

Devonshire Place, Port Talbot

LANDSCAPE & ECOLOGICAL MANAGEMENT PLAN

Document Reference: 2489501-SBC-00-XX-RP-L-0001

June 2024



Intentionally blank

Devonshire Place, Port Talbot

LANDSCAPE & ECOLOGICAL MANAGEMENT PLAN

June 2024

Document Ref: 2489501-SBC-00-XX-RP-L-0001

Revision	Reason	Approved By	Date
PL01	Planning – Condition Discharge	Simon Brewster	10-06-24

Intentionally blank

CONTENTS

- 1.0 Introduction, Purpose and Context
- 2.0 Scope of the Document & Length of Plan
- 3.0 Description and Evaluation of Landscape
 - i. Habitats, and ecological features (present and to be created)
 - ii. Desired/target conditions of features (present and to be created)
 - iii. Ecological Trends and Constraints
- 4.0 Aims & Objectives of Management, Risks & Protection Zones
- 5.0 Short & Long Term Management Options & Actions
- 6.0 Prescriptive Management Actions and Works Schedules and Annual Works Plan
- 7.0 Management & Maintenance Responsibilities, Interpretation Boards & Public Engagement.
- 8.0 Monitoring, Species Licencing Requirements, Remedial & Replacement Measures

Appendix A Landscape Maintenance & Management Qualitative Standards

Intentionally blank

1.0 Introduction, Purpose, and Context

1.1. Report Purpose and Structure

1.1.1 This report has been prepared by Soltys Brewster Consulting and Soltys Brewster Ecology on behalf of J G Hale Construction and Linc Cymru, in relation to the construction of a new housing development in Port Talbot. The site is within Neath Port Talbot Council (NPTC).

1.1.2 This document has been prepared, in order to discharge the following NPTC Planning Conditions for both the LEMP and Biodiversity Enhancement and Management Plan when read in conjunction with the documents outlined in Clause 1.1.3. The Conditions are:

Condition 9

"Prior to the occupation of the development, a landscape management plan, including long-term design objectives, management responsibilities and maintenance schedules for all landscaped areas, other than small domestic gardens, has been submitted to and approved in writing by the Local Planning Authority. The landscape management plan shall be carried out and the landscaping maintained in accordance with the approved details."

Condition 13

"Prior to the commencement of works to construct dwellings, a Biodiversity Enhancement and Management Plan shall be submitted to and approved in writing by the Local Planning Authority. The plan should update the biodiversity mitigation and enhancements identified in the Ecological Assessment Report by Pure Ecology dated December 2022 to reflect amendments to the proposal. The scheme shall be implemented in accordance with the approved details and maintained thereafter."

1.1.3 The information contained within this document provides an integrated management plan for the maintenance and management of all existing habitats and proposed soft landscape areas across the development. These are illustrated in the following approved planning documents:

- 222006-ASL-XX-XX-DR-L-0001 Landscape General Arrangement
- 222006-ASL-XX-XX-DR-L-0904 Planting Plan & Schedule
- 222006-ASL-XX-XX-DR-L-0930 Landscape Construction Details
- 222006-ASL-XX-XX-SP-L-0001 Landscape Design Specification Document

- 957 Devonshire Place Ecological Assessment-21-10-22

1.1.4 This document has been informed by ecological surveys undertaken by Pure Ecology between June - September 2022. This included an Extended Phase 1 Habitat survey in June 2022 followed by bat activity surveys between August – September 2022. The findings of the ecological surveys are summarised in the Ecological Assessment Report (Pure Ecology, 2022).

Trigger Date for the Commencement of Delivery of Actions

- 1.1.5 This document is produced as an operation stage management document and the outlined tasks are triggered at the defects completion of the construction stage services.
- 1.1.6 Interim management is principally led by implementation establishment although the outlined operation stage aspects will need to be taken into consideration from the commencement of the construction stage.

2.0 Scope of the Document & Length of the Plan

2.1. Scope

- 2.1.1. This document has been produced by Chartered Landscape Architects, members of the Landscape Institute (CMLI), and Suitably qualified Ecologists, members of the Chartered Institute of Ecology & Environmental Management (CIEEM). The document covers the landscape management and maintenance after practical completion of all soft landscape elements including existing GI assets, new landscape components and related habitat and species enhancement measures, protected species likely to be using the site and invasive species known to be present.

2.2. Length of the Plan

The content of the document identifies how the landscape is to be managed in perpetuity, including replacements as and when necessary. In accordance with best practice, it recognises that landscape is living and changing, and as such this management plan shall be regarded as a 'living document' which may be updated during the life of the development and review may be required to readdress management tasks. Section 8.0 address monitoring, Species licencing requirements, Remedial and Replacement Measures.

3.0 Description and Evaluation of Landscape

3.1. Description of the Site & Habitat and Ecological Features (Present and Proposed)

3.1.1 The proposed development includes;

- 16 new houses,
- 5 new apartment buildings,
- 13 retained existing trees,
- new external hard landscaped footpaths, car parking and carriageways,
- new amenity grass and wildflower seeding,
- new rain gardens,
- new native shrub and hedge planting,
- retained and new boundary hedge and woodland planting,
- play area with equipment and bark mulch path
- bench seating
- biodiversity enhancement features such as bird/bat boxes and log piles/insect hotels

3.1.2 The Landscape General Arrangement (dwg 0001) illustrates the locations of retained trees, the locations for proposed planting and biodiversity enhancement features.

