# Darwin Green One, Histon Road, Cambridge
## First Access, Drainage & Open Space Full Application

Landscape Maintenance and Management Plan for
External Works to Land within South Cambridgeshire District Council
Condition No. 5, Planning Application No. S/0001/07/F

**FOR PLANNING**

18 October 2013
628.2/RPT01 Rev. C

**Landscape Architecture | Planning | Design**
landscapeagency.co.uk | enquiries@landscapeagency.co.uk

## REVISION HISTORY

| Rev | Date | Description | Initials | Checked |
|---|---|---|---|---|
| \ | **31.10.2012** | Document issued as Draft for Information as part of Work Stage E package of works. | **MJ** | **AR** |
| **A** | **02.11.2012** | Document revised with client comments, hard landscape maintenance operations and issued as Draft for Information as part of Work Stage E package of works. | **SP** | **MJ** |
| **B** | **25.07.13** | Document revised to correspond with latest design proposals as requested by SCDC and focused on the retention of the existing hedge and reduced the emphasis on biodiversity enhancements. Document updated inline with revised engineering approach and to provide an emphasis on attenuated land for recreational use. Clarification of weed free environment updated and emphasis to dock control relaxed. | **MJ** | **EP** |
| **C** | **20.12.13** | Document updated in line with hedge laying details, existing ditch/ hedge bank and general minor amendments. | **MJ** | **AR** |

**Document prepared for on behalf of:** Barratt Eastern Counties

**Project Number:** 628.2

**Document Status:** For Planning

T: 01904 691630
landscapeagency.co.uk
enquiries@landscapeagency.co.uk

## CONTENTS

# 01 INTRODUCTION

## OBJECTIVE

To describe the purpose of this document, outline a description of the works and required standards to manage and maintain external areas as identified for a period of 25 years.

## BACKGROUND

This document has been produced on behalf of Barratt Eastern Counties and to inform third party ownership once areas are adopted by the Local Authority, referred to as 'Employer' hereon in, as a direct response to discharge Planning Condition No. 5, associated with Form 4 - Planning Application No. S/0001/07/F by South Cambridgeshire District Council. The aim is to establish a 25 Year Management and Maintenance Plan which would be implemented within the defined landscape areas at the time of completion. This may be prior to Practical Completion to ensure all newly planted areas are well maintained throughout the duration of the construction contract and provide guidance once external works areas have been successfully adopted.

Reference should also be made of relevant ecological maintenance plan required for the and surrounding landscape areas as described by Applied Ecology, Ecological Consultants - document reference NIAB 1 Ecological Maintenance Plan - South Cambridge District Council Condition 7 dated October 2012.

## LOCATION

This document has been produced to set out management and maintenance principals associated with the landscape areas surrounding the attenuated land as shown on The Landscape Agency location schematic below and detailed drawings 628.2-108 & 109. A3 reduced copies of these detailed drawings have been included within Appendix D for reference and are known as 'Contract Drawings' for the duration of this document. These drawings indicate the areas to be maintained and form the initial forecast of the scope and nature of the maintenance work. However, maintenance work will fluctuate as the Employer's requirements change, site conditions dictate or 'best practice' techniques are improved during the proposed 25 years.

*Location Plan Schematic*

## QUANTITY OF WORK

It is intended that the contract period for the management and maintenance works will be no less that twenty five years from the date of successful implementation of all landscape works. Reference should be made to any Contract Particulars as provided by the Employer.

## DETAILED DRAWINGS

External works have been developed for the area surrounding the attenuated land and detailed landscape proposals have been illustrated on the relevant drawings located with Appendix D of this document.

## DIMENSIONAL ACCURACY

Before commencing any part of the maintenance works, the Contractor shall check that all dimensions shown on the relevant Contract Drawings are correct. He shall check and satisfy himself that the various parts and maintenance regimes fit satisfactorily together, and are compatible in relation to existing physical features. These checks shall be carried out sufficiently in advance of the Works to allow for corrections and approvals.

## DESCRIPTION OF THE WORKS

The Works comprise of Landscape Maintenance including:

- Objective of the works
- Care and maintenance of trees
- Maintenance operations to grass
- Weed Control in both soft and hard landscapes

The Employer reserves the right to add additional specifications for the future maintenance of the site should the proposals be altered to include new landscape elements not already covered by this document. This document covers all long term objectives relating to maintenance and management operations for external works to the Site for a period of 25 years generally.

It is intended that the frequency of maintenance operations will be ever decreasing once the landscape has been established for a period of time. A flexible and adaptable approach to the maintenance of all trees and shrubs will need to be adopted for the timescale of this document.

## 02 OBJECTIVES

The Contractor shall assist the Employer in the development and management of a safe, diverse and interesting landscape, maintained in accordance with general best practice horticultural operations. Due to the extent of the site, development proposals will be phased therefore certain areas of the site will be unoccupied and awaiting development. The objective with such areas is to keep the land open, deter the growth of self seeded trees, shrubs and other flora and to prevent the development of habitats for protected species of plants and animals, whilst keeping within the requirements of the Wildlife & Countryside Act 1981.

All problems and damage which is evident on Site shall be identified and described in detail in order that the Employer can give instructions for rectification at the earliest stage.

The Employer's maintenance requirements are generally given as quality standards, which the Contractor is required to adhere to. Exceptions are made where a specific operation is an important part of the management, for example the timing of cutting of ecologically important grass.

The Contractor shall be responsible for all aspects of the works and job organisation, the techniques to be employed and their appropriate sequence in order to comply with the Schedule of Maintenance Operations as set out in Appendix A and the Detailed Specification of Maintenance Works set out in Appendix B.

# 03 DESIGN STATEMENT

## OBJECTIVE

Define original design intent for all areas to be maintained. Refer to Appendix D for Contract Drawings and location of works.

## OVERVIEW OF GREEN CORRIDORS FUNCTION / CHARACTER ASPIRATIONS

- To retain high quality features of the existing landscape including trees and hedges where possible.
- To develop a green open space to provide continuous links within a wider mosaic of green spaces, forming publicly accessible open space.
- Integrate pedestrian activities sensitively within the green corridors to provide a safe environment.
- Green corridors should be multifunctional.
- Where possible work with engineers to develop lighting schemes which are sensitive to the night time environment promoting safe lighting for pedestrian movement without compromising bat activity.
- It is understood that every section of green corridor cannot contain every type of habitat or landscape feature. Proposals, in principle, must seek to offer a continuous network of habitats which permit and promote movement of wildlife within the immediate setting and broader context. The aspirations for the wider green corridors are to encourage variety in form, promoting biodiversity and character, which positively contributes to the Darwin Green development and Cambridge as a whole.

## EXISTING HEDGES

- These are identified in the Design Code Parameter Plans and form a key existing component to retain within the proposed masterplan.
- At present, no internal hedgerows existing within this area.
- Boundary hedgerow exists to the south eastern boundary. This hedgerow contains generally a greater species variety but would benefit from a more regular and structured programme of management and maintenance.
- The key principle for this hedgerow is to preserve the hedge in its current form to main a robust and well established boundary.

Existing hedgerow character should embrace:

- Existing establishment of hedgerow trees.
- Existing hedge would benefit from regular management programme, although laying is not proposed to this section of hedge.
- It is not crucial to maintain the current height and width of this hedge, as cutting will prevent the hedgerow over maturing and vigorous species dominating.
- In some areas a variety of hedge heights is desirable to create a varied visual character.

## ATTENUATED LAND

Embrace natural soft forms where possible.
Avoid concrete structures.

- Reduce engineered impact by grading out the landscape used for attenuation to provide a more flexible area of open space when area is not attenuating surface water runoff.

# 04 CONDITIONS

## OBJECTIVE

To ensure the work is carried out efficiently with minimal disruption

## TIMING OF OPERATIONS

The Contractor shall perform all operations in a timely manner to ensure that all of the Employer's maintenance specifications are achieved and maintained throughout the Contract period.

The Employer reserves the right to defer or prohibit any operation being proposed by the Contractor, or to suspend it if it is in progress, if :

- the Contractor had not made the Employer aware that the operation was in progress; or
- in the opinion of the Employer, the work being proposed or in progress is likely to be dangerous or damaging to the site, to wildlife, to adjacent property, to herbaceous material, shrubs or trees (but excluding weeds), or to members of the public.
- the Site is required for another purpose e.g. whilst an area of public open spacer is being prepared for or used for an event of any description.

The contractor shall inform the Employer a minimum of forty-eight hours and a maximum of seven days prior to each intended application of pesticide and detail the locations to which pesticides are to be applied. The Employer reserves the right to defer or prohibit the herbicide application, or to suspend it when in progress if :

- the Contractor had not made the Employer aware that pesticide application was in progress; or

- in the opinion of the Employer the work is likely to be dangerous or damaging to the site, to plant material other than those to be eradicated or to members of the public.

The Contractor shall seek the permission of the Employer (which shall not unreasonably be withheld) to work weekends or Public Holidays.

The Contractor shall not use noisy work equipment, for example mowing machines, chainsaws, chipping machines, before 8.00 a.m. and after 6.00 p.m. without the permission of the Employer.

## ACCESS TO SITE

The Contractor shall have free access to the site for the duration of the works unless he is instructed by the Employer.

Access to the site shall be by public roads. The Contractor will be responsible for agreeing methods of access to the sites with the Employer and also for ensuring that his own vehicles and those of subcontractors, suppliers or others employed by him under this contract use only the agreed routes and parking areas. Use of Banksman when manovering machinery around site is recommend at all times.

The Contractor shall ensure that transport directly or indirectly involved in the works shall at all times when leaving the site be in a state of

cleanliness to preclude the fouling of public or private roads on or adjacent to the site.

The Employer requires the Contractor's Manager/Supervisor to be contactable by mobile telephone at all times, whether on site or not.

## NEW AND EXISTING SERVICES

The contractor shall locate, identify and familiarise himself with all existing services on Site which may affect the Works. The Contractor shall satisfy himself of the extent and nature of the services and shall be responsible for the repair of any damage to them caused by the Contractor or any sub-contractor. When/ if it is necessary to arrange the temporary disconnection of services, it shall be the Contractor's responsibility to ensure that all necessary arrangements are made with the said undertakers and shall inform the Employer of such arrangements, and not to allow such time to affect the programme of works.

The Contractor shall notify the Employer when he considers that the Works may affect existing services. In such cases the Employer may instruct or amend the setting out of the Works as necessary.

## DUST AND MUD NUISANCE

The Contractor shall take all necessary steps to eliminate dust and mud nuisance (including woody waste, grass and herbage clippings) during the carrying out of the Works.

The existing public highways, platforms, footways and private access routes used by vehicles of the Contractor or any of his Sub-Contractors or suppliers of materials or plant, shall be kept clean and clear of dust, grass debris, and mud dropped by the said vehicles or their tyres. The Contractor shall immediately clear all dust and mud from the work spreading onto these highways or any public or private right of way.

The Contractor shall, when it is considered that any operation may result in airborne dust or fumes, contact the Employer prior to commencing such works within 50 metres of the buildings, car parks, signals, or railway tracks, and obtain the Employer's approval prior to commencement.

## ENVIRONMENTAL PROTECTION

The Landscape Contractor shall be fully conversant with existing legislation, including European legislation, relating to wildlife and nature conservation issues, and protected species and habitats.

When working in or close to watercourses, the contractor is referred to Environment Agency publication "Works in, Near or Liable to Affect Watercourses". All such works shall be in compliance with this guidance.

Mature trees and other vegetation that are to be retained onsite must be fenced off for their protection with temporary protective fencing in compliance with BS 5837:2012 when undertaking improvement works which may cause adverse effects. The fenced area must not be moved unless under instruction and supervision of the Employer. Machine works shall be not carried out within these fenced

areas and the areas shall not be used for the storage of materials, equipment or machinery.

It is an offence under the Wildlife and Countryside Act (1981) to destroy the nest of all birds. For this reason all trees and hedges to be removed must be free from actively breeding birds. In addition the contractor should note the special protection afforded to bats, which may use trees for nesting and hibernation over the winter period. To ensure that nesting birds are not resident, works on trees and hedgerows shall usually be carried out outside of the normal breeding season (between the months of November to February inclusive) subject to the vegetation not being used by hibernating bats. Where vegetation to be cleared supports an active nest / hibernating bat works are to cease immediately until the Employer consents that works can recommence.

Under the Conservation (Natural Habitats, &c.) (amendment) regulation 2007, it is, and there is no longer the 'incidental result defence' which cover acts which are the incidental result of an otherwise lawful activity which could not have been reasonably avoided. As such, land owners/managers are now required to ensure the no European Protected Species are present on site that could be harmed in any of the following ways:

- capture, injure or killed
- picked, cut or destroyed
- take or destroy eggs
- disturb animals significantly to effect the ability to survive, breed or rear or nurture their young
- damage or destroy a breeding site or resting place.

## DAMAGE TO PROPERTY, EXISTING LANDSCAPE FEATURES & SURFACES

The Contractor is to indemnify the Employer against any damage to property, any existing landscape planting or surfaces arising out of or in connection with his acts in the execution of this Contract or his negligence. He shall make good any such damage at his own expense to the satisfaction of the Employer.

The Employer reserves the right, in all cases, to make alternative arrangements for the rectification of such damage, using his own or any other Agency and to deduct the cost from monies owing to the Contractor.

# 05 STANDARDS OF MAINTENANCE & WORKMANSHIP

Method Statements and Risk Assessments for each operation must be supplied to the Employer for approval before work commences. The Contractor will be responsible for ensuring health and safety of all operatives during maintenance visits and take the necessary precautions to prevent risk to the general public during routine maintenance visits. The Contractor shall ensure any potentially hazards operations such as but not limited to; cutting of grass verges, removal of tree branches, spraying or strimming are carried out at an appropriate time together with appropriate hazard warning methods.

Where a British Standard exists for materials to be used in the maintenance works, unless otherwise stated, the minimum requirements of the latest standard shall apply.

All work shall be carried out by operatives qualified to carry out the particular tasks required by the maintenance specification. Where British Standard Codes of Practice exist the work is to be carried out in accordance with the latest Code.

All materials or articles, required to complete the maintenance requirements shall comply with any specified standard, whether a British Standard, other named standard or otherwise, shall be satisfied by compliance with any relevant national or governmental standard of any member state of the European Communities, or any relevant international standard recognised in such a member state, provided that in either case the standard in question offers guarantees of safety, suitability and fitness for purpose.

When any material or article is required to comply with a British Standard, such material or article or its container shall bear the stamp of the registered certification trademark of the British Standards Institution. Alternatively, the Contractor shall submit to the Employer test certificates furnished by the supplier or manufacturer of the material or article indicating compliance with the relevant British Standard.

The Contractor shall notify the Employer, at least seven working days, beforehand of all intended deliveries of plant material, soil, fertilisers, fencing materials, gravels and the like and of their composition.

*Please refer to Detailed Specification of Maintenance Works set out in Appendix B for specific maintenance standards.*

# 06 TREES

## OBJECTIVE

To establish and maintain healthy, well formed, attractive, safe trees.

Detailed list of proposed tree species has been provided within the contract drawings within Appendix D of this document.

Proposed Street Trees and Feature tree planting will all be planted as Standard (Light) x2 transplanted. Proposed Native tree planting within Green Corridors and Buffer Planting to be planted as a mix of Bareroot, Feathered Whips, 2x transplanted along with Standards and Multi-Stems, 3x transplanted. All trees will be supported by short timber stake and adjustable biodegradable tree tie along with single timber stakes to all whip planting. Mulch mats will be used to reduce the growth of grass around the base each tree and a watering regime will be instigated during the trees first season of growth.

## REQUIREMENTS

Individual tree maintenance shall be required as a general specification applying to the whole area.

It is likely that the works required to individual trees will consist of:

- Epicormic growth removal
- Pruning out of damaged and diseased branches
- Maintenance of tree ties and stakes

Only hand tools shall be used to achieve the maintenance work required.

Each tree shall be individually considered and the general description of work to be undertaken shall be interpreted in relation to the species, shape, size, character and condition of each individual tree. All operations shall be carried out so as to leave a well balanced tree crown, however consideration will be given to the establishment of trees which support a range of wildlife, and are fitting in this landscape of prominent single trees and small clumps.

Arboricultural works shall be carried out in accordance with the general safety factors set out in BS 3998 (2010) “Tree Work - Recommendations”, or any amendments thereto.

Ideally, all tree pruning operations shall only be undertaken within the dormant season and outside the bird nesting season. The removal of live wood from any species shall not be undertaken during periods of severe frosts.

## OPERATIONS - REGULATIVE PRUNING

Tree pruning shall be carried out in accordance with the Arboriculture Research Note 48/83/PATH as issued by the Arboricultural Advisory and Information Service.

Pruning cuts shall wherever possible be made at a fork or at the main stem. All wounds shall be kept as small as possible. The final pruning cut shall be made so that both the branch, branch bark ridge and branch collar remain intact.

As part of tree pruning operations, all or any of the following works as may be necessary:

### EPICORMIC GROWTH REMOVAL

Remove all epicormic buds, growth from the trees' stems and/or root suckers from all trees in grassland and all trees in groundcover and shrub beds in order to achieve and to maintain single, clean stemmed trees to a height of 2.5m or to the height specified.

### ADDITIONAL PRUNING REQUIREMENTS

Remove any reverted branches from cultivars of tree species within the trees crown. Remove by pruning any undesirable climbing plants at base and main stem of the tree.

