# Landscape Management Plan

**(3448 501A)**

## Crease Drove, Peterborough

**Prepared by**

September 2019

On behalf of:
**Longhurst Group Limited**

# Landscape Management Plan

# 1.0 Introduction

## 1.1 General

TPM Landscape, Chartered Landscape Architects have been commissioned by Longhurst Group Limited to produce a landscape management plan for the proposed landscape at the housing development scheme at Crease Drove in Peterborough. This document will form part of the planning application for the proposed development and once approved will provide guidance for the establishment, maintenance and future management of external landscaped areas and planting around the development.

## 1.2 Aims of the Plan

This plan has been developed to establish long term management objectives and practices for all 'public' external areas associated with the proposed residential development. The plan presumes that all of the external elements have been built in accordance with the approved planning drawings;

**- 3448 101 and 102 Landscape Layout**
**- 3448 201, 202 and 203 Planting Plan**

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 Site Maintenance and Responsibility

The company responsible for maintaining the landscaping around the development will also be responsible for inspecting the site and for keeping a logged record of inspections, faults and rectified works. Following the handover, ongoing site maintenance will become the responsibility of the management company and the management will be in perpetuity.

# 2.0 General Description

## 2.1 Site context

The proposal site lies on the southern edge of Crowland Town, a town that lies roughly 7 miles north of Peterborough.

The proposal site consists of an agricultural field. The northern boundary contains hedgerow, trees and a track. Beyond this boundary there is a warehouse and brownfield site. The eastern boundary runs along the back of residential gardens beyond which is part of the settlement of Crowland. Crease Drove runs along the western boundary and beyond the southern and western boundaries are more fields.

## 2.2 Site Proposals

The development proposal is for a residential development consisting of 55 residential units: 41 as part of phase 1 to be approved through Reserved Matters and a further 14 units as part of phase 2 to be approved through a separate full planning application. Each phase will be complemented with landscaping and include car parking and access roads.

Presuming all properties are occupied, the private gardens will be individually maintained by the resident. Communal areas including Public Open Space (POS) will be maintained by the Management Company.

The site access is off Crease Drove to the west of the site

The overall scheme comprises of a range hard landscaping, soft landscaping and SUDs;

Hard landscape includes block paving, edging and boundaries.

Soft landscape includes ornamental shrub beds, tree planting, ornamental hedges, native shrub planting, meadow planting, bulbs and amenity grass.

An attenuation area is located to the east of the site within the POS along the site boundary.

## 3.0 Health and Safety

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

- The management company 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. Services are identified where known on the drawings, although the management company should presume that there may be further which are not known at this time.
- Working in areas used by residents, on foot or in vehicles.
- The use of chemicals known to be hazardous to humans and animals.
- Lifting heavy objects and working with heavy machinery.
- The possibility that hazardous material may be deposited in or inadvertently left in areas requiring cleaning (needles, medication etc).
- Working within or in close proximity to attenuation areas

Methods for reducing the potential site risks are well established and should be common practice for competent management companies. The management company is expected to identify the hazards associated with any maintenance operations he proposes, 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 management company 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 management company is to carry out all operations with regard to the safety and welfare of the general public, private and public property, domestic and native flora and fauna and Statutory Services.

### 3.2 Disposal of Material on site

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

# 4.0 Hard Elements

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

All paving, kerbs edges, fences, walls and furniture should be fit for purpose, robust and in good condition. Any damage arising from the management and maintenance works 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 recommendation of the manufacturer's instructions. Hard works should not be carried out in undesirable weather condition e.g. frost.

## 4.1 Hardstanding Areas: Roads and Footpaths

Maintenance objective
All roads, footpaths and fences are to be maintained in a safe and clean condition free from any defects or debris which could potentially cause a trip hazard.

Inspections
A visual inspection is to be carried out by the management company at 6 monthly intervals or following reports from residents that surfaces require repairing. A report of the inspection are rectified works should be logged.

