

Technical Report

# BREEAM Ecology Report

Extension to Ysgol y Hafod Junior Site, Johnstown

Wynne Construction

August 2021



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# 1 Introduction

## 1.1 Terms of Reference

In June 2021, Atmos Consulting Ltd ('Atmos') were commissioned by Wynne Construction Ltd to carry out the ecological aspects of BREEAM Assessment, following the 2018 methodology<sup>1</sup>, for an extension to the existing Ysgol y Hafod Junior Site on Bangor Road, Johnstown, LL14 2SW. This report should be read in conjunction with GN40 Ecology Assessment Issues Reporting Template and the Ecological Value Calculator which have been prepared separately.

## 1.2 Site Description and Proposed Development

The Ysgol y Hafod Junior site lies within a residential area in the town of Johnstown within the county of Wrexham Borough. It is bounded by Bangor Road to the north, and residential developments on all other sides.

The school is comprised of an older, tall single storey red brick building to the front with steep slate pitched roofs. To the rear, a small flat roofed extension comprises the reception, which then links the older building to a more modern single-storey extension with gradually sloping pitched slate roof. The buildings are surrounded by hardstanding which form part of the playgrounds. Beyond to the south-west and south east, semi-natural grassland areas are present, utilised for wildlife gardening and as playing fields. The site boundaries are comprised of trees and fences.

The proposed development is an extension to the newer, southern building to extend the provision within the school. The school building is located largely on the existing hardstanding playground, with a small area on the amenity grassland playing field. A new, extended car park is located on the playing field. A planning application is being submitted for the extension, which aims to achieve BREEAM 'Good'. This report has been prepared in support of this.

In addition, works are proposed to the adjacent Old School House and garden, in the west of the site. The works construct a single storey extension to the House for 'Flying Start' and an outdoor play space.

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<sup>1</sup> GN36 BREEAM, CEEQUAL and HQM Ecology Calculation Methodology – Route 2. May 2018

## 2 Baseline Habitats

The following habitat types have been identified on the site based on the 2019 Phase 1 habitat survey, listed in order of decreasing extent:

### Amenity Grassland

The playing fields cover the majority of the site area. They are dominated by perennial rye grass *Lolium perenne* with occasional flowering herbs including creeping buttercup *Ranunculus repens*, dandelion *Taraxacum agg.*, white clover *Trifolium repens* and daisy *Bellis perennis*.

A small area of land to the west of the school buildings was also classed as amenity grassland. This is less managed than the playing fields and is a grassed area with raised beds for vegetable planting.

### Hardstanding and Buildings

The playgrounds surround the existing red-brick single storey school buildings.

### Tall Ruderal and Dense / Continuous Scrub

An area named 'habitat area' exists in the eastern corner of the site. This supports patches of unmanaged species-poor grassland dominated by false oat-grass *Arrhenatherum elatius* and cock's-foot *Dactylus glomerata* with scrub and tall ruderals invading including goat willow *Salix caprea*, birch *Betula* species, dog rose *Rosa canina*, bramble *Rubus fruticosus agg.*, Common nettle *Urtica dioica* and great willowherb *Epilobium hirsutum*.

This area may once have included a small pond as there is a shallow, dry depression surrounded by willow.

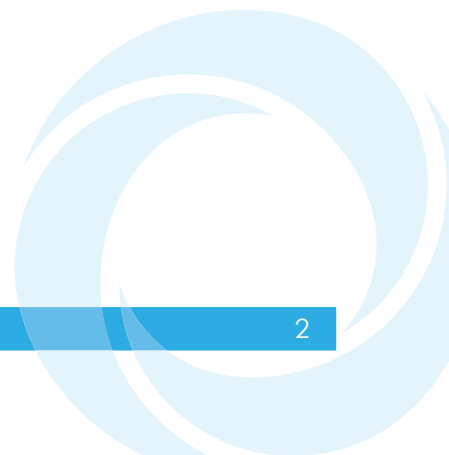
### Scattered Scrub and Individual Broadleaved Trees

The school site contains a number of planted, young to semi-mature trees including silver birch *Betula pendula*, ash *Fraxinus excelsior* and sycamore *Acer pseudoplatanus*.

The school entrance is bounded by a small shrub border which includes cotoneaster, hazel *Corylus avellana*, buddleia *Buddleia x davidii* and Rhodedendron *Rhodedendron ponticum*.