### PRUNING OUT OF DEADWOOD, DAMAGED AND DISEASED WOOD

Prune back using appropriate equipment all dead, damaged or diseased wood to its point of origin. The cutting of the branch shall not damage the branch collar if taken off at a main limb or on the bole. The triple cut method shall be used when carrying out the pruning operation and the final wound shall be smooth and free of snags.

All damage to main limbs or boles shall be cleaned to remove damaged or diseased tissue back to, but not into, live wood or bark. The final wound shall be smooth and free of snags.

Once trees have become established, dead wood may be left on the tree to encourage insect life, subject to there not being a risk of infection to the tree. Trees should be encouraged to develop a habit in keeping with the open landscape rather than an ornamental habit.

# 07 HEDGES

## OBJECTIVE

A key objective is not to preserve the hedges in their current form but to maintain a continuous corridor for wildlife movement. Proposals are to encourage the creation of new hedgerow characters, retaining a continuous wildlife movement.

New hedge planting should seek to further enhance biodiversity and respond to the varying hedge characters across the Site generally.

## EXISTING HEDGES

Where existing hedgerows are punctured by access routes, tree planting is promoted at either side of the cut. As the trees mature and canopies spread, bats and birds can utilise the canopies as a continuous corridor.

Existing hedges are identified in the Design Code Parameter Plans and form a key existing component to retain within the proposed masterplan. Areas which identify existing hedge locations include; North West Corridor, Transverse Corridors (in part) and south of Central Park. Please refer to the various detailed landscape plans for further information

New hedgerow characters should embrace:

- Increased species variety.
- Scalloped edges.
- Hedgerow tree planting.
- Variety of boundary heights.
- Existing hedges would benefit from structured management programmes including regular laying and cutting to maintain a denser form.
- It is not crucial to maintain the current height and width of the hedges, regular laying and cutting will prevent hedgerows over maturing and vigorous species dominating. A continuous corridor is the key character to retain.
- In some areas a variety of hedge heights is desirable to create a varied visual character and selection of habitat types.

At present the internal hedgerows are primarily hawthorn with limited species variety. Hedges in these locations have received limited management and are consequently poor in terms of species and form.

Boundary hedgerows contain generally a greater species variety but would benefit from a more regular and structured programme of management and maintenance.

Areas of existing hedge proposed to be cut back shall be thinned and managed through 'South of England Style' hedge laying technique to provide double brushed by cutting at the base to allow the stem to be bent over whilst still attached and supported by stakes. Typical hedge height once areas have been laid will be approx. 1-1.5m.

This encourages regeneration, variety of habitat, heights & character. In addition, this will also encourage natural surveillance across the site to increase pedestrian safety.

Additional native species will be added to enhance existing hedges and provide traditional mixed rural style hedge.

## DESIGN INTENT FOR HEDGELAYING

Reference has been made of the National Hedgelaying Society in particular general design intent information and recommendations for successful hedge laying. Works to all hedges to be carried out by a suitability qualified contractor to ensure all hedges are laid in accordance with best practice techniques.

Laying hedges is one of many techniques available in the management of hedgerows. Left unmanaged, a hedgerow will continue to grow upwards and outwards, eventually over maturing. In some instances, hedges on site have become overgrown and lack vegetation cover to the base limits wildlife habitat potential. Over mature hedges can prevent other plant species establishing, reducing their overall biodiversity benefit. Laying such hedges can reclaim areas of previously shaded grassland. Styles of hedge laying vary across parts of the UK with each style developed to cope with the climate of the area, different rural practices and the type of trees and shrubs that grow within hedges. It is proposed that the hedges contained within Darwin Green will be laid in accordance with 'South of England Style' general recommendations.

## DESCRIPTION OF HEDGELAYING STYLE

The 'South of England' hedge is a double brushed hedge style, i.e. the same each side. This style has been chosen due to the sites location and that the hedge runs between two publically accessible green spaces and or between key pedestrian and cycle routes, therefore needs to appear attractive and provide a robust hedge appearance on both sides. The finished result will be more natural in style than many other styles of hedge laying.

Each existing stem shall be cut a cleanly as possible nearly all the way through the base of the hedge and laid over at an angle of approximately 35 degrees. The cut stems (pleachers), are laid parallel, tightly together. Generally, hedges are then staked vertically for strength and to achieve the thickest possible hedge.

A single line of natural stakes (machined stakes are not suitable) shall be fixed at approximately 900mm centres, located within the centreline of the hedge. Stakes are used to support the newly laid stems and allow the hedge to be maintained in a compact form. Stakes are normally Hazel or Ash, though Elm, Field Maple, Blackthorn and Hawthorn are suitable. Willow must not be used since it will take root.

Use of horizontal 'binders' are a key characteristic of the South of England Style hedging and will help to bind the top of the stakes with a horizontal woven stem. Both sides of the hedge are to be trimmed. No brush should stick up above the level of the stakes. The height of the finished laid hedge is to be approximately 1.5 metres.

## MAINTENANCE

All hedges will require regular maintenance to provide the desired height and width and to encourage bushy growth from the base. Where the cycle of laying and trimming is repeated, hedges can thrive indefinitely. A healthy hedge can normally recover well from severe cutting but repeated severe cutting can gradually cause whole hedges to die off. However, as hedges mature, gaps can appear towards the base of the hedge and they cease to provide an effective barrier. At this point, the hedge should be allowed to grow sufficiently so that it can be laid, both to fill in the gaps and to ensure the long term viability of the hedge by promoting vigorous re-growth from the base. Hedges might typically be laid every 15 to 25 years.

The laying of all hedges to be no lower than 1.5m high, then to be maintained long term at a height of 3m. Where there is a double hedgerow, one side of the hedges shall be laid on commencement of landscape works, and the other side in 5 years' time, when the previous hedge has established & provides mitigation.

Maintenance will be achieved through the following aims:

- Clear out any rubbish/ litre/ general debris from the base of the hedge along with weeds or elder plants.
- Generally using tractor mounted hedge cutting equipment where access allows and where access is limited, hand operations will be carried out.
- Cut adjacent grass verges, taking care not to undercut the stems at the base of the hedge.
- Cut the sides of the hedge, starting with the lower part if two passes are necessary.
- Cut the top of the hedge, above is to be formed or if the hedge is less than 1.4m high.
- Maintenance is to be carried out in late winter (Jan to Feb) barring periods of hard frost to allow any available berries to be picked by wildlife.
- Maintenance should not take place annually as most plants will not flower on year old wood and areas should be maintained on a cyclical approach, based on a 2 to 3 year rotation period.
- Maintenance should follow the direction of any previous hedge laying to minimise damage to the wood.
- Emphasis should be on cutting smaller stems rather than major stems.

## ARISINGS

It is recommended that it may be possible to stack brushwood out of sight i.e. behind the hedge away from footpaths to ensure no obstructions are made. This provides an environmentally friendly solution for brushwood, providing a short term habitat, dead wood and a gradual release of carbon dioxide back into the atmosphere.

## NEW HEDGES

New low level mixed, native, hedge planting will be provided to promote biodiversity and structure within the allotments. Hedgerow tree establishment should be avoided to prevent shading of productive allotment land. This approach shall be used to replace dead, dying or diseased areas of hedgerows or areas which require gaps being replanted.

## EXISTING DITCHES ADJACENT TO HEDGES

Existing ditches adjacent to all hedges should be retained to ensure existing rootzones are protected. These areas should be seeded with a rough grass seed mix and maintained as per recommendations for Grass Cutting in section 09. Some areas will require additional buffer planting to increase species diversity to existing hedges and reduce linearity generally.

All existing ditches are generally low maintenance, however there may be a requirement for some maintenance to address litter and general cutting back. Periodic maintenance activities should include; general inspection of ditches to ensure removal of any litter and periodic care of vegetation. Vegetation should be cut back every one or two years to prevent woody species from dominating.

Unwanted perennial weeds (docks, thistles) may need control by occasional spot treatment with a herbicide. To control scrub and bramble development, rough grass areas will need to be cut as per recommendations in section 09. All clippings arising from these operations should be removed from the ditch but retain onsite where applicable. Use of fertilizers and herbicides should be avoided where possible.

# 08 GRASS CUTTING

## OBJECTIVE

To maintain areas of grass at the required height.

## GRASS CUTTING: GENERAL REQUIREMENTS

The Contractor shall cut grass, with appropriate machinery, based on frequency outlined within Appendix A - Schedule of Operations, Timing and Frequency, to meet the quality standards set out in Grass Cutting Specifications. The Contractor should note that certain areas may need to be cut more frequently than others sharing the same specification to achieve and maintain the same objective.

All loose stones or other harmful material from whatever source which may damage grass cutting equipment or create a possible hazard to persons or property shall be removed from the area.

All litter from grass cutting areas shall be removed from the area prior to grass cutting based on frequency outlined within Appendix A - Schedule of Operations, Timing and Frequency.

The Contractor shall cut grass neatly around all new or existing structures, walls, fences and the like during each operation to ensure that the height of the grass along the boundary or around the feature does not exceed the height of the grass in the rest of the grass cutting area. Where the grass cutting area is bound by a solid wall or fence the contractor may use a herbicide to maintain a weed free strip against the wall or fence. The strip shall not exceed 200mm in width.

Grass around established trees in grass shall not exceed the height of the grass in the rest of the grass cutting area. This shall be maintained by using appropriate equipment, ensuring that no damage occurs to the tree, especially its bark and roots.

Grass cutting shall be neat and to a consistent height over the whole cutting area with neither tufting where the grass has not been cut evenly nor scalping where the grass has been cut too short. Individual stems shall not be left standing proud of the general sward after the grass cutting equipment has completed its pass.

The Contractor shall note and take especial care when carrying out operations adjacent to glazed areas of buildings, in order to avoid damage to doors, windows etc., from flying stones or other debris. Any damage to existing buildings or structures, shall be made good at the Contractor's expense to the satisfaction of the Employer.

The Contractor shall not allow grass cuttings from his work to lie on drives, paths, roads and the like: cuttings which fall on such places shall be swept up and scattered on adjoining grass in the grass cutting area. All service covers within the sward must be kept clear of any build up of arisings and must be specifically checked and cleared as necessary at the end of the mowing season.

If the Contractor, with no delay or hindrance due to adverse weather conditions, or specified instruction from the Employer, has allowed the grass in any cutting area to grow longer before cutting than the requirements of the specifications as defined below, and the Employer considers that the arisings from such a delayed cutting may cause a hazard or are unsightly, then the Employer may require the Contractor to rake up and remove all such arisings.

Grass cutting equipment shall be of a type capable of producing a standard of finish commensurate with the Employer's instructions. Cylinder mowers are to be preferred on cutting fine and short grass, but in areas where this is not possible other appropriate machinery should be used.

Cutters and blades shall be sharpened and set according to the manufacturers' recommendations to ensure a consistent cleanly mown sward and the height of cut determined as the height above ground level to the cutting blade measured with the machine standing on a hard level surface.

All guards shall be in place and in good condition and all safety devices shall be operational and of a type originally fitted on manufacture.

All machines shall have an effective silencer of the type originally fitted on manufacture.

## SPECIFICATIONS FOR MAINTENANCE OF GRASSED AREAS

The following recommendations are based on the individual grassed areas containing specific seed mixes to provide a variety of grassland habitats for amenity and nature conservation:

- Amenity Grassed Areas
- Rough Grassed Areas
- Wildflower Meadow Areas
- Attenuation Swales/ Ponds

## AMENITY GRASSED AREAS

The grass shall not be allowed to grow longer than 50mm. The grass areas shall be cut 26 times throughout the growing season (3/4 times a month dependant on climatic conditions and growth), usually April through to September or as directed by the Employer. Mown paths within amenity grassed areas shall be maintained to a height of 25mm. Arisings from the first cut each year shall be boxed and removed from the area. Arisings from subsequent cuts shall be left in situ unless instructed otherwise. The edges of grassed areas adjacent to planted areas, buildings and footways shall be cut with a half-moon edging tool in October and March, if required to maintain a smooth flowing curves and or straight lines where applicable. The operation shall be done with the aid of a pegged line where the edge does not benefit from an adjacent hard edge. Where instructed a broad leaf selective herbicide and / or moss killer shall be applied. Where instructed, the areas treated shall be oversown with specified grass seed mix at a coverage in accordance with the Contract Drawings. Any bare or failing areas, ruts, or ridges shall be levelled off, topped up as

necessary with imported topsoil, cultivated and re-seeded to the Employers specification.

## ROUGH GRASSED AREAS

Within the first year, m**o**st of the sown species are perennial and will be slow to germinate and grow and will not usually flower in the first growing season. There will often be a flush of annual weeds from the soil in the first growing season. This weed growth is easily controlled by topping or mowing.

It is important to cut back annuals before they die back, set seed and collapse as this cut will reveal the developing tussock mixture and give it the space it needs to develop.

Once established tussocky grassland requires minimal maintenance. Unwanted perennial weeds (docks, thistles) may need control by occasional spot treatment with a herbicide. To control scrub and bramble development, tussocky areas may need cutting every 2-3 years between October and February. For wildlife this cutting is best done on a rotational basis so that no more than half the area is cut in any one year leaving part as an undisturbed refuge.

Rough grass shall be allowed to grow to the length appropriate to the species contained within the specialist seed mix. The grass areas shall be cut no more than 6no. times each year, with some areas being left unmanaged, usually in April through to September or as directed by the Employer. The grass shall be allowed to grow to a maximum height of approximately 200 - 250mm. The height of grass shall not be cut lower than 100mm unless instructed by the Employer. Mown paths within rough grassed areas shall be maintained to a height of between 25 - 50mm as per amenity grassed areas. Arisings from the first cut each year shall be boxed and removed from the area. Arisings from subsequent cuts shall be left in situ unless instructed otherwise.

Mowing established tussocky grassland may require heavy duty cutting equipment: lawn mowers are not tough enough to deal with thick tussocks or woody scrub. Tractor mounted flail mowers are suitable for large areas, petrol brush cutters (professional 'strimmers') are good for small or awkward areas.

## SEED MIX TO ATTENUATED LAND

Within the first year, m**o**st of the sown meadow species are perennial and will be slow to germinate and grow and will not usually flower in the first growing season. There will often be a flush of annual weeds from the soil in the first growing season. This weed growth is easily controlled by topping or mowing.

Avoid cutting in the spring and early summer if the mixture is autumn sown and contains yellow rattle, or if the mixture has been sown with a nurse of cornfield annuals. These sown annuals should be allowed to flower, then in mid-summer cut and remove the vegetation. It is important to cut back the annuals before they die back, set seed and collapse: this cut will reveal the developing meadow mixture and give it the space it needs to develop.

Once established, the second and subsequent years can be managed in a number of ways which, in association with soil fertility and will determine the character of the grassland. The best results are usually obtained by traditional meadow management based around a main summer hay cut in combination with autumn and possibly spring mowing/ strimming.

Meadow grassland is not cut from spring through to late July/August to give the sown species an opportunity to flower. After flowering in July or August 'hay cut' is carried out: cut back with a scythe, petrol strimmer or tractor mower to approximately 50mm. Leave the 'hay' to dry and shed seed for 1-7 days then remove from site.
Mow/ strim the re-growth through to late autumn/winter to approximately 50mm and again in spring if needed.

# 09 WEED CONTROL

## OBJECTIVE

Not to completely maintain a 'weed free environment' given the informal landscape character of the space but to put in place weed control measures to address how areas should be dealt with if pernicious weeds establish and prevent the establishment of new native grasses, hedgerows, shrub and tree planting etc. to ensure the proposed landscape character is not detrimentally affected.

## WEED CONTROL: GENERAL REQUIREMENTS

All pesticides and marker dyes used shall appear on the current Pesticides Safety Directorate database (PSD) or Health and Safety Executives (HSE) Approved Lists for the use required and shall be non-toxic to human beings, birds and animals under normal use and circumstances.

It is recommended that advice should be sought from a BASIS approved person for the correct pesticide to use and written confirmation of this recommendation must be provided to the Employer before use.

The Contractor shall ensure that pesticide and marker dye application, storage, handling and transport comply with all relevant legislation, statutory instruments and Codes of Practice.

Pesticide and marker dye will not be left unattended unless placed in a secure, fixed, appropriately labelled, purpose built container or vault.

The Contractor shall not draw water from any water course or water surface for any weed control operations. Nor, shall the Contractor before, during and after pesticide application pollute public drains, drains, water courses, other sources of water supply and water surfaces with pesticide concentrate, diluted pesticides or with marker dye.

The pesticide to be used, method of application, type and size of spray nozzle, knapsack pressure, droplet size and dilution shall (when appropriate) be agreed with the Employer before application commences, and be in accordance with manufacturer's recommendations in order to achieve the intended result.

In accordance with the Control of Pesticides Regulations 1986 (COPR) (as amended 1997), all operators working with pesticides shall hold Certificates of Competence appropriate to the type of operation in progress or shall work under the direct and personal supervision of a holder of such a Certificate at all times. Not more than two non-certificated operatives shall work under the responsibility of a Certificate holder.

The Contractor is required to provide the Employer with photocopies of the Certificates of Competence for any employee who will be applying pesticides and chemicals within the site contained in the Contract.

All persons employed in the handling and use of pesticides shall use the technical and engineering controls and wear the personal protective equipment (PPE) identified in the assessment carried out under the COSHH Regulations 1988 and as detailed in the approved Code of Practice for Using Plant Protection Products (DEFRA 2006).

All users including the Contractor are required to keep records of all pesticide applications and retain them retain these records for at least three years. Refer to the approved Code of Practice for Using Plant Protection Products. The Contractor is to provide the Employer with a signed copy of his pesticide record sheets at the same time as the application for payment.

