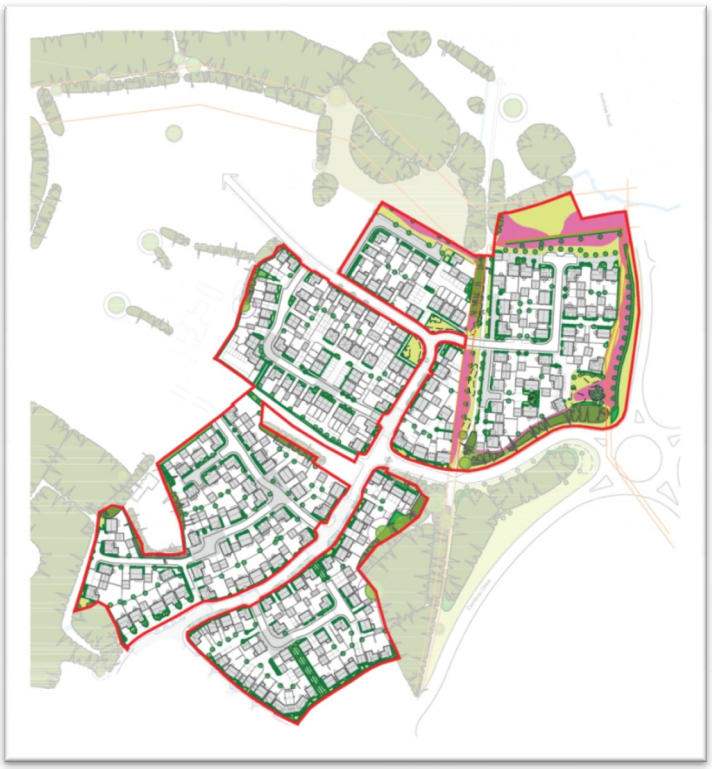
BARRATT HOMES

SOUTH SEBASTOPOL DEVELOPMENT

BARRATT PHASE 1 LANDSCAPE MANAGEMENT PLAN



soltysbrewster
CONSULTING
ECOLOGY

4 Stangate House
Stanwell Road
Penarth
Vale of Glamorgan
CF64 2AA

Telephone:- 029 2040 8476
Facsimile:- 029 2040 8482
e-mail:- enquiry@soltysbrewster.co.uk
Web Site:- www.soltysbrewster.com

CarbonNeutral Company

Landscape **Assessment**
Landscape **Planning**
Landscape **Design**

Intentionally blank

Applicant: BARRATT HOMES, SOUTH WALES

SEBASTOPOL DEVELOPMENT

BARRATT PHASE 1 LANDSCAPE MANAGEMENT PLAN

Document Ref: 1040902/R01

Issue	Revision	Stage	Date	Approved by	Signed
1	A	Internal Draft	09-02-11	Simon Brewster (Director)	
2	B	Draft	01-03-11	Simon Brewster (Director)	
3	C	ISSUED	03-03-11	Simon Brewster (Director)	

Intentionally blank

CONTENTS

Figures

Intentionally blank

i Foreword

Management Plan Context

Subsequent to a refreshed outline planning application in January 2011 the following management plan document addresses the landscape management requirements relating to the retained and proposed landscape within the boundary of the Barratt phase 1 housing development, as illustrated in figure 1. This report has been produced by Soltys Brewster Consulting with Landscape Architecture and Ecology input, building on the principles defined within the Outline Planning Application Management Plan 1040901/R02, produced by Asbri Planning, Soltys Brewster and Waterman.

This document identifies the management needs relevant to this phase of the development, building on the management principles and objectives previously outlined. It identifies the specific long term landscape management requirements, intended by the Landscape Designers, to maintain and enhance the landscape components of this phase of the development.

Intentionally blank

1.0 INTRODUCTION

1.1 This document comprises of a detailed management plan covering all retained and proposed landscape areas and open spaces within the Barratt Phase 1 development of South Sebastopol, Cwmbran. This management plan should be treated as a specific guide to management operations relevant to the specific phase of development and phased site area only.

See figure 1 which identified the extent of this phase.

See figure 2 which identifies the intended phasing of the wider site.

1.2 This document identifies the long term objectives for specific areas and identifies management requirements to achieve the original design goals in a pragmatic, manner as mechanisms to deliver the quality standards and wider strategic objectives. However it recognised that landscape is a living and changing thing, therefore this management plan should be regarded as a 'living document' which will be updated during the life of the development and review will be required to readdress management tasks, guided by the 'long term objectives' for each area, or component.

1.3 The management plan is required by Torfaen County Borough Council to secure the long-term management of the landscape structure, open space, areas of nature conservation value and public access for informal recreation.

Competency of Implementation

1.4 **This document is not intended as a fully prescriptive 'maintenance' schedule and identifies key 'management' requirements only. It assumes that the requirements will be implemented by competent landscape managers and operatives, who are responsible for the application of best practice standards and 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.**

2.0 MANAGEMENT PLAN STRATEGIC VISION

Overarching Objectives

2.1 The following guiding objectives are outlined in greater detail within the overall site Outline Planning Application Management Plan 1040901/R02.

2.2 The landscape and open space is an integral part of the development framework for the site and the vision is to design and manage the site, responding both to the changing needs of residents and to the changing landscape to:-

- Protect species and habitats of significance;
- Provide a valuable recreational asset, with a stimulating range of spaces and landscapes, for the enjoyment and use by the community, and;
- Enhance the biodiversity value of the site, contributing to a long-term synergy between the community and the natural environment.

2.3 Within the wider site some areas have a level of landscape and ecological interest that warrants their protection from intrusive human activity. A key principle of the vision for the community is the identification, protection and enhancement of such areas. Within the majority of areas access will be encouraged in order to promote social cohesion, health and recreation, and to provide a safe and well used environment for individuals and families to enjoy.

