**London Borough of Camden** 

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Produced by Camlins Landscape Architects 14<sup>th</sup> June 2013

Revision 02 by Hannah Oakden Landscape Design 19<sup>th</sup> January 2015,

To be read in conjunction with Greengage's Ecological Management Plan issued February 2014 and Aboricultural Method Statement issued January 2015

19<sup>™</sup> January 2015

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# **BACTON LOW RISE MANAGEMENT AND MAINTENANCE**

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#### 1.0 Introduction

This report sets out the Designers Assumptions regarding management and maintenance of the external public realm and landscape. Its purpose is to describe the proposed public realm and landscape scheme to be implemented as part of the Bacton Low Rise development. It will set out a strategy for the implementation and maintenance of the landscape scheme as required by Condition 30 of the 'Notice of Grant of Planning Permission'. This condition states:

"All hard and soft landscaping works shall be carried out in accordance with the approved landscape details by not later than the end of the planting season following completion of the development or any phase of the development, whichever is the sooner. Any trees or areas of planting which, within a period of 5 years from the completion of the development, die, are removed or become seriously damaged or diseased, shall be replaced as soon as is reasonably possible and, in any case, by not later than the end of the following planting season, with others of similar size and species, unless the local planning authority gives written consent to any variation."

The following report describes the works to be carried out under the construction Contract; identifies the design objectives for all the external landscape elements; the parties responsible for the implementation of the landscape scheme; identifies maintenance activities to be carried out under the Contract; and finally provides a scheduled summary of all the maintenance operations.

The main Construction Contract is to allow for a: - 12 months maintenance and establishment period for all areas of grass, shrubs and hedges from the date of Practical Completion - 24 months maintenance and establishment period for all new tree planting from the date of Practical Completion

Planning Condition 30 requires: - 5 years maintenance and establishment period for all new tree planting, areas of grass, shrubs and hedges from the date of Practical Completion.

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#### 2.0 Description Of The Works

In the BLR site there are two perimeter courtyard blocks. To the street, occupied private defensible space acts as a buffer between the public and private realms whilst front doors activate the streetscape. Private amenity space opens onto secure semi-private courtyards. Play equipment is integrated into a dynamic environment containing a mixture of hard and soft landscaping. Between the two perimeter blocks a new pedestrianised street recognises the significance of St. Martin's Church within its urban context. Townhouses and maisonettes predominantly occupy this tree-lined street, facilitating a sense of ownership over the space.

The DHO site involves setting a row of townhouses and maisonettes along an east to west axis which runs adjacent to the railway. This creates a buffer between the railway and proposed private courtyard whilst maximising southerly light into the space. Integrated play equipment and appropriate planting is also proposed. A new mansion block on the eastern corner of the site sits directly against the pavement line. A further two townhouses then frame the entrance to the private courtyard creating a stronger edge to Vicar's Road.

Refer to the attached Landscape General Arrangement for details of the external landscape spaces.

#### 2.1 Existing Trees

Following consultation with the Local Authority and a detailed arboricultural survey 23no. Trees are to be retained on site.

- Tree T8 White Beam
- Tree T12 Lime
- Tree T13 Lime
- Tree T14 Sycamore
- Tree T15 Lime
- Tree T16 Lime
- Tree T17 Lime
- Tree T18 Lime
- Tree T19 Silver Birch
- Tree T20 Pear
- Tree T21 Acacia
- Tree T22 London Plane
- Tree T23 London Plane
- Tree T24 London Plane
- Tree T25 London Plane
- Tree T26 London Plane
- Tree T29 Ash
- Tree T30 Ash
- Tree T31 Ash
- Tree T32 London Plane
- Tree T33 Ash
- Tree T34 Ash
- Tree T35 Willow

Refer to the Arboricultural Report produced by Greengage in September 2012 'Bacton Low Rise, Tree Survey, Implications Assessment & Constraints Report' and Arboricultural Method Statement issued January 2015. Existing trees are to be protected by suitable fencing throughout the demolition and construction phases. All works within the Root Protection Areas (RPA) of the retained trees are to be undertaken in accordance with BS 5837 'Trees in relation to design, demolition and construction - Recommendations'.

# 2.2 New Tree Planting

Thirty five trees are to be planted as part of the construction contract. These trees are subject to a 24 months defects liability period to ensure establishment.

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#### TREE PLANTING SCHEDULE:

Species:	Girth:	Form:	Height:	Root:	No.:
Amelanchier lamarckii	/	Multi-Stem	300-350cm	Root ball	1no
Betula pendula	20-30cm	Semi-Mature	/	Root ball	3no
Betula utilis	20-30cm	Semi-Mature	/	Root ball	2no
Gleditsia tricanthos	20-25cm	Semi-Mature	/	Root ball	4no
Koelreuteria paniculata	/	Semi-Mature	300-350cm	Root ball	3no
Liriodendron tulipifera	30-35cm	Semi-Mature	/	Root ball	5no
Malus domestica	12-14cm	Heavy Standard	/	Root ball	2no
Pinus nigra	/	Semi-Mature	400-550cm	Root ball	4no
Platanus x hispanica	20-25cm	Semi-Mature	500-550cm	Root ball	7no
Prunus padus 'Watereri'	20-25cm	Semi-Mature	/	Root ball	4no

#### 2.3 Shrub Bed Areas

A series of shrub beds / raised planters have been formed as part of the construction contract. Refer to the Camlins issue Schedule of Shrubs, Climbing Plants and Grassed Areas (July 2013). For the DHO Site refer to Hannah Oakden Landscape Design Soft Landscape Plans. Drg. No. HO-439\_SL\_CY106\_R05\_opt1 & HO-439\_SL\_CY206\_R05\_opt1. These areas of shrub planting are subject to a 12 months defects liability period.