Ecological Survey Work to Inform the Sites Development

3.1.3 Ecological survey work undertaken at the site (Pure Ecology, 2022) identified that the site mainly comprises of hardstanding and buildings. Features of other ecological interest include areas of poor semi-improved grassland, dense scrub and tall ruderal vegetation as well as scattered trees.

3.1.4 Bat activity surveys identified the presence of a small Common Pipistrelle day roost within existing buildings B1, B3, B4, B6 and B7. Based on the survey findings the roosts were considered to be of low conservation significance and the collective bat roost resource evaluated as being important within a local (site) context only.

Features to be Managed and their Relationship with the Proposals

3.1.5 The following table lists the existing and proposed landscape and ecological features to be managed and their relationship with the development. Their desired/target condition is identified in 6.0 Prescriptive Management Actions and Work Schedules.

Existing and Proposed Landscape and Ecological Features	Relationship with the Development	Desired/Target Condition
Existing Trees	Structural Landscape Elements of no direct relationship with the development use	Mature GI components managed for their long-term contribution as biodiverse as valuable diverse habitats
Existing Invasive Species	To be eradicated or controlled	To be eradicated or controlled
Proposed Bat & Bird Boxes	Primarily Habitat Mitigation and Enhancement Elements	Maintained as used features
Proposed Trees	Primarily Habitat Mitigation and Enhancement Elements	Mature GI components contributing to the habitat and biodiversity to the site.
Proposed Hedgerows	Primarily for amenity and visual screening of fence around the children's play area. Contribution to biodiversity with native species in plant mix.	Mature GI components contributing to the habitat and biodiversity to the site.
Proposed Shrub & Rain Garden Plants	Front of Site Amenity Landscape with a	Visually attractive and diverse with seasonal displays and nectar sources

	contribution to biodiversity.	and shelter for common birds and mammals.
Proposed Wildflower Meadow Mixes	Primarily for biodiversity enhancement	Dense sward of wildflower meadow dominated by wildflowers rather than grasses to create long seasonal displays for pollinating insects and also for visual amenity.
Proposed Amenity Grass	Primary function is for operational use and amenity on the site, with a secondary function being contribution to biodiversity.	Resilient, useable lawn for residents whilst also providing species diversity for local wildlife.

3.1.6 The majority of existing trees are to be retained and protected within the layout (loss of trees T1, T2, and T15). The proposed scheme integrates as well as possible with the retained trees, contributing to place making, habitat diversity and value to the wider environment.

- 3.1.7 The scheme also incorporates new habitat creation and the enhancement of existing features through new planting and beneficial management in order to improve ecological resources within the site and the wider landscape, aiming to secure the site's value for wildlife in the long-term. New provisions for roosting bats and nesting birds (bat/bird boxes and ridge tiles) will also be provided upon existing trees/new buildings, while new provisions for reptiles (log/brush piles) and invertebrates (bug/insect hotels) will be provided across the site, with a focus on portions of the site that will be more heavily planted. These improvements are included within the landscape drawing package referred to above.

Ecological Trends

- 3.1.8 The site currently supports existing buildings and hardstanding, consistent with the site's former use as a school. Other ecological features include poor semi-improved grassland, dense scrub, tall ruderal and scattered trees. The current site is not managed and vacant. In the absence of long-term management remaining semi-natural habitats would develop into a scrub layer (i.e., natural succession) and the existing buildings would continue to be used by roosting bats.
- 3.1.9 Following commencement of construction activity and new planting at the site retained and created habitats will be subject to management as set out in the current document to maintain and provide new resources for protected species in the long-term.

Site Constraints

Public Access

- 3.1.10 The whole site is open to the public (except for the rear gardens of individual properties), with a new small public open space on the southeast corner of the proposals that includes bench seating, a playground and planting.

Protected Species

3.1.11 The site supports protected species including roosting bats and nesting birds. The following legislation is therefore applicable to any management activities undertaken at the site:

- Bats are fully protected under the Conservation of Habitats and Species Regulations 2017 (as amended). The species is protected against killing, injury and disturbance and their breeding sites and resting places against damage and destruction;
- All wild birds are protected against killing and injury under the Wildlife and Countryside Act 1981 (as amended) and their nests against damage or destruction whilst in use or being built.

3.1.12 Certain operations and timings have the potential to cause harm to one or more of these species and their presence is therefore an important consideration in terms of future site management (e.g., tree and hedge pruning). This management plan incorporates the best practice guidance for each of these species groups in order to minimise the risk of committing an offence under the above legislation during habitat management activities.

3.1.13 Operations outside of those detailed within this plan (e.g., demolition of existing buildings and destruction of bat roost) will require a licence from Natural Resources Wales (NRW) to permit the loss. No trees assessed to have potential to support roosting bats are proposed to be removed.

4.0 Aims & Objectives of Management, Risks & Protection Zones

4.1.1. Principle Aims and Objectives

The principle aims and objectives of the maintenance and management of the landscape are:

- To establish new planting in a healthy and safe condition.
- To maintain and manage the landscape in a healthy, safe and attractive condition, contributing to the site intended character, biodiversity and wildlife value in the longer term.
- Maximise the landscape visual amenity to the benefit of the key uses on the site and within its immediate surroundings.

Risk Assessment of Potential Damaging Construction Activities

- 4.1.2. The principal construction stage risks relate to GI protection from physical or surface damage from construction areas on retained trees. The Landscape General Arrangement identifies the principal GI assets to be protected during the construction stage.