2.4 The accessible open areas will play a vital role in providing the formal and informal amenity space for residents to enjoy the area. Open space is allocated for playing fields, informal areas for walking and play, integrating access with the canal and wider recreational corridor, and general recreation in woodland and parkland areas for the enjoyment of the community.

2.5 In addition, a network of pedestrian and cycle routes and recreational corridors linking the residential areas with wider recreational routes will be incorporated into this Phase of the development. They will provide the opportunity for residents to move through, use and enjoy the open space without dependence on the car. Footpaths and cycle-ways have been

designed to be safe and welcoming, and to encourage people to interact with their natural landscape and neighbourhood in a positive and managed way.

2.6 The vision for the development will be translated into reality through reserved matters detailed design and management plans that offer pragmatic, flexible, long-term and sustainable mechanisms to deliver the quality standards agreed with Torfaen County Borough Council.

Phased Context

2.7 The overall South Sebastopol proposal aims to development approximately 1200 dwellings together with associated works on the 100.6 ha site to the south of Sebastopol, Torfaen.

2.8 The scheme has been developed with careful consideration of environmental features of the site with the aim of creating an integrated, comprehensive and sustainable development that recognises the key role of the existing landscape and the retention of those existing landscape features. These are the canal, the central woodland, streams and associated riparian vegetation and the site hedges.

2.9 One of the key features of the scheme is the retention and enhancement of green corridors throughout the site, including large areas of green space running east-west through the site along its northern boundary and its centre. These have been developed around the retained areas of ecologically sensitive land identified within the various ecological reports. These green spaces, together with the canal running north-south through the centre of the site, serve to break the site into four areas.

2.10 The Outline Planning Application *Development Brief and Design and Access Statement* identified how the scheme has been developed with careful regard to the areas of ecological value and maintenance of hedgerows and trees within the development parcels.

2.11 The green corridors form part of a movement framework for the site which retains and enhances the considerable existing network of cycleways and footpaths wherever possible and provides new road, cycle and footpath links to create an integrated and comprehensive movement strategy for the site.

3.0 LANDSCAPE COMPONENTS STRATEGIC CONTEXT

Existing Habitats and Species

3.1 The following habitats have been identified within this phase (Phase 1) of the development:

- semi-natural broad-leaved woodlands mostly on steep valley sides;
- very occasional broad-leaved or mixed plantation woodlands and amenity planting, particularly long the A 4051;
- thorn scrub and secondary woodland occurring rather rarely in small patches;
- hedges, mostly modestly species-rich;
- bramble scrub mostly at field edges;
- stands of bracken sometimes with tall semi-ruderal herbs (e.g. rose bay willow herb) in similar situations to thorn scrub;
- rough mesotrophic (semi-improved) grassland of limited extent, mostly on road and track verges, but also along the northern boundary of the phase;
- small amounts of semi-improved agricultural grassland;
- small amounts of improved agricultural grassland; and
- amenity-turf (e.g. along the sides of the cycle track);

3.2 The following protected species have been identified within this phase of the site:

- Roosting, commuting and foraging bats;
- Birds; and
- Terrestrial Invertebrates (Including Glow worm, Lampyris noctiluca, from desktop study)

3.3 Measures to ensure protection of such species and any associated mitigation measures are not addressed within this plan – these measures are included within the ecology chapter of the submitted Environmental Statement.

Environmental information

3.4 A substantial repository of environmental information has been collected in relation to the site as part of its planning history. This has been used to inform the suite of management plans. Reference should be made to Chapter 5 of the Environmental Statement which

provides a summary of ecological information and full references of the original study documentation.

3.5 In addition to this, a tree survey (ref. E11338-R-2-2-2-101212-BC) has also informed the production of this management plan.

Historical Management of Landscape and Habitats

3.6 Historical management of the site was undertaken on an ad hoc individual ownership basis within no known set management framework. Practices generally comprise the management of grassland for pastoral uses. Woodland areas were generally left unmanaged.

3.7 The landscape vision is to create a high quality landscape and setting for the new development that respects, conserves and enhances the main existing landscape features of value, as described in the foregoing sections. The revised landscape design aims to address current updated site constraints, whilst aiming to create new areas of landscape, which will create usable and engaging public open space, assisting in the visual integration of the proposed development, bringing vibrancy, identity and accessibility to public areas.

3.8 To realise the landscape vision, the strategic landscape areas have been revised, based on the following principles.

Retention of:

- Principal existing woodland blocks;
- Water courses associated with woodland;
- Ecologically important hedgerows, where possible;
- The majority of the valuable trees on site;
- Areas of conservation grassland; and
- The canal corridor and its existing character.

The introduction of:

- New woodland block to contribute to the retained structure;
- New hedgerows and the improvement of existing hedgerows;
- New structural tree planting to contribute to the site, its setting, gateway, access routes and village and neighbourhood identity;
- New grassland meadow mixes to contribute to biodiversity and individual site area identity;
- The linking of areas of existing and new vegetation to create good connectivity;
- New buffer planting adjacent to existing communities to respect their setting;
- Areas of attractive and usable public open space, integrated with the development to contribute to the creation of cohesive community; and
- The creation of inviting, visually diverse and safe public footpath links.

4.0 LANDSCAPE MANAGEMENT STRATEGIC AIMS AND OBJECTIVES

Woodland, Management Aims

4.1 The proposals aim to enhance existing and create new linkage and connectivity. It aims to deliver an integrated landscape and development plan, adding value to the development and landscape framework. Proposed plant species and woodland mixes are based on existing, mainly native, plant species. Mixes aim to contribute to the landscape and biodiversity value of retained woodlands, whilst contributing towards the character and sense of place within the proposed development.

