

## Document 3

# SPECIFICATIONS - SCHEDULES A, B & C

- SCHEDULE A - Specification for Services - General Requirements
- SCHEDULE B - Specification for Services - Specific Operations, Tree Maintenance Services
- SCHEDULE C - Specification for Services - Specific Operations, Tree Planting and Establishment Services



## CAMBRIDGE CITY COUNCIL FRAMEWORK AGREEMENT FOR ARBORICULTURAL SERVICES - SPECIFICATIONS

The specification consists of the following 3 schedules:

- SCHEDULE A
  - SPECIFICATION FOR SERVICES - GENERAL REQUIREMENTS
  
- SCHEDULE B
  - SPECIFICATION FOR SERVICES - SPECIFIC OPERATIONS, TREE MAINTENANCE SERVICES
  
- SCHEDULE C
  - SPECIFICATION FOR SERVICES - SPECIFIC OPERATIONS, TREE PLANTING AND ESTABLISHMENT SERVICES

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**CAMBRIDGE CITY COUNCIL FRAMEWORK AGREEMENT FOR ARBORICULTURAL SERVICES -  
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# **1 SCHEDULE A**

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## **1.1 SPECIFICATION FOR SERVICES - GENERAL REQUIREMENTS**

This Schedule specifies the general standards, procedures, and measures to be adopted by the Contractor during the execution of the Services. Where reference is made to a British Standard or British legislation within any part of the Specification for Services or Contract it shall be deemed to include any relevant European or international equivalent.

The details below apply to all Services unless specifically stated otherwise.

## **1.2 GENERAL**

The Specification for Services includes **SCHEDULE A**, General Requirements; **SCHEDULE B**, Specific Tree Maintenance Operations; and **SCHEDULE C**, Specific Tree Planting and Establishment Operations. They shall take precedence over any publications, referred to within the Specification for Services.

If the Contractor becomes aware of any discrepancy, omission, error, or ambiguity within the Specification for Services, or other contents of the Contract, or any other document, publication, literature, or recognised practice or standard of workmanship to which the Contract refers, this will not vitiate or invalidate the Contract, nor release the Contractor from their obligations, liabilities, and performance requirements for the whole or any part of the Contract. Where any such discrepancy or error arises during the Contract Term the Contractor shall have the matter clarified and corrected by the Council and confirmed in writing if required.

All Contractors must be an accredited ARB Approved Contractor as approved by the [Arboricultural Association](#) for the duration of the Contract.

### **1.2.1 Communication**

The Contractor(s) must be contactable during Normal Working Hours as defined at 1.4 below.



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If the Contractor is unable to provide the Services as specified or to the agreed timescales, the Contractor shall inform the Council at the earliest opportunity, so that all service users can be informed of any possible variation/delay in services. The Contractor should clearly state the alternative arrangements it is putting in place to ensure delivery of Service(s) and co-operate with any reasonable request of the Council in this respect.

### **1.2.2 Performance Standards**

The Council expects work to be carried out in accordance with the contract specification and within the agreed timeframes of any schedule or batch of works instructed. Performance standards may be determined with the Contractor during the contract from time to time.

In instances where a contractor 's performance is deemed sub-standard through:

- a. Failure to complete the works within the specified timescales or any agreed extension to the specified timescale, and/ or
- b. Greater than 5% of any specified trees or groups within a schedule (written or verbal), as assessed by the Instructing Officer as having one or more uncompleted works specifications.

The Instructing Officer shall discuss the matter(s) with the contractor and the contractor shall be given a reasonable opportunity to either recover performance and/ or demonstrate how it will be improved before the Instructing Officer carries out any of the actions specified below:

The Council reserves the right to defer the award of further work to that contractor. Contractors may also be excluded from further tranches of mini competitions where the contractor's performance has not improved or been satisfactorily demonstrated that it will improve.

In cases where work remains incomplete and the Instructing Officer has cause to believe that the outstanding work may not be completed/ remedied in a reasonable timeframe then the Instructing Officer reserves the right to terminate all existing order(s) and award to alternative contractors. The Contractor acknowledges that the appropriate works must be done within a specific timeframe that is not 'open ended'.

In instances where a Contractor's quotations and invoices are deemed sub-standard through:

- a. Being late.

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- b. Containing insufficient information – Quotation and invoices should contain the information as set out in the models set out in **APPENDIX 2 Model Quotation & Invoices**
- c. Being inaccurate.

The Council will not accept them and return them to the Contractor.

### **1.2.3 Standards of Workmanship**

The Contractor is to use the standards of expertise and workmanship specified in the Contract and Specification for Services. The Contractor shall employ only competent operatives who can meet this requirement and must make allowance accordingly when pricing work.

The Contractor shall employ enough qualified persons to ensure that the services are provided are always provided and in all respects in accordance with the Contract including making provision for holidays and other unforeseen absence such as staff sickness.

Unless otherwise specified, all pruning, tree surgery, and related operations shall be undertaken in accordance with **BRITISH STANDARD 3998 RECOMMENDATIONS FOR TREE WORK** current and applicable at the time of the performance of the relevant Services, or such other standard as may be current and applicable at the time of the performance of the relevant Services. Other aspects of arboriculture covered by BS publications referred to elsewhere in the Contract where applicable and their European equivalents shall be equally applicable, and the recommendations and standards referred to therein must be observed unless otherwise specified.

Climbing irons and spurs, or any other climbing aid that causes injury to trees, must not be used except on trees that are to be felled or removed.

## **1.3 CLASSIFICATION OF SERVICES**

The Council requires Services as detailed in **SCHEDULE A**; and in respect of tree maintenance services as described in **SCHEDULE B**; and in respect of tree planting and establishment services as described in **SCHEDULE C** , to be delivered on a response time basis.

1.3.1 The services are classified and shall be provided as follows:

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*Table 1 Tree maintenance services response times*

<b>Tree maintenance services</b>	<b>Response time</b>	<b>Price/ Rates</b>	<b>Purchase Order</b>	<b>No. of Contractors</b>
<b>Emergency – Out of Normal Working Hours</b>	<b>On site within 90 minutes</b>	<b>daily / hourly</b>	<b>None issued</b>	<b>3 or more</b>
<b>Emergency – In Normal Working Hours</b>	<b>On site within 120 minutes</b>	<b>daily / hourly rate</b>	<b>None issued</b>	<b>3 or more</b>
<b>High Priority</b>	<b>Works completed within 24 hours</b>	<b>daily / hourly rate</b>	<b>None issued</b>	
<b>Priority</b>	<b>Works completed within 5 working days</b>	<b>daily / hourly rate</b>	<b>None issued</b>	
<b>Planned tree maintenance</b>	<b>Works completed within specified timescales</b>	<b>daily / hourly rate or quote or mini competition</b>	<b>Issued</b>	

**1.3.2 Emergency (Out of Normal Working Hours) Service**

This role will involve responding to tree related emergencies. A team is required to be on site within 90 minutes of call out. Call outs will generally involve single one-off instructions that will require works of varying complexity, dependant on the specifics of the situation, to make a tree (or trees) safe. During severe weather events multiple instructions may be issued.

No Purchase Order shall be issued before this service is completed however a retrospective quotation will need to be submitted within 3 working days following the completion of the call out, unless otherwise agreed with the Instructing Officer. See **APPENDIX 2 Model Quotation & Invoices** for a model retrospective quotation with the minimum required details needed for submission. The Contractor shall receive an instruction from the Council.

Contractors will be chosen for instruction from the following list of priorities:

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- a. Price and required response time – the Contractors will be called in descending order of competitiveness as determined by the schedule of rates. Response time of less than 90 minutes may sometimes be required.
- b. Contractor availability – where the Contractor cannot be contacted or required response time cannot be met, the next most competitive contractor will be called

### **1.3.3 Emergency (In Normal Working Hours) Service**

This role will involve responding to tree related emergencies. A team is required to be on site within 120 minutes of call out. Call outs will generally involve single one-off instructions that will require works of varying complexity, dependant on the specifics of the situation, in order to make a tree (or trees) safe. During severe weather events multiple instructions may be issued.

No Purchase Order shall be issued before this service is completed however a retrospective quotation will need to be submitted within 3 working days following the completion of the call out. See **APPENDIX 2 Model Quotation & Invoices** for a model retrospective quotation with the minimum required details. The Contractor shall receive an instruction from the Council.

Contractors will be chosen for instruction from the following list of priorities:

- a. Price and required response time – the Contractors will be called in descending order of competitiveness as determined by the schedule of rates. Response time of less than 90 minutes may sometimes be required.
- b. Contractor availability – where the Contractor cannot be contacted or required response time cannot be met, another contractor will be called. A response of less than 120 minutes may sometimes be required.

### **1.3.4 High Priority Service**

The works shall be completed within 24 hours of the contractor agreeing verbally to undertake the works. Instructions will generally involve single one-off instructions or small batches of work of varying complexity.

Contractors will be chosen for instruction from the following list of priorities:

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- a. Price and required response time – the Contractors will be called in descending order of competitiveness as determined by the schedule of rates. Response time of less than 90 minutes may sometimes be required.
- b. Contractor availability – where the Contractor cannot be contacted or required response time cannot be met, another contractor will be called. A response of less than 24 hours may sometimes be required.

### **1.3.5 Priority service**

The works shall be completed within 5 working days (unless otherwise agreed by the Instructing Officer) of the Contractor agreeing verbally to undertake the works. Instructions will generally involve single one-off instructions or small batches of work of varying complexity.

Contractors will be chosen for instruction from the following descending list of priorities:

- a. Price and required response time – the Contractors will be called in descending order of competitiveness as determined by the schedule of rates. Response time of less than 90 minutes may sometimes be required.
- b. Contractor availability – where the Contractor cannot be contacted or required response time cannot be met, another contractor will be called. A response time of less than 5 working days may sometimes be required.

### **1.3.6 Planned tree maintenance service**

Contractors may be invited to provide a quote for the works. If the quote is acceptable the Contractor will be issued with an instruction and Purchase Order.

The works are generally high value works issued on a planned basis within a timescale set out by the Council. Works may include smaller batches of work requiring a high degree of technical expertise or large batches of more general tree maintenance works of up to 2000 trees issued as part of the Council cyclical tree maintenance programmes. Response times will vary depending on the nature of the works but generally Contractors will be given circa 20 days to quote for the works, with a lead in time once the works have been awarded and completion time of up to 3 months for the larger batches of works.

Instructions will be issued to Contractors because of either:

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- a. The outcome of any mini competition or.
- b. for lower value works (estimated at less than £5000), specialist or complex works,  
Contractors will be chosen for instruction from the following list of priorities:
- c. Price – as determined by the schedule of rates.
- d. Experience – where a contractor has experience of a site, tree, service or known capability to meet the schedules requirements.
- e. Contractor availability – where the Contractor cannot be contacted or the schedule requirements met, the next most competitive contractor will be called.

**1.3.7 Planned tree planting and establishment service**

<b>Tree planting and establishment service</b>	<b>Response time</b>	<b>Rates</b>	<b>Purchase Order</b>	<b>No. of Contractors</b>
<b>Planned tree planting and establishment service</b>	Works completed within specified timescales	daily / hourly rate or quote  or mini competition	Issued	3 or more

*Table 2 Tree planting and establishment services response times*

Contractors may be invited to provide a quote for the works. If the quote is acceptable the supplier will be issued with an instruction and Purchase Order.

Instructions will be issued to Contractors because of either:

- a. The outcome of any mini competition.

Or for lower value works (estimated at less than £5000) or specialist and complex works, Contractors will be chosen for instruction from the following descending list of priorities:

- a. Price and the schedule requirements – the Contractors will be called in descending order of competitiveness as determined by the schedule of rates.



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- b. Contractor availability – where the Contractor cannot be contacted or the schedule requirements met, the next most competitive contractor will be called.

**1.3.8 Statutory works / services**

The Council is vested with certain powers that may occasionally result in a formal Notice being served on owners or occupiers of land to render safe potentially hazardous or imminently dangerous trees (e.g. where a dangerous tree on private land threatens to fall on the public highway).

In situations where a landowner or occupier fails to comply with a formal Notice, the Council may require the Contractor to assist in the execution of its powers by entering private land. The Contractor shall be prepared to assist the Council in such circumstances when and where reasonably directed to do so and this shall form part of the Services at no extra expense to the Council.

**1.4 HOURS OF WORK**

**1.4.1 General**

The Services will generally be carried out during normal working hours, (i.e. 08.00 to 17.00 hours Monday to Friday). The Contractor may work outside these hours only with the approval of the Council or when carrying out Emergency - Out of Normal Working Hours Service.

Working at weekends (i.e. Saturdays, Sundays) and Bank Holidays in England will not normally be allowed. The Contractor shall give the Council a minimum of two Working Days' notice of a desire to work during a weekend.

The Council may require the Contractor to undertake certain Services outside Normal Working Hours. On these occasions payments may be claimed in accordance with the Schedule of Rates for the appropriate working period as defined in the contract price schedule. The hours of working shall be agreed with the Council, including the start time and the time when the contractor shall have ceased working.

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### **1.4.2 Emergency, High Priority and Priority Services**

The nature of tree works is such that situations arise which require emergency action or priority attention. Many trees within the care of the Council grow in situations where their safety is a high priority, or they may be in locations where there is a high risk of damage to person or property, a situation may arise whereby a tree in such a location requires early or immediate attention. The Contractor shall, as part of the Services, undertake such works as and when required by the Council and expedite these works with appropriate urgency.

If the Contractor required to perform Emergency or Priority Services is unable to perform such Services within the specified response time for any reason the Council must be informed immediately.

In the event of the Contractor required to perform Emergency or Priority Services being unable to perform such Services within the specified response time, the Council shall appoint another contractor to undertake the Service.

## **1.5 ORGANISATION**

### **1.5.1 General**

The Contractor shall organise the performance of Services in an efficient and safe manner in order to maximise the effectiveness of their resources and minimise any disruption to the public. The Contractor must also take account of the timescale requirements of individual Work Instructions.

The Contractor must be prepared to operate a flexible programme of Services to allow for changing priorities and work conditions.

Where the location of the site causes inconvenience or delay to the public (e.g. where permanent traffic control causes traffic to queue) the Contractor must arrange for the Contractor's operatives to operate a system of staggered breaks so that work continues to progress thus avoiding any unnecessary delay to the public. It shall be noted that there are several traffic sensitive highways in Cambridge where restricted hours of working are applied; the current list is at **APPENDIX 1 Traffic Sensitive Streets** and may be amended by Cambridgeshire County Council from time to time. The Council shall advise the Contractors of any such changes.

The Contractor shall take all necessary precautions and measures to prevent any public nuisance in respect of:

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- a. Smoke, dust, fumes, rubbish, and similar causes.
- b. Excessive noise or light pollution.
- c. Actions which cause unreasonable disruption or inconvenience.

### **1.5.2 Pricing and Programming of Works**

The locations of works will be largely within the City boundary.

The Council will issue the Contractor with verbal and/or written instructions and any necessary plans or other information needed to assess and price works. This may include inspecting trees and recommending appropriate action to the Council. The Council will expect the Contractor to fully understand the Council's **SPECIFICATION FOR SERVICES - GENERAL REQUIREMENTS** and where necessary supply additional written information if required.

The Contractor may be required to make site visits with or without the Council and make necessary contacts with interested person(s) or parties to assess the operational requirements for works, price works and submit details to the Council for approval as part of the Service. The Contractor may delegate this duty to a competent and suitably qualified employee who must have the necessary authority to make decisions on behalf of the Contractor.

The Contractor may be issued with individual jobs or batches of works covering several jobs which may vary in size and work content.

The Contractor must inspect each site of works and its environs carefully and acquaint and appraise the means of access, site conditions including the presence of any hazards within or adjacent to the site and note any special requirements or arrangements which may be necessary.

The Contractor will obtain a written quotation, detailed invoice, and proof of payment for any costs incurred in arranging for the disconnection and re-connection of above ground power lines and cables or underground services. These costs shall be paid by the Contractor as part of the service and reimbursed by the Council once the information above is provided to the Council.

If the execution of the Service necessitates entry onto adjoining land, the Contractor will make all necessary arrangements for access.

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The Contractor must ensure that each Schedule of Work is accurately priced before being returned to the Council. All quotes and correspondence including invoices in relation to a Schedule of Work must clearly reference the schedule name and unique number supplied by the Council.

The Contractor shall price the Services in accordance with the instructions issued by the Council. Any service to be priced at hourly or daily rates shall comply with those submitted by the Contractor.

The Council has the right to return any invoice that is considered unsatisfactory for any reason for clarification or reconsideration.

The Council may request the Contractor to clarify or explain any quotation or invoice received in relation to any relevant Service.

The Council may invite a Contractor to price works for a Service. The Council does not undertake, nor is under any obligation to issue a Purchase Order for any works that have been priced, whether satisfactory or otherwise.

Where a job or operation may be executed in more than one way, the cheapest option shall normally be chosen provided it is consistent with safe working practice and satisfactory standards of workmanship.

If the Council considers that any completed Service, or any individual item within a schedule, submitted by the Contractor for approval is priced excessively, or for any other reason is considered unsatisfactory, the Council reserves the right to obtain a quote from one or more of the other Framework Contractors for comparison and if need be allocate the subject work elsewhere.

If the comparison quote is more acceptable to the Council, the Contractor shall not be entitled to claim any costs involved in completing the quotation and he may not be awarded the works

The Council may issue a Purchase Order to the Contractor to execute the Service.

The Contract comprises of the Purchase Order and/ or verbal or written instruction and/ or the Schedule of Works, and the Terms and Conditions of Cambridge City Council's **FRAMEWORK FOR ARBORICULTURAL SERVICES**.

### **1.5.3 Staffing, Supervision and Operatives**

Contractor shall be entirely responsible for the supply of all staff (supervisory or otherwise) and operatives, and ensure that they are adequately briefed about the Contractor's obligations and

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duties under the Contract, the Specifications, and all necessary details, instructions and operations relating to the safe and proper provision of the Services. All operatives (whether staff of the Contractor or otherwise) must be properly equipped, trained and qualified for the duties they are required to perform, and possess the ability and experience to undertake those duties in a professional and competent manner.

The Contractor must employ suitable and enough staff to answer telephone(s), receive and respond to texts and emails and be able to contact and direct operational staff. This is especially important in relation to the **Emergency, High Priority and Priority Services**.

The Contractor must always nominate a Contractor's Representative to undertake competent supervision of the operatives and the Services, to ensure conformity with the Contract, high standards of workmanship and safeguarding of the public and property. If the Contractor's Representative is not directly supervising the works and not continually present on a site where Services are being performed, they shall delegate a suitably qualified and experienced member of the workforce to take charge. The Contractor shall advise the Council of the name and contact details of the Contractor's Representative and any delegated operative.

The Contractor must arrange for an adequate number of operatives to be working at the relevant site(s) to ensure safe and efficient execution of the Services. Where the Contractor employs additional ground operatives for traffic control and related duties, this must be the prime duty of such operatives and they must not be assigned to other duties to the detriment of the prime duty.

The Contractor shall ensure any operatives are properly attired and presentable and conduct themselves in a satisfactory manner during the performance of the Services. The Contractor and/ or any operatives shall always be polite and courteous and exhibit good behaviour. The Contractor and the Contractor's workforce shall also adopt a conscientious and workmanlike attitude to their respective tasks.

The playing of radios or musical equipment at a volume audible to persons using the highway, Council land or in adjacent properties, is not permitted in the execution of Council Services.

### **1.5.4 Supply and Operation of Transport, Plant, Tools and Equipment**

All vehicles intended for use on the public highways shall at all times be properly licensed and insured and be in a roadworthy condition, so as to ensure compliance with any statutory requirement for the time being in force, or any succeeding statutory requirements.

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The Contractor shall be responsible for the provision of all transport, plant, machinery, tools, and other equipment required for the efficient and safe performance of the Services. All such equipment must be safe, comply with all legal requirements, operate in accordance with noise levels acceptable to Environmental Health Standards and shall efficiently suppress radio and television interference. Such equipment must also be of a type appropriate for the nature of Services involved, be in a well-maintained condition, good working order and, where required, carry any necessary safety stamps, certification, or registration plates. Records of appropriate testing and maintenance are to be kept and made available on demand to the Council or to other duly authorised persons for **HEALTH AND SAFETY AT WORK ACT** monitoring.

