



Kirklees Council

TCF HECKMONDWIKE BUS STATION

Landscape Management Plan

Landscape and Urban Design





Kirklees Council

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Landscape Management Plan

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1 INTRODUCTION

1.1 PROJECT BACKGROUND

- 1.1.1. This Landscape Management Plan has been produced on behalf of the client, Kirklees Council for the purposes of outlining the principles, objectives and typical tasks required for the management and maintenance of the Heckmondwike Bus Station landscape scheme, as proposed under the Transforming Cities Fund (TCF).
- 1.1.2. TCF comprises a £317m programme of investment that aims to deliver a transformational programme of new infrastructure and help create a step change in travel across the Leeds City Region (LCR). The West Yorkshire Combined Authority's TCF Vision is: *"to support delivery of inclusive growth across the Leeds City Region, through an innovative and coordinated walking, cycling and bus package, which provides genuine sustainable and healthy travel options for our communities along our corridors of greatest economic need, and transforms accessibility from new development sites and accommodates growth at key public transport hubs"*.
- 1.1.3. The proposed development of the Heckmondwike Bus Hub is a joint initiative by the West Yorkshire Combined Authority (WYCA) and Kirklees Council, who commissioned WSP to develop proposals to improve the public realm and placemaking associated with the Bus Station upgrades. Its aim was to revitalise the streetscape and enhance the experience for cyclists and pedestrians using the Bus Station.

1.2 AIMS AND OBJECTIVES

Aims

- 1.2.1. The overall aim of the landscape scheme is to provide a high-quality, well-maintained landscape treatment to all areas within the scheme.

Objectives

- 1.2.2. The objectives of this landscape management and maintenance plan include:
- To manage all landscape areas effectively to ensure that the principles and long-term objectives of the masterplan are achieved;
 - To maintain all proposed trees in a healthy and safe condition through regular inspection and liaison with an arboricultural specialist, and maintenance undertaken by arboricultural or landscape specialists, in order to facilitate healthy establishment;
 - To keep areas of paved surface and street furniture elements in a clean and tidy condition.
 - To take appropriate measures to ensure that trees identified for retention are protected throughout the construction period, as set out in BS5837:2012 – Trees in Relation to Design, Demolition and Construction (Recommendations); and
 - To achieve a high-quality landscape and any associated maintenance in accordance with BS7370-4:1993 - Grounds Maintenance - Recommendations for Maintenance of Soft Landscape.

1.3 DOCUMENT OVERVIEW

- 1.3.1. The management requirements in this document have been formulated to maximise the longevity of the proposals through activities that result in early and successful establishment of planting. This



ensures planting requires minimal remedial and replacement works following establishment. This document deals with the maintenance of the following areas:

General Items

- Weed Control / Total Weed Control
- Pest and Disease Control
- Control of Litter
- Watering
- Pruning
- Arisings
- Cleaning through Planters and Planting Beds

Soft Landscape Items

- Maintenance of Proposed Tree Planting in Soft Landscape
- Maintenance of Proposed Wildflower, Species Rich and Neutral Grassland on Mounds
- Maintenance of Proposed Shrubs, Marginal plants, Planting Beds and Rain Gardens
- Maintenance of Green Sedum Roofs
- Maintenance of Green Wall

Hard Landscape Items

- Cleanliness of Paved Surfaces
- Maintenance of Street Furniture

2 SITE DESCRIPTION

2.1.1. The Heckmondwike Bus Hub Scheme (herein referred to as the ‘Proposed Works’) will reconfigure the existing bus station and provide new facilities to encourage sustainable transport use. The Proposed Scheme will be comprised of a new ‘fit for purpose’ bus station at Heckmondwike to provide increased capacity for bus services, improved interchange opportunities, an improved waiting environment, and improved access to information. The Proposed Scheme will also comprise the following:

- A new covered concourse with new bus stands, seating and real time information boards;
- Five new Drive-in-Reverse-Out (DIRO) bus stands, one Drive-in-Drive-Out (DIDO) layover stand and one layover resting bus bay located off the carriageway on a new hard landscaped bus apron, replacing the existing 4 No. bus layover bays to increase bus capacity;
- A new fully enclosed waiting area with an Accessible WC and Changing Places facility. This will also provide enclosed staff office space, rest areas, and plant rooms;
- A harmonious modern building design that integrates well into the surrounding heritage assets and public realm but also provides a unique design identity;
- Enhanced soft and hard landscaping to create a more inviting and usable public realm that also promotes art, culture, and biodiversity;
- New reversing camera facilities to allow for safe bus reversing activity so the drivers can view what’s behind them at bus stands 1 to 5;
- An environmentally friendly bus station design which will incorporate energy efficiency, local energy generation such as roof-mounted solar photovoltaic (PV) panels, and green features that complements the surrounding heritage and public realm;
- 6 No. cycle stands (accommodating 12 No. cycles);
- Bin store; and
- Improved pedestrian circulation routes around the bus station site.

2.1.2. This management plan covers the landscape proposals associated with the Bus Station as outlined above and should be read in conjunction with the landscape general arrangement drawing listed below in **Table 2-1**. These drawings are available in [Appendix B](#) of this document.