### Other Habitats

In addition to those habitats identified on the 2019 habitat survey, a further area has been added to the site boundary. This is in the west of the site around the Old School House. It includes an existing building, hardstanding paths and a small grassed garden area.



## 3 BREEAM Ecology

### 3.1 Methodology

A Suitably Qualified Ecologist (SQE) has been appointed to undertake this assessment. The SQE is Catherine Hibbert, an Ecology Technical Director with 13 years' experience, a full member of CIEEM (able to use the suffix MCIEEM) and qualified with a BSc (Hons) in Geographical Sciences. This report has been reviewed by the SQE and any other contributing elements produced by other members of the Ecology Team have been checked and signed off by the SQE.

This report has been prepared based on the 2018 BREEAM guidance, GN36 Route 2.

Based on the criteria provided in the Guidance Note, the 'full calculation method' is applicable to this Site, as opposed to the 'simplified calculation method' as it covers 0.5ha of habitat or more. This full method requires the habitats present on the Site to be assessed using Natural England's Farm Environment Plan (FEP) Manual.

A change in ecological value calculator<sup>2</sup> is used to input the following steps:

- First of all, the ecological value of the existing site, pre-development, is calculated.
- Secondly, the habitats to be lost to the proposed development are quantified.
- Finally, the habitats proposed to be created and enhanced as part of the site landscaping are quantified.
- The resultant value relates to the level of biodiversity included within the proposals, and the extent that this addresses any losses caused by the development.

The BREEAM Ecology assessment has been carried out based on an extended phase 1 habitat survey carried out by Marches Ecology, on behalf of Wrexham County Borough Council (WCBC) in August 2019 by a suitably experienced Ecologist and full member of CIEEM.

The scope of the BREEAM assessment relating to ecology is set out below in Table 1. Where information is not already included in the separate document GN40, this is provided in Sections 3 and 4 below. Specifically, this is the calculations for ecological change and enhancement, and long-term ecology management and maintenance.

**Table 1: BREEAM requirements for ecology**

| Ecology Criteria                   | BREEAM Aim                                                                                                                                                                                         | Relevant Section                                      |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Ecological risks and opportunities | To ensure potential ecological risks were included in the site design from an early stage via an appropriate survey and opportunities to integrate them into the design were taken where possible. | GN40 (separate document)                              |
| Managing impacts on ecology        | To avoid or limit as far as possible, negative impacts on the ecology of the site and its zone of influence arising as a result of the project.                                                    | GN40 (separate document)                              |
| Ecological change and enhancement  | To enhance the ecological value of the site and areas within its zone of influence to support local, regional and national priorities.                                                             | GN40 (separate document) and Section 3 of this report |

<sup>2</sup> BREEAM-CEEQUAL-HQM Change in Ecological Value Calculator v3.3

| Ecology Criteria                             | BREEAM Aim                                                                                                                                           | Relevant Section                                      |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Long term ecology management and maintenance | To continue to monitor, manage and maintain the site and its biodiversity and ecological features to achieve the intended outcome for the long term. | GN40 (separate document) and Section 4 of this report |

## 3.2 Ecological Change and Enhancement

### 3.2.1 Pre-development Biodiversity Calculations

The calculations for the baseline ecological value of the Site are accordingly presented in the following section. There are both 'area-based' and 'linear' habitats proposed as part of the scheme, these are detailed below.

#### Area-based Habitats

In order to calculate the pre-development biodiversity units for area-based habitats, the following calculation is applied in the Change in Ecological Value Calculator:

$$\text{Area-based Biodiversity Units (A)} = \text{Area} \times \text{Distinctiveness} \times \text{Condition}$$

**Area** is measured in hectares (ha) for area-based habitats, and in metres (m) for linear habitats.

**Habitat distinctiveness** bands are default based on the habitat types and score as follows:

- High = 6
- Medium = 4
- Low = 2

**Habitat condition** is calculated using the methodology in Natural England's Farm Environment Plan (FEP) Manual<sup>3</sup>, as follows:

- Good condition (any habitat which passes all the FEP criteria) = 3
- Moderate condition (any habitat which fails one FEP criterion) = 2
- Poor condition (any habitat which fails more than one FEP criterion) = 1

