



Hydro Aluminium Deeside, Wrexham Industrial Estate

Conservation Plan

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1 Introduction

1.1 Background

This Conservation Plan concerns a proposed development at Hydro Aluminium Deeside, located on Bridge Road, Wrexham Industrial Estate, LL13 9QS (National Grid Reference SJ 3750 4927).

Development proposals will comprise of the construction of a new hardstanding storage area for finished aluminium goods within an area of disused ground. The proposed storage area would measure approximately 68m x 40m in area.

As part of the planning application process, Natural Resources Wales (NRW) have been consulted with regards to European Protected Species at the site.

NRW consider that the proposal is not likely to be detrimental to the maintenance of the favourable conservation status of the local population of great crested newt provided any subsequent consent requires the submission and implementation of an approved conservation scheme.

NRW also consider biosecurity (In this case, biosecurity issues concern invasive non-native species (INNS) and diseases) to be a material consideration owing to the nature and location of the proposal.

In order to address the above concerns, NRW recommend attaching the following planning condition to the consent:-

Condition 1: No development shall commence until a site species/habitat Conservation Plan has been submitted to and approved in writing by the Local Planning Authority. The Conservation Plan should build upon the outline conservation plan (part 3.4 of the Ecological Addendum) and include:

1. The submission of amphibian avoidance measures;
2. The submission of a scheme that identifies the provision and management of a corridor for long term conservation purposes;
3. The submission of measures designed to prevent the accidental capture/killing of newts post construction. This is essentially the design and construction of an amphibian friendly surface water management system;
4. Ecological Compliance Audit, including key performance indicators.
5. Biosecurity Risk Assessment. The risk assessment shall include measures to control, remove or for the long-term management of invasive species both during construction and operation. The Biosecurity Risk Assessment shall be carried out in accordance with the approved details.

Kingdom Ecology Ltd have therefore produced this document as a suitable Conservation Plan to address this Planning Condition and to satisfy each of NRW's specific concerns/requirements.

This Conservation Plan has been produced by Richard Roe (BSc, MSc, MIEEM, CEnv). Richard is a professional ecological consultant with over nineteen years' experience. Richard has provided ecological input into several other developments across the Industrial Estate.

1.2 Wrexham Industrial Estate Key Species Summary

Wrexham Industrial Estate supports nationally important populations of great crested newt. Great crested newt ponds extend around the boundaries of the Estate with further populations located within the Industrial Estate itself including good populations around HMP Berwyn (to the south of the proposed development site); around Erlas Black Wood at the centre of the Industrial Estate and along Bryn Lane at the East of the Industrial Estate.

The Industrial Estate infrastructure of roads, industrial units and areas of hardstanding has resulted in some isolation and fragmentation of the pond clusters located within the industrial estate itself.

This means that any remaining potential amphibian dispersal corridors are of prime importance to the continuing function of the wider Wrexham Industrial Estate great crested newt metapopulation.

As well as great crested newt, the Wrexham Industrial Estate is acknowledged as maintaining important populations of the dingy and grizzled skipper butterfly. Both of these butterflies are 'Species of Principal Importance' as listed under Section 7 of the Environment (Wales) Act 2016.

The potential value and function of semi-natural habitats within the industrial estate as wildlife corridors has been recognised by Wrexham Borough Council who have provided a Green Network Plan for the Industrial Estate. An existing block of plantation woodland along the southwest boundary of the Hydro site is identified within the Green Network Strategy.

The development proposals at the Hydro Site will seek to retain a suitable corridor of land alongside Clywedog Road East. This proposed corridor of land would be managed and protected solely for its nature conservation benefit. This proposed corridor extends beyond that identified by Wrexham Borough Council's green network to provide a corridor which is approximately 30m in width.

The main aims of the Conservation Plan will be to retain a suitable dispersal corridor for amphibians through the site and also, through the adoption of appropriate habitat management measures, to provide suitable butterfly habitats along the habitat corridor and thereby contribute to the maintenance and enhancement of the butterfly and other invertebrate populations within the wider Wrexham Industrial Estate.

1.3 Existing Habitats at the Site

1.3.1 Site Survey

An update ecology walkover survey of the site was undertaken on the 1st April 2020.

In summary, the proposed works area and adjacent habitats comprise of an area of recently profiled and cleared land located at the southwestern end of the main Hydro Aluminium works.

The proposed storage aluminium storage area (red line boundary and Target Note 1 on Figure 1 in the Appendix) comprises of an area of gravel hardstanding on level ground. The boundaries of the proposed storage area are marked with wooden planking and overlaid with steel mesh (in preparation for concreting to provide the final storage area). This area of land is considered to be of negligible conservation value and does not support any suitable terrestrial habitats for great crested newt. The storage area measures approximately 70m x 40m in area.

