

Landscape Management Report

Ryebank, Chorlton

Prepared on behalf of Step Places LTD, Southway Housing Trust and Manchester Metropolitan University

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1.0 Introduction

1.1 General

TPM Landscape, Chartered Landscape Architects, have prepared this report relating to the landscape design for the public and communal areas within the Ryebank Chorlton development. The landscape management report has been produced to ensure that future management objectives are achieved. This document will form part of the planning approved information for the proposed development and will provide guidance for the establishment, maintenance and future management of all public or communal external landscaped areas and planting around the site.

1.2 Aims of the report

This report has been developed to establish long term management objectives and practices for all of the external areas associated with the Ryebank Chorlton development with the exclusion of private front and back gardens.

The report presumes that all of the external areas have been built in accordance with the approved planning drawings. A clear understanding of the design aims and intentions will help to ensure that the landscape reaches maturity in the form in which it has been designed.

1.3 Objectives

The overall objectives for the maintenance include the following;

- Maintain all grassed areas as healthy and biodiverse grassland;
- Maintain to promote the longevity of the existing woodland for its amenity value and wildlife provisions;
- Allow shrubs and flowers to reach their species potential to ensure that they produce flowers and seed heads, growing to their natural shape and form to provide texture and interest;
- Keep trees within the site in a safe condition to promote longevity of the tree and reduce the risk of failure. Ensure that any works on trees or and shrubs considers the local wildlife (foraging opportunities, bird nesting season etc.);
- Keep all hard-surfaced areas in a good state of repair and free from any potentially dangerous arisings that could cause a slip or trip hazard;
- Ensure the site is free from litter and deleterious material to maintain a clean and tidy appearance;
- Ensure that all structures, furniture and features are looked after and maintained in a good state of repair and safe condition so that they do not fail or have the potential to cause harm to the residents;
- Ensure that boundaries are maintained in a safe condition and good state of repair.
- Rain gardens to be maintained as an attractive feature with a clean and tidy appearance;

- Ecological basin to be maintained to increase biodiversity on site and attract and provide a sanctuary of breeding for wildlife;
- Maintain wildflower meadow to support establishment and allow a diverse mix of flowers and grasses to thrive; and
- Ensure that all ecological enhancement features and habitats are looked after and maintained in a good condition in line with ecologist recommendations.

The report shows operation objectives for a five-year period to ensure that the establishment of the scheme is achieved. It is assumed that the management company will continue to maintain the landscape indefinitely and operations will be broadly in line with the operations described at year 5.

1.4 Site Maintenance and Responsibility

The company responsible for maintaining the landscape will be responsible for inspecting the site and for keeping a logged record of inspections, faults and rectified works. The managing agent is required to appoint a Landscape Maintenance Contractor, whether that be the original installation contractor or a separate party. All contractors should be registered with BALI (British Association of Landscape Industries).

2.0 General Description

2.1 Existing Context

The site is situated adjacent to Longford Park, approximately 1.2km east of Stretford, Old Trafford. The site is predominantly grassland and scrubland with trees and a small area of hardstanding to the south.

The land use to the north, south and east comprises residential development. To the west lies Longford Park. To the southeast of the site lies the St Johns RC Primary School. Access to the site is provided by Ryebank Road and Longford Road. There are some informal pathways within the grassland on site.

Existing trees in the west offer a high value ecological habitat (refer to Urban Greens Ecology Reports). There is existing perimeter vegetation around the east and western boundaries and an Aspen Grove in the north of the site. The Aspen has very dense trunk spacing which provides enclosure and screening to the adjoining developments. There are two community garden areas and an existing scattering of orchard trees.

2.2 Site Proposals

The development proposals are to form a new residentially led masterplan set within a landscape framework.

Adoptable Streets

Tree lined streets and associated pedestrian footways lead through the development. A combination of trees and rain-gardens, protect the pedestrian path from the road, whilst creating a visually green street. Materials and maintenance are to be in line with the local authorities requirements.

Street trees are located within both hard and soft landscape areas.

Private Streets

Streets are typically 5.5m wide with 2m wide associated footways. Areas of planting separate the parking courts and the front gardens of the properties, with street tree planting typically within soft landscape zones. A variety of hard landscape materials using varying plan sizes break down the streets.

Greenway

At the southern section of the development proposal and adjoining Longford Road a village green space is proposed that offers and open an inviting landscape with a strong community focus. The space allows for clear views along the greenway with incidental breakout spaces in the form of grow zones, ornamental planting, orchard groves and grow beds.

The landscape here also integrates a shared pedestrian / cycle route that forms a connection to Ryebank Road in the north.

Located in the vicinity of the existing Nico Ditch an ecological basin is proposed as a central feature within the masterplan. The water body is framed by built form with occupants enjoying an attractive outlook.

The Greenway opens out at the interface of the ecological basin with a separate route proposed directly above the basin below. Railings create a boundary and form a safety barrier for users at the higher level.

Soft landscape around the basin would be focused on ecology and attracting wildlife throughout the seasons. There is opportunity for engagement with St John's School and using the basin as an educational tool. The basin in the location of the Nico ditch also offers the opportunity for interpretation and storytelling with the folklore stories.

The villas are located adjacent to the Greenway towards the north of the proposal site. The existing vegetation is set back from the properties allowing open views over the existing neutral grassland and to the mature trees in the distance as a backdrop. The villas have upper external terraces that maximise on this setting and provide natural surveillance over users on the Greenway below.

Individual pathways are proposed from the rear of the properties onto the Greenway to allow direct access onto the community route and wider informal pathway network connecting to Longford Park. The boundaries facing the public open space and Greenway are proposed to be 1.8m instant vertical pre-grown vegetative panels and 1.5m high brick walls with trellis above.

As the Greenway moves north the landscape proposals seek to create further informal recreation areas where users can engage in exercise or growing opportunities. Raised grow zone planters continue the community garden opportunities with small orchard areas set back from the main pathway to allow foraging.

Play opportunities in the form of undulating ground, distance markers, informal timber structures e.g. stepping stones and logs provide nodal points along the route and help engage the users with the place.

Sympathetic materials such as resin bound gravel and timber will harmonise the harder elements within the informal parkland setting.

Private Amenity Space

The age friendly landscape at the north and south of the site both adjoin existing mature vegetation and both form built development at the entrances to the proposal site. Their interface with the streetscape is therefore very important.

The age friendly ground floor apartments have small patio areas, where these are not within the secure communal gardens, a low-level railing, set within a planting bed is proposed. This will create a defensible space between the footway and private patio when patios are facing the streets.

The communal gardens will be secure with visually permeable boundaries to allow views out and in to the garden spaces. The garden space will allow the occupants to enjoy the outdoors with a range of seating and gardening opportunities.

The masterplan has sought to address key community linkages with links to St John's Forest School. It is envisaged that people from the north and within the proposed houses would want to access St John's School or Longford Road so inclusion of a pathway through the existing trees in the south east is proposed. There is opportunity for informal play and ecological interventions that link to the wider character being sought in the masterplan.

The space between the built form of the terrace houses is separated into three parts. A central communal green space flank by rear gardens to the terrace houses. The gardens are enclosed with low level walls to create a private demise but an open aspect into the communal area. The space will provide a shared ownership character with people encouraged to engage with their neighbours and use the space for informal recreation. The space allows residents to gain access to their rear gardens

e.g. via bike, where the gardens at 6m in length provide ample space for a bike store or small garden shed.

The central community will have low level gates at the entrances to enclosure the space and create a safe place to play but will not be locked with the space open to others.

The dwellings have private back gardens with 1.2m high slatted screen fences between that interface with access into a shared communal courtyard. The courtyard allows for access into the rear gardens with bikes and a direct connection onto the Greenway. The courtyard is enclosed with 1.5m high vertical bar railings that allows for open views onto the Greenway and street.

Tree planting at the centre of the space and against the garden boundaries soften the harder landscape elements. There is opportunity for informal seating and subtle play within the spaces. The rear gardens have space within them for bike sheds.

3.0 Health and Safety

The following potential hazards have been identified within the proposed development site which may have implications for maintenance operations:

- Contractors working on the site should make themselves aware of the location of underground services, defining the exact locations with the Statutory Authorities prior to commencing works below the surface;
- Working in areas used by resident's, public whether on foot, in wheelchairs or vehicles;
- Working in areas used by people; ensuring paths are kept clear at all times and potentially dangerous tools or machinery is not left lying around,
- The use of chemicals known to be hazardous to humans and animals;
- Working at elevated positions or on slopes;
- Lifting heavy objects and working with heavy machinery; and
- The possibility that hazardous material may be deposited in or inadvertently left in areas requiring cleaning (needles, medication, dog foul etc).
- Working adjacent to or within water in and around the attenuation areas, swales and basin.

Methods for reducing the potential site risks are well established and are common practice of competent contractors. The contractor is expected to identify the hazards associated with any maintenance operations they proposed, together with an assessment of the risks involved and methods for reducing the risks. The Risk Assessment should be recorded and retained for reference in the future if necessary.

3.1 Site Operations

All operations on site are to be carried out by suitably qualified operatives with appropriate safety clothing. The maintenance contractor is to adhere to the latest guidance on safe working practice, including information from the recognised industry body, the local authority and the government Health and Safety Executive. The maintenance contractor is to carry out all operations with regard to the safety and welfare of the general public, private and public property, native flora and fauna and Statutory Services.

3.2 Disposal of materials from site

All, rubbish, leaves, grass and general arisings removed from the site are to be deposited at a licensed tip in the appropriate section.

4.0 Hard Elements

Maintenance operations are to be carried out in order to provide a clean, inviting and safe environment for all users of the site. For the purposes of this report, it is assumed that all the works required by the planning approval have been carried out in accordance with the approved drawings.

All paving, edges, walls and street furniture should be safe, robust and in good condition. Any damage must be reinstated to the original condition and in accordance with the relevant specification of the client.

All hard works to be installed under the recommendations of the manufacturer's instructions. Hard works should not be carried out in undesirable weather conditions.

4.1 Hard Surfacing (Footways, Roads and Parking Lots)

Maintenance objective

Footways, roadways and parking lots are to be maintained in a safe and clean condition free from any defects or debris which could potentially cause a trip hazard. Surfaces are to be level and free from trip or slip hazards.

