

Report Title	Proposed Residential Development, Rivulet Road, Wrexham - Ecological Mitigation Method Statement
Client	Anwyl Construction Ltd
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this report was produced by



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1 INTRODUCTION

1.1 Project Background

- 1.1.1 Marches Ecology was commissioned by Anwyl Construction Ltd to prepare an Ecological Mitigation Method Statement in relation to a proposed residential housing development on land off Rivulet Road, Wrexham (OS Grid Ref. SJ 338 498). The site location and boundary is shown on a Munro Associates plan entitled '*Proposed Site Plan*', Dwg. no. 003/004 Rev. E, dated July 2011. Outline planning permission (Ref. P/2009/0969) has been provided for this proposal subject to a number of conditions. Three of these conditions are of relevance to this Method Statement; conditions 27 (in part), 28 and 30. The wording of these conditions is as follows:

Condition 27: 'As part of the reserved matters application, details of a buffer zone between the stretch of the River Gwenfro to the north west of the site and the proposed built development, within which the pedestrian footway shall be a minimum of 3 metres from the river boundary, shall be submitted to and approved by the Local Planning Authority. The measures as are approved shall be fully implemented in accordance with a timetable which has been submitted as part of this scheme for written approval'.

Condition 28: 'Prior to the commencement of any development, a 3 metre exclusion zone shall be fenced off for the duration of construction works along the stretch of the River Gwenfro to the north west of the site in accordance with a scheme to include a plan showing otter proof fencing (post, rail and mesh) which shall be submitted to and approved in writing by the Local Planning Authority as part of the reserved matters application. Within the safeguarded areas, no development shall take place and no plant, equipment or building waste materials shall be placed within it'.

Condition 30: 'The development shall be carried out in strict accordance with the results and recommendations as detailed with the ecology report as carried out by Marches Ecology and dated March 2010 approved as part of this application. As part of the reserved matters application a short and long term management plan and mitigation strategy, and ecological method statement to include any proposed works to the existing stone retaining wall shall be submitted to and approved in writing by the Local Planning Authority. The development, including any site clearance works, shall be carried out in strict accordance with these details as approved'.

- 1.1.2 This Method Statement has therefore been produced in order to provide part of the information required by Wrexham County Borough Council (WCBC) in order to discharge these conditions. This document briefly reviews the existing ecological resource and the ecological issues identified in Marches Ecology (2010). It details mitigation/ compensation measures to be implemented prior to and during the construction period. The Method Statement will ensure as far as is reasonably possible that impacts on the ecological resource are minimised/ avoided.
- 1.1.3 The principal aim of this Ecological Mitigation Method Statement is to guide ecological mitigation/ compensation measures. It is based on the results of a habitat assessment survey completed on 24th February 2010 and reported in Marches Ecology (2010); and a

Phase 1 Habitat Survey completed on 4th May 2012. The latter was undertaken by Tom Knight of Marches Ecology; the results have yet to be formally reported.

- 1.1.4 A separate Management Plan has been prepared and is to be submitted to the Local Planning Authority (in relation to Condition 30). Both the Management Plan and this Method Statement are concerned with ecological issues only; soft landscaping is not covered.

1.2 The Proposed Development

- 1.2.1 The proposed development includes a range of residential housing units; 35 dwellings in total. The boundary of the site is shown on a Munro Associates plan entitled '*Proposed Site Plan*', Dwg. no. 003/004 Rev. E, dated July 2011. It should be noted that the boundary shown on this plan differs slightly from that included in Marches Ecology (2010). The difference being that the western corner of the site, an approximately rectangular plot of land immediately to the south of the River Gwenfro, is currently not included within the site boundary. As such this area of land is not considered in this Method Statement.
- 1.2.2 Details of the proposed soft landscaping scheme are presented on two The Ark Company Landscape Architects plans entitled '*Proposed new housing development Soft landscape proposals (1 of 2)*' Dwg no. 02/113/01 v4, dated November 2011 and '*Proposed new housing development Soft landscape proposals (2 of 2)*' Dwg no. 02/113/02 v4, dated November 2011. These plans provide information with regard planting and aftercare of the proposed soft landscaping.

