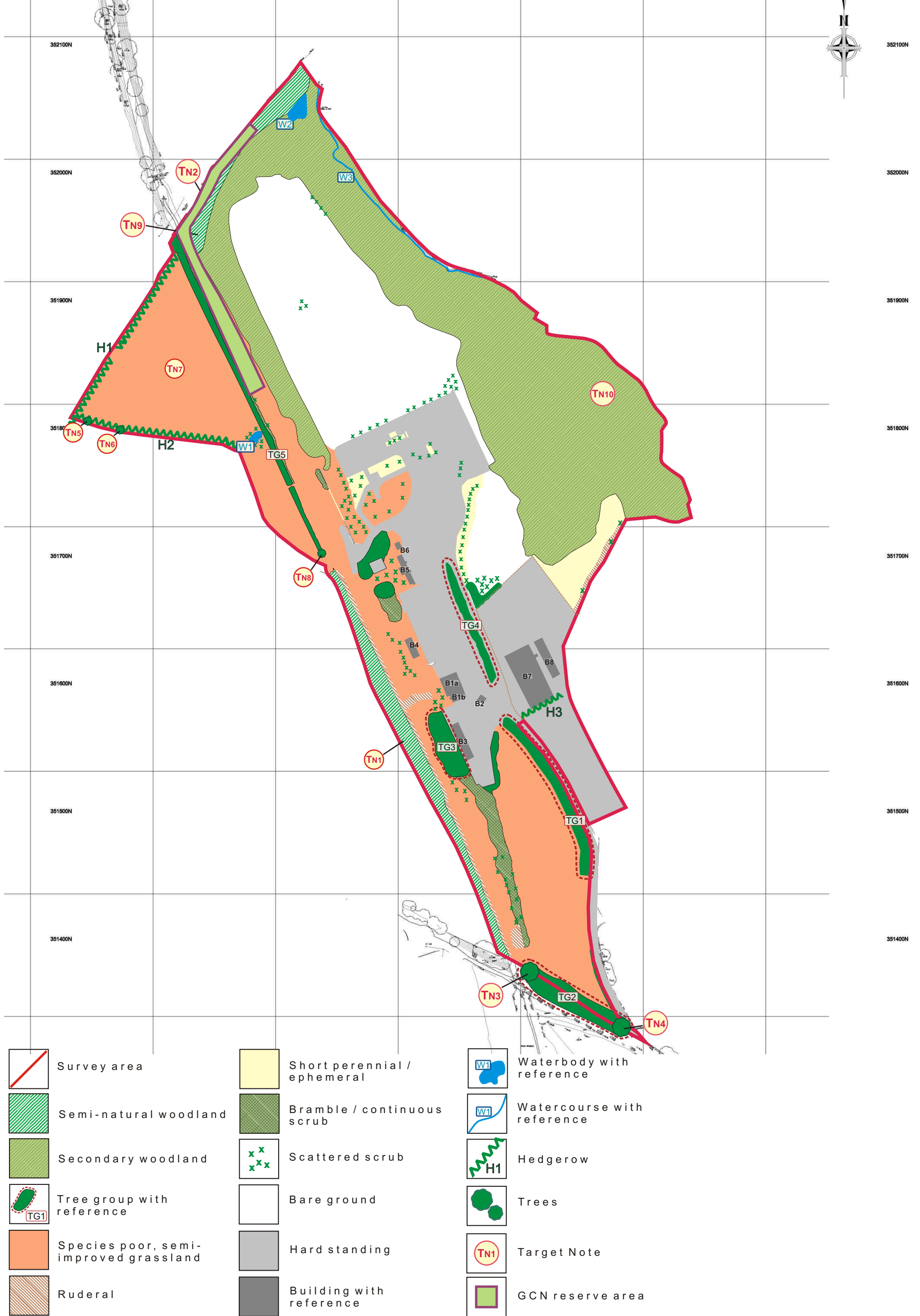
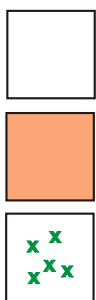