Practical Measures to Avoid Negative GI Impacts During Construction

- 4.1.3. Practical measures (both physical measures and sensitive working practices) to avoid or reduce impacts during construction are identified below;
- Protective fencing will be erected and secured for the full period of adjacent construction
 - Surface run off from construction areas into adjacent safe guarded areas will be controlled to avoid any surface water, sludge or contamination runoff or ground infiltration into the root protection areas of retained trees. This will be achieved by surface bunding, run off capture and temporary siltation swales or basins, scaled to address the scale of need for each construction phase.
 - Vegetation clearance works affecting trees and dense scrub will avoid the breeding bird season (typically March – August). If this is not possible, all vegetation removal works within this time period should be undertaken under

ecological supervision. If an active bird nest was identified, it will be left in place with a suitable buffer until no longer in use;

- Demolition works to building will be subject to a NRW licence and bat mitigation method statement;
- A tool box talk will be provided to the site management team at commencement of the construction phase to ensure all agreed protective measures and protective protocols are communicated to the site team.

5.0 Short & Long Term Management Options & Actions

5.1. This section addresses management needs required following completion of the site. The purpose of management actions, after completion of the site, are to ensure the successful establishment and ongoing improved value of these landscape assets through management. It covers:

- Guiding principles
- Aims for each component
- Management requirement for establishment
- Ongoing management
- Overview and monitoring

5.2. Table A (Landscape Management Operational Requirements) below, lists the main landscape components and/or feature specific management operation requirements for the retained and new soft landscape within the development site.

Plant Replacements

5.3. In the pursuance of standard practice any trees, plants or grass areas which within the 2-year period die, are removed or become seriously damaged or diseased, will be replaced in the following season with others of a similar size and species to that scheduled in Table A or in the plant schedule as per drawing planting drawings.

Disturbance of Wildlife

5.4. Operations must avoid disturbance of wild birds and animals¹ using the site for shelter, nesting, breeding, foraging and protection. Maintenance operatives should be aware of their statutory obligations in this regard; in particular the legal protection afforded to nesting birds,(see section 3.1.8 above) and should comply with the timing and specification of operations detailed in this document to avoid committing an offence. Operatives should notify the client management team if any risk of disturbance arises during maintenance operations and adjust their works programme and methods as advised.

¹ With the exception of pest species such as rats.

Nesting Birds

- 5.5. To avoid disturbance to nesting birds, clearance or heavy pruning of the boundary hedgerows, trees and shrubs should be undertaken outside the bird nesting season (works possible between September and February inclusive). Any such works undertaken during the nesting bird season will need to be preceded by a thorough check for nesting birds by an ecologist. Some operations such as clipping formal hedges are best sequenced during the nesting season to trim back typically light open extension growth during the growing season. These are not invasive procedures if completed as regularly as specified and should not directly affect nesting birds. Operatives should inspect hedges (or other vegetation where relevant) to satisfy themselves that they are not going to disturb any nesting birds before proceeding, and if the potential for direct effects are identified, the operation should be left until any young have fledged and the nest is no longer in use.
- 5.6. The landscape plan is to provide additional biodiversity enhancement features (bird boxes) at the site (general purpose bird box and house sparrow nest box). Where vegetation management is required within a close proximity to these boxes (e.g. pruning/cutting back of branches/shrubs etc. within a 3m buffer of these boxes), then these works shall be carried outside the nesting bird season (as detailed above).

Roosting Bats

- 5.7. As part of the survey work completed by Pure Ecology in June 2022, a ground level appraisal of trees for bat roost potential was undertaken. The survey identified one tree with low potential to support roosting bats (T8 – London Plane) which will be retained as part of the development proposal. Trees subject to be removed were assessed to be of Negligible bat roost potential.
- 5.8. As trees mature and attain new features, they can develop bat potential over time. As such, any future maintenance works (excluding light pruning) or felling of trees will require assessing for bat roost potential by a suitably qualified ecologist (prior to felling).

This will involve an initial assessment from the ground to identify any Potential Roost Features (PRF) with supplementary climbing inspection or emergence checks undertaken where PRF-M (Moderate or High) roost potential is identified.

- 5.9. The proposed plans provide additional roosting opportunities, including bat box and ridge tile bat access tiles associated with new buildings. Once installed, these shall be treated as active bat roosts and should therefore not be disturbed as part of any future management operations.

Other species

- 5.10 The proposed plans provide additional resources (bee/insect hotels and log piles) for invertebrates and other species on the site (e.g., small mammals and herpetofauna). Once installed, these shall be treated as active habitats and should not be disturbed as part of any future management.

Pollution Avoidance

- 5.11. Landscape maintenance operations shall avoid pollution of the water environment. Only clean surface water may be discharged to channels, gullies and soakaways or nearby watercourses. The written consent of Natural Resources Wales will be required for any chemical discharge.

Use of Pesticides and Herbicides

- 5.12. In the interests of best practise for biodiversity, the use of pesticides and herbicides should be minimised where possible. Weeds should typically be removed by hand and pests should only be treated when they are affecting the continued health and thriving of plants.

Should an invasive plant species be discovered on site the stand should be eradicated by the most efficient means possible, by removal, or suitable approved chemical treatment to their location, to eradicate them as soon as possible and limiting treatment to the area contaminated by the invasive species.

5.13. Management of Trees

5.13.1. Tree stakes and ties are to be checked and adjusted as required periodically and after high winds and frost-heave. Any damaged or missing stakes or ties are to be replaced as specified. Once the tree has established and no longer requires support the stakes and ties are to be removed.