An access track with storage bays and a passing place runs from the area's main entrance on Bridge Road up to the proposed storage area and into the main Aluminium works.

Habitats to the east of the access track comprise of an earth embankment (Target Note 4) which leads up to a wood panel fence. The embankment was created approximately 20 years ago. Vegetation has been allowed to naturally colonise and develop on the embankment.

The embankment supports a herb-rich, unimproved neutral grassland habitat. Species identified included false oat-grass, cock's foot, black knapweed, ox-eye daisy, agrimony, teasel, ribwort plantain, creeping buttercup and wild carrot. There is encroaching bramble scrub plus small stands of hawthorn and young oak trees.

The area to the west of the embankment and access track has been cleared and levelled with some reprofiling to create extended terraced bunds, adding to the existing landscaped earth bund that forms the south-western boundary of the site

The base of the bunds comprises of level, bare ground. Whilst the terraces (Target Note 2) comprise of an approximate 4m wide slope leading up to a level 3-4m wide terrace followed by another 3-4m wide slope leading to an approximately 12m wide flat terrace. The slopes of the earth bunds have begun to re-vegetate whilst the level faces of the terraces comprise principally of bare earth.

Soils at the site were observed to be clay-rich with rubble and building materials present mixed within the soil. The soils are likely to be relatively nutrient-poor and have not undergone any agricultural improvement.

The slopes of the terraces have begun to develop a similar species composition to that identified on the opposite, older embankment at Target Note 4. Species present recorded along the slopes included ribwort plantain, black knapweed, prickly sow-thistle, ox-eye daisy, broadleaved dock, great willowherb, agrimony, coltsfoot, creeping cinquefoil, bird's-foot trefoil, wild carrot, hedge mustard, creeping thistle, bramble, and creeping buttercup.

The west face of the earth embankment slopes steeply down towards the southwestern boundary of the site on Clywedog Road East. This face of the embankment supports a band of plantation woodland (Target Note 3) which is approximately 20 years old. The plantation comprises of a mixture of silver birch, sycamore, Scots pine, hawthorn, blackthorn and dog rose with an understorey of ivy, bramble and nettles with occasional lords and ladies and cowslip.

There is a band of mature broadleaved woodland located immediately to the north of the Hydro site and within an adjacent area of land (Target Note 6 on Figure 1).

The woodland is located either side of a watercourse. The woodland comprises mostly of young/semi-mature self-seeded hawthorn, sycamore, hazel, elder and ash with occasional mature white poplar which are likely to be of plantation origin.

The woodland and watercourse form part of a more-or-less unbroken corridor of semi-natural vegetation which runs from the southwestern edge of the Industrial Estate, through the estate itself, before joining Redwither Brook approximately 500m to the east of the site. Redwither Brook eventually flows into the River Clywedog at the south-eastern edge of the Industrial Estate. The woodland and its associated watercourse is likely to function as a wildlife corridor through the industrial estate and is identified on the council's Green Network Plan.

1.3.2 Habitat Evaluation and Opportunities

Habitats within the immediate development site are considered to be of negligible biodiversity value (habitats comprise of hardstanding).

Adjacent habitats have largely been recently modified with the land cleared, levelled and reprofiled, creating the terraced, sloping bunds along the sites south-western boundary.

Habitats currently comprise of extensive areas of bare ground with some regenerating plant communities on the spoil bunds.

Although the site is currently of relatively low biodiversity value, the site offers opportunities for habitats to develop into features of greater value.

The soils already support a diverse seedbank comprising of neutral grassland species. This is evidenced by the diversity of regenerating vegetation on the slopes of the earth bunds. The soil present is likely to be relatively nutrient-poor and has not undergone any agricultural improvement. This is likely to promote plant species diversity in the future.

The modified embankments offer the opportunity for a mosaic of habitats to develop and re-colonise the site. With differing soil conditions offered by the compacted earth on the tops of the embankments compared with looser soil substrate on the slopes.

The band of woodland along the southwestern boundary of the site offers a further habitat niche within proximity to the embankments.

The site is likely to develop into a range of sparse, neutral grassland habitats which will likely be rich in herbs with patches of bare ground and occasional stands of scrub. Small areas of such habitat are already present on the west facing embankment at Target Note 4.

Such habitats would be of ecological value in their own right and could also offer valuable habitats for invertebrates, small mammals, amphibians and birds.

2 Amphibian Avoidance Measures

2.1 Overview

The proposed storage aluminium storage area comprises of an area of gravel hardstanding on level ground. The boundaries of the proposed storage area are marked with wooden planking and overlaid with steel mesh (in preparation for concreting to provide the final storage area). This area of land is considered to be of negligible conservation value and lacks suitable terrestrial habitats for great crested newt. The storage area measures approximately 70m x 40m in area.