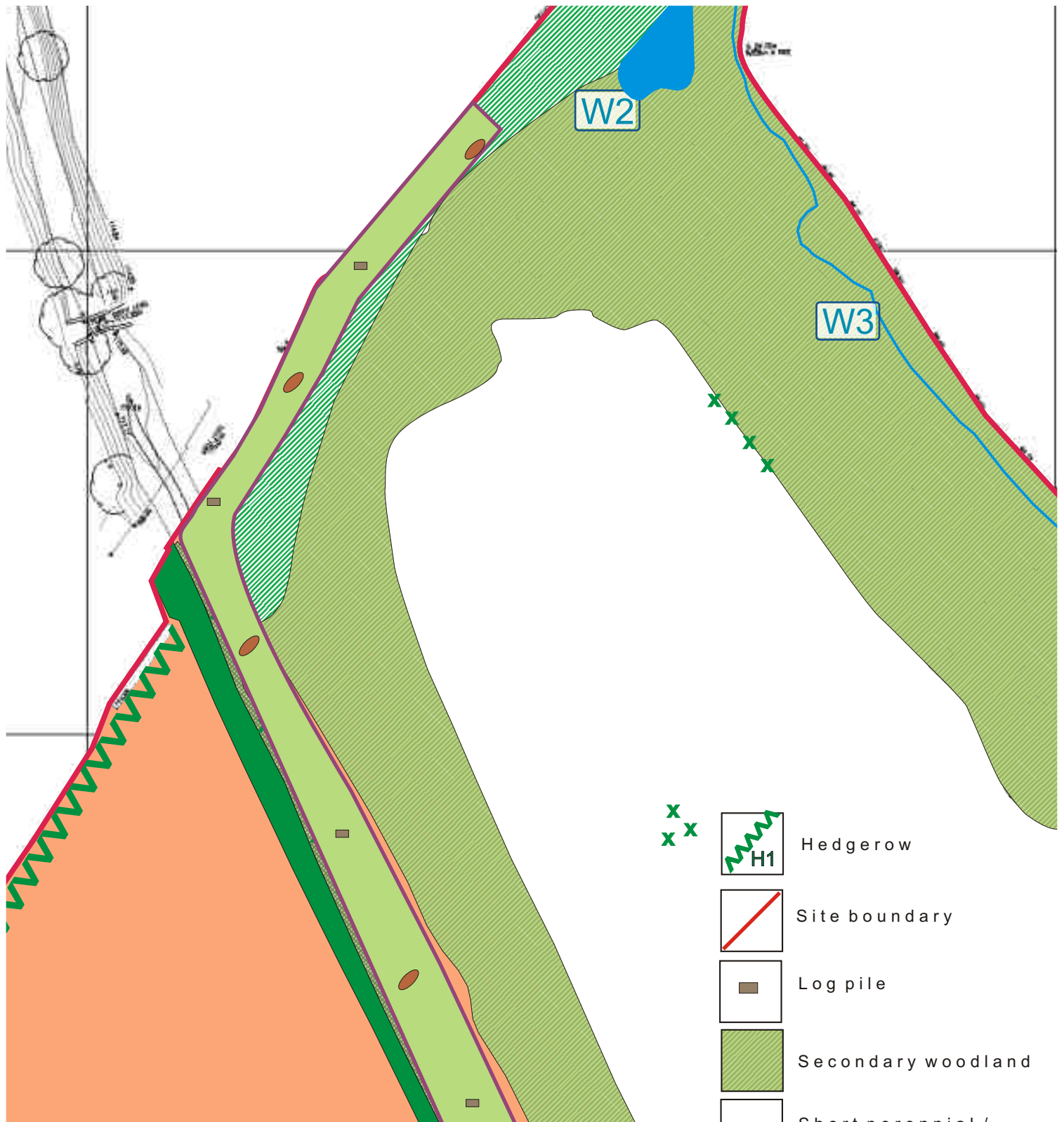