5.13.2. Selective cutting outside of the scheduled maintenance should only be undertaken if undesirable growth is becoming invasive or overhanging fences creating security concerns. Ensure pedestrian and vehicular routes are not unduly impeded by overhanging branches through selective cutting in accordance with good horticultural practice.

5.14. Management of Amenity Grass

5.14.1. Once established amenity grass areas will be cut as regular as required to a height of 35mm. All arisings are to be removed and composted/disposed of as appropriate. Invasive and rank weed will be spot treated as required monthly in May, June and July.

5.15. Management of Meadow Grass

5.15.1. Meadow grass areas are specified two different mixtures: EM2 by Emorsgate Seeds in 'Wildlife Meadow Mix Grass' and EM8 by Emorsgate Seeds in 'Un-lined Rain Gardens Type 3'.

5.15.2. Once established, both types of meadow grass areas are to be cut once in March, and again in August, September, and October to a height of 50mm. All arisings are to be removed and composted/disposed of as appropriate. Arisings to be left for 7 days before removal of first autumn cut. Invasive and rank weed will be spot treated as required monthly in May, June and July.

5.16. Regular Maintenance Operations

5.16.1. The following tables list the main management and maintenance tasks and illustrate the proposed regular maintenance in two ways;

- Table A lists individual species, as listed on the planting plans and schedules and identifying the species specific maintenance which is required

- Table B tabulates the annual general operations to show frequency and timings.

5.16.2. *Appendix A* provides specification guidance on management tasks.

Table A1: Landscape Management

The following operations are anticipated maintenance and management aims and requirements. These should be reviewed and managed by an appropriately skilled and qualified team of ecologists and landscape professionals accommodating iterative revisions or additions as required by site circumstances.

Feature	Species/Mix	Location	Desired Target Conditions	Management Requirements	Overview and Monitoring
Bat, Bird and Insect Boxes	See Landscape General Arrangement Plan: 7no. Integrated bat boxes (Vivara Pro Build-in WoodStone Bat Box or equivalent woodstone model) 7no. Raised ridge tiles (e.g., bat access tile set²) 5no. House Sparrow nest box (Vivara Pro WoodStone House Sparrow Nest Box or equivalent woodstone model) 5no. General purpose bird box (1B Schwegler Nest Box or equivalent woodstone model) 2no. Insect tower/boxes³ (to be installed on 1.2m timber post)	See Ecological Enhancement Plan	Intact, and suitable for targeted Species use	Bird Boxes to be cleaned out annually in September/October	Check boxes remain usable and in suitable condition. Replace any damaged or missing models.

² <https://www.nhbs.com/bat-access-tile-set>

³ <https://www.nhbs.com/insect-tower>

Feature	Species/Mix	Location	Desired Target Conditions	Management Requirements	Overview and Monitoring
Native Shrubs	Structural Shrubs 10% Corylus avellana 20% Cornus ‘Midwinter Fire’ 15% Crataegus monogyna 15% Prunus spinosa 5% Rosa canina 10% Viburnum opulus Groundcover species 10% Ajuga reptans 15% Anemone nemorosa 20% Anthemis tinctoria 20% Campanula carpatica 30% Centranus ruber 5% Erigeron sp.	Across the site as landscape plans	Collection of compact, mature shrubs interspersed with dense groundcover vegetation.	Watering None should be required except for during periods of drought (no rain for 14 continuous days) Pests and Disease Only act if these re threatening the continued structure and longevity of the shrubs, otherwise allow a natural balance to develop. Pruning Unless overhanging property or public realm path or road access no annual clipping is required. Where used close to pavements, clip as required to maintain safe access and amenity. Any pruning should take place outside of bird-nesting season (October-January). Hazards Crataegus, Prunus and Rosa have sharp thorns – appropriate protection equipment and precautions should be used when handling these species. No other prescribed works within the first 10 years, subject to monitoring and recommendation	Thinning & Coppicing Review Corylus and Cornus in Year 3 and Year 7 within the first 10 year management period. Make recommendations for year 4 and year 8 coppicing works (cut stems to 7.5cm from ground), if these are considered desirable in the formation of fresh new stems on shrubs.

Lined Rain Gardens	Type 1 Species Mix Anemone ‘Honorine Jobert’ Bergenia ‘Overture’ Dryopteris dilatata Geranium ‘Rozanne’ Helenium ‘Moerheim Beauty’ Helenium ‘Autumn Lollipop’ Helleborus foetidus Lobelia cardinalis Osmunda regalis Type 2 Species Mix Cornus ‘Midwinter Fire’ Rosa canina Viburnum opulus Viburnum tinus Iris pseudacorus Carex pendula Molinia caerulea Calamagrostis ‘Karl Foerster’ Stipa arundinacea	Across the site as landscape plans	Dense planting with a balance of species across the planting. Larger shrub species to be clipped/split to maintain compact form	Watering None should be required Pests and Disease Only act if these are threatening the continued structure and longevity of the planting Pruning Cut back flowered stems of Anemone, Helenium, Iris and Lobelia in late autumn. Cut back foliage and flowers of Calamagrostis and Molinia to 5-7cm tall in early spring. Remove flowers of Carex in late summer to prevent self-seeding. Remove dead/damaged Dryopteris and Osmunda leaves as necessary. Prune Viburnum tinus after flowering and Viburnum opulus, Rosa canina and Cornus in winter. Hazards Helleborus, Iris and Lobelia are harmful if eaten and can be a skin and eye irritant. Rosa has thorns. Appropriate protection equipment and precautions should be used when handling these species. No other prescribed works within the first 10 years, subject to monitoring and recommendation	Thinning & Coppicing Review in Year 3 and Year 7 within the first 10 year management period. Make recommendations for year 4 and year 8 works, if these are considered desirable in the formation of a diverse planting bed. Lift, divide and remove portions of Anemone and Carex if they begin to dominate. Schedule hard pruning of shrubs to manage size as required.
----------------------------------	--	---	--	---	--