The risk of harming any amphibians during construction is considered to be low owing to the hostile nature of existing habitats within the works areas (solely hardstanding). However, this risk will be further reduced by the implementation of standard amphibian reasonable avoidance measures during works. Prior to the start of works on site, a toolbox talk should be provided to site workers by the Project Ecologist. The induction should cover the legal status of great crested newt, the method of working, the avoidance measures to be followed and actions to be taken if protected species are encountered.

2.2 Reasonable Avoidance Measures

The reasonable avoidance measures to be implemented should comprise of the following.

2.2.1 Site Clearance

The site should be kept tidy and free from piles of debris, stone, spoil, or construction materials. This is so that there are no features beneath which Amphibians could seek shelter.

There are some areas of stored construction materials (large concrete blocks) located within areas of gravel hardstanding immediately adjacent to the proposed works area.

There is a low risk that great crested newt could be taking refuge beneath these features. It is therefore recommended that should these require moving from site, that they are carefully lifted with a machine and checked beneath for great crested newt or any other amphibians (see Section 2.1.4 for actions undertaken on discovery of amphibians).

2.2.2 Storage of Materials

Where construction materials are brought onto site for use in the development, all such materials should be stored on pallets or in skips, so that they are elevated off the ground and do not create new features beneath which Amphibians can take shelter.

2.2.3 Excavations

Where new trenches or pits are to be excavated, these should not be left open overnight in case dispersing amphibians fall into them. Where this is not possible, trenches should be fitted with wooden ramps to allow wildlife to escape.

2.2.4 Discovery of Amphibians

If any frogs or toads are encountered during the development, it is recommended that these are carefully captured and moved to woodland habitats along the western boundary of the site.

If a newt of any type is identified during works, works should immediately stop and advice sought from the Project Ecologist.

3 Habitat Corridor Creation and Management

3.1 Proposed Habitat Corridor

3.1.1 Overview

As part of the Conservation Plan, it is recommended that the two areas of embankment are retained and managed for their conservation value (both the east and west facing slopes as shown as Target Notes 2 and 4 on Figure 1).

This will retain a 30m wide corridor of semi-natural habitat that will run for 250m along the southwest boundary of the site and will link to the larger block of woodland immediately to the north of the site (Target Note 6 on Figure 1). The proposals will also manage and conserve a further block of southwest facing neutral grassland habitat (Target Note 4 on Figure 1).

This proposed corridor of land would be managed and protected solely for its nature conservation benefit. As previously described, this corridor extends beyond that identified by Wrexham Borough Council's green network to provide a corridor which is approximately 30m in width. This corridor will retain a potential great crested newt dispersal route along the southwest boundary of the hydro site and will seek to provide suitable habitats for notable butterflies.

3.1.2 Habitat Corridor Objectives

The Habitat Management proposals for the retained Wildlife Corridor will be guided by the following key principles and aims:-

- Where possible, retain blocks of interlinked habitat as opposed to isolated pockets of habitat;
- Maximise the biodiversity value of retained habitats at the site;
- Promote botanical interest within grassland habitats;
- Where possible include suitable habitat for notable invertebrate species;
- Provide appropriate terrestrial habitat for great crested newt
- Ensure the long-term viability of the proposed Wildlife Corridor by appropriate, long-term management and long-term protection of the site;
- Allow for a flexible and iterative process with regards to the management of the habitats through annual ecological monitoring of the habitats present, with appropriate performance indicators to guide the management plan and allow biodiversity opportunities to be explored and promoted.

3.1.3 Management Plan Delivery and Responsibilities

The Habitat Corridor will be managed in accordance with this Habitat Management Plan for the lifetime of the Hydro Site.

Hydro Aluminium Ltd will be responsible for the management and maintenance costs and for arranging the required monitoring, management and maintenance activities.

Annual ecological monitoring would be undertaken at the site for the lifetime of the site's operation. The monitoring works will record habitats present, confirm whether management prescriptions are being completed and will make adjustments to the management plan, where required.

An Ecological Compliance Audit will be completed during the construction phase and for the first three years post construction to ensure that the Conservation Plan is being appropriately followed.

Hydro Aluminium will appoint an appropriately qualified ecologist to undertake monitoring works and to complete the Ecological Compliance Audit.

3.1.4 Habitat Management

Proposals within the mitigation areas will include the management of existing grassland, scrub and woodland habitats.

Habitat management at the site should seek to encourage a diverse range of habitats.

This will be achieved within grassland habitats through the maintenance of low nutrient soils, through the control of scrub encroachment and by careful timing of cuts to allow grasses and herbs to flower and set seed. No fertiliser should be applied to the mitigation grasslands.

Mowing regimes should aim to provide a variety of grassland habitat types with an uneven sward in order to provide suitable habitats for dingy and grizzled skipper as well as to promote their botanical diversity.