Figure B5.1 - Receptor Site Location (Not to Scale)

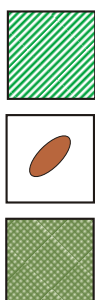
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 February 2009



Tree group with reference

Species poor, semi-improved grassland

Scattered scrub



Semi-natural woodland

Hibernacula

Bramble / continuous scrub



Hedgerow



Site boundary



Log pile



Secondary woodland



Short perennial / ephemeral



Waterbody with reference



Watercourse with reference



GCN reserve area

Figure B5.2 Receptor Site Enhancements (Not to Scale)

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- Gatewen Colliery, Wrexham
- February 2009

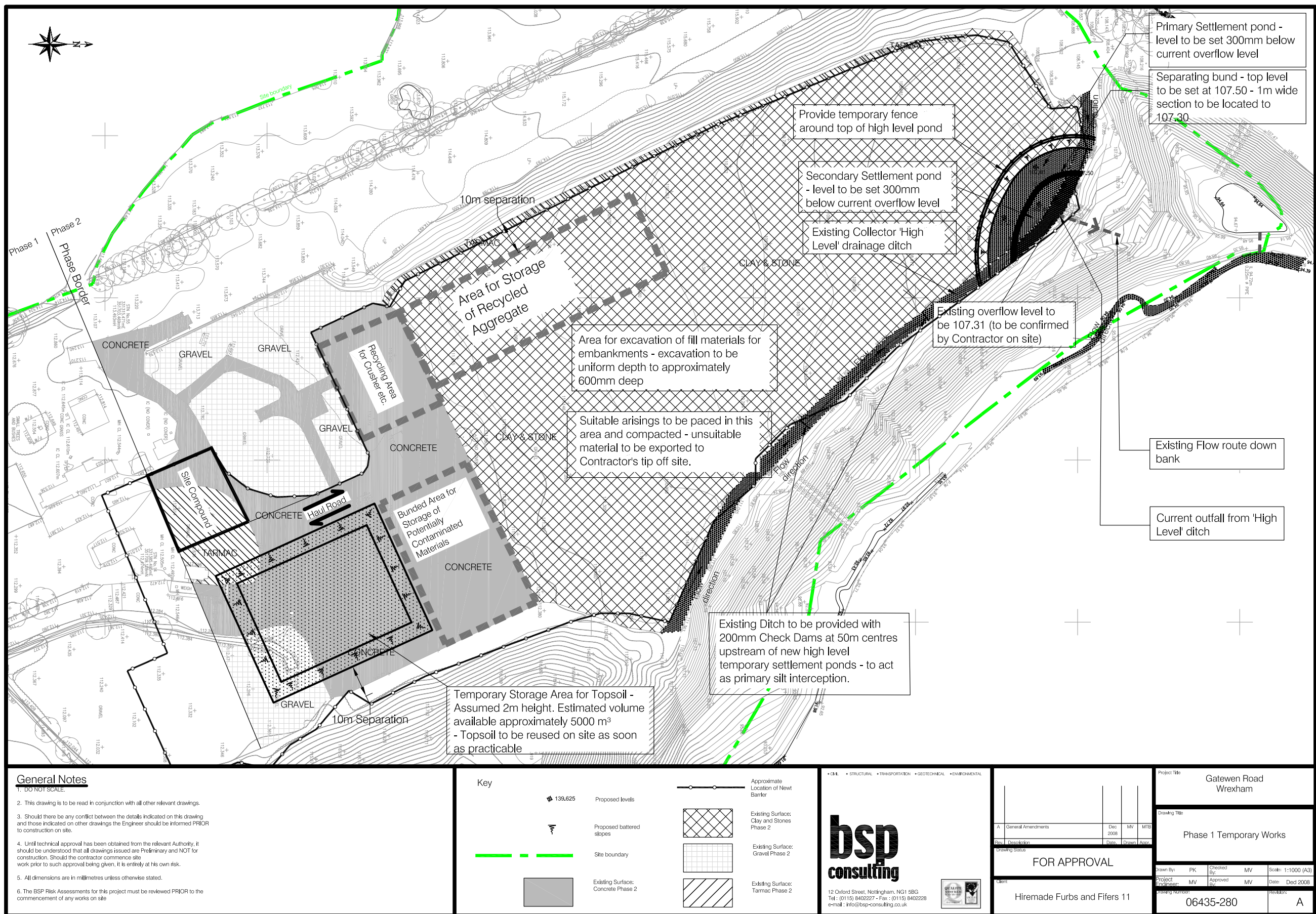


Figure B5.3 - Proposed Cut and Fill and Storage Works from BSP Consulting
(Not to Scale)