Maintenance Operations
Surfaces are to be kept free from litter, mud, arisings, deleterious material and hazardous obstructions. Surfaces are to be uniform in appearance, form a level surface and constructed from a homogenous material, free from ruts, grooves, cracks, hollows and pot-holes (holes greater than 75mm in diameter and 10mm depth).

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

Paths should be repaired within 1 week of a reported fault (or as soon as the material required for repair is available), if the fault presents a risk to the users of the site that area should be cornered off until the repair can be completed. Footpath foundations and surfaces are to be repaired to the original specification, unless otherwise agreed with the service provider.

Any weeds, algae and moss growing on hard surfaces, between paving joints or kerbs should be manually removed or sprayed with a glyphosate based herbicide, once dead the weeds should be uprooted and removed from site. Any gaps in the joints should be filled with either sand or mortar as per the original specification.

Any weeds discovered which are classified as injurious or invasive (please refer to Natural England Guidelines) should be reported to the site manager and appropriate action taken to eradicate or prevent the further spread of these weeds.

One operation per month - 1
Two operations per month – **2**
As required – **a/r**

| **Operation** | **MONTHS** | | | | | | | | | | | | **Notes** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **J** | **F** | **M** | **A** | **M** | **J** | **J** | **A** | **S** | **O** | **N** | **D** | |
| **Hardstanding Areas: Roads and Footpaths** | | | | | | | | | | | | | |
| 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 slippy 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 inline 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 |

### 4.2 Boundaries: Fence, Railings and Gates

Maintenance objective
Fences, railings and gates are to be maintained in a safe and clean condition and in good working order. Gates which are intended for controlled access only are to remain closed and should not be left open during the maintenance operations unless supervised.

Inspections
A visual inspection is to be carried out at 6 monthly intervals or following reports from the site manager or residents that a fault/damage has occurred. A report of the inspection should be logged.

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

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

All items 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 and the boundary made secure, the fault should be repaired at the earliest available opportunity.

Ensure that the boundary fences between the site and the neighbouring properties remain in a sound condition that retains the security of the site. If the boundary falls into disrepair liaison between the site management and neighbouring property should be undertaken.

One operation per month - 1
As required - a/r

| **Operation** | **MONTHS** | | | | | | | | | | | | **Notes** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **J** | **F** | **M** | **A** | **M** | **J** | **J** | **A** | **S** | **O** | **N** | **D** | |
| **Boundaries: 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. |
| 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 5 years or as required following inspection. |

### 4.3 Edges: Kerbs, Edging and Walls

Maintenance objective
All 'Edges' should be maintained in a safe and clean condition and fit for purpose. All cladding, copings, walls, edging and kerbs should be secure and firmly in place.

Inspections
A formal visual inspection is to be carried out at 6 monthly intervals or following reports from the client / resident 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. Grout mortar between kerbs, cladding and copings to be inspected and topped up where necessary with matching colour. Metal and timber edging to be neat and secured firmly in place and aligned straight, or follow smooth uniform curves. Loose edging to be reinstated and secured. Any damaged edging to be removed and replaced with same specification.

Walls are to be kept free of hazardous protuberances and free from weeds. Weeds should be manually removed or sprayed with a glyphosate based herbicide, once dead the weeds should be removed. The structure of the wall should be checked during inspections to ensure that they are sound and all components are in a good state of repair.

Faults 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.

These works will be the sole responsibility of the contactor and at all times the edges should be maintained in sound condition.

One operation per month - **1**

| **Operation** | **MONTHS** | | | | | | | | | | | | **Notes** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **J** | **F** | **M** | **A** | **M** | **J** | **J** | **A** | **S** | **O** | **N** | **D** | |
| **Edges: Kerbs, Edgings and 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 raise 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. |

# 5.0 Soft Elements

For the purpose of this report it is assumed that all planting and initial tree work have been carried out in line with the approved planning drawings and any failed plant or tree replaced by the original contractor at the end of the 12 months rectification period.

## 5.1 Proposed Trees

Objectives
Trees will play an important role in providing structure to the landscape proposals and will provide a valuable asset to the site, provide screening 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 an 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. For woodland areas weed growth may be removed by applying a herbicide spray to the base of saplings during autumn or early spring before trees are in leaf.