Table 2-1 – Heckmondwike Bus Station Drawing Schedule

<i>Drawing Reference</i>	<i>Drawing Title</i>	<i>Revision</i>
TCF-WSP-KHBH-XXX-DR-LE-000001	Landscape Design (Sheet 1 of 1)	P04

3 IMPLEMENTATION OF THE WORKS

- 3.1.1. This management plan covers a period of 10 years, including a 3-year defects liability period. Following practical completion of the site, it is anticipated that the first 3 years of planting maintenance will be the responsibility of the Landscape Contractor appointed by the client, after which it will become fully the responsibility of the Local Authority.
- 3.1.2. The works prescribed in this document should be undertaken using appropriate and well-maintained equipment operated by qualified and supervised staff. All works shall be implemented in accordance with the maintenance schedules shown in [Section 6.0](#).
- 3.1.3. At all times it is a requirement that the relevant British Standards, Statutory Regulations and Codes of Practice are complied with. Refer to [Appendix A](#) for a list of advice publications, British Standards and best practice guidance notes.
- 3.1.4. The work prescribed in this document should be carried out in an organised manner at reasonable times to minimise unnecessary disturbance to users of the town centre. The work should also take into account the correct timing of seasonal activities such as pruning and trimming to comply with good horticultural practice alongside any restrictions imposed by ecological constraints.

4 MANAGEMENT REQUIREMENTS

4.1 OVERVIEW

4.1.1. This section sets out the management requirements, which should be read in conjunction with the following tables:

- Table 5-1 – Soft Landscape Management Plan Table;
- Table 6-1 – Soft Landscape Maintenance Schedule;
- Table 6-2 – Soft Landscape Annual Programme;
- Table 6-3 – Hard Landscape Maintenance Schedule; and
- Table 6-4 – Hard Landscape Annual Programme.

4.2 GENERAL ITEMS

General Notes

- Remove litter and debris, taking care not to cause damage when working in close proximity to planting. Ensure appropriate equipment/methods being used e.g. hand litter picker;
- Trim: Older flowering stems of herbaceous perennials, undertaken in the timeframe outlined in the maintenance schedules in this document;
- Remove: Redundant plant supports, litter, debris and arisings;
- Remove dead or diseased plants and replace;
- Check all plants and remove all dead foliage, dead wood, and broken or damaged branches and stems;
- The works should be left in a clean, tidy condition at practical completion and after any making good and maintenance tasks; and
- All plants have been selected for their low maintenance; most plants will require minimal annual care, however any ornamental grasses ought to be cut back in spring only before new growth appears.

Weed Control

4.2.1. Aim to minimise the use of chemicals on site, for the benefit of wildlife. Much of the proposed planting is wildflower meadow and therefore use of herbicides is not necessary - hand weeding should be used. Where herbicides are absolutely necessary - and only with agreement in writing from the project landscape architect - they will generally be limited to the treatment of noxious and notifiable weeds as defined under the Weeds Act 1959 and the Wildlife and Countryside Act 1981, and take into account the following requirements:

- All works utilising chemicals will be undertaken with reference to relevant legislation and best practice (refer to [Appendix A](#)). Personnel will be registered in the British Agrochemical Standards Inspection Scheme (BASIS) and hold a BASIS Certificate of Competence;
- All spray operators will hold the National Proficiency Testing Council (NPTC) qualification and/or National Register of Spraying Operatives (NROSO) qualification for the equipment to be used or work under the direct personal supervision of a qualified operator;
- The use of herbicides will be preceded by a COSHH risk assessment, considering all potential risks and effects on the environment and to human health;
- Only pesticides approved under the Control of Pesticides Regulations 1986 (COPR), as amended by the Control of Pesticides (Amendment) Regulation 1997 or, for products containing more

recently available active ingredients, the Plant Protection Products Regulations 1995 (as amended) (PPPR) and the Plant Protection Products (Basic Conditions) Regulations 1997 will be permitted. Avoid pesticides that contain neonicotinoids (which can be harmful to invertebrates, importantly bees); and

- All herbicides will be applied in concentrations and adopting safeguards in full accordance with the manufacturer's instructions.

Total Weed Control - New Paved Areas

- 4.2.2. Where total weed control is undertaken in paved areas, spraying will only be permitted during favourable weather conditions, including low wind speed. Recommended guards to be used in accordance with the manufacturer's recommendations to safeguard against damage as a result of spray drift.

Pest and Disease Control

- 4.2.3. All plant material shall be inspected for the presence of any pests or disease occurring within the scheme, and appropriate action shall be taken to remedy the disease and eradicate pests. All materials used in connection with these works shall be approved and be applied and used in accordance with the conditions for the use of pesticides, which should be outlined in the specification documents at detailed design stage.

Control of Litter

- 4.2.4. Procedures will be put in place to ensure the site is kept clean and litter free and should include provision for a response to acts of vandalism and graffiti. Unless specified otherwise, remove all litter and non-biodegradable arisings from site.

Watering

- 4.2.5. The need for watering in the first 3 years following planting will be determined by the landscape contractor and/or site manager based upon site and prevailing weather conditions as assessed through routine maintenance visits and annual planting inspections.

Pruning

- 4.2.6. All pruning will be undertaken in accordance with best arboricultural practice using secateurs and handsaws. Pruning works will be carried out to retain the natural appearance of the individual plant species.

Arisings

- 4.2.7. Any arisings will be removed off site by the contractor for recycling.

Cleaning Through Planters and Planting Beds

- 4.2.8. Where appropriate, all dead wood along with any broken or damaged branches will be cut and disposed of / recycled accordingly. Care to be taken when removing any litter or other items disposed of in beds – as a safeguarding measure appropriate protective wear and equipment is advised.