4.2 Wet woodland, (not in this phase of development), is to be managed to enhance its value and structural importance to the site. Public access will be precluded on safety and biodiversity grounds from this woodland type only.

4.3 Existing Woodland Blocks (combination and dry woodland) should be managed to:

- Manage woodland for its ecological and landscape value rather than its potential commercial value;
- Maximise the characteristics of each woodland type, to encourage the retention and regeneration of each woodland's principal structure, to protect and enhance its composition and longevity for the future, sustaining specimen and veterans trees;
- Identify the most valuable dominant specimen trees and manage adjacent vegetation to allow them to thrive, protect and enhance the principal woodland canopy;
- Implement phased selective thinning of overcrowded canopies and over dense woodland, (being mindful of retaining the existing character of the woodland types in question and ensuring this is not damaged in the short term), with the aim to improve light levels and encourage the regeneration and diversification of the woodland floor herb layer and secondary canopy species, appropriate to each woodland type;
- Allow appropriate diversification with regenerating thicket vegetation retained in appropriate areas, to create suitable cover for nesting birds and foraging ground

species such as badger and otter. Woodland should not be managed to be all clear stemmed trees, diversity adds aesthetic and biodiversity value;

- Promote responsible recreational access and use, for the benefit of the new community, (with the exception of the woodland/scrub to the north west of the A4051 roundabout), however overuse or damaging recreational activity should be iteratively managed to ensure these do not reduce the landscape and biodiversity value of the woodland asset on site. Sections of heavily used woodland may need areas to be secured from public access for periods of time up to 5 years, to allow regeneration to be protected and managed;
- Wet woodland (not in this phase of the development, but on the wider site) is to be secured from public access to protect its structure and composition, for public safety and to encourage and protect its use by otters;
- Increase the physical and species diversity to enhance biodiversity and create three dimensionally complex woodland structures with recreation benefits and complementary aesthetic qualities. This should aim to enhance the physical attributes of each woodland type;
- Woodland immediately along stream courses should be allowed to develop a denser vegetation cover to protect and promote their use as importance wildlife corridors;
- Regularly cut back and treat (as necessary) undesirable invasive and non-native species to protect woodland from its effects;
- Where woodland backs onto development ensure these areas are not used as convenient locations for the dumping of garden or other waste;
- Where development faces woodland, management will aim to promote the woodland appearance as an attractive and beneficial site feature. This may require selective crown lifting to reduce shading and allow view into woodland areas to promote a safe environment. These detailed considerations will be addressed along with the landscape design and management plan production for each detailed area, and;
- Woodland management should be jointly reviewed by a landscape architect and ecologist every five years, including revision and adjustment management objectives and operations.

4.4 The wet woodland (in the wider site but not within phase 1), is currently unmanaged and a management regime will be implemented to improve its structural and species diversity. This will be done through reintroduction of a coppice rotation, selective thinning and management of invasive species. Coppicing of the wet woodland area is proposed to be on a 20-30 year rotation.

Hedgerows

4.5 The hedgerow network consists of a combination of existing hedgerows (of varying quality, value and physical character) and new hedgerows implemented as part of each development phase, principally illustrated on the Strategic Landscape Plan. Retained and new hedgerows collectively create an important structure across the site, providing a wildlife corridor network for foraging and movement and significant physical barriers and boundaries, linked to woodland, defining and structuring the physical environment. In all cases hedgerows should be managed as dense continuous vegetation corridors, however some will require management as short clipped hedges, close to the frontage of development for example and some can be managed as mature, unclipped hedgerow corridors. All will require management.

4.6 The proposed management of each hedgerow depends on the location, function and adjacent land use. Although Reserved Matters landscape design and management plans will identify individual hedgerow types, which dictate their future management, it is envisaged (at the Strategic Outline stage), that there are likely to be three principal hedgerow types:

- Dense mature hedgerows requiring infrequent management;
- Dense hedgerows cut back and laid on a regular management cycle, similar to traditional field boundaries, and;
- Lower, regularly clipped hedgerows where visibility or increased formality and the retention of views are a priority for safety, management of adjacent areas, or for identified design reasons.

Specimen Trees

4.7 There are approximately 80 individual retained trees, in addition to tree groups, retained on site. These are mostly mature trees positioned within existing hedgerows and on woodland edges. The trees are predominantly native species, with *Quercus robur* (Pedunculate Oak), *Fraxinus excelsior* (Ash) and *Alnus glutinosa* (Alder), being the most common. The majority of high quality trees have been retained within the revised 2011 masterplan and Strategic Landscape Plan and around 500 new specimen trees are proposed within the Strategic Landscape Plan covering the whole site.

4.8 Existing mature trees should be surveyed by a fully qualified arboriculturist every two years, to assess the condition and safety of each. Any deterioration in condition should result in more frequent inspection and trees assessed as being unsafe should be cut back, as necessary to make safe. All works to existing mature trees should be checked with the Tree Officer at Torfaen County Borough Council, to check if they have TPO protection and appropriate approvals put in place, as relevant. No existing mature trees should be cut down, lopped or pruned unless there is clear evidence that these operations are in the best interest of the trees health and longevity, or there is a clear Health and Safety issue which needs to be addressed.

4.9 Newly planted trees are to be checked, as identified in the relevant Reserved Matters Management Plan, to ensure they are straight and upright, have no damage caused to their crowns or stems by stakes, or maintenance and they are watered, only during drought conditions within the first 5 years following planting and then only when necessary to avoid leaf loss or death. Any newly planted trees which die should be replaced in the following season with the same species to the same specification and quality. All stakes should be removed in May when this initial support is no longer required. This should typically be 3 years following planting and no more that five years, if appropriate ground conditions prevail.