Habitat management should be carried out once a year in September/October and should comprise of strimming of some areas whilst others would be left to provide a patchwork of grassland habitats with retained scrub and tall herb habitats. Approximately 30% of grassland habitats should be strimmed each year.

The grassland habitats would be managed to provide a mosaic of long (10-50cm) and short (<10cm) grassland with an abundance of spring nectar sources, butterfly larval food plants in short or bare ground, seed heads from the previous years as roosting sites for adult butterflies and scrub patches/edge for shelter.

Grassland management therefore needs to be piecemeal and rotational with bare areas (minimum size 2x2m) created periodically to provide suitable butterfly breeding habitat.

As the ground within the corridor is relatively compacted, this is considered likely to encourage a relatively sparse grassland- this will provide a good habitat for invertebrates. If parts of the grassland are becoming too lush, it may be necessary to introduce an additional early spring cut of vegetation within some parts of the site to encourage areas of short sward grassland. Any recommendation for alterations to the mowing regimes would be determined during the annual monitoring surveys.

It is recommended that no management of grassland is undertaken for the first year to allow habitats to continue to regenerate. Rotational strimming may commence in Year 2 pending the findings and recommendations of the Year 1 monitoring visit and report.

Grassland mowing should be carried out on a rotation so that there are always uncut areas on-site, allowing plants to flower and set seed and insects to nectar and overwinter in uncut areas.

Management of grassland/herb habitats should be undertaken using a strimmer to allow patches of short sward habitat to be created rather than large blocks uniform habitat. Approximately 30% of the grassland habitats should be cut each year in small patches of approximately 4 x 5m along the earth bunds.

Existing stands of thorny scrub should be retained however patches of bramble scrub on the slopes of the bunds should be cut back and removed from site. Some bramble encroachment from the woodland would be encouraged (see below)

Where a single annual cut of grassland is proposed, this should be undertaken as late in the season as possible thereby giving plants time to set seed and also limiting impacts upon invertebrates and breeding birds.

After each cut, the mown material should always be removed from the sward. Failure to do so will result in a build-up of litter forming a dense mat which can impact upon plant diversity.

The objectives of the management prescriptions will be to achieve the following approximate ratios of habitat on the earth bunds after 5 years:-

- 10-20% Scrub bramble or thorn scrub habitat
- 5-30% bare ground/early successional communities
- 50-80% Grassland/wildflower habitat

Some limited habitat management would also be undertaken within the adjacent belt of plantation woodland along the site's south western boundary.

To increase the value of this woodland it is recommended that it is thinned out and that any higher value trees (e.g. young oak trees) are encouraged to come through. This can be achieved through 'haloing' (haloing involves the felling and pruning back of surrounding low-value trees and scrub so that they do not shade out and stunt the development of the more valuable adjoining trees). The thinning out of the woodland should allow more light through to the field layer potentially enhancing conditions for woodland ground flora. Thinning of the woodland should be carried out in year 1 or 2 and then repeated once every 10 years.

Some scrub habitats will be allowed to colonise the top of the earth bund to allow a more natural ecotone to develop between the grassland habitats and the woodland belt. This edge habitat will hopefully develop into bramble scrub and young trees/scrub. The extent of this scrub edge habitat should be managed to retain no more than the 20% maximum coverage for the overall grassland area as described above.

In order to control the extent of this scrub, some selective scrub control (approximately 30% each year) should be carried out on a rotational basis with sections of scrub cut back from year 5 and then repeated every 5 years.

Works to the woodland and scrub should be undertaken outside of the nesting bird season (March-August inclusive).

Some log piles and areas of dead wood should be retained within the woodland to provide additional habitat for invertebrates.

A summary of Management proposals along with frequency and time of year is provided in Table 1 below.

Table 1- Habitat Management Summary

<i>Habitat</i>	<i>Frequency of Management</i>	<i>Time of Year</i>	<i>Management Proposal</i>
Grassland Management	No management first year. Patches of grassland strimmed annually. Frequency/extent may be increased/decreased pending findings of monitoring surveys.	Works to be undertaken September/October to allow plants to flower and set seed.	Approximately 30% of grassland to be cut each year in small patches of approximately 4 x 5m along the earth bunds. All cuttings/ arisings to be removed. No fertiliser to be applied.
Bare ground	As and when required to be determined by previous summer's monitoring survey	Any time of year	Bare areas (minimum size 2x2m) created periodically to provide suitable butterfly breeding habitat.
Woodland management	Year 1 or 2 and then every 10 years on rotation.	Avoid nesting bird season (March-August inclusive)	Woodland to be thinned out around higher value trees. Log piles and areas of dead wood to be retained within the woodland
Scrub management adjacent to woodland	From Year 5 onwards and then each section of scrub to be cut back on a 5-year rotation.	Avoid nesting bird season (March-August inclusive)	All arisings to be removed.
Ecological Monitoring Survey	To be completed annually	To be completed during the summer	Ecological site visit to be conducted annually with findings and recommendations for management presented before September/ October habitat management works

3.1.5 Wardening, Monitoring and Reporting

Land at Wrexham Industrial Estate can suffer some anti-social behaviour including fly tipping, unauthorised use of off-road vehicles and use of land by unauthorised gypsy and traveller encampments.