4.3 SOFT LANDSCAPE ITEMS

Proposed Tree Planting in Soft Landscape

- 4.3.1. Trees in soft landscaping i.e. planters will have practical functions, such as providing visual interest,

shade, and carbon sequestration to add distinctiveness and maturity to the scheme whilst increasing the biodiversity of the scheme.

- 4.3.2. As part of an annual inspection, undertake pruning to all trees, in accordance with best practice guidance as listed in Appendix A to promote healthy growth.
- 4.3.3. All remaining stakes and ties from trees, where they are no longer required, will be removed off-site to be recycled. Removal is typically after 3-5 years.

Watering: Apply sufficient surface water around the stem through the irrigation pipe as necessary for the continued thriving of all trees. Watering to be undertaken during the growing season and more regularly during periods of drought and hot summer months. Watering to be undertaken for the first 3 growing seasons and be in accordance with '8545:2014 Trees: from nursery to independence in the landscape – recommendations'

Undertake management activities at an appropriate time of year, work is to be undertaken by an experienced specialist, with any tree works being carried out in accordance with British Standards.

- 4.3.4. Check below-ground root anchor systems and that grates, grilles and other street furniture do not damage or compromise the trees, taking remedial action where appropriate.
- 4.3.5. Any arisings to be removed off site by the contractor for recycling.

Proposed Wildflower, Species Rich and Neutral Grassland on Mounds

- 4.3.6. Grasses: Comb out dead and winter damaged leaves in early spring. Remove dead foliage and old flowered stems in spring.
- 4.3.7. A 500mm verge to be mown around the edge of the wildflower meadows to ensure they do not appear unkempt. The verges are to be cut once every four weeks from March to October.
- 4.3.8. Monitor success of establishment annually; undertake over-seeding if required during next season, and water and aerate as required;
- 4.3.9. First year management: Cut regularly throughout the growing season in establishment year to 40-60mm. Cutting to 40-60mm when height reaches 150mm.
- 4.3.10. Second year and on-going management: Cut 2-3no. times each year, a 'hay cut' between late August and October shall be to 70mm after flowering. Then the grass shall be maintained with a cut of 50mm to remove excess grass, the following March and April. Do not cut from spring through to August, to give sown species an opportunity to flower;
- 4.3.11. Leave 10% of each seeded area uncut to provide shelter for animals and invertebrates through the winter, cutting a mosaic, with scalloped edges;
- 4.3.12. Neutral Grassland needs to be maintained at a varied height, with at least 20% of the sward being less than 70mm and at least 20% being taller than 70mm. Cutting shall be by hand strimming twice a year between late August and October.
- 4.3.13. The species within the area of Neutral Grassland must be reviewed regularly to ensure the condition of the habitat matches the UKHab Condition Classification, in accordance with Natural England Biodiversity Metric 3.1. An appropriate species mix will be determined for the site, at detailed design.

Proposed Shrubs in Planters, Marginal Plants, Planting Beds and Rain Gardens

- 4.3.14. Allow shrubs to develop and mature without becoming overgrown, or cause nuisance through blocking footpaths and sight lines. Pruning will be carried out to encourage dense, healthy, bushy growth and desirable ornamental features, e.g. flowers, fruit, autumn colour, stem colour. Pruning

will be scheduled to allow flowering. Remove any suckers from shrubs by cutting back level with the source stem or root.

- 4.3.15. Allow perennials to establish and spread within a given planting area. Perennials shall be allowed to flower with dead heading to encourage repeat flowering where appropriate.
- 4.3.16. New plants to be watered before and after planting out and ongoing as necessary for the continued thriving of all planting, but particularly in dry weather.
- 4.3.17. At the end of the growing season trim older flowering stems of herbaceous perennials. Remove any litter, debris and arisings off site to be recycled.
- 4.3.18. Maintain bark mulch (avoid pine mulch) to a depth of 75mm, except within areas of wildflower/ grassland.
- 4.3.19. Annually inspect rain gardens, removing litter and silt accumulation and check for drainage performance.
- 4.3.20. Apply fertilizer after installation (unless after August) or at the start of the next growing season in spring.

Maintenance of Green Sedum Roofs

- 4.3.21. Green sedum roofs are proposed to be fitted to the roof of the hub building and the bin store. Green roofs provide an instant 'green' solution that contributes to improving air quality and increasing biodiversity. They also provide visual amenity, absorb carbon, and contribute to attenuating storm water run-off.
- 4.3.22. Minimal watering is required – in extreme cases of drought (more than 3 weeks with no rain) irrigation is required accordingly.
- 4.3.23. Removal and disposal of unwanted plants (weeds or plant encroachment) twice annually.
- 4.3.24. Prune annually any overgrown planting in mid-September.
- 4.3.25. Apply slow releasing fertiliser in spring and autumn with sedum fertiliser (to suppliers' specification).
- 4.3.26. Ensure outer edge gravel is sufficiently topped up and kept free of vegetation/debris.
- 4.3.27. Inspect twice annually for any general damage, condition of discharge pipe, structural (weight) conditions, wind damage, functionality of fixings / root-proofing, and general plant health condition.
- 4.3.28. Green roof pipes, gullies, gutters and gravel should be kept free of vegetation and debris.