4.10 Trees that overhang the highway from neighbouring properties are the responsibility of the individual landowners that must ensure they do not obstruct traffic, obscure signs or adversely affect forward visibility along the road. A qualified arboriculturist should be

responsible for determining appropriate management of trees in shared areas and along highways.

4.11 Pruning should be undertaken only if required for safety reasons.

4.12 Felling should be on the advice of an arboriculturist. Felling of any tree should be regarded as a last resort measure. It should be felled only if it is diseased or damaged and constitutes a safety risk, which requires felling of the tree rather than limited tree surgery.

4.13 When a tree has been felled because it was diseased or damaged, it should be replaced with the same species, or an appropriate alternate species, where relevant. Normally the tree should be planted adjacent to the stump of the felled tree. If the tree was felled because it was dangerous by virtue of its location, a replacement should be planted at an acceptable nearby location.

4.14 Prior to any pruning or felling works of larger trees (typically with a diameter at chest height in excess of 300mm), the tree should be assessed for its potential to support roosting bats. Identification of features such as rot holes, split limbs or loose bark could be undertaken by an arboriculturalist in the first instance with subsequent assessment and survey by a suitably experienced ecologist as appropriate. Felling or pruning works would also need to consider avoidance of the bird nesting season, which typically runs from March – August inclusive.

Grassland

4.15 Non-ecologically sensitive areas of open grassland are to be accessible to the public and residents.

- Playing Fields (not within this phase of development) will be managed and maintained in accordance with current good practice and the Playing Field Maintenance Specification, agreed with Torfaen Council.
- Recreational Grassland will be managed and maintained for informal games, walking and amenity use, with open aspects with unrestricted access for the enjoyment of all users, where conservation issues are not a constraint.

- Conservation Grassland (MG5 + MG23) will be retained and managed within the aim of enhancing its habitat value whilst retaining any existing public access.

4.16 Six different new grassland mixes are proposed in addition to retained grass.

1. Woodland Wildflower Mix
2. Wildflower Meadow Mix
3. Hedgerow Wildflower Mix
4. Amenity Grass Mix
5. Sports Amenity Mix
6. Flowering Lawn Grass Mix

Of these, the Woodland Wildflower is not to be regularly cut.

4.17 The following should not be cut between December and mid August each year. With a monthly cut in late August (following completion of flowering and seed dispersal), September, October and November. Any of these mixes adjacent to hedgerows (within 500mm) should remain uncut to retain cover for the benefit of wildlife.

1. Wildflower Meadow Mix
2. Hedgerow Wildflower Mix
3. Flowering Lawn Grass Mix

4.18 The remaining should be cut regularly, as with any amenity grass mix, typically weekly or fortnightly during the normal growing season.

4. Amenity Grass Mix
5. Sports Amenity Mix

MG5 Grassland (Not in Phase 1 Area)

4.19 MG5 grassland (conservation grassland) is a traditionally grazed hay meadow and this management will be replicated where possible. The grazing of this habitat is undertaken to keep the more aggressive grass species to a minimum and allow other species to colonise, and hence provide a greater species diversity. Grazing here is however not an option given the residential nature of the site post development. To compensate for this Yellow rattle (*Rhinanthus minor*) will be sown (via scarifying the soil in areas) in spring of a given year and

cut in August once seed plants have had a chance to germinate. Yellow rattle is a semi-parasitic plant that reduces the grass dominance and therefore increases species diversity. As such compensating for lack of addition nutrients from lack of grazing is not considered necessary.

MG23 Grassland (Not in Phase 1 Area)

4.20 MG23 grassland (conservation grassland) is typical of ill-drained pastures on moderately acid to neutral, peaty and mineral soils in the cool and rainy lowlands of western Britain. As for the MG5 grassland grazing is not possible given the residential nature of the development therefore scrub clearance and annual cutting in September /October will be undertaken as required to prevent this habitat from turning into Woodland W7 transition. All arisings to be removed from site.

Japanese Knotweed and Himalayan Balsam

4.21 The existing Japanese Knotweed on site should be eradicated within each phased development area prior to development and should therefore not be a significant management operation. However both Japanese Knotweed and Himalayan Balsam are widespread invasive species which commonly spread along river and canal corridors, it is therefore important to check the site during April and May each year and treat any identified areas following best practice.

4.22 It is important to understand that with Japanese Knotweed there is a need to assess each infestation individually and develop a best practice approach based on each site's unique problem. Key considerations include:

- Situation / location;
- Proximity to water courses;
- Size of infestation;
- Site access;
- Presence of other vegetation;
- Eventual intended land use / digging requirements, and;
- Cost.

4.23 The most appropriate treatment method for small quantities, which will only be experienced if annual checks and treatment are thorough, is spraying with a suitable chemical, approved for use within or adjacent to the areas in question. The restrictions associated with treatment adjacent to water should be noted in particular.

4.24 A suitable certified and qualified operative should be retained to immediately commence treatment and to continue until eradicated.

4.25 Himalayan Balsam is more easily controlled by monthly cutting back and ensuring it is not allowed to flower. This will control and eradicate any small infestations. Chemical treatment, as with Japanese Knotweed, is likely to be more practical for any establishing or larger stands.

5.0 SPECIFIC LANDSCAPE MANAGEMENT REQUIREMENTS

5.1 Refer to figure 3, 'Landscape Management Tasks, Key Plan' for the site location of landscape components requiring specific management operations, in addition to the standard management requirements for each landscape component type.