#### 2.4 Areas Of Grass

The Courtyard Lawns are to be turfed with Fescue rich grass. All areas of grass are subject to a 12 months defects liability period.

# 2.5 Areas Of Paving

The public realm and landscape spaces of the Bacton Low Rise development are to be surfaced with:

- Bitumen Macadam with coloured wearing course
- Granite setts
- Precast concrete flags
- Cropped granite setts
- Clay paving
- Hardscape Inish paving with Gapfast spacers to create a permeable surface

# 3.0 Design Objectives For Landscape Elements

The long-term design objective for the landscape scheme is to provide a series of attractive communal external spaces, courtyards and gardens.

This 'Designers Assumptions Regarding Management and Maintenance' sets out the long-term management and maintenance activities required to ensure the successful establishment of the external landscape spaces:

- the establishment of healthy trees of good form with a flowing branch line, strong leader and clear stems (dependant on species); - the establishment of shrub bed areas free from weeds; and - the establishment of a healthy vigorous grass sward, free from disease, fungal growth, discoloration, moss, thatch and weeds with an even smooth surface and neat well-defined edges. - smooth, even pedestrian hard landscape surfaces.

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#### 3.1 Long Term Design Objectives & Management Activities

The construction Contract allows for a defects liability period to ensure the successful establishment of landscape elements. All areas of soft landscape installed as part of the construction Contract are subject to a defects liability period from the date of Practical Completion:

- the Contract allows for a 12 months maintenance and establishment period for all areas of grass, shrubs and hedges from the date of Practical Completion
- the Contract allows for a 24 months maintenance and establishment period for all new tree planting from the date of Practical Completion

#### 4.0 Landscape Maintenance Activities

The landscape maintenance works required within the Contract are specified in the Landscape Specification. This is a contractual document. The specific work requirements are identified in clauses Q30 Seeding/Turfing, Q31 External Planting and Q35 Landscape Maintenance. For clarity the relevant clauses are reproduced within this document as Appendix A 'Landscape Maintenance Operations Generally'.

The Defects Liability Period begins from the date of Practical Completion and are as follows:

- Trees: 24 months or until leafing out in the third growing season after planting whichever is the later.
- Shrubs: 12 months or until leafing out in the second growing season after planting whichever is the later.
- Grass: 12 months.

#### 4.1 Summary of Maintenance Operations Required to Existing Trees

Remedial measures to existing trees are required to mitigate construction impacts (e.g. pruning, decompaction of existing root zones and irrigation works). Refer to the Arboricultural Report produced by Greengage in September 2012 'Bacton Low Rise, Tree Survey, Implications Assessment & Constraints Report' and Aboricultural Method Statement produced in January 2015.

# 4.2 Summary Of Maintenance Operations Required To Tree, Hedge & Shrub Planting

- Frequency of maintenance visits: bi-monthly during growing season, monthly otherwise. -Plants/trees/shrubs that have failed to thrive (unless due to theft or malicious damage after completion) during the defects liability period stated above are to be replaced with equivalent plants/trees/shrubs. -Replacements are to match size of adjacent or nearby plants of same species or match original specification (allowing for growth of originally planted stock) whichever is the greater size. - Timing of making good: within 8 weeks of notification of failure. - Weed control: Maintain weed free area around each tree and shrub, minimum diameter the larger of 800mm or the surface of original planting pit. Keep planting beds clear of weeds, by hand and mechanical means. - Planted areas: Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows. Take care not to reduce depth or effect of mulch. - Precautions: Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools. -Staking: Check condition of stakes, ties, guys and guards. Replace broken or missing items. Adjust if necessary to allow for growth and prevent rubbing of bark. Frequency of checks: 4 weeks. - Trees: Spray crown when in leaf during warm weather. Carry out in the late afternoon / evening. - Prune at appropriate times, to remove dead or dying and diseased wood and suckers, to promote healthy growth and natural shape. Prune trees to favour a single central leading shoot, unless type and form is of a multi stemmed nature. - Watering: As necessary to ensure establishment and proper development at the discretion of the contractor.