Inspections

A formal visual inspection is to be carried out by the maintenance contractor at 6 monthly intervals or following reports from the client that surfaces require repairing. A report of the inspections and rectified works should always be logged.

An annual inspection of the paving grouting should be carried out to ensure the stability of the footways and roadways are maintained.

Contractors Maintenance Operations

Surfaces are to be kept free of litter, mud, arisings, deleterious material, algae and hazardous obstructions. Surfaces are to be uniform in appearance, a level surface, free from ruts, grooves, cracks, hollows and potholes (holes greater than 75mm in diameter and 10mm depth).

Paved areas are to be repaired within 1 week of a reported fault, unless the potential hazard is severe (trip hazard) in which case the area is to be cordoned off and repaired at the earliest available opportunity.

Any oily substances are to be removed with a household detergent and warm water. Chewing gum should be treated with a freezing spray and carefully removed with a scraper once hardened. All maintenance to be carried out in accordance with the manufacturer's instructions.

All surfaces and foundations are to be repaired to the original specification, unless otherwise agreed with the Local Planning Authority or Statutory Authority.

One operation per month (within month / months specified) - **1**.

As required - **a/r**

Operation	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Pedestrian Surfaces, Roads and Parking Lots													
Visual inspection of footways, roadways and paving areas				1						1			Carry out 6 monthly inspections, report to be logged; any faults reported should be rectified as required.
General cleaning of paving	1	1	1	1	1	1	1	1	1	1	1	1	Keep surfaces free of litter, leaves, mud, arisings and any hazardous objects. Sweep and remove any arisings, keep all areas weed free. Any build-up of moss or algae should be treated as required to ensure surfaces are not slippery or dangerous.
Clean paved areas annually by relevant washing techniques for varying materials e.g. granite/concrete						1							(Acid and bleach should not be used)
Apply sealant to paving	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	(As required after cleaning)
Apply herbicide						1				1			Apply to weeds if appear between paving, when weeds have been suppressed hand hoe out and refill mortar joints
Repair	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	Repair surfaces when reported or in line with faults as identified in the inspections report. Repair to original specification. Check grouting to paving and reinstate where necessary
Ensure water is drained from footways to prevent pooling				1						1			When specified or as necessary after prolonged periods of wet weather
Clear snow from pathways and roads	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	Clear snow following adverse weather (a/r) and apply suitable grit to key vehicle and pedestrian access routes (avoid plant areas).

4.2 Edges – Flush and Raised Edges, and Walls

Maintenance objective

All 'edges' should be maintained in a safe and clean condition. All cladding, copings should be secure.

Inspections

A formal visual inspection is to be carried out at 6 monthly intervals or following reports from the client that a fault or damage has occurred. A report of the inspections and rectified works should always be logged.

Maintenance Operations

All 'Edges' are to be kept free of litter, deleterious material and hazardous protuberances. Surfaces are to be maintained uniform in appearance and with seamless levels vertically and horizontally for copings and cladding. All steps to be level across the tread length to avoid trip hazard. Grout mortar between cladding and copings to be inspected and topped up where necessary with matching colour.

Faults and failures are to be repaired within 1 month of a reported fault, unless the potential hazard is severe, in which case the area surrounding the fault should be cordoned off, the fault should be repaired at the earliest available opportunity.

Re affix cladding, copings and steps as required and any failures to be replaced to the same specification as the original.

One operation per month (within month / months specified) - 1.

<u>Operation</u>	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Edges – Kerbs, Edging & Walls													
Visual inspection of edges				1						1			Carry out 6 monthly inspections, report to be logged; any faults reported should be rectified as required.
Clean edges						1							Carry out annually and remove detritus / chewing gum using a stiff brush and soapy water.
Apply anti-graffiti coating to raised edges if misuse becomes apparent						1							Carry out once a year or as necessary
Apply non residual herbicide				1						1			Apply herbicide to spot treat weed problems. Hand removal after herbicide has taken effect

4.3 Proposed Fences, Railings & Gates

Maintenance objective

Fences, railings and gates are to be maintained in a safe and clean condition and in good working order. Maintenance gates which are intended for controlled access are to remain locked and should not be left open during the maintenance operations unless supervised. Kissing gates or similar are to remain in good working order and provide controlled access in their design.

Inspections

A formal visual inspection is to be carried out at 6 monthly intervals or following reports from the maintenance contractor or public that a fault or damage has occurred. A report of the inspections and rectified works should be logged.

Maintenance Operations

Fences and railings are to be kept free of litter, deleterious material and hazardous protuberances. Surfaces are to be maintained as uniform in appearance and coated in a homogenous paint, stain, enamel, or plastic coating in accordance with the original specification.

For timber fences any timber which has originally been stained or treated should have the original wood stain product or colour (or similar approved) reapplied annually in the spring to rejuvenate the appearance of the wood. For pressure treated wood this should not be required unless the wood needs to be stained to bring out the colour or else is stained or coloured as part of the design requirements. The Contractor should refer to the original specification requirements to determine colour finishes and products required.

Repaint fence/railings as required but not more than on an annual basis. When paint starts to flake and/or look unsightly repaint fence/railings to the same specification as the original ensuring that any rust is removed and the surface prepared and primed before the paint is applied. .

Structures should be checked after adverse weather to ensure they remain stable, if features have become unstable re affix to ensure stability and fit for purpose. Refer to the original specification for details of foundations and fixing details.

One operation per month (within month / months specified) - 1

As required - a/r

<u>Operation</u>	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Fences, Railings and Gates													
Visual inspection of boundaries				1						1			Carry out 6 monthly inspections, report to be logged; any faults reported should be rectified as required. Repair if required.
Re-stain	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	As required following inspection

4.4 Metalwork

Maintenance objective

All metalwork to be maintained in a safe and clean condition.

Inspections

A formal visual inspection is to be carried out at 6 monthly intervals or following reports from the client that a fault or damage has occurred. A report of the inspections and rectified works should always be logged.

Maintenance Operations

Metal bollards, lighting columns, litter bins, tree grilles and any metal elements on street furniture/structures are to be kept free of litter, deleterious material and hazardous protuberances. Surfaces to maintain uniform in appearance and maintained in accordance with the original specification.

Powder-coated surfaces are to be kept clean from dirt through regular washing using a solution of warm water and mild detergent applied with a soft cloth or sponge. If the coating starts to flake off and look unsightly, repaint as required to the same specification as the original in accordance with the manufacturer's instructions ensuring that any rust is removed and the surface prepared and primed before the paint is applied.

Stainless steel surfaces are to be wiped down with water and a mild detergent. Small marks to be repaired in situ with an appropriate abrasive cloth in line with the manufacturer's instructions.

All metalwork is to be repaired within 1 month of a reported fault, unless the potential hazard is severe, in which case the area surrounding the fault should be cordoned off and the boundary made secure, the fault should be repaired at the earliest available opportunity.

These works will always be the sole responsibility of the management company and the site boundaries should be maintained in sound condition and the site secure.

One operation per month (within month / months specified) - 1.

As required - a/r

<u>Operation</u>	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Metalwork													
Visual inspection of metalwork – repair if required				1						1			Carry out 6 monthly inspections, report to be logged; any faults reported should be rectified as required. Repair/replace if required
Clean metalwork						1							Carry out annually, removing dust and dirt being careful to not remove or damage surface finish.
Re-paint / Re-stain	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	As required following inspection
Strip back and repaint metalwork to match existing	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	Every 5years or as required following inspection

4.5 Timber Elements

Maintenance objective

All timber elements should be maintained in a safe and clean condition. Surfaces should be smooth to the touch (avoiding potential for splinters), fixings secure and flush with the finished surface, and the wood should be sound avoiding the potential for failure due to rot.

Inspections

A formal visual inspection is to be carried out at 6 monthly intervals or following reports that a fault or damage has occurred. A report of the inspections and rectified works should always be logged.

Maintenance Operations

Any timber elements that have originally been stained should have the original wood stain colour (or similar approved) reapplied annually in the spring to rejuvenate the appearance of the wood.

All timber used on the site should be hardwood to ensure longevity.

The timber should be repaired within 1 month of a reported fault, the section of wood that is damaged or rotten should be replaced with a piece of timber of the original specification. Where the fault may cause a risk to the user of the site the item should be cordoned off until the fault is repaired.

These works will always be the sole responsibility of the management company and the site furniture and structures should be maintained in sound condition.

One operation per month (within month / months specified) - 1.

<u>Operation</u>	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Timber Elements													
Visual inspection timberwork e.g. seating – repair if required				1						1			Carry out 6 monthly inspections, report to be logged; any faults reported should be rectified as required. Repair/replace if required
Clean any metalwork components that support the timber elements						1							Carry out annually, removing dust and dirt being careful to not remove or damage surface finish.

4.6 Stonework / Solid Concrete

Maintenance objective

All stone / Solid Concrete elements should be maintained in a safe and clean condition. Surfaces should be smooth to the touch, fixings secure and flush with the finished surface, and the stone should be sound avoiding the potential for failure due to chips or cracks.

Inspections

A formal visual inspection is to be carried out at 6 monthly intervals or following reports that a fault or damage has occurred. A report of the inspections and rectified works should always be logged.

Maintenance Operations

Stone / Solid Concrete elements should be repaired within 1 month of a reported fault, the section of stone that is damaged, chipped or cracked should be replaced with a piece of stone of the original specification. Where the fault may cause a risk to the user of the site the item should be cordoned off until the fault is repaired.

These works will always be the sole responsibility of the management company and solid elements should be in sound condition.

One operation per month (within month / months specified) - 1.

<u>Operation</u>	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Stonework / Solid Concrete													
Visual inspection of stonework / Solid Concrete – repair if required				1						1			Carry out 6 monthly inspections, report to be logged; any faults reported should be rectified as required. Repair/replace if required
Clean stonework / Solid Concrete areas annually and remove detritus / chewing gum - stiff brush and soapy water						1							Carry out annually, removing dust and dirt being careful to not remove or damage surface finish.
Clean any metalwork components e.g. anti skate						1							Carry out annually, removing dust and dirt being careful to not remove or damage surface finish.

4.7 Public Realm Bins

Maintenance objective

All bins should be maintained in a safe and clean condition. Surfaces should be smooth to the touch, doors closed, bins vertical and fixings secure and flush with the finished surface.

Inspections

A formal visual inspection is to be carried out at 6 monthly intervals or following reports that a fault or damage has occurred. A report of the inspections and rectified works should always be logged.