5.2 The reference figures following the following key structure.

Management Types

W Woodland

H Hedges

G Grass (Amenity)

MG Meadow Grass

Numbering

1 Sequential numbering of each management type

Sub Reference

(E) Existing

(N) New

5.3 WOODLAND

Monitoring and Reactive Management

5.3.1 Beyond the identified prescriptive woodland management tasks, outlined below, woodland should require only responsive management to address a change in the balance of woodland blocks. This can typically be caused by;

- the appearance of an invasive species;
- decay or die back in crowns, individual specimens, species, or groups;
- damage by weather, or other external influences (fire etc); and
- a change in the equilibrium of the woodland, such as pests, fungal, or viral attack of a key single species, or multiple species, such as sudden oak death (Phytophthora ramorum).

5.3.2 In these circumstances a management response at as early a stage as possible is required, to contain the impact, with the aim of maintaining a healthily and sustainable equilibrium within each woodland block and the woodland asset across the site. It is not possible to anticipate the nature of these changes so an annual inspection by a suitably qualified professional to specifically identify any new issues of biodiversity, landscape and visual, or arboricultural concerns is recommended.

Woodland Tree Safety Inspections

5.3.3 In addition to periodic wider woodland checks, outlined above, a biennial arboricultural Health and Safety assessment of all trees adjacent to and within 'falling distance' of properties and highways, is recommended to minimise the risk of property damage, or injury. Trees should be felled immediately on identification of significant concerns and should be replanted with a good quality replacement of the same species.

W1 (E)

Description

5.3.4 A poorly managed existing small woodland block of mainly willow, alder and hawthorn, with some oak and other native species, with damp ground conditions. Straggly vegetation, material overhanging the highway having been inappropriately flailed, with poor density and poor visual quality.

Long Term Objectives

5.3.5 Develop as a dense tall screen of willow, alder, hawthorn and oak, to provide definition and visual screening along this boundary of the site, providing denser cover to encourage increased wildlife corridor usage.

Management Tasks (Year 1)

1) Remove the build up of rubbish and extraneous material.
2) Between November and January, cut all woody vegetation within 2 metres of the back of the existing vehicle barrier, to 300mm above adjacent ground level, using suitable chainsaw equipment. Removing all arising.

3) Interplant existing vegetation with the following mix assuming planting a 40% total area of the existing woodland, avoiding any planting within 2 metres of the back of the existing vehicle barrier.
    - 1+1 transplants at 1 per metre square of available space.
    - 10% Salix caprea
    - 40% Crataegus monogyna
    - 25% Quercus robur
    - 25% Corylus avellana

Management Tasks (Year 2 onwards)

4) From year two, on a five year cycle, coppice the largest scrubby species (Willow, Hazel, Hawthorn) (approximately 20% of the whole) by cutting to 300mm above ground. Leave Alder and Oak species to mature as standard trees.

W2 (E)

Description

5.3.6 A small existing copse and overgrown native hedge species and small trees (Alder, Willow and hawthorn, bramble) with some non-native invasive species.

Long Term Objectives

5.3.7 Retain and manage as a small copse of trees and shrubs contributing to the wider visual amenity. Retain, but control the spread of brambles.

Management Tasks (Year 1)

1) Where present, remove (grub up or treat with suitable herbicide) Buddleia and Japanese Knotweed. Coppice shrub species maintaining larger specimens as small trees. Cut bramble back to ground.

Management Tasks (Year 2 onwards)

2) Retreat any invasive species. Cut bramble back when they overgrow the areas. No further management required.

W3 (E)

Description

5.3.8 A dense block of existing principally native species along the back of properties, the majority of which is off-site.

Long Term Objectives

5.3.9 Retain with only reactive management needs as outlined earlier in this section.

HEDGES

5.3.10 Hedges and hedgerows, covered by this section, exclude formal hedges within garden boundaries, which it is assumed will be managed as clipped hedges by the occupants. There are however a series of public realm and site boundary hedges retained and proposed, which require management to achieve the intended design aims.

5.3.11 Wider site hedges fall into 3 categories;

1) Existing field boundaries of single and mixed native species;
2) Newly planted mixed native species hedges mimicking a traditional hedgerow, intended to be clipped, or managed less frequently to allow a more substantial vegetation boundary to establish; and
3) Newly planted single species hedges envisaged as a formal clipped hedge. These are either Beech, Box or Privet hedges.

Monitoring and Reactive Management

5.3.12 Beyond the identified prescriptive hedge management tasks, outlined below, hedges should require only responsive management to address any unintended issues. This can typically be caused by;

- the appearance of an invasive species (native and non-native);
- decay or die back in crowns, individual specimens, species, or groups;
- damage by weather, or other external influences (fire etc); and

- a change in the equilibrium of the plant species caused by pests, fungal, or viral attack of a key single species, or multiple species.

5.3.13 In these circumstances a management response at as early a stage as possible is required to contain the impact, with the aim of maintaining a healthily and sustainable equilibrium within each hedge and the hedge asset across the site. It is not possible to anticipate the nature of these changes, so an annual inspection by a suitably qualified professional to specifically identify any new issues of biodiversity, landscape and visual, or arboricultural concerns is recommended.

Hedgerow Tree Safety Inspections

5.3.14 In addition to periodic wider checks, outlined above, a biennial arboricultural Health and Safety assessment of all trees within hedges adjacent to and within 'falling distance' of properties and highways, is recommended to minimise the risk of property damage, or injury. Trees should be felled immediately on identification of significant concerns and should be replanted with a good quality replacement of the same species.

H1 (E)

Description

5.3.15 An existing single species (hawthorn) field boundary hedge. Dense vegetation, regularly clipped to typically 1.2 metres in height. A visually strong boundary hedge.

Long Term Objectives

5.3.16 Manage as a dense native hedge boundary, regularly clipped (annually in October), allowing the height of the hedge to increase to two metres overall height.

Management Tasks (Annual)

1) Clip hedge annually, allowing an increase in the height of approximately 200mm per year, up to an overall height of 2 metres, using a suitable sharp, tractor mounted flail hedge cutter, in October each year.