Maintenance of Green Wall

- 4.3.29. The green wall provides a series of environmental and amenity benefits, including improving air quality, contributing to biodiversity, absorbing carbon, creating a focal point for the site and creating a setting for a memorial to the late Arriva driver.
- 4.3.30. The green wall is to be a free-standing frame, stabilised by underground construction works.
- 4.3.31. In addition, one side of the bin store will contain a green wall, attached to the bin store wall.
- 4.3.32. Maintenance tasks to be identified and undertaken by green wall specialist maintenance contractor. Indicative maintenance tasks may include:
 - Prune and tie in new shoots twice a year in April/May and September/October;

- Check irrigation system regularly to ensure it is providing water to each plant;
- Inspect regularly to ensure healthy plant conditions, adhering to shaping requirements and check condition of posts / steel grid structure; and
- Maintain compost to required depth.

4.4 HARD LANDSCAPE MAINTENANCE ITEMS

Paved Surfaces

- 4.4.1. Maintain paving in a clean, well-maintained condition, free of debris, hazards and damage.

Street Furniture

- 4.4.2. All external furniture will be kept in a well-maintained, clean and safe working condition.
- 4.4.3. Inspect street furniture twice annually for wear / damage that may have potential to cause risk to the public.
- 4.4.4. Ensure any metal or painted surfaces to furniture has not worn or eroded through use.

5 MANAGEMENT PLAN

5.1 OVERVIEW

- 5.1.1. This section of the report outlines how the requirements in the previous section will be achieved. The tasks outlined in [Section 6.0 – Maintenance Schedules](#) will be broadly undertaken within two consecutive time frames, as described below.

5.2 TIMETABLE

Establishment and Maintenance Period (Year 0/1-3)

- 5.2.1. Once the landscape works have been completed (practical completion) there will be a twelve-month rectification period where the Landscape Contractor will be responsible for the initial establishment of the external works (hard and soft landscape items) and the replacement of any failed plants.
- 5.2.2. The Landscape Contractor will also be responsible for any defects to the hard landscape and resulting rectification (making good). They will also be responsible for the maintenance period of the external spaces for the establishment and management period following practical completion up to the end of Year 3.

On-going Activities (Year 4-10)

- 5.2.3. Following the maintenance period, Kirklees Council will take responsibility for the on-going management and maintenance activities of the external areas.

5.3 MANAGEMENT PLAN TABLE

- 5.3.1. The following table sets out the desired objectives and the necessary activities to establish and maintain the landscape types identified, in order to fulfil the stated objectives. The table should be read in conjunction with Section 4.0 – Management Requirements and Section 6.0 – Maintenance Schedules.