However, the proposed habitat corridor is located within the fenced compound that makes up the Hydro Aluminium Site. Consequently, public and vehicular access is highly restricted and the risk of the described undesirable activities are considered to be very low. Consequently no specific wardening of the site would be required.

Monitoring of the site would be undertaken annually by an appropriately qualified ecologist. The monitoring survey would take place during the summer and aim to assess the success of the previous year's habitat management works. This would allow for any refinement of management practices.

An annual monitoring report with management recommendations (where relevant) would be produced and submitted to Hydro and would be available to the Council. Habitat management proposals are largely scheduled for September/October each year. The monitoring report would be provided in advance of the annual habitat management to allow any refinements and recommendations to be carried out. This will aid the overall plan in meeting the Conservation Plan aims and objectives.

Monitoring of the habitat corridor would be undertaken for the lifetime of the Hydro Aluminium Plant.

A biodiversity compliance audit will also be undertaken by the appointed ecologist to confirm that the site recommendations have been undertaken and appropriately completed.

The compliance audit would last for the duration of construction works and for the first three years of the ongoing habitat management works. After this period, monitoring and reporting of the site will continue for the life of the Hydro Aluminium Site with the follow-on report available to the Council, NRW or any other interested bodies.

4 Amphibian Friendly Surface Water Management System

4.1 Drainage Proposals

A surface water management plan has been produced for the site. Full Details of this proposal are presented in the Appendix (See attached document '*Application Form for Full Application Approval of SuDS on new developments in accordance with The Sustainable Drainage (Approval and Adoption Procedure) (Wales) Regulation 2018*').

However, in summary, the drainage scheme will comprise of a gravel filter drain / French drain along the western edge of the development site. The drain will fall to a covered catch pot / inspection chamber which then sends water east to an existing balancing pond (currently dry). The drainage scheme will support no gully pots, steep channels or other drainage features in which newts could become trapped.

Confirmation that these measures have been implemented would be included within the Ecological Compliance Audit (see Section 5).

5 Ecological Compliance Audit

As part of the development proposal, Hydro Aluminium will commission an Ecological Consultant to undertake an ecological compliance audit using key performance indicators.

The compliance audit will be undertaken to ensure that recommendations within the Conservation Plan have been satisfactorily completed/implemented and to record documentary evidence to this effect.

The appointed Ecological Consultant will submit the annual Compliance Audit to Wrexham CBC and NRW.

The compliance audit would last for the duration of construction works and for the first three years of the ongoing habitat management works. After this period, ecological monitoring, reporting and management of the habitat management area will continue for the life of the Hydro Aluminium Site with the follow-on report available to the Council, NRW or any other interested bodies.

The Compliance Audit will require that the following Key Performance indicators are completed/undertaken.

1. A suitably experienced ecologist will be appointed for the project duration and for monitoring of the future habitat management works.
2. Prior to the start of any works on site, all site workers will be inducted by the Project Ecologist. This induction will cover the legal status of great crested newt, the method of working, and action to be taken if protected species are encountered.
3. Implementation of the bio-security risk assessment and avoidance measures as detailed in Section 6 of the Conservation Plan.
4. During construction, great crested newt Reasonable Avoidance Measures will be followed as detailed in Section 2 of the Conservation Plan.
5. Confirmation that the amphibian friendly surface water management system has been incorporated into the scheme design as described in Section 4 of the Conservation Plan.
6. Confirmation that the proposed Habitat Corridor has been suitably retained and protected during construction works.
7. Implementation of post development habitat/site management and maintenance and, annual habitat monitoring as described in Section 3 of the Conservation Plan.
8. Successful implementation of the management plan to achieve habitat goals including a mosaic of woodland, short grassland, tall grassland, scrub and bare ground habitats.

The proposed compliance audit structure with key performance indicators and required evidence is presented in Table 2 in the Appendix.

6 Biosecurity Risk Assessment

6.1 Risk Assessment

The proposed development site and the habitat corridor currently do not support any non-native invasive species. There are no waterbodies on the site.

The risk of spreading invasive plant species from the site are therefore considered to be very low.

No new landscaping is proposed for the site therefore there is no risk of any planting scheme introducing species that might undermine the ecology of the area.

Areas of bare ground including within the conservation area and adjacent habitats will be allowed to naturally regenerate as opposed to being seeded or replanted.