Hedge	Hedgerow Mix Acer campestre Cornus sanguinea Euonymus europaeus Lonicera periclymenum Sambucus nigra Viburnum opulus	Boundary hedge to children's play area	Allowing the hedge to establish as a dense native hedgerow and as a visual screen to the low fence behind.	Clipping Clip the hedge in February to maintain a maximum height of 1.2m, maximum width of 1m and a dense, bushy form. Shears and secateurs to be used for pruning in proximity to the parallel fence. Watering None should be required except for during periods of drought (no rain for 14 continuous days). Pests and Disease Only act if these are threatening the continued structure and longevity of the woodland, otherwise allow a natural balance and natural controls to develop. Hazards Euonymus is harmful if eaten. Appropriate protection equipment and precautions should be used when handling these species. No other prescribed works within the first 10 years, subject to monitoring and recommendation	Thinning & Coppicing None should be required.
---------------------	--	---	---	---	--

Feature	Species/Mix	Desired Target Condition	Management Requirements	Overview and Monitoring
Grassland	<i>Amenity seeded grass</i>	Diversified grassland of biodiversity and habitat value that also performs as a traditional amenity lawn.	Mow regularly as a lawn, with cuts to a minimum height of 35mm. Arisings collected, removed and disposed of appropriately. Annual Decompaction and Feeding Decompaction is not routinely required for amenity grass areas. Do not feed amenity grass areas. Invasive or rank weeds to be removed, weeding to be carried out as spot treatment by hand.	
	<i>Wildflower meadow mix grass EM2 and Meadow mix for Wetlands EM8</i>	Diversified grassland of biodiversity and habitat value.	Once established, the meadow grass areas are to be cut once in March and again in August, September and October to a height of 50mm. All arisings are to be removed and composted/disposed of as appropriate. Arisings to be left for 7 days before removal of first autumn cut (September). Invasive and rank weed will be spot treated as required monthly in May, June and July. Manage as a Hay Cut Meadow following the guidance in Table B below.	

6.0 Works Schedules and Annual Works Plan

6.11. Standard Annual Maintenance Plan

Table B: Annual General Operations Frequency and Timings

Below is an outline for regular maintenance operations, based on standard quality operational requirements which are outlined in detail in Appendix A.

Operations Months	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Pest Control (only if a threat to the asset)			Every month weeks									
Litter and rubbish collection	Every month weeks											
Grass Verges and Amenity Lawn Areas			Every 7 days									
Meadow Grass Areas (all operations)			Cut in early March if Ground condition allow					Cut after main flowering period from August. Cut regeneration growth as required in September and October				
Shrubs	Every month											
Rank Weed Control			Every month									
Annual Defective Plant Replacement											[Replanting of Failures]]	
Fertilising Shrub Areas Only				During April following Practical Completion.								

7.0 Management & Maintenance Responsibilities

7.11. Management & Maintenance Responsibilities

- 7.11.1. The responsibility for carrying out all management actions identified within this document will fall to the following parties:

Pre-Construction and Construction Phase responsibilities

These will fall to the J G Hale Construction team, including management team, with the day to day responsibilities falling to the site manager. As identified in earlier toll kit talks and provision of the agreed restrictive practices information, all relevant materials will be communicated to the relevant individuals, prior to commencement on site. It will be the responsibility of the J G Hale Construction Management team to ensure any new site staff are suitably briefed on the restriction of working practices required by this document and planning conditions, to protect the GI assets and wildlife.

Establishment and 12 Month Maintenance and Management

The management and maintenance post-construction of all will be the responsibility of the development team, as above.

Longer Term Responsibilities

The long-term management and maintenance responsibilities, post-construction and 12 month defects period, will be the responsibility of Linc Cymru.

- 7.11.2. This document assumes that requirements will be implemented by competent landscape managers and operatives, who are responsible for the application of best practice standards are all relevant health and safety procedures, protection of the environment, avoidance of pollution and protection of protected species and habitats. The identified management objectives and tasks in no way remove their responsibilities to current, or any future, statutory and best practice procedures, or obligations. Where conflicts may arise, these will need to be resolved in the spirit of the management requirements.

8.0 Monitoring, Species Licencing Requirements, Remedial & Replacement Measures

8.11. Overview and Monitoring

8.11.1. As all plants are living organisms and can respond differently to varying ground and micro-climate conditions, it is important that a periodic review of the Management Plan be carried out following implementation. This should allow review of the intended outcomes and allow revision of management operations, responding to site circumstances and the success rate of different plant species which may require amended management and planting design evolution to achieve the identified ‘aim’.

8.11.2. The following operations assume suitable competent and trained landscape maintenance operatives carry out these tasks following best practice guidance, as specified within this document. The suitability of operatives should be assessed by a suitably qualified and experienced landscape professional before the commencement of operations. The quality of their work should also be monitored on a regular basis, following an agreed quality standard.

8.12. Species Licencing Requirements

8.2.1 A licence from NRW, relating to the presence of roosting bats, will be required to permit the demolition of the existing building during the construction phase of the proposed development. No licensing requirements apply to the operational or management works based on survey work completed to date. In the event that species such as roosting bats were discovered on site, appropriate measures would be put in place as advised by an ecologist.