The Contractor's vehicles used in the performance of Services, i.e. vans, light trucks and lorries, must display clearly the name of the firm or company, except where vehicles are hired for temporary use or where such vehicles are used by authorised sub-contractors, provided they meet the requirements of the Contract in all other respects. All vehicles used in the performance of Services must be fitted with at least one high visibility flashing warning beacon (in addition to standard hazard warning lights) for use when working on the public highway or similar sites. Where appropriate, all vehicles and plant must be equipped with suitable audible warning devices both for the safety of the public and the Contractor's employees and operatives.

All vehicles, plant and machinery shall be capable of being operated, and will be operated, in a manner which is sympathetic to the maintenance of a clean and healthy environment. The bodies of vehicles and trailers must fully enclose loaded items or allow all loaded items to be soundly sheeted or netted. All loaded items shall be transported securely and safely, they shall be contained within the vehicle to eliminate all spillage and contamination of the public highway and general environment and suitably protected from damage during transportation.

Drivers and operators of vehicles, plant and equipment must hold necessary and appropriate licences and certification, as required by the relevant legislation relating to such vehicles, plant, machinery and equipment and be properly trained, competent and experienced using the same.

The Contractor shall:

- a. Use all vehicles, plant, machinery, and equipment in a careful, conscientious, workmanlike and proper fashion without overloading and for the purpose or in the manner for which the vehicles and plant were designed.



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- b. Undertake maintenance of such vehicles, plant, machinery, and equipment in accordance with the manufacturer's recommendations and maintain the cleanliness and appearance of such vehicles, plant, machinery, and equipment.
- c. Ensure that drivers drive safely, correctly and in accordance with statutory regulations always.
- d. Permit the Council or his representative at all reasonable times to have access to such vehicles, plant, machinery, and equipment to inspect their condition.
- e. Not knowingly use any vehicles, plant, machinery and equipment that does not comply with the requirements of the Contract or is for any reason un-roadworthy or is not being maintained and/or used in accordance with current legislation and/or good industry practice.
- f. Not leave or abandon any unsecured vehicles, plant, machinery, and equipment at any location where it might cause danger, damage, nuisance, inconvenience, or a breach of the law.
- g. Not allow vehicles, plant, machinery, and equipment to be left with their engines or power units running when unattended.
- h. Ensure that the size and weight of all vehicles and plant are appropriate for the size of access and condition of the site.

The Contractor shall provide enough vehicles, plant, machinery, and equipment to cover all normal maintenance and repair demands without adversely affecting the Contractor's performance of the Services or causing delay to the performance of the Services.

If through malfunction, accident, defect, or damage (accidental or otherwise) to the Contractor's own vehicle(s) or plant that detrimentally affects the Services, the Contractor shall hire such additional vehicle(s) or plant in order to allow the Services to be performed satisfactorily. All costs resulting from such extra/ additional hire will be borne by the Contractor and the hired vehicles and plant shall be of a nature and specification that is appropriate to the relevant Services to be performed.

All hand tools must be properly maintained in accordance with all relevant legislation and good industry practice. Saws, knives, and similar tools must be kept sharp. The Contractor should note that a selection of tools such as wheel barrows, spades, a post rammer of an appropriate weight and

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size, hammers, pliers, pincers, saws for cutting stakes, knives for cutting ties and strapping and spanners may be required for young tree maintenance.

The Contractor shall be responsible for obtaining such specialist equipment and/ or operatives as may be required to provide the Services. Where any doubt arises over the safety or suitability of such plant or equipment, the Council reserves the right to have the item in question inspected by the Council's Health and Safety Officer, or any other qualified person appointed by the Council, to advise the Council on its acceptability or otherwise. The decision made by the Council on whether to allow the item to be used, with or without modification(s), shall be final and the Council shall not be responsible for any delay occasioned by any such inspections.

Where the Council requires or approves the use of such specialist equipment or plant for reasons of safety or expediency, the Contractor shall be paid the cost of hire (including an operator where appropriate) at a price agreed beforehand. The Council shall not pay any additional costs incurred by the Contractor for operating such equipment (e.g. fuel or the replacement of tool or machine parts) unless specific agreement has been reached with the Council.

The Contractor must note that no additional payment or reimbursement shall be made by the Council for the acquisition or hire of stump grinding machines (with or without an operator) or wood chipping machines or any other general item of equipment or plant which the Council considers a contractor offering a comprehensive arboricultural service should provide for everyday or periodic use.

### **1.5.5 Depot, Office, and Storage Facilities**

The Contractor shall be responsible for the provision of all depot, office and storage facilities and all costs involved in their acquisition, leasing and maintenance.

### **1.5.6 Disposal of Wood, Stumps and Other Arisings**

The Contractor shall make all necessary arrangements for the removal and disposal of timber, wood, waste, surplus materials, chemicals and any other substance from the site that arises from the performance of the Services, unless specified by the Council. Such removal and disposal of timber, wood waste, surplus materials, chemicals, and any other substance must be carried out safely and in accordance with any legislation relating to its disposal and movement. The Contractor shall be responsible for all costs involved in such disposal and removal.

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Where wood (in any form) is to be removed from the site by means of a vehicle, the wood must be loaded and secured in such a way that it complies with all relevant Road Traffic legislation. Loads of wood must not overhang the sides of any vehicle and high visibility tape or marker(s) must be used where loads overhang the rear or front of the vehicle.

If a skip, or similar container, is to be used for the disposal of arisings, it shall not be left on site or on the highway without the proper authorisation and guarding.

A woodchipper may be used to assist with the disposal of brush and cordwood arising from the works. A proper system for the collection of chippings must form part of the operation to avoid the uncontrolled dispersal of chips about the site. At some locations, e.g. semi-natural sites, chippings may be returned to the site with the prior agreement of the Council.

The Contractor shall be responsible for the disposal of chippings. A supply of chippings shall be retained as mulch for young trees. The Council reserves the right to require the Contractor to deliver chippings to a location anywhere within the City for use by the Council or any other party. The supply, transportation and delivery of these chippings shall be at no additional cost.

Lengths of timber or other forms of wood or arisings shall not be left on, or near, a site after the completion of Services. Sites shall not be used to store timber awaiting collection by a specialist vehicle or contractor without the prior agreement of the Council as to the exact location of the timber storage and period involved. The Council reserves the right to require the Contractor to deliver timber to a location anywhere within the City for use by the Council or any other party. The supply, transportation and delivery of this timber shall be at no additional cost.

The reduction of timber into logs, or the selling of logs from a site, is not permitted. The Council reserves the right to remove and dispose of any timber left on site without the prior agreement of the Contractor and deduct all costs involved from the Contractor and the Contractor shall not be entitled to claim for any resulting loss of timber value.

The Contractor shall not agree with any member of the public, or other unauthorised party other than the landowners, to leave wood or other arisings on land for any reason.

The Contractor shall not burn any wood (brushwood, cordwood, or timber) or any other material on site.

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### **1.5.7 Materials**

The Contractor shall be responsible for the purchase, supply, delivery, and storage of all materials required to perform the Services in compliance with the Contract. All materials shall conform to the specifications of materials agreed by the Council. The Council reserves the right to amend any specifications of materials provided by the contractor and agree any adjustments in costs with the Contractor.

Where the Contractor is employed on works incorporating site reinstatement operations, provision shall be made for a reliable and readily available supply of reinstatement materials to avoid delays to works. To allow for a reasonable element of urgent or unplanned works a stock of soil, aggregate, wood chip mulch and fine cold asphalt to **BS EN 13108 - BITUMINOUS MIXTURES. MATERIAL SPECIFICATIONS** shall be stored.

### **1.5.8 Use of Horticultural Pesticides and Chemicals**

The Council is striving to move away from the use of horticultural pesticides on public open spaces. When agreed the use is required the Contractor shall comply with all legislation and any relevant codes of practice and regulations relating to the use of horticultural pesticides and chemicals. All such pesticides and chemicals must be approved for use in accordance with relevant legislation and regulations and any publication or codes of practice.

Operatives required to apply pesticides and chemicals shall hold the necessary certification in accordance with the above legislation and Regulations.

Herbicides shall be applied carefully to avoid movement through the soil so that they kill only the target vegetation. Damage to adjoining grass and other plants is avoided. The Contractor shall take all necessary precautions to ensure the safety of the general public including children, the occupiers of dwellings, any property within and surrounding the site, animal pets and wildlife.

### **1.5.9 Biosecurity**

All tools are to be surface sterilised (e.g. cleaning saw blades in methylated spirit) after use on trees that are known to be, or suspected of being, infected by a transmittable disease.

Consideration of biosecurity, and the implementation of routine control measures such as cleaning pruning tools, will help to limit the introduction and spread of pests and pathogens. Some are

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potentially more devastating than others, and the threat of their arrival in Cambridge and its surrounding environs warrants planning and preventative action.

It is expected that the Contractor shall take a proactive and responsible approach to managing biosecurity throughout all their business operations undertaken as part of this framework. The Contractor has a duty to adhere and to continually adapt to published industry approved codes of practice as well as produce their own Biosecurity Policy – an example policy has been published by the Arboricultural Association – [Guidance Note 2 Application of biosecurity in arboriculture](#) ([Appendix 4](#))

### **1.5.10 Health and Safety at Work**

The Contractor shall comply with all and every provision of the **HEALTH AND SAFETY AT WORK ETC. ACT 1974**, any regulations, or orders made under the same and any codes of practice to the extent that they are relevant to the Services, the site, and the Contractor's depot and other facilities. The Contractor shall supply to the Health and Safety Executive or the Local Authority such information as may be required by them from time to time in relation to their operations and compliance with the provisions of such Acts, orders and regulations.

The Contractor shall adopt safe methods of work for all operations coming within the scope of the Contract and any associated operations, in order to protect the health and safety of the Contractor and his workforce, Council employees, all other persons, including the public, and property.

The [Arboriculture and Forestry Advisory Group](#) (AFAG) and the [Forest Industry Safety Accord](#) (FISA) issue a range of Safety Guides containing recommendations and procedures for carrying out arboricultural and related operations. The Contractor shall adopt the recommendations contained in these Safety Guides unless the Contractor agrees in writing with the Council to a modified or alternative working practice. Copies of the Safety Guides are available from AFAG and FISA direct or via the Internet.

The Contractor shall ensure the Contractor's staff and any operatives or sub-contractors shall always wear and use appropriate protective and safety clothing and equipment during the works. The protective and safety clothing and equipment shall be appropriate for the location and highway designation and for the operations, works to be undertaken and the relevant Risk Assessments including cold and sun protection. The Contractor shall make satisfactory arrangements for the provision of such clothing and equipment for his staff and operatives. The Contractor shall ensure

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that all sub-contract operatives comply with such safety requirements. Guidance on appropriate safety clothing and equipment is given in the above-mentioned AFAG and FISA Safety Guides.

All operatives (whether working directly for the Contractor or any sub-contractor) shall have received appropriate training in First Aid in accordance with Health and Safety Executive guidance. First Aid kits must be readily available at the site during the works and comply with the recommendations found in the AFAG and FISA Safety Guides. The size of kits must be appropriate for the number of operatives present and the nature of the works.

All operatives employed in performing the Services shall be in a satisfactory physical and mental condition appropriate to the nature of the works.

The Contractor, the Contractor's staff, operatives or sub-contractors shall not consume, or start performing services having consumed, nor allow themselves to be exposed to any form of alcohol, medication, drugs or other preparation or substance which could potentially affect their alertness and performance during the execution of the works and thus place themselves or others at risk. The Council shall have the right to require the Contractor to remove from site any person considered to have ignored this requirement and to provide a suitable replacement operative.

The Contractor shall make adequate arrangements for Lone Worker safety. In addition to this, the Contractor shall ensure that there is an adequate procedure in place for contacting the local Police, Fire, Ambulance and Statutory Undertakers (or their agents) in case of emergencies, etc. The Contractor is advised to inform all staff, operatives or sub-contractors of the location and contact details of the nearest doctor's surgery and hospital.

The Contractor shall only perform the Services when suitable weather conditions prevail. Working in extreme or adverse conditions may affect concentration and safety. The performance of Services shall be postponed immediately if weather conditions deteriorate to a point where an appreciable risk of danger exists to persons or property. Such conditions may include high winds, rain, hail, or ice, extreme cold or heat, or reduced visibility (e.g. fog).

The Contractor shall be familiar and comply with the current **CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH REGULATIONS (COSHH)** and be able to produce all the necessary documentary evidence to the Council or other authorised party should this be required.

All hazardous and flammable materials shall be stored in appropriate containers, clearly labelled as to their contents and in accordance with HSE Guidance and Regulations. The Contractor shall make all necessary arrangements for the disposal or storage of all surplus materials arising from the works.



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This shall be carried out safely and comply with any legislation relating to the disposal or storage of hazardous materials, chemicals and related substances and their containers.

The Contractor shall be aware that the Workplace (Health and Safety and Welfare) Regulations 1992 require an employer shall make available certain facilities to all employees and comply with the same. These include a supply of fresh water for drinking and washing purposes particularly where chemicals are used. Operatives shall be able to wash their hands at lunch times and before leaving work.

The Contractor must not use any explosive or similar material (e.g. for the removal of tree stumps).

The Contractor shall make provision for adequate and periodic rest and meal breaks for operatives and ensure enough breaks are observed to maintain safety. These will be especially important to reduce worker fatigue during prolonged periods of work over and above Normal Working Hours (e.g. such as may occur in emergency situations).

### **1.5.11 Habitat and wildlife**

Prior to work commencing the contractor is responsible for assessing the tree(s), immediate surroundings, and approach routes for the presence of protected species, some of which are subject to season specific legislation. The assessment should be undertaken and recorded by competent individuals, following best practice guidance appropriate to the species and season (e.g. main bird nesting season March – August inclusive).

Where there is evidence that bats birds or other protected species are present the Contractor should immediately contact the Council prior to starting works. Outside of imminently dangerous situations the works will be postponed. Where bat roosts are present a Natural England Protected Species licence may be required prior to works.

When working near watercourses known by the Council to contain invasive species, the contractor will be responsible for ensuring appropriate methods of biosecurity are implemented to avoid the spread of species between sites.

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## **1.6 SITES AND ADJACENT LAND**

### **1.6.1 General**

The Contractor shall be responsible for the security and safety of all sites during the performance of Services. The Contractor shall take all reasonable steps to ensure continual security and safety where work sites are left unattended.

The Contractor shall take all necessary steps to avoid damaging any structures or fittings, street furniture, trees, shrubs and plants, grass or other surfaces at the site of the works, whether on land owned by the Council or on neighbouring or adjoining land.

The Contractor shall not deposit any chemical or other material at or near the site unless with the express written permission of the Council. If any damage occurs the Contractor must notify the Council immediately. Adequate reinstatement shall be undertaken to the satisfaction of the Council or the Council shall approve the payment of compensation to any adjoining landowner by the Contractor.

Vehicles or trailers shall not be parked on highway verges except where highway or operational safety makes it unavoidable. The Contractor shall not use vehicles on any highway in such a way that water, mud, clay, debris, or any other material is caused or permitted to fall on the highway. In the event of water, mud, clay, or debris falling on the highway it shall be cleared by the Contractor immediately at the Contractor's expense.

Access to all property must always to be maintained free from obstruction.

Where space for the temporary storage of wood and other arisings is limited or non-existent (e.g. on the public highway) the Contractor shall arrange for all wood, etc. to be removed from the site as it becomes available. Where wood or arisings are temporarily stacked, the Contractor shall ensure that public safety is not compromised. Where the Contractor seeks to leave any wood, materials, or equipment on site for longer than a temporary period the permission of the Council shall be obtained. The Contractor shall not leave any wood, materials, or equipment on neighbouring or adjoining land without the permission of the Council and the relevant landowner. Any damage to adjoining property shall be properly repaired in agreement with the landowner and such agreement shall have the express written approval of the Council.

The Contractor shall not allow any staff or operatives and any sub-contractors to trespass on adjoining property.

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All sites or areas in or about sites where Services are to be or have been performed shall be left in a safe, clean, and tidy state.

All excess arisings and other materials shall be removed as performance of the relevant Services progresses and the ground raked or brushed to leave it clean and tidy.

All roads, footpaths and gullies shall be cleared immediately of water, mud, clay, debris or any other material resulting from the performance of the Services.

No site shall be left unattended during the day without appropriate health and safety warnings and no materials or debris shall be left overnight unless with the permission of the Council.

Any arisings containing foreign matter (such as rubbish, foreign substances and elements, toxic concentrations, noxious perennial weeds, and roots) shall be taken to a licensed tip as soon as reasonably practicable having regard to the performance of the Services. Under no circumstances whatsoever shall any arisings containing foreign matter (such as rubbish, foreign substances and elements, toxic concentrations, noxious perennial weeds and roots) be left on the site in a dangerous position or condition or left on any site overnight.

### **1.6.2 Services performed in public places**

Where the Services are to be performed in an area to which the public has access, the Contractor shall take every precaution necessary to ensure the safety of the public (including, but not limited to, providing staff or operatives to restrict and/or direct the public, and by supplying and erecting barriers, displaying signs and using high visibility tape, as necessary). A high visibility flashing warning beacon may be required at some sites over and above vehicle mounted beacons.

The Contractor shall not leave any plant, materials, or equipment unattended on a site without the prior agreement of the Council.

### **1.6.3 Services Performed on Or Near the Highway**

For the purposes of the Contract, the public highway is land shown on the highways register held by Cambridgeshire County Council, and shall incorporate all public highways which may comprise the carriageway, footway, lay-bys, pedestrian only areas, verges, footpaths, bridleways, car parks and adjacent land. Both the highways register, and definitive map are public documents, if there is any doubt as to the extent of the highway these documents must be consulted in the first instance (TEL:

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**03450 455212**). The conditions in this section apply equally, if the site of the Services is adjacent to the highway, or the operation involves the loading or unloading of wood or other material on or off a vehicle standing on the highway.

Traffic shall refer to all motorised vehicles, pedestrians, cyclists, ridden animals and any other users of the highway.

Traffic control on the highway shall conform to **THE DEPARTMENT FOR TRANSPORT'S TRAFFIC SIGNS MANUAL CHAPTER 8, TRAFFIC SAFETY MEASURES AND SIGNS FOR ROAD WORKS AND TEMPORARY SITUATIONS** (as current) and any subsequent amendments and additions. The layouts shown in the Manual are the minimum that shall be acceptable. In certain circumstances in the interests of public safety or to minimise traffic disruption the Council may instruct the Contractor to increase signs, lamping or lighting to a specification required by Cambridgeshire County Council, being the Highway Authority. The Contractor will obtain a written quotation, detailed invoice, and proof of payment for any costs incurred in arranging for these extra services. These costs shall be paid to the Contractor by the Council as part of the service.

Any and each vehicle used by the Contractor (or its sub-contractors) is to carry a current copy of **SAFETY AT STREET WORKS AND ROAD WORKS – A CODE OF PRACTICE** published by The Department of Transport.

The Contractor shall co-operate with the person appointed by the Highway Authority (Cambridgeshire County Council) to manage the highway network in the city, in programming works to avoid unnecessary conflict of activities on the highway.

The Contractor shall give three working days' notice to the person appointed by the Highway Authority (Cambridgeshire County Council) to manage the booking and programming of working space in the highway of the intention to work in specific streets ([streetworks@cambridgeshire.gov.uk](mailto:streetworks@cambridgeshire.gov.uk)). The purpose of such notice is to programme works to avoid unnecessary conflict of activities on the highway. If the Highway Authority advises that working is unacceptable no works shall be undertaken in that period on those highways, or until the Highway Authority agrees that works may take place. In exceptional circumstances Services may have to be delayed.

On traffic sensitive streets, the timing of works shall accord with the detail provided at **APPENDIX 1 Traffic Sensitive Streets**.

Reasonable access to private property will always be maintained during the period of works.

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In the event of non-compliance with the above, the Council or any other authorised person may stop the Services and require the Contractor to withdraw. Where the Contractor fails to leave any unattended site properly and safely guarded, the Council or other authorised person or authority (e.g. the Police or Highway Authority) may render the site safe and recover all such costs involved in rendering the site safe from the Contractor.

### **1.6.4 Services performed in cemeteries, crematorium, and churchyards**

When working in cemeteries, the crematorium or churchyards, the Contractor must take extra care not to damage graves, sanctums, memorials, gardens, and any structure. All such damage, however minor, or disturbance of any grave or above ground sanctum must be reported to the Council immediately.

The Contractor shall perform the Services so as not to disturb services or funerals. The times when Services may be performed, and the specific required dress and behaviour standards must be agreed with the manager of the site and the Council prior to work commencing.

### **1.6.5 Services performed near rivers and streams**

The Contractor shall not leave timber or brushwood lying in, near or across, any river, stream, or waterway, nor allow it to float downstream. All wood must be removed from any such waterways.