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 to replace the dead/dying tree.

During establishment trees will require regular watering particularly during prolonged dry periods. Mulch should also assist in retaining moisture within the soil. Water the trees minimum 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. Where water restrictions apply (hosepipe bans, drought orders) an alternative supply of water shall be used if possible.

Tree ties should be inspected twice annually as part of the general maintenance visits and adjusted accordingly. Damaged ties or stakes should be replaced. When the trees are established and can support themselves the ties should be carefully removed and the stakes cut down to ground level. This operation is likely to be required after 3 to 5 years dependant on establishment rates, stability and growing conditions. Underground tree guys, tree stakes and tree ties should be inspected twice annually as part of the general maintenance visits and adjusted accordingly. Damaged guys/ties should be replaced. Guys/ties will require adjusting as it is likely to take 3 to 5 years for the trees to establish dependant on stability and growing conditions.

Pruning of young trees should not generally be required unless they have dead or diseases 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.

These works will be the sole responsibility of the contactor and at all times trees should be maintained in good health and in a safe condition.

One operation per month - 1
Four operations every month – 4

| Operation | MONTHS | | | | | | | | | | | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | J | F | M | A | M | J | J | A | S | O | N | D | |
| **Proposed 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. |
| 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. |
| 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. |

## 5.2 Proposed Native Buffer Planting

Objectives

The native shrubs should be maintained to ensure strong early establish and ongoing development. They will also provide important habitats for birds and mammals.

Inspections / Monitoring

Inspect the whip planting annually when they are in fully leaf to ensure that they are thriving and record defects requiring remedial works. Ensure the shelter guards are intact, installed correctly and are not restricting growth

Short Term Management Operations (5 years)

Newly planted whips and bare root stock take some time to establish, and until this occurs they are subject to competition from weeds. To reduce competition, an area around the plants should be maintained with an area of bark mulch around the base and kept weed free. Herbicides should be avoided if possible unless grass and weeds are affecting the establishment of the plants. After 3-5 years or after the plants have established this should not be necessary. If they show signs of poor growth or reduced vigour an application of the appropriate fertiliser should be carried out.

Any failed trees or shrubs should be replaced to the original specification, however this should be carried outside of the bird nesting season.

During establishment trees and shrubs may require regular watering particularly during prolonged dry periods during the summer months. These areas should be watered if there has been a period of dry weather between May to September.

Shelter guards, canes and ties should be inspected and adjusted accordingly to ensure they are not restricting growth. Damaged guards, canes or ties should be replaced. When the plants are established and can support themselves the guards, canes and ties should be removed to avoid constricting growth. This operation is likely to be required after 3 to 5 years dependant on establishment rates, stability and growing conditions. The guards should be checked after strong winds and reaffixed where necessary.

Long Term Management Operations (5+ years)

Once the whips have established and their canopies begin to touch, it is important to consider thinning. This is likely to be required at around 10 years of growth. The operation must be carried out by a qualified contractor with a felling licence. Ensure thinning works our outside the bird nesting season.

More regular / routine pruning of the whip planting on establishment should only be carried out on the shrubs/trees which are close to publicly accessible areas and should include the following operations:

Remove dead, diseased, damaged or dying branches only where they pose a risk to the safety of the users of the site. (Dead wood is an important habitat for wildlife within a healthy woodland ecosystem and should not be removed unnecessarily). Large woody material (girth of over 10cm) should be collected to create log piles within the planted areas, these should be stacked neatly and safely to ensure that they do not pose a risk to the users of the site.

As part of the annual inspection of the trees any works should aim to:

Report and/ or treat any incidence of pests and diseases where they pose a risk. If any specialist pruning such as crown thinning and reduction is required this work must be undertaken by an approved arboriculturalist. Any pruning or surgery to trees must maintain the natural shape of the tree, and if trees are to be felled this operation should be done in a safe manner complying with all current regulations including BS 3998.