The Contractor shall supply approved signs stating "Herbicide Application in Progress". Sufficient signs will be erected by the Contractor before work commences to ensure that, as far as is reasonably practicable, members of the public are made aware that pesticide application is being, or is about to be, undertaken. All such signs shall remain in position throughout the operation and shall be removed as soon as practicable after the works are completed.

When contact and systemically translocated pesticide applications are performed in soft landscapes a marker dye shall be used in sufficient quantity to enable the Employer to see where spray has been applied. The Contractor must ensure that hard surfaces such as footpaths and kerbs are not contaminated with dye**.** No marker dye is to be used in pesticide applications to hard landscapes or hard surfaces or when applying a residual herbicide. The Contractor shall supply dye and ensure that such dye is compatible with the pesticide in use.

If in the Employer's opinion weed growth before any proposed application of pesticide is so tall as to create a difficulty for the Contractor in avoiding spraying shrubs and/or trees the Contractor shall use appropriate mechanical or manual means to weed the site sufficiently to allow safe pesticide application.

When undertaking boundary weed control to planted areas the Contractor shall only apply pesticide to control weed or grass growth to a strip a maximum of 300mm in width from the edge line of stems in the planting bed. If in the Employer's opinion the Contractor's pesticide application exceeds the stated dimension of 300mm outside the edge line of stems, the Employer shall require the Contractor to re-seed damaged grass in accordance with the Employer's requirements. Where the planted area consists of ground cover forming a boundary with grassland, a herbicide strip shall not be permitted around the edge of the planted area. The boundary between the grass and the ground cover shall be pruned in accordance with the pruning requirements as set out within Appendix A - Detailed Specification of Maintenance Works.

If present, climbing weeds shall be pulled carefully out of ground cover shrubs, other shrubs and trees and then be taken off site to tip.

During pesticide application the Contractor shall ensure that:

- all spray equipment is efficient, well maintained and free from leaks;

- no damage is done to shrubs, trees, bulbs or other planted material or grass surfaces whether owned by the Employer, residents or other parties;
- damage to species with green or otherwise sensitive bark is avoided;
- the weather conditions are suitable throughout the area and for the duration of the operation;
- placement of pesticides is accurate avoiding drift, and
- the edges of sprayed areas are neat and accurate and do not extend into grass areas.

If in the Employer's opinion the dead vegetation after pesticide application constitutes a fire hazard or is unsightly he may require the Contractor to cut the dead vegetation by suitable means.

Any areas of weed surviving due to being missed during spraying, or inclement weather shall be re-treated by the Contractor at his own expense.

All bottles, tins, bags, wrappers or other form of container which have contained chemicals, shall when empty, be disposed of in a safe and proper manner at an approved location.

Any plants or grass areas damaged during spraying operations shall be made good as directed by the Employer to his entire satisfaction at the Contractor's expense.

The manufacturer’s instructions shall be strictly abided by and the correct fallow period allowed prior to new seeding or planting.

The application of granular pesticide shall be made manually or by means of an approved spreader and lightly forked into the topsoil or as per the manufacturers recommendations.

The Employer should be notified immediately if the Contractor finds any evidence of invasive weeds (The Wildlife and Countryside Act 1981) or Injurious weeds (Weeds Act 1959). In particular but not limited to either Giant Hogweed (*Heracleum mantegazzianum*.), Himalayan Balsam (*Impatiens glandulifera*) or Japanese Knotweed (*Fallopia japonica*) within the site area. Eradication methodologies for each of these plants must be approved by the Employer in order to eradicate both weeds completely from the site.

## WEED CONTROL - SPECIFICATIONS

For the purpose of the Contract "weed free" means the absence of live weed throughout the identified section for the duration of the Contract to the reasonable satisfaction of the Employer. The Contractor shall treat weed growth by the most appropriate means (generally chemically, mechanically or by hand) as necessary in the section identified to meet the specific landscape maintenance specifications defined below.

Whilst the site is within contractor ownership, weed establishment should be prevented to ensure newly planted species can establish. On practical completion, areas shall be free from pernicious weeds until such time that the site is handed back to the employer.

## WEED CONTROL - AREAS

In order to give a neat appearance to the following; all planted & grass areas, along pedestrian routes and all other landscape areas as necessary and included within the Contract Area as identified on the landscape agency detailed drawings 628.2-016 & 017 or to control weed which has grown through the above areas, the contractor shall treat weed growth by the most appropriate means (chemically, mechanically or by hand) as many times as necessary in order to keep the areas weed free. the contractor shall not apply pesticide to control weed or grass growth in or next to water courses beneath or adjacent to footbridges/ culverts. The contractor shall use appropriate mechanical or manual means to affect weed or grass control in such locations.

## WEED CONTROL AT HARD FEATURES

In order to give a neat appearance around individual hard features in grassed areas included within the Contract Area, e.g. fences, gateways, highway signs, lamp columns, service installation markers, man-hole covers and walls. The contractor may use pesticides to maintain a weed free strip or spot around those features up to but not exceeding 200mm in width, or 400mm in diameter.

The contractor shall use pesticides to maintain the surface of the hard standing upon which street furniture such as benches, logs and seats are sited as weed free. The contractor shall not use pesticides around the edge of the hard standing. In such locations, the contractor shall cut the grass or weed to the required specification using the appropriate work equipment.

Where street furniture is sited in grassed areas, the contractor shall not use pesticides around the legs of benches, picnic furniture, play or sports equipment or sculpture. In such locations the contractor shall cut the grass or weed to the required specification using the appropriate work equipment taking great care to keep the item clean of any blown arisings.

## WEED CONTROL IN HERBACEOUS/ANNUAL BEDS AND BORDERS

The contractor shall not apply pesticide to control weed or grass growth within herbaceous or annual borders or beds. Within the herbaceous planting beds identified in the Contract Documents, the Contractor shall usually treat weed growth by hoeing or hand weeding as many times as necessary to ensure that the control meets the Employer's satisfaction.

## WEED CONTROL TO TREES IN GRASS /HARDSTANDING

A 1m diameter weed free circle is to be kept around individual trees in grass/ hardstanding. The Contractor shall not apply pesticide to control weed and grass growth within the 1m

diameter circle. The trees identified in the Contract Documents shall be hand weeded as many times as necessary to ensure that the control meets with the Employer's satisfaction.

## WEED CONTROL TO ATTENUATED LAND

Weeding to the attenuated area will largely be dependant on climatic conditions but should be maintained weed free, where possible in order to maintain their aesthetic appearance and performance capabilities.

The use of pesticides is prohibited unless permission is sought, through the Employer, of the Environment Agency and Employer receives written approval of that permission. The Contractor shall use appropriate mechanical or manual means to affect weed or grass control in such locations.

Weeds are to be removed at the end of the growing season (October - November), or when specified by the Employer. When clearing vegetation care should be taken to avoid great crested newt and water vole habitats.

Aquatic vegetation arisings should be stacked close to the waters edge for 48 hours to drain and allow wildlife to return to the water. Vegetation should then the removed off site and disposed of at an approved location.

## LOCALISED, SPECIES SPECIFIC WOODY WEED CONTROL

All vigorous plant species identified such as bramble, elderberry etc., shall be cut once a year between October and early January and the arisings removed off site. The cut stems should not be treated with appropriate herbicide but managed to ensure species do not become dominant within areas.

## BROADLEAVED WEED CONTROL

When specified in the Contract Documents, all areas of grassland cut as Short/Rough Grass shall be treated with selective herbicide at least twice per annum, generally in both spring and autumn, to control broadleaved weed to the reasonable satisfaction of the Employer.

## DOCK CONTROL

When specified in the Contract Documents or if areas have become dominated by the spread of docks, the Contractor shall control docks by performing localised targeted selective herbicide application at least twice per annum, generally in both spring and autumn, to control docks to the reasonable satisfaction of the Employer. This maintenance operation shall be carried out to reasonably control the spread of docks but not to eradicate all docks if areas are minor and not impacting on the successful establishment of newly planted species.

# 10 HARD LANDSCAPE

Recommendations as provided by Woods Hardwick consulting Engineers.

## OBJECTIVE

To identify a programme of maintenance operations associated with all hard landscape elements.

## CYCLEWAY

Cycleways will be inspected on an annual or six monthly basis in line with Cambridgeshire County Council guidance. Inspections shall take the form of single person on foot or cycle. Defects identified on inspection shall receive temporary repair within 24 hours.

Cycleways should be swept using mechanical sweeper at regular intervals to avoid build-up of debris on the surface.

Annual inspections of the surface should be undertaken and any defects corrected accordingly.

## PEDESTRIAN FOOTPATH

All SMA or Black Asphalt Cement footpaths will be inspected on an annual basis in line with Cambridgeshire County Council guidance. Temporary repairs should be made within 24 hours of identification. Such defects may comprise potholes greater than 25mm in depth, edging defects, lighting defects, and standing water. Surfacing may require rolling and re-patching to local authority standards.

# 11 ENGINEERING MAINTENANCE ACTIVITIES

Recommendations as provided by Woods Hardwick consulting Engineers.

### OBJECTIVE

To identify a programme of maintenance operations associated with drainage and hydrological features.

### INSPECTIONS

During and following construction, the storm water drains, attenuated land and flow controls will need to be regularly inspected in order to assess performance and schedule and required maintenance.

Routine inspections should be undertaken on a 6 monthly basis to assess the functionality of the storm water drainage system and to assess the need for any maintenance. These inspections should be undertaken on a monthly basis during the construction period and three months afterwards. Thereafter, inspections shall continue on a six monthly basis. These inspections are required to establish the need for basic maintenance and therefore do not require a professional engineering knowledge.

Engineering inspections should be carried out by professional engineering personnel and should provide supplementary advice with regard to routine maintenance and provide a more in depth assessment of the drainage system. Engineering inspections should commence during construction and continue on a yearly basis for the first two years. Thereafter, inspections shall be spaced up to three years. Engineering inspections should also be carried out as soon as practicable following an intense period of rainfall or following request from a routine inspection

Routine Inspections should comprise, but not limited to:

### Manholes/Catchpits

All manholes/catchpits will require to be inspected externally and internally. External inspections will determine the overall condition of the access points, and should record deterioration of exposed concrete, access lids, restricted access due to overgrown vegetation/debris.

### Flow Control

Inspections will determine the overall condition of the flow control device to ensure it is working efficiently and effectively.

### Attenuated Land

Inspections to identify excessive scour or deposition of silt and to identify excessive vegetation growth which could restrict the flow of water between inlet and outlet and overall capacity of the attenuated land.

### Headwalls

Inspections will determine the overall condition of the headwalls & flap valves and should record deterioration of exposed concrete, evidence of exposed reinforcement or concrete staining due

to deteriorating reinforcement below the surface, damage to flap valves and restricted access/flow due to overgrown vegetation/debris.

## ROUTINE MAINTENANCE ACTIVITES

Maintenance activities will be determined from routing inspections but are likely to comprise.

### Pipes / Flow Control Device

Clear accumulated sediment and debris (6 monthly).

### Manholes / Catchpits

Clear accumulated sedimentation (6 monthly)
Repair/replace damaged pit covers and grates (As required).

### Attenuated Land

Clear accumulated sedimentation and excessive vegetation (As required).

### Headwalls

Repair/replace damaged flap valves (As required). Clear vegetation/debris from outlet pipe/flap valve (6 monthly).

# APPENDIX A - SCHEDULE OF OPERATIONS, TIMING & FREQUENCY

The schedule below lists the timing of key operations and should be read in conjunction with the detailed Maintenance Specification within Appendix B.

| OPERATION | LANDSCAPE ELEMENT | FREQUENCY | MONTHS AND/OR FREQUENCY OF ACTION - 25 YEAR MANAGEMENT PLAN | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec |
| LITTER PICK | All areas | Weekly | x | x | x | x | x | x | x | x | x | x | x | x |
| WATERING | Planting and newly seeded grassed areas | As necessary to ensure continue thriving. More frequently in spells of dry weather | | | | x | x | x | x | x | x | | | |
| TREE PLANTING | Crowns of Trees | In spells of dry weather during the evening | | | | | x | x | x | x | | | | |
| | Trees | Undertake biannual inspection of all newly planted trees. Replace any dead or dying plants. Loosen tree ties where necessary. | | | | x | | | | x | | | | |
| | Tree stakes and ties | Remove or loosen within years 5/ 6 and monitor establishment | | | | | | | | | | | | |
| WEED CONTROL | Grass areas, plant beds, tree surround | Monthly | | | x | x | x | x | x | x | x | x | | |
| | Hard Surfaces | Monthly | | | | | x | | x | | | | | |
| GRASS CUTTING | Amenity Grassed areas | Typically 26 cuts per year | | | x | x | x | x | x | x | x | x | | |
| | Rough Grassed Areas | Typically 6 cuts per year | | | | x | x | x | x | x | x | | | |
| | Attenuated areas | Typically 3 cuts per year | | | x | | | | | x | | x | | |
| TOP DRESSING | Grassed areas | Yearly | | | | | | | | | | x | | |
| LEAF REMOVAL | Grass areas and hard surfaces | As necessary | | x | x | x | x | x | x | x | x | x | x | |
| REFIRMING BY ROLLING | Grass areas | 2 weeks prior to first cut, yearly | | | x | | | | | | | | | |
| EDGE TRIMMING | Grass areas | In growing season or as necessary to prevent encroachment dormant season. 150mm Mowing strip adjacent walls keep in check with herbicide | | x | | x | | x | | x | | x | | x |
| THATCH REMOVAL | Grass areas | Once at end growing season | | | | | | | | | | x | | |
| AERATION | Grass areas | Twice a year | | | | | x | | | | | x | | |

| OPERATION | LANDSCAPE ELEMENT | FREQUENCY | MONTHS AND/OR FREQUENCY OF ACTION - 25 YEAR MANAGEMENT PLAN | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Jan | Feb | Mar | Apr | May | June | July | Aug | Sept | Oct | Nov | Dec |
| RE-LEVELLING AND RE-INSTATEMENT OF GRASS AREAS | Grass areas | Inspect once a year ad take necessary action | | | | | | | | | | x | | |
| FERTILISER APPLICATION | Trees | Yearly | | | | x | | | | | | | | |
| | Plant beds | Yearly | | | | x | | | | | | | | |
| | Grassed areas | Yearly | | | | x | | | | | | | | |
| REFIRMING / TREE GUYS | Trees | Quarterly | | | x | | | x | | | x | | | x |
| PRUNING | Trees | When instructed | | | | | | | | | | | x | |
| | Plants | Individual to each plant species and desired habit required | | | x | | | | | | | | x | |
| MULCH –TOP-UP | Plants | Yearly | | | x | | | | | | | | | |
| INSPECT HEALTH AND SAFETY -SURROUNDINGS FOR HEALTH AND SAFETY OF PUBLIC AND MAINTENANCE STAFF - PESTS/ DISEASES | Trees | For health and safety issues each visit, otherwise twice a year | | x | | | | | | | x | | | |
| | Plants | Each maintenance visit | x | x | x | x | x | x | x | x | x | x | x | x |
| DEADHEADING | | Each routine visit | | | | x | x | x | x | x | x | x | | |
| THINNING BY TRANSPLANTING SURPLUS PLANTS | Plants | Twice a year | | | x | | | | | | | x | | |
| RELIEVE COMPACTION | Plant beds | Twice a year | | | x | | | | | | | x | | |
| SNOW CLEARANCE | Evergreen plants | As required to meet standard | x | x | x | x | | | | | | | x | x |
| SIGNS | Annual inspection of signs and post markers | Annually | | x | | | | | | | | | | |
| HARD SURFACES | | Annual inspection of all hard surfaced areas. | | x | | | | | | | | | | |

# APPENDIX B - DETAILED SPECIFICATION OF MAINTENANCE WORKS

To be read with Preliminaries/ General conditions.

**GENERALLY**

105 MAINTENANCE OBJECTIVES

- Location: All soft landscape areas.
  - Duration: Ten years.
- Aims:
  - Enhanced landscape quality;
  - Improved landscape visual amenity;
  - Opportunities for recreation and sport; and
  - Provide wildlife habitat and increase biodiversity.
- Restrictions: As described in the landscape maintenance manual.
- Results: As scheduled.

110 NOTICE

- Give notice before:
  - Application of herbicide.
  - Application of fertilizer.
  - Watering.
  - Each site maintenance visit.
- Period of notice: 7 days.

130 REINSTATEMENT

- Damage or disturbance to soil structure, planting, grass, fencing, hard landscaping, structures or buildings: Reinstate to original condition.

155 WATERING

- Supply: Potable mains water.
- Quantity: Wet full depth of topsoil .
- Application: Do not damage or loosen plants.
- Compacted soil: Loosen or scoop out, to direct water to rootzone.
- Frequency: As necessary for the continued thriving of all planting.

160 WATER RESTRICTIONS

- General: If water supply is, or is likely to be, restricted by emergency legislation, submit proposals for an alternative suitable source of water. Obtain instructions before proceeding.

170 DISPOSAL OF ARISINGS

- General: Unless specified otherwise, dispose of arisings as follows:
  - Biodegradable arisings: Remove to recycling facility.
  - Grass cuttings: Remove to recycling facility.
  - Tree roots and stumps: Remove from site.
  - Shrub and tree prunings: Remove to recycling facility.

  Litter and nonbiodegradable arisings: Remove from site.

180 CHIPPING OR SHREDDING

- General: Not permitted on site.

190 LITTER
- Extraneous rubbish not arising from the contract work: Collect and remove from site.

195 PROTECTION OF EXISTING GRASS
- General: Protect areas affected by maintenance operations using boards/tarpaulins. Do not place excavated or imported materials directly on grass.