Maintenance Operations

Bins should be cleaned regularly to retain a clean appearance and to remove detritus build up.

Bins should remain locked at all times, unless being opened by the management company for emptying.

The management company should monitor bins daily for the requirement to be emptied. Rubbish shall be moved within a contained environment to avoid spillages from waste bags.

The bins should be repaired within 1 month of a reported fault, where the fault may cause a risk to the user of the site the item should be cordoned off until the fault is repaired.

These works will always be the sole responsibility of the management company and the furniture and structures should be maintained in sound condition.

One operation per month (within month / months specified) - 1.

As required - a/r

<u>Operation</u>	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Public Realm Bins													
Formal visual inspection of bins – repair if required				1						1			Carry out 6 monthly inspections, report to be logged; any faults reported should be rectified as required. Repair/replace if required
Clean bins to remove detritus	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	Carry out as required, removing dust and dirt being careful to not remove or damage surface finish.
Empty Bins	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	Empty as required.

4.8 Lighting – Columns and Bollard Lighting

Maintenance objective

All lighting columns and bollard lighting should be maintained in a safe and clean condition.

Inspections

A formal visual inspection is to be carried out at 6 monthly intervals or following reports that a fault or damage has occurred. A report of the inspections and rectified works should always be logged.

Maintenance Operations

Lighting elements should be cleaned regularly to retain a clean appearance (to manufacturer's instructions). The management company should monitor the lights to ensure that they are working as intended.

Electrical compartments should remain locked at all times, unless being inspected and/ or repaired by a lighting technician.

Lighting should be repaired within 1 month of a reported fault, where the fault may cause a risk to the user of the site the item should be cordoned off until the fault is repaired by a qualified lighting technician from the manufacturing company.

These works will always be the sole responsibility of the management company and the lighting columns and building mounted lighting should be maintained in sound condition.

One operation per month (within month / months specified) – 1.

As required - a/r

<u>Operation</u>	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Lighting – Columns, Building Mounted Lighting, Bollard Lighting													
Formal visual inspection of lighting – repair if required		1						1					Lighting to be kept safe, clean and free of litter.
Clean lighting (to manufacturer’s instructions)	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	Clean to manufacturer’s instructions
Bulb replacement to ensure lux levels are retained	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	Lighting should be repaired or replaced to same specification as original if necessary.

4.9 Drainage

Maintenance objective

All drainage should be maintained to ensure the landscape drains affectively throughout the year.

Inspections

A formal visual inspection is to be carried out at 6 monthly intervals or following reports that a fault or damage has occurred. A report of the inspections and rectified works should always be logged.

Maintenance Operations

Drainage grill covers, slot drains and the associated chambers / carrier drains should be cleaned regularly (to manufacturer's instructions). Drainage units should be check for leaf accumulation notably in autumn to ensure leaf matter does not block water accessing the main drainage system. Drainage units should also be checked after heavy rainfall where debris is often collected as water runs to the drains.

These works will be the sole responsibility of the management and maintenance teams.

Please refer to Renaissance report for specific maintenance objectives in relation to drainage.

One operation per month (within month / months specified) – 1.

As required - a/r

<u>Operation</u>	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Drainage													
Formal visual inspection of drainage – repair if required		1						1					drainage to be kept safe, clean and free of litter / debris.
Clean drainage elements to ensure water can drain affectively	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	Clean to manufacturer’s instructions
Remove leaf accumulation in autumn										1	1		Leaf fall to be collected and removed from site

4.10 Proposed Informal Play / Trim Trail

This management plan (including maintenance schedules) shall apply to the lifetime of the development and be implemented as approved.

Maintenance objective

All informal play elements should be maintained in a safe, clean condition and in good working order to the original specification.

Inspections

Routine visual inspections are to be carried out regularly at weekly intervals or following reports from the residents that a fault/damage has occurred within the informal play zones. The equipment supplier should provide a checklist, and a report of the inspection should be logged. In line with RoSPA guidance, inspections are to be carried out to EN1176, and it is recommended that the maintenance contractor has undertaken training in play inspections. Operational inspections are to be carried out quarterly, and/ or, annual inspection carried out by a specialist.

Maintenance Operations – Play Equipment

The play area is to be kept free of litter, plant debris, deleterious material and hazardous protuberances. Leaf debris to be collected and disposed of appropriately.

All informal play equipment and safety surfaces should be maintained to the supplier's management specification and in line with RoSPA guidelines. Routine inspections should involve checking the basic condition of the play equipment, particularly for any faults due to vandalism. Annual and/ or quarterly inspections are to be carried out to check for minor/ major wear and long-term structural problems to ensure that equipment is sound, and all components are in a good state of repair. Fixings should be checked to ensure they are secure, and any moving parts are in good working order and not subject to any signs of wear.

Timber is to be checked for early signs of rot or where hazards are created from the splitting of the timber (avoiding the potential for injury). Remove algae build up on surfaces when required, to ensure that there is no potential for slip or trip hazards when play elements get wet.

RoSPA recommend power washing (a small area should be tested first for surface stability). Timber is to be checked for early signs of rot or where hazards are created from the splitting of the timber (avoiding the potential for injury).

Play items requiring repair is to be cordoned off and repaired by the original manufacturer within 1 month of a reported fault, unless the potential hazard is severe, in which case the area surrounding the fault should be cordoned off and the fault repaired at the earliest available opportunity.

Maintenance Operations – Landscaping

Regularly inspect the informal play area for any potential safety hazards, such as branches that may be at risk of falling or any other risks associated with the plants. For vegetation maintenance regimes including cutting back landscaping immediately adjacent to the play spaces.

One operation per month (within month / months specified) - 1
 Two operations per month (within month / months specified) – 2
 Four operations per month (within month / months specified) – 4
 As required - a/r

Operation	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Play Equipment – General Inspection													
Post Installation Inspection (by specialist e.g. RoSPA)						1							New playgrounds and equipment should be carefully checked for compliance with claims, specifications and installation procedures before being accepted.
Routine Inspection:													
Visual Inspection of basic condition of play equipment and general play areas, vandalism etc.	4	4	4	4	4	4	4	4	4	4	4	4	Carry out weekly routine inspections to equipment supplier's checklist and in line with RoSPA guidelines, report to be logged; any faults reported should be rectified within a week.
Inspect and maintain safety surfaces; rubber mulch.	a/r	a/r	a/r	1	a/r	a/r	a/r	a/r	1	a/r	a/r	a/r	Check rubber mulch is fixed to original specification and if there are any signs of erosion. Ensure any litter, debris etc. is removed
Remove algae from play equipment and timber elements	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	Power washing as recommended by RoSPA. Small test patch to be carried out first to check surface stability
Quarterly Checks (Report to be logged; any faults reported should be rectified as required):													
All proprietary play equipment			1			1			1			1	Maintenance checks to equipment supplier's checklist and in line with RoSPA guidelines.
Annual Inspection:													
(Specialist Contractor e.g. RoSPA)						1							This should be carried out by a specialist not connected with the playground operator or manager.
Landscaping maintenance	See sections 5.1, 5.2 and 5.4												

5.0 Soft Elements

For the purposes of this report, it is assumed that all planting has been carried out in line with the approved planning drawings and any failed plants or trees replaced by the original contractor at the end of the 12 months Rectification Period, the contractor should refer to the associated local authority planning conditions regarding the replacement period for any dead/dying trees and plant stock.

5.1 Existing Trees

Objectives

Retain all existing trees as indicated on the approved plan to preserve their contribution to the visual amenity and enclosure of areas. Ensure that the trees continue to thrive and to provide visual amenity to the area.

Ensure that trees are maintained in a safe condition and do not cause any obstructions on site or pose any health and safety risk (same applies to the off-site trees overhanging into the site).

All tree works undertaken should comply with British Standard 3998 and should therefore be carried out by skilled tree surgeons. It would be recommended that quotations for such work be obtained from Arboricultural Association Approved Contractors as this is the recognised authority for certification of tree work contractors.

Works to trees will be carried out in accordance with British Standard BS 5837: Tree Protection Measures. All vegetation and, particularly, woody vegetation proposed for clearance should be removed outside of the bird-breeding season (March - August inclusive) as all birds are protected under the Wildlife and Countryside Act, 1981 (as amended) whilst on the nest. Where this is not possible, vegetation should be checked for the presence of nesting birds prior to removal by an experienced ecologist. No ground works or storage of materials should take place within these areas.

Inspections

The existing trees should be inspected annually by a suitably qualified arboricultural consultant for a period of 5 years post completion to ensure that they are in good health and are not hazardous to the users. Further inspections may also be required following severe winds and storms or following a report by a member of the public.

Maintenance Operations

Any works proposed should be solely for the purpose of ensuring the health and safety of the users of the site, staff and public and to promote longevity of the trees and hedgerows. Any works carried out on the off-site trees overhanging into the site should be with the prior consent of the landowner. Any tree works should be carried out to avoid the bird-breeding season. It is the contractor's responsibility to ascertain if any trees are covered by Tree Preservation Orders, and if so to gain the appropriate consent from the local authority. Avoid carrying out any works to hedgerows when full of berries, to preserve its ecological value and valuable food source to wildlife.

Long-term Management

Routine pruning should include the following operations:

- The removal of dead, diseased, damaged or dying branches only where they pose a risk to the health and safety of the users of the site.
- The removal of vegetation where it is obscuring lighting columns or restricting access.
- Inspection and reporting of any incidence of pests and diseases which could cause trees or limbs to fail.

- Any surgery to existing trees must maintain the natural shape of the tree, after any tree works the trees should not appear to be topped or lopped.
- No tree works should be carried out on parts of the tree which are outside of the site boundary (only overhanging branches can be cut back). If a tree appears dead/ dying or dangerous then the landowner must be contacted immediately and the appropriate action taken to prevent harm or damage to people and property.

These works will always be the sole responsibility of the management company and may require the appointment of an arboriculturist.