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### 4.3 Summary Of Maintenance Operations Required To Grass Seed / Turf/ Wildflower Areas

- Frequency of maintenance visits: bi-monthly during growing season, monthly otherwise. - Make good by recultivation and reseeding/returfing areas that have failed to thrive (unless due to theft or malicious damage). Timing of making good to be within 8 weeks of notification of defect. - Grass cutting and trimming of edges: maximum growth to be 50mm high, cutting to be to height of 25mm. - Wildflower cutting 40-75mm. Remove all litter and arisings. Trimming to be at time of each cut, trim all grass edges, including around the base of trees, manholes etc and remove arisings. - Application of fertiliser for turf (not wildflower areas): in March, spring turf fertiliser 15:10:10 at 35g/m2; and in September, autumn turf fertiliser 5:10:10 at 50g/m2. - Weed control. Keep the sward substantially free of broad leaved weeds by applying a suitable selective herbicide. - Watering to prevent drying out and to ensure establishment.

### 4.4 Summary Of Maintenance Operations Required To Areas Of Paving

Every month throughout the year sweep all areas of external paving free of mud, grit, debris etc and remove any weeds.

#### 4.5 Landscape Management Responsibilities

The maintenance operations for all areas of grass, new tree planting, new hedge planting and remedial works to the existing trees are to be undertaken by the Contractor as part of the construction Contract for the required defects liability period.

Following the 12 and 24 months defects liability periods the Local Authority will continue the maintenance operations for the external spaces at Bacton Low Rise, London.

### 4.6 Schedule Of Landscape Maintenance Activities

Please refer to the 'Schedule Of Landscape Maintenance Activities'. This table provides a summary of the landscape maintenance activities set out within the Specification in a single matrix. During the defects liability period the landscape maintenance activities required indicates bi-monthly visits to inspect the works and undertake maintenance activities during the growing season (April – October) and monthly visits during the winter months.

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# SCHEDULE OF LANDSCAPE MAINTENANCE ACTIVITIES

6th March 2014

Maintenance Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Existing Trees:												
Watering (sufficient to encourage new fine root development)												
Grass, Trees, Hedges and Shrubs:												
Weeding where necessary												
Litter and debris collection	х	х	х	х	х	х	х	х	х	х	х	х
Tree, hedge and shrub replacements if necessary												
Grass:												
Cutting areas of grass (to maintain grass height of 25-50mm)			х	х	х	х	х	х	х	х		
Fertiliser application			х						х			
Scarifying areas of grass if necessary									Х			
Top dressing and reinstatement of grass areas if necessary												
Wildflower grass areas:												
Strim meadow grass to a height of 40-75mm (leave no mow zone)				х					х			
Monitor species diversity and weed out invasive plants if necessary												
Shrubs:												
Fertiliser application			х									
Watering (sufficient to prevent wilt) if necessary												
Trimming and pruning (dependant on species) if necessary												
Trees:												
Fertiliser application												
Watering (sufficient to prevent wilt)												
Underground guying to be inspected and maintained if necessary												
Pruning (to be undertaken by an approved Arboricultural Officer)												
Hedges:												
Fertiliser application			х									
Watering (sufficient to prevent wilt) if necessary												
Cutting (when at sufficient size)							х			х		
Paving: Every month through year sweep all areas of external	х	Х	х	Х	Х	Х	х	х	х	х	х	х
paving free of mud, grit, debris etc and remove any weeds												

Note 1: Contract allows for 12 months maintenance and establishment period of all areas of grass, shrubs and hedges from the date of Practical Completion.

Note 2: Contract allows for 24 months maintenance and establishment period of all new tree planting from the date of Practical Completion.

	Shaded areas indicate timescale within which activity is to be undertaken if found necessary
х	Indicates month activity is to be undertaken

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#### APPENDIX A - LANDSCAPE MAINTENANCE OPERATIONS GENERALLY

# Q30 SEEDING/TURFING

To be read with Preliminaries/General conditions.

# **GENERAL INFORMATION/REQUIREMENTS**

#### 115 SEEDED AND TURFED AREAS

- Growth and development: Healthy, vigorous grass sward, free from the visible effects of pests, weeds and disease.
- Appearance: A closely knit, continuous ground cover of even density, height and colour.

# 120 CLIMATIC CONDITIONS

General: Carry out the work while soil and weather conditions are suitable.

# 145 WATERING

- Quantity: Wet full depth of topsoil.
- Application: Even and without displacing seed, seedlings or soil.
- Frequency: As necessary to ensure the establishment and continued thriving of all seeding/turfing.

# 150 WATER RESTRICTIONS

 Timing: If water supply is or is likely to be restricted by emergency legislation do not carry out seeding/turfing until instructed. If seeding/turfing has been carried out, obtain instructions on watering.

#### 160 NOTICE

- Give notice before:
  - Setting out.
  - Applying herbicide.
  - Applying fertilizer.
  - Preparing seed bed.
  - Seeding or turfing.

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- Visiting site during maintenance period.
- Period of notice: 5 working days

# 170 SETTING OUT

Boundaries of seeding/turfing areas: Mark clearly in sand or other approved/agreed method.

# **PREPARATION**

#### 231 PEAT

Peat or products containing peat: Do not use.

# 250 CULTIVATION

- Compacted topsoil: Break up to full depth.
- Tilth: Reduce top 100 mm of topsoil to a tilth suitable for blade grading (10 mm down particles).
- Material brought to the surface: Remove stones and clay balls larger than 50 mm in any dimension, roots, tufts of grass, rubbish and debris.
- Ensure that cultivated soil is free draining.