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Gatenen Colliery, Wrexham

February 2009

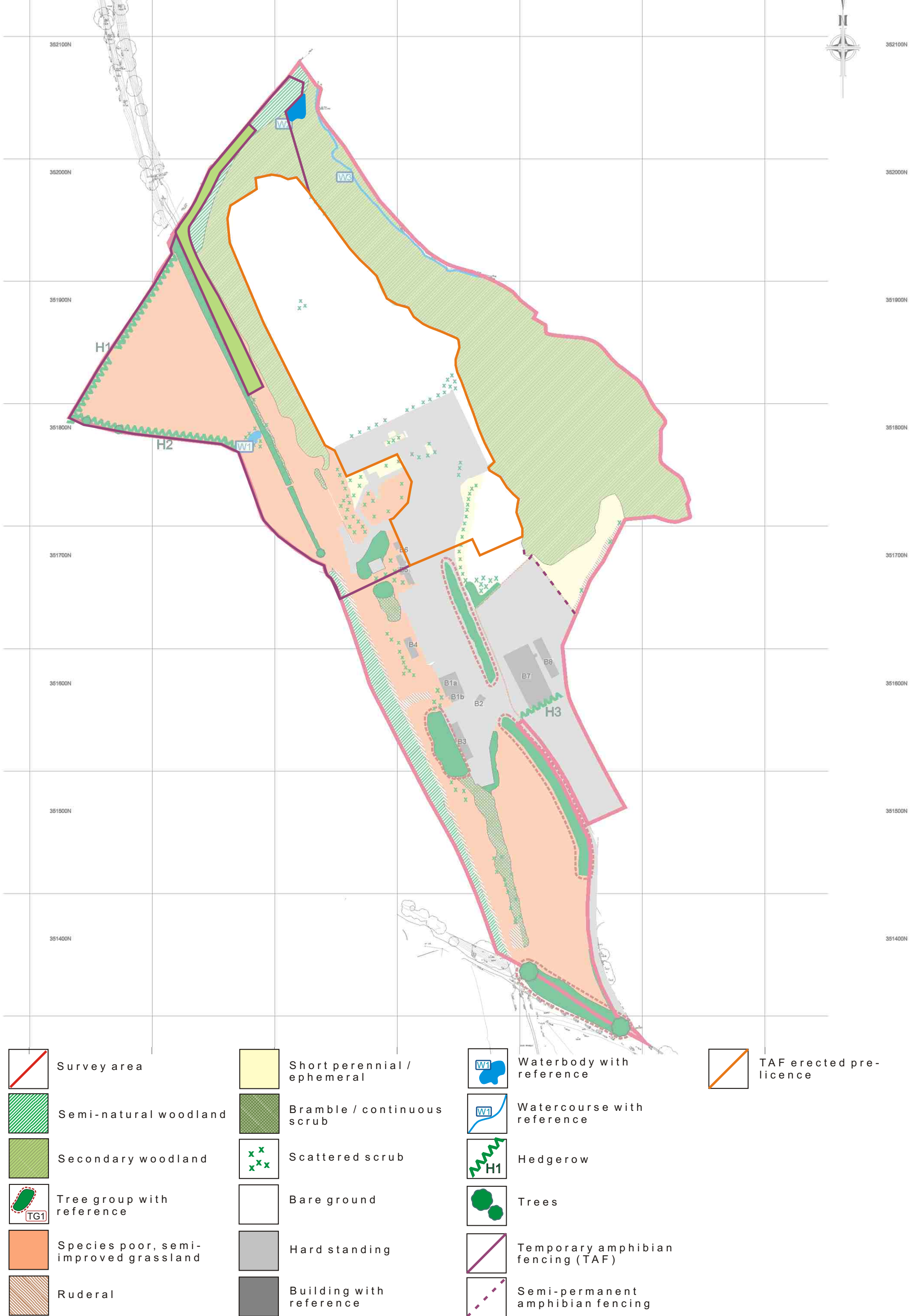


Figure B5.4 - Capture and Exclusion Measures (Not to Scale)