One operation per month (within month / months specified) - **1**

Two operations per month (within month / months specified) - **2**

Four operation per month (within month / months specified) – **4**

As required - **a/r**

Operation	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Existing Trees													
Visual inspection of all existing trees									1				Inspect trees for signs of disease, damage or as required following adverse weather replant if necessary
Remove dead, diseased or damaged limbs to promote a healthy shape									1				Avoid bird nesting season
Prune to retain shape									1				Avoid bird nesting season
Remove and dispose of accumulation of winter leaves											1	1	Check leaves for mammals before disposal as mammals may be in hibernation. Only to be carried out on areas that affect public access such as surfaced footpath routes, vehicle carriageways and car parks.
Existing Trees near Informal Play spaces													
Visual inspection of trees near play areas	1				1				1				Regularly inspect existing trees close to play areas for any potential safety hazards, such as branches that may be at risk of falling or any other risks associated with trees. Any dead or damaged branches to be removed
Pruning trees near play areas									1				Prune to maintain a safe clearance for play activities, removing any low-hanging branches (below 2m) that may pose a hazard

5.2 Proposed Trees

Objectives

Trees will play an important role in providing structure to the landscape proposals and will provide an asset to the site, provide screening, wind mitigation and contribute to the visual amenity of the local area. Therefore, it is important that they are given the best chance of successful establishment.

Inspections

Inspect on a bi-annual basis when the trees are in full leaf to ensure that the trees are thriving, and record defects requiring remedial works.

Maintenance Operations

Newly planted trees take some time to establish, and until this occurs, they are subject to competition from weeds. Any weeds should be removed by hand from the base of each tree and 75mm deep mulch maintained around the trunk.

If the trees show signs of poor growth or reduced vigour an application of the appropriate fertiliser can be applied. If the trees do not respond to a treatment of fertiliser, further investigations should be carried out, including the ground conditions for signs of compaction, contamination, poor quality topsoil. Remediate any problems uncovered with the soil. Should the remediation works not resolve the problem a replacement tree may need to be planted.

During establishment trees will require regular watering particularly during prolonged dry period, mulch should also assist in retaining moisture within the soil. Water the trees min once a week during periods of limited rainfall over May-September (during the first full growing season) ensuring that the soil is fully saturated. Ensure all irrigation pipes are free from debris. Water shall be applied at 40litres per individual tree. Contractor to review trees in periods of high winds as trees are more prone to drying out. Water tree bags may be required to ensure a constant source of water. Where water restrictions apply (hosepipe bans, drought orders) an alternative supply of water shall be used if possible.

Underground tree guys should be inspected twice annually as part of the general maintenance visits and adjusted accordingly. Damaged guys should be replaced. Guys will require adjusting as it is likely to take 3 to 5 years for the trees to establish dependant on stability, wind conditions and growing conditions.

Pruning of young trees should not generally be required unless they have dead or diseased branches. In such cases the tree branch should be pruned back (using a sharp clean knife) to an outward facing bud whilst maintaining the natural shape of the tree.

It is the responsibility of the landscape contractor/ maintenance contractor to monitor and manage the trees and associated irrigation of all trees. Trees on the scheme are in various situations including in ground, in raised planters and above the podium sharing large soil volumes. Trees set in raised planters have a lower soil volume than elsewhere and therefore, it is essential that the water moisture is monitored closely and irrigated accordingly to ensure successful tree growth. The raised planters incorporate a capillary action irrigation system, and the water inlets and tank volumes are to be checked as part of the regular maintenance visits. Trees set above the podium, albeit sharing much larger soil volumes, still require regularly watering and monitoring.

These works will always be the sole responsibility of the contractor and trees should be maintained in good health and in a safe condition.

One operation per month (within month / months specified) – **1**.

Four operation per month (within month / months specified) - **4**.

Operation	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Proposed Individual Trees													
Visual inspection of trees					1								Inspect trees for signs of disease, damage or as required following adverse weather. replant if necessary
Slow-release fertiliser					1								Only when necessary
Weeding/ mulch				1	1	1	1	1	1				Remove weeds and top up mulch (mulch topped up once annually) to retain a weed free around the base of each tree
Tree stakes and ties				1					1				Check and adjust, replace or remove as required until the tree has established. Check and re-adjust after strong winds. Remove in year 3-5 or as required. Ensure trees remain vertical.
Tree guying				1					1				Repair and adjustment. Check and re-adjust after strong winds
Watering					4	4	4	4	4				Water once a week during the growing season and as necessary in periods of drought only during the first 2 years until the trees have established.

Routine pruning				1					1				Should not be required for the first few years, after which pruning should only include the removal of dead or diseased branches.
Remove and dispose of accumulations of winter leaves											1	1	To be carried out to reduce risk of slipping and to maintain a tidy environment
Tree Replacements	1	1									1	1	Any trees that have failed should be replaced to the original specification and planted within the next planting season.
Top up capillary action irrigation	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	Ensure the capillary action irrigation it topped up regularly. Check as part of maintenance visits.

5.3 Existing Woodland

Objectives

Ensure that the existing woodland trees are maintained in a safe condition and do not cause any obstructions on site or pose any health and safety risk (off site trees should also be inspected and reported if they pose any additional risk to the site).

Ensure that trees within falling distance of the footpaths, highway and housing are in a safe condition with structurally significant decay managed appropriately and subject to regular inspections.

Ensure a diversity of habitats throughout the woodland by retaining where practicable and safe standing and fallen dead wood.

Manage woodland understorey to promote the natural establishment of the woodland ground flora and some desirable self-seeded woody shrubs to provide structural and habitat diversity of the wood and encourage a dense vegetation cover to maintain screening around the site and promote longevity of the woodland.

Provide structural and habitat diversity of the wood and encourage a dense vegetation cover to maintain screening around the site and promote longevity of the woodland.

Inspections

All retained trees should be subjected to sound arboricultural management as recommended within section 8.8.3 of BS5837 *Post Development Management of Existing Trees*, where there is a potential for public access to satisfy the landowner's duty of care.

Additionally, inspections annually and following major storms should be carried out by an experienced arboriculturalist or arborist to identify any potential public safety risks and to agree on remedial works as required. A report of the inspections and any works should always be logged. Inspection to be taken annually to assess the works required to encourage a healthy structural diversity to the woodland understorey.

Trees within falling distance of the footpaths, highway and housing will be assessed annually and any necessary remedial work undertaken managing the risk associated with dead or dying trees.

Maintenance Operations

Any works proposed should be solely for the purpose of ensuring the health and safety of the public and to promote the longevity of the trees. Works should be carried out by suitably qualified arboriculturalist or qualified and insured tree contractor to the best arboricultural standards, considering all safety implications and working in accordance with current BS 3998 guidelines.

Any tree works should be undertaken outside the nesting bird season (1st March – 31st August inclusive).

An Arboriculturist must be consulted prior to undertaking any major tree works. If works are required to any trees with bat roosting potential, advice must be sought from a licensed bat ecologist prior to any works commencing.

Routine pruning of the trees should include the following operations:

- The removal of dead, diseased, damaged or dying branches where they pose a health and safety risk;
- The removal of vegetation where it is restricting access or light levels to adjacent properties;
- Inspection and reporting of any incidence of pests and diseases which could cause trees or limbs to fail;

- Any surgery to existing trees must maintain the natural shape of the tree, after any tree works the trees should not appear to be topped or lopped;
- If trees are to be felled, this operation should be done in a safe manner complying with all current regulations including BS 3998. If large specimens or groups of trees have to be significantly reduced in height or felled, appropriate replacement tree planting should be carried out by negotiation with the local authority.

These works will be the sole responsibility of the contactor or appointed arboriculturalist.

Remove any undesirable self-seeded tree saplings from the woodland floor, except the occasional tree specimen (growing within gaps in the canopy cover) which should be protected and encouraged to grow to provide potential replacement trees as part of the natural replenishment of the woodland.

Cut back any large areas of bramble which may have established, to ensure that they do not take over the woodland floor.

Retain and encourage woody shrub vegetation to establish such as hawthorn, hazel and within the existing understorey mix. Only remove shrubs which are impeding the establishment of newly planted trees and/or are growing over footpaths or lighting.

Strim areas of rough grass around the woodland edge just once a year (Sept- Oct) to encourage the establishment of a good ground flora mix reducing competition from grasses and prevent the encroachment of woody vegetation into footpaths.

Thinning and Cutting Woodland Understorey Vegetation

Thinning and cutting understorey vegetation will be undertaken on an annual cyclical programme (5 - 10-year cycle) and will be carried out outside of bird nesting season (March to August inclusive). If works are required to any trees with bat roosting potential, advice must be sought from a licensed bat ecologist prior to any works commencing.

One operation per year (annually) - 1

One operation every 6 months – 2

Operation	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Existing Woodland Trees													
Arboricultural inspection of trees close to publicly accessible areas or those that overhang roads and paths.									1				Annual. Arrange for any remedial work to be done immediately.
Schedule a health and safety arboricultural inspection after strong winds or storms.													As required.
Remove dead, diseased or damaged branches where they pose a health and safety risk.		1							1				Avoid bird nesting season. For conserving deadwood please refer to section 5.2.
Prune trees where they obstruct highway, footpath or adjacent properties.									1				Avoid bird nesting season. For conserving deadwood please refer to section 5.2.
Treatment of pests and diseases and/or removal of diseased trees.													As required and advised by arborist. All felling to be carried out in accord with BS3998. Felling outside bird breeding season and after guidance has been sought from a licensed bat worker.
Use of woody material to create dead wood habitat piles within the woodland.	1												As available.
Replacement tree planting.											1		Appropriate replacement tree planting should be carried out by negotiation with the local authority.

Existing Understorey												
Inspection of scrub habitats.								1				Inspect to assess extent of encroachment over other habitats and need for control.
Prune understorey where they obstruct highway, footpath or adjacent properties.												As required. Avoid bird nesting season. For conserving deadwood please refer to section 5.2.
Treatment of pests and diseases and/or removal of diseased shrubs.												As required and advised by arborist. All felling to be carried out in accord with BS3998. Felling outside bird breeding season.
Litter picking all areas of the woodland and remove all foreign objects.	1	1	1	1	1	1	1	1	1	1	1	Once a month.
Thinning and cutting understorey vegetation.									1			Thinning and cutting understorey vegetation will be undertaken on an annual cyclical programme (5 - 10-year cycle) and will be carried out outside of bird nesting season (March to August inclusive). If works are required to any trees with bat roosting potential, advice must be sought from a licensed bat ecologist prior to any works commencing.
Annual strim of woodland edge rough grass.								1				To encourage establishment of good ground flora mix.