All works are to be carried out by a suitably qualified arboriculturalist to the best arboricultural standards, considering all safety implications (working within areas accessible by the public) and working in accordance with BS 3998 2010 and in accordance with good practice for the protection of bats or nesting birds or bats which could potentially be using the site.

One operation per month - 1
As required - a/r

**First 5 years**

| Operation | MONTHS | | | | | | | | | | | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | J | F | M | A | M | J | J | A | S | O | N | D | |
| **Proposed Whip Planted Native Shrubs** | | | | | | | | | | | | | |
| Visual inspection of whip planted native shrubs | | | | 1 | | | | | 1 | | | | Inspect shrubs 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. Report any non-native invasive species and carry out process for removal in accordance with national legislation |
| Tree stakes, ties and guards | | | | 1 | | | | | 1 | | | | Check and adjust, replace or remove as required until the plants have established. Check and re-adjust after strong winds. Remove in year 3-5 or as required |
| 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 growing season until the vegetation has established |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Routine pruning | | | | 1 | | | | | 1 | | | | Pruning should only be carried out where trees are in close proximity to public access, or where they pos a potential safety risk |
| Tree Replacements | 1 | 1 | | | | | | | | | 1 | 1 | Any plants that have failed should be replaced to the original specification and planted within the next planting season |

**5 + years**

| Operation | MONTHS | | | | | | | | | | | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | J | F | M | A | M | J | J | A | S | O | N | D | |
| **Proposed Whip Planted Native Shrubs** | | | | | | | | | | | | | |
| Visual | | | | 1 | | | | | 1 | | | | Inspect shrubs for signs of disease, damage or as required following adverse weather, replant if necessary |
| Weeding | | | | 1 | | | | | 1 | | | | Remove weeds (mulch should not be required). Report any non-native invasive species and carry out process for removal in accordance with national legislation |
| Thinning / felling trees | a/r | a/r | | | | | | | a/r | a/r | a/r | a/r | Thin out woodland trees once canopies begin to touch to allow sufficient sunlight to reach understorey planting. Felling to be carried out by a qualified contractor approximately every 10-15 years |
| Routine pruning | | | | 1 | | | | | 1 | | | | Pruning should only be carried out where trees are in close proximity to public access, or where they pos a potential safety risk |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Deadwood | | | | 1 | | | | | 1 | | | | Large woody material (girth of over 10cm) should be collected to create log piles within the woodland areas. Other deadwood to be retained unless cause identified as being due to disease or if the deadwood poses a risk to public safety |

### 5.3 Proposed Ornamental Hedges

Objectives

The hedges will help to define spaces, create division between spaces and will offer definition and boundary treatments to individual properties, gardens, roadways and streets.

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. Ensure the shelter guards are intact, installed correctly and are not restricting growth.

Maintenance Operations

For ornamental hedges within housing areas do not trim the top of the hedges until they have achieved the desired height of 120cm. Until the desired height has been achieved trim the sides of hedges to promote dense growth. Trim on an annual basis during the spring to promote bushy growth during year 1-4.

After the hedges have established lightly trim annually back to the desired height. To prevent weed growth maintain a 75mm 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. Water from rain water harvesting systems should be used (when available) using a flexible hose and attachment.

Hedges should not be allowed to exceed the height specified above to ensure visibility and safety across the site is not compromised.

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 Ornamental 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 | | | | Should not be required for the first few years, after which pruning should only include the removal of dead or diseased branches. |
| 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) |

## 5.4 Proposed Ornamental Shrub Beds

Objectives

The shrub 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 gardens. Pruning operations should be carried out under the 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 annually and record gaps that need filling with additional plants, areas that require thinning, 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 that may become present. During this time weeds should be removed by hand, or spot herbicide treatment and the bark mulch should be maintained to the original specified depth (75mm) until the canopies meet.

Any weeds discovered which are classified as injurious or invasive (please refer to Natural England Guidelines) should be reported to the site manager and appropriate action taken to eradicate or prevent the further spread of these weeds.

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 during May - September (the first full growing season) ensuring that the soil is fully saturated. Water from rain water harvesting systems should be used (when available) using a flexible hose and attachment to reach the desired location.