8.13. Ecological Watching Brief During Construction (Ecological Clerk of Work Role)

8.3.1 Ecological supervision during site preparation and enabling works primarily relates to the presence of roosting bats (see 8.2.1 above) and nesting birds. Clearance of woody vegetation including trees and dense scrub will avoid the breeding bird season (typically March – August). Vegetation clearance works within this time period will be undertaken

under direct ecological supervision. Works relating to the demolition of the existing buildings will be subject to a licence application to NRW and will follow the bat mitigation method statement.

8.14. Process of Annual Review, Consultation, Reporting

8.14.1. Review of the retained and proposed landscape assets by a Chartered Landscape Architect and Suitably Qualified Ecologist, with knowledge of the design intent is proposed each year up to year 7 following completion of the construction stage. Further reviews for the remaining 3 years of the management plan will be recommended as part of the year 7 review process, as required to achieve the target/desired condition of each of the landscape components. Following each annual review a report will be provided to Linc Cymru with a summary of the success and recommendations for additional management of the landscape assets, as considered appropriate to the overall management aims and objectives.

8.15. Length of Plan, Method of Review and Process of Updating

8.15.1. This initial monitoring and reviewing process identified within this plan are for a 10 year period. Management tasks identify the relevant review periods for each prescriptive management objective within this initial 10 year period. In year 10 a site and document review, by a Chartered Landscape Architect and Suitably Qualified Ecologist, should review the initial document aims and assess the need for ongoing formal management, resulting in a redrafted document for the coming 10 year period.

Appendix A:
Landscape Maintenance & Management Qualitative Standards

LANDSCAPE MAINTENANCE & MANAGEMENT QUALITATIVE STANDARDS

GENERALLY

OBJECTIVES

The works are to be maintained to a high standard. They must be kept neat and clean at all times; weed and litter free, hard surfaces free from any soil or mud, mulch or other undesirable material, with all planting in a healthy state. Particular attention to ensuring that the works themselves do not cause inconvenience or danger to the public.

- The first aim is to successfully establish the landscape components and their diversity relevant to the various design aims across the site.
- Secondly, once established, manage the landscape whilst enhancing biodiversity and contributing to local habitats.

To this end the use of chemical pest, weed or fungal control should be minimised, hand weeding being the preference and pest/fungal control only when threatening the establishment and success of the landscape components.

Visits per annum as Maintenance Schedule Table, attached

WEATHER CONDITIONS

Re-planting, pruning, cultivation, grass cutting and herbicide application shall be carried out in suitable weather conditions using horticultural best practice. Replanting shall be carried out between November and January of each year.

WATERING

Only when required to maintain health and vigorous growth.

- Quantity: Wet to field capacity.
- Application: Do not damage or loosen plants.
- Compacted soil: Loosen or scoop out, to direct water to rootzone.
- Frequency: Check weekly throughout first year, as necessary for the continued thriving of all planting and during declared droughts.

Tree watering bags should be used for all street trees during extended dry spells and/or the ground becomes too dry, watering manually to field capacity becomes ineffective or tree have clear signs of desiccation.

DISPOSAL OF ARISING

General: Unless specified otherwise, dispose of arisings off site.

LITTER

- Extraneous rubbish: Collect and remove from site.

CLEANLINESS

- Soil and arisings: Remove from hard surfaces.
- General: Leave the works in a clean, tidy condition at completion and after any maintenance operations.

ANNUAL MULCHING

Supply and spread additional mulch, as originally specified, to maintain a thickness of 50 mm across the entire planting beds.

GRASSED AREAS

MAINTENANCE OF GRASSED AREAS

General: Maintain turf in a manner appropriate to the intended use.

- Soil and grass:
 - Condition: Maintain a healthy vigorous sward, free from disease, fungal growth, discolouration, scorch or wilt.
 - Waterlogging and compaction: Prevent.
 - Damage: Repair trampling, abrasion or scalping.
- Ornamental lawns: Maintain reasonably free from moss, excessive thatch, weeds, frost heave, worm casts and mole hills.
 - Edges: Neat and well defined, in clean straight lines or smooth flowing curves.
- Litter and fallen leaves: Remove regularly to maintain a neat appearance.

GRASS CUTTING GENERALLY

- Before mowing: Remove litter, rubbish and debris.
- Finish: Neat and even, without surface rutting, compaction or damage to grass.
- Edges: Leave neat and well defined. Neatly trim around obstructions.
- Adjoining hard areas: Sweep clear and remove arisings.

GRASS CUTTING MACHINES

Must be appropriate to the grass cutting operation required, taking due regard to grass type, mowing specification, ground contour and condition. Machinery is to be well maintained and correctly adjusted to give a clean even cut without damaging the grass.

TREE STEMS

Precautions: Do not allow nylon filament rotary cutters and other mechanical tools closer than 100 mm to the stem of any tree.

- Operations close to stems: Complete using hand tools.

MOWING LAWN GRASS AND 1 METRE WIDE MOWING STRIPS ADJACENT TO ALL PATH ABUTTING GRASS AREAS OF ANY MIX

- Complete every ten days between February and November inclusive, or as necessary.
- Cut to 35mm height.
- Arisings: Remove

EDGES TO SEEDED AND TURFED AREAS

- Location: Planting beds and around newly planted trees.
- Timing: After seeded areas are well established.
- Edges: Cut to clean straight lines or smooth curves. Draw back soil to permit edging.
- Arisings: Remove.