5.4 Proposed Ornamental Planting

Objectives

The shrub and herbaceous beds should have total vegetation cover with no gaps in order to minimise maintenance requirements, and to provide a neat and tidy appearance to the public. The pruning operations should be carried out under guidance of a horticulturally qualified manager, with a view to allowing the shrubs and herbaceous plants to achieve their species potential in terms of form, flower and structure.

Inspections

Inspect the shrub beds twice annually and record gaps which need filling with additional plants, areas thinned, or pruning operations to encourage growth to fill gaps. Where there has been a significant failure of plants to thrive, carry out investigations to locate the source of the problem and consult the landscape architect prior to replacement planting.

Maintenance Operations

Newly planted areas take some time to establish. Until this occurs, young plants are subject to competition in their root zone from any weeds. During this time weeds should be removed by hand and the bark mulch should be maintained to the original specified depth (50mm) until the canopies meet. After which weed growth should be more suppressed and only localised weeding should be required.

During establishment all the plants will require regular watering particularly during prolonged dry periods. Water the shrub beds min once a week during periods of limited rainfall over May-September (during the first full growing season) ensuring that the soil is fully saturated. Watering should be undertaken by low pressure hose sprinkler and evenly sprayed over the whole area at a rate of 25litres/m². Ensuring watering is not undertaken during the heat of the day to avoid scorching of the plants.

Shrubs which grow over paths or obscure sight lines should be pruned. Should individual species grow excessively during the first five years, pruning should consist of the removal of individual branches to maintain the natural shape of the plant or selective thinning.

Routine annual pruning of shrubs should not be required within the first three years, although some of the herbaceous plants and flowering shrubs should be maintained in accordance with the list below to encourage new growth and longer flowering periods.

Herbaceous Plants General; these are the plants which generally have soft stems and will die back in the winter months. Any dead stems and leaves should be tidied up in the spring when the threat of frost has gone. Old and dead vegetation can be cut with secateurs back to the base or gently pulled by hand, to encourage the new growth to push through, arisings should be disposed of in the green waste. Allow seed heads to remain on the plants for winter interest and insect habitats. Some herbaceous plants can be spilt and replanted if they start to become open or scruffy.

Grasses: Seed heads on the grasses should be allowed to remain on the plants throughout the winter for visual interest. In the spring for deciduous grasses cut back old seed heads and any dead vegetation to encourage new growth.

Flowering Herbaceous Plants: Some of the more prolific flowering plants will benefit from a light prune after flowering to encourage a second flowering in early autumn, prune the plants back to young new leaf growth removing all the old flower heads.

Specimen shrubs in planting beds; allow the shrubs to establish as individual specimens, in the case of multi stemmed woody shrubs clear leaves from the base to allow herbaceous vegetation and shrubs to establish underneath.

One operation per month (within month / months specified) - **1**.
 Two operations per month (within month / months specified) - **2**.
 Four operation per month (within month / months specified) - **4**.
 As required - **a/r**

Operation	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Proposed Ornamental Planting													
Visual inspection of shrubs and perennials				1					1				Inspect Plants for signs of disease, damage or as required following adverse weather. replant if necessary
Hand weed				1	2	2	2	2	1				Hand weed beds up to once a fortnight during the summer months, remove weeds and tidy up the bark mulch surface. If necessary, treat prolific weeds with a non-residual glyphosate-based herbicide ensure that after the weeds have died, they are removed to prevent the bed from looking unsightly.
Watering					4	4	4	4	4				Water once a week during the growing season and as necessary in periods of drought only during the first two years until the shrubs have established.
Mulch				1									Top up mulch in the spring once the bed has been weeded, this should not be required after year 3-5 when the planting has established.
Plant replacement	1	1									1	1	Replace dead and dying plants to original specification during the next planting season

Remove dead foliage and old flower stems	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	Remove and dispose of foliage and stems. If diseased remove as necessary as soon as possible.
Apply slow-release fertiliser				1									Only if plants have shown signs of poor health in the previous season. Apply a slow-release fertiliser or well-rotted manure in the spring.
General pruning				1									Should not be required in the first 1-3 years, however, remove any branches that are obstructing paths, growing into the grassed areas or taking over other plants in the bed.
Selective thinning				1									In year 5 when the plants have established, thin out plants if overcrowded in the bed.
Plant specific maintenance				1									For maintenance of Cornus carry out specific maintenance operations as described in this section.
Clear snow	a/r	a/r	a/r	a/r							a/r	a/r	Remove snow from foliage after excessive fall if weight of accumulation may cause damage

5.5 Proposed Hedges

Objectives

To provide linear structure and privacy within the landscaped areas.

Inspections

Inspect the hedges annually when they are in fully leaf to ensure that they are thriving and record any gaps that need filling with additional plants or that require pruning to encourage growth. Record if there are any areas of significant failure to thrive which may require remedial works to the soil.

Maintenance Operations

Trim the 1m high instant hedge twice annually to encourage strong growth during year 1-4. The instant hedges are to be maintained at a maximum 1.2 high overall.

To prevent weed growth, maintain a 50mm depth of bark mulch at the base of the hedge until the hedge has established, fertiliser application should be avoided unless there are specific localised areas of poor growth.

During establishment, hedges will require regular watering particularly during prolonged dry periods. Water the hedge a minimum of once a week during periods of limited rainfall during May - September (the first full growing season) ensuring that the soil is fully saturated. This is imperative for the instant hedgerows to the resident's garden spaces to ensure successful long-term growth. The landscape contractor/ maintenance contractor must monitor the soil moisture and condition of the hedgerow to make sure they are not drying out.

Hedges should not be allowed to exceed the height specified above to ensure the design approach and appearance to the resident's garden is upheld.

The internal steel frame within the raised planters and where the instant hedges are proposed are to be checked for the structure integrity and to ensure they provide the required security element.

These works will be the sole responsibility of the management company.

One operation per month - 1
 Four operations every month – 4
 As required – a/r

Operation	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Proposed Hedges													
Visual Inspection of hedges				1					1				Inspect hedges for signs of disease, damage or as required following adverse weather. Replant if necessary.
Inspect hedges after strong winds (as required)					4	4	4	4	4				Water once a week during the growing season and as necessary in periods of drought only during the first 2 years until the hedge has established.
Replace dead and dying hedge plants to original specification during the next planting season	1	1									1	1	Any hedge plants that have failed should be replaced to the original specification and planted within the next planting season.
Remove and dispose of accumulations of winter leaves.											1	1	To be carried out to reduce risk of slipping and to maintain a tidy environment.
Weed control and tidying at base of hedge					1		1						Remove and dispose of weeds.

Hedge trim				1					1				Lightly trim twice annually back to the desired height, remove dead or diseased branches. Ensure a clipped appearance for the boundary hedgerows is upheld.
Fertiliser	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	Apply an appropriate fertiliser as required to aid establishment if the hedge is showing signs of stress (i.e. defoliation, die back)
Watering					4	4	4	4	4				Water once a week during the growing season and as necessary in periods of drought only during the first two years until the hedge has established.

5.6 Proposed Scrubland

Objectives

Scrubland areas are an extremely valuable habitat to support wildlife habitat, however, it is important that these areas have some element of management to prevent them from taking over areas of grassland. The transition between different habitat types is an important factor in the success of a scrubland.

Inspections

The scrubland areas require minimal maintenance work; however, they should be inspected in the winter months of November/ December to ensure wildlife is not disrupted and avoid the bird breeding season. Also avoid works near hibernation sites, particularly where reptiles may be occupying sunspots near watercourses.

Maintenance Operations

Remove any litter. Newly planted shrubs and trees take some time to establish, and until this occurs, they are subject to competition from weeds. Any weeds should be removed by hand.

Tree and shrub guards should be inspected annually as part of the general maintenance visits and adjusted accordingly. Damaged guards should be replaced. When the scrubland is established, the guards should be carefully removed. This operation is likely to be required after 3 to 5 years dependent on establishment rates, stability and growing conditions.

Cuttings and the control of scrubland is recommended using handheld tools, brush cutters and or chainsaws to ensure it doesn't become out of control and encroach on to other areas. Dispose of arisings and stack into piles of deadwood.

It is not advised to use herbicides due to the proximity to Wince Brook and potential harmful impact on wildlife. Use an environmentally friendly based product to remove weed growth if necessary.

When whips have grown into trees, please refer to the Proposed Trees/ Existing Trees section for ongoing long-term maintenance.

One operation per month (within month / months specified) – 1

<u>Operation</u>	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Proposed Scrubland													
Inspection of Scrub											1		Carry out an inspection of the establishment of the scrub and identify priority areas for thinning.
Cut/ thin and encroachment control											1	1	Cut/ thin to create retain natural shape and form.
Remove fallen leaves, debris and litter	1	1									1	1	Remove prior to cutting (do not blow or sweep into adjacent planting beds).

5.7 Existing Rough Grassland

Objectives

Maintain the rough grassland in a controlled manner as to not disturb the litter layer which supports mammal, reptiles and invertebrate habitats. The grassland should be cut or strimmed at suitable intervals to prevent it becoming over-grown by brambles, scrub and potentially self-sown trees.

There are some areas considered to be too steep to be maintained and are to be left in their existing condition. Other areas, including surroundings to natural play areas/ features and edgings to footpaths are to be maintained to create a neat appearance.

Inspections

Grassed areas can be inspected as part of regular maintenance operations, although they should be formally inspected twice annually to assess requirements for cutting/ topping.

Maintenance Operations

Remove any litter or leaves before cutting.

The grassland should be mown in rotation, approximately one third of the area is to be mown each year to a height of no less than 130mm. The sward should be cut or topped twice annually surrounding picnic tables, edgings to footpaths and around the natural play areas. The sward in these areas are to be cut no less than 80mm. A 2m wide strip at the footpath edges are to be strimmed to 80mm as part of these maintenance operations. Other areas that are shallow enough to be maintained area to be strimmed to a height of no less than 130mm. The sward can be topped with a strimmer or a similar piece of equipment.

In addition, if areas become patchy and unsightly, they should be reseeded with a similar grass seed mix.

It is not advised to use herbicides due to the potential harmful impact on wildlife. Use an environmentally friendly based product to remove weed growth.

Areas that are too steep or considered dangerous to be maintained is to be left in its existing condition.

These works will be the sole responsibility of the contactor.