Table 5-1 – Soft Landscape Management Plan Table

Item	Objectives	Management Period Years 0/1-3	On-going Activities 4-10
<p>Proposed Tree Planting in Soft Landscape</p>	<ul style="list-style-type: none"> To establish two native trees in planter to north of site and four more within soft landscaping to increase the biodiversity and visual impact. Enhance opportunities for wildlife on site. Visually soften the landscape and provide mitigation for lost tree planting. 	<ul style="list-style-type: none"> Annual inspection and pruning as required to remove dead, dying or diseased branches; to promote healthy growth and remove obstacles to access. Subject to approval from arboriculturist. Hand-pull coarse, noxious or noifiable weeds to keep a 500mm radius weed free area around the trunk of trees. Non-residual herbicide only to be used if non-chemical techniques are not feasible, and by spot-treatment only. Inspect planting for wind-throw, re-firm trees and check staking and tree tie requirements; replace where necessary. Check for damaged or diseased trees, remove and replace trees where sufficient damage has occurred to jeopardise long term survival of the tree. Where disease is identified treat with appropriate pesticide, should removal not be required. Apply sufficient water during the growing season and more regularly during periods of drought and hot summer months. 	<ul style="list-style-type: none"> Undertake annual walkover inspection of tree areas. Avoid damage to trunks of trees during maintenance and keep a weed /plant free area of 500mm radius around trunks. Mulch areas surrounding trees to a depth of 50mm to 75mm and radius of 500mm. Re-mulch trees in soft ground as needed annually in March to maintain 75mm depth. Coarse, noxious/ noifiable weeds are to be hand-pulled where feasible, otherwise spot-treated with non-residual herbicide to reduce competition. Check for dead, damaged or diseased trees/ branches. Where disease is identified treat as appropriate, only using pesticide if alternative methods are unsuitable. Any tree removed due to death or disease should be replaced with a tree of equivalent size/ species. Apply sufficient water during the growing season and more regularly during periods of drought and hot summer months to ensure continued health of trees.
<p>Proposed Wildflower, Species Rich and Neutral Grassland</p>	<ul style="list-style-type: none"> To provide a low maintenance solution to bringing biodiversity into the scheme. Keep newly planted areas free from weeds, litter, pests and diseases and in good condition. To visually soften the landscape 	<ul style="list-style-type: none"> Remove any litter, debris and arisings off site to approved recycling facility Grasses: Comb out dead and winter damaged leaves in early spring. Remove dead foliage and old flowered stems in spring. Apply sufficient water during the growing season and more regularly during periods of drought and hot summer months. First year management: Cut regularly throughout the growing season in establishment year to 40-60mm. Cutting to 40-60mm when height reaches 150mm. Second year and on-going management: cut 2-3 times a year - a 'hay cut' between late August and October shall be to 70mm after flowering. Then the grass shall be maintained with a cut of 50mm to remove excess grass, the following March and April. Do not cut from spring through to August, to give sown species an opportunity to flower. 	<ul style="list-style-type: none"> Grasses: Comb out dead and winter damaged leaves in early spring. Remove dead foliage and old flowered stems in spring At end of growing season trim older flowering stems of herbaceous perennials. Apply sufficient water during the growing season and more regularly during periods of drought and hot summer months to ensure continued health of planting. Wildflower/grassland: cut 2-3 times a year – a 'hay cut' between late August and October shall be to 70mm after flowering. Then the grass shall be maintained with a cut of 50mm to remove excess grass, the following March and April. Do not cut from spring through to August, to give sown species an opportunity to flower.
<p>Proposed Shrub Planting in Planter to north of site (Exclude species rich grassland/ wildflower area in planter)</p>	<ul style="list-style-type: none"> To establish a varied palette of shrubs and grass species to provide year round visual interest To allow for seating and to enable planting where utilities prevent in-ground planting. Enhance opportunities for wildlife on site. Keep newly planted areas free from weeds, litter, pests and diseases and in good condition. 	<ul style="list-style-type: none"> During establishment and early maintenance period monitor and record plant losses and vandalism. Hand-pull coarse, noxious or noifiable weeds to keep a weed free area around the base of shrubs. Non-residual herbicide only to be used if non-chemical techniques are not feasible, applied via spot-treatment only. Qualified/suitably experienced staff to inspect and check condition of planting at each visit. Remove and replace failed planting and where disease is identified treat with appropriate pesticide should removal not be required. Remove any litter, debris and arisings off site to approved recycling facility. Grasses: Comb out dead and winter damaged leaves in early spring. Remove dead foliage and old flowered stems in spring. New plants to be watered before and after planting out and ongoing as necessary for the continued thriving of all planting and more regularly during periods of drought and hot summer months. Re-mulch as needed annually in March to maintain 75mm depth. Apply sufficient water during the growing season and more regularly during periods of drought and hot summer months. Add fertilizer application to the planter and planting bed, once annually in spring. 	<ul style="list-style-type: none"> inspection of planting to be undertaken by qualified/suitably experienced person at each visit. Ensure control of pests/ disease/ vandalism and make good. Shrubs to be pruned to encourage healthy and bushy growth and desirable ornamental features, e.g. flowers, fruit, autumn colour, stem colour. Remove any suckers by cutting back level with the source stem or root. Grasses: Comb out dead and winter damaged leaves in early spring. Remove dead foliage and old flowered stems in spring Re-mulch as needed annually in March to maintain 75mm depth Apply sufficient water during the growing season and more regularly during periods of drought and hot summer months to ensure continued health of planting Add fertilizer application to the planter and planting bed, once annually in spring.
<p>Proposed Shrubs, Grasses and Marginal Planting in Rain Gardens</p>	<ul style="list-style-type: none"> To provide a suitable sustainable to urban drainage by using a bioretention system that is functional, promotes biodiversity, and is visually stimulating. Keep newly planted areas free from litter, weeds, pests and diseases and in good condition. Ensure necessary maintenance is undertaken so rain gardens perform their drainage function effectively. Provide a green barrier, preventing pedestrians crossing the road, where it is deemed unsafe. 	<ul style="list-style-type: none"> During establishment and early maintenance period monitor and record plant losses and vandalism. Hand-pull coarse, noxious or noifiable weeds to keep a weed free area around the base of shrubs. Non-residual herbicide only to be used if non-chemical techniques are not feasible, and by spot-treatment application only. Qualified/suitably experienced staff to inspect and check condition of planting at each visit. Remove and replace failed planting and where disease is identified treat with appropriate pesticide should removal not be required. Re-mulch as needed annually in March to maintain 75mm depth (mulch should not be composed of light-weight material such as pine bark). New plants to be watered before and after planting out and ongoing as necessary for the continued thriving of all planting. Regular inspection of the rain gardens for silt accumulation, blockages, collapses. 	<ul style="list-style-type: none"> Inspection of rain garden to be undertaken by qualified / suitably experienced person at each visit – remove any silt accumulation and ensure effective performance of drainage i.e. no blockages. Shrubs to be pruned to encourage healthy and bushy growth and desirable ornamental features, e.g. flowers, fruit, autumn colour, stem colour. Remove any suckers by cutting back level with the source stem or root. Re-mulch as needed annually in March to maintain 75mm depth (mulch should not be composed of light-weight material such as pine bark). Grasses: Comb out dead and winter damaged leaves in early spring. Remove dead foliage and old flowered stems in spring. At end of growing season trim older flowering stems of herbaceous perennials.