**Table 2: Ysgol y Hafod pre-development area-based biodiversity units**

| Phase 1 habitat type   | Area (Ha) | Habitat distinctiveness | Habitat condition    | Pre-development biodiversity units (A) <sup>4</sup> |
|------------------------|-----------|-------------------------|----------------------|-----------------------------------------------------|
| J1.3 Amenity grassland | 0.89 ha   | Low (2)                 | N/A (1)              | 1.78                                                |
| J3.6 Building          | 0.13 ha   | Low (2)                 | N/A <sup>5</sup> (1) | 0                                                   |

3 Natural England (March 2010) Higher Level Stewardship Farm Environment Plan (FEP) Manual. Technical guidance on the completion of the FEP identification, condition assessment and recording of HLS FEP features. Third edition.

4 Calculated using the formula Distinctiveness x Condition x Area = A

5 No condition assessment required for this feature according to FEP Manual, value of low / poor is used by default.

| Phase 1 habitat type   | Area (Ha) | Habitat distinctiveness | Habitat condition    | Pre-development biodiversity units (A) <sup>4</sup> |
|------------------------|-----------|-------------------------|----------------------|-----------------------------------------------------|
| J3.6 Hardstanding      | 0.33 ha   | Low (2)                 | N/A <sup>5</sup> (1) | 0                                                   |
| A3.1 Scrub             | 0.07 ha   | Medium (4)              | Moderate (2)         | 0.56                                                |
| A2.2 Broadleaved trees | 0.04 ha   | Medium (4)              | Moderate (2)         | 0.32                                                |
| Garden                 | 0.01 ha   | Low (2)                 | Moderate (2)         | 0.04                                                |

The total value of the baseline (pre-development) area-based biodiversity units within the site of Ysgol y Hafod is therefore the sum of the three values in the final column **2.7**.

### 3.3 Post-development Biodiversity Calculations

#### 3.3.1 Habitats to be Retained, Lost and Created

The proposed development is situated predominantly on existing hardstanding and amenity grassland, which will be 'lost' to the development. Small areas of scrub will be lost to the creation of a new access ramp, and along the school entrance. Four broadleaved trees will be removed.

The soft landscaping is illustrated on a figure submitted with the planning application (drawing ref. ref. HAF-STO-00-00-DR-L-0009 dated 25/08/21).

The remaining amenity grassland and a habitat area in the east of the site will be retained and protected from development. It will be enhanced by creating log piles from felled trees to provide further structure and invertebrate habitat.

Furthermore, the remaining boundary trees will be retained and protected from development in accordance with the Arboricultural Impact Assessment (Ref: 19/AIA/WXM/249).

As the habitats proposed as part of the landscaping are those in direct proximity to the new school building and car parking, for the purposes of the calculations it is assumed that these habitats will be 'created'. This is because the existing amenity grassland around the development footprint will be disturbed as part of the working area. These habitats are input in the Change in Ecological Value Calculator as area-based habitats to be created. However, as there is likely to be an existing seedbank and the new grasslands will be adjacent to existing grassland, the chances of success will be greater. This has been taken into account in the calculator via a delivery risk of 'medium'.

#### Proposed Planting

Table 3 details the landscape planting proposed to be created as part of the development at Ysgol y Hafod. The grassland, tree and shrub species have been specified as native and flower-rich to optimise biodiversity.

**Table 3: Soft landscape types to be created as part of Ysgol y Hafod extension**

| Soft landscape type | Species and specification                                                                                                                                                                                                                          |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Trees               | <p>23 x broadleaved trees; 14 – 16 cm girth; rootball</p> <p>9 x Amelanchier 'Robin Hill' <i>Amelanchier arborea</i></p> <p>6 x field maple <i>Acer campestre</i></p> <p>1 x oak <i>Quercus petraea</i></p> <p>4 x pin oak <i>Q. palustris</i></p> |