One operation per year (annually) – 1

As required – a/r

Operation	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Proposed and existing Rough Grassland													
Inspection				1						1			Carry out and inspection of the establishment of the grass sward to identify any damaged areas, excessive weed growth, poor grass cover etc which may require remediation works over the coming year.
Topping of the grass (in rotation – no more than 1/3 each year)				1						1			Topping the grass to a height of no less than 80mm surrounding play, footpaths and picnic tables, and 130mm for other accessible areas
Cut Edges				1						1			Edges to paths to be cut with a neat edge avoiding encroachment over the paths. The arisings are to be swept off the paths and disposed of in a licenses tip.
Remove fallen leaves, debris and litter				1									Remove prior to cutting.

5.8 Proposed Amenity Grassland

Objectives

A mixture designed to create a species rich grassland that can be kept trimmed or left longer to flower.

Grass areas should be well maintained at all times as overgrown and patchy grass can be unsightly.

Inspections

Grassed areas can be inspected as part of the regular maintenance operations, although they should be formally inspected annually to assess requirements in terms of topdressing, over seeding etc.

Maintenance Operations

Remove any litter or leaves before cutting. Arising's should be removed from site.

To provide the formal appearance desired, following the initial year of its creation, the amenity grassland would be cut regularly to a minimum height of 70mm through the growing season (up to 21 cuts a year) which may require fortnightly cuts during some months. Cutting should be suspended during April and May to allow the earlier flowing species (such as cowslip) to flower and again in late June for a 4–8-week period. All arisings would be removed within a 48-hour period.

A fertiliser application to be applied only as required, either as a spring feed for shoot growth or as an autumn feed for root growth using the appropriate feed application.

In addition, these applications should compensate for any areas of poor growth or excessive wear. An application of selective herbicide should be made during early summer to prevent any weed species from having a detrimental effect to the appearance of the sward and to prevent any infestation becoming severe.

In periods of dry weather conditions, it may be required to water the grass at a rate of 15litres/m². Ensuring watering is not undertaken during the heat of the day to avoid scorching of the grass.

Other maintenance applications, which will be required from time to time, include the following: topdressing, overseeding, scarifying, spiking etc to alleviate common problems such as thatch, compaction, poor drainage, malnourishment etc. These items should be addressed in the annual check.

These works will be the sole responsibility of the management company.

One operation per month (within month / months specified) - **1**

Two operations per month (within month / months specified) - **2**

Four operation per month (within month / months specified) - **4**

As required - **a/r**

Operation	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Proposed Amenity Grassland													
Inspection				1									Carry out an inspection of the establishment of the grass sward to identify any damaged areas, excessive weed growth, poor grass cover etc which may require remediation works over the coming year.
Cut - First Year				1		1		1		1			Mow grassland when it reaches 100mm and regularly within the first year. Cut to 70mm to encourage tillering of new plants, repeat as desired. Regular topping back will encourage vegetative growth of the perennial species but will stop the sward from flowering. Once mowing or strimming ceases the plants will grow to the point of flowering. If flowering is required in the first year then one or two strims early on will suffice, alternatively a strategy of mowing throughout the first year will produce tight sward that will be more resistant to encroachment by weed species in future years. Cutting to be removed from the site following 48-hour period.
Cut- Once Established						1		1		1			Once established, cut as required to 70mm with no cuts taken during April and May and again in late June for 4-8 weeks. Cuttings to be removed from site following 48-hour period.
Cut edges				1	1	1	1	1	1	1			Edges to paths and shrub beds to be cut with a neat edge avoiding damage to the shrubs and tree trunks and the arisings removed from the beds or swept off the paths and disposed of in a licensed tip.

Reform edges				1				1					Twice a year the soft grass edges should be redefined with a half-moon spade to form neat straight edges and any grass encroaching onto footpaths taken back
Apply fertiliser application in year 1 -2				1						1			Once in the spring and once in the summer as required
Topdressing, over seeding, scarifying, spiking	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	As required if identified in the annual inspection
Remove fallen leaves, debris and litter	1	1	1	1	1	1	1	1	1	1	1	1	Remove prior to cutting (do not blow or sweep into adjacent planting beds)

5.9 Bulb Planting

Objectives

To ensure bulbs thrive providing seasonal interest at key locations within public spaces.

Inspections

Bulb planting in ornamental planting beds can be inspected as part of the regular maintenance operations associated with the lawn maintenance. They should be formally inspected annually to assess requirements in terms of gaps, flower quality, etc.

Maintenance Operations

Where bulbs are planted within ornamental planting beds cut back foliage 6-8 weeks after flowering ends to allow sufficient time for the bulb to regain the necessary nutrients to ensure it will flower the following season. Apply fertiliser towards the end of February if required.

One operation per month (within month / months specified) – **1**.

Two operations per month (within month / months specified) - **2**.

As required - **a/r**

<u>Operation</u>	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Bulbs													
Inspect bulbs during flowering season			1	1	1								Visual inspection to identify any issues
Cut back foliage 6-8 weeks after flowering ends					1	1	1						Season varies depending on species and cultivar
Apply fertiliser if required		1											To promote healthy growth

5.10 Wildflower Meadow

Objectives

To create and maintain a biodiverse and balanced wildflower meadow that is free from invasive weeds for the benefit of wildlife and visual amenity.

Inspections

Meadow areas can be inspected as part of regular maintenance operations, although they should be formally inspected annually to assess overgrown or patchy areas.

Management Operations

For comprehensive details on the preparation, sowing, establishment and management of the specified wildflower meadow seed mixture refer to the guidelines in full and the Emorsgate Website. In some instances, below the text is shortened or para-phrased for brevity.

During the first year of establishment, competition from grasses and weeds will need to be kept under control. It is essential, particularly in the first twelve months to manage the sward to aid seedling development and maintain a balanced composition from one year to the next. Allow the arising to settle (for insects to disperse) before removing the arising off site in a licensed tip (green waste).

First Year:

The first cut should be carried out to a height of 5cm in March/ April (May if spring sown).

Cut the sward to a height of 5-7cm every two months or when the sward reaches 15cm to encourage balanced establishment between the grasses and flowers. Dispose of arisings.

After flowering, the final cut should be carried out in September/October and all clippings removed.

Future Years:

Thereafter, the first cut should be carried out in March /April reducing the height of the sward to 7.5cm (if required). A following cut should be carried out after flowering in August/ October), reducing the sward height to 7.5cm. All clippings to be removed.

Where the meadow areas are close to the paths maintain a min 1m wide regularly mown strip between the path and the meadow, incorporating this area into the amenity grass areas.

One operation per month (within month / months specified) - 1.

Operation	MONTHS												Notes	
	J	F	M	A	M	J	J	A	S	O	N	D		
Proposed Wildflower Meadow														
Inspection of Meadow				1									Carry out an inspection of the establishment of the sward to identify any damaged areas, excessive weed growth, poor cover etc, which may require remediation works over the coming year.	
First year cutting			1	a/r	1	a/r	1	a/r	1	a/r			Cut the sward to a height of 5-7cm every two months or when the sward reaches 15cm to encourage balanced establishment between the grasses and flowers. Dispose of arisings.	
Following years cutting				1						1			Cut grass to 75mm with an appropriate mechanical mower. Do not remove arising for 24 hrs for insects to disperse.	
Inspect for weed growth and hand weed where necessary				1		1		1					Hand hoe out any weeds and remove.	
Remove fallen leaves, debris and litter	1	1									1	1	Remove prior to cutting (do not blow or sweep into adjacent planting beds).	

5.11 Proposed Wildflower Meadow – Wetland Areas

Objectives

Wildflower mix suitable for wetland (EM8 Meadow Mixture for Wetlands by Emorsgate or similar approved) areas has been proposed within the attenuation areas and nearby. This area will provide a valuable habitat for aquatic insects, foraging birds and small mammals. A mix will include 20% native wildflowers and 80% slow growing grasses. The attenuation area should be well maintained, ensuring any standing water is visible for safety and in a clean condition.

Inspections

The wildflower mix will require a specific maintenance regime in its first year to ensure that the sward establishes without competition, please refer to year 1 maintenance operations for further details. Meadow Areas in general can be inspected as part of the regular maintenance operations.

Management

Remove litter before cutting. On an annual basis, ensure that all dead growth is removed before the start of the growing season and any sediment are removed from inlets/ outlets if required. The attenuation area may need to be re-seeded in areas of poor growth.

Operations should be restricted to when the attenuation area is not holding any water. Care should be taken when working on embankments.

First Year

Most sown meadow wildflower and grass species are perennial; they will be slow to germinate and grow and will not usually flower in their first growing season. There will often be a flush of annual weeds from the soil in the first growing season which may grow up and obscure the meadow seedlings beneath. These weeds can look unsightly, but they will offer shelter to the sown seedlings, are great for bugs, and they will die before the year is out. So, resist cutting the annual weeds until mid to late summer, especially if the mixture contains Yellow Rattle, or has been sown with a nurse of cornfield annuals. Then cut, remove and compost. Early August is a good time. This will reveal the young meadow, which can then be kept short by grazing or mowing through to the end of March of the following year. It is important to cut back cornfield annuals before they die back, set seed or collapse: this cut will reveal the developing meadow mixture and give it the space it needs to develop.

Mow newly sown meadows from early August to a height of 40-60mm, removing cuttings if dense. This will control annual weeds and help maintain balance between faster growing grasses and slower developing wildflowers.

Carefully dig out or spot treat any residual perennial weeds such as docks.

Establishment on site may be patchy and may take several years to fully colonise as the area is prone to flooding.

Immediate management would require the removal of aquatic vegetation to ensure at least 70% of the water is maintained as open water, free from marginal and aquatic vegetation.

Autumn Sown (First Year)

March - Cut to 40-70mm if there is sufficient material (sward above 100mm).

May - Cut to 40-70mm.

August/September - Cut to 40mm after flowering. in all cases remove clippings.

Maintenance thereafter

April - Cut to 40-70mm.

August/September - Cut to 40mm after flowering. in all cases remove clippings.

Spring Sown (First Year)

6 weeks after sowing - Cut to 40-70mm if there is sufficient material (sward above 100mm).

May - Cut to 40-70mm if there is sufficient material (sward above 100mm).

August/September - Cut to 40mm after flowering. in all cases remove clippings.

Maintenance thereafter

April - Cut to 40-70mm.