# 260 GRADING

- Topsoil condition: Reasonably dry and workable.
- Contours: Smooth and flowing, with falls for adequate drainage. Remove minor hollows and ridges.
- Finished levels after settlement: 25 mm above adjoining paving, kerbs, manholes etc.
- Blade grading: May be used to adjust topsoil levels.
- Give notice: 3 days notice for inspection of finished grading, for sign off prior to commencement of any seeding or turfing operations.

# 280 FINAL CULTIVATION

- Timing: After grading and fertilizing.
- Seed bed: Reduce to fine, firm tilth with good crumb structure.
  - Depth: 100 mm.
  - Surface preparation: Rake to a true, even surface, friable and lightly firmed but not over compacted.
  - Remove surface stones/earth clods exceeding 10mm.

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 Adjacent levels: Extend cultivation into existing adjacent grassed areas sufficient to ensure full marrying in of levels.

# **SEEDING**

# 310 GRASS SEED

- Mixture: As per planting schedule.
- Supplier: Emorsgate Seeds, Tel. (01553) 829028
- Application rate: as specified by manufacturer

# 312 SEED MIXTURE FOR NATURALIZED WILDFLOWER AREAS

- Supplier: Emorsgate Seeds, Tel. (01553) 829028
  - -Mixture reference: As per planting schedule.
- Origin (as defined in the National Plant Specification): Native UK.
- Application rate: as specified by manufacturer

# 319 QUALITY OF SEED

- Freshness: Produced for the current growing season.
- Certification: Blue label certified varieties.
  - Standard: EC purity and germination regulations.
  - Official Seed Testing Station certificate of germination, purity and composition: Submit when requested.
- Samples of mixtures: Submit when requested.

# 330 SOWING

- General: Establish good seed contact with the root zone.
- Method: To suit soil type, proposed usage of grassed area, location and weather conditions during and after sowing.

# 335 GRASS SOWING SEASON

• Grass seed generally: April - October.

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#### 336 WILDFLOWER SOWING SEASON

Wildflower seed generally: March to May.

# TURFING (CLAUSES INCLUDED FOR POTENTIAL INSTRUCTIONS TO LAY TURF)

- 410 TURF Non specified in contract, clauses included to allow potential instruction to turf subject to timing of works.
- Standard: To BS 3969, free from undesirable grasses and weeds.
- Source: Contractor to submit proposals for approval by CA
- Herbicide treatment: Apply not less than four weeks and not more than three months before lifting.

# 420 DELIVERY AND STORAGE

- Timing: Lay turf with the minimum possible delay after lifting. If delay occurs, lay turf out on topsoil and keep moist.
- Delivery: Arrange so as to avoid need for excessive stacking.
- Stacking height (maximum): 1 m.
- Dried out or deteriorated turf: Do not use.

#### 430 TURFING GENERALLY

- Time of year: Any (subject to weather conditions and CA's approval)
- Timing of laying:
  - Spring and summer: within 18 hours of delivery.
  - Autumn and winter: within 24 hours of delivery.
- Weather conditions: Do not lay turf when persistent cold or drying winds are likely to occur or soil is frost bound, waterlogged or excessively dry.
- Working access: Planks laid on previously laid turf. Do not walk on prepared bed or newly laid turf.
- Jointing: Lay with broken joints, well butted up. Do not stretch turf.
- Edges: Use whole turfs. Trim to a true line.
- Adjusting levels: Rake out high spots and infill hollows with fine soil.
- Consolidating: Firm lightly and evenly with wooden beaters as laying proceeds to ensure full contact with the substrate. Do not use rollers.
- Dressing: sand. Brush well in to completely fill all joints.

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• Watering: Thoroughly water completed turf immediately after laying. Check by lifting a corner of turf that water has penetrated to the soil below.

# PROTECTING/CUTTING

#### 510 PROTECTIVE FENCING

- Fencing type: 1200 high chestnut pale fence (or contractors choice subject to approval) to all areas of seeding/turfing.
- Erection: On completion of seeding/turfing.
- Removal: when turf is established and ground is hard at the discretion of the CA.

#### 530 FIRST CUT OF GRASSED AREAS

- Timing: When grass reaches 75mm high and is reasonably dry.
- Preparation: Before cutting, remove debris, litter, and stones and earth clods larger than 25 mm in any dimension.
- Height of first cut: 25 mm.
- Arisings: to be removed from site.

# 590 CLEANLINESS

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

# **MAINTENANCE**

# 605 MAINTENANCE

• Duration: Carry out the operations in clauses 610 to 680 from completion of seeding/turfing for 12 month period commencing from date of Practical Completion.

# 610 FAILURES OF SEEDING/TURFING

- General: Grassed areas that have failed to thrive (unless due to theft or malicious damage), during the
  period stated in clause 605, will be regarded as defects due to materials or workmanship not in
  accordance with the Contract. Make good by recultivation and reseeding/returfing.
- Timing of making good: Within 8 weeks of notification of defect.

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#### 620 MAINTAINING SEEDED LAWNS.