| Soft landscape type  | Species and specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      | 3 x Callery pear <i>Pyrus calleryana</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Hedges               | 77m of hedge, each plant 60 – 80 cm<br>Beech <i>fagus sylvatica</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Shrubs and bulbs     | 3L size potted shrubs at 4 / m <sup>2</sup> density<br>1,640 x native or pollinator friendly shrubs, including:<br>Shrubby veronica <i>Hebe green globe</i><br>Rudbekia <i>Rudbekia fulgida</i><br>Heather <i>Calluna vulgaris</i><br>Red barked dogwood <i>Cornus alba sibirica</i><br>Lavender 'Hidcote' <i>Lavandula angustifolia 'Hidcote'</i><br>Bulbs x 1,098 at a density of 10 / m <sup>2</sup><br>Dafodil <i>Narcissus</i>                                                                                                                                                                             |
| Wildflower grassland | Sown with <b>Emorsgate seeds EL1 'Flowering Lawn Mixture' or equivalent, which includes:</b><br>Lady's bedstraw <i>Galium verum</i><br>Rough hawkbit <i>Leontodon hispidus</i><br>Ox eye daisy <i>Leucanthum vulgare</i><br>Bird's-foot trefoil <i>Lotus corniculatus</i><br>Cowslip <i>Primula veris</i><br>Selfheal <i>Prunella vulgaris</i><br>Meadow buttercup <i>Ranunculus acris</i><br>Red clover <i>Trifolium pratense</i><br>Common bent <i>Agrostis capillaris</i><br>Crested dog's-tail <i>Cynosurus cristatus</i><br>Red fescue <i>Festuca rubra</i><br>Smaller cat's-tail <i>Phleum bertolonii</i> |
| Grassland            | Sown with <b>Emorsgate seeds EG22 strong lawn mix, or equivalent, which includes:</b><br>Common bent<br>Red fescue<br>Perennial rye-grass <i>Lolium perenne</i><br>Smooth-stalked meadow grass <i>Poa pratensis</i>                                                                                                                                                                                                                                                                                                                                                                                             |

### 3.3.2 Biodiversity Calculations

Based on the planting proposed above, calculations have been carried out to determine the post-development biodiversity units for area (Table 4) and linear-based (Table 5) habitats, given as 'E' in the final rows of the two tables.

For individual trees, these are included in area-based habitats, with the area measured is indicative based on the root protection area. For newly planted trees such as these, this is taken to be their canopy extent based on coverage after 25 years.

**Table 4: Post-development area-based calculations, per habitat type**

|                      | Semi-mature trees                             | Shrubs / Garden        | Grassland                              | Grassland                                           |
|----------------------|-----------------------------------------------|------------------------|----------------------------------------|-----------------------------------------------------|
| Phase 1 habitat type | A3.1: Parkland / scattered trees: Broadleaved | A2.2: Scrub, scattered | B2.2: Neutral grassland, semi-improved | B2.2: Neutral grassland, semi-improved (wildflower) |

|                               | Semi-mature trees           | Shrubs / Garden             | Grassland                   | Grassland<br>grassland)     |
|-------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Distinctiveness               | Medium (4)                  | Medium (4)                  | Medium (4)                  | High (6)                    |
| Target condition              | Moderate (2)                | Moderate (2)                | Moderate (2)                | Moderate (2)                |
| Post-devt area (ha)           | 0.04 ha                     | 0.054 ha                    | 0.11 ha                     | 0.03 ha                     |
| Delivery risk <sup>6</sup>    | Low (1)                     | Low (1)                     | Low (1)                     | Medium (0.67)               |
| Temporal risk <sup>7</sup>    | 20 years (0.5)              | 5 years (0.84)              | 5 years (0.84)              | 5 years (0.84)              |
| Spatial risk                  | Within 500m of area of loss | Within 500m of area of loss | Within 500m of area of loss | Within 500m of area of loss |
| <b>Result (E)<sup>8</sup></b> | <b>0.16</b>                 | <b>0.37</b>                 | <b>0.74</b>                 | <b>0.20</b>                 |

**Table 5: Post-development linear habitat creation calculations**

|                                       | Hedgerow |
|---------------------------------------|----------|
| Length to be created (E) <sup>9</sup> | 77 m     |

The pre- and post-development biodiversity values for the development are given in Table 6, with the overall biodiversity units (G) and percentage change indicated (%).

**Table 6: Biodiversity units**

|            | Pre-development biodiversity units (A and B) | Units lost to development (C and D) | Post-development biodiversity unit creation (E and F) | Total biodiversity units (G) | % change in biodiversity units |
|------------|----------------------------------------------|-------------------------------------|-------------------------------------------------------|------------------------------|--------------------------------|
| Area-based | 2.7                                          | 0.94                                | 3.22                                                  | 3.22                         | 119 % <sup>10</sup>            |
| Linear     | None                                         | None                                | 75                                                    | 75                           | > 100 % <sup>11</sup>          |

Considering the Landscape Planting Plan for Ysgol y Hafod, the area-based planting replaces **119 % of the biodiversity units** lost to the development.