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■ February 2009

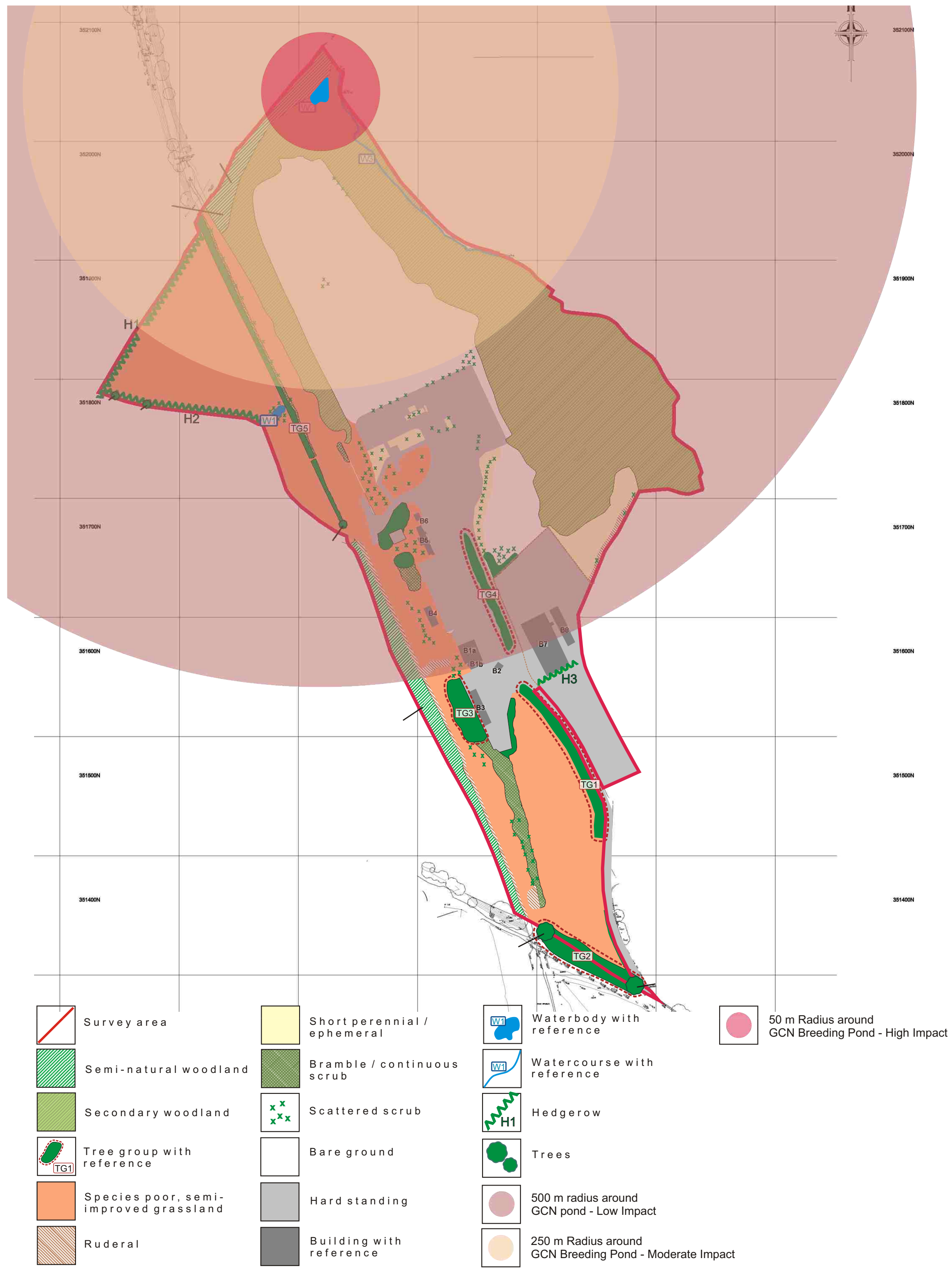


Figure B5.5 - Map to Show Extent of Impacts (Not to Scale)

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■ Gatewen Colliery, Wrexham
■ February 2009