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

Flowering herbaceous plants

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. In the case of the multi stemmed woody shrubs, clear leaves from the base to allow herbaceous vegetation and shrubs to establish underneath.

One operation per month - 1
Two operations per months – 2
Four operations every month – 4

| Operation | MONTHS | | | | | | | | | | | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | J | F | M | A | M | J | J | A | S | O | N | D | |
| **Proposed Shrub Beds** | | | | | | | | | | | | | |
| 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 upto 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 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 and Viburnum carry out specific maintenance operations as fully described in item 5.5. |

**5.5 Proposed Wildflower Meadow**

Objectives

To create and maintain a biodiverse and balanced wildflower meadow within the swale that is free from invasive weeds for the benefit of wildlife and visual amenity. A mix will include 20% flowers and 80% grasses.

Management Operations

The following information has been extracted from the *Germinal Seeds Wild Flora Mixtures Maintenance Guide.* For comprehensive details on the preparation, sowing, establishment and management of the specified wildflower meadow seed mixture refer to the Guide in full and the Germinal Seeds Website. In some instances below the text is shortened or para-phrased for brevity.

Due to the expected high levels of phosphate levels in the soil, it is recommended that the topsoil is removed from the areas to be planted. The soil underneath is worked into a tilth and new seed is sown. This process creates a scrape. Appropriate management would be 4 -6 cuts a year down to 40mm -70mm and on each occasion create some soil disturbance (scarify), this stops the sward becoming too thick or tight and facilitates the spread of perennial wildflower species, as well as creating an environment for new seeds to germinate. This disturbance is especially important toward the late summer and autumn.

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).

Autumn Sown:
The first cut should be carried out once the sward exceeds a height of 10cm (late March / early April). The cut should be to a height of 4-7cm.

A second cut could be required if re-growth exceeds 10cm by the end of April/early May.

After flowering, (September/October) cut to 4-7cm and removing clippings.

Thereafter during the following year, (March /April) cut the sward to 4-7cm, removing all excess grass, with a following cut after flowering (September / October), removing all clippings.

Spring Sown:
Six weeks after sowing cut to 4-7cm where there is sufficient material.

In May cut to 4-7cm once sward exceeds approximately 10cm high.

After flowering, (September/October) cut to 4-7cm and removing clippings

Thereafter during the following year, (March /April) cut the sward to 4-7cm, removing all excess grass, with a following cut after flowering (September / October), removing all clippings.

One operation per month - 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. |
| Cut (If Autumn sown) | | | | 1 | | | | | 1 | | | | Cut grass to 40 - 70mm. Do not remove arising for 24hrs for insects to disperse. |
| Cut (if Spring sown) | | | | | 1 | | | | 1 | | | | Cut grass to 40 - 70mm. Do not remove arising for 24hrs 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). |

### 5.6 Proposed Bulb Planting

Objectives
To ensure bulbs thrive and provide seasonal interest.

Inspections
Bulb planting 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 areas are planted with naturalising bulbs, the grass will be cut 6-8 weeks after the bulbs have flowered to allow sufficient time for the bulb to regain the necessary nutrients to ensure it will flower the following season. Normal mowing will then resume until the bulbs start to reappear. Apply fertiliser if required towards the end of February if required.

One operation per month - 1

| Operation | 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 after 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 |

### 5.7 Proposed Grass

Objectives
The grass should be well maintained at all times as overgrown and patchy grass can be unsightly. It will provide openness to the development and opportunities for informal recreation.

Inspections
Lawn and grassed areas can be inspected as part of 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.

The sward should be cut to maintain the grass between 25mm and 50mm height. The grass should be cut min 12 times per year during the growing season which may require weekly cuts during some months.

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 on the appearance of the sward and to prevent any infestation becoming severe.