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

**GRASSED AREAS**

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

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

225 TREE STEMS
- Precautions: Do not use mowing machinery closer than 100 mm to tree stems. Use nylon filament rotary cutters and other hand held mechanical tools carefully to avoid damage to bark.

250 LEAF REMOVAL
- Operations: Collect fallen leaves.
- Special requirements: None.
- Disposal: Remove from site for recycling.

266 MOWING GENERAL AMENITY AREAS
- Grass height: Maintain between 25 and 50 mm.
- Arisings: Arisings from the first cut each year shall be boxed and removed from the area. Arisings from subsequent cuts shall be left in situ unless instructed otherwise.

271 MOWING ROUGH GRASSED AREAS

- Grass height: The grass shall be allowed to grow to a maximum height of approximately 200 - 250mm. The height of grass shall not be cut lower than 100mm unless instructed by the Employer. Mown paths within rough grassed areas shall be maintained to a height of between 25 - 50mm as per amenity grassed areas
- Frequency of cutting: The grass areas shall be cut 6no. times each year, usually in April through to September or as directed by the Employer.
- Arisings: Arisings from the first cut each year shall be boxed and removed from the area. Arisings from subsequent cuts shall be left in situ unless instructed otherwise.
- Special requirements: Rough grass shall be allowed to grow to the length appropriate to the species contained within the specialist seed mix to ensure maximum habitat value for local wildlife.

274 MAINTAINING GRASSED AREAS TO ATTENUATED LAND

- Preparation: Before each cut remove litter and debris.
- Areas shall be cut to a height of between 40 and 70mm as specified below, after the seeding of desirable species, usually in late summer/early autumn.
- Arisings generally shall be raked off and removed off Site, by such means that avoids pulling, tearing or causing other damage to the soil surface and retained vegetation. The removal of arisings shall be completed within 7 days of a hay cut after flowering in July or August: unless otherwise instructed, or agreed by the Employer.
- Within the first year, m**o**st of the sown meadow species are perennial and will be slow to germinate and grow and will not usually flower in the first growing season. There will often be a flush of annual weeds from the soil in the first growing season. This weed growth to be controlled by topping or mowing.
- Once established, the second and subsequent years can be managed by traditional meadow management based around a main summer hay cut in combination with autumn and possibly spring mowing/ strimming.
- Do not cut meadow grassland from spring through to late July/August.
- Mow/ strim the re-growth through to late autumn/winter to approximately 50mm and again in spring if needed.
- Watering: Contractor's choice .

285 TOP DRESSING

- Location: All grassed areas where required.
- Timing: Following scarification and aeration.
- Material: Sandy loam.
- Supplier: Contractor's choice.
  - Product reference: Contractor's choice.
- Declaration of analysis: Submit.
- Additional analyses: Not required.
- Samples: Not required.
- Application rate: 5-6 mm depth.

300 SCARIFYING

- Location: any grassed areas where moss has accumulated reducing the grass cover.
- Timing: October or November, before top dressing.
- Operations: Relieve thatch conditions and remove dead grass.
- Depth (maximum): 25 mm into soil.
- Arisings: Remove.

307 HOLLOW TINING
- Location: All grassed areas showing signs of compaction.
- Timing: October or November, before top dressing.
- Depth: 75 mm.

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

310 RE-FORMING GRASS EDGES
- Location:
  - Path edges;
  - Planting bed edges;
  - Service access cover edges; and
  - Where damage occurs.
- Edges: Draw back soil and re-form edges to clean straight lines or smooth flowing curves, sloping slightly back from vertical.

320 LEVELLING HOLLOWS AND BUMPS IN TURF
- Standard: To BS 7370-3, clauses 12.4 and 12.5.

325 RELIEVING SURFACE COMPACTION IN TURF
- Standard: To BS 7370-3.
- Method: Spiking.
- Top dressing: Medium to fine sand to depth of 2-3 mm.

330 SELECTIVE HERBICIDE
- Location: Grassed areas.
- Herbicide: Suitable for suppressing perennial weeds.
- Areas not to be sprayed: Wildflower areas.

340 SPOT WEEDKILLING IN ROUGH GRASS AREAS
- Herbicide: Suitable for suppressing perennial weeds.
- Operations: Spot treat injurious weed species listed in the Weeds Act 1959 and Wildlife and Countryside Act 1981.

350 FERTILIZER - SPRING APPLICATION
- Type: Organic.
- Application rate: 60 g/m².

360 FERTILIZER - AUTUMN APPLICATION
- Type: Organic.
- Application rate: 60 g/m².

381 REINSTATEMENT OF WORN OR DAMAGED LAWNS
- Worn or damaged areas: Make good by returfing or reseeding:
  - Returfing standard: To BS 7370-3, Clause 12.2.
  - Reseeding standard: To BS 7370-3, Clause 12.6.
- Turf or seed: To match existing in appearance and quality.
- Protection and watering: Provide as necessary to promote successful germination &/ or establishment.

**SHRUBS/TREES/HEDGES**

500 ESTABLISHMENT OF NEW PLANTING

- Duration: 10 Years.
- Weed control:
  - Method: Keep planting beds clear of weeds by maintaining full thickness of mulch and use of suitable herbicides as required.
  - Area: Maintain a weed free area around each tree and shrub, minimum diameter the larger of 1 m or the surface of the original planting pit.
- Soil condition: Fork over beds to keep soil loose, with gentle cambers and no hollows. Do not reduce depth or effect of mulch.
- Watering: To ensure the successful and healthy plant establishment during contract period .

502 ESTABLISHMENT OF NEW PLANTING - FERTILIZER

- Time of year: March or April.
- Type: Organic.
- Spreading: Spread evenly. Carefully lift and replace any mulch materials.
  Application rate: 250 g per feathered, standard or larger tree.

510 TREE STAKES AND TIES

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

520 REFIRMING OF TREES AND SHRUBS

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

525 TREE GUARDS

- Loose or defective guards: Adjust, refix or replace to original specification and to prevent chafing.

540 PRUNING GENERALLY

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

545 PRUNING OF EXCESSIVE OVERHANG

- Timing: Annually.
- Operations: Remove growth encroaching onto grassed areas, paths, roads, signs, sightlines and road lighting luminaires.
- Special requirements: Allow ground cover plants to partially overlap paths and lawns.

550 PRUNING OF EXCESSIVE HEIGHT

- Timing: Annually.
  Operations: Remove excessive height Above 12 m.

555 PRUNING TREES AND SHRUBS

- Standard: To BS 7370-4.
- Special requirements: None.

570 FORMATIVE PRUNING OF YOUNG TREES

- Standard: Type and timing of pruning operations to suit the plant species.
- Time of year: Do not prune during the late winter/ early spring sap flow period.
- Young trees up to 4 m high:
  - Crown prune by removing dead branches and reducing selected side branches by one third to preserve a well balanced head and ensure the development of a single strong leader.
  - Remove duplicated branches and potentially weak or tight forks. In each case cut back to live wood.
- Whips or feathered trees: Do not prune.
- Operatives: Member of the Arboricultural Association.

575 PRUNING ORNAMENTAL SHRUBS

- General: Prune to encourage healthy and bushy growth and desirable ornamental features, e.g. flowers, fruit, autumn colour, stem colour.
- Suckers: Remove by cutting back level with the source stem or root.

600 TRIMMING RAPIDLY ESTABLISHING HEDGES

- General: Allow to reach planned height as rapidly as possible.
  - Form: Trim back lateral branches moderately.

605 TRIMMING SLOWLY ESTABLISHING HEDGES

- Operations:
  - Timing: Cut back hard in June and September to encourage bushy growth down to ground level.
  - Form: Allow to reach planned dimensions only by gradual degrees, depending on growth rate and habit.

615 TRIMMING FIELD HEDGES

- Operations: Trim to specified height and profile using suitable mechanical cutters.

620 REMOVAL OF DEAD PLANT MATERIAL

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

630 DEAD AND DISEASED PLANTS

- Removal: As soon as possible.
- Replacement: In the next suitable planting season.

The Landscape Agency Q35

635 REINSTATEMENT OF SHRUB/ HERBACEOUS AREAS
- Dead and damaged plants: Remove.
- Mulch/ matting materials:
  - Carefully move to one side and dig over the soil, leaving it fit for replanting.
- - Do not disturb roots of adjacent plants.
- Replacement plants:
  - Use pits and plants: To original specification or to match the size of adjacent or nearby plants of the same species, whichever is the greater.
  - Additional requirements: Submit details and cost of plants before ordering.
- Dressing: Slow release fertilizer:
  - Type: Organic.

  Application rate: As manufacturer's recommendations.

645 WEED CONTROL GENERALLY
- Weed tolerance: At all times, weed cover less than 5% and no weed to exceed 100 mm high.
- Adjacent plants, trees and grass: Do not damage.

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

655 WEED CUTTING BY HAND OR MACHINE
- Undesirable grass, brambles and herbaceous growth: Cut down cleanly to a maximum height of 75 mm.
- Herbicides: Do not use.

657 HERBICIDE TO KILL REGROWTH
- Type: Suitable foliar acting herbicide to kill regrowth.
- Timing: Allow recommended period for herbicide to take effect before clearing dead weeds.

665 WEED CONTROL WITH WINTER HERBICIDE
- Type: Suitable residual soil acting herbicide.
- Time of year: Unless otherwise agreed, complete before end of March.
- Timing: Allow recommended period for herbicide to take effect before clearing dead weeds.

670 WEED CONTROL WITH SUMMER HERBICIDE
- Type: Suitable foliar acting herbicide.
- Timing: Allow recommended period for herbicide to take effect before clearing dead weeds.

675 DIGGING OVER
- General: Dig over beds. Do not damage existing plants, bulbs and roots.

  Depth of dig (minimum): 100 mm.

680 SOIL AERATION
- Compacted soil surfaces:
  - Prick up: To aerate the soil of root areas and break surface crust.
  - Size of lumps: Reduce to crumb and level off.

  Damage: Do not damage plants and their roots.

685 SOIL LEVEL ADJUSTMENT
- Level of soil/mulch at edges of beds: Reduce to 50 mm below adjacent grass or hard surface.
  - Arisings (if any): Spread evenly over the bed.

690 MAINTENANCE OF LOOSE MULCH
- Thickness (minimum): 75 mm.
  - Top up: As schedule.
- Mulch spill on adjacent areas: Remove weeds and rubbish and return to planted area.
- Weeding: Remove weeds growing on or in mulch by herbicide treatment.

693 MAINTENANCE OF MULCH MATTING/ SHEET MULCHES
- General: Inspect and reattach or refirm mulch mats and sheet mulches.
- Type: Geotextile.
  Remove: After soil surface is fully covered by foliage.

695 FERTILIZING ESTABLISHED TREES AND SHRUBS
- Time of year: After flowering.
- Type of fertilizer: Slow release.
- Application: Spread evenly.
  - Rate: 60 g/m².

700 SNOW REMOVAL FROM SHRUBS/ TREES
- Standard: To BS 7370-4.
- Plants subject to snow removal: All evergreens.
- Timing: Within 24 hours of snowfall.

710 WOODLAND PLANTING MAINTENANCE
- Watering: In exceptional circumstances to prevent plants dying.
- Loose plants: Refirm surrounding soil, without compacting.
- Vegetation: Except trees and coppice shoots to be retained, cut down to 100 mm above ground level within the plantation area.
  - Arisings: Leave between rows.
- Ditches and drains: Keep clear.

**TREE WORK**

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

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

820 PREVENTION OF WOUND BLEEDING

- Standard: To BS 3998, clause 8.

825 PREVENTION OF DISEASE TRANSMISSION

- Standard: To BS 3998, clause 9 and Appendix B.

830 CLEANING OUT AND DEADWOODING

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

  Climbing plants not specified within detailed planting plans.

835 CUTTING AND PRUNING GENERALLY

- Tools: Appropriate, well maintained and sharp.
- Final pruning cuts:
  - Chainsaws: Do not use on branches of less than 50 mm diameter.
  - Hand saws: Form a smooth cut surface.
  - Anvil type secateurs: Do not use.
- Removing branches: Do not damage or tear the stem.
- Wounds: Keep as small as possible, cut cleanly back to sound wood leaving a smooth surface, and angled so that water will not collect on the cut area.
- Cutting: Cut at a fork or at the main stem to avoid stumps wherever possible.

  Large branches: Remove only if unavoidable.
  - Remove in small sections and lower to ground with ropes and slings.
- Dead branches and stubs: When removing, do not cut into live wood.
- Unsafe branches: Remove epicormic shoots and potentially weak forks that could fail in adverse weather conditions.
- Disease or fungus: Give notice if detected. Do not apply fungicide or sealant unless instructed.

840 CROWN REDUCTION/ SHAPING

- General: Cut back selectively to lateral or sublateral buds or branches to retain flowing branch lines without leaving stumps.
- Operations: Reduce crown by 15%.

845 CROWN LIFTING

- Clearances: Remove branch systems to give clearance.
  - Height: 2.5m above footpaths, 3 m above cycleways, 5.5m above vehicular carriageways.
- Removing branches: Remove whole branches back to the stem, or cut lower portions of branches back to lateral or sublateral buds or branches. Do not leave stumps.

850 CROWN THINNING

- Removing branches: Remove inward growing, crossing, rubbing, dead and damaged branches.
- Thinning: Selectively remove secondary and small live branch growth evenly throughout the crown.
  - Quantity: 15 %.
- Cutting: Make no cuts of more than 50 mm diameter.

- Branches: Cut back to lateral or sublateral buds or branches without leaving stumps.

- Appearance: Leave a uniform and well balanced structure of branches and foliage.

855 CUTTING TREE ROOTS

- Excavating: Use hand tools only.
- Protected area: Do not cut roots within an area which is the larger of:
  - The branch spread of the tree.
  - An area with a radius of half the tree's height, measured from the trunk.
- Outside protected area: Give notice of roots exceeding 50 mm in diameter. Do not cut without approval.
- Cutting:
  - Cutting: Make clean smooth cuts with a hand saw.
  - Wounds: Minimize. Avoid ragged edges.
  - Finishing: Pare cut surfaces smooth with a sharp knife.
- Backfilling:
  - Protection: Cover cut roots with clean sharp sand.

  Material: Backfill with original topsoil.

860 REMOVING TREES, SHRUBS AND HEDGES

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

865 BARK DAMAGE

- Wounds:
  - Do not attempt to stop sap bleeding.
  - Bark: Remove ragged edges using a sharp knife.
  - Wood: Remove splintered wood from deep wounds.
  - Size: Keep wounds as small as possible.
- Liquid or flux oozing from apparently healthy bark: Give notice.

870 CAVITIES IN TREES

- Investigation: Remove rubbish and rotten wood. Probe the cavity to find the extent of any decay, and give notice.
- Water filled cavities: Do not drain.
- Sound wood inside cavities: Do not remove.
- Cavity openings: Do not cover.

## WATER AREAS

895 CLEARANCE OF WATERCOURSES

- Clearance: Remove litter, debris, accumulated silt and excessive vegetation causing an obstruction.
- Frequency: As per Section 10 of this document.
- Time of year: As instructed.
- Method: As per Section 10 of this document.
  - Access: From one bank only.
  - Position: At least 1 m from the top of the bank.
- Phasing: As approved management plan.

## HARD LANDSCAPE AREAS/FENCING

910 HARD SURFACES AND GRAVEL AREAS

- Herbicide: Apply a suitable foliar acting or residual herbicide. Allow recommended period for herbicide to take effect before clearing arisings.
- Hard surfaces: Remove litter, leaves and other debris.
- Surface gutters and channels: Remove mud, silt and debris.
- Drainage gullies: Empty traps and flush clean.
- Gravel areas: Rake over. Remove weeds, litter, leaves and debris, and level off.
- Repairs to flexible bituminous pavings: In accordance with the original paving specification or BS 7370-2, clause 4.12.
- Stain removal: In accordance with BS 7370-2, table 4.

920 FENCING

- Fences: Inspect and repair to maintain protection against intruders.

930 GRAFFITI REMOVAL

- Method: Pressure wash.
- Subsequent treatment: Not required.
  - Finish: N/A.

# APPENDIX C - DEFINITIONS USED IN SPECIFICATION

**Arisings**
Those things which appear as a result of the works, see also debris.

**Banksman**
A mechanical excavator and tractor driver's helper who signals instructions to the driver or operator.

**CDM**
Construction, Design and Management Regulations 2007.

**Contract Drawings**
Planning approved drawings provided by the employer at time of agreeing contact particulars which illustrates works through the identification of location and detailed specification.

**Coppicing**
The pruning of a tree or shrub, such as dogwood, elder, rose or willow, near to ground level to result in the production of a quantity of vigorous basal shoots.

**Debris**
Those things of little or no value which appear as a result of the works, for example grass cuttings, general tree or shrub prunings, damaged nails, off-cuts from tree ties and off-cuts from tree stakes.

**Employer**
Those responsible for the letting and management of the contract throughout the proposed time period of the maintenance and management plan.

**Final cut wound surface**
The surface of a wound made by the Contractor executing the final pruning cut.

**Final pruning cut**
The action which completes limb, branch or twig removal using either chainsaw, handsaw or secateurs. The final pruning cut shall be smooth and shall be formed in one continuous cutting operation.

**Grass**
All herbaceous plants in the sward in the sub-compartment, such as grasses, clover, wild flowers and other species, and also root suckers if present.

**Litter**
All items of refuse such as sweet wrappers, cigarette butts, drink cans, shopping bags, general landscape debris and the like which have been dropped or dumped on the site or which may blown into the site from outside the boundary.