- Maximum height of growth at any time: 50 mm.
- Preparation: Before each cut remove all litter and debris.
- Cutting: As and when necessary to a height of 25mm.
  - Arisings: to be removed from site.
- Trimming: At the time of each cut, trim all grass edges, including round the base of trees, manholes, etc. and remove arisings.
- Weed control: Keep the sward substantially free of broad leaved weeds by applying a suitable selective herbicide.
- Bulb planting areas: Do not cut until bulb foliage has died down.
- Watering: To prevent drying out and to ensure establishment.

# 650 MAINTAINING GRASSED AREAS WITH PERENNIAL WILD FLOWERS

- Duration: Carry out the following operations from completion of seeding until: the end of the rectification period.
- Height and frequency of cut in first growing season:
  - Time of first cut: March/ April.
  - Height of first cut: 100 mm.
  - Frequency of subsequent cutting (minimum): Every 6-8 weeks until autumn.
  - Height of growth permitted (maximum): 150 mm.
- Height and frequency of cut in second growing season:
  - Time of cut: cut once in early April and again in late September.
  - Height of cut: 40-75 mm.
- Trimming: All edges.
  - Arisings: Remove.
- Watering: To prevent drying out and to ensure establishment.

# 680 FERTILIZER FOR GRASS (NOT WILDFLOWER AREAS)

- March application: 15:10:10 Spring turf fertilizer at 35 g/m2.
- September application: 5:10:10 Autumn turf fertilizer at 50 g/m2.

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# Q31 EXTERNAL PLANTING

To be read with Preliminaries/General conditions.

### **GENERAL INFORMATION/ REQUIREMENTS**

#### 112 SITE CLEARANCE

- General: Remove rubbish, concrete, metal, glass, decayed vegetation and contaminated topsoil.
- Stones: Remove those with largest dimension exceeding 50 mm.
- Contamination: Substances injurious to plant growth including subsoil, rubble, fuel, and lubricants.
- Large roots: Grub up and dispose of without undue disturbance of soil and adjacent areas.

#### 118 SOIL CONDITIONS

- Soil for cultivating and planting: Moist, friable and not waterlogged.
- Frozen or snow covered soil: Do not plant in frozen or snow covered conditions.

# 120 CLIMATIC CONDITIONS

• General: Carry out the work while soil and weather conditions are suitable. Do not plant during periods of frost or strong winds.

# 125 TIMES OF YEAR FOR PLANTING

- Deciduous trees and shrubs: Late October to late March. Obtain approval for planting during the first and last two weeks of this period from the CA.
- Conifers and evergreens: September/ October or April/ May.
- Herbaceous plants (including aquatic and marginal): September/ October or March/ April.
- Container grown plants: At any time if ground and weather conditions are favourable. Ensure that adequate watering and weed control is provided.
- Dried bulbs, corms and tubers: September/ October.
- Green bulbs: After flowering in spring.

#### 130 MECHANICAL TOOLS

• Restrictions: Do not use within 1M of plant stems and within 2.0m of canopy spread (whichever is the greater) of any trees.

# 145 WATERING

Quantity: Wet full depth of topsoil.

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- Application: Even and without damaging or displacing plants or soil.
- Frequency: As necessary to ensure establishment and continued thriving of planting.

# 150 WATER RESTRICTIONS

• General: If water supply is or is likely to be restricted by emergency legislation, do not carry out planting until instructed. If planting has been carried out, obtain instructions on watering.

# 160 NOTICE

- Give notice before:
  - Setting out.
  - Applying herbicide.
  - Applying fertilizer.
  - Delivery of plants/ trees.
  - Planting shrubs.
  - Planting trees into previously dug pits.
  - Watering.
  - Visiting site during maintenance period.
- Period of notice: 5 working days.

# 165 PREPARATION, PLANTING AND MULCHING MATERIALS

• General: Free from toxins, pathogens or other extraneous substances harmful to plant, animal or human life.

# 200 PLANTS/ TREES - GENERAL

- Condition: Materially undamaged, sturdy, healthy and vigorous.
- Appearance: Of good shape and without elongated shoots.
- Hardiness: Grown in a suitable environment and hardened off.
- Health: Free from pests, diseases, discoloration, weeds and physiological disorders.
- Budded or grafted plants: Bottom worked.
- Root system and condition: To requirements of Plant Schedule and balanced with branch system.
- Species: True to name.

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# 215 PLANTS/ TREES - SPECIFICATION CRITERIA

 Name, forms, dimensions, provenance and other criteria: As scheduled and defined in the National Plant Specification.

### 225 BULBS/ CORMS/ TUBERS

- Condition: Firm, entire, not dried out or shrivelled.
- Health: Free from pests, diseases and fungus.
- Handling/ Storage: Remove from packaging immediately. If necessary, store for the minimum period
  of time in a well ventilated, dark, covered location at 18 21∞C, away from vehicle exhausts and fruit.

# 235 CONTAINER GROWN PLANTS/ TREES

- Growing medium: With adequate nutrients for plants to thrive until permanently planted.
- Plants: Centred in containers, firmed and well watered.
- Root growth: Substantially filling containers, but not root bound, and in a condition conducive to successful transplanting.
- Hardiness: Grown in the open for at least two months before being supplied.
- Containers: With holes adequate for drainage when placed on any substrate commonly used under irrigation systems.