The linear planting creates additional hedgerow planting along a 75m stretch of boundary which is a net gain as no hedgerows are lost to the development.

## 3.4 Results

In accordance with BREEAM GN36, the output with the lowest percentage score should be used to identify the reward level available for the development as follows:

- 75% and 94% - Minimising loss,

6 Difficulty to successfully create habitat to meet the target condition

7 Time to meet target condition

8 Habitat creation, area-based (E) = post-development distinctiveness x post-development target condition x post-development area x delivery risk x temporal risk x spatial risk

9 For linear habitats, the length created is the resultant value E.

10 Percentage change in area-based biodiversity units (G/B) x 100

11 Percentage change in linear biodiversity units (G/B) x 100

- 95% and 104% - No net loss for the habitats assessed,
- 105% and 109% - Net gain for the habitats assessed,
- **110% or above - Significant net gain.**

**The Ysgol y Hafod scheme scores 119 %, which falls into the category of 'significant net gain'.**

The scheme therefore exceeds the target of no net loss of biodiversity and delivers net gain.

## 4 Landscape and Ecological Management Plan

### 4.1 Background

In accordance with BREEAM guidance, information is provided below as to the appropriate management measures to be in place for the landscaping as part of the Ysgol y Hafod scheme.

### 4.2 Soft Landscape Types

The soft landscape types in the Landscape Planting Plan are set out in Table 3 above. Further details are provided below with additional biodiversity measures included.

#### Trees

Trees will be planted as individual specimens along the edge of the new car park following the distribution set out in the soft landscaping plan (ref. HAF-STO-00-00-DR-L-0009 dated 25/08/21). These comprise the following species:

- Amelanchier
- Field maple
- Oak
- Pin oak
- Pear

All trees to be in accordance with BS 3936, BS8545 and The National Plant Specification – 'Rootballed Trees' recommendations. Trees to be planted in accordance with BS 4428:1989 and double staked (10-12cm - 14-16cm girth trees) and tied in prepared pits.

Tree pits in poorly draining soils are to be positively drained, connecting into the surface water drainage system to engineer's details. Generally, all trees are to be planted as shown ensuring a minimum of 5 metres from buildings and 3 metres from drainage or services. Suitable foundations are to be provided to accommodate proposed tree planting and retained trees in accordance with the NHBC Standards.

#### Hedge

A 77m beech hedge will be planted with the trees 60 – 80 cm in height.

Plants will be in accordance with BS 3936 and handled in accordance with the NPS 'Handling & Establishment' guidelines and planted in accordance with BS 4428:1989. Hedge plants to be pit planted in double staggered rows 300mm apart at 450mm centres (or as scheduled).

Water plants well immediately after planting and prior to spreading of mulch. Planted areas to be covered with 75mm depth bark mulch and kept weed free. Where necessary plants to be protected from rabbits with rabbit fence and / or individual rabbit mesh guards securely staked. It is assumed that all hedges are to be maintained at a maximum height of 1.5m for the purposes of the NHBC guidelines.

## Shrubs

3L pot size shrubs will be planted at densities of between 3 – 5 / m<sup>2</sup> following the distribution set out in the soft landscaping plan (ref. HAF-STO-00-00-DR-L-0009 dated 25/08/21). Water plants well immediately after planting and prior to spreading of mulch. Planted areas to be covered with 75mm depth bark mulch and kept weed free.

## Bulbs

Daffodil bulbs will be planted at a density of 10 / m<sup>2</sup> comprising the following varieties:

- Welsh daffodil narcissus pseudonarcissus x 366
- Daffodil 'Dutch master' N. 'Dutch master' x 366
- Daffodil 'early sensation' N. 'early sensation' x 366

## Wildflower Grassland

The wildflower grassland areas are to be seeded with Emorsgate seed mix EL1 'Flowering lawn mixture' or equivalent. Once established, this flower-rich grassland will respond well to regular mowing as it supports species which can flower at a relatively low level.