August/September - Cut to 40mm after flowering. In all cases remove clippings.

Once Established

Following this, management will focus on maximising the nature conservation interest of the attenuation areas and require that the vegetation is cut back with removal short, wedge-like sections of vegetation every 2-3 years in rotation. Any dense stands of single species (e.g. yellow iris) will require selective thinning.

Aquatic and marginal vegetation should be checked annually and where necessary cleared to maintain 70% open water. Only 1/3 or less of marginal areas should be cleared annually on a rotational basis during autumn; arisings should be left next to the attenuation area for at least 7 days before taking to a designated composting area.

Any bankside vegetation will be strimmed annually to 150mm in 1/3 sections on rotation to maintain cover and shelter for fauna. Areas of pernicious weeds should be removed by hand only, and no fertiliser is to be applied to the banks to minimise the risk of algae blooms and risk of deoxygenating the water. Where the meadow areas are close to the paths maintain a minimum 1m wide regularly mown strip between the path and the meadow, incorporating this area into the amenity grass areas. Should it be too steep for the mower, then alternative grass-cutting methods need to be employed on the attenuation area.

These operations are the sole responsibility of the contractor and should be restricted to when the area is not holding any water. All inspections and maintenance tasks should comply with all relevant Health and Safety information and include the development of risk assessments when working close to water or on an embankment.

One operation per month (within month / months specified) - **1**

Two operations per month (within month / months specified) - **2**

Four operation per month (within month / months specified) - **4**

As required - **a/r**

<u>Operation</u>	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Proposed Wildflower Meadow – Suitable for Wetland													
Inspection of Meadow				1									Carry out an inspection of the establishment of the sward to identify any damaged areas, excessive weed growth, poor cover etc. which may require remediation works over the coming year.
In the first year, annual weed growth cut back				1		1		1					Annual weed growth shall be cut back to encourage the development of a good perennial ground cover. Hand hoe out any weeds and remove.
Cut back vegetation			1						1				Vegetation is cut back and removal of short wedge-like sections of vegetation on rotation every 2-3 years in rotation with long armed exactor.
Thinning of dense stands from year 2									1				Any dense stands of single species (e.g. yellow iris) will require selective thinning from the year 2.
Remove fallen leaves, debris and litter	1	1									1	1	Remove prior to cutting (do not blow or sweep into adjacent planting beds)

5.12 Proposed Marginal Planting

Objectives

Marginal vegetation has been proposed to the edge of wildlife basin / attenuation areas and should be maintained for establishment and ongoing longevity of the planting. This area will provide a valuable habitat for aquatic insects, foraging birds and small mammals.

Inspections / Monitoring

Inspect the scrub and marginal planting twice annually when they are in full leaf to ensure that they are thriving and record defects requiring remedial works. Assess the vegetation in terms of density, weed growth and coverage to determine maintenance requirements. Where there has been a significant failure of plants to thrive, carry out investigations to locate the source of the problem and consult the landscape architect prior to replacement planting.

Management Operations

Newly planted areas take some time to establish. Until this occurs, young plants are subject to competition in their root zone from weeds. During this time, weeds should be removed by hand and the bark mulch should be maintained to the original specified depth (75mm) until established. After which weed growth should be more suppressed and only localised weeding should be required.

During establishment, all the plants will require regular watering particularly during prolonged dry periods. Water the shrub beds a minimum of once a week during periods of limited rainfall over May-September (during two full growing seasons) ensuring that the soil is fully saturated.

Watering is required in the first two years after planting, which will be the responsibility of the developer before handover to the management company.

Routine pruning of the scrub and marginal planting should only be carried out on the plants which are close to publicly accessible areas or are causing an obstruction and pose a potential safety risk.

These operations are the sole responsibility of the contractor and should be restricted to when the area is not holding any water. All inspections and maintenance tasks should comply with all relevant Health and Safety information and include the development of risk assessments when working close to water or on an embankment.

One operation per month (within month / months specified) - 1

As required - a/r

<u>Operation</u>	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Proposed Marginal Planting													
Monitoring of newly established scrub planting	1	1	1	1	1	1	1	1	1	1	1	1	New scrub planting should be monitored monthly for the first 2 years to check for signs of poor growth.
Watering of newly established scrub planting			2	2	4	4	4	4	2	2			Water new scrub planting regularly during the first 2 years of establishment, particularly during prolonged dry periods.
Visual Inspection of scrub/marginal planting				1					1				After year 2. Inspect planting for signs of disease, damage or as required following adverse weather, replant if necessary
Weeding				1					1				Remove weeds. Report any non-native invasive species and carry out process for removal in accordance with National legislation.
Routine pruning				1					1				Pruning should only be carried out where planting is in close proximity to public access, or where they pose a potential safety risk.
Mulch				1									Top up mulch in the spring once the bed has been weeded, this should not be required after year 3-5 when the planting has established.
Plant replacement	1	1									1	1	Replace dead and dying plants to original specification during the next planting season

6.0 Rain Gardens

Objectives

The rain gardens are designed to collect rain runoff from the development. The gardens are planted at a lower level than the surrounding ground, so water naturally flows into them.

The objective is to create a total vegetation cover with no gaps to minimise maintenance requirements, and to provide a neat and tidy appearance to the proposed landscape setting. The pruning operations should be carried out under guidance of a horticulturally qualified manager, with a view to allowing the shrubs and herbaceous plants to achieve their species potential in terms of form, flower and structure.

Inspections

Inspect the planting beds annually and record gaps which need filling with additional plants, areas thinned, or pruning operations to encourage growth to fill gaps. Where there has been a significant failure of plants to thrive, carry out investigations to locate the source of the problem and consult the landscape architect prior to replacement planting.

Inspect rain garden annually and remove any built-up soil, debris or leaves that are blocking the inlets or outlets. Cut back or remove any vegetation or grass that is growing into inlets. Over time you may have to remove sediments that build up just inside the inlet areas.

Maintenance Operations

Newly planted areas take some time to establish. Until this occurs, young plants are subject to competition in their root zone from weeds. During this time weeds should be removed by hand and the bark mulch should be maintained to the original specified depth (50mm) until the canopies meet. After which weed growth should be suppressed by hand weeding.

During establishment all the plants may require regular watering particularly during prolonged dry periods. Water the shrub beds min once a week during periods of limited rainfall over April-September (during the first growing seasons) ensuring that the soil is fully saturated. Watering should be undertaken by low pressure hose sprinkler or evenly sprayed over the whole area at a rate of 25litres/m². Ensuring watering is not undertaken during the heat of the day to avoid scorching of the plants.

Shrubs which grow over paths or obscure sight lines should be pruned. Individual species to grow excessively during the first five years, then pruning should aim for the removal of individual branches to maintain the natural shape of the plant or selective thinning.

Routine annual pruning of shrubs should not be required within the first three years, although some of the herbaceous plants and flowering shrubs should be maintained in accordance with the list below to encourage new growth and longer flowering periods;

Herbaceous Plants General; these are the plants which generally have soft stems and will die back in the winter months. Any dead stems and leaves should be tidied up in the spring when the threat of frost has gone. Old and dead vegetation can be cut with secateurs back to the base or gently pulled by hand, to encourage the new growth to push through, arisings should be disposed of in the green waste. Allow seed heads to remain on the plants for winter interest and insect habitats. Some herbaceous plants can be spilt and replanted if they start to become open or scruffy.

Some of the more prolific early summer flowering plants will benefit from a light prune after flowering to encourage a second flowering in early autumn, prune the plants back to young new leaf growth removing all of the old flower heads.

Specimen shrubs in planting beds; allow the shrubs to establish as individual specimens.

Mulch is an important part of rain garden care. Wood chip mulch keeps the soil moist, allowing for easy infiltration of rainwater. Mulch prevents erosion, controls weeds, retains moisture, adds organic material to the soil, and improves drainage. Every year check the mulch layer and, if needed, replenish to maintain a depth of 50mm. Spread mulch between plants and on bare ground.

Do not fertilise the plants, they receive all the nutrients they need from compost-amended soil, and annual mulching.

Inspect beds after extreme weather events to check if the garden infiltrate water after rainstorms. Monitor the inflow and overflow areas to make sure they are still intact and can continue to carry water into and out of the rain garden. Remove any debris or litter in the rain garden that may interfere with flow. Keep the inflow pipe accessible and flush out pipe if necessary. Look for areas where water may not be soaking into the ground. This may be due to fine sediment or compaction of the soil. Remove sediment that may be building up and rake the soil surface. If you suspect compaction, break up and loosen the soil when it is not saturated.

Maintain a decorative cobble rock pad to protect the ground and prevent erosion where concentrated water flows into the rain garden from a pipe or outlets.

Compacting the soil; packing down the soil can make drainage more difficult, tread soil lightly and rarely, especially in the bottom area.

One operation per month (within month / months specified) - **1**

Two operations per month (within month / months specified) - **2**

Four operation per month (within month / months specified) - **4**

As required - **a/r**

<u>Operation</u>	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Proposed Rain Garden													
Visual inspection of Shrubs and Perennials				1					1				Inspect plants for signs of disease, damage or as required following adverse weather, replant if necessary
Hand Weed				1	2	2	2	2	1				Hand weed beds up to once a fortnight during the summer months, remove weeds and tidy up the bark mulch surface.

Watering					4	4	4	4	4				Water once a week during the growing season as necessary in periods of drought only during the first year until the plants have established
Mulch				1									Mulch with wood chip in the spring once the bed has been weeded, this should not be required after year 3-5 when the planting has established
Plant replacement	1	1									1	1	Replace dead and dying plants to original specification during the next planting season
Remove dead foliage and old flower stems	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	Remove and dispose of foliage and stems. If diseased remove as necessary as soon as possible
General pruning				1									Should not be required in the first 1-3 years, however remove any branches that are obstructing paths, growing into the grassed areas or taking over other plants in the bed
Selective thinning				1									In year 5 when the plants have established, thin out plants if overcrowded in the bed

Inspect water flowing				1						1			Inspect rain garden annually and remove any built-up soil, debris or leaves that is blocking the inlets or outlets. Cut back or remove any vegetation or grass that is growing into inlets. Remove sediments that build inside the inlet areas. If suspect compaction, break up and loosen the soil when it is not saturated
Inspect rain garden after storms	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	After heavy storms, check the inflow and overflow areas to make sure they are still intact and can continue to carry water into and out of the rain garden. Remove any debris or litter in the rain garden that may interfere with flow. Keep the inflow pipe accessible and flush out pipe if necessary. Look for areas where water may not be soaking into the ground. This may be due to fine sediment or compaction of the soil

Inspect for any exposed soil or erosion				1						1		Look for any exposed soil or erosion caused by fast or high-volume water flows. To keep erosion to a minimum, add decorative rock (more than 50mm in diameter) to protect the ground where water flows into the rain garden. Maintain a decorative cobble rock pad to protect the ground If erosion persists, water may be flowing into the rain garden too rapidly, in this case, the slope of the pipe or swale directing water may need to be reduced, or the amount of water flowing into the rain garden may need to be decreased. Adding small rock check dams every few feet in the inflow can slow water and reduce erosion
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7.0 Ecological Basin

For guidance on vegetation management around the basin area please see Section **5.11 Proposed Wildflower Meadow – Wetland Area** and **Section 5.12 Proposed Marginal Planting**.