One operation per month - 1
Two operations per month – 2

| Operation | MONTHS | | | | | | | | | | | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | J | F | M | A | M | J | J | A | S | O | N | D | |
| **Lawn Areas** | | | | | | | | | | | | | |
| 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 | | | | 1 | 2 | 2 | 2 | 2 | 2 | 1 | | | Cut grass to 25-50mm with an appropriate mechanical mower, remove all arisings. |
| Cut edges | | | | 1 | 2 | 2 | 2 | 2 | 2 | 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 | | | | 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) |

## 6.0 SUDs: Attenuation Basin

Objectives

The proposed Attenuation Basin is designed to assist managing water run-off on site, and will have varying levels of water throughout the year, and may be dry, or boggy during the summer months. Nevertheless, the swales should be maintained as an attractive feature with a clean and tidy appearance.

Attenuation Basins 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, not being subject to vandalism or tipping, and do not represent a hazard through lack of maintenance. The swales basins should be well maintained at all times, ensuring it is clear of any litter or debris to ensure free drainage.

Inspections

The Attenuation Basin will be inspected as part of the regular maintenance operations, (particularly during the period of vegetation establishment and after significant storm events). They should be inspected monthly as part of routine inspections to assess requirements in terms of litter/debris removal, grass cutting, clearing of inlet/outlets and repair of eroded or damaged areas. An annual inspection should be carried out by a Specialist Engineer to check the control structures are functioning correctly. A record of each inspection should be logged.

### Maintenance Operations

The detention basins should be managed to ensure that they are functioning as the original design intended. The following operations should be carried out to ensure this:

- Litter / debris removal
- Meadow grass cutting
- Inlet and outlet clearing/ check covers are secure
- Repair of eroded/ damaged areas

A safe and acceptable system of clearance should be developed to deal with the blockages or build-up of any litter, debris, weeds or sediment that is beginning to establish. This system should be developed and/or refined over time to ensure the flow is not impeded during normal operating conditions.

*Removal of Litter and Other Debris:*

The swale is to be cleared of debris and kept free of litter, deleterious material and hazardous protuberances. All debris/litter to be disposed of appropriately.

*Meadow Grass Cutting:*

A cutting regime is to be implemented in line with section 5.5. Allow the arising to settle (for insects to disperse) before removing the arising off site in a licensed tip (green waste).

*Inlet and Outlet Maintenance:*

Take appropriate safety measures to remove deleterious or dangerous material and ensure the inlets and outlets are free-flowing and their covers are secure. Record types and amount of debris removed, frequency of cleaning and problems experienced.

Drainage inlets and outlets are to be cleaned regularly and checked for signs of erosion or damage. Inlets and/ or outlets in need of repair are to be cordoned off and repaired by the manufacturer within 1 month, 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.

The build-up of sediment should be monitored annually and removed on a 5 year rotational period unless the potential build-up is severe, in which case the area surrounding the build-up should be cordoned off and the build-up removed at the earliest available opportunity.

*Repair of Eroded or Damaged Areas:*
All eroded or damaged areas 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 and the boundary made secure, the fault should be repaired at the earliest available opportunity.

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** | |
| **SUDs: Attenuation Basin** | | | | | | | | | | | | | |
| Routine inspection of Attenuation Basin to check that it is functioning as originally designed | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Carry out monthly routine inspections of detention basin, report to be logged; any faults reported should be rectified as required. Check for:<br>• Litter / debris removal<br>• Grass cutting<br>• Inlet and outlet clearing/ check covers are secure<br>• Repair of eroded/ damaged areas |
| Inspection for litter and debris removal | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Monthly inspection or following a significant storm event. Remove and dispose of appropriately. |
| Clear inlets and outlets | 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 arising's appropriately. |
| Cut meadow grass | Refer to Section 5.6 | | | | | | | | | | | | |
| Removal of excess sediment | 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 appropriately. |
| Annual inspection by Specialist Engineer | | | | | | 1 | | | | | | | Control structures of detention basin to be inspected annually by a specialist to ensure they are functioning as the original design intended |
| Repair of eroded or damaged areas | a/r | a/r | a/r | a/r | a/r | a/r | a/r | a/r | a/r | a/r | a/r | a/r | Area to be repaired within one month or cordoned off and the boundary made secure, the fault should be repaired at the earliest available opportunity. |

## 7.0 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.