The contractor will be required to use biodegradable chain oils near watercourses where there is a risk of contamination of that watercourse.

### **1.6.6 Works at semi-natural sites**

Maintenance and conservation works may be required at semi-natural sites such as wooded areas, spinneys, shelter belts, hedgerows, commons, Local Nature Reserves (LNRs) and watercourses.

In certain circumstances the cost of work at semi-natural sites may be calculated on an hourly or daily rate basis, any Order shall specify whether such hourly or day rates are applicable.

Where the scope and content of the works cannot be defined easily or with clarity, the Contractor shall be invited to attend a site meeting to receive instruction and guidance on the Services required.

The Contractor may be required to agree the scope and contents of the work. The Contractor may be issued with an additional itemised specification to augment the Order in relation to the Services

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required. The Contractor shall prepare a quotation for those Services that are not to be charged at hourly or daily rates.

Semi-natural sites managed by the Council are normally open to the public, the Contractor shall consider the provision and needs of public access, management and safety in all prices quoted. This may include the presence of ground staff to ensure the public does not enter the work area and the supply and erection of signs and barriers to warn and exclude the general public from the area. Special care must be exercised where children are concerned, and works should be avoided during school holidays if possible.

All tree work operations shall be undertaken with due care to avoid damage to adjacent trees, understorey, shrubs, scrub, bulbs, hedges and other vegetation, and any paths, fences, ditches, buildings, structures, surfaces, and obstacles. Where unavoidable damage to surrounding trees and understorey occurs, the damaged plants must be repaired by pruning, or in the case of badly damaged saplings or scrub, coppicing may be appropriate. All damage shall be reported to the Council and remedial treatment agreed beforehand. All damage must be repaired, or compensation paid to the satisfaction of the Council.

Tree work operations shall generally comply with the relevant Specifications of this Contract unless otherwise agreed with the Council in writing.

The selective thinning of trees, saplings and scrub must be undertaken with care. The method and extent of any thinning required, together with any preference for the eradication or retention of species will be specified by the Council. The Contractor may be required to execute the thinning of a 'sample' area for assessment by the Council before being allowed to proceed with the main thinning works.

Where coppicing is required, all stems will be cut in accordance with the specification in **SCHEDULE B** unless otherwise specified by the Council. Snags or short stumps with acutely sloping cuts must not be left because these could cause injury to persons or property.

The Council may require the killing of selected stumps with an approved arboricide. The Contractor shall adopt a controlled and systematic approach to such stump killing to ensure the proper treatment of all, and only, target stumps.

Where hedgerows or woodland edges are to be cut, all such trimming, pruning or cutting must be executed using hand tools and handheld plant. Tractor mounted flail cutters or similar plant must not be used.



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Vehicles and heavy plant (e.g. tractors, wood-chippers and trailers) must not be used in semi-natural sites without the specific consent of the Council. Vehicles and plant may be allowed in appropriate circumstances and conditions by the Council where it is necessary to remove cordwood, extract timber or dispose of brushwood with a woodchipper. Access points and ground protection measures for vehicles and plant shall be agreed with the Council.

The Council may require the retention of dead trees, trunks, or other forms of wood (and natural ground litter) which may be standing or fallen. This will apply to fallen trunks and larger branches which have been colonised by mosses and other forms of flora and fauna, and this type of wood must not be removed or disturbed unless otherwise authorised by the Council.

The Council may require the fixing or stacking of dead wood, branches, and trunk sections in accordance with conservation practices. The Council shall discuss any such operations at a site meeting with the Contractor and agreed suitable working methods.

The Council may require the Contractor to use wood or brush arising from the works to construct timber edging or brushwood barriers to designate paths or discourage access to certain areas by the public. The Council shall meet the Contractor on site to discuss and agree any such operations including the type and size of wood or brush to be used, the method(s) of construction and the location of the works to be undertaken. Timber edging and barriers shall be secured using stakes, nails and similar fixings must not be used.

The Council may require the Contractor to construct a 'sample' length of edging or barrier for assessment before allowing the total length to be constructed. All edgings and barrier must be constructed in a neat and workmanlike fashion and be aesthetically acceptable in appearance. They must also be safe and secure against the actions of the public.

Contractor shall agree with the Council the disposal method for wood and other arisings beforehand. Normally, this may be by chipping, stacking, or removal from site. In some circumstances, the construction of 'eco-piles' (e.g. neat piles of cordwood) may be acceptable with the prior consent of the Council.

## **2 SCHEDULE B**

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### **2.1 SPECIFICATION FOR SERVICES-SPECIFIC OPERATIONS - TREE MAINTENANCE SERVICES**

This Schedule specifies the specific standards, procedures, and measures to be adopted by the Contractor during the execution of Tree Maintenance Services. Where reference is made to a British Standard or British legislation within any part of the Specification of Services or Contract it shall be deemed to include any relevant European or international equivalent.

**APPENDIX 2 Model Quotation & Invoices**

**APPENDIX 3 Key to Abbreviations That May Be Used In The Schedule Of Works**

**APPENDIX 4 Combined Operation Schematics**

### **2.2 GENERAL**

#### **2.2.1 Identification of trees**

Trees to receive attention will usually be identified by their common or botanical name e.g. Rowan or *Sorbus aucuparia*. Trees may be identified individually, or in groups by a specific number and location on a plan, and/or by an address qualified by a position in relation to that address. In certain circumstances, individual trees may be marked with paint, tape, a tag, or notice. Where a tree is multi-stemmed and the tree works operations require all stems to be addressed, only one stem may be marked.

The Contractor shall exercise great care to ensure that only the correct tree(s) are pruned or felled and will brief the Contractor's operatives accordingly. Any variation from the Order provided must be reported in detail to the Council for entry on the tree maintenance database of tree maintenance (this being the Council's record and audit of tree maintenance).

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### 2.2.2 Tree works

If, during any preliminary inspection or performance of the Services, the Contractor notes any major defects not allowed for in the Order, or other limitation to working in a tree, e.g. bats roosting and nesting birds, these must be reported to the Council with appropriate urgency. If the defect(s) or limitations are of a type, or extent, which could require a change to the Order, the Contractor must stop work on the tree, or trees, in question until the Council has reassessed the situation.

As far as possible, standard terms will be used when specifying pruning operations. The Contractor must study the terms listed below, in conjunction with the recommendations and content of **BS 3998 TREE WORK - RECOMMENDATIONS** current at the time of the performance of the Services (or its European equivalent). The Services required will generally be specified in the Order in the format set out below.

#### Operation – specification & qualification & reason

The operation and specification will always be stated, but in some circumstances no qualification or reason may be given.

Where the qualification 'only' appears after a specification, only that part of the specification applying to the operation should be applied.

### 2.2.3 Tree pruning

All pruning shall be in accordance with **BS 3998** current at the time of performance of the Services (or its European equivalent), except where specified.

All pruning operations will consider the natural and aesthetic appearance of the species involved, its natural habit of growth and the safety of the tree.

Pruning wounds will not be treated with any form of wound paint or sealant unless specified by the Council.

Flowering trees must not be pruned when they are in bloom, or about to bloom, unless specifically authorised by the Council, or the pruning is being carried out to eliminate an immediate hazard or danger.

Where an avenue, or other uniform collection of trees, is to be pruned the Contractor may be required by the Council to prune an individual 'pattern / example' tree first to ensure that the extent

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and style of pruning is acceptable before the Contractor is allowed to proceed with the pruning of the remaining trees. Alternatively, the Contractor may be shown a previously pruned 'pattern' tree and instructed to prune other trees in a similar, or identical, fashion. In either case, the Contractor must ensure that the pruning is in accordance with the shape or form exhibited by the 'pattern' tree.

The size and number of pruning cuts shall be kept to the minimum required to achieve the objective. An excessive proportion of the leaf area of a tree shall not be removed, disproportionately large or numerous wounds shall not be created. These requirements should be considered when more than one form of crown management e.g. crown reduction and crown lifting is to be undertaken.

Branches and trunks are referred to using the following nomenclature:

- a. Where trees are supported by a single, main trunk more than 1.5 metres in height, the trunk will be termed *TRUNK*, any branches growing directly from the trunk will be *PRIMARY LIMBS*.
- b. Where a tree is supported by more than one trunk or is supported by a number of trunks emanating from a single trunk of less than 1.5 metres high, i.e. the tree is multi-stemmed, the individual trunks will be termed *STEMS*.
- c. The trunk of a very young tree (a sapling) may also be referred to as a *STEM*.
- d. Individual branches which grow directly from a trunk, or stem, will be termed *PRIMARY*.
- e. A branch growing from a primary branch shall be termed *SECONDARY*.
- f. Branches growing from a secondary branch will be termed *TERTIARY*.
- g. All other smaller branches will be referred to as *MINOR*.

Further clarification may be given in the Order where necessary.

### **2.3 TREE PRUNING – SPECIFIC OPERATIONS**

Tree management by pruning shall describe the process of cutting to undertake a given type of operation. In this context, pruning falls into two main categories:

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- a. *REMEDIAL AND RESTORATIVE PRUNING*, whereby the existing form of the tree is modified or rectified, sections **Crown lifting (C/L)**, **Crown thinning (C/T)**, **Crown reduction (C/R)**, **Dead-wooding**, **Epicormic/Sucker Removal**, **Cleaning Out (C/O)**, **Pruning reverted growth**, **Coppice**
- b. *FORMATIVE PRUNING*, whereby young trees are encouraged to grow in a desired form, section **Formative Pruning Operations (F/P)**

**2.3.1 Crown lifting (C/L)**

Crown lifting involves the removal of selected lower branches from the trunk, stems and branch system to give a specified clearance above the surrounding ground level or other stated object or, a specified distance by which part of the crown should be raised.

If the clearance specified is between two figures e.g. 2.5 to 3m, the Contractor shall use his skill and judgment to achieve the required clearance whilst maintaining a balanced crown.

Crown lifting on mature or old trees by removing major branches should be avoided unless they are down hanging or pendulous to a degree that makes it necessary to remove them. Where possible secondary branches should be removed, or branches shortened.

Where crown lifting required applies to one side, or part of the crown only, this shall be stated clearly in the Order.

**2.3.1.1 Specification**

Crown lifting will generally be specified in the Order in the following way:

***CROWN LIFT – TO SPECIFICATION & QUALIFICATION***

For example:

*CROWN LIFT – to 2m*

*CROWN LIFT – to 2.25 – 2.5m*

*CROWN LIFT – by 1.5m*

*CROWN LIFT –to 2.75m over cycle path*

Where crown lifting is required to the lowest remaining branch, this may be specified in the Order in the following way:

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***REMOVE – LOWER SPECIFICATION BRANCHES***

***CROWN LIFT – TO CLEAN STEM TO SPECIFICATION***

For example,

*REMOVE – lower 6 branches*

*CROWN LIFT – to clean stem to 2m*

**2.3.2 Crown thinning (C/T)**

Crown thinning involves the judicious removal of selected branches and shoots to reduce the density of the canopy by a specific amount. The pruning shall be carried out to achieve a balanced and evenly thinned crown and involves the removal of minor, secondary and weak growth. The work shall be undertaken throughout the crown and shall not be limited to the inner and lower parts of the crown. The cutting of branches back to the main stem should be avoided. The extent of the thinning will be specified as an approximate percentage of the existing density of the crown.

**2.3.2.1 Specification**

Crown thinning will generally be specified in the Order in the following way:

***CROWN THIN – BY SPECIFICATION***

For example:

*CROWN THIN – by 15 - 20%*

*CROWN THIN – by 20 - 25%*

*CROWN THIN – by 25 - 30%*

Where crown thinning applies to part of the crown, this shall be clearly stated in the Order. It may specify the removal of individual branches.

For example:

*CROWN THIN –by 20% lower crown only*

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### 2.3.3 Crown reduction (C/R)

Crown reduction involves a reduction in the overall size of the crown, or a specific portion or section. Where practicable, the work shall shape and balance of the crown to leave the tree with an aesthetically pleasing appearance, but the species involved, and its natural growth habit shall be considered. The amount by which the outer crown shall be reduced will be specified in metres defining the required reduction in height and spread, or as a percentage relating to the removal of the outermost branch and twig length.

#### 2.3.3.1 Specification

Overall crown reduction will generally be specified in the Order in the following way:

#### ***CROWN REDUCE – BY SPECIFICATION***

For example:

*CROWN REDUCE – by 2 – 2.25m*

*CROWN REDUCE – by 30%*

### 2.3.4 Localised crown reduction or directional pruning

Localised crown reduction or directional pruning will be specified in metres, or by a percentage relating to the removal of the outermost branch and twig length.

The part of the crown to be reduced will be specified by identifying the side, or as clearance from a specified object.

Where the reduction is to clear street furniture an area around the object to be clear of branches shall be specified. Only secondary, tertiary, and minor branches shall be removed.

Where a streetlight is to be cleared, in addition to specified clearance around the lamp head, the specification shall include the removal of branches necessary to illuminate the road and footpath.

Localised crown reduction may include the reduction in length of specific branches.

#### 2.3.4.1 Specification

Localised crown reduction will generally be specified in the Order in the following way:

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CROWN REDUCE – by specification & qualification

For example:

*CROWN REDUCE – garden-side by 1 – 1.25m*

*CROWN REDUCE – to clear building by 1.5m*

*CROWN REDUCE – to clear streetlamp by 0.5*

*CROWN REDUCE – clear BT wires*

### **2.3.5 Sightline clearance for traffic lights, street signs and speed cameras**

Sightline clearance for traffic lights, street signs and speed cameras is a form of localised crown reduction and/ or crown lifting. It will generally be specified in metres.

A 60m sightline shall be cleared from the specified object.

Traffic lights and signs: the 60m measurement shall be taken at 1.75m above ground, from the centre of the lane(s) of traffic approaching the traffic lights or sign.

Speed cameras: the 60m measurement shall be taken at 1.75m above ground from the centre of the lane(s) of traffic, dependent upon the operational direction of the speed camera.

#### **2.3.5.1 Specification**

Sightline clearance will generally be specified in the Order in the following way:

CROWN REDUCE.CROWN LIFT – to clear sightlines by specification &  
qualification

For example

*CROWN REDUCE.CROWN LIFT – to clear sightlines by 0.5m to traffic light*

### **2.3.6 Modified crowns, re-pollarding and shoot renewal pruning**

Modified crowns are those that have been previously pollarded or reduced. Crown reduction operations which have not been described above include re-pollarding and shoot renewal pruning.



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Re-pollarding shall involve the removal of all new growth back to, or at a specified distance from, the previously pollarded head.

### **2.3.6.1 Specification**

Re-pollarding will generally be specified in the Order in the following way:

CROWN REDUCE – re-pollard & qualification

For example,

*CROWN REDUCE – re-pollard*

*CROWN REDUCE – re-pollard to 400mm above pollard point*

Shoot renewal pruning seeks to maintain a more natural shape to a modified crown. It shall be achieved by retaining the framework of branches formed after crown reduction and thinning and branch tip reduction this crown by a specified amount.

Shoot renewal pruning will generally be specified in the Order in the following way:

CROWN REDUCE. CROWN THIN – growth from reduction points by &  
specification

For example

*CROWN REDUCE. CROWN THIN – growth from reduction points by 50%*

### **2.3.7 Dead-wooding**

Dead-wooding involves the removal of dead, dying or diseased branches, broken branches and stubs.

#### **a. Complete deadwood**

Complete dead-wooding is the removal of deadwood over 25mm in diameter, as measured at union, and 100mm in length.

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### b. Major deadwood

Major dead-wooding is the removal of deadwood over 50mm in diameter as measured at union and over 500mm in length.

### c. Conservation deadwood

Conservation dead-wooding is the removal of deadwood for the purpose being to manage the tree for the benefit of wildlife. Where deadwood exceeds 50mm in diameter it shall be removed to leave a natural break. Where possible this shall be achieved without mechanical intervention. If this is not possible the branch shall be partially cut with a saw and the remainder broken away by the operative to leave a snag or spur.

#### **2.3.7.1 Specification**

Dead-wooding will generally be specified in the Order in the following ways:

REMOVE – deadwood
Major deadwood
Conservation deadwood

#### **2.3.8 Epicormic/Sucker Removal**

Epicormics are defined as the sucker growth at and surrounding the base of a tree and epicormic shoots growing on the trunk or primary limbs of a tree. Where all sucker growth is less than 25mm in length no work is required.

Where any of the sucker growth exceeds 25mm all the growth shall be removed.

The lower branches of fastigate trees shall not be removed unless they are suckers growing from the rootstock of a grafted cultivar or variety or obstruct the passage of pedestrians or vehicular traffic.

Epicormic growth up to 2.25m above ground level, or the first true branch break, or up to a specified height, shall be removed on larger trees cleanly and neatly by hand using secateurs, short or long handled pruners (loppers), handsaws, pole saws or long arm pruners. Billhooks or similar implements with a chopping mode of action must not be used.

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Chainsaws may only be used where cuts above 50mm in diameter are required and such cuts can be achieved to leave a neat and tidy finish without causing excessive or large wounds or scarring to adjacent bark. Chainsaws shall not be used to remove clusters of shoots on burrs.

### **2.3.8.1 Specification**

Epicormic removal will generally be specified in the Order in the following way:

REMOVE – epicormics & qualification

For example:

*REMOVE – epicormics*

*REMOVE – epicormics to 5m*

*REMOVE – epicormics to pollard head*

*REMOVE – to 5m*

### **2.3.9 Cleaning Out (C/O)**

Cleaning out involves the removal of dead, dying and diseased wood over 25mm in diameter measured at the union and 100mm in length, stumps of broken branches, stubs and broken branches. Crossing branches which are not part of the main structure should be interpreted so the least valuable branch is removed. It should be noted that in the case of mature trees there is usually no benefit in removing crossing branches, if in doubt the Contractor shall refer to the Council for advice. Any foreign objects should be removed including, nails, ropes, rubbish. Stakes that no longer offer support or protection shall be removed. Climbing plants should not be removed, severed, or reduced in height unless specified.

### **2.3.9.1 Specification**

Cleaning out will generally be specified in the Order in the following way:

CLEAN OUT - & qualification

For example

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*CLEAN OUT – reduce ivy to 2m*

*CLEAN OUT – remove broken branch only*

**2.3.10 Pruning reverted growth**

Pruning reverted growth to remove all reverted branches on cultivars unless this would spoil the aesthetic appearance of the tree or compromise its safety.

**2.3.10.1 Specification**

This will be specified in the Order as the removal of specific branches.

CROWN THIN – remove reverted branches

FORMATIVE PRUNE – remove reverted branches

**2.3.11 Coppice**

Coppice is defined as a tree that has previously been cut at, or near, ground level regularly to encourage the development of multiple stems.

Multi-stemmed trees, which have multiple stems emanating from a single point at ground level, will be treated as coppice.

Coppicing is defined as the cutting of a woody plant near ground level to encourage the development of multiple stems. Re-coppicing is the removal of all, or a percentage of, stems to a specified point above the original stool.

Where the tree is being coppiced for the first time a single stump of 200mm tall shall be left. Where the plant is being re-coppiced then stumps measuring not less than 200mm, but not more than 300mm, in height shall be left where each stem has been removed, above the stool.

Any alternative specification for the length of stumps to be retained, or the percentage and size of stems to be removed, will be clearly stated in the Order.

**2.3.11.1 Specification**

Coppicing and re-coppicing will generally be specified in the Order in the following way:

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### Coppice

#### **2.3.12 Formative Pruning Operations (F/P)**

The objective is to develop a strong tree structure. It should be noted that no more than 25% of the live foliage should be removed in any single or combined formative pruning operation.

The condition of each tree shall be checked and the need for any specific formative pruning operations assessed. Any necessary formative pruning operations will be undertaken paying attention to the formation of a single leading shoot and the removal of poorly placed branches.

The species, habit and location of each tree must be considered when executing such pruning to avoid unjustified work. Examples include fastigate varieties of trees which are normally allowed to retain lower side shoots and some species of oak, hawthorn, apple and mop-headed cultivars which do not develop single leading shoots.

Where trees have developed dense or heavy crowns which place excessive strain on the stem or its supporting tie(s) and stake(s), the crown should be judiciously and evenly thinned to reduce excessive weight. Corrective pruning and surgery to remove snags, dead, defective, or reverted branches and the repair wounds shall also be carried. Any suckers at the base of the tree and any epicormic shoots on the stem shall be removed. All buds of such shoots will be rubbed off to reduce future growths. Branches obstructing the footpath or highway will be reduced or removed.