1.3 Structure of this Report

- 1.3.1 The remainder of this report is structured as follows:
Section 2 provides a summary of the ecological resource;
Section 3 outlines potential impacts and proposed mitigation measures; and
Section 4 provides references.

2 SUMMARY OF ECOLOGICAL RESOURCE

2.1 Introduction

- 2.1.1 The following summary of the ecological resource is largely based on that included within Marches Ecology (2010). This report should be consulted for further information. Where relevant the results of the Phase 1 Habitat Survey have been used to update this description.

2.2 Habitats and Flora

Sparse Grassland/ Ephemeral Vegetation

- 2.2.1 The site is generally characterised by piles of building materials and soil stock piles with the ground consisting of a range of substrates. Much of the central portion of the site has previously been levelled and cleared. It has also been subjected to a high level of recent disturbance/ compaction due to the construction of the housing development on adjacent land directly to the south. The site is largely unvegetated although there is some sparse vegetation associated with stock piles. Where present plant species are characteristic of such brownfield disturbed habitat. In some parts of the site these communities are relatively species-rich and include several 'Locally Scarce'¹ and 'Locally Rare'² plants.



¹ In Vice County 50, a scarce plant is described as being recorded in 4-15 10 km squares (Green, 2006).

² In Vice County 50, a rare plant is described as being recorded in 1-3 10 km squares (Green, 2006).

Trees/ Woodland

- 2.2.2 There is a small stand of semi-natural broad-leaved woodland in the southeast corner of the site. The canopy of this woodland is largely dominated by semi-mature *Betula pendula* (Silver Birch) with *Acer pseudoplatanus* (Sycamore), *Fraxinus excelsior* (Ash) and *Salix caprea* (Goat Willow). The shrub layer is relatively sparse and the ground layer appears to be species-poor. A small stand of the non-native invasive plant *Fallopia japonica* (Japanese Knotweed) was recorded near the northern edge of this woodland in 2010. During the Phase 1 Habitat Survey in 2012 it appeared that the Japanese Knotweed had been treated with herbicide.



- 2.2.3 Other than at the woodland described above there are very few trees on the site; a small number of young saplings are present around the site periphery. Although *Buddleja davidii* (Butterfly-bush) is frequent throughout most of the site the majority of the plants present are young. There are a few small patches of semi-mature bushes.

Walls

- 2.2.4 The site boundaries are virtually all formed by free-standing or retaining walls of large stone blocks or brick. These walls support a number of species of plant in particular several ferns.

2.3 Fauna

2.3.1 Marches Ecology (2010) presents the results of a walkover survey that included assessment of the habitat within the site for its potential value for protected and other notable species. Species/ species groups considered to be of relevance to the site were:

- Bats;
- Otters (*Lutra lutra*); and
- Birds.

2.3.2 The site was considered to be of limited/ low value for bats and birds. While Otters are known to utilise the adjacent stretch of the River Gwenfro it was considered unlikely that they would be able to access the site as the river channel is contained by a wall on this boundary with an approximate 4 m vertical drop from the site to the water level. However as the River Gwenfro is located directly adjacent to the site boundary and the Otter is an *Annex II* species identified as a qualifying feature of the River Dee and Bala Lake/ Afon Dyfrdwy a Llyn Tegid SSSI/ Special Area of Conservation (SAC) this species was considered to be the key ecological issue on this site.

2.4 Summary

2.4.1 Further to the above, mitigation measures were outlined in Marches Ecology (2010) with regards to the following habitats: woodland, and species: plants, bats, Otter and birds. The identified Japanese Knotweed should also be subject to control measures.

3 MITIGATION/ COMPENSATION MEASURES

3.1 Introduction

3.1.1 The mitigation/ compensation measures detailed below expand on the ecological issues identified in Marches Ecology (2010). As detailed in paragraph 1.2.2 the proposed soft landscaping scheme is presented in two The Ark Company Landscape Architects plans (referred to henceforth as the 'Ark plans').

3.1.2 All site personnel will be made aware of the importance of ecological mitigation measures through this method statement and/ or tool-box talks as detailed below.