RE-FORMING GRASS EDGES

- Location: All edges.
- Edges: Draw back soil and re-form edges to clean straight lines or smooth flowing curves, sloping slightly back from vertical.

LEVELLING HOLLOWES AND BUMPS IN TURF

- Standard: To BS 7370-3, clauses 12.4 and 12.5.

SELECTIVE HERBICIDE

- Location: All Meadow and Amenity Grass Areas.
- Herbicide: Suitable for suppressing perennial weeds.
- Areas not to be sprayed: Bulb and corm planted areas when in leaf.

SHRUBS/TREES/HEDGES/HERBACEOUS

Complete as outlined in the maintenance schedule

WEED CONTROL

Carry out maintenance of the planted areas as follows:

- Keep all beds clear of weeds by hand removal with approved herbicide application to be minimised.
 - Ring weeding - maintenance ground around the base of each tree (typically 700mm diameter) completely weed free to specified diameter around all stock.
 - Maintenance and all hedge planting beds completely weed free.
 - Hand weed areas as necessary to maintain weed free.
- All debris caused by hand weeding or herbicide application shall be removed from site. Ensure weed growth immediately adjacent to plant stock is removed by hand during each visit.

LITTER COLLECTION

As part of weed control operations collect and remove all extraneous and detrimental to the appearance of the site, including paper, packaging materials, bottles, cans, and similar debris.

TREE STAKES AND TIES

- Inspection/ Maintenance times: As scheduled and immediately after strong winds.
- Stakes:
 - Replace loose, broken or decayed stakes to original specification.
 - If longer than half of clear tree stem height, cut to this height in spring. Retie to tree firmly but not tightly with a single tie.
- Ties: Adjust, refix or replace loose or defective ties, allowing for growth and to prevent chafing.
 - Where chafing has occurred, reposition or replace ties to prevent further chafing.
- Removal of stakes and ties: During spring when no longer required to support the tree.
 - Fill stake holes with lightly compacted soil.

REFIRMING OF TREES AND SHRUBS

- Timing: After strong winds, frost heave and other disturbances.
- Refirming: Tread around the base until firmly bedded.
- Collars in soil at base of tree stems, created by tree movement: Break up by fork, avoiding damage to roots. Backfill with topsoil and refirm.

PRUNING GENERALLY

- Pruning: In accordance with good horticultural and arboricultural practice.
 - Removing branches: Do not damage or tear the stem or bark.
 - Wounds: Keep as small as possible and cut cleanly back to sound wood.
 - Cutting: Make cuts above and sloping away from an outward facing healthy bud, angled so that water will not collect on cut area.
 - Larger branches: Prune neither flush nor leaving a stub, but using the branch bark ridge or branch collar as a pruning guide.
- Appearance: Thin, trim and shape each specimen appropriately to species, location, season, and stage of growth, leaving a well-balanced natural appearance.
- Tools: Use clean sharp secateurs, hand saws or other approved tools. Trim off ragged edges of bark or wood with a sharp knife.

PRUNING OF EXCESSIVE OVERHANG

- Timing: During monthly visits.
- Operations: Remove growth encroaching onto grassed areas, paths, roads, signs, sightlines and road lighting luminaires.

PRUNING OF EXCESSIVE HEIGHT

- Timing: As instructed.
- Operations: Remove excessive height as instructed.

PRUNING TREES AND SHRUBS

- Standard: To BS 7370-4. .

PRUNING TREES AND SHRUBS

- Standard: To BS 7370-4.

FORMATIVE PRUNING OF YOUNG TREES

- Standard: Type and timing of pruning operations to suit the plant species.
- Time of year: Do not prune during the late winter/ early spring sap flow period.
- Young trees up to 4 m high:

Crown prune by removing dead branches and reducing selected side branches by one third to preserve a well-balanced head and ensure the development of a single strong leader. Remove duplicated branches and potentially weak or tight forks. In each case cut back to live wood.

- Whips or feathered trees: Do not prune.

PRUNING ORNAMENTAL SHRUBS

- General: Prune to encourage healthy and bushy growth and desirable ornamental features, e.g. flowers, fruit, autumn colour, stem colour.

-See Table A for specific requirements

- Suckers: Remove by cutting back level with the source stem or root.

PRUNING FLOWERING SPECIES OF SHRUBS AND ROSES

- Time of year:

-See Table A for specific requirements.

-Winter flowering shrubs: Spring.

-Shrubs flowering between March and July: Immediately after the flowering period.

-Shrubs flowering between July and October: Back to old wood in winter.

Rose bushes: Early spring to encourage basal growths and a balanced, compact habit.

TRIMMING HEDGES

- Operations:

-Form: Trim carefully and neatly to regular height (to be agreed based on establishment rate), line and shape, with the width at the top less than that at the base.

- Tools/ Cutting: Suitable mechanical cutters.

REMOVAL OF DEAD PLANT MATERIAL

- Operations: At the end of the growing season, check all shrubs and remove all dead foliage, dead wood, and broken or damaged branches and stems.

DEAD AND DISEASED PLANTS

- Removal: As soon as possible.
- Replacement: In the next scheduled round of replacement planting.

REINSTATEMENT OF SHRUB/ HERBACEOUS AREAS

- Dead and damaged plants: Remove.
- Replacement plants:
- Use pits and plants: To original specification or to match the size of adjacent or nearby plants of the same species, whichever is the greater.
- Additional requirements: Submit details and cost of plants before ordering.
- Dressing: Controlled release fertilizer:
- Type: As Enmag or similar.
- Application rate: As manufacturer's recommendations.