Item	Objectives	Management Period Years 0/1-3	On-going Activities 4-10
<p>Green Sedum Roofs</p>	<ul style="list-style-type: none"> ■ Green sedum roofs are proposed to be fitted to the roof of the hub building and bin store to provide an instant 'green' solution that contributes to improving air quality and increasing biodiversity. ■ The roofs also provide visual amenity and contribute to attenuating storm water run-off. 	<ul style="list-style-type: none"> ■ Prune overgrown planting annually (September) ■ Remove and dispose of weeds twice a year. ■ Water as necessary to maintain healthy condition of plants (in periods of drought). ■ Inspect twice annually for damage to fittings and overall units, replacing / rectify as necessary. ■ Apply fertilizer annually (spring) to suppliers' specification. 	<ul style="list-style-type: none"> ■ Prune overgrown planting annually (September) ■ Remove and dispose of weeds twice a year. ■ Water as necessary to maintain healthy condition of plants (in periods of drought). ■ Inspect twice annually for damage to fittings and overall units, replacing / rectify as necessary. ■ Apply fertilizer annually (spring) to suppliers' specification.
<p>Proposed Green Wall (indicative only - maintenance and tasks to be defined and undertaken by specialist contractor)</p>	<ul style="list-style-type: none"> ■ Provide a biodiverse solution to improve the facade of the domineering wall ■ Contribute to improving air quality and visual amenity. ■ Provide a Memorial for the Arriva Driver 	<p><i>Maintenance activities to be confirmed and undertaken by green wall specialist contractor. Maintenance may include:</i></p> <ul style="list-style-type: none"> ■ Inspect irrigation system regularly to ensure it is providing water to each plant ■ Prune and tie in new shoots twice a year in April/May and September/October ■ Inspect regularly to ensure healthy plant conditions, adhering to shaping requirements and check condition of posts / steel grid structure / irrigation system. ■ Maintain compost to required depth. 	<p><i>Maintenance activities to be confirmed and undertaken by green wall specialist maintenance contractor. Maintenance may include:</i></p> <ul style="list-style-type: none"> ■ Inspect irrigation system regularly to ensure it is providing water to each plant ■ Prune and tie in new shoots twice a year in April/May and September/October ■ Inspect regularly to ensure healthy plant conditions, adhering to shaping requirements and check condition of posts / steel grid structure / irrigation system. ■ Maintain compost to required depth.

6 MAINTENANCE SCHEDULES

- 6.1.1. The table below sets out the anticipated schedule for undertaking maintenance works and should be read in conjunction with the [Management Requirements \(Section 4.0\)](#) and [Management Plan \(Section 5.0\)](#) in the above sections. The schedules below set out the types of activity required to achieve the long-term aims of the landscape proposals for the scheme.
- 6.1.2. It is recognised that requirements on a year-on-year basis can vary depending on climatic conditions over time and during any specific year. Detailed requirements should be reviewed accordingly and programmed on a three-yearly basis.

Table 6-1 – Soft Landscape Maintenance Schedule

Item / Area	Task	Year																				
		0 / 1	2	3	4	5	6	7	8	9	10											
Proposed Tree Planting	A	Firming – straighten any plants to an upright position that have been subject to frost heave or wind rock and re-firm the ground.	•	•	•																	
	B	Monitor trees for signs of poor health / defects. Take remedial action if required.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	C	Undertake pruning operations to remove tree branches which are dead / dying or are encroaching on paths / pedestrian and vehicular access areas. Maintain a 2m clear stem on all trees.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	D	Check tree stakes / guards / ties for tightness and overall condition. Adjust ties as required.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	E	Review and remove tree stakes, guards and ties (when required); dispose off-site and backfill holes with topsoil. Check below-ground root anchor systems and that grates, grilles and other street furniture do not damage or compromise the trees.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Wildflower Species Rich and Neutral Grassland Mounds	F	A 500mm verge to be mown around the edge of the wildflower mounds to ensure they do not appear unkempt.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	G	Grasses: comb out dead and winter damaged leaves. Remove dead foliage and old flowered stems.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	H	Cutting of wildflower and neutral grassland	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	I	Top up mulch layer to planters and rain gardens.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Planters (shrubs only) and Rain Gardens	J	Inspect rain garden and clean inlets / outlets and remove silt accumulation.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	K	Trim older flowering stems or herbaceous perennials at the end of the growing season.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	L	Grasses: comb out dead and winter damaged leaves. Remove dead foliage and old flowered stems.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Green Sedum Roofs	O	Inspect for general damage and condition of planting and fixings / structural elements. Ensure gutters and drains are free of debris	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	P	Apply slow releasing fertiliser (to suppliers' specification)	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Q	Prune overgrown planting and remove any vegetation encroaching into unwanted areas.	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Item / Area	Task	Year											
		0 / 1	2	3	4	5	6	7	8	9	10		
Green Wall - indicative actions only	M	•	•	•	•	•	•	•	•	•	•	•	•
	N	•	•	•	•	•	•	•	•	•	•	•	•
All Planted Areas	R	•	•	•	•	•	•	•	•	•	•	•	•
	S	•	•	•	•	•	•	•	•	•	•	•	•
	T	•	•	•	•	•	•	•	•	•	•	•	•
	U	•	•	•	•	•	•	•	•	•	•	•	•
	V	•	•	•	•	•	•	•	•	•	•	•	•
	X	•	•	•	•	•	•	•	•	•	•	•	•
	Y	•	•	•	•	•	•	•	•	•	•	•	•

* Rate is as required upon each visit

** As required – this may be daily for establishment of new plants and increasing in periods of drought or during excessive hot periods

*** Indicative tasks only, specific tasks to be identified and undertaken by specialist contractor

Table 6-2 – Soft Landscape Annual Programme

This table provides guidance on the annual timing of tasks as identified within the programme. Not all tasks would be undertaken on an annual basis.