General Mitigation Measures

3.1.3 Generic measures to mitigate potential impacts on ecological resources should be implemented as follows:

- where there is potential for impact on protected species, mitigation measures should be designed to ensure compliance with the law and licensing procedures;
- where possible, measures should be taken to minimise adverse impacts on other species (and if necessary, agreed with the appropriate regulatory authority);
- where possible, potential impacts should be avoided through seasonal timing of work, *e.g.* avoiding vegetation clearance during the bird nesting season;
- through implementation of best practice in relation to construction sites, disturbance to wildlife should be minimised as much as possible. In addition, routine construction site practices should be implemented to control dust, spillages, releases to watercourses, vibration and noise; and
- compliance with the mitigation measures should be ensured through monitoring/ auditing as required.

3.2 Habitats and Flora

Introduction

3.2.1 Marches Ecology (2010) identifies the following possible mitigation/ compensation measures:

- To offset the loss of plant diversity from the site the proposed 'buffer strip' could be planted with a suitable locally native wildflower seed mix (in combination with an appropriate management regime).
- The retaining/ boundary walls support a number of plants including several ferns; wherever possible these walls should be retained.
- The small stand of semi-natural woodland located in the southeast corner of the site provides an attractive feature although again it is only of site value. As much of this woodland should be retained within the proposed development as possible.
- The stand of *Fallopia japonica* (Japanese Knotweed) recorded ... and any other stands that may be located within the site should be controlled with appropriate methodologies prior to starting any physical works. Care should be taken with regard to removing such

material from the site for disposal to ensure it is not spread throughout the site and elsewhere.

Habitats

River Gwenfro 'Buffer Strip'

- 3.2.2 The site directly abuts the River Gwenfro for a short distance in the northwest corner of the site. It was proposed in Marches Ecology (2010) '*to provide an approximate 8 to 10.4 m wide 'buffer strip' between the boundary wall adjacent to the river and the closest buildings although this buffer would include a pedestrian access walkway*'. The exact width of the buffer strip has yet to be confirmed as the design for this part of the site is currently ongoing. The Ark plans indicate that a native species 'hedge' to 3 m wide will be planted directly adjacent to the river boundary. This hedge would include species such as *Ilex aquifolium* (Holly), *Corylus avellana* (Hazel) and *Rosa canina* agg. (Dog-rose). Ideally these plants should be of British native provenance. The remainder of the buffer strip at this location is to be planted with amenity grassland and various ornamental shrub/ perennial mixes.
- 3.2.3 As the buffer strip includes relatively formal areas adjacent to buildings it is not proposed to provide any wildflower grassland at this location as suggested in Marches Ecology (2010). However the Ark plans indicate that the ground beneath the woodland to be retained in the southeast corner of the site will be sown with British Seed Houses WFG4 'Neutral Soils' mix. It is suggested that it would be more appropriate to sow this area with the WFG8 'Shaded Areas' mix. This will address loss of plant diversity as suggested in Marches Ecology (2010).

Boundary Walls

- 3.2.4 The existing dilapidated brick wall along the Rivulet Road frontage is to be demolished although a short section near the River Gwenfro will be rebuilt. The existing sandstone block walls on the east and southeast boundaries and adjacent to the River Gwenfro are to be retained. Along with the large sandstone block retaining wall on the southern site boundary these will continue to provide a potential substrate for ferns and other plants.
- 3.2.5 Anwyl Construction Ltd has confirmed that they will not be undertaking any work to the existing retaining walls as part of the proposed development. Repairs to these structures and extensions to the retaining wall were undertaken by Gower Homes as part of a separate residential housing development on land to the south.

Woodland

- 3.2.6 As shown on the Ark plans most of the woodland in the southeast corner of the site is to be retained. It is also proposed to interplant the existing trees with four different species of tree. As detailed above the ground beneath the trees will be sown with a wildflower mix. A new retaining wall is to be built on the northern edge of the retained area.
- 3.2.7 Other than the small stand of woodland there are no size-able trees located within the site although there are a small number located close to the eastern and northwest boundaries. Appropriate tree protection should be installed prior to any work starting on the site particularly adjacent to the retained woodland. These protection measures should include exclusion barriers and signage, and be in accordance with '*BS 5837:2005 Trees in Relation*

to Construction – Recommendations'. Further information is provided in Amenity Tree Care Ltd (2012).

Japanese Knotweed

- 3.2.8 Wales and West Housing Association has confirmed that the Japanese Knotweed previously recorded on the site has been treated/ removed. No further control measures are therefore proposed/ necessary.