H2 (E) + H3(N)

Description

5.3.17 An existing, reasonably open and unclipped native hedge under planted and extended in length by a newly planted diverse native hedge mix. The existing hedge is an important visual boundary with a retained property, along the back gardens of new properties. The hedge contains some specimen trees.

Long Term Objectives

5.3.18 To establish an improved, denser linear hedge boundary, with height, as a wildlife corridor and significant visual landscape structural component of the site.

Management Tasks (Year 1)

1) Within the existing hedge, between November and February, cut back all Hawthorn, Hazel, Blackthorn, Elder and Willow to 300mm above ground level, removing arisings from site.

Management Tasks (Year 2)

2) Review the regeneration of cut back vegetation during the summer and in the following autumn/winter period interplant any gaps with transplants of the same species present in the hedge.

Management Tasks (Year 5)

3) Review the establishment of the new hedge and assess the appropriateness to lay the hedge as par of a traditional boundary management with accepted landscape and biodiversity benefits.

H4 (E)

Description

5.3.19 An existing, principally holly, very dense and tightly clipped field boundary hedge along Bevin Lane. Clipped to approximately 1.8 metres high.

Long Term Objectives

5.3.20 Sustain this significant dense hedge feature.

Management Tasks (Annual)

1) Clip hedge annually, using a suitable sharp, tractor mounted flail hedge cutter, in October, maintaining the height and spread of the current hedge.

H5 (E)

Description

5.3.21 An existing, principally native mixed species hedge, dense and regularly clipped field boundary hedge along the existing lane. Clipped to approximately 1.8 metres high.

Long Term Objectives

5.3.22 Sustain this significant dense hedge feature.

Management Tasks (Annual)

1) Clip hedge annually, using a suitable sharp, tractor mounted flail hedge cutter, in October, maintaining the height and spread of the current hedge.

H6 (E)

Description

5.3.23 An existing, principally native mixed species hedge, tall and dense property boundary hedge.

Long Term Objectives

5.3.24 Sustain this significant dense hedge feature maintaining privacy between the development and the existing property.

Management Tasks

1) No programmed actions required. Trim back overhanging branches when necessary.

H7 (E)

Description

5.3.25 An existing, principally native mixed species hedge, tall and dense property boundary hedge.

Long Term Objectives

5.3.26 Sustain this significant dense hedge feature maintaining privacy between the development and the existing property. Trim back overhanging branches when necessary.

Management Tasks

1) No programmed actions required.

H8 (N)

Description

5.3.27 A new species rich structural native hedge.

Long Term Objectives

5.3.28 Sustain as a significant tall dense hedge feature of visual importance within the site.

Management Tasks (Year 1 to 5)

1) No programmed actions required. Leave the hedge to establish as a dense tall structure. Trim overhanging branches by hand held equipments, as necessary. Replant failures annually.

Management Tasks (Year 5 to 10)

2) Review the establishment and assess the appropriateness to lay the hedge as part of a traditional boundary management, with accepted landscape and biodiversity benefits, or alternatively coppice appropriate species (Crataegus, Corylus, Cornus) to encourage regeneration and thickening of vegetation, retaining trees and other species as taller unclipped features.

H9 (N)

Description

5.3.29 A new species rich structural native hedge.

Long Term Objectives

5.3.30 Sustain as a significant tall dense hedge feature of visual importance within the site.

Management Tasks (Year 1 to 5)

1) No programmed actions required. Leave the hedge to establish as a dense tall structure. Trim overhanging branches by hand held equipments, as necessary. Replant failures annually.

Management Tasks (Year 5 to 10)

2) Review the establishment and assess the appropriateness to lay the hedge as part of a traditional boundary management with accepted landscape and biodiversity benefits, or alternatively coppice appropriate species (Crataegus, Corylus, Cornus) to encourage regeneration and thickening of vegetation, retaining trees and other species as taller unclipped features.

H10 (N)

Description

5.3.31 A new species rich structural native hedge.

Long Term Objectives

5.3.32 Sustain as a significant tall dense hedge feature of visual importance within the site.

Management Tasks (Year 1 to 3)

1) No programmed actions required. Leave the hedge to establish as a dense tall structure. Trim overhanging branches by hand held equipments, as necessary. Replant failures annually.

Management Tasks (Year 4 then Annual)

2) The hedge section along the access road only. Clip annually to approximately 1.2 to 1.4 metres high as a well defined native hedge abutting existing off-site tall screen vegetation and access road. Clip using a suitable sharp, tractor mounted flail hedge cutter, in October. Leave other sections of hedge untrimmed.

H11 (N)

Description

5.3.33 A new species rich structural native hedge.

Long Term Objectives

5.3.34 Sustain as a tidily clipped dense hedge feature defining the boundary between a publicly accessible track and private gardens.

Management Tasks (Year 1 & 2)

1) No programmed actions required. Leave the hedge to establish. Trim overhanging branches by hand held equipments, as necessary. Replant failures annually.

Management Tasks (Year 3 then Annual)

2) Clip annually to approximately 1.2 metres high as a well defined native hedge boundary with visibility over the top. Clip using a suitable sharp, tractor mounted flail hedge cutter, in October. Leave other sections of hedge untrimmed.

H12 (N)

Description

5.3.35 A new species rich structural native hedge.

Long Term Objectives

5.3.36 Sustain as a significant tall dense hedge feature of visual importance within the site.

Management Tasks (Year 1 to 3)

1) No programmed actions required. Leave the hedge to establish as a dense tall structure. Trim overhanging branches by hand held equipments, as necessary.

H13 (N)

Description

5.3.37 A new species rich structural native hedge.

Long Term Objectives

5.3.38 Sustain as a tidily clipped dense hedge feature defining the boundary between a open space and semi-private driveway.