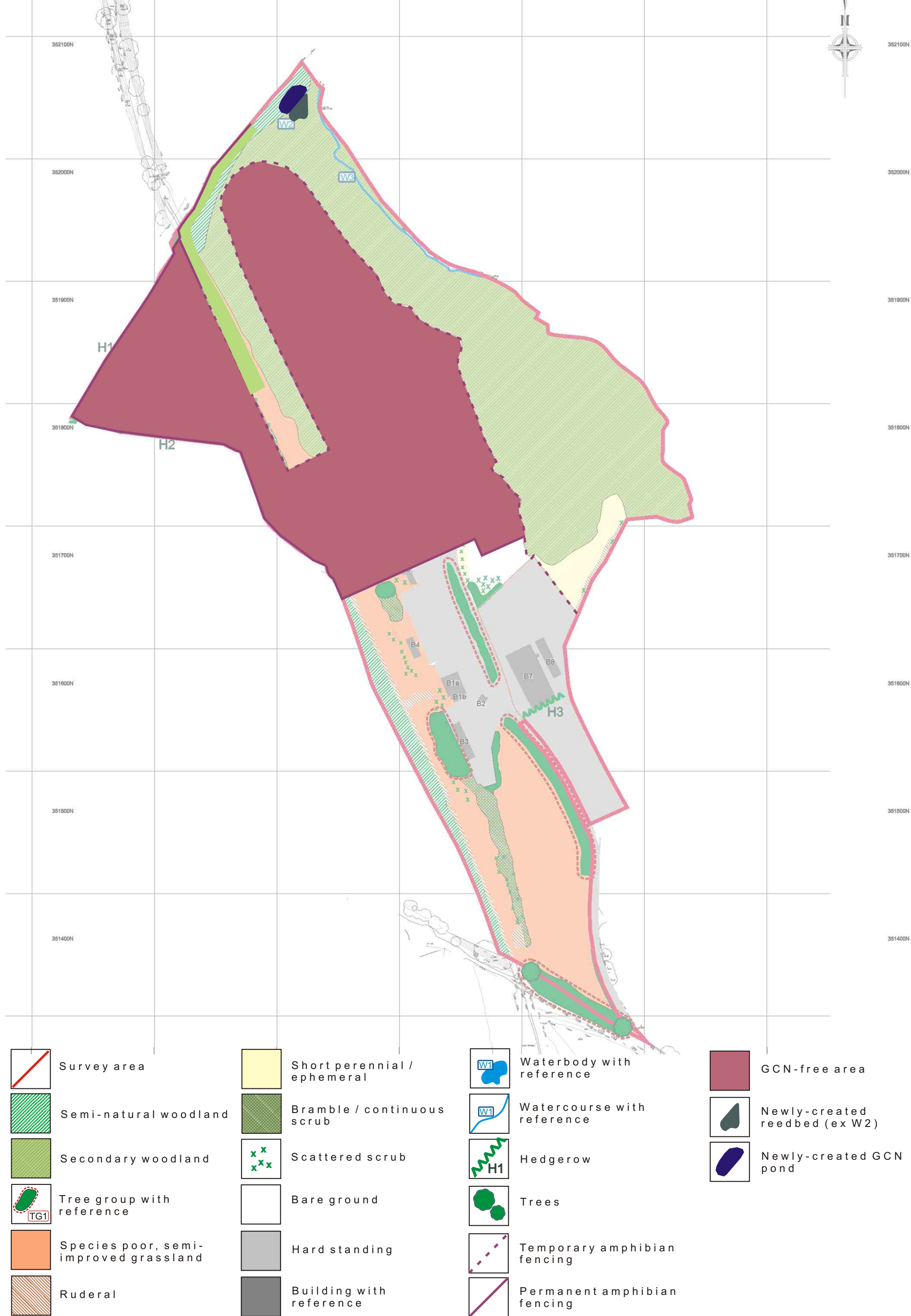


Figure B5.6 - Capture and Exclusion Measures (Not to Scale)