3.3 Bats

- 3.3.1 Marches Ecology (2010) identified a single tree within the woodland on the site as being of limited potential value for roosting bats. It is believed that this tree is T8, T9 or T43 in Amenity Tree Care Ltd (2012). The exact tree could not be confirmed but all of these trees are to be retained. Any roost that may be present in this tree would be protected from potential disturbance during the construction phase as the woodland will be located in a Construction Exclusion Zone (Amenity Tree Care Ltd 2012).
- 3.3.2 Other features within the site of limited potential value for roosting bats identified in Marches Ecology (2010) are all associated with retaining/ boundary walls (e.g. Ivy, crevices, small voids). No work on retaining walls is to be undertaken by Anwyl Construction Ltd; the retaining walls within the site were repaired by another company responsible for the construction of residential dwellings immediately to the south of the site. However some repairs may be undertaken on the eastern boundary wall. This wall should be inspected by a suitably qualified bat consultant prior to any such remedial work. If deemed necessary an emergence survey should be undertaken to determine whether or not such structures are being utilised by roosting bats. The results of this survey would be used to design mitigation/ compensation measures if required.
- 3.3.3 The boundary wall by Rivulet Road is to be demolished. Marches Ecology (2010) did not identify any features within this wall of potential value for roosting bats.

3.4 Otter

Introduction

- 3.4.1 Marches Ecology (2010) identified the following mitigation measures with regard Otters:
1. The existing boundary wall that is directly adjacent to the River Gwenfro will be retained in place at all times to ensure that Otters cannot access the site at any time. Some minor repairs may be required.
 2. Where the top of this boundary wall is close to the existing site level (e.g. near the Salop Road boundary) the site ground level should either be reduced or the height of the wall increased to ensure that the top of the wall is approximately 1.5 m above the site ground level. In addition metal railings should be fitted to the top of the wall where possible to further deter human access to the river corridor.

3. It is proposed to provide an approximate 8 to 10.4 m wide 'buffer strip' between the boundary wall adjacent to the river and the closest buildings although this buffer would include a pedestrian access walkway.
 4. A 3 m wide exclusion zone will be temporarily fenced adjacent to the river during the construction period and all site personnel would be prevented from entering this area. Appropriate signage will inform site personnel of the importance of this fencing and that they should not access outside the fenced areas.
 5. To discourage people from accessing the river corridor and potentially uncontrolled fly-tipping it is proposed to plant a hedge along the entire boundary adjacent to the river within the buffer strip. This hedge should comprise three staggered rows of locally native shrubs to include *Prunus spinosa* (Blackthorn), *Crataegus monogyna* (Hawthorn), *Ilex aquifolium* (Holly) and *Rosa canina* agg. (Dog-rose). Management of this hedge should seek to achieve an approximate height of 2 m and minimum width of 3 m.
 6. No 'night-working' and therefore uncontrolled external lighting should be used during the construction period within a minimum of 15 m from the bank top of the river.
 7. Any site compound, portacabins, storage or re-fuelling facilities will be located a minimum of 30 m from the river bank.
 8. Any external lighting installed on buildings and street lighting should be fitted with baffles and or point straight down into the site or to where it is needed to avoid light spillage. The brightness of these lamps should be as low as legally possible and they should be placed as low as possible on the poles. All artificial lighting should point away from the river; light spillage on to the river corridor should be minimised wherever possible. Further consideration of such measures may be required at such time as when a detailed proposal for the development is available.
 9. Drainage for the site should be designed to ensure that there will be no reduction in water quality of the adjacent river. The river will be protected during the construction phase through implementation of best practice. This will help to safeguard Otters as well as other riverine species.
- 3.4.2 With regards item 1 above it has been confirmed that no repair works are proposed for this boundary wall. It should be noted that item 2 in the list above is not relevant here as this part of the Rivulet Road site is outside the scope of this Method Statement. Further information with regards items 3 to 5 and 9 inclusive is provided below. Items 6 to 9 will be discussed at a toolbox talk to be presented by a suitably qualified ecologist to all construction contractors.
- 3.4.3 Item 8 refers to external lighting to be provided within the site. A detailed design is currently being prepared. When available this design will be reviewed by the ecologist to ensure that light spillage onto the river is minimised where possible. Item 9 refers to drainage. The drainage layout for the site is shown on two REFA Consulting Engineers plans entitled '*Private Drainage Sheet 1 of 2*' and '*Private Drainage Sheet 2 of 2*' (Dwg. nos. 12003/02/1Rev B and 12003/02/2Rev B respectively, both dated 27/1/12). These plans show that all surface/ rain and waste water from the site will be connected to existing facilities on Rivulet Road. As such the water quality of the river would not be directly affected during the 'operation' phase of the development.