It includes the following plant species:

- 4% Lady's Bedstraw *Galium verum*
- 0.5% Rough Hawkbit *Leontodon hispidus*
- 1% Oxeye Daisy *Leucanthemum vulgare*
- 3.7% Bird's-foot Trefoil *Lotus corniculatus*
- 3% Cowslip *Primula veris*
- 4% Selfheal *Prunella vulgaris*
- 3.5% Meadow Buttercup *Ranunculus acris*
- 0.3% Wild Red Clover *Trifolium pratense*

It includes the following fine grasses:

- 8% Common Bent *Agrostis capillaris*
- 40% Crested Dog's-tail *Cynosurus cristatus*
- 28% Red-fescue *Festuca rubra*
- 4% Smaller Cat's-tail *Phleum bertolonii*

Wildflower areas are to be seeded in accordance with BS 4428:1989 during March, April or September. Unimproved or low fertility topsoil to be imported, cultivated and levelled to remove all minor hollows or ridges as required with any debris or stones greater than 20mm diameter removed to provide a fine weed free tilth. Do not apply fertiliser. Weeds to be eradicated by selective spot-application of herbicide or repeated cultivation prior to sowing. Lightly rake areas after sowing and keep well-watered. Areas to be kept free from unwanted plants and mown every 6 - 8 weeks during establishment year removing arisings. In subsequent years cut in early spring and autumn after setting seed (in accordance with manufacturers recommendations) removing arisings.

Seed mix to be sown in accordance with suppliers' recommendations, 4g/m<sup>2</sup> over a topsoil 200mm in depth.

## Grassland

Grasslands in areas of higher footfall will be Emorsgate EG22 strong lawn mix or equivalent. It includes the following grasses:

- 5 % Common bent
- 50 % Red fescue
- 25 % Perennial rye-grass *Lolium perenne*
- 20 % smooth-stalked meadow-grass

The grassland will be sown to a similar method to that outlined above for the wildflower grassland.

Cutting will be more frequent than the wildflower areas, in accordance with the regime for the wider playing fields.

It will be sown at a rate of 25 g / m<sup>2</sup> over an imported topsoil depth of 200mm.

## 4.3 Management and Maintenance

Maintenance is to be carried out at approximately monthly intervals during the defects liability / rectification period to include the following:

1. Eradicate weeds by hand or appropriate spot-sprayed chemical means.
2. Cut out dead or / and damaged stock or branches, prune as required.
3. Replace any dead or damaged stock as necessary
4. Ensure all shrubs and trees are firmed in, securely staked and tied with guards where applicable.
5. Collect litter, sweep and tidy site.
6. Water as required.
7. Carry out mowing to wildflower areas as per Emorsgate Seeds Ltd aftercare First year & Established sward guidance i.e. flowers should be allowed to set seed before cutting is timed in the autumn and all arisings removed.
8. All hedges to plot frontages be maintained at a max height of 1.0m. Hedges and shrub planting within visibility splays to be maintained in accordance with current highways design guidelines.
9. In areas where hedges do not need to apply to highways guidelines, these should be permitted to grow to c. 1.5m.
10. After 5 years of growth, hedges should be assessed to determine if they are suitable for laying.
11. Shrub to be maintained free from perennial weeds, self-set shrub and tree species.
12. Shrubs should be pruned for shape and form as necessary.
13. At final visit apply granular fertiliser to all planted areas and top up bark mulch depth to 75mm.

### 4.3.1 Watering

All plant material (including grassland) to be watered in dry periods until established during April through to September with a fine rose until the water penetrates the topsoil to at least 5cm depth and achieves field capacity. Frequency of watering regime to be determined by weather conditions, soil conditions and underlying geology, all plant

beds to be watered to ensure soil is consistently moist to promote successful establishment.

As a guide only it is suggested that during hot, dry periods, plants are to be watered every six to ten days. For individual trees it is suggested that 18 watering visits per year are carried out commencing late March (prior to budburst) and utilising a minimum of 50 litres of water per tree. Soil probe to be used to determine soil saturation to full depth of root ball.

## 4.4 Timescales

The timescale for the current Landscape Planting Plan is for a five-year period. Before the end of the five-year period, the operators will develop a longer term maintenance regime to ensure that the objectives of the landscape design continue to be achieved for years to come as part of the general site maintenance. As part of this, it is recommended that biodiversity value is also considered in the longer term.

In general, where possible, it is recommended that tree and hedge planting is carried out when plants are dormant in the winter period (November – February).

Grass seed should be sown in spring or autumn to avoid the summer heat and the winter frosts to maximise the success rate.