The margins of the basin should be profiled into a shallow slope to permit amphibians and other wildlife easy access in and out of the basin and to allow the colonisation of marginal and emergent plants and the centre of the basin should have a maximum depth of 1m.

If deemed necessary, the basin will be lined with puddling clay to ensure that it retains water throughout most of the year. The basin will be allowed to fill naturally. A small amount of deadwood will also be left in the centre of the basin, which will further enhance biodiversity.

Objectives

The proposed wildlife basin is designed to increase biodiversity on site and attract and provide a sanctuary of breeding for wildlife.

Areas with water or partial water represent a potential hazard to residents, children and pets, and should be monitored regularly to check they are performing as originally intended, are not subject to vandalism or tipping, and do not represent a hazard through lack of maintenance.

Inspections

The basin area is to be formally inspected at 6-monthly intervals by the maintenance contractor, following a report by a resident or a significant storm event. A report of the inspections and rectified works should be logged. Assess the vegetation in terms of density, weed growth and coverage to determine maintenance requirements. Silt levels and sediment accumulation should be monitored and managed accordingly. Inspect bank stability, water depth and the presence of fish (or evidence of attempted fishing) and waterfowl.

Inspect presence of invasive plant species listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) e.g. New Zealand Pygmyweed (*Crassula helmsii*) and Himalayan Balsam (*Impatiens glandulifera*) Typha. If present, use of a specialist contractor to eradicate the species.

Maintenance Operations

On a monthly basis, ensure basin area is cleared of debris, litter, deleterious or dangerous material.

All inspections and maintenance tasks should comply with all relevant Health and Safety information and include the development of risk assessments when working close to water or on an embankment. Knee rail fencing will be installed around the basin to ensure health and safety and to deter encroachment into these areas.

Control of Willow/Scrub Encroachment

Any willow or shrub removal should be carried out between September-February to avoid the bird nesting season (March – August inclusive). The plants will be removed by physically cutting and / or digging it out, rather than using any herbicidal treatments.

Willow encroachment within and around the basin will be controlled at no greater than 30% of the basin margins. This will be necessary to avoid willows removing water from the ground and causing the habitats to dry out.

Removed plants to be placed around the basin for two days to allow aquatic invertebrates to re-enter basin, see below.

Management of Aquatic and Emergent Vegetation

The basin area should be managed to retain at least 75% of surface area as open water through the cutting back or pulling out of marginal and emergent vegetation. To ensure a diversity of aquatic species, reeds or shrubs will be cut out or pulled out if they become dominant.

Only species which are becoming dominant and choking the basin or with invasive species tendencies will be removed. E.g. Typha, Floating Pennywort, Curly Leaved Waterweed, Australian Swamp Stonecrop, Water Fern, Parrot's Feather, Himalayan Balsam.

Marginal and aquatic vegetation is only be removed from the centre of the basin as the entire margin should be vegetated. It would detrimentally impact the aesthetic and ecology of the basin if the banks are stripped bare. Marginal and emergent vegetation control will be implemented during the autumn. Cutting or pulling will be carried out by hand, arisings removed after 48 hours.

Invasive Typha will not be permitted to encroach over the basin. Removal of Typha will be carried out every three years or as required to maintain at least 75% open water at the basin. Plant removal to be conducted in winter (i.e. October to February inclusive).

Removed plants to be left alongside the basin for two days to allow aquatic invertebrates to re-enter basin.

One operation per month (within month / months specified) – 1

As required - a/r

Operation	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Proposed Ecological Basin													
Visual inspection and monitoring of basin				1						1			Visual inspection of basin - Identify areas of erosion, scour or gullies - Identify locations of silt deposits - Determine the health of the vegetation and soil - Identify areas of excessive waterlogging or other damage - Identify if the basin is not drying out - Inspect if the basin is not over shade - Inspect bank stability, water depth and the presence of fish and invasive species - Inspect presence of invasive species.
Remove litter	1	1	1	1	1	1	1	1	1	1	1	1	Remove litter/debris/dead vegetation/ deleterious or dangerous material.
Inspect basin after storms.	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	a/r	Inspect basin after heavy storms. Remove any debris or litter. Inspect for any exposed soil or erosion within the basin.

Marginal / emergent vegetation and willow / scrub control										1			Marginal and emergent vegetation control will be implemented during the autumn. Cutting or pulling will be carried out by hand, arisings removed after 48 hours. Marginal and aquatic vegetation is <u>only be removed from the centre of the basin</u> as the entire margin should be vegetated. Any willow or shrub removal should be carried out between September-February to avoid the bird nesting season (March – August inclusive). The plants will be removed by physically cutting and / or digging it out, rather than using any herbicidal treatments.
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8.0 Ecological Enhancement Features

Ecological enhancement features (bat and bird boxes) are proposed within the site. The inclusion of bird and bat boxes within the retained trees will enhance opportunities for roosting bats and nesting birds within the site.

All bat and bird boxes must be installed prior to occupation of the development and in line with manufacturer's specifications.

A plan to show the locations of these boxes and the specifications should be produced by a suitably qualified ecologist once the layout is finalised.

8.1 Ecological Features: Bat Boxes

Bat Boxes will be positioned in a southerly or south-easterly direction on the trees and be installed at a height between 4 to 6 metres. Bat bricks should be positioned where they will warmed by the sun and have a clear flightpath to / from the box (i.e. not obscured by trees or buildings). The boxes should also not be lit by external lighting, so positioning away from streetlights will be best. Example bat boxes include: 1FF Schweglar Bat Box (external) and Ibstock Enclosed Bat Box 'C' (integrated).

Objectives

To enhance roosting opportunities for bats that are known to be present within the local area.

Installation

The Ibstock Enclosed Bat Boxes 'C' bat tubes will be installed into the external walls of buildings, either flush or beneath a rendered surface. This makes them ideal for situations where you wish the box to be discrete as only the entrance hole will be visible. They can also be painted to match the building with an air permeable paint if desired.

The Schweglar Flat Bat Boxes 1FF will be positioned on proposed trees within the Ecological Area.

Maintenance

Once bats have inhabited a bat box, they may only be disturbed by a licenced bat ecologist. This to be carried out from the ground to ensure they remain in workable condition, there are not damaged or misplaced.

One operation per month (within month / months specified) - 1

<u>Operation</u>	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Bat Boxes													
Annual inspection carry out by a qualified ecologist											1		Inspection to be carried out by a licenced bat ecologist. Review the number and condition of bat boxes. Where box is found damaged, to be replaced to a similar model prior to the next March. If the box is found to be misplaced, it will be resituated.

8.2 Ecological Features: Bird Boxes

The bird boxes are durable and will enhance the site by providing nesting opportunities for a wide range of bird species that are known to be present within the local areas. Many of the targeted bird species will not currently be nesting on site due to a lack of suitable nesting opportunities.

Objectives

Bird boxes will be maintained in a workable condition to provide nest and roost habitat throughout the year.

Installation

Bird Boxes will be positioned away from direct sunlight and wind exposure, and to face vegetative habitat to provide shelter and food. The bird boxes will face in a northerly or easterly direction, thus avoiding strong sunlight and wet winds, and be placed so that birds have a clear flight path to the nest box. Example bird boxes include: 1B Schwegler Nest Box (26mm Hole, external) and Woodstone Built-in Swift Nest Box A (integrated on trees).

The bird boxes should be sited at a minimum height of three metres.

Maintenance

Bird boxes to be inspected once a year in November by qualified ecologist to ensure they remain in workable condition, there are not damaged or misplaced. During the inspection bird boxes to be cleaned of any debris. If the nest box is occupied (by bird or other animal), cleaning will be delayed until the next year. If the box is occupied by wasp or hornets, the box will be removed and replaced by a suitable box.

One operation per month (within month / months specified) - 1

<u>Operation</u>	MONTHS												Notes
	J	F	M	A	M	J	J	A	S	O	N	D	
Bird Boxes													
Annual inspection carry out by a qualified ecologist											1		Inspection to be carried out by a qualified ecologist. Review the number and condition of bird boxes. During the inspection bird boxes to be cleaned of any debris. Where box is found damaged, to be replaced to a similar model prior to the next March. If the box is found to be misplaced, it will be resituated. If the nest box is occupied (by bird or other animal), cleaning will be delayed until the next year.

9.0 Monitoring and Review

In order to ensure that the existing and proposed landscape within the site reach and maintain their maximum value. All landscaping should be monitored every year to check establishment. It is recommended that the inspection take place in July/August. The inspection will identify any issues and future landscape management objectives.

Results of this monitoring should be used to inform annual changes to the management plan, and at the end of the five-year rolling work programme.

A programme of monitoring is to be established by appointed Maintenance Contractor that will allow the success of landscape management and maintenance operations to be assessed and will feed into periodic reviews of this Landscape Management Strategy to ensure that management protocols remain appropriate to achieving the broad aim of conserving biodiversity on site.

If the maintenance of the approved Landscape Management Strategy is proposed to be changed, this is to be first approved in writing by the Local Authority.

10.0 Handover Procedures

The maintenance period will run concurrently with the rectification period so it may be prevalent to have the same contractor for both the construction side of the operations and the Maintenance Contractor, to help avoid disputes. After the rectification period the management and maintenance objections need to remain in place for the following operational years of the development site.

To ensure a smooth handover between management contractor companies a clearly documented record of works will be required.