WEED CONTROL GENERALLY

- Weed tolerance: Weed to clear ground every two weeks.
- Adjacent plants, trees and grass: Do not damage.

HAND WEEDING

- General: Remove weeds entirely, including roots.
- Disturbance: Remove the minimum quantity of soil, and disturb plants, bulbs and mulched surfaces as little as possible.
- Completion: Rake area to a neat, clean condition.
- Mulch: Reinstate to original depth.

HERBICIDE APPLICATION AND USE

Herbicide application should be minimised. Hand weeding preferred. Ensure that all herbicide application is undertaken by a trained operative, in accordance with the manufacturer's directions and with the Health and Safety (Agriculture) (Poisonous Substance) regulations where they apply. Ensure at all times that the public are not subject to any hazard from the use of chemicals and that all equipment, containers and materials are kept in a secure place when on site and not in use, and that all equipment containers etc. are removed from site at the end of each day. Herbicide application can be carried out at all times when there will be at least possible danger to the public.

SOIL AERATION

- Compacted soil surfaces:
 - Prick up: To aerate the soil of root areas and break surface crust.
 - Size of lumps: Reduce to crumb and level off.
- Damage: Do not damage plants and their roots.

SOIL LEVEL ADJUSTMENT

- Level of soil/mulch at edges of beds: Reduce to 30 mm below adjacent grass or hard surface.
 - Arisings (if any): Spread evenly over the bed.

MAINTENANCE OF LOOSE MULCH

- Thickness (minimum): 50 mm.
 - Top up: Annually in the first 3 years.
- Mulch spill on adjacent areas: Remove weeds and rubbish and return to planted area.
- Weeding: Remove weeds growing on or in mulch by hand weeding.

TREE WORK

TREE WORK GENERALLY

- Identification: Before starting work agree which trees, shrubs and hedges are to be removed or pruned.
- Protection: Avoid damage to neighbouring trees, plants and property.
- Standards: To BS 3998 and Health & Safety Executive (HSE) 'Forestry and arboriculture safety leaflets'.
- Removing branches: Cut as Arboricultural Association Leaflet 'Mature tree management'. Cut vertical branches similarly, with no more slope on the cut surface than is necessary to shed rainwater.
- Appearance: Leave trees with a well-balanced natural appearance.
- Chain saw work: Operatives must hold a Certificate of Competence.
- Tree work: To be carried out by an approved member of the Arboricultural Association.

ADDITIONAL WORK

- Defective, diseased, unsafe or weak parts of trees additional to those scheduled for attention: Give notice if detected.

PREVENTION OF WOUND BLEEDING

- Standard: To BS 3998, clause 8.

PREVENTION OF DISEASE TRANSMISSION

- Standard: To BS 3998, clause 9.

CLEANING OUT AND DEADWOODING

- Remove:
 - Dead, dying, or diseased wood, broken branches and stubs.
 - Fungal growths and fruiting bodies.
 - Rubbish, windblown or accumulated in branch forks.
 - Wires, clamps, boards and metal objects, if removable without causing further damage and not part of a support structure that is to be retained.
 - Other unwanted objects, e.g. tree houses, swings.

CUTTING AND PRUNING GENERALLY

- Tools: Appropriate, well maintained and sharp.
- Final pruning cuts:
 - Chainsaws: Do not use on branches of less than 50 mm diameter.
 - Hand saws: Form a smooth cut surface.
 - Anvil type secateurs: Do not use.
- Removing branches: Do not damage or tear the stem.
- Wounds: Keep as small as possible, cut cleanly back to sound wood leaving a smooth surface, and angled so that water will not collect on the cut area.
- Cutting: Cut at a fork or at the main stem to avoid stumps wherever possible. Large branches: Remove only with prior approval.
 - Remove in small sections and lower to ground with ropes and slings.
- Dead branches and stubs: When removing, do not cut into live wood.
- Unsafe branches: Remove epicormic shoots and potentially weak forks that could fail in adverse weather conditions.

CROWN LIFTING

- Clearances: Remove branch systems to give clearance.
 - Height: 2.0m.
- Removing branches: Remove whole branches back to the stem, or cut lower portions of branches back to lateral or sublateral buds or branches. Do not leave stumps.

BARK DAMAGE

- Wounds:
 - Do not attempt to stop sap bleeding.
 - Bark: Remove ragged edges using a sharp knife.
 - Wood: Remove splintered wood from deep wounds.
 - Size: Keep wounds as small as possible.

REMOVING TREES, SHRUBS AND HEDGES

- Standards: To BS 3998, Appendix A and Health & Safety Executive (HSE)/ Arboricultural and Forestry Advisory Group Safety Leaflets.
- Existing services: Check for below and above ground services. Give notice if they may be affected.
- Shrubs and smaller trees: Cut down and grub up roots.
- Tree stumps:
 - Removal: Remove mechanically to a minimum depth of 300 mm below ground level.
 - Removal by winching: Give notice. Do not use other trees as supports or anchors.
- Protection: Avoid damage to neighbouring trees, plants and property.
- Work near retained trees: Where tree canopies overlap and in confined spaces generally, take down trees carefully in small sections to avoid damage to adjacent trees that are to be retained.
- Filling holes:
 - Material: Use as-dug material and/ or imported soil as required.
 - Finishing: Consolidate and grade to marry in with surrounding ground level.