The conservation area will undergo annual monitoring by an experienced ecologist. The ecologist will therefore identify any new invasive species at the site and these can then be eradicated during annual habitat management works.

6.2 Biosecurity Risk Avoidance Measures

There remains a low risk that invasive plant species could be brought to the site during construction works or during future habitat monitoring/management.

It is therefore recommended that the following measures are followed to limit this risk:-

- Ecologists or maintenance staff visiting the proposed conservation area should wear footwear and outerwear that can easily be kept clean.
- Footwear and outerwear should be regularly cleaned and kept visually free from soil and organic debris.
- Vehicles and construction machinery within the Conservation Area should be kept clean of mud and organic debris particularly around tyres, wheels or under wheel arches.
- All tools and equipment used for habitat management should be kept clean, serviceable and free from organic debris. Only equipment needed for the management tasks should be taken into the conservation area.

Appendix

Table 2- Ecological Compliance Audit Check List

No	Performance Indicator	Evidence required	Pass (Yes/No), comments	Any action required?
1	A suitably experienced ecologist will be appointed for the project duration and for the future habitat management process.	Letter, contract or other document outlining the appointment of an Ecologist for the lifetime of the project.		
2	Prior to the start of any works on site, all site workers will be inducted by the Project Ecologist. This induction will cover the legal status of great crested newt, the method of working, and action to be taken if protected species are encountered.	Copy of documents from ecological induction, showing content of induction. List of induction attendees		
3	Implementation of bio-security risk assessment and RAMs as detailed in Section 6 of the Conservation Plan.	Bio-security risk assessment is available for inspection. Log of implementation of any bio security measures is available for inspection and shows that they have been implemented.		
4	During construction, great crested newt reasonable avoidance measures have been followed as detailed in Section 2 of the Conservation Plan.	Log of activities, including clearance activities, log of any amphibians encountered and actions undertaken		
5	Confirmation that amphibian friendly surface water management system has been incorporated into the scheme design as described in Section 4 of the Conservation Plan.	Log and field observation show that appropriate surface water management systems have been implemented		
5	Confirmation that the proposed Habitat Corridor has been suitably retained and protected during construction works.	Log and field observation show that the proposed habitat areas have been retained and undamaged during construction.		

No	Performance Indicator	Evidence required	Pass (Yes/No), comments	Any action required?
6	Implementation of post development habitat/site management and maintenance and, annual habitat monitoring as described in Section 3 of the Conservation Plan.	Log and field observation show that appropriate management activities have been implemented in years 1-3. Annual report also to be produced with habitat descriptions. Report will confirm whether any previous management prescriptions have been undertaken and will make recommendations for future management of the site.		
7	Successful implementation of management plan to achieve habitat goals including a mosaic of woodland, short grassland, tall grassland, scrub and bare ground habitats.	Annual Report will determine whether the site management works are maintaining/promoting the ecological functionality of the mitigation site. Where adjustments are required to the habitat management prescriptions these will be identified in the report. Annual reports will be available to Council.		



**Application Form for Full Application Approval of SuDS on
new developments in accordance with The Sustainable
Drainage (Approval and Adoption Procedure) (Wales)
Regulations 2018**

Submitted by:

**Hydro Aluminium Deeside Limited
Bridge Road
Wrexham Industrial Estate
Wrexham
LL13 9PS**

Submitted to:

**SuDS Approving Body
Flood & Water Management Team
Environment Department
Wrexham County Borough Council
Abbey Road South
Wrexham
LL13 9PW**

Contents of Application Form

- 1. Applicant Details**
- 2. Site Details**
- 3. Interest in Land**
- 4. Application**
- 5. Application Fee**
- 6. Environmental Impact Assessment (EiA) Statement**
- 7. Compliance with Statutory National Standards for Sustainable Drainage Systems (SuDS)**
- 8. Assessment of Flood Risk**
- 9. Surface Water Discharge Hierarchy**
- 10. Infiltration Assessment**
- 11. Non-performance Bond, Adoption, Operation & Maintenance**
- 12. SuDS Scheme Application Checklist**
- 13. Declaration**

List of Items Submitted

- 1. Application Form**
- 2. Application Summary and Section 7 details [this document]**
- 3. Location Plan**
- 4. Layout Plan & new drainage scheme**
- 5. Existing Site Drainage Plan**
- 6. Flood Risk Map**
- 7. Geotechnical Information (IPPC Application Site Report 2001)**
- 8. Bedrock Geology**
- 9. Surface Geology**
- 10. Site photographs**