January	February	March	April	May	June	July	August	September	October	November	December
N, T	C, B, T	A, J, G, N, O, P, T, F, I, H	B, D, F, M, P, Q, T, V, H	N, T, V, N, F	B, J, O, T, V, F	N, O, T, V, F	B, F, C, G, T, V, F, H	D, J, K, M, N, Q, O, P, T, V, F	B, E, T, F	S, T	J, T

Table 6-3 – Hard Landscape Maintenance Schedule

This table provides guidance on the annual timing of tasks as identified within the programme.

Item / Area	Task	Year												
		0 / 1	2	3	4	5	6	7	8	9	10			
All Hard Surface Areas	A	•	•	•	•	•	•	•	•	•	•	•	•	•
	B	•	•	•	•	•	•	•	•	•	•	•	•	•
	C			•			•				•			•
	D	•	•	•	•	•	•	•	•	•	•	•	•	•
	E	•		•						•				•
All Street Furniture	F	•	•	•	•	•	•	•	•	•	•	•	•	•
	G	•	•		•		•			•		•		•

Note: We have used our reasonable endeavours to provide information that is correct and accurate and have discussed above the reasonable conclusions that can be reached on the basis of the information available. Having issued the range of management activities recommended it is for the client to decide whether these are appropriate for the site and compliant with similar works carried out on adjacent highway sites.

Table 6-4 – Hard Landscape Annual Programme

This table provides guidance on the annual timing of tasks as identified within the programme. Not all tasks would be undertaken on an annual basis.

January	February	March	April	May	June	July	August	September	October	November	December
A	A	A, B, C, D, E, F, G	A	A	A, D	A	A	A, B, C, E, F, G	A	A	A

7 RESPONSIBILITIES AND REVIEW

7.1 RESPONSIBILITIES

Construction and 3-year Establishment Period

- 7.1.1. During the construction phase it is the contractor's responsibility to ensure public access to the construction zone is restricted.
- 7.1.2. All personnel appointed by or on behalf of Kirklees Council to carry out inspections and management tasks will be suitably trained and competent.
- 7.1.3. The two year aftercare maintenance period will be built into the implementation contract to cover post-installation maintenance requirements of the landscape works. Management and maintenance during the first two years following construction, including planting which has failed to flourish, will be the responsibility of the landscape contractor. At the end of this establishment period, any defects in soft landscape materials due to materials or workmanship will be rectified and future responsibility will be handed over to Kirklees Council.
- 7.1.4. Maintenance of the green wall will be undertaken by green wall specialist maintenance contractor from completion of construction and ongoing. A green wall specialist can provide a specialised unique maintenance contract which includes regular monthly visits and horticultural husbandry visits, twice annually.
- 7.1.5. The green wall specialist contractor will carry out maintenance tasks monthly, which may include
- Checking for pests and diseases
 - Checking for airborne weeds
 - Cleaning around the green wall
 - Trimming and pruning where necessary
 - Shaping plants
 - Planting replacements if necessary
 - Applying biological control through irrigation system
 - Checking moisture levels
 - Irrigation system service (ensuring even distribution, re-calibration through the seasons, and checking for any frost damage though winter).

Long Term Management

- 7.1.6. After the 3-year establishment period, the landscape maintenance requirements will become the responsibility of Kirklees Council (including any landscape contractors appointed to act on their behalf).
- 7.1.7. Kirklees Council as the adopting organisation will coordinate all management of the site in perpetuity in accordance with this Landscape Management Plan and the accompanying maintenance

schedules.

- 7.1.8. Kirklees Council may appoint a Landscape Management Contractor to carry out maintenance operations, as well as consultants to provide specialist advice or monitoring where necessary, such as suitably qualified ecologists, arboriculturists or landscape architects.
- 7.1.9. All works, materials and operations will be in accordance with relevant legislation, British Standards, Regulations (including the CDM Regulations) and Codes of Practice.
- 7.1.10. Maintenance of the green wall will be undertaken by a specialist green wall contractor. They will continue to make regular visits at intervals to be agreed with the Project Manager including horticultural husbandry visits, twice annually.

7.2 MONITORING AND REVIEW

Annual Reviews during Establishment

- 7.2.1. The Landscape Management Plan and maintenance schedules will be monitored and assessed for their effectiveness on an annual basis for the first two years following the completion of the development.
- 7.2.2. Each annual review will be coordinated and completed by a suitably qualified representative from Kirklees Council. The review will include advice from specialist consultants as required (such as a qualified arboriculturist, ecologist, green wall specialist or landscape architect) in discussion with the Landscape Management Contractor.
- 7.2.3. Each annual review will be made between May and August, as identification of many plants is easier at this time. The review should be completed by an individual able to identify plant species. The vegetation planted will be checked against landscape plans and associated species lists to check for any failed planting and whether the aims and objectives of the Landscape Management Plan are being met. Failed planting will be replaced by the same species, in consultation with landscape specialists. However, consideration will be given to varying replacement species with equivalent species that may be more resilient to environmental conditions, or where any strategic landscape enhancements, including new planting, could be better achieved through varying replacement species. Priorities will be established for undertaking associated works.
- 7.2.4. Should species composition become dominated by one or very few species, advice will be sought on an appropriate mix to re-plant or otherwise increase the species diversity present.
- 7.2.5. Checks will also be made for colonising flora, particularly non-native invasive species that may become naturally established, such as those listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). If undesirable colonising species are present, they will be managed or removed. It should be noted that where species listed under Schedule 9 of the Wildlife & Countryside Act are identified, these species are legally controlled and specialist advice should be sought. Checks will also be made for excessive growth of undesirable weeds (including those listed under the Weeds Act (1959) such as bramble *Rubus fruticosus* agg. or nettle *Urtica dioica*).
- 7.2.6. The annual review may also include (as appropriate):
 - Specialist reports - advising on particular aspects such as protected species, general silvicultural husbandry and health and safety issues;



- Records of attendance sheets demonstrating the maintenance work undertaken;
- A walk over assessment of the landscape areas to assess landscape components and their condition, and the need for any enhancement or amendment; and
- Minutes of the site walkover/meeting.