Lower branches should be removed to clear them from traffic, to prune them away from a building or footpath and make signs visible. Shortening or thinning limbs in larger young trees is preferred over removal because of the negative health impacts of large limb removal. A live crown ratio of at least sixty percent should be maintained to a maximum height of 3m above ground level for those young trees over 7.5m in height. This means that there should be live branches along the upper sixty percent of the trunk to distribute wind stress and develop trunk taper for stability and strength.

##### **2.3.12.1 Specification**

Formative pruning will generally be specified in the Order in the following way:

FORMATIVE PRUNE - Formative prune

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FORMATIVE PRUNE - Formative prune – remove lowest three branches (marked with chalk)

### 2.4 COMBINED TREE MAINTENANCE OPERATIONS

To simplify specifying works several different operations have been combined into a single specification. The combined operations are:

- **Young Tree Maintenance**
- **Standard Maintenance (SMT)**
- **Combined Proactive Specification (CPS)**
- **Some 'REM – tree....' Operations**

Schematics of the above operations are available in **APPENDIX 4 Combined Operation Schematics** . These should be printed off and available for quick reference in each vehicle used by the Contractor.

### 2.5 YOUNG TREE MAINTENANCE

Young trees are defined as those trees still requiring the support of stakes or guying mechanisms.

The Order issued to the Contractor may include 'young tree maintenance' for specific trees.

Operatives shall be trained in young tree maintenance. The Council may request a demonstration of their knowledge and skill before issuing an Order.

Young tree maintenance describes a series of combined operations set out in paragraphs below.

Young tree maintenance will generally be specified in the Order in the following way:

Young tree maintenance & qualification where required

For example:

*Young tree maintenance*

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### *Young tree maintenance – mulch only*

#### **2.5.1 Young tree maintenance - specific operations**

##### **2.5.1.1 General maintenance.**

Severely damaged, vandalised, or dead trees should be removed, along with any associated planting aids such as stakes, cross-members, ties, strapping, strimmer guards, irrigation pipes and gator watering bags. The tree gator watering bags are to be returned to the Council. The ground where the tree has been removed shall be reinstated with topsoil, as described in Section Site reinstatement The Contractor shall consult the Council before removing any tree whose retention is in doubt.

##### **2.5.1.2 Checking of Stakes.**

The general condition and soundness of each stake must be checked.

##### **2.5.1.3 Stake replacement.**

Loose stakes must be firmed, and defective stakes replaced.

Any replacement stake is to be softwood, of an appropriate length to support the tree, with 50-75mm top diameter, peeled, pointed, and treated unless otherwise instructed by the Council. The stake should be driven in in such a way to avoid damage to the top of the stake.

The stake shall be secure in the ground, upright and in alignment with any others in the street.

No part of the stake should damage the roots or abrade any part of the tree, the trunk shall be a minimum distance of 50mm from the stake, spacers may be used to prevent chaffing of the lower trunk.

Multiple stakes and cross bars may sometimes be required as replacement, in these cases the cross bar should be of half round timber, of the same nature as the stakes.

##### **2.5.1.4 Stake reduction and removal**

Where a tree has become partially established and is above extra heavy nursery standard size (i.e. with a stem circumference above 16cm at one metre above ground level) the stake may be reduced by one half to two-thirds of its height and the tree re-tied.

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Where a tree has become fully established (i.e. the tree is capable of standing without the aid of an artificial support) and the stem diameter is 50-60mm at one metre above ground level the stakes and ties may be removed and the ground around the base of the tree firmed and reinstated including the filling of any stake holes with top soil.

Before any height reduction or removal of a tree support system is undertaken, it is very important to ensure that:

The stem of the tree is strong enough to support its crown without fear of failure or excessive flexing.

The tree is firmly anchored in the ground by its root system with no or negligible movement at the base of its stem.

Due allowance is made for the potentially damaging actions of wind and vandals.

If in doubt, retain the stake(s) and guard(s) where appropriate, for a further period.

### 2.5.1.4.1 Specification

Stake reductions may be specified separately in the Order in the following way:

Reduce stake by (+ specification)

For example

*Reduce stake by 30%*

Stake removals may be specified separately in the Order in the following way:

*REM – stake*

Firming of loose stakes may be specified separately in the Order the following way:

Re-set stake & qualification where required

*Re-set stake by removing and replacing damaged stake*



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### **2.5.1.5 Checking of ties/strapping.**

The general condition and soundness of ties, strapping and spacers (including spacer blocks or cushions) must be checked. Defective ties and strapping shall be renewed where necessary using the same materials as the original staking. Ties and strapping must be adjusted to hold the tree stem firmly but not too tightly. It will usually be necessary to renew the tie or strapping if it requires adjustment, but the spacer may be re-used if its condition is satisfactory.

### **2.5.1.6 Single stake method.**

A single tie, with spacers, shall be used to attach the tree to its stake. The tie shall be fitted to hold the stem firmly, but not too tightly and to preclude any sideways movement of the tree around the stake. The tree should be secured to the stake using hessian tree tie, wrapped to form a spacer and then stapled.

The tie must be fitted to hold the stem firmly, but not too tightly and to preclude any sideways movement of the tree around the stake. It should be positioned not more than 25mm from the top of the stake, to avoid abrasion. Hessian tree tie should be secured by driving 6no. staples for each strap/stake. Use 10-14mm, heavy duty galvanized staples

#### 2.5.1.6.1 Specification

This operation may be specified separately in the Order in the following way:

Retie tree tie to prevent rubbing

### **2.5.1.7 Multiple-staking method.**

Where a tree is double staked then the tree should be secured using two lengths of hessian tree tie, twisted to form loose spacers, pulled taught and then stapled to the stake. It should be secured by driving 6no. staples for each strap/stake. Use 10-14mm, heavy duty galvanized staples.

Where triple stakes are used then the tree should be secured using three lengths of hessian tree tie, twisted to form loose spacers, pulled taught and then stapled to the stake. It should be secured by driving 6no. staples for each strap/stake. Use 10-14mm, heavy duty galvanized staples.

Where four stakes are used then the tree should be secured using four lengths of hessian tree tie, twisted to form loose spacers, pulled taught and then stapled to the stake. It should be secured by driving 6no. staples for each strap/stake. Use 10-14mm, heavy duty galvanized staples.

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Where a tree is double staked using a cross member, a single tie with spacers shall be fixed to the cross bar. The tie must be fitted to hold the stem firmly, but not too tightly. Two galvanised clout-nails shall be used, carefully positioned so that the heads will not damage the tree if the tie were to become slack. The nails should be driven in to leave the head proud by 3mm to facilitate future removal.

The ties, or strapping, shall be positioned so that it is not possible for a hand hold between the lowest branch and the tie or strapping.

### **2.5.1.8 Formative Pruning**

Formative pruning will apply to only those all those trees classed as young trees defined in

**Formative Pruning Operations (F/P)**. The pruning operations are described at **TREE PRUNING – SPECIFIC OPERATIONS**.

### **2.5.1.9 Treatment around base of trees**

Treat around bases shall be applied to trees growing in grass areas or grassed road verges more than 750mm wide.

Weed and grass growth encroaching into the mulched area, nominally 500mm radius around each tree, shall be removed and the mulch re-adjusted.

Additional wood chipping mulch may be required to ensure a radius of 500mm and depth of 75mm is achieved.

A mulch of re-cycled wood chips shall be applied around the base of the tree to a depth of 75 mm and 500mm distance from the trunk. This mulch is a byproduct of the tree maintenance operations and cannot be claimed as a commodity.

## **2.6 STANDARD MAINTENANCE (SMT)**

Street trees are those growing on Highway and communal Housing land (approx. 15,000 individual and groups of trees). They are maintained on a systematic, proactive, cyclical programme. The City is divided into three sectors on a geographical and ward basis and trees are inspected every three years. Works are scheduled for each ward during the summer and suppliers are invited to quote on

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a ward-by-ward basis; the work to be performed at a specified time between late summer and mid-March. Works that cannot wait until the next cyclical assessment are issued on an ad-hoc and priority basis as they arise.

Standard maintenance will apply to all street trees except for those *YOUNG TREES RELIANT ON STAKES FOR SUPPORT*

### **2.6.1 Standard maintenance - specific operations**

The following pruning operations, as fully described in Section 2.3 above, will be undertaken

#### **2.6.1.1 Remove epicormics/suckers (section 2.3.8)**

To the first true branch.

#### **2.6.1.2 Crown lift (C/L) (section 2.3.1)**

Crown lift all round including over grass areas and overhanging gardens to a minimum of 3m. wherever appropriate, remove branches back to stem to achieve clearance.

For smaller trees, (typically less than 8m) or where a 3m lift would greatly affect the structure of the tree, lift to 1/3rd of the height or 2.4m whichever is greater.

All trees – CROWN LIFT to 5m over the carriageway for 'A' roads only (as listed in APPENDIX 1 Traffic Sensitive Streets); and 3.5 - 4.5m over the carriageway for all other roads.

#### **2.6.1.3 Cleaning out (C/O) (section 2.3.9.)**

Cleaning out involves the removal of dead, dying and diseased wood over 25mm in diameter measured at the union and 100mm in length, stumps of broken branches, stubs, and broken branches. Crossing branches which are not part of the main structure should be interpreted so the least valuable branch is removed. It should be noted that in the case of mature trees there is usually no benefit in removing crossing branches, if in doubt the Contractor shall refer to the Council for advice. Any foreign objects should be removed including, nails, ropes, rubbish. Stakes that no longer offer support or protection shall be removed. Climbing plants should not be removed, severed, or reduced in height unless specified.

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### **2.6.1.4 Cable clearance**

Work undertaken to clear overhead cables by either crown lifting (C/L), crown thinning (C/T) or crown reduction (C/R) or a combination of these operations as far as is reasonable without damaging the principle limb and leader structure of the tree. In some cases, the task may not be achievable as one operation. Where the specification is to clear overhead telephone wires no set distances may be given.

### **2.6.1.5 CROWN REDUCE/ CROWN LIFT to clear sight lines to traffic lights, street signs and speed cameras by 0.5m**

Where appropriate, to all trees within 60m of either a traffic light, street sign or speed camera from the direction of viewing only.

### **2.6.1.6 CROWN REDUCE to clear streetlamps by 0.5m**

Where appropriate, to all trees' adjacent streetlamps

### **2.6.1.7 CROWN REDUCE to clear building by 2m**

To achieve the clearance of 2m far as is reasonably possible without damaging the principle limb and leader structure of the tree. Apply where appropriate, to all trees whose canopy is with 2m of a building

### **2.6.2 Specification**

'Standard maintenance (SMT)' may be specified occasionally for trees growing outside Highway and Housing land in communal use.

Where 'Standard Maintenance (SMT)' has been specified in an Order to a batch of trees, each tree must be checked to ensure that it meets the Standard Maintenance criteria. Any works necessary should be implemented. Any major defects to be reported to the Council.

Standard maintenance for trees growing on the Highway and Housing land in communal use will generally be specified in the Order in the following way:

Standard maintenance (SMT)


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**2.7 COMBINED PROACTIVE SPECIFICATION (CPS)**

Trees growing on Highway and communal Housing land are currently managed on a ward-by-ward basis, on a 3-year proactive cycle known as the 'Tree Maintenance Programme' or 'TMP'. To simplify issuing works issued under the TMP, the 'Combined Proactive Specification' or 'CPS'. combines several different operations into a single combined specification. Individual operations listed in the combined specification will only apply in specific circumstances. For each tree, the Contractor should apply the appropriate operation listed in the cascade table below. When determining the appropriate operation to be applied the Contractor should start at the top of the table and work down through the list to determine whether the tree falls into the appropriate situation. The operations/ situations are listed in Table 4.

'TMP' schedules are generally awarded by geographic ward which can contain over 1000 trees. Formal Council tree inspections are undertaken after such schedule of works have been completed and combined with a works check. A 'snag' list of incomplete works that should have been completed under the 'CPS' will be drawn up for subsequent completion by the contractor. This 'snag' list will be completed at no extra cost to the Council. The Council may hold back a proportion of the value of the original works schedule until the 'snags' have been completed. The formal inspection will also identify works needed over and above the 'CPS' (for example the removal of dead mature trees) which will be tendered later.

Table 3 Combined proactive specification



<b>Operation</b>	<b>Situation where the operation is to be applied</b>	<b>Schedule B, section/ paragraph reference</b>
TREE INSPECTION - ground	Undertake a basic inspection from the ground to check for major defects or limitations to work. If the defects or limitations are of type or extent which would require a change to the order, work should stop the Inspecting Officer notified	2.12.2
REMOVE TREE FOR REPLANT	To all young trees on a stake that are dead	2.9
YOUNG TREE MAINTENANCE	To all young trees	2.5
STANDARD MAINTENANCE	To all trees not classified as young.	2.6

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**2.8 REMOVE -TREE.... – COMBINED OPERATIONS**

Tree felling, stump removal and site reinstatement will usually be referred to as part of a combined operation. There are 3 different combined operations **REMOVE – tree...**operations:

1. REMOVE – tree by root
2. REMOVE – tree for replant
3. REMOVE – tree and kill root

These combined operations combine the single operations of: Tree Felling (2.9), ‘Stump removal and killing’ (2.10), Site Reinstatement (2.11) into a single specification. A summary of requirements for each of the 3 specifications can be found in Table 4 below

SPECIFICATION / OPERATION	TREE FELLING	STUMP TREATMENT	SITE REINSTATEMENT
REMOVE – tree by root  <b>(where no replacement tree is to be planted)</b>	Fell or dismantle the tree.  Leave stump at 1m above ground level if not removal the stump in a single operation.	Grub or grind out stump to a depth of 200mm and remove all roots with 300mm of the periphery of the stump	Remove any stump chippings and replace with topsoil to align with the surrounding area. A slight mounding may be acceptable to allow for settlement. The area shall be left safe, level, graded, foot firm and tidy.
REMOVE – tree for replant  <b>(where a replacement tree is to be planted)</b>	Fell or dismantle the tree.  Leave stump at 1m above ground level if not removal the	Grub or grind out stump to a depth of 450mm and remove all roots with 300mm of the periphery of the stump	Remove any stump chippings and replace with topsoil to align with the surrounding area. A slight mounding may be

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	stump in a single operation.		acceptable to allow for settlement. The area shall be left safe, level, graded, foot firm and tidy.
REMOVE – tree and kill root  <b>(where no replacement tree is to be planted and the stump is to remain)</b>	Fell or dismantle the tree.  Cut the trunk (stem) to a close to ground level as possible to avoid it becoming a trip hazard.	Where stumps are to be killed with chemicals the Council shall approve the product and method before implementation of works.	n/a

*Table 4 Combined Remove tree...operations*

## **2.9 TREE FELLING**

### **2.9.1 General**

Before any tree shall be felled, all structures fixed to the tree (e.g. commemorative plaque, tree guard, fence, bird or bat box, tree house) must be removed carefully. The Order shall provide instructions concerning such items.

Where space for felling is restricted by hazards or obstacles, or where there is a danger or risk of damage to the public, property and surrounding area, trees will be carefully dismantled by lowering and felling in appropriately sized sections.

Damage to underground and above ground services, buildings, structures, walls, fences, foot and cycle paths, the public highway, street furniture, lamp columns, signs and traffic signals, grass, garden plants and furniture, vehicles and cycles must be avoided wherever possible. Where any avoidable damage occurs, the Contractor is responsible for proper re-instatement works. All such damage shall be reported to the Council.

### **2.9.2 Where the stump to remain**

Where the stump is to be left in the ground the final cut must be clean, smooth, and free from protrusions that could cause injury or damage.

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Where the stump is to be left in the ground the final cut must match the level of the surrounding area (i.e. on sloping ground, the cut should match the angle of slope). The presence of wire, nails, kerbstones, paving, any metal or stone obstructions at or near the base of a trunk will not normally be considered as a valid reason for the Contractor to not fell a tree to the level specified. The Contractor must endeavour to overcome such difficulties. Any difficulties shall be reported to the Council. In exceptional circumstances a special exception may be allowed by the Council.

### **2.9.2.1 Specification**

This operation will generally be specified in the Order in the following way:

*REMOVE – tree to ground level*

### **2.9.3 Where the stump is to be removed**

Where a tree is to be felled and the stump removed later, the trunk shall be cut to 1 metre above ground level and removed; the stump shall be removed thereafter. The trunk shall not be cut to less than 1 metre above ground level without the agreement of the Council and shall be left in a manner to protect the public against injury.

Stumps shall be removed within five working days of felling or before the completion date for the relevant Services.

On occasion the Council may require the retention of a stump 1 metre high for an indefinite period. This is normally to safeguard a planting position. The stump shall be left in a condition so that the public and property are protected from injury or harm.

### **2.9.3.1 Specification**

This operation will generally be specified in the Order in the following way:

*REMOVE – tree leaving 1m high stump.*

## **2.10 STUMP REMOVAL AND STUMP KILLING**

### **2.10.1 General**

The removal of stumps will usually be achieved by grubbing out by hand or grinding out by machine. Grubbing out by hand may be specified in some instances in the Order. Grubbing out by hand is the removal of a stump using hand tools, a hand operated winch may be used if required. Grinding out by machine is the removal of a stump using a stump grinding machine of type and size appropriate



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for the job. Mechanical excavators (e.g. JCB type) and other types of plant (e.g. powered winches and cranes) shall not be used for stump removal.

The Contractor shall assume that public utility services may exist below ground in the vicinity of tree stumps and roots and exercise all care and attention to avoid damage during stump removal operations. The Contractor shall be responsible for identifying and avoiding any underground service. The Contractor is advised to contact the appropriate statutory bodies and obtain information on the location of public utilities. The Contractor may use detectors such as the Cable Avoiding Tool. If any damage occurs the fault shall be reported directly to the public utility. The Contractor shall be responsible for any loss, damage or injury to services and surrounding structures. A report shall be made to the Council advising of the circumstances and the action taken.

### **2.10.2 Grubbing out by hand**

Where stumps are to be grubbed out by hand, the area surrounding the stump shall be excavated using hand tools. The roots shall be severed to allow the whole stump and any buttress or main roots found within of 300mm of the periphery of the stump shall be removed.

### **2.10.3 Stumps adjacent structures**

Where stumps are less than 300mm from a wall, path, fence or other structures, the removal of roots shall be agreed with the Council. The hole shall be backfilled with material appropriate to the reinstatement specified. Where the excavation is in soft landscape the hole shall be filled using soil taken from the excavated stump and root. Additional topsoil to BS 3882 as current shall be imported as necessary to leave the area safe, level, graded, foot firm and tidy.

### **2.10.4 Machine grinding**

Where stumps are to be machine ground the whole stump must be removed. The type of machine used shall be appropriate for the size of the stump to be removed. Where access is available, a larger type of stump grinder shall be used, the stump and associated roots shall be ground out to a depth of not less than 450mm. Where access is confined, a pedestrian operated stump grinder shall be used, the stump and associated roots shall be ground out to a depth of not less than 300mm.

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Any buttress or main roots found within 300mm of the periphery of the stump shall be removed. Where stumps are less than 300mm from a wall, path, fence or other structures, the removal of roots shall be agreed with the Council.

During the stump grinding operation, the Contractor must ensure that wood chips and other items of debris (e.g. stones) are not dispersed in the surrounding area, or damage and endanger persons or property. Stump grinding machines must be fitted with adequate skirting or other form of protective guard to prevent the dispersal and projection of debris. Wood chips shall be removed from the site unless otherwise instructed by the Council.

The hole shall be backfilled with material appropriate to the reinstatement specified. Where no reinstatement is specified the site shall be cleared of excess chippings, the area forked and firmed to leave the site in a tidy condition with an even surface.

All suckers and surface roots found within 300mm of the periphery of the stump shall be removed by hand or by using appropriate equipment. Any damage to the ground surface shall be reinstated using the appropriate material(s) unless otherwise agreed with the Council. Wood chips shall be removed, and any excavation backfilled with material appropriate to the reinstatement specified. Where the excavation is in soft landscape the hole shall be filled using soil taken from the excavated stump and root. Additional topsoil to **BS 3882** as current shall be imported as necessary to leave the area safe, level, graded, foot firm and tidy.

### **2.10.5 Stump removal for replacement planting**

Where a replacement tree is to be planted, stumps shall be removed in accordance with this specification to ensure successful planting. The Contractor shall ensure the whole of the stump surface roots found within 300mm of the periphery of the stump are removed as specified. If necessary, the site must be checked for sections of stump or root using a suitable prod or similar implement (which does not conduct electricity).