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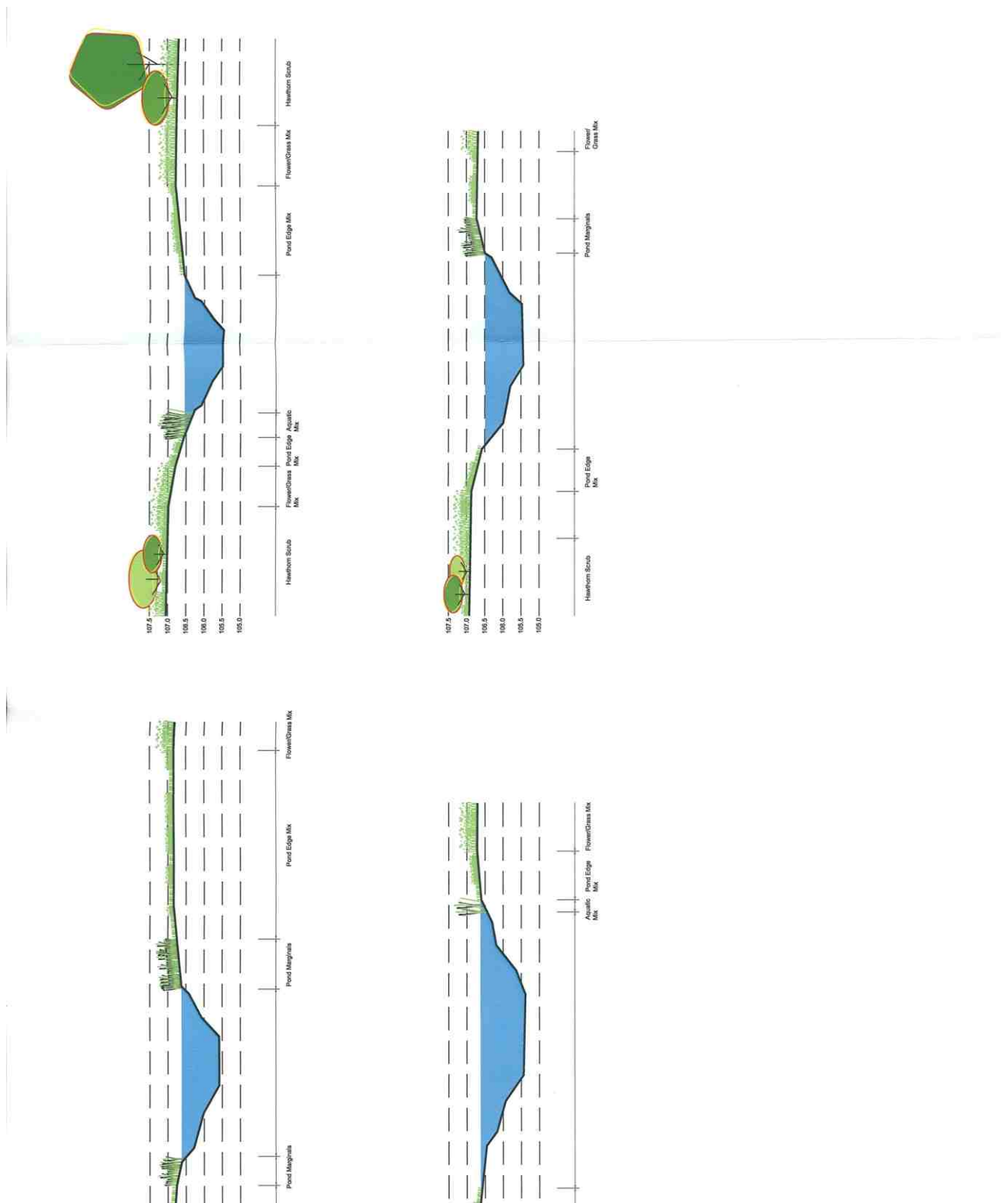


Figure C1.3.1 Illustrative Examples of Pond Creation
(Not to Scale)