**Maintenance specification**
The Employer's detailed requirement for the standard of landscape maintenance to be achieved by the Contractor throughout the contract period.

**Operative**
Person engaged to perform the works for the Contractor, whether directly employed by the Contractor or subcontracted to him.

**Pesticide**
The meaning within the *Code of Practice for using Plant Protection Products 2006.*

**Plan**
The representation on paper of the Contract Area, each plan individually identified.

**Practical Completion Definition**
The culmination of the majority of construction contracts but excludes any work identified as defective work or not in accordance with the approved contract documents.

**Site**
The location within the Contract Area made available to the Contractor as shown on the plan or otherwise identified to the Contractor by the Employer.

**Instruction**
An instruction from the Employer requiring certain listed works to be performed by the Contractor within the Contract Area within the time period stated in the Notice.

**Statutory requirements**
Any statute, any statutory instrument, rule, order or regulation made by Parliament or any bye-law made by the local authority or any Regulation, Directive or Decision of the European Community. In these Conditions references to statutory requirements include any statutory modification or re-enactment thereof for the time being in force.

**Use of work equipment**
Includes starting, stopping, programming, setting, transporting, repairing, modifying, maintaining, servicing and cleaning as well as use of the work equipment as required for the proper completion of the maintenance (see also work equipment).

**Weed**
A plant (including its root system) growing in a place where it is not required by the Employer, such plant may be an annual or perennial, with or without secondary thickening.

**Weed free**
The absence of live weed to the reasonable satisfaction of the Employer for the duration of the Contract.

**Woody Weed**
A weed, a perennial plant demonstrating secondary thickening, i.e. bramble, a root sucker or natural regeneration of a broadleaved tree species.

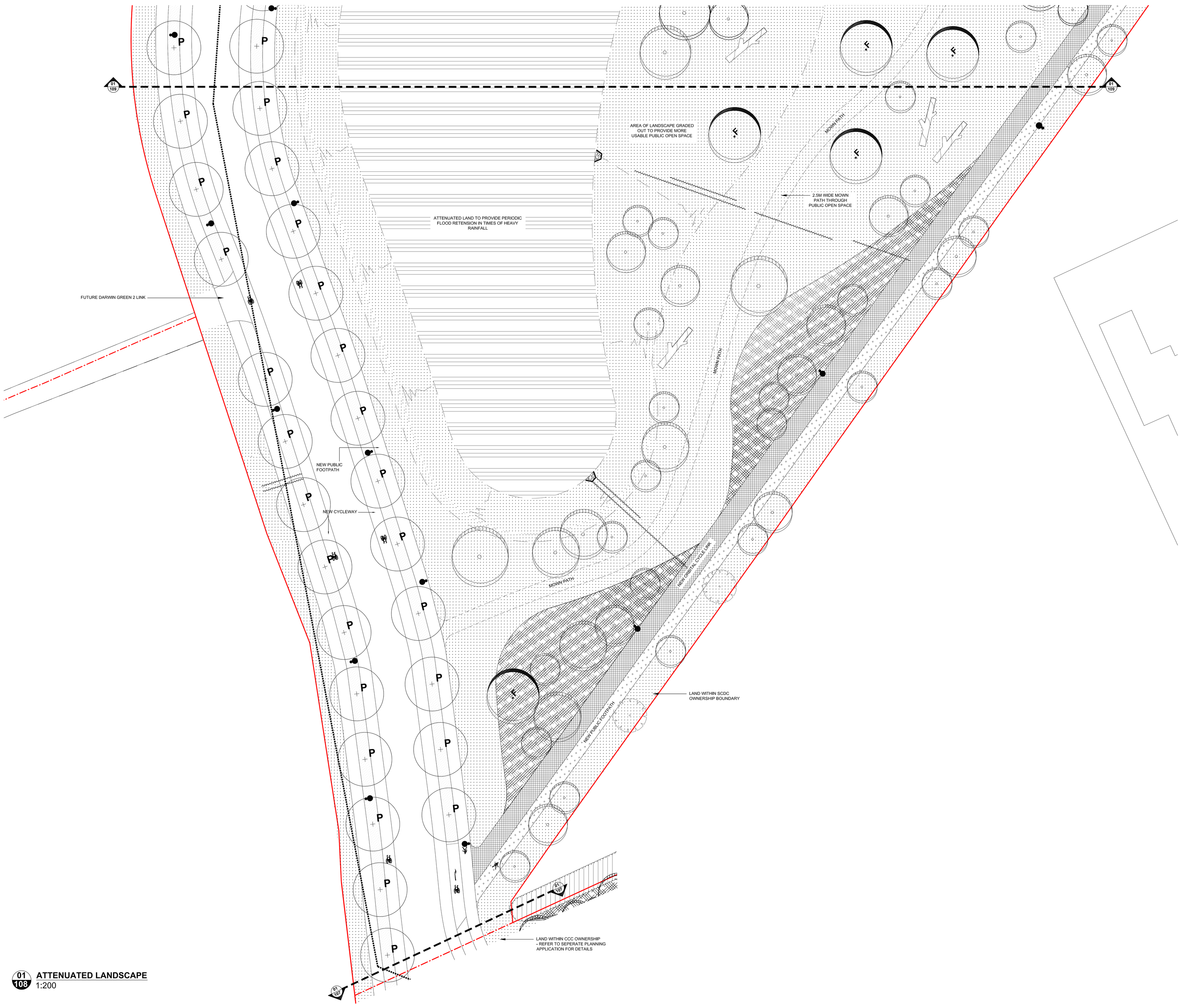
**Work equipment**
Everything used in the performance of work, including hand tools, machinery and plant of all kinds, including all the consumable stores, fluids, materials, safety equipment and transport required for the use of the work equipment for the proper completion of the Contract.

**Works**
The tasks required to be performed by the Contractor at his own expense in accordance with the tender documents.

# APPENDIX C – CONTRACT DRAWINGS

The following A3 reduced plans have been included within this document for ease of reference. It is recommended that the full scale plans are reference for clarity.

- 628.2-108-Attenuated Landscape GA Sheet 01 (of 02)
- 628.2-109-Attenuated Landscape GA Sheet 02 (of 02)
- 628.2-208-Attenuated Landscape PP Sheet 01 (of 02)
- 628.2-209-Attenuated Landscape PP Sheet 02 (of 02)
- 628.2-300-Typical Details to Attenuated Landscape




## 01 108 ATTENUATED LANDSCAPE
1:200

## KEY

**SITE BOUNDARY (SCDC)**

**INFRASTRUCTURE RED LINE APPLICATION BOUNDARY (SCDC) - EXTENT OF DETAILED DESIGN**

## HARD LANDSCAPE

**NEW FOOTPATH LINKS**
2m Wide black SMA or Black Asphalt Cement surfacing, Refer to Engineer's drawings for details

**ORBITAL CYCLE ROUTE**
3m Wide high quality SMA with red surfacing finish to Cambridge City Council standard specification, Refer to Engineer's drawings for details

## LANDSCAPE ELEMENTS

**NATURAL LOG PLAY AREAS**
Hardwood play tree trunks prepared for use in public realm, Tree trunks to be sourced locally, Sizes approx, 500 - 1200mm dia, x various lengths, All tree trunks to be low level, suitable for seating/ climbing & securely fixed into ground with stakes, Refer to dwg 628.2-306/ Detail 04 for details

**CULVERTS AND UNDERGROUND PIPEWORK**
Indicative location of underground interconnecting pipework between swales and ponds, Refer to Engineers details for culvert and headwall details.

**ROOT DEFLECTOR MEMBRANE**
Linear root deflector to protect services within 3m of tree planting and to prevent tree roots penetrating highway construction, Terram Rootguard (Tel: 01621 874200) or similar approved

**UNDERGROUND PIPEWORK/ SERVICES**
Indicative location of underground interconnecting pipework for surface water and foul sewers, Refer to Engineers details for details on services, depths and detailed locations

**PROPOSED LIGHTING COLUMNS**
New ligting columns to MMA Lighting Consultancy details

## SOFT LANDSCAPE

*(Refer also to 7-004 for Specification Notes)*

**EXISTING TREES**
Existing trees located with established hedgerows/ site boundary to be retained

**PRIMARY STREET TREES**
Tree species will reinforce proposed street hierarchy & develop distinct variety & scale, Trees to be Standard (Light), 2x transplanted, 8-10cm girth, 250-300cm overall height, Trees supported by underground guying, Species to be *Corylus colurna* as agreed with Cambridge City Council, Refer to dwg 628.2-305/ Detail 04 for Street tree pit details (for CCC) and refer to dwg 628.2-300/ Detail 03 for Street tree pit details (for SCDC)

**FEATURE TREE PLANTING**
Trees to provide 'feature' specimen planting to key public open spaces to provide seasonal interest and focal points along footpaths and entrances, adjacent to play areas and within grassland, Trees to be Standard (Standard) 2x transplanted, 300-350cm overall height, Trees supported by short timber double stake with adjustable bio-degradable tie, Species to include but not limited to: *Fagus sylvatica 'Purpurea'*, *Quercus robur*, *Salix alba* (no closer than 5m adjacent to water bodies/ courses) Refer to dwg 628.2-305/ Detail 05 for Standard tree pit details (for CCC) and refer to dwg 628.2-300/ Detail 02 for Standard tree pit details (for SCDC)

**NATURALISTIC TREE PLANTING**
Trees planted throughout site to improve diversity & provide buffer planting to site boundaries and green corridors,

**Type 1:** General planting areas - trees to be feathered whips 2x transplanted, bare root, 125-150cm high, supported by single timber stake, Refer to dwg 628.2-305/ Detail 02 for Feathered Whip tree pit details (for CCC) and refer to dwg 628.2-300/ Detail 04 for Feathered Whip tree pit details (for SCDC)

**Type 2:** Edge of footpaths - Standard (Standard) 2x transplanted, supported by short timber double stake with adjustable bio-degradable tree tie & Multi-stems to be 2x transplanted, 250-300cm high, supported by single stake laid at 45° angle,Refer to dwg 628.2-045/03 & 05 for Standard & Multi-Stem tree pit details (for CCC) and refer to dwg 628.2-045/02 & 06 for Standard & Multi-Stem tree pit details (SCDC), Species to include; *Acer campestre, Alnus glutinosa, Betula pendula, Carpinus betulus, Crataegus laevigata, Crataegus monogyna, Quercus petraea, Sorbus aucuparia, Tilia cordata, Tilia tormentosa*

**EXISTING HEDGE - RETAINED**
Existing areas of hedgerow retained and incorporated within structure of new planting proposals to create variety and form

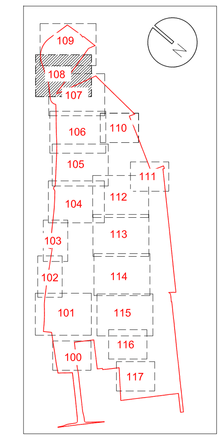
**BUFFER PLANTING**
A native buffer planting mix to provide a layered and diverse screen planting, Species supplied as 1+1 bare root whips, 40-60cm high with Spiral Tree Guard & cane support, Spacing to be 1m centres and planted in groups of 3,5,7 and 9, Species to include; *Acer campestre (7.5%), Betual pendula (7.5%), Corylus avellana* (5%), *Crataegus monogyna* (10%), *Euonymus europaeus* (5%), *Ilex aquifolium* (15%), *Ligustrum vulgare* (15%), *Quercus robur* (5%), *Rosa arvensis* (10%), *Sambucus nigra* (10%), *Salix caprea* (5%), *Sorbus aria* (5%), Refer to dwg 628.2-305/01 for Bareroot Whip planting details (for CCC) and refer to dwg 628.2-300/03 for Bareroot Whip planting details (for SCDC)

**AMENITY GRASSED AREAS**
Areas of low maintenance amenity grass seed, sown onto min, 150mm depth topsoil maintained 26x/ year - 'A4 (Low Maintenance Areas)' seed mix as supplied by British Seed Houses, Species to Include; *Festuca rubra rubra* (40%), *Festuca rubra commutata* (30%), *Festuca ovina* (25%), *Agrostis capillaris* (5%), Refer to dwg 628.2-307/06

**ROUGH GRASSED AREAS**
Rough grassed areas, sown onto min, 150mm depth topsoil maintained 6x/ year - 'EM10 Tussock Mixture' as supplied by Emorsgate, Species to Include but not limited to: *Achillea millefolium, Centaurea nigra, Cynosurus cristatus, Daucus carota, Dipsacus fullonum, Festuca rubra, Holcus lanatus, Vicia cracca*. Refer to dwg 628.2-307/06

**SEED MIX TO SWALES/ PONDS/ ATTENUATED LAND**
Water tolerant seed mix to establish along length of swales, Areas to be maintained 3x/ year - 'EM8 Meadow Mixture for Wetlands' as supplied by Emorsgate, Species to include but not limited to: *Achillea millefolium, Agrostis capillaris, Centaurea nigra, Cynosurus cristatus, Festuca rubra, Primula veris, Ranunculus acris, Rumex acetosa, Vicia cracca*

**NOTES**




02 108 LOCATION PLAN OF DRAWING
NTS

| | | | |
|---|---|---|---|
| D | 20.12.2013 | RT | MJ |

DRAWING UPDATED INLINE WITH SCDC COMMENTS RED LINE BOUNDARIES UPDATED

| | | | |
|---|---|---|---|
| C | 21.09.2013 | RT | MJ |

BOUNDARY UPDATED FOR CLARITY, ORBITAL AND FOOTPATH LOCATION SWITCHED, TREE SPECIES AMENDED TO MATCH CCC SUGGESTED SPECIES LIST, DWG CUT LINE AMENDED DWG.NO. UPDATED AND NOTES ADDED

| | | | |
|---|---|---|---|
| B | 23.01.2013 | MJ | AR |

DRAWING UPDATED IN LINE WITH SCDC COMMENTS, KEY UPDATED ACCORDINGLY, EXTENT OF VIEWPORT AMENDED FOR CLARITY, ASH REMOVED FROM PROPOSALS, DRAWING STATUS UPDATED

| | | | |
|---|---|---|---|
| A | 24.10.2012 | EP | AR |

DRAWING UPDATED AS PER DESIGN TEAM COMMENTS 24.10.2012 AND ISSUED AS WORK STAGE D INFORMATION, DRAWING STATUS CHANGED TO PLANNING

***THIS DRAWING IS SUBJECT TO LOCAL AUTHORITY APPROVALS AND FURTHER DETAILED DESIGN***

***THIS DRAWING IS FOR PLANNING SUBMISSION PURPOSES ONLY AND SHOULD NOT BE USED FOR TENDER OR CONSTRUCTION***

***REFER TO ENGINEERS DRAWINGS FOR DETAILED DRAINAGE, LEVELS AND SURFACE FINISHES***

***FOR PLANNING***


the landscape agency
Aviator Court, Clifton Moor, York, YO30 4UZ
Tel: 01904 691630 Fax: 01904 691634
enquiries@landscapeagency.co.uk
www.landscapeagency.co.uk


client
BARRATT EASTERN COUNTIES

project
DG 1 - FIRST ACCESS, DRAINAGE & OPEN SPACE RM APP (SOUTH CAMS)

title
ATTENUATED LANDSCAPE GA - SHEET 01 (of 02)

| scale | date |
|---|---|
| 1:200@A0 | 16.08.12 |
| drawn | checked |
| SP | AR |
| drawing number | revision |
| 628.2-108 | D |

0m 10m 20m
5m

HATCHED AREA INDICATES TREE PRESERVATION ORDER - NO 08/13/SC (AREA A2)

HISTON ROAD

EXISTING HEDGEROW AND TREES RETAINED

NEW PUBLIC FOOTPATH

NEW CYCLEWAY

MOWN PATH

2.5M WIDE MOWN PATH THROUGH PUBLIC OPEN SPACE

ATTENUATED LAND TO PROVIDE PERIODIC FLOOD RETENSION IN TIMES OF HEAVY RAINFALL

AREA OF LANDSCAPE GRADED OUT TO PROVIDE MORE USABLE PUBLIC OPEN SPACE

01 108

01 109

## KEY

**SITE BOUNDARY**

**INFRASTRUCTURE RED LINE APPLICATION BOUNDARY (SCDC) - EXTENT OF DETAILED DESIGN**

## HARD LANDSCAPE

**NEW FOOTPATH LINKS**
2m Wide black SMA or Black Asphalt Cement surfacing, Refer to Engineer's drawings for details

**ORBITAL CYCLE ROUTE**
3m Wide high quality SMA with red surfacing finish to Cambridge City Council standard specification, Refer to Engineer's drawings for details

## LANDSCAPE ELEMENTS

**NATURAL LOG PLAY AREAS**
Hardwood play tree trunks prepared for use in public realm, Refer to be sourced locally, Sizes approx, 500 - 1200mm dia, x various lengths, All tree trunks to be low level, suitable for seating/ climbing & securely fixed into ground with stakes, Refer to dwg 628.2-306/ Detail 04 for details

**CULVERTS AND UNDERGROUND PIPEWORK**
Indicative location of underground interconnecting pipework between swales and ponds, Refer to Engineers details for culvert and headwall details,

**PROPOSED LIGHTING COLUMNS**
New ligting columns to MMA Lighting Consultancy details

**ROOT DEFLECTOR MEMBRANE**
Linear root deflector to protect services within 3m of tree planting and to prevent tree roots penetrating highway construction, Temark Rootguard (Tel: 01621 874200) or similar approved

**UNDERGROUND PIPEWORK/ SERVICES**
Indicative location of underground interconnecting pipework for surface water and foul sewers, Refer to Engineers details for details on services, depths and detailed locations