If the planting of a replacement tree cannot be realised because the removal of the stump and ground reinstatement is not in accordance with the specification, or any agreement made with the Council, the Contractor may be required to return to the site and complete the Order at no additional cost to the Council.

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**2.10.6 Stump killing**

**2.10.6.1 Chemical**

Where stump removal by hand or machinery is impractical, or the Council has specified or agreed that it is not appropriate, the Contractor may be required to kill stumps using an approved chemical.

Where stumps are to be killed by chemicals, the method and procedure shall comply with **BS3998** current at the time of the performance of the Services (or its European equivalent) and any instructions issued by the Council. The Council shall approve the product and its active ingredient(s) to be used by the Contractor beforehand. The product manufacturer's instructions must be followed exactly. The Contractor's operatives shall be trained in the use of chemicals and wear the appropriate protective clothing.

It may be appropriate to advise residents that the stump is to be treated chemically. The Council shall advise if this notification is required and the Contractor shall be responsible for informing residents. The Contractor shall agree the extent of the consultation and the contents and wording of the advisory letter with the Council.

**2.10.6.2 Other methods**

Other methods of stump killing may be used only with the prior consent of the Council.

**2.10.7 Specification**

Stump removal will generally be specified in the Order in the following way:

*REMOVE - stump*

Where stump killing is the preferred option it will generally be specified in the Order in the following way.

*REMOVE – fell tree and kill stump*

Stump removal may be referred as part a combined operation including 'Stump removal and killing' (2.10), 'Tree Felling' (2.9) and 'Site Reinstatement' (2.11) in the Order in the following way:

*REMOVE – fell tree for replant (where a replacement tree is to be planted)*

*REMOVE – fell tree by root (where no replacement tree is to be planted)*

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### **2.11 SITE REINSTATEMENT**

#### **2.11.1 General**

Where any tree, or any tree works operation, causes damage to any surface within, or access to, the site, adjacent land or any other area affected by, or associated with, the tree work operations the Contractor shall be required to undertake appropriate reinstatement unless otherwise specified or agreed with the Council. All areas must be left safe, clean and tidy after any type of reinstatement operation.

Reinstatement operations shall be undertaken immediately on completion of the tree work operations.

The Contractor shall be responsible for the cost of all reinstatement works, except in the following circumstances:

- a. Where an Order makes provision for the Contractor to be paid additional costs for the reinstatement of damage.
- b. Where the Council specifically authorises the payment of any additional reinstatement costs owing to special circumstances.

#### **2.11.2 Reinstatement with topsoil**

Where an area is to be reinstated using topsoil, the reinstatement works shall include the removal of any stump chippings and the ground shall be restored with top soil in accordance with **BS 3882** as current to align with the surrounding area. A slight mounding may be acceptable to allow for settlement. The area shall be left safe, level, graded, foot firm and tidy.

#### **2.11.3 Reinstatement with turf**

Where an area is to be reinstated with turf laying will comply with **BS 4428 AS CURRENT 'CODE OF PRACTICE FOR GENERAL LANDSCAPE OPERATIONS'** Section 6: Turfing (or its European equivalent).

The reinstatement works shall include the removal of any stump chippings and the ground shall be restored with top soil in accordance with **BS 3882**: as current to produce a firm, even and stable medium on which the turf shall be laid and into which it shall root and establish to the satisfaction of the Council.

The turf will be laid to a uniform level and aligned with the surrounding levels. Reinstatement following stump removal may result in slight mounding of the area. A minor rise to allow for future settlement shall be acceptable, but excessive mounding will not be acceptable, and the Contractor shall be required to reinstate the ground correctly. The area shall be left clean, safe, and tidy.

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Enough turf must be supplied to reinstate the whole area of the works, including the area surrounding the stump and any other areas of damaged turf associated with the works.

In periods of protracted drought or dry conditions, the Council may require the Contractor to arrange for the turf to be watered to enable establishment. This extra cost shall be agreed with the Council. Alternatively, the Council may allow the Contractor to postpone laying the turf until the weather conditions are more conducive to establishment, but the reinstatement works shall not be delayed unduly and the Contractor shall ensure such works are not overlooked or forgotten.

### **2.11.4 Reinstatement with grass seed**

Where an area is to be reinstated with grass seed, the seeding will generally comply with **BS 4428: AS CURRENT 'CODE OF PRACTICE FOR GENERAL LANDSCAPE OPERATIONS'**, Section 5, Seeding of Grass Areas (or its European equivalent). The reinstatement works shall include the removal of any stump chippings and the ground shall be restored with topsoil in accordance with **BS 3882:as current**. Enough depth of topsoil shall be graded to a uniform level and aligned with the surrounding area, the seed bed shall be prepared manually by firming and raking to enable the seed to establish satisfactorily.

The Contractor shall obtain the prior agreement of the Council to use turf, as specified above, instead of grass seed where the specification requires reinstatement with grass seed, no additional payment for turf will be paid. Where a grass seed mixture is specified (e.g. for reinstatement of a fine turf area) the precise grass seed must be used.

### **2.11.5 Reinstatement with asphalt**

Where an area is to be reinstated with asphalt, all stump chippings shall be excavated. The hole shall be backfilled with soil consolidated to 200mm below the surrounding surface level. Ministry of Transport Type I granular material (or European equivalent) shall be placed on the consolidated soil to within 30mm of the surrounding surface level. A top dressing of 30mm layer of fine, cold asphalt shall be laid on the granular material.

The Contractor shall inform the Council on completion. The Contractor shall be responsible for the supply and laying of all the above materials which are a temporary reinstatement.

If permanent reinstatement is required, this shall be undertaken by the Council at a later date at no expense to the Contractor.

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### 2.11.6 Specification

Site reinstatement will generally be specified in the Order in the following way:

REINSTATE - + qualification

For example

*REINSTATE– with grass seed*

*REINSTATE – with turf*

*REINSTATE– with asphalt*

Site Reinstatement may be specified as part a combined operation including 'Stump removal and killing' (2.10), 'Tree Felling' (2.9) and 'Site Reinstatement' (2.11).

It will generally be specified in the Order in the following way:

REMOVE– tree for replant (where a replacement tree is to be planted)

REMOVE – tree by root (where no replacement tree is to be planted)

## 2.12 TREE INSPECTIONS AND CONDITION REPORTS

There are two categories of tree inspection which may be instructed

1. Climbing
2. Ground

### 2.12.1 Checking

A climbing inspection is a basic inspection of the aerial parts of a tree, or parts of a tree, by a competent climbing arborist to ensure it is free from any defects or other factors that might affect its health and safety. .

The Council need not be present at the time of inspection, but the date and time of the inspection shall be agreed with the Council.

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If defects are identified the Contractor must discuss these with the Council. The Council shall be advised of the implications for the tree, the options available and any work undertaken.

Brief written notes or verbal report may be required as set out in the instruction, but the Council shall be advised of all findings.

When the instruction is to check and make safe in the absence of the Council detailed notes shall be taken of the condition of the tree and the action taken.

Checking inspections are usually undertaken where the Council is unable to carry out an inspection at the time of survey e.g. around the base of a tree where basal suckers obscure the butt.

Remedial works associated with checking inspections are likely to be of a minor nature only.

### **2.12.2 Ground inspection**

Where a ground inspection is required, the Contractor shall arrange for a careful basic visual tree inspection by a competent person from ground level. The Contractor shall ensure that the competent person undertaking the inspection gives particular attention to the general health and condition of the tree, any evidence of decay, defects or weakness at the base and in the main forks, any evidence of poor anchorage and instability, and any other general observations concerning the tree and its environs which could affect the future of the tree and any adjacent structures and features.

On no account shall increment bores or other invasive diagnostic tools be used without the prior consent of the Council.

The Council need not be present at the time of inspection, but the date and time of the inspection shall be agreed with the Council to allow him to be present.

Written notes should be taken, a description of the problem, the implications for the tree, the options available and the work recommended must be given to the Council. Photographs and diagrams should be provided where appropriate.

If the tree is found to be unsafe or in need of urgent attention for any reason, the Contractor shall report the findings and any other relevant observations verbally to the Council immediately so that further action or instruction may be taken.

If the tree is found to be safe, sound, and healthy, this fact must be reported verbally to the Council.

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**2.12.3 Specification**

Tree inspections will generally be specified in the Order in the following way:

TREE INSPECTION/CLIMBING

TREE INSPECTION/GROUND

**2.13 PRUNING OF CLIPPED TREES, HEDGES, SHRUBS AND SCREENS**

The Contractor may be required to trim, clip, or cut trees, hedges, and screens to a formal shape.

The Contractor must employ at least one operative who understands the basic principles of trimming, clipping, and cutting trees and hedges to a formal shape and is competent in such work.

The Contractor may be required to prune shrubs. The Contractor must employ at least one operative who understands the basic principles of pruning shrubs and is competent in such pruning.

The trimming, clipping, and cutting trees and hedges to a formal shape and the pruning of shrubs must be carried out by a skilled operative who can achieve a neat, even, and workmanlike finish to the operation. Only hand tools and hand-held forms of cutters and trimmers shall be used for such operations. All hedge cutting operations shall be carried out in accordance with the appropriate safety guidance.

The details of pruning clipped hedges, trees, shrubs, and screens will generally be specified in the Order.



## 3 SCHEDULE C

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### 3.1 SPECIFICATION FOR SERVICES - SPECIFIC OPERATIONS - TREE PLANTING AND ESTABLISHMENT SERVICES

This Schedule specifies the specific standards, procedures, and measures to be adopted by the Contractor during the execution of Tree Planting and Establishment Services. Where reference is made to a British Standard or British legislation within any part of the Specification of Services or Contract the most recent publication will be assumed and it shall be deemed to include any relevant European or international equivalent.

**APPENDIX 5A Daily check list for planting operatives** - Check list for trees prior to acceptance of delivery to site and planting.

**APPENDIX 5B Planting specification graphic for use in the field**

**APPENDIX 5C Check list for trees prior to acceptance of delivery to site and planting**

The details below apply to Tree Planting and Establishment Services only.

### 3.2 GENERAL

These requirements deal with the supply, planting, and establishment of trees.

Supply incorporates the supply (including procurement), delivery and holding of the plants.

Planting includes primary and ancillary planting works.

Establishment (or aftercare) embraces post planting maintenance and watering of the newly planted material.

Most Orders placed, will be based on 'mini competitions' between Framework Suppliers. Some Orders placed will be based on a direct quote from a single Contractor. Some Orders placed will be based on the schedule of rates.

Works issued for pricing may include the following operations:

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### **a. 3.3 SUPPLY**

### **b. 3.4 PLANTING**

### **c. 3.5 ESTABLISHMENT**

The Contractor shall adopt a caring, and conscientious and positive attitude towards supply and planting to achieve high survival and first-time establishment rates. The post planting maintenance regime must be properly executed with the aim of achieving a 100% a survival and establishment rate.

All nursery stock must be produced, procured, handled, stored, planted, and maintained to comply with:

- **BS 3936-1, NURSERY STOCK SPECIFICATION FOR TREES AND SHRUBS**
- **BS4428 CODE OF PRACTICE FOR GENERAL LANDSCAPE OPERATIONS (EXCLUDING HARD SURFACES).**
- **BS8545 TREES: FROM NURSERY TO INDEPENDENCE IN THE LANDSCAPE – RECOMMENDATIONS CLAUSES 8,9,10 AND 11.**

The planting season will commence on the 1st November and cease on the 31st March annually. The delivery of plants will normally be required by November. All planting will be carried out during the planting season unless otherwise required by the Council. Any planting required outside the planting season will be arranged with the Contractor and the Council which may authorise any reasonable additional costs. The date upon which the planting works will commence will be by mutual agreement but the Council reserves the right to instruct the Contractor to delay planting if conditions are unacceptable or to commence works if the Contractor unduly delays commencement. The Council reserves the right to cancel a contract because of unacceptable delays.

The Contractor will co-operate fully with the Council to undertake planting ceremonies and similar operations as required.

Plants shall be identified using their botanical name only in relation to the ordering, supply, holding, planting and aftercare of trees. Clear labelling of plants must always be exercised until planting.

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### **3.3 SUPPLY**

#### **3.3.1 General**

The Order may require the Contractor to purchase the nursery stock. The Council may require the Contractor to visit one or more nurseries at any time of year to carry out an inspection. The Council may accompany the Contractor on these visits. The Contractor will be responsible for holding all of the plants prior to planting unless otherwise required by the Council.

The Council may purchase nursery stock itself prior to issuing the planting Order. The Contractor will be responsible for holding all the plants prior to planting unless otherwise required by the Council.

The Contractor will be responsible for the acquisition of all associated materials listed in the Order and required in this Specification of Service for the planting of the nursery stock in readiness for planting during the season.

If the Contractor experiences any difficulty in obtaining the required nursery stock or materials, they must contact the Council without delay so that agreement can be reached over any substitutions, amendments or omissions.

Good quality, well grown plants will be required. All plants must be true to type and free from all pests and disease, disorders and conform to **BS3936 PARTS 1 AND 4 AND BS8545 CLAUSE 8**.

#### **3.3.2 Delivery**

The tree stock is to be delivered to the Contractor's holding area by the supplier, arrangements for which are to be made between the Contractor and the supplier.

Where the Council has purchased the nursery stock its acceptance is a Council duty, so the Council must be present when it is unloaded from the delivery vehicle to check the number and quality of the trees; in this way unacceptable stock can be returned immediately and the order verified before handing the plants over to the Contractor .

Where the Contractor has purchased the nursery stock the Contractor must immediately examine the plants upon their receipt. Plants must not be accepted by the Contractor from his supplier, and the Council will not accept them if:

- a. They are not true to type as specified.

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- b. There is no clearly defined straight leader. (This does not apply to multi-stem and weeping trees.)
- c. There is not a balanced branching framework typical of the species.
- d. All lateral branches are not subordinate to the central leader and not evenly spaced along the central stem. (Ensure that lateral branch diameter does not exceed 50% of stem diameter at the point of branch attachment)
- e. There is not a clearly defined stem taper
- f. The ratio of height to stem diameter is not balanced.
- g. There are signs of incompatibility at graft and budding unions.
- h. There are crossing, co-dominant or included branches.
- i. They have major damage above or below ground.

**3.3.2.1 For bare root stock only**

There is not an evenly spaced lateral root system with a minimum of four major lateral roots.

There are not evenly distributed fibrous roots at a density commensurate with the species being planted.

The roots have not been fully protected during transport and show signs of desiccation.

**3.3.2.2 For root ball stock only**

The root ball is not intact (made-up root balls with trees that have not been transplanted during the production process should be rejected).

The root flare is not clearly visible at the top of the actual root ball. Any mounding of soil (which might or might not contain fine root) above the root flare should be removed. (The visibility of the root flare can be impeded by the hessian, wire or ropes used to wrap the root ball.)

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**3.3.2.3 For containerized trees**

There is inadequate root development. (Fibrous roots in containers should hold the compost ball together once the container is removed. If the compost ball falls apart the tree should be rejected)

Any minor damage incurred during transport should be rectified by pruning.

The Contractor shall resolve any discrepancies over plant numbers, sizes, species or condition with his supplier without delay and report such discrepancies to the Council.

**3.3.3 Holding area / healing in**

**3.3.3.1 Holding area / heeling in - bare root stock**

The holding area for bare rooted plants should be an area of either sand beds, or cultivated land with an adequate depth of topsoil to accommodate the temporary storage of tree roots. The land must be secure from vandals, thieves, rodents, pests and sheltered from the effects of inclement weather conditions. The area for holding trees must be acceptable to the Council.

All bare root plants must be heeled in without delay, and within 24 hours of delivery.

Before heeling into friable moist sand or soil all bundles are to be broken and packing material removed. The roots of dry stock are to be soaked in water for 30 minutes before heeling in.

The Contractor must heel in the plants in a pre-prepared trench of adequate size to protect the roots from desiccation and frost. The root systems must be carefully covered with friable soil and firmed to hold the trees stable, however, they should not be in too deep, as this may make lifting difficult, or damage the plant in the process. Trees must be able to withstand being in this situation for a few weeks, if necessary.

The trees should be regularly monitored to ensure they remain firm in the ground and in a good condition.

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### **3.3.3.2 *Holding area / heeling in - rootballed trees***

The rootballed trees will be delivered to the Contractor's holding area by the supplier, arrangements for which are to be made between the Contractor and the nursery.

The trees shall be kept in an area where the root ball is in constant shade and protected from wind. The root ball must remain moist; it shall be monitored for desiccation and watered if it becomes dry. In the 24 hours prior to planting the root ball shall be thoroughly wetted.

The trees shall be stored in an upright position and adequately supported.

### **3.3.3.3 *Holding area / heeling in - container grown trees***

Containerised trees will be delivered to the Contractors holding area by the supplier, arrangements for which are to be made between the Contractor and the supplier

The trees shall be kept in an area where the container is in constant shade and protected from wind. The container grown root must remain moist, it shall be monitored for desiccation and watered if it becomes dry. In the 24 hours prior to planting the container shall be thoroughly wetted.

The trees shall be stored in an upright position and adequately supported.

## **3.4 PLANTING**

### **3.4.1 Introduction**

In order to increase the success and establishment of newly planted trees, we continue to develop a comprehensive protocol incorporating good stock handling and husbandry, minor adjustment in planting specification, increasing the knowledge and understanding of our planting contractors as well as closer monitoring of planting operations.

The specification provided is very detailed and comprehensive but unless it is put into practice on the ground it has limited use beyond enforcing the standard. Well executed stock handling and general husbandry can make a significant difference to tree establishment – poor handling of a bare-root tree can result in trees dying at the point of planting. We recognise that the use of bare-root

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trees requires close attention to detail and is a skill that is not widely taught in the arboricultural industry, with this in mind, we work in collaboration with the planting contractors to share our experience and knowledge in handling trees of all types to prevent easily avoidable failures and improve overall establishment rates.

In addition to having a detailed specification we provide simplified interpretation including a daily checklist alongside a visual specification informative found in the appendix. This does not replace the specifications laid out below, it is designed to be used in the field and gives an edited version for those implementing the specification.

For large batches of tree planting, the first full day of planting will be spent alongside a Tree Officer as an opportunity to educate and to instil the desired methodology. We also require a WhatsApp group (or other such system) between the contractors and Tree Officers to make for easy daily communications. The Contractor is required to provide a weekly sheet of locations to be planted to be provided by the contractor along with a running list of completed trees.

### **3.4.2 General**

The planting positions and specifications shall have been supplied at the time of the Order.

The positions will be identified in the Order on a schedule with map. If the position is critical, a cross will be painted on the ground, by the Council, prior to planting. If the presence of a service, or some other factor, precludes planting in the position indicated, the Contractor should seek an alternative position within 2 metres avoiding planting directly in front of living room windows in order to prevent excessive shading. If a sensible adjustment cannot be made, or you require clarification or assistance, the Council should be consulted.

The Contractor shall assume underground services are present and will excavate with all care and attention to avoid damage, especially when excavating the tree pit and driving in the stake. The Contractor shall be responsible for identifying and avoiding any underground service, this may involve the use of detectors such as the Cable Avoiding Tool. If damage does occur, the fault shall be reported directly to the public utility. The Council will hold no liability for any such damage or repair. A report shall be made to the Council advising of the circumstances and the action taken.

Planting must be carried out only in suitable weather conditions. Planting may be delayed if unsuitable weather conditions occur and the Council reserves the right to instruct the Contractor to postpone planting if such conditions are considered incompatible with good planting practice. The Contractor

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may recommence planting as soon as weather conditions permit. For general guidance, weather conditions such as medium to heavy frosts, accumulations of snow, excessive wetness or extremely cold winds will be likely to delay planting.

Planting works will usually be programmed on a day to day basis. The Contractor must agree each days planting with the Council.

No extra payment will be made for removing unestablished trees where replacement planting is indicated in the Order.

Where planting in rows, avenue, or other formal style the Contractor will be responsible for the final lining up during actual planting to achieve a high degree of accuracy in the symmetry of the stakes required.

All planting procedures to comply with BS4428 and BS8545 Clause 10. Trees should be checked prior to planting in accordance with the check list set out in **TABLE 1 BS8545 (2014)** and reproduced at **APPENDIX 6A Daily check list for planting operatives.**

Combined planting specifications may be described in the Schedule of Works in the following way:

Planting specification A
Planting specification B
Planting specification C
Planting specification D
Planting specification E

Planting specification A is the planting of a tree, with a single stake, tied and mulched.