Buffer Strip

- 3.4.4 The buffer strip is shown on a Munro Associates plan entitled '*Proposed Site Plan*' Dwg no. 383/ 003, Rev. F. The exact width of the buffer strip has yet to be confirmed as the design for this part of the site is currently ongoing. The proposed planting of this area is illustrated on the Ark plans. A 3-metre wide strip directly adjacent to the river is to be planted with a 'native shrub mix': *Cornus sanguinea* (Dogwood), *Corylus avellana* (Hazel), *Ligustrum vulgare* (Privet), *Ilex aquifolium* (Holly), *Rosa canina* agg. (Dog-rose) and *Viburnum opulus* (Guelder-rose). Planting details are provided on the Ark plans. Management of this hedge is detailed in a separate Management Plan.
- 3.4.5 Between the 'hedge' detailed above and the nearest building to the river (and therefore part of the proposed buffer strip) there is an area of amenity grassland and ornamental shrub planting. Further detail is provided on the Ark plans. This would achieve the requirements of items 3 and 5 above.

Exclusion Fencing

- 3.4.6 Marches Ecology (2010) states that '*Otters are unlikely to be able to access the survey site as the river channel is contained on this boundary by a wall with an approximate 4 m vertical drop from the site to the water level*'. The presence of this barrier was again confirmed during the Phase 1 Habitat Survey on 4th May 2012. However condition 28 of the planning permission requires the installation of '*otter proof fencing (post, rail and mesh)*'. This description would suggest semi-permanent or permanent fencing which is not required on this site. This requirement was discussed with Emma Broad (Biodiversity Officer, Wrexham County Borough Council). It was confirmed that the purpose of the fencing was to exclude construction traffic/ personnel from the river corridor rather than stop Otters accessing the site.
- 3.4.7 It was suggested that heras fencing held securely in place with scaffold poles driven into the ground would be more appropriate as long as it is sufficiently robust. Temporary fencing will be used to exclude construction traffic/ personnel from the river corridor/ 3 m exclusion zone. The Munro Associates plan entitled '*Proposed Site Plan*' Dwg no. 383/ 003, Rev. F indicates the approximate alignment of this fence. The heras fencing will utilise standard 2 m by 3.47 m panels with each panel joined to the scaffold poles by two 'heras fence clips'. The clips would be tightened with a spanner/ or similar. The panels would be attached to scaffold poles at each join. The scaffold poles are a standard 3 m length and would be driven a minimum of 0.5 m into the ground. This protective fencing may be further strengthened through the use of scaffold poles as struts or the attachment of additional heras panels in a triangular arrangement approximately every 4 or 5 panels.
- 3.4.8 A large, clearly visible sign should be attached to the top of this fence on every other panel along its length facing into the work site. These signs should measure approximately 30 cm by 30 cm (as a minimum). The signs should take the format of normal construction site prohibition notices; a red circle with a red line across it on a white background with a black picture, and white lettering on a red background. The sign should state 'Otters – Do Not Enter' or similar. An inspection of the completed fence/ signs will be undertaken by a suitably qualified ecologist prior to works commencing and a single audit visit would be completed during the construction period to ensure that the fence remains in good condition.

The importance of this fencing and that no access is allowed outside the fenced areas would also be covered in the toolbox talk.

- 3.4.9 The temporary fencing must be in place prior to the start of construction or any other work on site. This will be retained in-situ, and in an effective state of repair, for the duration of all the works. There should be no construction activities/ access by personnel/ use of machinery/ vehicles or storage of equipment/ materials/ tools on the opposite side of the fence to the construction site. Furthermore, no tools, machinery/ vehicles and equipment should be left within this area. Other materials and spoil/ rock piles, etc should not be stored within the fenced area. Should any work be deemed necessary outside of the fence then the ecologist should be contacted for advice and the work may need to be supervised.