## SOFT LANDSCAPE

**EXISTING TREES** *[refer to dwg 628.2-004 for specification notes]*
Existing trees located with established hedgerows/ site boundary to be retained

**PRIMARY STREET TREES**
Tree species will reinforce proposed street hierarchy & develop distinct variety & scale, Trees to be Standard (Light), 2x transplanted, 8-10cm girth, 250-300cm overall height, Trees supported by underground guying, Species to be *Corylus colurna* as agreed with Cambridge City Council, Refer to dwg 628.2-305/ Detail 04 for Street tree pit details (for CCC) and refer to dwg 628.2-300/ Detail 03 for Street tree pit details (for SCDC)

**FEATURE TREE PLANTING**
Trees to provide 'feature' specimen planting to key public open spaces to provide seasonal interest and focal points along footpaths and entrances, adjacent to play areas and within grassland, Trees to be Standard (Standard) 2x transplanted, 300-350cm overall height, Trees supported by short timber double stake with adjustable bio-degradable tie, Species to include but not limited to: *Fagus sylvatica 'Purpurea', Quercus robur, Salix alba (no closer than 5m adjacent to water bodies/ courses)* Refer to dwg 628.2-305/ Detail 05 for Standard tree pit details (for CCC) and refer to dwg 628.2-300/ Detail 02 for Standard tree pit details (for SCDC)

**NATURALISTIC TREE PLANTING**
Trees planted throughout site to improve diversity & provide buffer planting to site boundaries and green corridors,

**Type 1:** General planting areas - trees to be feathered whips 2x transplanted, bare root, 125-150cm high, supported by single timber stake, Refer to dwg 628.2-305/ Detail 02 for Feathered Whip tree pit details (for CCC) and refer to dwg 628.2-300/ Detail 04 for Feathered Whip tree pit details (for SCDC)

**Type 2:** Edge of footpaths - Standard (Standard) 2x transplanted, supported by short timber double stake with adjustable bio-degradable tree tie & Multi-stems to be 2x transplanted, 250-300cm high, supported by single stake laid at 45° angle,Refer to dwg 628.2-045/03 & 05 for Standard & Multi-Stem tree pit details (for CCC) and refer to dwg 628.2-045/02 & 06 for Standard & Multi-Stem tree pit details (SCDC), Species to include; *Acer campestre, Alnus glutinosa, Betula pendula, Carpinus betulus, Crataegus laviagata, Crataegus monogyna, Quercus petraea, Sorbus aucuparia, Tilia cordata, Tilia tormentosa*

**EXISTING HEDGE - RETAINED**
Existing areas of hedgerow retained and incorporated within structure of new planting proposals to create variety and form

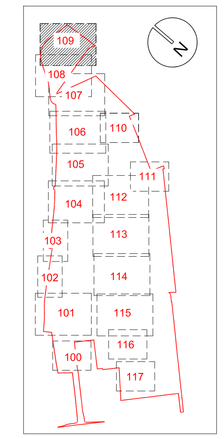
**BUFFER PLANTING**
A native buffer planting mix to provide a layered and diverse screen planting, Species supplied as 1+1 bare root whips, 40-60cm high with Spiral Tree Guard & cane support, Spacing to be 1m centres and planted in groups of 3,5,7 and 9, Species to include; *Acer campestre* (7.5%), *Betual pendula* (7.5%), *Corylus avellana* (5%), *Crataegus monogyna* (10%), *Euonymus europaeus* (5%), *Ilex aquifolium* (15%), *Ligustrum vulgare* (15%), *Quercus robur* (5%), *Rosa arvensis* (10%), *Sambucus nigra* (10%), *Salix caprea* (5%), *Sorbus aria* (5%), Refer to dwg 628.2-305/01 for Bareroot Whip planting details (for CCC) and refer to dwg 628.2-300/03 for Bareroot Whip planting details (for SCDC)

**AMENITY GRASSED AREAS**
Areas of low maintenance amenity grass seed, sown onto min, 150mm depth topsoil maintained 26x/ year - 'A4 (Low Maintenance Areas)' seed mix as supplied by British Seed Houses, Species to include; *Festuca rubra rubra* (40%), *Festuca rubra commutata* (30%), *Festuca ovina* (25%), *Agrostis capillaris* (5%), Refer to dwg 628.2-307/06

**ROUGH GRASSED AREAS**
Rough grassed areas, sown onto min, 150mm depth topsoil maintained 6x/ year - 'EM10 Tussock Mixture' as supplied by Emorsgate, Species to include but not limited to; *Achillea millefolium, Centaurea nigra, Cynosurus cristatus, Daucus carota, Dipsacus fullonum, Festuca rubra, Holcus lanatus, Vicia cracca*. Refer to dwg 628.2-307/06

**SEED MIX TO SWALES/ PONDS/ ATTENUATED LAND**
Water tolerant seed mix to establish along length of swales, Areas to be maintained 3x/ year - 'EM8 Meadow Mixture for Wetlands' as supplied by Emorsgate, Species to include but not limited to; *Achillea millefolium, Agrostis capillaris, Centaurea nigra, Cynosurus cristatus, Festuca rubra, Primula veris, Ranunculus acris, Rumex acetosa, Vicia cracca*

**NOTES**




02 109 **LOCATION PLAN OF DRAWING**
NTS

01 109 **ATTENUATED LANDSCAPE**
1:200

E 20.12.13 RT MJ
DWG, AMENDED INLINE WITH CCC COMMENTS

D 02.10.13 RT MJ
DWG, AMENDED INLINE WITH CCC COMMENTS

C 23.09.2013 MJ AR
BOUNDARY UPDATED FOR CLARITY, ORBITAL AND FOOTPATH LOCATION SWITCHED, TREE SPECIES AMENDED TO MATCH CCC SUGGESTED SPECIES LIST, DWG CUT LINE AMENDED DWG.NO, UPDATED AND NOTES ADDED

B 23.01.2013 MJ AR
DRAWING UPDATED IN LINE WITH SCDC COMMENTS, KEY UPDATED ACCORDINGLY, EXTENT OF VIEWPORT AMENDED FOR CLARITY, ASH REMOVED FROM PROPOSALS, DRAWING STATUS CHANGED TO PLANNING

A 24.10.2012 EP AR
DRAWING UPDATED AS PER DESIGN TEAM COMMENTS 24.10.2012 AND ISSUED AS WORK STAGE D INFORMATION

***FOR PLANNING***


the landscape agency
Aviator Court, Clifton Moor, York, YO30 4UZ
Tel: 01904 691630 Fax: 01904 691634
enquiries@landscapeagency.co.uk
www.landscapeagency.co.uk


client
BARRATT EASTERN COUNTIES

project
DG 1 - FIRST ACCESS, DRAINAGE & OPEN SPACE RM APP (SOUTH CAMS)

title
ATTENUATED LANDSCAPE GA - SHEET 02 (of 02)

scale 1:200@A0
date 16.08.12
drawn SP
checked AR
drawing number 628.2-109
revision E

***THIS DRAWING IS SUBJECT TO LOCAL AUTHORITY APPROVALS AND FURTHER DETAILED DESIGN***

***THIS DRAWING IS FOR PLANNING SUBMISSION PURPOSES ONLY AND SHOULD NOT BE USED FOR TENDER OR CONSTRUCTION***

***REFER TO ENGINEERS DRAWINGS FOR DETAILED DRAINAGE & STRUCTURAL SPECIFICATION***

0m 10m 20m

# KEY

*[Refer to DWG 628.2-004 for specification notes]*

**SITE BOUNDARY**

**INFRASTRUCTURE RED LINE APPLICATION BOUNDARY (SCDC) - EXTENT OF DETAILED DESIGN**

**EXISTING TREES**
Existing trees located with established hedgerows/ site boundary to be retained

**STREET TREES**
Trees to be Standard (Light), 2x transplanted, 8-10cm girth, 250-300cm overall height, Trees supported by underground guying. Species to be *Corylus colurna* as agreed with Cambridge City Council.
*[Refer to dwg 628.2-024/ Detail 01 for Street tree pit details]*

**FEATURE TREE PLANTING**
Trees to be Standard (standard) 2x transplanted, 300-350cm overall height, Trees supported by short timber double stake with adjustable bio-degradable tie. Species to include:
*Fagus sylvatica 'Purpurea', Quercus robur, Salix alba* (no closer than 5m adjacent to water bodies/ courses)
*[Refer to dwg 628.2-024/ Detail 02 for Standard tree pit details]*

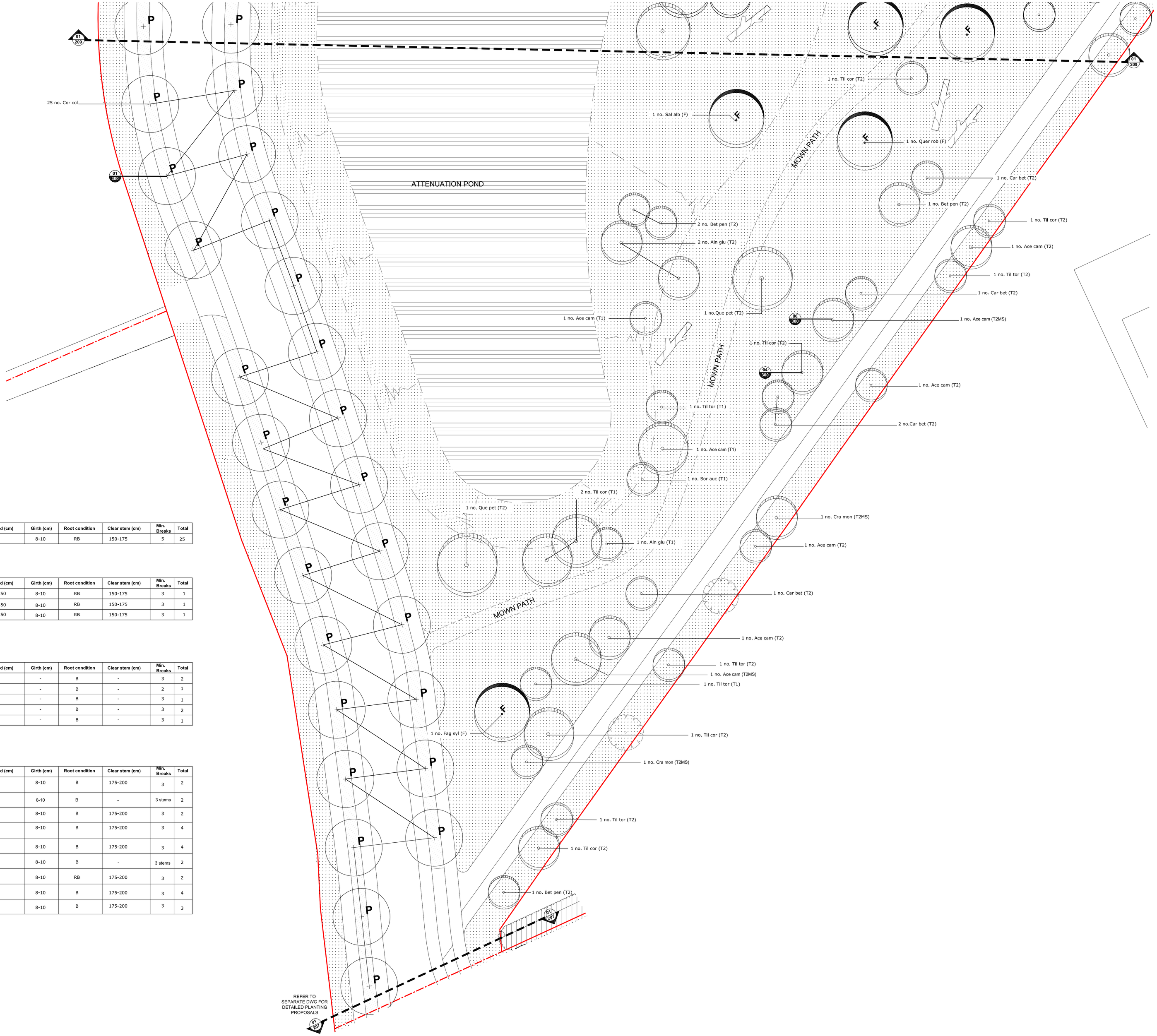
**NATURALISTIC TREE PLANTING**
**Type 1:** General planting areas - trees to be feathered whips 2x transplanted, bare root, 125-150cm high, supported by single timber stake,

**Type 2:** Edge of footpaths - Standard (Standard) 2x transplanted, supported by short timber double stake with adjustable bio-degradable tree tie & Multi-stems to be 2x transplanted, 250-300cm high, supported by single stake laid at 45° angle, Species to include; *Acer campestre, Alnus glutinosa, Betula pendula, Carpinus betulus, Crataegus laevigata, Crataegus monogyna, Quercus petraea, Sorbus aucuparia, Tilia cordata, Tilia tormentosa*
*[Refer to dwg 628.2-024/ Detail 04 for Feathered Whip tree pit details & 628.2-024/02 & 06 for Standard & Multi-Stem tree pit details]*

**AMENITY GRASSED AREAS - (600m2)**
Areas of low maintenance amenity grass seed maintained 26x/ year - 'IA4 (Low Maintenance Areas)' seed mix as supplied by British Seed Houses, Sowing rate 35,00 g/m2. Overseed rate 20,00 g/m2, Species to Include; *Festuca rubra rubra* (40%), *Festuca rubra commutata* (30%), *Festuca ovina* (25%), *Agrostis capillaris* (5%)

**ROUGH GRASSED AREAS - (5200m2)**
Rough grassed areas maintained 6x/ year - 'EM10 Tussock Mixture' as supplied by Emorsgate, Species to include but not limited to:
*Achillea millefolium, Centaurea nigra, Cynosurus cristatus, Daucus carota, Dipsacus fullonum, Festuca rubra, Holcus lanatus, Leucanthemum vulgare, Vicia cracca*

**SEED MIX TO SWALES/ PONDS - (4000m2)**
Water tolerant seed mix to establish along length of swales, Areas to be maintained 3x/ year - 'EM8 Meadow Mixture for Wetlands' as supplied by Emorsgate, Species to include but not limited to:
*Achillea millefolium, Agrostis capillaris, Centaurea nigra, Cynosurus cristatus, Festuca rubra. Primula veris, Ranunculus acris, Rumex acetosa, Vicia cracca*




## STREET TREES

| Key | Species | Form | Transplanted | Height/Spread (cm) | Girth (cm) | Root condition | Clear stem (cm) | Min. Breaks | Total |
|---|---|---|---|---|---|---|---|---|---|
| Cor col | Corylus colurna | Standard (light) | 2x | 250-300 | 8-10 | RB | 150-175 | 5 | 25 |

Trees supported by short timber double stake with adjustable bio-degradable tie.

## FEATURE TREE PLANTING

| Key | Species | Form | Transplanted | Height/Spread (cm) | Girth (cm) | Root condition | Clear stem (cm) | Min. Breaks | Total |
|---|---|---|---|---|---|---|---|---|---|
| Fag syl (F) | *Fagus sylvatica 'Purpurea'* | Standard (standard) | 2x | 300-350 | 8-10 | RB | 150-175 | 3 | 1 |
| Quer rob (F) | *Quercus robur* | Standard (standard) | 2x | 300-350 | 8-10 | RB | 150-175 | 3 | 1 |
| Sal alb (F) | *Salix alba* | Standard (standard) | 2x | 300-350 | 8-10 | RB | 150-175 | 3 | 1 |

Trees supported by short timber double stake with adjustable bio-degradable tie.

## NATURALISTIC TREE PLANTING (Type 1)

| Key | Species | Form | Transplanted | Height/Spread (cm) | Girth (cm) | Root condition | Clear stem (cm) | Min. Breaks | Total |
|---|---|---|---|---|---|---|---|---|---|
| Ace cam (T1) | *Acer campestre* | Feathered | 2x | 125-150 | - | B | - | 3 | 2 |
| Aln glu (T1) | *Alnus glutinosa* | Feathered | 2x | 125-150 | - | B | - | 2 | 1 |
| Sor auc (T1) | *Sorbus aucuparia* | Feathered | 2x | 125-150 | - | B | - | 3 | 1 |
| Til cor (T1) | *Sorbus cordata* | Feathered | 2x | 125-150 | - | B | - | 3 | 2 |
| Til tor (T1) | *Tilia tormentosa* | Feathered | 2x | 125-150 | - | B | - | 3 | 1 |

Trees supported by single timber stake with adjustable bio-degradable tie.