7.2.7. Within 1 calendar month of the review, a revised Landscape Management Plan shall be produced (if appropriate) and circulated to relevant Kirklees Council officers and maintenance team. Within 3 years of the completion of the site, the revised document shall be submitted to the LPA as a non-material amendment to the previously approved Landscape Management Plan.

Long term Reviews

7.2.8. After the first three years the Landscape Management Plan will be reviewed every five years, or as required to ensure the satisfactory management of the landscape in perpetuity.



Appendix A

BRITISH STANDARDS AND BEST PRACTICE GUIDANCE



BRITISH STANDARDS AND BEST PRACTICE GUIDANCE

The following is a list of advice publications, British Standards or 'best practice' guidance notes deemed applicable to the undertaking of landscape works to which reference is required. This list is for guidance only, which the Site Operator may wish to update as required.

BRITISH STANDARDS (PUBLISHED BY BRITISH STANDARDS INSTITUTION)

- BS 1722 Specification for Fences (all parts)
- BS 3882: 2015 Specification for Topsoil
- BS 3936 Part1:1992 Nursery Stock (all parts)
- BS 3998:2010 Tree Work
- BS 4428:1989 Code of Practice for General Landscape Operations
- BS 4043:1989 Transplanting root-balled trees
- BS 5837:2012 Trees in Relation to Design, Demolition and Construction
- BS 7370 Grounds Maintenance (all parts)
- BS 8545: 2014 Trees: From Nursery to Independence in the Landscape

ARBORICULTURAL ASSOCIATION

- D. Lonsdale 1983: A Definition of the Best Pruning Position; Arboricultural Research Note 48/83.
- D. Lonsdale 1993: Choosing the Time of Year to Prune Trees; Arboricultural Research Note 117/93.
- Stakes and Ties (1989); Arboricultural Research Note 77/89.
- Guidance Note 3 Planting and Managing Amenity Woodlands.

HMSO / DEFRA

- The Body Language of Trees: A Handbook for Failure Analysis, published by the Department of the Environment, Transport and the Regions.
- Weeds Act 1959.
- Wildlife and Countryside Act, 1981, as amended.
- UK Woodland Assurance Standard (UKWAS) 4th Edition.
- The Control of Substances Hazardous to Health (COSHH) Regulations 2002, as amended
- The Control of Pesticides Regulations 1986 (COPR), as amended by the Control of Pesticides (Amendment) Regulations 1997.
- Regulation EC 396/2005 amending EC Directive 91/414/EEC.
- The Plant Protection Products Regulations 2011 (as amended).
- The Water Supply (Water Quality) Regulations 2010.
- The Control of Pollution Act 1974 & 1989 Amendments.
- Identification of Injurious Weeds (2011 DEFRA); MAFF - Leaflet to support Weeds Act 1959.
- Guidelines for the use of herbicides on weeds in or near watercourses and lakes (1996); MAFF.
- The safe use of pesticides for non-agricultural purposes (1995); HSC.



HORTICULTURAL TRADES ASSOCIATION AND THE JOINT COUNCIL FOR LANDSCAPE INDUSTRIES

National Plant Specification (1985), published by the Committee for Plant Supply and Establishment and the HTA.

OTHER RELEVANT LEGISLATION

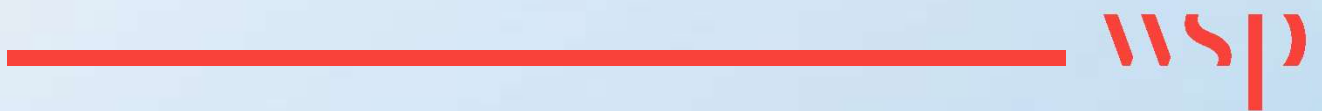
- The Food and Environment Protection Act (1985)
- The Control of Pesticides Regulations (1986)
- The Control of Substances Hazardous to Health (COSHH) Regulations (2002)
- The Health and Safety Work Act (1974)

OTHER USEFUL GUIDANCE

- LCC Guidance: Urban Tree Planting (SC Rev C- Dec 2018)
- LCC Guidance: Landscape Management Plans Required by Planning Condition (Rev B 2016)
- Natural England – Green Roofs: Their Existing Status and Potential for Conserving Biodiversity in Urban Areas (Report 498)
- CIRIA - The SuDS Manual (C753) (2015)
- Yorkshire Water - Sewers for Adoption: A Design and Construction Guide for Developers
- Trees and Design Action Group - Trees in Hard Landscapes: A Guide for Delivery (2014)
- Trees and Design Action Group - Trees in the Townscape: A Guide for Decision Makers

Appendix B

LANDSCAPE DRAWINGS







Three White Rose Office Park
Millshaw Park Lane
Leeds
LS11 0DL

wsp.com