7. Compliance with Statutory National Standards for Sustainable Drainage Systems (SuDS)

Compliance with Standard Principles
My proposed surface water drainage scheme will comply in the following way/s:
1. The concrete surface will fall from "front to back" (north-east to south-west) across the 40m width of the new area. Excess surface water will then be collected by a filter drain and flow to a solid drain running back under the concrete area, discharging to the on-site balancing pond to provide attenuation of flow prior to final discharge off-site to stream. Existing vegetation will be kept along the north-west edge of the area to provide a buffer zone between the new storage area and the nearby stream. 2. There are no proposals to capture and store rainfall falling on the new storage area due to both economic constraints and a lack of suitable uses on-site for harvested water. 3. The area will be used for storage of aluminium extrusion ingot, which poses no pollution risk to surface or groundwater. Site vehicles are subject to routine preventative maintenance. Spill kits are provided and personnel are trained in their use. 4. The proposed new storage area is small in scale at <0.3 Ha and is not situated in a flood risk area according to NRW data. 5. Transit of surface water to watercourses will be slowed via new drainage and existing infrastructure (balancing pond and penstock valve). 6. Drainage components used in series include a filter drain serving the new yard area, connecting to a balancing pond with mature vegetation. 7. As a privately-owned industrial site there is no public amenity value nor use of public land. 8. Existing vegetation will be retained beyond the new storage area and managed for biodiversity, including the retention of areas of creeping cinquefoil (a favoured plant of the grizzled skipper butterfly, a Priority Species in the UK Biodiversity Action Plan). 9. The scheme will comprise standard drainage components for the new site drainage 10. The connection to the balancing pond avoids the need for pumping. 11. The development is relatively small in scale and material and labour costs for its construction are acceptable. Once in place, the new drainage will be incorporated into existing maintenance plans for all drainage on-site, entailing routine inspection, twice-yearly emptying of oil-water separators, plus CCTV inspection and clearance / jetting if required. 12. Hydro Aluminium Deeside is part of the Norsk Hydro Group and is financially secure. Annual budgets incorporate funds allocated to upkeep of buildings and facilities, including yard areas and drainage.
Supporting Information: 1. Flood Risk Map 2. Geotechnical & Contaminated Land information ("Application Site Report 2001") 3. Site layout and landscape plan

Compliance with Standard S1 - Surface water runoff destination
My proposed surface water drainage scheme will comply in the following way/s:
Rainwater harvesting is not part of the proposal due to economic constraints at this time. It will be considered for future CAPEX proposals. Harvested rain water will have limited use on-site due to the quality requirements for process cooling water, which accounts for 97% of water consumption on-site (with the remaining 3% being for domestic uses). The site is located over Recent Glacial Till, consisting mainly of boulder clay which is typically present to depths of nine metres. Infiltration to ground is not practicable due to the lack of permeability of the soil. Surface water will ultimately be discharged to surface water, via connection to the existing site drainage and balancing pond.
Supporting Information: 1. Geological Maps 2. Trial Pit photos 3. Site Drainage Plan

Compliance with Standard S2 - Surface water runoff hydraulic control
My proposed surface water drainage scheme will comply in the following way/s:
Surface water will be managed through appropriate sustainable drainage measures, with the yard surface designed to fall towards the south-west boundary. At this boundary, an infiltration trench will be installed, filled with stone and a 150mm diameter perforated pipe. This will connect to a 225mm diameter solid drain running north-east to the existing balancing pond on the premises. The balancing pond has well-established vegetation and serves to slow the flow to the final discharge to a stream that flows along the north-west boundary of the site (an unnamed tributary of Redwither Brook). The discharge point is equipped with a penstock valve to hold the drainage water on-site if necessary. The site is situated in Abenbury, identified in the local flood risk management plan as having zero risk from fluvial flooding in the 1:30, 1:100 and 1:1000 year events.
Supporting Information: 1. Flood Risk Map