Planting specification B is the planting of a tree, with double stake and tied and mulched

Planting specification C is the planting of a tree, with a triple stake and tied and mulched



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Planting specification D is the planting of a tree, with four stakes, top & bottom rails forming a cage, tied and mulched

Planting specification E – is the planting of a tree without stakes and mulched

### **3.4.3 Lifting**

Lifting and planting operations are to be carried out in weather conditions conducive to successful establishment, as set out in **BS4428 AND BS8545 CLAUSE 9**.

Bare root trees taken from the holding ground are to be planted the same day.

- Plants must be lifted carefully, without damage to the roots of the tree being moved, or to those remaining in the trench.
- The roots shall always be protected from exposure to desiccation.
- As soon as the tree is lifted from the holding ground it must be placed in a watertight, co-extruded bag, large enough to cover all the root system, tied at the neck to prevent the roots drying out. It shall remain within the bag until the moment of planting out.
- Care shall be taken carrying the trees not to drop or mishandle them.

### **3.4.4 Loading**

The Contractor shall arrange for all the plants required for the day's planting to be lifted. All plants, materials, tools, and safety equipment shall be carefully loaded onto his transport and properly secured and protected.

The trees should be loaded onto the vehicle in reverse order to that in which they are to be planted for that day to minimise damage.

Plants should be packed into vehicles in such a way that the weight of plants does not damage other plants within the same load. They must be fully protected against desiccation and abrasion of roots, stems, and branches.

If an open, flat bed vehicle or trailer, is being used the trees must be laid flat, securely tied down and completely covered by sheeting.

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No part of the crown shall be exposed during transportation to avoid damage and desiccation. If the tops of the trees protrude beyond the vehicle, adequate health and safety measures shall be taken to safeguard the trees and road users.

Any damaged or diseased plants identified after delivery to site, or prior to planting, will be replaced by the Contractor at his own expense.

### **3.4.5 Tree care**

During the course of planting it will be necessary to remove bare root stock from the co-extruded bag in order to ascertain if the pit is large enough to accommodate the root system and to confirm the position of the stake in relation to the root system. The tree must be returned to the co-extruded bag and tied at the neck whilst the planting position is being prepared to prevent damage to the roots.

For rootballed trees, once on site the hessian, wire mesh or chain link encompassing the root ball shall be retained but the securing wire must be cut once in the planting hole and pulled back from the stem.

For containerised trees once on site the container encompassing the root ball shall be removed and the soil teased loose from the edge of the root ball to allow the roots to grow into the backfill material. The roots should be gently opened out to encourage them to grow towards the tree pit and surrounding soil, thereby promoting early establishment.

Before planting, any broken or damaged roots and branches are to be cut back to an appropriate point, any snags should be removed. Competing leading shoots and poorly placed shoots should be removed to an appropriate point. The Contractor may be required to prune back the crowns of certain tree species (e.g. Gleditsia and Robina) if required by the Council. Heavily coiled roots are to be eased from the root ball or cut. All pruning work will be implemented using sharp secateurs or hand tools.

Bare rooted trees' roots should be spread evenly in the planting pit.

All labels, string and tape shall be removed from the tree at the time of planting.

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### 3.4.6 Planting operations

#### 3.4.6.1 *Planting operations – The Pit*

The pit shall be square, measuring 1 metre wide and 1 metre long and only as deep as the root system of the tree.

Where space is limited, and a standard pit cannot be dug such as in a narrow verge, the pit should be made rectangular, 1 metre long and as wide as reasonably possible within the verge from the kerb edge to the footpath.

Where the rootball / container or root system exceeds 1 metre in overall width, the pit shall be dug at least 25% greater than the root spread of the tree to be planted.

The turf shall be cut cleanly from the top soil, chopped into small portions and returned, face down into the bottom of the pit. All soil excavated from the pit shall be stored neatly beside the pit, top soil should be kept separate from sub soil.

The soil of the sides and base of the pit shall be loosened to allow root penetration but not dug over – this is to avoid excessive settlement later on.

The top soil excavated should be broken up so that the largest face does not exceed 30 mm (i.e. would pass through a 30mm sieve) before being returned as the planting medium. All weeds and non-organic backfill material shall be removed from the top soil.

Once the pit has been excavated the tree shall be positioned in the centre in such a way to ensure the roots can spread adequately and the canopy turned to allow the most appropriate alignment of branches. The tree must stand upright and be aligned with others in the street, if appropriate.

#### 3.4.6.2 *Planting operations - Staking*

All softwood stakes are to be peeled, pointed, and treated. 2.4 metres long and with 50-75mm top diameter.

Staking should be carried out before the tree is positioned in the pit and the tree offered to the stakes and before returning the backfill. Where 2 or 3 stakes are employed these should be regularly spaced around the tree and of even height. For rootballed and containerized trees the stakes, either

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2 or 3 as specified, must be positioned outside the root ball. All stakes should be placed so they provide adequate support.

The stake(s) should be driven in such a way to avoid damage to the top of the stake. The stake(s) shall be secure in the ground, upright and in alignment with any others in the street. The tree may then be planted.

No part of a stake should damage the roots or abrade any part of the tree, the trunk shall be a minimum distance of 50mm from the stake, spacers may be used to prevent chaffing of the lower trunk.

### **Planting Specification A**

- Single stake 2.4m long, 50-75mm diameter should be driven into the ground to not damage tree roots and approximately 50mm from the stem
- The stake should be placed on the south-west side to meet the prevailing wind (
- The final height of stake(s) should be between 140cm and 160cm

### **Planting Specification B**

- Two stakes 2.4m long, 50-75mm diameter should be driven into the ground to not damage tree roots and approximately 500mm from the stem
- The two stakes should be in-line and parallel with the road if in a highway setting or if in a park or for open areas they should be in-line with the prevailing wind.
- The final height of stake(s) should be between 140cm and 160cm

### **Planting Specification C**

- Three stakes 2.4m long, 50-75mm diameter should be driven into the ground to not damage tree roots and approximately 500mm from the stem.
- The stakes should be arranged carefully with so that two stakes are supporting the tree on the prevailing wind side. See image.
- The final height of stake(s) should be between 140cm and 160cm

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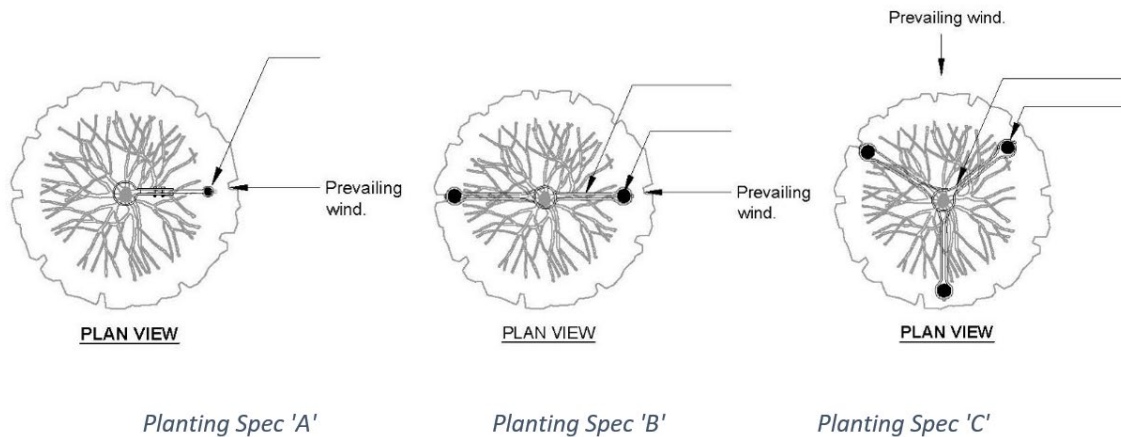


Figure 1 Planting Specifications

### 3.4.6.3 Planting operations – Backfill

Soil shall be returned to the pit, once sufficient has been replaced to lightly cover the roots, the tree should be shaken gently, taking care not to damage the roots, to allow the soil to mix with the roots and settle around the root plate.

The remaining soil should be returned in layers of 150-230mm and gently firmed into the pit with the heel to ensure contact with the roots. Firming in should be such as to ensure the roots will be held securely in the soil, compaction is to be avoided and water penetration is not restricted.

### 3.4.6.4 Planting operations – Tying and securing

For 'Planting Spec A' the tree should be secured to the stake using hessian tree tie, wrapped to form a spacer and then stapled.

- The tie must be fitted to hold the stem firmly, but not too tightly and to preclude any sideways movement of the tree around the stake.
- It should be positioned not more than 25mm from the top of the stake, to avoid abrasion.
- Hessian tree tie should be secured by driving 6no. staples for each strap/stake. Use 10-14mm, heavy duty galvanized staples

Where a tree is double staked using 'Planting Spec B' then the tree should be secured using two lengths of hessian tree tie, twisted to form loose spacers, pulled taught and then stapled to the stake.

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It should be secured by driving 6no. staples for each strap/stake. Use 10-14mm, heavy duty galvanized staples.

Where triple stakes are used 'Planting Spec C' then the tree should be secured using three lengths of hessian tree tie, twisted to form loose spacers, pulled taught and then stapled to the stake. It should be secured by driving 6no. staples for each strap/stake. Use 10-14mm, heavy duty galvanized staples.

Where four stakes are used 'Planting Spec D' then the tree should be secured using four lengths of hessian tree tie, twisted to form loose spacers, pulled taught and then stapled to the stake. It should be secured by driving 6no. staples for each strap/stake. Use 10-14mm, heavy duty galvanized staples.

### **Planting operations - Watering**

Within three days of planting the tree and before the mulch has been applied, the tree shall be watered thoroughly, using 8-10 litres of water per tree, applied to avoid run off. This is to ensure air pockets are washed out and soil and roots are in close contact, even though the ground may be wet at the time of planting this must still be implemented as the benefit will be reaped in drier conditions.

Ideally this operation is carried out immediately after planting and before the mulch is applied.

#### ***3.4.6.5 Planting operations - Mulch***

Mulches are beneficial and suppress weed growth. Well-rotted wood chip is the most common material used as mulch but other products may be allowed with the agreement of the Council.

Mulch should be laid to a depth of 75mm and to a 500mm radius around the tree to completely cover the backfilled tree pit.

Mulch should be spread evenly around the rootball and pulled back from the stem so it is not in contact with the trunk.

All weeds and grasses should be cleared from the area to be mulched before application.

#### ***3.4.5.6 Planting operations - Guards and cones***

Where a strimmer guard is specified in the Order an Arbortech® strimmer guard shall be fitted. The guard is to be placed around the stem on top of the mulch layer. These must be fitted correctly in accordance with the manufacturer's instructions.

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If the specification requires the use of a shield, an Arbortech® tree shield should be used. The shield must be installed in accordance with the manufacturer's instructions.

### ***3.4.5.7 Planting operations - Site appearance***

The site must be left clean, tidy, and safe. All excess soil and other materials shall be removed as work progresses and the ground raked or brushed to leave it clean and tidy.

All roads and footpaths shall immediately be cleared of mud or any debris resulting from the works.

No holes must be left open unattended during the day without appropriate health and safety warnings, no excavation shall be left open overnight.

Any arisings containing foreign matter, such as rubbish, foreign substances and elements, toxic concentrations, noxious perennial weeds, and roots, to be taken off site to a licensed tip.

## **3.5 ESTABLISHMENT**

### **3.5.1 General**

Aftercare includes post planting maintenance and watering.

The Order may require the Contractor to quote for the aftercare of trees for up to 3 years.

Alternatively, aftercare may be instructed using the schedule of rates and at short notice.

The Council shall be given at least two clear working days of the commencement of the programme for maintenance and watering, including details of the location, date, and approximate time of starting. The Council shall be given Notice at least two clear working days in advance of each maintenance, watering, and site visit.

The Contractor shall confirm in writing details of the work undertaken to the Council within 48 hours of completion of each maintenance or watering visit, stating all operations undertaken. Details should include the location of dead and dying trees. The Council is currently exploring alternative methods of providing more targeted watering and may ask the Contractor to upload digital photographs of each tree taken during each site visit, to the web.

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### **3.5.2 Post planting maintenance**

#### **3.5.2.1 General**

The Contractor may be instructed to visit all planted stock listed in the Order up to three times (May, August, and March) for each year specified in the Order to undertake post planting maintenance.

This operation can be combined with watering visits.

Trees which have died or have been vandalised or damaged beyond repair must be removed completely along with any associated materials such as stakes, ties, and irrigation pipes. It should not be assumed that defoliated trees, or those which fail to break into leaf, are dead. Utmost care should be taken to positively identify the crown of the tree is devoid of live buds, if in doubt refer to the Council. A written record of the planting position, reason for clearance and the date of removal shall be forwarded to the Council.

The planting materials which are not recoverable should be salvaged and disposed of by the Contractor. Those that can be re-used should be temporarily stored by the contractor and offered back to the Council for reuse.

#### **3.5.2.2 Reinstatement**

Where a reinstatement is temporary pending planting a replacement tree, or within a shrub bed or grass verge, the site shall be reinstated with evenly compacted, good quality topsoil, finished to match the surrounding soil level after firming. Where an area is to be reinstated with asphalt the hole shall be backfilled with soil which has been consolidated to 200mm below the surrounding surface level. Above this soil will be laid Type 1 granular material to within 30mm of the surrounding surface level, and then surfaced with a layer of fine, cold asphalt. The Contractor shall inform the Council on completion. The Contractor will be responsible for the supply and laying of all the above materials. Costs will be recoverable from the Council. Any permanent reinstatement will be carried out by the Council, later, at no expense to the Contractor.

All areas must be left safe, clean, and tidy after any type of reinstatement operation, unless specified otherwise.



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### **3.5.2.3 Stakes**

The general condition and soundness of each stake must be checked. Loose stakes must be firmed, and defective stakes replaced in the same position. Stakes shall be driven into the ground in such a way to avoid damage to the top of the stake.

The stake shall be secure in the ground, upright and in alignment with any others in the street. No part of the stake should abrade any part of the tree, spacers may be used to prevent chaffing of the lower trunk, which shall be a minimum distance of 50mm from the stake.

### **3.5.2.4 Ties and spacers**

The general condition and soundness of ties and spacers (including spacer blocks or cushions) must be checked. Defective ties and spacers shall be renewed where necessary. Ties must be adjusted to hold the tree stem firmly, but not tightly. It will usually be necessary to renew the tie if it requires adjustment, but the spacer may be re-used if its condition is satisfactory.

The appropriate number, and correct size and type of tie and spacer must be used to suit the size and condition of each tree and staking method. Please contact the Council prior to determine any preference e.g hessian strapping or rubber ties.

### **3.5.2.5 Mulch**

Mulches are beneficial and suppress weed growth. During watering, the Contractor will check the mulch around the base of each tree. Mulch should be maintained to a depth of 75mm and to a radius of 500mm around the trunk. Where the mulch does not meet this specification additional mulching to bring those trees identified up to the required specification should be undertaken. Well-rotted wood chip is the most common material used as mulch, but other products may be allowed with the agreement of the Council.

### **3.5.2.6 Guards and cones**

The general condition of wire guards should be checked and those which are defective, or so badly deformed that they no longer afford the tree adequate protection, must be repaired (i.e. straightened and refitted), or replaced. If the tree could be damaged by the guard, it should be adjusted, or removed, whichever is most appropriate.

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Basal cones should be checked to ensure they are in working order, if they are damaged or defective, they should be re-fitted or replaced, as appropriate. Where guards or cones are removed and re-fitted, they must be placed the same way as originally fitted. Any accumulation of litter or other debris should be cleared from within the guard.

### **3.5.2.7 Pruning**

Pruning of the crown must be kept to a minimum. Dead or broken branches should be removed, any branches which will conflict with pedestrians or vehicles should be reduced to allow their free passage and all basal growth cleared. The Council should be informed if the Contractor considers formative pruning is required. Any formative pruning work will be instructed separately. All pruning work and tree surgery must be done using secateurs or hand tools, to a correct pruning point and in accordance with **BS 3998 RECOMMENDATIONS FOR TREE WORK** as current.

Formative pruning is intended to encourage the development of a balanced and well-formed crown. It should include, where appropriate, the removal of any shoots competing with the leader and poorly placed branches. Corrective pruning and surgery to remove snags, dead and diseased limbs, and crossing branches should be implemented. Formative pruning may include the removal of branches with narrow angled forks, the thinning of over-crowded shoots, the removal of reverted branches on cultivars and varieties of common trees, the repair of wounds, the raising of low crowns and the removal of branches to clear road signs. Any suckers at the base of the tree should be cleared and any epicormic shoots on the stem should be rubbed off to reduce future growths. Consideration must be exercised when pruning trees with a fastigate or weeping habit, and species which do not naturally develop a single leading shoot. In these cases, feathered stems (as found on the young trunks of fastigate trees) and the retention of several leading shoots may be acceptable. Where trees have developed dense or heavy crowns which place excessive strain on the stem or its supporting tie(s) and stake(s), it may be prudent to reduce excessive weight by carefully thinning the crown.

### **3.5.2.8 Watering**

#### **3.5.2.8.1 Watering regime**

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The specific watering regime will be specified in the Order or instructed based on the schedule of rates.

Any specific watering regime will be loosely based on the following indicative plan and subject to available funds:

- Year 1 - 16 visits from May – September
- Year 2 - 1 in May and September and fortnightly June, July, August (8 visits)
- Year 3 - 1 in June, 2 in July, 1 in August (4 visits)

### 3.5.2.8.2 Watering methodology

A transplanted tree's reduced root system limits its ability to get water from as wide an area as before. Generally, trees need to be watered regularly from April to October. During the spring, when the ground first dries out to a depth of 5cm, watering should commence. The preferred routine is to give a thorough soaking every two weeks (or weekly during drought). Often, summer showers that seem heavy do not penetrate more than 5cm of soil and do little to help the tree establish. Therefore, fortnightly watering should be a regular routine regardless of summer rainfall.

To trees fitted with an irrigation bag (capacity of between 50-75 litres). The following watering methodology will be followed for all trees:

- Wash through the centre of the gator bag (the space between the bag and tree)
- Wash around the base of the gator bag.
- Fill gator bag to ¼ capacity
- After bag is ¼ full gently lift on the black straps at the top of the bag. (Failure to lift straps may alter drip time).
- Resume filling until the amount of water indicated in Table 1 has been delivered. The amount of water to be delivered varies according to tree size.
- For those trees with a stem girth 20/25 cm 100 litres should be delivered at each visit. 50 litres to fill the gator bag and the remaining 50 litres will be delivered to the surface of the

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pit area, so that it soaks into the area of the root ball. Care will be taken to ensure that water does not run off the surface, taking it away from the tree. If necessary, build baffles at the edge of the pit area, to retain the water as it is applied.

To trees without irrigation bags or with irrigation pipes. Water shall reach the root system by percolating through the soil structure. It should be applied either through the water pipe which must be cleared of debris which may impede the flow of water or the water should be showered over the surface at the base of the tree. The application of water is to be at a pace which avoids run off and ensures the root zone is soaked on each occasion. Where the soil conditions are hard lightly breaking the crust with a fork to aid water penetration is permissible. The amount of water to be delivered varies according to tree size and is shown in Table 4.

*Table 5 A guide for the amount of water to be delivered at each watering*

Stem girth (cm)	Height (m)	Water (litres)
8/10	- 2.5m	35
10/12	- 2.5m	50
12/14	2.5-3.0	50
14/16	2.5-3.0	50
16/18	3.0 - 3.5	50
20/25	4.0 - 4.5	100

### 3.5.2.8.3 What to do in periods of drought or exceptionally wet weather

The above watering rates consider a typical English summer, so, if we experience an abnormal summer, either wetter or drier than normal, apply the following rules at sub-sections 3.5.2.8.3.1 and 3.5.2.8.3.2

#### 3.5.2.8.3.1 *Wet Weather*

Do NOT water if the ground around the root ball if it is sodden, delay watering for one week and re-assess. If water is puddled on top of the root ball or pit area then gently use a fork to create holes around the edge of the tree pit, not too close to the root ball, to increase drainage and to stop the soil becoming anaerobic. Remove any water that does not drain away significantly from the surface of the root ball with a bucket.

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### **3.5.2.8.3.2 *Dry Weather***

Before watering use a fork to create holes around the edge of the tree pit, not too close to the root ball, to increase permeation of water. Additional weekly visits may be instructed separately by the Council.