# 246 LABELLING AND INFORMATION

Standard: To BS 3936.

# 250 SUPPLY OF PLANTS/ TREES

• Suppliers: Members of the Horticultural Trades Association Nursery Certification Scheme or as otherwise approved.

# 260 PLANT/ TREE SUBSTITUTION

- Plants/ trees unobtainable or known to be likely to be unobtainable at time of ordering: Submit alternatives, stating:
  - Price.
  - Difference from specified plants/ trees.
- Further alternatives: Proposed substitutions may not be acceptable and submission of further alternatives may be required.
- Approval: Obtain before making any substitution.

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### 265 PLANT/ TREE HANDLING, STORAGE AND TRANSPORT

- Standard: To CPSE 'Handling and establishing landscape plants' (obtainable from the Horticultural Trades Association) Part I, Part II and Part III, paragraphs 1.3.3 to 1.3.6, 3.0, and 4.0.
- Frost: Protect plants/ trees from frost.
- Handling: Handle plants/ trees with care. Protect from mechanical damage and do not subject to shock, e.g. by dropping from a vehicle.

#### 270 PLANTING GENERALLY

- Standard: To CPSE 'Handling and establishing landscape plants' (obtainable from the Horticultural Trades Association) Part III, paragraphs 6.2 to 6.6.
- Appearance: Plant upright or well balanced with best side to front.

# 280 TREATMENT OF TREE WOUNDS

- Cutting: Keep wounds as small as possible.
  - Cut cleanly back to sound wood using sharp, clean tools.
  - Leave branch collars. Do not cut flush with stem or trunk.
  - Set cuts so that water will not collect on cut area.
- Fungicide/ Sealant: Do not apply unless instructed.

# 290 SURPLUS MATERIAL

• General: Remove subsoil, stones, debris, wrapping material, canes, ties, temporary labelling, prunings and other arisings/ rubbish.

# PREPARATION OF PLANTING BEDS/ PLANTING MATERIALS

#### 300 HERBICIDE

- Locations: All planting beds, hedge lines, grassed areas and spot application in woodland areas.
- General: Prevent weeds from seeding and perennial weeds from becoming established, by applying a suitable herbicide.
  - Delay cultivation as recommended by manufacturer.

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# 341 PEAT

Peat or products containing peat: Do not use.

# 375 CULTIVATION

- Compacted topsoil: Break up to full depth.
- Cultivation: Loosen, aerate and break up soil into particles of 2 8 mm.
  - Depth: Top 100 mm of planting beds.
  - Timing: Within a few days before planting.
  - Weather and ground conditions: Suitably dry.
- Surface: Leave regular and even.
- Levels: As required in sections D20 and Q28.
  - Within 25mm of levels specified on drawings.
- Undesirable material brought to the surface: Remove, including weeds, roots, stones and clods larger than 50 mm in any dimension, tufts of grass and foreign matter.
- Soil within root spread of trees and shrubs to be retained: Do not dig or cultivate.

# PLANTING SHRUBS/ HERBACEOUS PLANTS/ BULBS

# 401 PLANT LAYOUT

- Spacing as per drawings and specification.
- Generally: Evenly spaced, where mix specified plant large areas in groups of 5 8 species type through mix, in small areas plant in groups of 3 species type through mix.

# 445 PLANTING BULBS/ CORMS/ TUBERS

- Depth: Top of bulb/ corm/ tuber at a depth of approximately twice its height, base in contact with bottom of hole.
- Backfilling: Finely broken soil. Lightly firm to existing ground level.
- Naturalized planting in existing grassed areas:
  - Scattering: Random. Plant bulbs/ corms/ tubers where they fall.
  - Planting: Neatly remove a plug of turf and replace after planting.

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# 475 BACKFILLING MATERIAL

• Composition: Previously prepared mixture of topsoil excavated from pit and additional topsoil as required.

#### 480 AFTER PLANTING

- Watering: Immediately after planting, thoroughly and without damaging or displacing plants or soil.
- Firming: Lightly firm soil around plants and fork and/ or rake soil, without damaging roots, to a fine tilth with gentle cambers and no hollows.

# **485 MULCHING PLANTING BEDS**

- Material: Medium grade chopped bark mulch.
  - Purity: Free of pests, disease, fungus and weeds.
- Preparation: Clear all weeds. Water soil thoroughly.
- Coverage: 50mm deep, to all planted areas.
- Sample: Provide sample for approval by CA.

# **PLANTING TREES**

# 505 TREE PITS

- As drawings HO-439-200-141, HO-439-200-142, HO-439-200-144, HO-439-200-145, HO-439-200-146
   & LL439-200-143
- In accordance with BS 8545 Trees: from nursery to independence in the landscape Recommendations

# 525 SEMI-MATURE TREES

- Standard: Prepare roots and transplant to BS 4043.
- Backfilling material: As clause 585.
- Support: As contract drawings or where not specified in accordance with clause 535 or clause 575 as
  appropriate to ensure trees remain wind firm and upright for a period of 5 years or till the roots are
  established whichever is the sooner.

# 535 STAKING GENERALLY

• Stakes: Softwood, peeled chestnut, larch or oak, free from projections and large or edge knots and with pointed lower end.