River Gwenfro

- 3.4.10 Generic potential impacts on the River Gwenfro during the construction phase should be avoided through the implementation of best practice measures to protect the watercourse from sediment release, sediment run-off, pollution by fuel and oil and other accidental spillages during construction. The general advice contained in the Pollution Prevention Guidance (PPG) leaflets produced by SEPA, EA and the Environment and Heritage Service (Northern Ireland) should be adhered to, particularly the following:

- PPG1: General Guide to the Prevention of Pollution.
- PPG5: Works in, Near or Liable to Affect Watercourses.
- PPG6: Working at Demolition and Construction Sites.
- PPG7: Refuelling Facilities.

As well as:

- SEPA (2009). *Engineering in the Water Environment Good Practice Guide: Temporary Construction Methods*. First Edition, March 2009 (WAT-SG-29).

- 3.4.11 The site compound and storage facilities will be located as far away from the river as possible. All fuelling of tools and equipment will be undertaken a minimum of 30 m from the water course and at least one fluid spill-kit will be located on site at all times. Prior to leaving the site at the end of each day, all plant/ other machinery, tools and other materials will be stored securely or in locked containers.

3.5 Birds

Mitigation

- 3.5.1 Marches Ecology (2010) identified that nesting birds '*may find opportunities in the small stands of scrub/ woodland and the boundary/ retaining walls*'. The destruction of any bird nests that are in use is illegal. The simplest option to avoid issues arising from the presence of nesting birds is to schedule work that affects nesting habitat (*e.g.* removal of trees, shrubs and work to the boundary walls) outside the nesting period (March to August inclusive).
- 3.5.2 If it is not possible to clear shrubs and trees/ repair walls outside the nesting season all such areas should be checked by a suitably qualified ecologist prior to commencement of works.

If a nest is found a buffer zone of no less than 5 m should be retained and fenced off around the nest until any chicks have fledged. This would need to be confirmed by the ecologist.

- 3.5.3 It is likely that at least some of these features would be cleared within the nesting season and as such will need to be checked by a suitably qualified ecologist. Appropriate avoidance/ mitigation measures will be required when any potential nesting habitat is removed prior to/ during construction to minimise the likelihood of disturbance, injury or mortality of nesting birds, their eggs and chicks.

Compensation

- 3.5.4 The proposed planting (see Ark plans) includes for several discrete areas of ornamental shrubs and trees as well as the native shrub mix adjacent to the river. All such features, along with new walls/ buildings (in the medium-term) will provide potential nesting opportunities. Most of the existing woodland in the southeast corner of the site is also to be retained.
- 3.5.5 Five nest-boxes will be installed in the retained woodland; maintenance of these nest-boxes is detailed in a separate Management Plan. Schwegler produce a range of appropriate nest-boxes (*e.g.* Schwegler 1B type).
- 3.5.6 The nest-boxes should generally be sited between 1.5 m and 5 m above the ground but in this case should be at least 3 m above the ground. All of the nest-boxes should be located somewhere between (facing) north through east to southeast; avoiding prevailing winds and direct sunlight where possible. On trees the dry side of the tree trunk offers most protection. Nest-boxes should generally be sited near shrubs/ other vegetation that will provide good cover for young birds. To facilitate easy maintenance the nest-boxes should be attached to the trees with wire or similar (and not nails).

4 REFERENCES

Amenity Tree Care Ltd (2012). *Rivulet Road, Wrexham. Arboricultural Method Statement (AMS) - Compiled to discharge planning condition number 11. Updated 1st May 2012.* Produced on behalf of Anwyl Construction Ltd.

Green, J.A. (2006). *The Flowering Plants of Denbighshire – A Botanical Checklist for VC50.* Powlsons Ltd, Colwyn Bay.

Marches Ecology (2010). *Land at Rivulet Road, Wrexham - Habitat Assessment Survey.* Unpublished report on behalf of Wales & West Housing Association.

SEPA (2009). *Engineering in the Water Environment Good Practice Guide: Temporary Construction Methods.* First Edition, March 2009 (WAT-SG-29).