### **3.5.2.9 *Mulch***

Mulches are beneficial and suppress weed growth. During watering, the Contractor will check the mulch around the base of each tree. Mulch should be maintained to a depth of 75mm and to a radius around the tree set out in table 1 above. Where the mulch does not meet this specification additional mulching to bring those trees identified up to the required specification should be undertaken. Well-rotted wood chip is the most common material used as mulch, but other products may be allowed with the agreement of the Council.

### **3.5.2.10 *Dead and dying trees***

The Contractor shall report to the Instructing Officer any dead or dying tree on the schedule to be watered, or other condition of concern prior to the end of each visit or as soon as practicable before this date.

### **3.5.2.11 *Communication***

The Contractor will inform the Instructing Officer the date of watering each location for each visit, 1 week prior to the commencement of each visit.

## **3.6 ESTABLISHMENT, POST PLANTING MANAGEMENT & DEFECTS LIABILITY PERIOD**

At the time of ordering a tree planting mini competition, The Council may include Post Planting Management (PPM) which is a combined operation encompassing 18 months of establishment works including but not limited to watering, weeding, mulching and pruning - full details of the specification are listed below.

As part of the PPM, the contractor also enters into a Defects Liability Period for the life of the contract where the contractor shall be held responsible for any defects arising through workmanship

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or materials not in accordance with this specification. Full details of the Defects Liability Period are listed below.

### **3.6.1 PPM Specification**

All planted trees shall be tended for 18 months from the date of practical completion, which shall be deemed as the 31st March after completion of planting. Maintenance during the course of the contract (including the Defects liability period) shall include the Watering, Stake & Tie maintenance, Weed Clearance, Mulching, the control of insects and/or diseases, Soil/Compost level checks, Pruning and any horticultural operations necessary for the successful growth of the trees. The Contractor must ensure that all elements of young tree maintenance listed above are carried out according to and that the standards must conform to those laid out in section 5 Establishment for the duration of the contract.

### **3.6.2 Frequency of maintenance visits**

It is up to the Contractor to react to growing conditions and how the tree stock is establishing in order to ensure all trees conform to the standards laid out in section 'Establishment' for the duration of the contract. Some growing seasons may require more visits than others however as a minimum it is expected that each tree will receive 14 visits for each growing season. At least 12 of these visits will occur during the active growing season April – September and a minimum of 2 in the Autumn/Winter period.

Note, the success of the PPM contract will not be measured by the frequency of visits, it will be the maintenance of standards for the duration of the contract and the quality of tree establishment at the end of the Defect Liability Period.

### **3.6.3 Costs**

Contractor is liable for all reasonable costs incurred in performing the PPM program including additional materials required to ensure the standards are always met e.g. replacement stakes, ties, top soil etc. The only exception to this is where costs to repair damage caused by vandalism or accidental damage by members of the public which shall be covered by the Council. In these cases, damage must be reported as detailed in section Dead & Dying Trees and works agreed by the Instructing Officer. Itemised invoices will then need to be supplied to the Council showing the additional cost breakdown.

### **3.6.4 Replacement of Failures**

The Contractor, who will replace all failures with replacement stock of the same size and species as that originally specified, unless otherwise agreed by the Instructing Officer shall ensure 100% stocking with live plants at the end of the first season. Replacement of all failures and all missing and

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defective planting stock shall be at the Contractor's own expense and shall be completed during the period November to February following the Defects Liability Period.

A "failure" is defined as any planted tree or shrub which at the end of the defects liability period the branch crown framework is not showing clearly discernible, live, healthy buds arising from the branch crown framework, if it is displaying 50% or greater dead material and/or the pruning dead material would clearly leave the trees form further compromised and badly misshapen by dieback unless otherwise agreed by the Instructing Officer.

Vandalism: In the case of deliberate vandalism to planted trees, it will not be the responsibility of the contractor to replace these failures unless terms are agreed. In such cases replacement planted trees must be maintained for the contracted period.

### **3.6.5 Defects Liability Period**

The Defects liability period shall commence from the day on which the whole of the planting contract is accepted as completed. The period shall run for 18 months from the date of acceptance. Should the contractor fail to maintain sites as specified in sections Establishment to the satisfaction of the Instructing Officer. The cost of such maintenance as determined by the Instructing Officer at his sole discretion shall be borne by the contractor.

The contractor at his own expense shall replace trees suffering from damage during the period of the contract, unless otherwise stated by the Instructing Officer.

The Defects Liability Period for replacement trees is reset to the date of replanting.

During the 18-month maintenance period, the contractor shall be held responsible for any defects arising through workmanship or materials not in accordance with this specification.

The Instructing Officer will request a site inspection and full report of the projects with the Contractor upon completion of the planting work.

85% of the Contract Value shall be paid for work completed to the satisfaction of the Engineer on submission of the Contractor's invoice(s)

### **3.6.6 Retention**

Retention of 15% of the value of the Contract executed shall be made during the Defects Liability Period. The cost of replacing trees and shrubs that have died during the Defects Liability Period shall

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be deducted from the retention and the maintenance sum owing and the remainder shall be paid to the Contractor at the end of this period.

A letter of completion will be issued to the Contractor one month prior to the end of the Defects Liability Period if replacement of all missing, defective or dead planting stock has been done to his satisfaction, in which case the remaining retention of 15% will be paid.



## 4 APPENDICIES

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**CAMBRIDGE CITY COUNCIL FRAMEWORK AGREEMENT FOR ARBORICULTURAL SERVICES -  
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**APPENDIX 1 TRAFFIC SENSITIVE STREETS**

THESE ROADS ARE SUBJECT TO WORKING HOURS RESTRICTIONS

Work permitted between 09.30 and 15.30 ONLY

<b>Location</b>	<b>Ward</b>	<b>Road #</b>
Babraham Road	Queen Edith's	A1307
Barnwell Road	Abbey	A1134
Barnwell Road	Romsey	A1134
Barton Road	Newnham	A603
Bridge Street	Market	C290
Brookfields (C280)	Romsey	C280
Brooklands Avenue	Trumpington	C281
Brooks Road (A1134)	Romsey	A1134
Cambridge Road	Trumpington	A10
Cambridge Western Bypass M11(T) - N/Bound	Newnham	M11
Cambridge Western Bypass M11(T) - N/Bound	Trumpington	M11
Cambridge Western Bypass M11(T) - N/Bound	Castle	M11
Cambridge Western Bypass M11(T) - S/Bound	Newnham	M11
Cambridge Western Bypass M11(T) - S/Bound	Castle	M11
Cambridge Western Bypass M11(T) - S/Bound	Trumpington	M11
Cambridge Western Bypass Northbound M11 Off Slip J12	Newnham	M11
Cambridge Western Bypass Northbound M11 On Slip J11	Trumpington	M11
Cambridge Western Bypass Northbound Off Slip J11	Trumpington	M11
Cambridge Western Bypass Southbound M11 On Slip From A603	Newnham	M11
Cambridge Western Bypass Southbound Off Slip J11	Trumpington	M11

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Cambridge Western Bypass Southbound On Slip J11	Trumpington	M11
Castle Street	Castle	A1134
Castle Street (C290)	Castle	C290
Cherry Hinton Road	Cherry Hinton	C235
Cherry Hinton Road (C235)	Coleridge	C235
Chesterton Lane	Castle	A1303
Chesterton Road	Castle	A1304
Chesterton Road (A1134)	West Chesterton	A1134
Chesterton Road (A1303)	West Chesterton	A1303
Coldhams Lane	Petersfield	C298
Coldhams Lane	Abbey	
Coldhams Lane	Cherry Hinton	
Coldhams Lane (A1134)	Romsey	A1134
Coldhams Lane (C298)	Romsey	C298
Coldhams Lane (Unclass)	Romsey	
Drummer Street	Market	
Drummer Street (C280)	Market	C280
East Road (Dual Carriageway)	Petersfield	A603
East Road (Single Carriageway)	Petersfield	A603
Elizabeth Way	Market	A1134
Elizabeth Way	West Chesterton	A1134
Elizabeth Way (Dual Section)	West Chesterton	A1134
Emmanuel Street	Market	C280

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Fendon Road	Queen Edith's	A1307
Gonville Place	Petersfield	A603
Hauxton Road	Trumpington	A1309
Hauxton Road (A10)	Trumpington	A10
Hauxton Road Single Carriageway Section	Trumpington	A1309
High Street	Trumpington	A1309
High Street (C233)	Cherry Hinton	C233
Hills Road	Queen Edith's	A1307
Hills Road	Petersfield	A1307
Hills Road	Coleridge	A1307
Hills Road	Trumpington	A1307
Histon Road	Arbury	B1049
Histon Road	Castle	B1049
Huntingdon Road (Single Carriageway North Of Storeys Way)	Castle	A1307
Huntingdon Road (Single Carriageway South Section)	Castle	A1307
Huntingdon Road (Storeys Way Dual Section)	Castle	A1307
Kings Parade	Market	
Lensfield Road	Trumpington	A603
Long Road	Trumpington	A1134
Madingley Road	Castle	A1303
Madingley Road (Dual Section)	Castle	A1303
Madingley Road (Single Carriageway West Of Dual Section)	Castle	A1303
Magdalene Street	Castle	C290

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Maids Causeway	Market	C291
Market Hill	Market	
Market Street	Market	
Mill Road	Petersfield	C280
Mill Road	Romsey	
Mill Road (C280)	Romsey	C280
Milton Road	East Chesterton	A1309
Milton Road (A1134)	West Chesterton	A1134
Milton Road (A1309)	West Chesterton	A1309
Milton Road (Dual Section)	East Chesterton	A1309
Mowbray Road	Queen Edith's	A1134
Newmarket Road	Petersfield	A1134
Newmarket Road	Abbey	A1134
Newmarket Road (A1134)	Abbey	A1134
Newmarket Road (A1303)	Abbey	A1303
Newnham Road	Newnham	A1134
Newnham Road (A603)	Newnham	A603
Northampton Street	Castle	A1303
Parker Street	Market	C280
Parkside (C280)	Market	C280
Perne Road	Coleridge	
Perne Road	Romsey	A1134
Perne Road (A1134)	Coleridge	A1134

**CAMBRIDGE CITY COUNCIL FRAMEWORK AGREEMENT FOR ARBORICULTURAL SERVICES -  
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Queen Edith's Way	Cherry Hinton	C233
Queen Edith's Way (C233)	Queen Edith's	C233
Queen Edith's Way	Queen Edith's	A1134
Queen's Road	Newnham	A1134
Regent Street	Market	C290
Shelford Road	Trumpington	A1301
Sidney Street	Market	C290
Silver Street	Market	C294
Silver Street	Newnham	C294
St Andrew's Street	Market	C290
St Mary's Street	Market	
Station Road	Petersfield	
Station Road (B1045)	Petersfield	B1045
The Fen Causeway	Newnham	A1134
The Fen Causeway	Trumpington	A1134
Trumpington Road	Trumpington	A1134
Trumpington Road (A603)	Trumpington	A603
Trumpington Street	Market	
Trumpington Street (C294)	Market	C294
Trumpington Street (C296)	Market	C296
Victoria Avenue	Market	C292
Victoria Avenue	West Chesterton	C292
Victoria Road	West Chesterton	A1134

**CAMBRIDGE CITY COUNCIL FRAMEWORK AGREEMENT FOR ARBORICULTURAL SERVICES -  
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Victoria Road	Castle	A1134
Victoria Street	Market	

Table 6 Traffic sensitive streets

**CAMBRIDGE CITY COUNCIL FRAMEWORK AGREEMENT FOR ARBORICULTURAL SERVICES -  
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**APPENDIX 2 MODEL QUOTATION & INVOICES**

- Model Document – Retrospective Quotation for reactive works
- Model Document – Quotation for planned works
- Model Document – Invoice



**CAMBRIDGE CITY COUNCIL FRAMEWORK AGREEMENT FOR ARBORICULTURAL SERVICES -  
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**Model Document – Retrospective Quotation for reactive works <sup>1</sup>**

Joe Bloggs<sup>ii</sup>  
Tree Surgeon Ltd<sup>iii</sup>  
100 Somewhere St<sup>iv</sup>

Robert Murison  
Mill Road Depot  
Cambridge City Council

10<sup>th</sup> May 2017<sup>v</sup>

CCC/9765 R<sup>vi</sup>

Following the completion of unplanned reactive works on behalf of Cambridge City Council, please find our itemised retrospective quote which has been based on the agreed schedule of rates within the Framework Agreement:

Call out location & service supplied <sup>vi</sup>	Instructing Officer: <sup>viii</sup>	Date of instruction <sup>ix</sup>	Hourly / Daily rate <sup>x</sup>	Cost <sup>xi</sup>
Sheeps green – fallen willow Two man crew for 1 day	Rob Murison	11 / 5 / 17	£500 p/day	£500
East Rd – branch clear up Two man crew for 2 hrs	Kenny McGregor	11 / 5 / 17	£55 p/hr	£55
Total				£550
VAT				£110
Grand total				<b>£660</b>

Kind regards,

Joe Bloggs

Contracts Manager – Tree Surgeon Ltd

<sup>1</sup> This is the minimum, mandatory information required on all retrospective quotations submitted within three days of the priority works being completed. Please note the design / format of this document is for illustration purposes only and can be altered to suit your individual company.

All quotations must include the following:

- <sup>i</sup> The name of contract manager who prepared the quote
- <sup>ii</sup> The name of the company
- <sup>iv</sup> The company address
- <sup>v</sup> The date of the quotation
- <sup>vi</sup> the contractors unique quote reference number / code
- <sup>vi</sup> Location / description of each call out and the service supplied e.g. 2 man team for 2 hours
- <sup>viii</sup> Instructing officer who ordered the priority works
- <sup>ix</sup> Date for each individual instruction
- <sup>x</sup> Rate as agreed within schedule of rates
- <sup>xi</sup> A cost for each individual call out

Figure 2 Model document – retrospective quotation for works

**CAMBRIDGE CITY COUNCIL FRAMEWORK AGREEMENT FOR ARBORICULTURAL SERVICES -  
SPECIFICATIONS**

**Model Document – Quotation for planned works <sup>i</sup>**

Joe Bloggs<sup>ii</sup>  
Tree Surgeon Ltd<sup>iii</sup>  
100 Somewhere St<sup>iv</sup>

Robert Murison  
Mill Road Depot  
Cambridge City Council

10<sup>th</sup> May 2017<sup>v</sup>

CCC/9765<sup>vi</sup>

Thank you for giving us the opportunity to bid for works under the Cambridge City Council tree works framework, please find our quote for the following works:

<b>Reference Number(s) &amp; Schedule Name(s):</b> <sup>vii</sup>	1050 LWO Cherry Hinton Hall Planting
<b>Instructing Officer:</b> <sup>viii</sup>	Rob Murison

The inclusive price for the completion of the above schedule is: **£500 + VAT**<sup>ix</sup>

This price remains valid for a period of 90 days from the date of this quotation.<sup>x</sup>

If you wish to instruct us, please refer to our quotation code in your document. Following instruction we will be able to program in the works within 2 weeks and be completed by the date shown on the Request to quote notification.<sup>xi</sup>

Kind regards,

Joe Bloggs,

Contracts Manager – Tree Surgeon Ltd

<sup>i</sup> This is the minimum, mandatory information required on all quotations submitted for planned tree maintenance under the framework. Please note the design / format of this document is for illustration purposes only and can be altered to suit your individual company.

All quotations must include the following:

- <sup>ii</sup> The name of contract manager who prepared the quote
- <sup>iii</sup> The name of the company
- <sup>iv</sup> The companies address
- <sup>v</sup> The date of the quotation
- <sup>vi</sup> the contractors unique quote reference number / code
- <sup>vii</sup> The unique Schedule reference number and schedule name exactly as shown on Request to Quote (RTQ) email
- <sup>viii</sup> Instructing officer as shown on RTQ email
- <sup>ix</sup> The inclusive price for completing the schedule and the VAT status
- <sup>x</sup> The length of time the quotation will remain valid for along with any terms and conditions specific to your company
- <sup>xi</sup> Time scales and confirmation that you are able to meet the deadline set on the RTQ

Figure 3 Model document – quotation for planned works

**CAMBRIDGE CITY COUNCIL FRAMEWORK AGREEMENT FOR ARBORICULTURAL SERVICES -  
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**Model Document – Invoice <sup>i</sup>**

Joe Bloggs<sup>ii</sup>  
Tree Surgeon Ltd<sup>iii</sup>  
100 Somewhere St<sup>iv</sup>

Robert Murison  
Mill Road Depot  
Cambridge City Council

10<sup>th</sup> May 2017<sup>v</sup>

Invoice number: CCC/9765<sup>vi</sup>

Reference Number(s) & Schedule Name(s): <sup>vii</sup>	Instructing Officer: <sup>viii</sup>	Purchase Order Number <sup>ix</sup>	Cost <sup>x</sup>
1050 LWO Cherry Hinton Hall Planting	Rob Murison	137859	£500
Total			£500
VAT			£100
Grand total			£600

**Payment Details<sup>xi</sup>**

Thank you for your business, I refer you to our payment terms and conditions below.<sup>xii</sup>

Kind regards,

Joe Bloggs,

Contracts Manager – Tree Surgeon Ltd

<sup>i</sup> This is the minimum, mandatory information required on all invoices submitted. Please note the design / format of this document is for illustration purposes only and can be altered to suit your individual company.

All invoices must include the following:

- <sup>ii</sup> The name of contract manager who prepared the quote
- <sup>iii</sup> The name of the company
- <sup>iv</sup> The companies address
- <sup>v</sup> The date of the quotation
- <sup>vi</sup> the contractors unique quote reference number / code
- <sup>vii</sup> The unique Schedule reference number and schedule name exactly as shown on Request to Quote (RTQ) & Work Instruction email. In the case of reactive works, please use the corresponding retrospective quotation reference number and a description of the works
- <sup>viii</sup> Instructing officer as shown on RTQ email / who instructed the work verbally
- <sup>ix</sup> The Purchase order number which is sent to you following a work instruction / after a retrospective quote has been agreed
- <sup>x</sup> A cost for each individual schedule as shown on purchase order
- <sup>xi</sup> Provide your preferred method of payment, typically BACS including: bank name, account number, sort code
- <sup>xii</sup> Your company's terms and conditions with regard to payment

Figure 4 Model documet - invoice

**CAMBRIDGE CITY COUNCIL FRAMEWORK AGREEMENT FOR ARBORICULTURAL SERVICES -  
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**APPENDIX 3 KEY TO ABBREVIATIONS  
THAT MAY BE USED IN THE SCHEDULE OF  
WORKS**

**Tasks**

C/L	–	crown lift
C/R	–	crown reduce
C/T	–	crown thin
C/O	–	clean out
W/T	–	wound treatment
T/I	–	tree inspection
REM	–	remove
CPS	–	combined proactive specification
SM	–	standard maintenance
YTM	–	young tree maintenance

**Site**

o/s	–	outside
s/o	–	side of
r/o	–	rear of
adj	–	adjacent
f/g	–	front garden
r/g	–	rear garden

s/g	–	side of house
opp	–	opposite
lhs	–	left hand side
rhs	–	right hand side
lp	–	lamp post number
BT	–	telephone pole number
agl	–	above ground level

**Schedule key:**

TMP	–	tree maintenance programme
PMP	–	parks maintenance programme
SRA	–	subsidence risk abatement
URG	–	urgent works
PJT	–	project works
PLA	–	planting programme

**CAMBRIDGE CITY COUNCIL FRAMEWORK AGREEMENT FOR ARBORICULTURAL SERVICES -  
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**APPENDIX 4 COMBINED OPERATION SCHEMATICS**

- 4a Standard maintenance
- 4b Young tree maintenance
- 4c Combined proactive specification
- 4d Remove tree.....combined operations

**CAMBRIDGE CITY COUNCIL FRAMEWORK AGREEMENT FOR ARBORICULTURAL SERVICES -  
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**Appendix 4A Standard Maintenance**



# Standard maintenance - specification

The following maintenance will apply to all trees NOT classed as young i.e. still reliant on their supporting stake(s)

SEPTEMBER 2020 update



**Epicormics** - remove to 1st true branch  
**Crown clean** - Remove deadwood (25mm diameter or 100mm in length and greater), remove stubs & broken branches  
**Remove debris** - Anything that may restrict growth, rope & bike locks etc..



**Crown reduce / thin/ lift to clear cables** - lift, thin and/or reduce to ensure 0.5m clearance all around cable run through tree. **Do not remove** significant branches or leader to achieve full clearance.



**Crown reduce / lift to clear street lamp** - lift, and/or reduce to ensure minimum 0.5m clearance all around lamp head.



**Crown reduce / lift to clear buildings** - lift and/or reduce to ensure 2m clearance vertically and laterally from tree to adjacent structures.