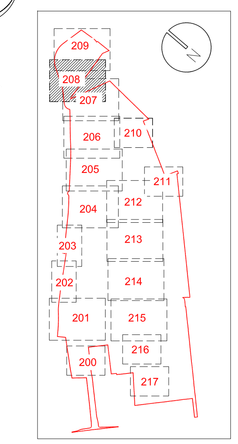
## NATURALISTIC TREE PLANTING (Type 2)

| Key | Species | Form | Transplanted | Height/Spread (cm) | Girth (cm) | Root condition | Clear stem (cm) | Min. Breaks | Total |
|---|---|---|---|---|---|---|---|---|---|
| Ace cam (T2) | *Acer campestre* | Standard (standard) | 2x | 250-300 | 8-10 | B | 175-200 | 3 | 2 |
| Ace cam (T2MS) | *Acer Campestre* | Multi-stem | 2x | 250-300 | 8-10 | B | - | 3 stems | 2 |
| Aln glu (T2) | *Alnus glutinosa* | Standard (standard) | 2x | 250-300 | 8-10 | B | 175-200 | 3 | 2 |
| Bet pen (T2) | *Betula pendula* | Standard (standard) | 2x | 250-300 | 8-10 | B | 175-200 | 3 | 4 |
| Car bet (T2) | *Carpinus betulus* | Standard (standard) | 2x | 250-300 | 8-10 | B | 175-200 | 3 | 4 |
| Cra mon (T2MS) | *Crataegus monogyna* | Multi-stem | 2x | 250-300 | 8-10 | B | - | 3 stems | 2 |
| Que pet (T2) | *Quercus petraea* | Standard (standard) | 2x | 250-300 | 8-10 | RB | 175-200 | 3 | 2 |
| Til cor (T2) | *Tilia cordata* | Standard (standard) | 2x | 250-300 | 8-10 | B | 175-200 | 3 | 4 |
| Til tor (T2) | *Tilia tormentosa* | Standard (standard) | 2x | 250-300 | 8-10 | B | 175-200 | 3 | 3 |

*Trees supported by short timber double stake, all with adjustable bio-degradable tree tie.*

**01 208** **ATTENUATION POND**
1:200

**NOTES**




**02 209** **LOCATION PLAN OF DRAWING**
NTS

C 20.12.13 RT MJ
PLANTING PLAN A.ENDED INLINE WITH CCC COMMENTS

B 16.09.13 RT MJ
DWG.NO. UPDATED

A 03.07.13 SP MJ
DRAWING UPDATED AS PER SCDC COMMENTS, SCHEME LAYOUT AND PLANTING PLAN AMENDED

***THIS DRAWING IS SUBJECT TO LOCAL AUTHORITY APPROVALS AND FURTHER DETAILED DESIGN***

***THIS DRAWING IS FOR PLANNING SUBMISSION PURPOSES ONLY AND SHOULD NOT BE USED FOR TENDER OR CONSTRUCTION***

***REFER TO ENGINEERS DRAWINGS FOR DETAILED DRAINAGE & STRUCTURAL SPECIFICATION***

***FOR PLANNING***


the landscape agency
Aviator Court, Clifton Moor, York, YO30 4UZ
Tel: 01904 691630 Fax: 01904 691634
enquiries@tlandscapeagency.co.uk
www.tlandscapeagency.co.uk


client
BARRATT EASTERN COUNTIES

project
DG 1 - FIRST ACCESS
DRAINAGE & OPEN SPACE RM APP

title
ATTENUATED LANDSCAPE - SHEET 01 (of 02)

scale 1:200@A0
date 30.10.12
drawn SP
checked AR
drawing number 628.2-208
revision C



0m 10m 20m
5m

## STREET TREES

| Key | Species | Form | Transplanted | Height/Spread (cm) | Girth (cm) | Root condition | Clear stem (cm) | Min. Breaks | Total |
|---|---|---|---|---|---|---|---|---|---|
| Cor col | Corylus colurna | Standard (light) | 2x | 250-300 | 8-10 | RB | 150-175 | 5 | 26 |

Trees supported by short timber double stake with adjustable bio-degradable tie.

## FEATURE TREE PLANTING

| Key | Species | Form | Transplanted | Height/Spread (cm) | Girth (cm) | Root condition | Clear stem (cm) | Min. Breaks | Total |
|---|---|---|---|---|---|---|---|---|---|
| Fag syl (F) | *Fagus sylvatica 'Purpurea'* | Standard (standard) | 2x | 300-350 | 6-8 | RB | 150-175 | 3 | 1 |
| Quer rob (F) | *Quercus robur* | Standard (standard) | 2x | 300-350 | 6-8 | RB | 150-175 | 3 | 3 |
| Sal alb (F) | *Salix alba* | Standard (standard) | 2x | 300-350 | 6-8 | RB | 150-175 | 3 | 1 |

Trees supported by short timber double stake with adjustable bio-degradable tie.

## NATURALISTIC TREE PLANTING (Type 1)

| Key | Species | Form | Transplanted | Height/Spread (cm) | Girth (cm) | Root condition | Clear stem (cm) | Min. Breaks | Total |
|---|---|---|---|---|---|---|---|---|---|
| Cra lea (T1) | *Crataegus leavigata* | Feathered | 2x | 125-150 | - | B | - | - | 1 |
| Cra mon (T1) | *Crataegus monogyna* | Feathered | 2x | 125-150 | - | B | - | - | 2 |
| Sor auc (T1) | *Sorbus aucuparia* | Feathered | 2x | 125-150 | - | B | - | 3 | 7 |

Trees supported by single timber stake with adjustable bio-degradable tie.

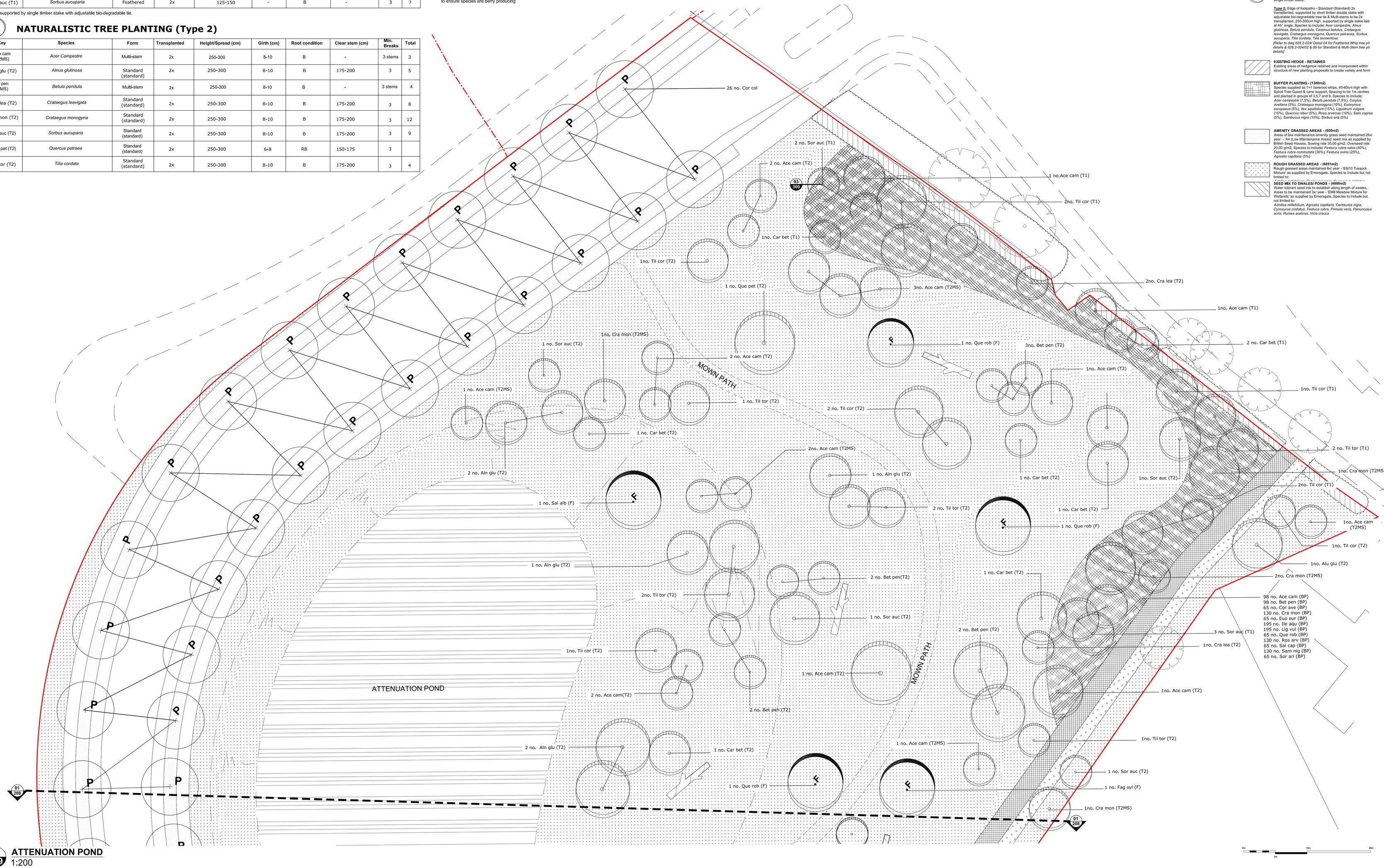
## NATURALISTIC TREE PLANTING (Type 2)

| Key | Species | Form | Transplanted | Height/Spread (cm) | Girth (cm) | Root condition | Clear stem (cm) | Min. Breaks | Total |
|---|---|---|---|---|---|---|---|---|---|
| Ace cam (T2MS) | *Acer Campestre* | Multi-stem | 2x | 250-300 | 8-10 | B | - | 3 stems | 3 |
| Aln glu (T2) | *Alnus glutinosa* | Standard (standard) | 2x | 250-300 | 8-10 | B | 175-200 | 3 | 5 |
| Bet pen (T2MS) | *Betula pendula* | Multi-stem | 2x | 250-300 | 8-10 | B | - | 3 stems | 4 |
| Cra lea (T2) | *Crataegus leavigata* | Standard (standard) | 2x | 250-300 | 8-10 | B | 175-200 | 3 | 8 |
| Cra mon (T2) | *Crataegus monogyna* | Standard (standard) | 2x | 250-300 | 8-10 | B | 175-200 | 3 | 12 |
| Sor auc (T2) | *Sorbus aucuparia* | Standard (standard) | 2x | 250-300 | 8-10 | B | 175-200 | 3 | 9 |
| Que pet (T2) | *Quercus petraea* | Standard (standard) | 2x | 250-300 | 6-8 | RB | 150-175 | 3 | |
| Til cor (T2) | *Tilia cordata* | Standard (standard) | 2x | 250-300 | 8-10 | B | 175-200 | 3 | 4 |

## BUFFER PLANTING

| Key | Species | Form | Transplanted | Height/Spread (cm) | Root condition | Min. Breaks | Density (/m2) | Total |
|---|---|---|---|---|---|---|---|---|
| Ace cam (BP) | *Acer campestre* | Whip | 1+1 | 40-60 | B | - | 1 | 98 |
| Bet pen (BP) | *Betual pendula* | Whip | 1+1 | 40-60 | B | - | 1 | 98 |
| Cor ave (BP) | *Corylus avellana* | Whip | 1+1 | 40-60 | B | - | 1 | 65 |
| Cra mon (BP) | *Crataegus monogyna* | Whip | 1+1 | 40-60 | B | - | 1 | 130 |
| Euo eur (BP) | *Euonymus europaeus* | Whip | 1+1 | 40-60 | B | - | 1 | 65 |
| Ile aqu (BP) | **Ilex aquifolium* | Whip | 1+1 | 40-60 | B | - | 1 | 195 |
| Lig vul (BP) | *Ligustrum vulgare* | Whip | 1+1 | 40-60 | B | - | 1 | 195 |
| Que rob (BP) | *Quercus robur* | Whip | 1+1 | 40-60 | B | - | 1 | 65 |
| Ros arv (BP) | *Rosa arvensis* | Whip | 1+1 | 40-60 | B | - | 1 | 130 |
| Sal cap (BP) | *Salix caprea* | Whip | 1+1 | 40-60 | B | - | 1 | 65 |
| Sor ari (BP) | *Sorbus aria* | Whip | 1+1 | 40-60 | B | - | 1 | 65 |
| Sam nig (BP) | *Sambucus nigra* | Whip | 1+1 | 40-60 | B | - | 1 | 130 |

All plants to be planted with spiral tree guard & cane support. Spacing to be 1m centres and planted in groups of 3,5,7 and 9. *Ilex sp. are dioecious therefore male and female plants must sourced to ensure species are berry producing




## KEY

*[Refer to DWG 628.2-021 for specification notes]*

**SITE BOUNDARY**

**INFRASTRUCTURE RED LINE APPLICATION BOUNDARY (SCDC) - EXTENT OF DETAILED DESIGN**

**EXISTING TREES**
Existing trees located with established hedgerows/ site boundary to be retained

**STREET TREES**
Trees to be Standard (Light), 2x transplanted, 8-10cm girth, 250-300cm overall height. Trees supported by underground guying. Species to be *Corylus colurna* as agreed with Cambridge City Council.
*[Refer to dwg 628.2-024/ Detail 01 for Street tree pit details]*

**FEATURE TREE PLANTING**
Trees to be Standard (standard) 2x transplanted, 300-350cm overall height, Trees supported by short timber double stake with adjustable bio-degradable tie, Species to include; *Fagus sylvatica 'Purpurea', Quercus robur, Salix alba* (no closer than 5m adjacent to water bodies/ courses)
*[Refer to dwg 628.2-024/ Detail 02 for Standard (Light) tree pit details]*

**NATURALISTIC TREE PLANTING**
Type 1: General planting areas - trees to be feathered whips 2x transplanted, bare root, 125-150cm high, supported by single timber stake,

Type 2: Edge of footpaths - Standard (Standard) 2x transplanted, supported by short timber double stake with adjustable bio-degradable tree tie & Multi-stems to be 2x transplanted, 250-300cm high, supported by single stake laid at 45° angle, Species to include; *Acer campestre, Alnus glutinosa, Betula pendula, Carpinus betulus, Crataegus leavigata, Crataegus monogyna, Quercus petraea, Sorbus aucuparia, Tilia cordata, Tilia tormentosa*
*[Refer to dwg 628.2-024/ Detail 04 for Feathered Whip tree pit details & 628.2-024/02 & 06 for Standard & Multi-Stem tree pit details]*

**EXISTING HEDGE - RETAINED**
Existing areas of hedgerow retained and incorporated within structure of new planting proposals to create variety and form

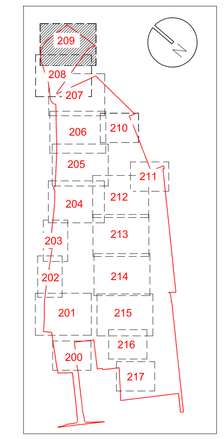
**BUFFER PLANTING - (1300m2)**
Species supplied as 1+1 bareroot whips, 40-60cm high with Spiral Tree Guard & cane support. Spacing to be 1m centres and planted in groups of 3,5,7 and 9, Species to include; *Acer campestre (7.5%), Betula pendula (7.5%), Corylus avellana (5%), Crataegus monogyna (10%), Euonymus europaeus (5%), Ilex aquifolium (15%), Ligustrum vulgare (15%), Quercus robur (5%), Rosa arvensis (10%), Salix caprea (5%), Sambucus nigra (10%), Sorbus aria (5%)*

**AMENITY GRASSED AREAS - (600m2)**
Areas of low maintenance amenity grass seed maintained 26x/ year - 'A4 (Low Maintenance Areas)' seed mix as supplied by British Seed Houses. Sowing rate 35.00 g/m2, Overseed rate 20.00 g/m2, Species to include; *Festuca rubra commutata* (30%), *Festuca ovina* (25%), *Agrostis capillaris* (5%)

**ROUGH GRASSED AREAS - (6851m2)**
Rough grassed areas maintained 6x/ year - 'EM10 Tussock Mixture' as supplied by Emorsgate, Species to include but not limited to;

**SEED MIX TO SWALES/ PONDS - (4800m2)**
Water tolerant seed mix to establish along length of swales, Areas to be maintained 3x/ year - 'EM8 Meadow Mixture for Wetlands' as supplied by Emorsgate. Species to include but not limited to;
*Achillea millefolium, Agrostis capillaris, Centaurea nigra, Cynosurus cristatus, Festuca rubra, Primula veris, Ranunculus acris, Rumex acetosa, Vicia cracca*

**NOTES**




02 / 209 **LOCATION PLAN OF DRAWING**
NTS

***THIS DRAWING IS SUBJECT TO LOCAL AUTHORITY APPROVALS AND FURTHER DETAILED DESIGN***

***THIS DRAWING IS FOR PLANNING SUBMISSION PURPOSES ONLY AND SHOULD NOT BE USED FOR TENDER OR CONSTRUCTION***

***REFER TO ENGINEERS DRAWINGS FOR DETAILED DRAINAGE & STRUCTURAL SPECIFICATION***

| | | | |
|---|---|---|---|
| D | 20.12.13 | RT | MJ |
| PLANTING PLAN AMENDED IN LINE WITH CCC COMMENTS | | | |
| C | 02.10.13 | RT | MJ |
| PLANTING PLAN AMENDED IN LINE WITH CCC COMMENTS | | | |
| B | 16.09.13 | RT | MJ |
| DWG.NO. UPDATED | | | |
| A | 24.01.13 | SP | MJ |
| DRAWING UPDATED AS PER SCDC COMMENTS SCHEME LAYOUT AND PLANTING PLAN AMENDED | | | |