Management Tasks (Year 1 & 2)

3) No programmed actions required. Leave the hedge to establish. Trim overhanging branches by hand held equipments, as necessary. Replant failures annually.

Management Tasks (Year 3 then Annual)

4) Clip annually to approximately 1.2 metres high as a well defined native hedge boundary with visibility over the top. Clip using a suitable sharp, tractor mounted flail hedge cutter, in October.

5.4 SPECIMEN TREES

5.4.1 Established mature specimen trees are retained at key locations across the site. These are typically significant visual and biodiversity features, which contribute to the visual amenity and wildlife value of the wider site.

5.4.2 New specimen trees are proposed in many different situations on site and should require minimal management beyond the initial establishment period (12 to 24 months).

Staking or Guying

5.4.3 The relevant staking or guying apparatus on new trees should be regularly checked to ensure it is effectively supporting trees in a straight upright position without damage to the trees.

Watering

5.4.4 Watering of new trees should only be necessary during drought periods within the initial establishment period (years 1 and 2) , to sustain healthily growth. Outside this period, unless exceptional circumstances materialise, species choice should provide a element of robustness to periods of drought.

New trees in Grass Areas

5.4.5 A minimum 600mm grass and weed free radius of soil, or bark mulch should be retained around the base of trees to avoid grass cutting constraints and to avoid damage to the base of tree trunks from grass cutting equipment.

Monitoring and Reactive Management

5.4.6 New and existing trees should require only responsive management following establishment, to address any damage from:

- Competition from adjacent vegetation or invasive species;
- decay or die back in crowns;
- Damage by weather, or other external influences (fire, vandalism etc); and

- Pests, fungal, or viral attack.

5.4.7 In these circumstances a management response at as early a stage as possible is required, to contain the impact, with the aim of treating damage to maintaining a health tree, or replacement in the case of sever damage or impact from unforeseen circumstances. It is not possible to anticipate the nature of these changes so an annual inspection by a suitably qualified professional to specifically identify any new issues is recommended.

Tree Safety Inspections

5.4.8 In addition to periodic wider woodland checks, outlined above, a biennial arboricultural Health and Safety assessment of all trees adjacent to and within 'falling distance' of properties and highways, is recommended to minimise the risk of property damage, or injury. Trees should be felled immediately on identification of significant concerns and should be replanted with a good quality replacement of the same species.

5.5 GRASSLAND

5.5.1 There are three principal types of grassland:

1) Retained Semi-Improved species rich grassland;
2) New Amenity Grassland; and
3) New Meadow Grassland.

G1(E) Retained Semi-Improved Grassland

5.5.2 The majority of this is present along the north eastern site boundary and consists of road verge and development open space. Along the road verges it is recommended that only a 2 metre strip is regularly cut through the normal growing season (March to September) with a typical weekly and fortnightly cut. The remaining road verge, adjacent to hedge planting, should be cut as 'New Meadow Grassland', promoting diversification and improved biodiversity value.

5.5.3 Other retained semi-improved grasslands should be regularly cut, as amenity grassland, to allow public access and to provide usable amenity space.

New Amenity Grassland

5.5.4 Amenity Grassland, refer to Soft Landscape Plans (1040902/PL/P/001 and 002), should be regularly cut through the normal growing season (March to September) with a typical weekly and fortnightly cut. Cuttings should be removed from site, to promote diversification.

5.5.5 Application of fertiliser and/or selective herbicide should be avoid as a regular application and only applied to address a specific identified need, following an annual inspection.

MG1 (N) New Meadow Grassland

5.5.6 New meadow grassland aims to enhance the biodiversity and provide visual amenity in key locations of the site. It is lower maintenance than amenity grassland, only requiring cut in late August, September and October, cuttings to be removed from the meadow areas.

Monitoring and Reactive Management

5.5.7 Apart from cutting, as outlined above, grassland should require only responsive management following establishment, to address any damage from:

- Competition from adjacent vegetation, or dominance of more invasive species;
- Die back or loss of the intended sward type and mix;
- Thinning or bare patches due to over use or shadowing;
- Damage by external influences (fire, vandalism etc); and
- Pests, fungal, or viral attack.

5.5.8 In these circumstances a management response at as early a stage as possible is required, to contain the impact, with the aim of treating damage and reseeding, as necessary. It is not possible to anticipate the nature of these changes so an annual inspection by a suitably qualified professional to specifically identify any new issues is recommended.

5.6 NEW AMENITY MASS SHRUB & HERBACEOUS PLANTING

Management Principles

5.6.1 The mix and combination of shrubs and herbaceous plants within amenity mass planting, has been chosen for a range of natural plant heights, appearance, scents and displays. The design intent is to allow different species to develop and grow within their natural parameters without the need for regular cutting of trimming, with the exception of hedges, addressed above.

5.6.2 Certain species do however respond to cutting back on a longer term cycle, which results in improved appearance and health. Where such management is beneficial, management operations are identified later in this section.

Monitoring and Reactive Management

5.6.3 Beyond the identified prescriptive management tasks, outlined below, amenity planting should require only responsive management to address any unintended issues. This can typically be caused by;

- Over vigorous or untypical growth of certain species, due to genetic or environmental conditions;
- Overhanging or obstructive growth;
- the appearance of an invasive species with amenity beds (native and non-native);
- decay or die back in vegetation, individual specimens, species, or groups;
- damage by weather, or other external influences (fire etc); and
- a change in the equilibrium of the plant species caused by pests, fungal, or viral attack of a key single species, or multiple species.

5.6.4 In these circumstances a management response at as early a stage as possible is required to contain the impact, with the aim of maintaining a healthily and sustainable equilibrium within each shrub beds. It is not possible to anticipate the nature of these changes, so an annual inspection by a suitably qualified professional to specifically identify any new issues of biodiversity, landscape and visual, or arboricultural concerns is recommended.