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- Preservative treatment: Pressure Impregnated.
- Nails: To BS 1202-1, galvanized, minimum 25 mm long and with 10 mm diameter heads.

#### 575 SHORT TRIPLE STAKING FOR ALL TREES NOT SUBJECT TO UNDERGROUND FIXING

- Staking: Drive stakes vertically at least 400 mm into bottom of pit evenly spaced around trees position before planting. Consolidate material around stakes during backfilling.
- Height of stakes: Cut to approximately 600 mm above ground level.
- Ties: Hessian ties, life span of four years required, sample required.
- Tying: Secure tree firmly from tree to stakes with a twist in each tie, hessian ties can be nailed to stakes.

#### 585 BACKFILLING MATERIAL

- Composition: Previously prepared mixture of topsoil excavated from pit and additional topsoil as required.
- Slow release fertiliser None required

# PROTECTING/ MAINTAINING/ MAKING GOOD DEFECTS

# 710 MAINTENANCE

 Duration: Carry out the operations in the following clauses from completion of planting for a period of 12 months from Practical Completion Frequency of maintenance visits: Monthly during growing season, bi-monthly otherwise.

#### 720 FAILURES OF PLANTING

- General: Plants/ trees/ shrubs that have failed to thrive (unless due to theft or malicious damage after completion) during period(s) stated below, will be regarded as defects due to materials or workmanship not in accordance with the Contract. Replace with equivalent plants/ trees/ shrubs.
  - Semi mature trees 24 months from Practical Completion or until leafing out in the third growing season after planting whichever is the later. Shrubs and herbaceous plants— 12 months from Practical Completion or until leafing out in the second growing season after planting whichever is the later. Grass 12 months from Practical Completion.
- Replacements: To match size of adjacent or nearby plants of same species or match original specification (allowing for growth of originally planted stock) whichever is the greater size.
- Timing of making good: within 8 weeks of notification of failure.

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# 740 CLEANLINESS

- Soil and arisings: Remove from hard surfaces and grassed areas.
- General: Leave the works in a clean tidy condition at Completion and after any maintenance operations.

#### 750 PLANTING MAINTENANCE GENERALLY

- Weed control: Maintain weed free area around each tree and shrub, minimum diameter the larger of 800mm or the surface of original planting pit.
  - Keep planting beds clear of weeds, by hand and mechanical means.
- Planted areas: Fork over beds as necessary to keep soil loose, with gentle cambers and no hollows. Take care not to reduce depth or effect of mulch.
- Precautions: Ensure that trees and shrubs are not damaged by use of mowers, nylon filament rotary cutters and similar powered tools.
- Staking: Check condition of stakes, ties, guys and guards. Replace broken or missing items. Adjust if necessary to allow for growth and prevent rubbing of bark.
  - Frequency of checks: 4 weeks.
- Trees: Spray crown when in leaf during warm weather. Carry out in the late afternoon / evening.

# 760 PLANTING MAINTENANCE - PRUNING

- General: Prune at appropriate times, to remove dead or dying and diseased wood and suckers, to promote healthy growth and natural shape.
  - Prune trees to favour a single central leading shoot, unless type and form is of a multi stemmed nature.

# 765 PLANTING MAINTENANCE - WATERING

• General: As necessary to ensure establishment and proper development at the discretion of the contractor.

# 790 FINAL MULCHING

- Timing: At end of the period stated in clause 710.
- Watering: Ensure that soil is thoroughly moistened prior to remulching, applying water where necessary.
- Planting beds: Remulch as clause 485. Coverage: 50mm
- Trees: Remulch as clause 590 when planted in planting beds (not in grass seeded/turfed areas).
   Coverage: 50mm

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# Q35 LANDSCAPE MAINTENANCE

To be read with Preliminaries/General conditions.

#### **GENERALLY**

#### 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.

# 175 DISPOSAL OF ARISINGS

- General: Unless specified otherwise, dispose of arisings as follows:
- [Remove from site].

# 180 CHIPPING OR SHREDDING ON SITE

• General: Not permitted on site.

# 190 LITTER

• Extraneous rubbish not arising from the contract work: Collect and remove from site.

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# 193 TREE AND PLANT STEMS

- Nylon filament rotary cutters and other mechanical tools: Do not allow closer than 100 mm to the stem of any tree or plant.
  - Complete operations close to stems using hand tools.

### 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 grass sward in a manner appropriate to the intended use.
- Grass height: Maintain within range specified in clauses 260 to 280.
- Soil and grass condition:
  - Maintain a healthy vigorous sward, free from disease, fungal growth, discolouration, scorch or wilt.
  - Prevent waterlogging and compaction.
  - Repair damage due to trampling, abrasion or scalping during mowing.
- Ornamental turf and lawns: Maintain reasonably free from moss, thatch, weeds, frost heave, worm and mole casts.
  - Edges: Neat and well defined.
- 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.

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Drought or wet conditions: Obtain instructions.

#### 225 TREE STEMS

• Precautions: Do not use mowing machinery closer than 1000 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: Remove fallen leaves.