***FOR PLANNING***


the landscape agency
Aviator Court, Clifton Moor, York, YO30 4UZ
Tel: 01904 691630 Fax: 01904 691634
enquiries@landscapeagency.co.uk
www.landscapeagency.co.uk


client
BARRATT EASTERN COUNTIES

project
DG 1 - FIRST ACCESS
DRAINAGE & OPEN SPACE RM APP

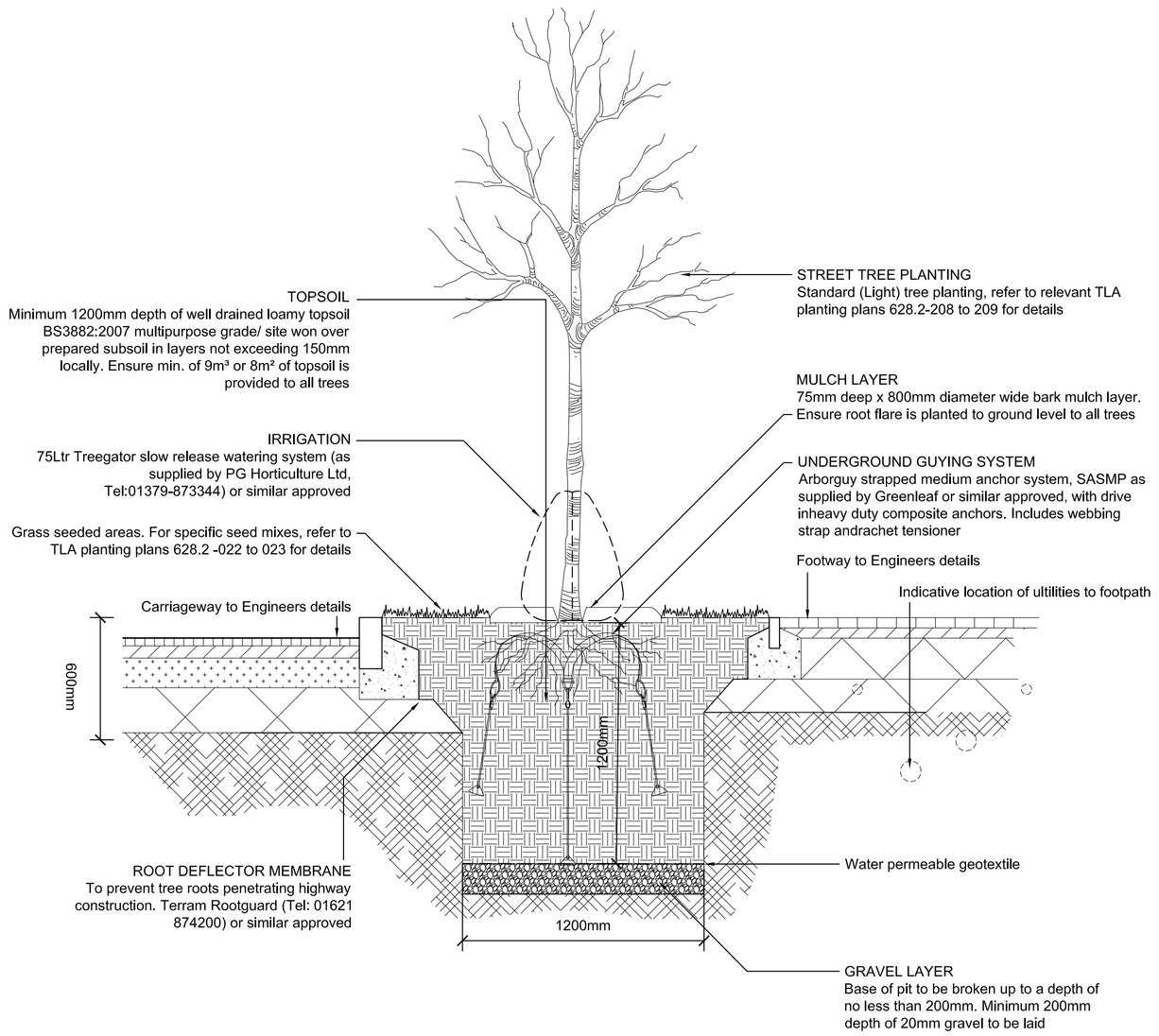
title
ATTENUATION POND
- SHEET 02 (of 02)

| scale | date |
|---|---|
| 1:200@A0 | 30.10.12 |
| drawn | checked |
| SP | AR |
| drawing number | revision |
| 628.2-209 | D |

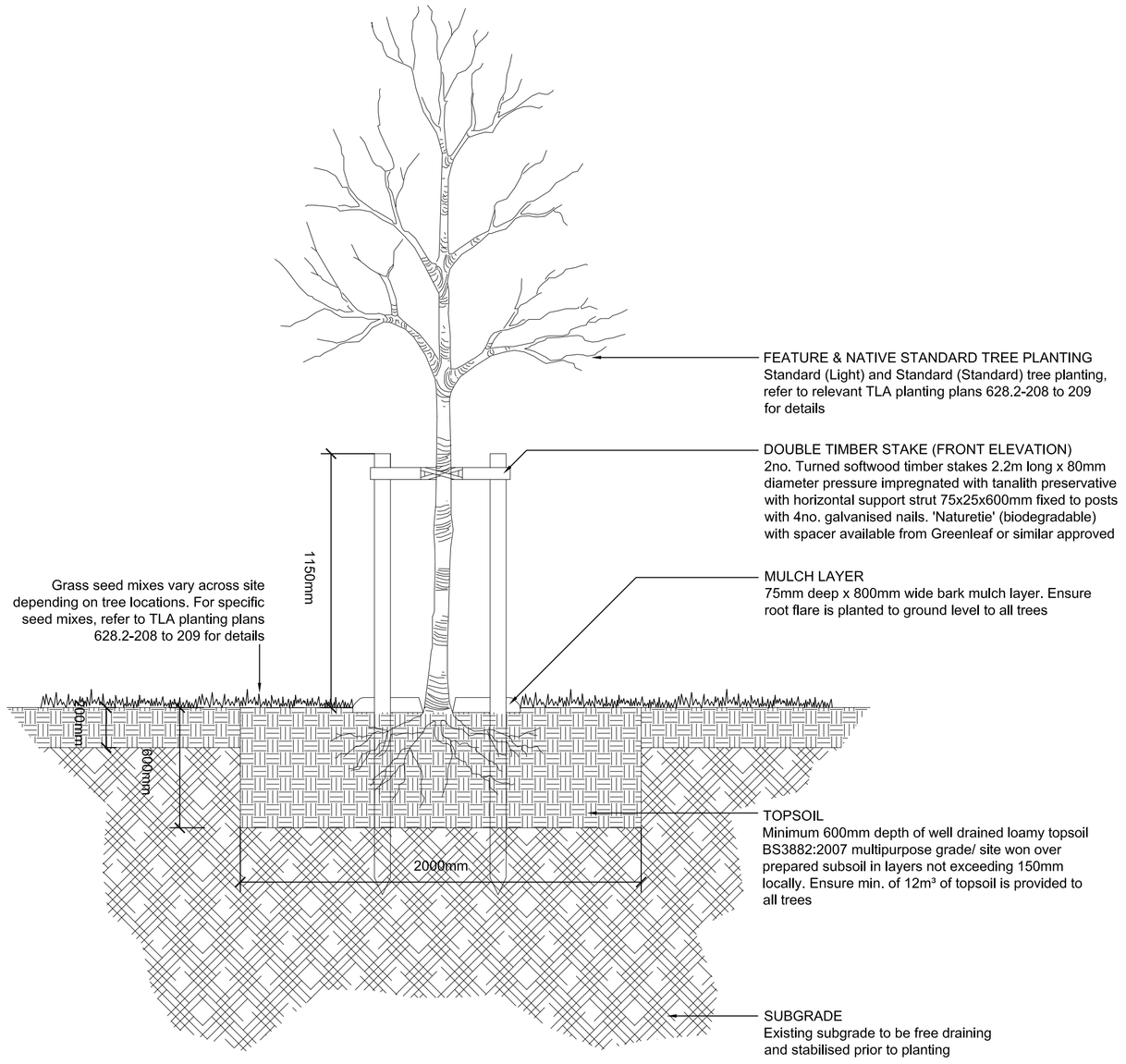
DO NOT SCALE FROM THIS DRAWING


0m 10m 20m
5m

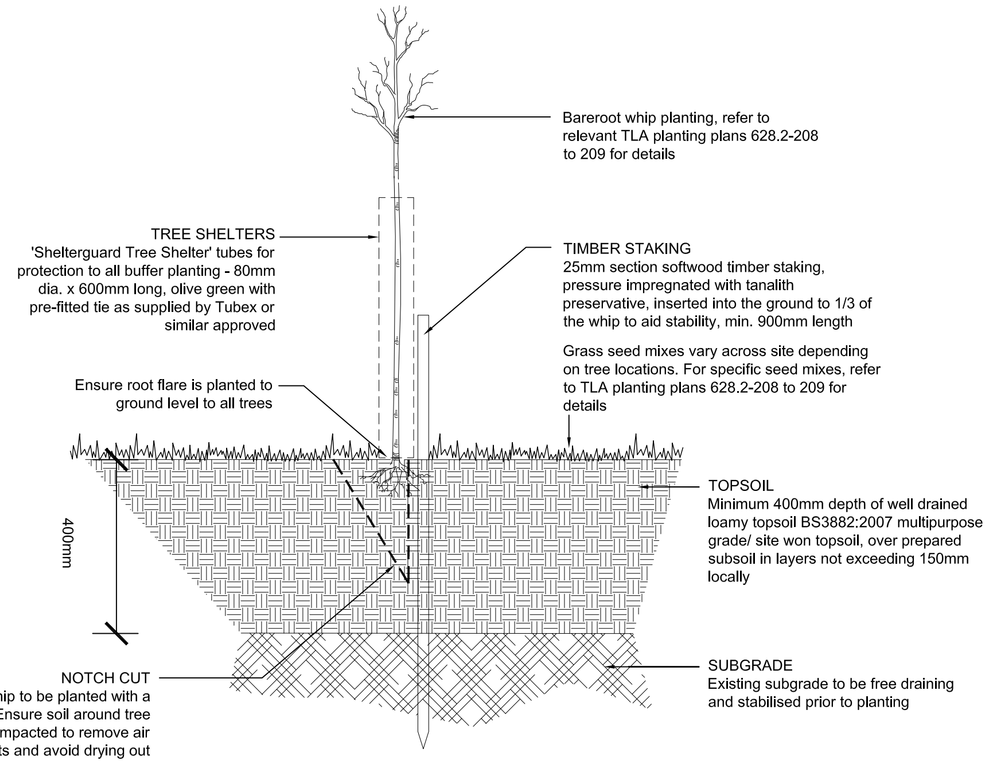
01 / 209 **ATTENUATION POND**
1:200



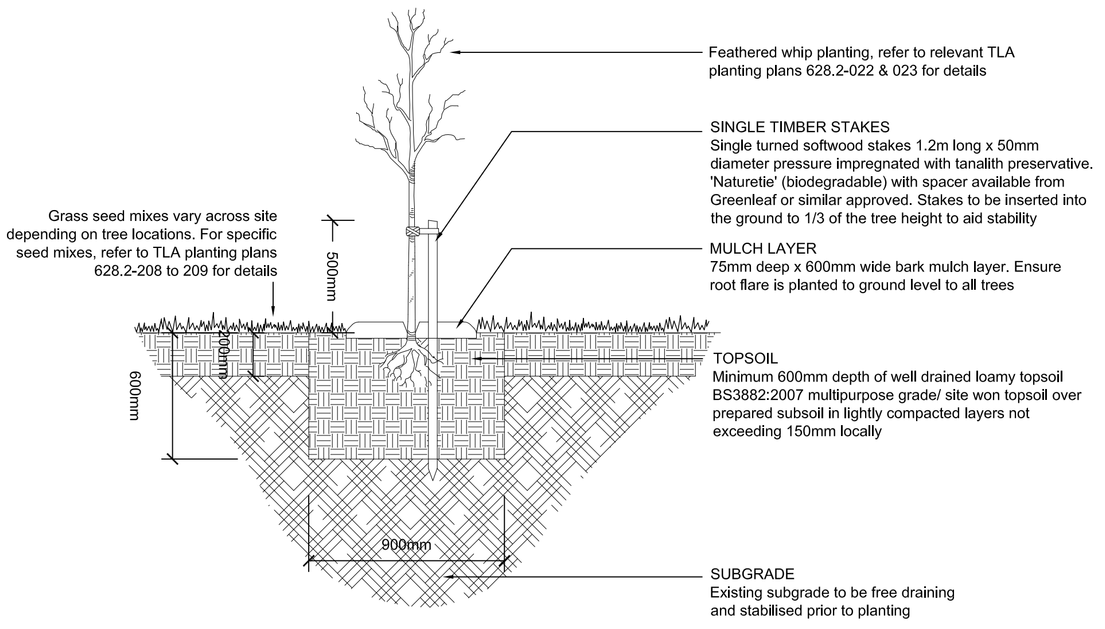

## 01 300 TYPICAL TREE PIT TO TREES IN VERGES (STREET TREES)
1:20



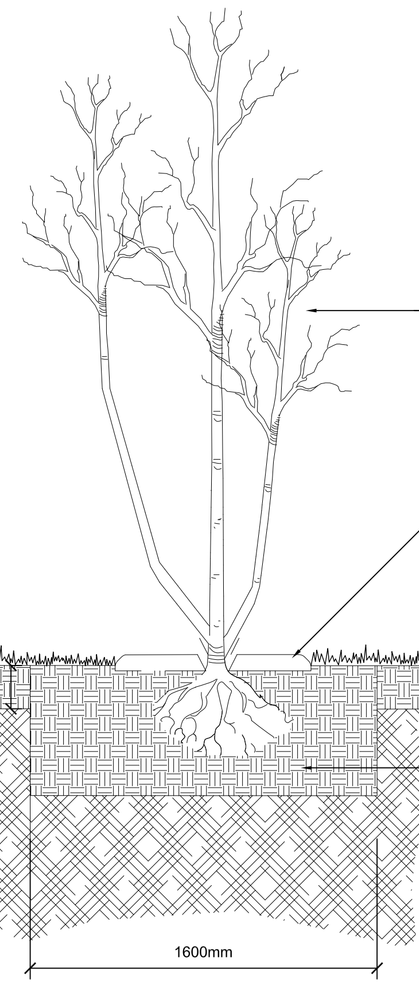

## 02 300 TYPICAL TREE PIT TO TREES IN SOFT (STANDARD LIGHTS)
1:20




## 03 300 TYPICAL PLANTING DETAIL TO BAREROOT WHIPS (BUFFER PLANTING)
1:10




## 04 300 TYPICAL TREE PIT (FEATHERED WHIPS)
1:20




## 06 300 TYPICAL TREE PIT DETAIL (MULTI-STEMS)
1:20

**NOTES**

*THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER TLA DRAWINGS AND RELEVANT SPECIALIST SUB-CONSULTANTS INFORMATION*

***TIMBER***
*TIMBER TO BE FSC CERTIFIED SOFTWOOD, PRESSURE IMPREGNATED WITH A WATER BASED PRESERVATIVE.*

*ENSURE ALL TIMBERS IN CLOSE PROXIMITY TO PUBLIC USE ARE FREE FROM MARKINGS FROM SUPPLIERS*

*ALL CUT TIMBER TO BE TREATED WITH COLOURLESS PRESERVATIVE FLUID. ALLOW FOR ALL VERTICAL POSTS TO BE ONCE WEATHERED TO TOPS UNLESS STATED OTHERWISE.*

***TREE PLANTING***
*TREE STAKES TO BE PLACED ON THE WINDWARD SIDE OF THE TREE TO PREVENT ABRASION ON TRUNK.*

***TOPSOIL***
*ON SITE TOPSOIL TO BE USED AS AVAILABLE. IMPORTED TOPOSIL TO BE USED TO MAKE UP SHORTFALL ONLY AND MAKING GOOD TO ALL LANDSCAPE EDGES. NEW TOPSOIL TO BE LANDSCAPE 20 AS SUPPLIED BY BRITISH SUGAR PLC TO BS 3882:2007. TOPSOIL TO BE FREE FROM PERRENIAL AND ANNUAL WEEDS, BULK VEGETATION GROWTH, FRAGMENTS OF GLASS, BRICKS, CONCRETE AND OTHER FOREIGN MATTER ABOVE 20MM.*

*TYPICAL ANALYSIS - STONES > 2MM 10%(MAX), STONES > 20MM 5%(MAX), STONES > 50MM 0%. 3% ORGANIC MATTER, 0.2% NITROGEN, MOSITURE CONTENT - NO GREATER THAN 20%*

| | | | |
|---|---|---|---|
| F | 19.12.13 | EH | MJ |
| DETAIL 05 ASPHALT FOOTPATH/CYCLEWAY OMITTED, TREE PIT DETAILS UPDATED INLINE WITH HIGHWAY SPECIFICATION | | | |
| E | 18.10.13 | MJ | AR |
| SIZE OF TREEGATOR INDICATED | | | |
| D | 25.09.13 | RT | MJ |
| DWG.NO. UPDATED, TREE PIT DETAILS UPDATED AS PER LATEST BEST PRCATICE GUIDELINES | | | |
| C | 03.07.13 | MJ | AR |
| MULTI-STEM DETAIL ADDED, NOTES UPDATED FOR CLARITY | | | |
| B | 23.04.13 | MJ | AR |
| TREE PIT DETAILS AMENDED IN LINE WITH LATEST LANDSCAPE PROPOSALS | | | |
| A | 25.01.13 | SP | MJ |
| LOGGERY DETAIL OMITTED, GRAVEL PATH DETAIL ADDED, DRAWING STATUS CHANGED TO PLANNING | | | |

***FOR PLANNING***

the landscape agency
Aviator Court, Clifton Moor, York, YO30 4UZ
Tel: 01904 691630 Fax: 01904 691634
enquiries@landscapeagency.co.uk
www.landscapeagency.co.uk

client
BARRATT EASTERN COUNTIES

project
DG 1 - FIRST ACCESS, DRAINAGE & OPEN SPACE RM APP (S. CAMS)

title
TYPICAL LANDSCAPE DETAILS

scale: AS SHOWN @ A1
date: 31.10.2012
drawn: EP
checked: MJ
drawing number: 628.2-300
revision: F