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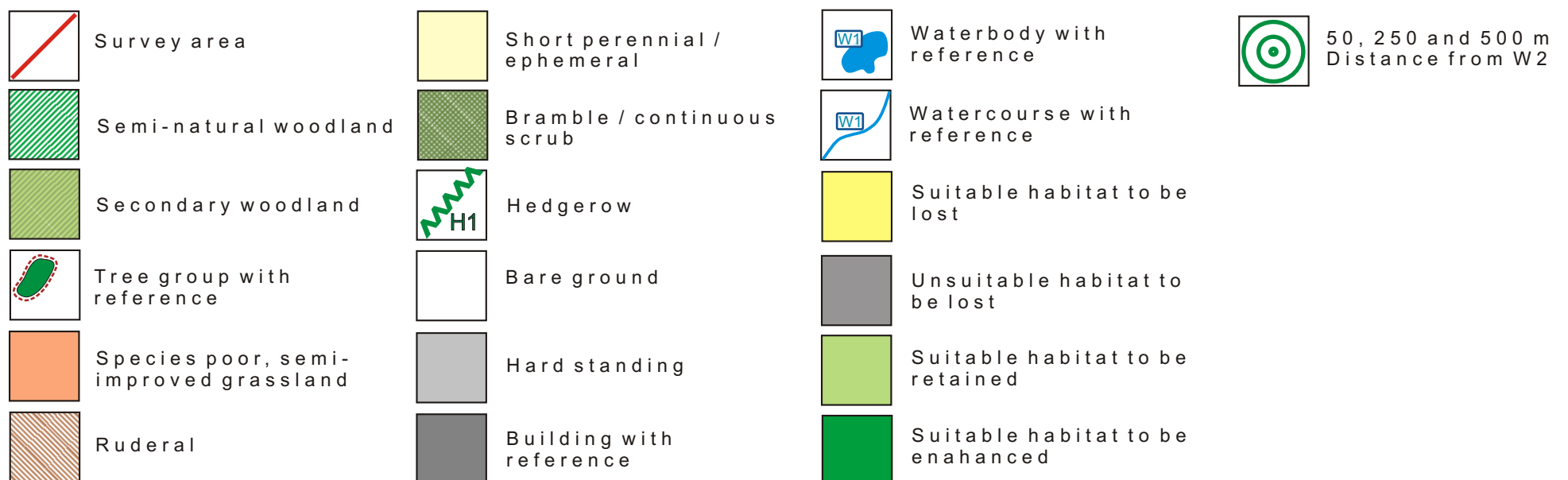
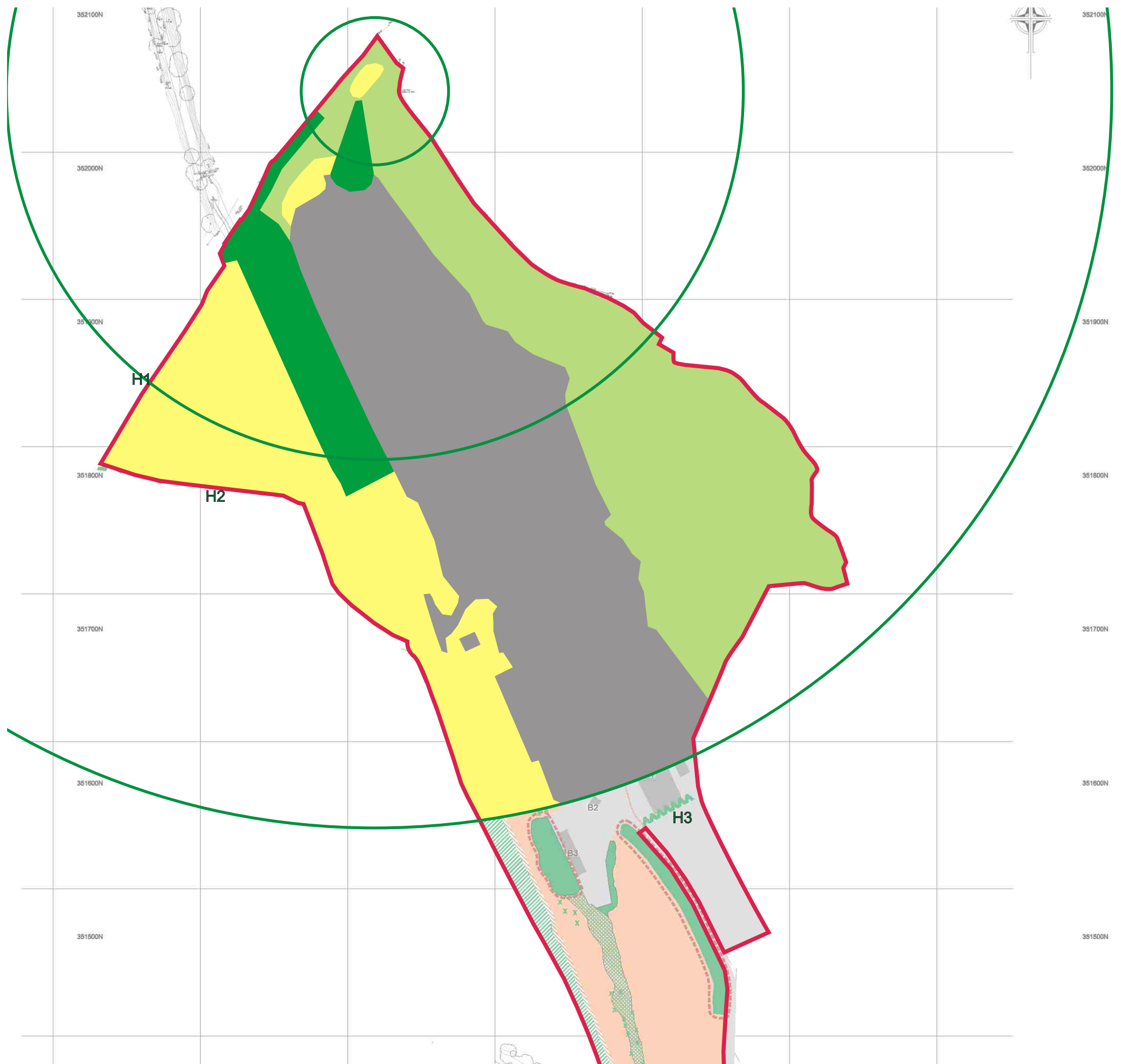


Figure C1.3.2 - Overall Site Gain/Loss of Habitat (Not to Scale)

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