**Crown lift all round** - Crown lift all round including over grass areas and overhanging gardens to a minimum of 3m. If appropriate, remove branches back to stem to achieve clearance. For smaller trees, (typically less than 8m) or where a 3m lift would greatly affect the structure of the tree, lift to 1/3rd of the height or 2.4m which ever is greater.



**Clear sight lines** - Crown lift, and/or reduce to ensure 0.5m clearance from traffic signs, signals and speed cameras. Ensure the sight line from 60m in the direction of viewing is clear.



**Crown lift over the highway** - crown lift to between 3.5 - 4.5 metres over the highway, aiming to get the maximum clearance appropriate for the tree.



For 'A' class roads\* crown lift to 5 metres.



Where appropriate, remove entire branches back to the stem or parent branch to extend the 'life of the lift'.



\* Refer to Appendix 1 Schedule A General Requirements for road classifications



Figure 5 Standard maintenance

Appendix 4B Young Tree Maintenance



# Young Tree Maintenance

July 2019 update

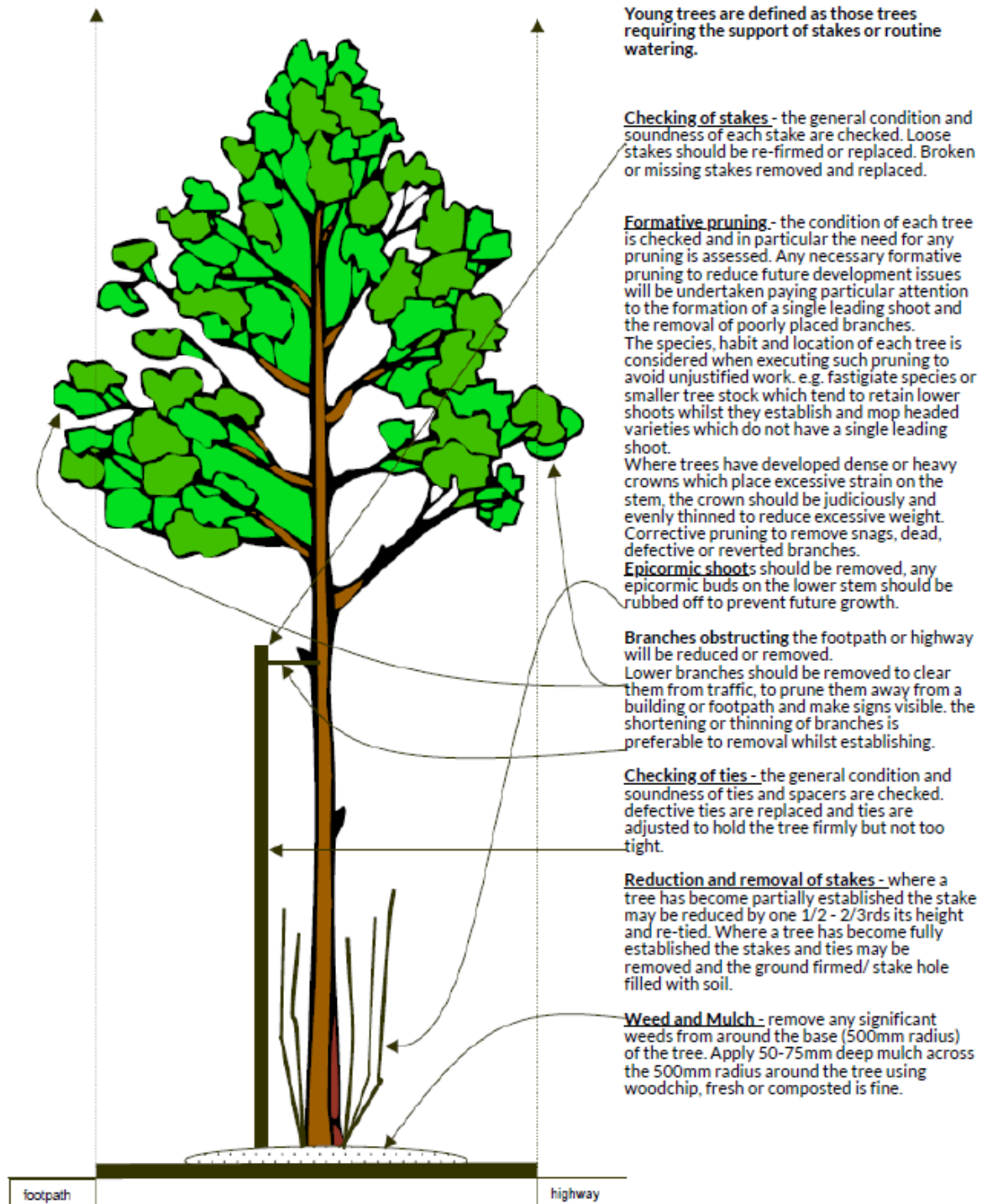


Figure 6 Young tree maintenance

## **CAMBRIDGE CITY COUNCIL FRAMEWORK AGREEMENT FOR ARBORICULTURAL SERVICES - SPECIFICATIONS**

### **Appendix 4C Combined Proactive Specification (CPS) – Sept 2020**

Trees growing on Highway and communal Housing land are currently managed on a ward-by-ward basis, on a 3 year proactive cycle known as the 'Tree Maintenance Programme' or 'TMP'.

In order to simplify issuing works issued under the TMP, a combined specification has been created, the 'Combined Proactive Specification' 'CPS'.


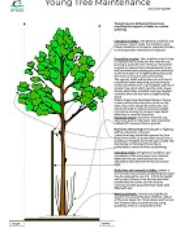

The specification combines a number of different operations, defined in the **FRAMEWORK AGREEMENT FOR ARBORICULTURAL SERVICES** , into a single combined specification.

Individual operations listed in the combined specification will only apply in specific circumstances. For each tree the Contractor should apply the appropriate operation listed in the cascade table below. When determining the appropriate operation to be applied the Contractor should start at the top of the table and work down through the list to determine whether the tree falls into the appropriate situation. The operations/ situations are list ed Table 6



**CAMBRIDGE CITY COUNCIL FRAMEWORK AGREEMENT FOR ARBORICULTURAL SERVICES -  
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**Table 7** CPS Cascade table

Operation	Situation where the operation is to be applied	Thumbnail
Tree inspection - ground	Undertake a basic inspection from the ground to check for major defects or limitations to work. If the defects or limitations are of type or extent which would require a change to the order, work should stop and the Inspecting Officer notified	n/a
Remove tree for replant	To all young tree on a stake that are dead	
Young Tree Maintenance	To all young trees on a stake	
Standard Maintenance	To all trees not on a stake	



APPENDIX 4d REMOVE tree....operations

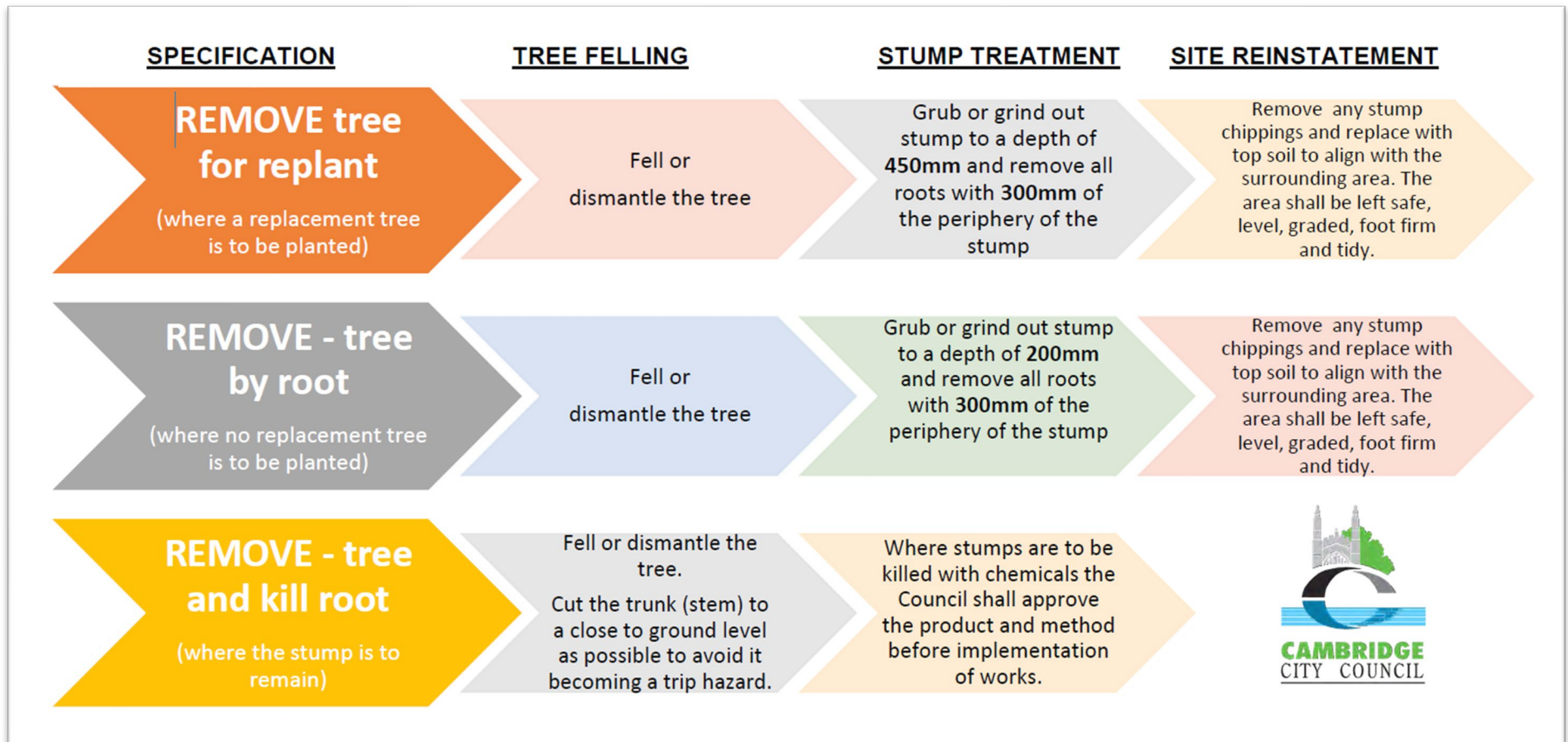


Figure 7 Remove tree combined operations

**APPENDIX 5 PLANTING APPENDICES**

- APPENDIX 5A Check list for trees prior to acceptance of delivery to site and planting
- APPENDIX 5B Planting specification graphic for use in the field
- APPENDIX 5C Daily check list for planting operatives

CAMBRIDGE CITY COUNCIL FRAMEWORK AGREEMENT FOR ARBORICULTURAL SERVICES -  
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**APPENDIX 5a Check list for trees prior to acceptance of delivery to site and planting**

*Table 8 Check list for trees prior to acceptance of delivery to site and planting*

The tree	Points to check
Above ground	<p>Check that the tree is true to type as specified.</p> <p>Check that there is a clearly defined straight leader. (This does not apply to multi-stem and weeping trees.)</p> <p>Check that there is a balanced branching framework typical of the species. Check that all lateral branches are subordinate to the central leader and evenly spaced along the central stem. Ensure that lateral branch diameter does not exceed 50% of stem diameter at the point of branch attachment.</p> <p>Check that there is a clearly defined stem taper.</p> <p>Check that the ratio of height to stem diameter is balanced. Inspect for signs of incompatibility at graft and budding unions. Check that there is no crossing, co-dominant or included branches.</p> <p>Any minor damage incurred during transport should be rectified by pruning.</p>
Below ground - Bare root	<p>Check that there is an evenly spaced lateral root system with a minimum of four major lateral roots.</p> <p>Check that there are evenly distributed fibrous roots at a density commensurate with the species being planted.</p> <p>Check that roots have been fully protected during transport and storage and do not show any signs of desiccation.</p> <p>Any minor damage incurred during transport should be rectified by pruning. Make sure the root system is fully protected until the tree is actually planted.</p>

CAMBRIDGE CITY COUNCIL FRAMEWORK AGREEMENT FOR ARBORICULTURAL SERVICES -  
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- Rootball	<p>Check that the root ball is intact (made-up root balls with trees that have not been transplanted during the production process should have been rejected on delivery from the nursery).</p> <p>Check that the root flare is clearly visible at the top of the actual root ball. Any mounding of soil (which might or might not contain fine root) above the root flare should be removed. (The visibility of the root flare can be impeded by the hessian, wire or ropes used to wrap the root ball.)</p> <p>Check that the root ball has not dried out during transport and storage and take remedial action if necessary prior to planting.</p> <p>If there is wire or rope circling the main stem to secure the root ball cage, ensure that it is removed prior to planting.</p> <p>Remove the wire cage where practicable. If this cannot be done, peel back the wire cage and hessian once the tree is in the planting pit.</p>
- Containerized	<p>Remove the container prior to planting.</p> <p>Fibrous roots in containers should hold the compost ball together once the container is removed. If the compost ball falls apart the tree should be rejected as there has been inadequate root development.</p> <p>Ensure that any fibrous root growth or excess compost above the root flare is removed and that the root flare is clearly visible prior to planting.</p> <p>Shave off any minor roots that are showing evidence of circling. (Trees with major circling roots should have been rejected on delivery.)</p> <p>Ensure that the container compost is moist at planting.</p>

Trees with major damage, whether above or below ground, should be rejected.


*PERMISSION TO REPRODUCE EXTRACTS FROM BS 8545 (2014): TREES: FROM NURSERY TO INDEPENDENCE IN THE LANDSCAPE – RECOMMENDATIONS IS GRANTED BY BSI. BRITISH STANDARDS CAN BE OBTAINED IN PDF OR HARD COPY FORMATS FROM THE BSI ONLINE SHOP:*

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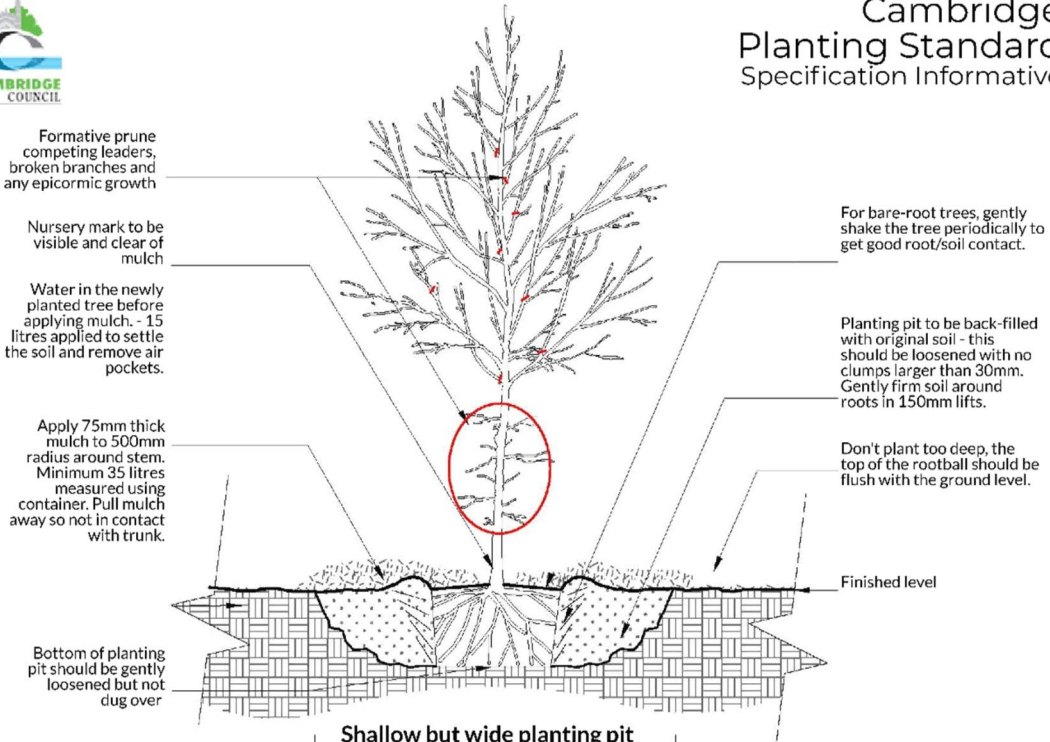
*TEL: +44 (0)20 8996 9001, EMAIL: CSERVICES@BSIGROUP.COM.*

APPENDIX 5B Planting specification graphic for use in the field



## Cambridge Planting Standard

Specification Informative


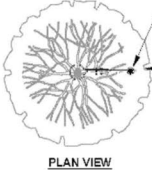


**Shallow but wide planting pit**

A square pit 1 metre wide by 1 metre in length and to the same depth as the rootball should be dug. In narrow verge situations where this is not possible the pit should be 1 metre long and as wide as possible given the situation.

**Spec - PLA**

Single stake should be driven in to the bottom of the tree pit so as to not damage tree roots and approximately 50mm from the stem. The top of the stake should be between 140-150cm above ground level.

PLAN VIEW


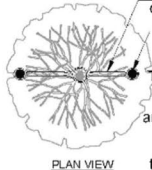
Single stake 2.4m long, 50-75mm diameter should be driven into the ground so as to not damage tree roots and approximately 50mm from the stem.

Prevailing wind.

Tree should be secured to the stake using hessian tree tie, wrapped to form a spacer and then stapled.

**Spec - PLB**

Two stakes should be driven in to the edge of the tree pit so as to not damage tree roots and approximately 500mm from the stem. The top of the stake should be between 140-150cm above ground level.

PLAN VIEW


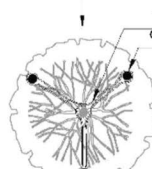
Two stakes 2.4m long, 50-75mm diameter should be driven into the ground so as to not damage tree roots and approximately 500mm from the stem.

Prevailing wind.

The two stakes should be in-line and parallel with the road or in-line with the prevailing wind. Then secured using hessian tree ties, twisted to form loose spacers, pulled taut and then stapled.

**Spec - PLC**

Three stakes should be driven in to the edge of the tree pit so as to not damage tree roots and approximately 500mm from the stem. The top of the stake should be between 140-150cm above ground level.

PLAN VIEW

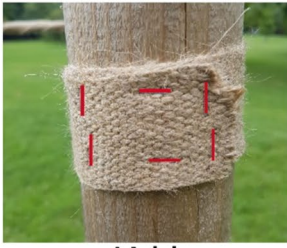
Three stakes 2.4m long, 50-75mm diameter should be driven into the ground so as to not damage tree roots and approximately 500mm from the stem.

Prevailing wind.

The stakes should be arranged carefully with the prevailing wind then secured using hessian tree ties, twisted to form loose spacers, pulled taut and then stapled.

**Staple strapping to stakes**

Using the pattern shown below, drive 6no. staples for each strap/stake. Use T50 10-14mm, galvanized heavy duty staples



**Mulch**

Once planted, staked and watered in; apply thick mulch spread evenly around tree. Fresh or composted woodchippings, 75mm thick and a 500mm radius.




Figure 8 Planting specification for use in the field



APPENDIX 5C Check list for trees prior to acceptance of delivery to site and planting



# Cambridge Planting Standard

## Daily Checklist

July 2019

### Weather - is the weather suitable for tree planting?



✘ For general guidance, medium to heavy frosts, accumulations of snow, excessive wetness or extremely cold winds are not appropriate for planting





✔ Light surface frosts and a little snow are generally fine as long as the soil isn't frozen beneath the turf

### Tools and Materials - have you got everything you need?



**Tools** - along with spades, post driver etc.. don't forget the CAT (Cable Avoiding Tool) and clean secateurs.





**Materials** - In addition to the obvious (tree strapping, stakes, staples etc..) don't forget you will also need:

- Water - 15 litres per tree to be applied after planting to settle the soil and remove air gaps
- Mulch - Fresh or composted woodchip. Minimum of 35 litres per tree - (75mm depth - 500mm radius).
- Measuring bucket for mulch (35 litre container)
- 'Water Me' tree tags



### Loading up the trees - have you got them covered?



- Only take as many trees as you can plant in one day
- Bareroot trees should be pre-soaked for at least 30mins before being individually bagged
- Wherever possible, try to load the trees in reverse order to prevent damage
- Always cover the van/trailer - No part of the trees should be exposed during transport



### Paperwork - got everything?



- Tree schedules & maps
- Risk assessments
- Tree tags
- Planting specification
- Contact details of Tree Officer in charge with planting



WhatsApp



Figure 9 Checklist for trees prior to acceptance