5.6.5 The following table lists proposed shrub and herbaceous plants which benefit from recommended management operations.

Proposed shrub and herbaceous plants which benefit from recommended management operations.

Planting Code	*Botanical Name*	*Common Name*	*Management Operation*
S3	Ceanothus 'Autumnal Blue'	Californian Lilac	If over vigorous, trim back.
S7	Cornus alba 'Elegantissima'	Variegated dogwood	Cut back to 1/3 of the height, every 3 years to promote improved red stems.
S8	Cornus stolonifera 'Flaviramea'	Yellow Dogwood	Cut back to 1/3 of the height, every 3 years to promote improved yellow stems.
S20	Lavandula angustifolia	Lavender	Cut back soft growth to the edge of woody growth in Early September each year to promote denser growth and improved flowering.
S26	Photina x fraseri 'Red Robin'	Christmas Berry	If over vigorous, trim back reactively,
P1	Achillea 'Walter Funcke'	Ornamental Yarrow	Cut back and remove flower heads and stalks in late January, prior to new seasons growth, to tidy.
P2	Agapanthus 'Purple Cloud'	African Lily	Cut back and remove flower heads and stalks in November, to tidy.

5.6.6 The remaining majority of shrubs require only reactive management to specific circumstances.

5.8 INVASIVE SPECIES

Monitoring and Reactive Management

5.8.1 There are several likely invasive plant species which will require management and control. The four most likely being Japanese Knotweed, Himalayan Balsam, Buddleia and Bracken. The existing Japanese Knotweed on site should be eradicated within each phased development area prior to development and should therefore not be a significant management operation. However both Japanese Knotweed and Himalayan Balsam are widespread invasive species which commonly spread along river and canal corridors, it is therefore important to check the site annually during April and May and treat any identified areas following best practice.

5.8.2 Buddleia is present in various existing parts of the site and is likely to continue to seed in various locations. Although of superficial benefit to wildlife, it is potentially invasive and should be controlled in all areas of the site.

5.8.3 Bracken is present on the most southern tip of Woodland W3(E) and should be eradicated by spraying, before this area is replanted (see soft landscape plan 1040902/PL/P/002). Any regrowth should to spot treated annually until eradicated. Any other identified areas of bracken growth on site should be similarly treated.

5.8.4 It is important to understand that with Japanese Knotweed there is a need to assess each infestation individually and develop a best practice approach based on each site's unique problem. Key considerations include:

- Situation / location;
- Proximity to water courses;
- Size of infestation;
- Site access;
- Presence of other vegetation;
- Eventual intended land use / digging requirements, and;
- Cost.

5.8.5 The most appropriate treatment method for small quantities, which will only be experienced if annual checks and treatment are thorough, is spraying with a suitable chemical, approved for use within or adjacent to the areas in question. The restrictions associated with treatment adjacent to water should be noted in particular.

5.8.6 A suitable certified and qualified operative should be retained to immediately commence treatment and to continue until eradicated.

5.8.7 Himalayan Balsam is more easily controlled by monthly cutting back and ensuring it is not allowed to flower and seed. This will control and eradicate any small infestations. Chemical treatment, as with Japanese Knotweed, is likely to be more practical for any establishing or larger stands.

6.0 MANAGEMENT PHASING

6.1 As the wider development is likely to be phased over an extended timescale (ten + years) the management requirements within this plan assume, year one is the year immediately following completion of the phase and handover of management obligations from the development consortium to the management company.

6.2 The wider site phasing is beneficial to the protection and enhancement of biodiversity on site, as the positive results from early phased management should be actively contributing to the overall site biodiversity while later phases are being initiated. Any short term detrimental effects of management operations are therefore minimised by the phased nature of the development.

7.0 FURTHER LICENCES, SURVEYS + PROTECTED SPECIES

7.1 Further licences and surveys for ecology should not be necessary for this phase of works, apart from nesting birds, which have statutory protection. All cutting of vegetation, or works which may impact on nesting birds should be progressed outside the accepted nesting bird season (March to August inclusive) and should principally be completed during November to February when broadleaf vegetation is dormant.

7.2 The management managers and operatives should however be comprehensively briefed on the likely protected species present on the wider site to ensure statutory obligations are understood and achieved at all times. It is recommended that a management company briefing by a suitably experience ecologist is progressed prior to initial implementation of this plan to brief the management company on its statutory obligations with regard to known protected species on site.

8.0 MONITORING

8.1 Inspection and monitoring of the landscape management is recommended in an annual basis, preferably by the original landscape designers with accompanied ecology and arboricultural expertise, to monitor and guide the success of the management objectives and to identify any additional, or revised management needs, focused on the strategic landscape objectives.

8.2 Specific recommendations for monitoring and safety checks, notably arboricultural safety checks and actions, are additionally identified within relevant preceding sections of this report.

8.3 Plant or other failures arising during the management period should be replaced within the appropriate preceding season, unless the result of circumstances requiring an alternative response, such as replacement of trees with a different species due to a pest or infection.

Community Involvement

8.4 The involvement of residents with habitat creation, management and monitoring of the site along the canal and stream corridors could provide a unique opportunity to foster a sense of ownership and appreciation of the natural resource on their doorstep. If this is progressed by the management company the biodiversity principles embodied within the Outline and Detailed Management Plans should be promoted within the local community so as to enhance awareness of and support for biodiversity action and protection.

8.5 Community involvement would need to ensure that the strategic and prescriptive aims and objectives of the management plans are not diluted or changed from the main objectives.

Back Cover

Cardiff

Belfast

Reading

soltysbrewster
CONSULTING