# 260 MOWING LAWNS

- Grass height: Maintain between 50mm and 25mm.
- Arisings: to be removed from site.

# 295 SPIKING

• Operations: Aerate the soil to ensure free drainage and adequate aeration as necessary to maintain health of turf. After spiking brush in clean horticultural sand to assist in drainage and aeration.

#### 300 SCARIFYING

- Operations: Relieve thatch conditions and remove dead grass.
- Depth: as necessary to maintain health of turf.

# 310 RE-FORMING GRASS EDGES

- Location: Planting beds, paths, manhole covers and the like.
- 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, clause 13.5.

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# 330 SELECTIVE HERBICIDE

Type: Selective herbicide to be approved by HO.

# 350 FERTILIZER - SPRING APPLICATION

• Type: Contractors choice

#### 360 FERTILIZER - AUTUMN APPLICATION

Type: Contractors choice

# 380 REINSTATEMENT OF LAWNS - WORN AREAS

- Damaged turf: Remove to a depth of 50 mm.
- Preparation: Cultivate substrate to a fine tilth.
- Reinstatement: Contractor's choice of returfing or topsoiling and reseeding:
  - Returfing: Quality and appearance to match existing.
  - Reseeding: Fill with fine topsoil to BS 3882 general purpose grade, free from stones, debris and weeds. Reseed with a seed mix to match existing grass in quality and appearance.
- Protection and watering: Provide as necessary to promote successful germination and/or establishment.

# SHRUBS/TREES/HEDGES

# 500 ESTABLISHMENT OF NEW PLANTING

- Duration: [12 months].
- Weed control:
  - Keep planting beds clear of weeds by hoeing and maintaining full thickness of mulch as specified.
  - 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.
- Trees: When in leaf, spray crowns in the evening during warm weather.

# 510 TREE STAKES AND TIES

Inspection/maintenance times: 4 weeks, and immediately after strong winds.

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- 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 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.

#### 540 PRUNING GENERALLY

- Pruning: In accordance with good horticultural and arboricultural practice.
  - Removing branches: Do not damage or tear the stem.
  - 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 fungus: Give notice if detected.
- Growth retardants, fungicide or sealant: Do not use unless instructed.

# 555 PRUNING HEDGES

- Standard: To BS 7370-4, clauses 3.6.3 to 3.6.5.
- Special requirements: Trim and prune to encourage thick base growth and the formation of a dense hedge, heights as per drawings.
- Remove all arisings.

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- Hedges to be pruned to form taper in hedge thickness from wider base to narrower top.
- Sides to be neat and to straight lines.
- Top of hedge to follow stringed level from one end to other unless noted on drawings.

#### 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 PLANTS

- Removal: Immediately
- Replacement: within eight weeks of notification.

# 635A 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.

#### 650 HAND WEEDING

- General: Remove weeds entire, 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.

# 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): 50 mm.

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- Top up: as required.
- Mulch spill on adjacent areas: Remove weeds and rubbish and return to planted area.
- Weeding: Remove weeds growing on or in mulch by hand or mechanical means.

#### 705 WINTER LEAF REMOVAL

- Operations: Take down temporary leaf fences. Collect accumulations of drifted leaves from the vicinity and from planting beds.
- Arisings: To be removed.

#### **TREE WORK**

# 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 or ends.
  - Any other material not associated with the tree or its support.

#### 835 CUTTING AND PRUNING GENERALLY

- Tools: Appropriate, well maintained and sharp.
- Final pruning cuts:
  - Do not use chainsaws on branches of less than 50 mm diameter.
  - When using handsaws, cut in one continuous operation to form a smooth cut surface.
  - Do not use anvil type secateurs.
- 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 if deemed unstable.
- Remove epicormal shoots and growth.
- Remove any suckers below ground level.

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• Disease or fungus: Give notice if detected. Do not apply fungicide or sealant unless instructed.

#### 865 BARK DAMAGE

- Wounds:
  - Do not attempt to stop sap bleeding.
  - Gently remove ragged edges and remove splintered wood from deep wounds, but keep wounds as small as possible.
- Liquid or flux oozing from apparently healthy bark: Give notice.

# APPENDIX B:

GENERAL ARRANGEMENT – CAMLINS PUBLIC REALM AND LANDSCAPE DRG. NO. LL439-200-0 (July 2013) & HANNAH OAKDEN LANDSCAPE DESIGN DETAILED ARRANGEMENT PHASE 1 DHO SITE DRG NO. HO-439\_DA\_001\_R05\_opt1

To be read in conjunction with newly revised landscape drawings for Phase 1 Bacton Low Rise DHO Site.

- Tree Proposals HO-439\_TP\_002\_R05\_opt1
- Hard Landscape Courtyard 1 of 2 HO-439\_HL\_CY105\_R05\_opt1
- Hard Landscape Courtyard 2 of 2 HO-439\_HL\_CY205\_R05\_opt1
- Soft Landscape Courtyard 1 of 2 HO-439\_SL\_CY106\_R05\_opt1
- Soft Landscape Courtyard 2 of 2 HO-439\_SL\_CY206\_R05\_opt1
- Ecological Enhancement HO-439\_EC\_003\_R05\_opt1