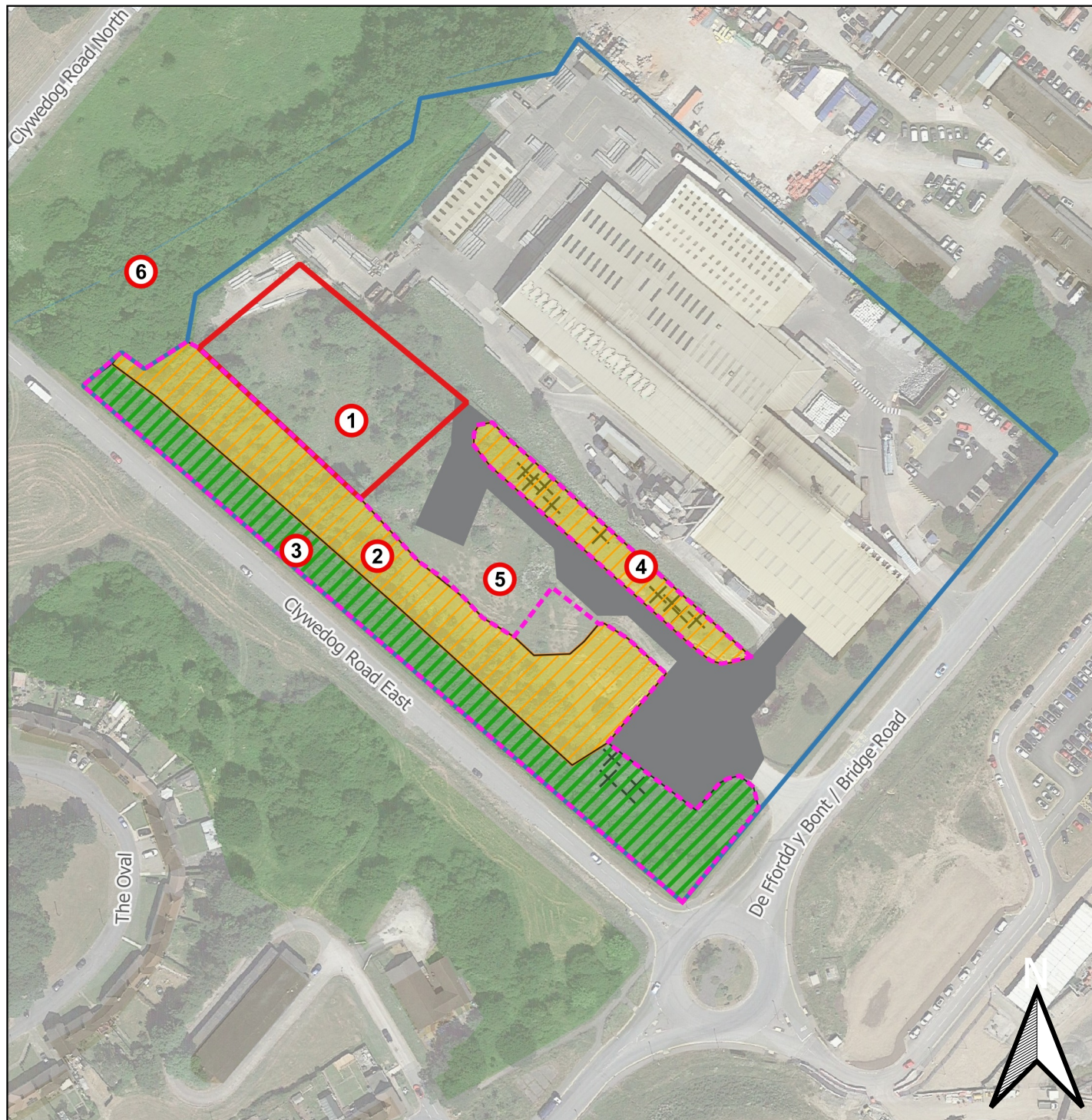
Compliance with Standard S3 – Water Quality
My proposed surface water drainage scheme will comply in the following way/s:
Commercial yard and delivery areas are rated as a medium pollution hazard level in the SUDS Manual. The combined approach of a filter drain, bioretention by the establish vegetation in the balancing pond, and use of the balancing pond as a detention basin through operation of the penstock valve provide adequate mitigation of the pollution hazards (index figures of 1.05 - 1.1 for pollution hazard levels of 0.6 - 0.7). The area will be used for storage of aluminium extrusion ingot, which poses no pollution risk to surface or groundwater. Site vehicles are subject to routine preventative maintenance. Spill kits are provided and personnel are trained in their use in the event of a spill or leak of fuel or oil.

Compliance with Standard S4 – Amenity
My proposed surface water drainage scheme will comply in the following way/s:
The proposed storage yard extension is wholly on private land with no public access, and hence there are no amenity or recreational opportunities.

Compliance with Standard S5 – Biodiversity
My proposed surface water drainage scheme will comply in the following way/s:
An ecological survey completed in support of the planning application for the proposal identified no sensitive habitats on-site. Existing green boundary areas will be retained and additional planting and site management on remaining green areas to promote the growth of creeping cinquefoil, feed plant of the grizzled skipper butterfly and help maintain the “green corridor” to allow free movement of species.

Compliance with Standard S6 – Design of drainage for Construction and Maintenance and Structural Integrity
My proposed surface water drainage scheme will comply in the following way/s:
The proposed design for drainage of the new storage area incorporates standard components for collection and drainage of stormwater, chiefly a 150mm diameter perforated land drain connecting to a 225mm solid drain via a 1200mm diameter concrete catchpit with 30mm sump. Existing elements will continue to be maintained on-site e.g. vegetation in the balancing pond. New elements will be subject to annual inspection in addition to reactive maintenance if required (e.g. CCTV survey / jetting).

FIGURE 1- Habitat Management Plan



Map data ©2020 Google

-  development boundary
-  Blue line boundary
-  Hardstanding
-  Ecology Area
-  Grassland managment
-  Woodland management
-  Target Note