



A2 Dominion and P3Eco

Bicester Eco-Development, Exemplar Site

Hedgerow Translocation and Arboricultural Advanced
Works Specification – Phase 1

Specification

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1 General

1.1 Introduction

1.1.1 This specification and method statement should be read in conjunction with the following:

- Advanced Hedgerow Translocation and Arboricultural Works (AHTAW) (drawing references UA001881-701-014)
- Tree Report incorporating Arboricultural Implications Assessment and Arboricultural Method Statement (prepared by Hyder Consulting Ltd dated 19th November 2010)

1.1.2 The NW Bicester Eco-Development Exemplar site is due to begin construction in summer 2012. To facilitate the commencement during summer months advanced arboricultural works are required during winter 2011 / 2012 planting / dormant season. This includes the removal of trees and the translocation of existing hedgerows. The affected hedgerows will be stooled and undercut in advance of translocation.

2 Preliminaries

2.1 Services on site

2.1.1 The Contractor shall locate and identify all existing services on Site which may affect the Works. The Contractor shall satisfy themselves with the extent and nature of the services and shall be responsible for the repair of any damage to them caused by the Contractor or any sub-contractor.

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

2.1.3 Any information provided by the Landscape Architect to the Contractor in respect of services shall not relieve the Contractor of his responsibility to check the completeness and accuracy of such information.

2.2 Dust and Mud Nuisance

2.2.1 The Contractor shall take all necessary steps to eliminate dust and mud nuisance during the carrying out of the Works.

2.2.2 The existing highways used by vehicles of the Contractor or any of his sub-contractors or suppliers of materials or plant, shall be kept clean and clear of dust and mud dropped by the said vehicles or their tyres. All dust and mud from the work spreading onto these highways or any public or private right of way shall be immediately cleared by the Contractor.

2.2.3 Unless otherwise expressly stated all arisings shall be removed from Site and the Contractor shall at all times keep the Site free from rubbish and debris.

2.3 Hedgerow Translocation

2.3.1 The Contractor shall ensure that all operations relating to the translocation of the hedgerows, in as far as they affect the normal use of highways, shall not be carried out without prior written notification and approval from Oxfordshire County Council (OCC) Highways Department, the Landscape Architect, arboriculturalist and ecologist, giving at least 1 week notice prior to carrying out any hedgerow translocation operations and tree works.

2.3.2 Submit a method statement for works adjacent to the public highway to the client's agent, Silver, for A2 Dominion approval, prior to gaining written consent from OCC as above.

2.3.3 Limit operations on and adjacent to adopted highways to minimum possible time.

2.4 Removal of Spoil, Rubbish and Fires

2.4.1 Unless otherwise expressly stated all arisings shall be removed from Site and the Contractor shall at all times keep the Site free from rubbish and debris.

2.4.2 The lighting of fires shall not be permitted on the Site. Naked lights necessarily in use for the execution of the Works shall be carefully controlled. No naked light appliance shall be left on the Site unattended.

2.4.3 The Contractor shall submit to Silver a written statement describing the arrangements and methods which the Contractor proposes to adopt for the disposal of controlled waste to ensure compliance with current legislation. The statement shall include details of the registered carriers and licensed waste sites the Contractor proposes to use.

2.5 Insurance

2.5.1 The Contractor shall hold Public Liability Insurance for a value of £5 million for the full period of the contract, in addition to the insurance provisions required under the Joint Council for Landscape Industries (JCLI) form of contract in relation to injury or death of persons and insurance of the works. Any additional costs incurred by the Contractor in effecting such insurance shall be shown in the Schedule of Rates.

2.6 Setting Out and Dimensional Accuracy

2.6.1 The Contractor shall be responsible for the true and proper setting out of the Works from the information given in the Drawings and Specification.

2.6.2 The Contractor shall check the setting out of the whole of the Works before commencing any part of the Works and check that the Works fit within the Site and fit satisfactorily together and in relation to existing physical features, in the manner envisaged by the Contract. Of particular importance is the setting out of translocated hedgerows and the removal of trees and other vegetation to the proposed development visibility splays. Proposed vision splays shall be pegged out on site and inspected by OCC Highways department and the project highways engineer for approval. No works shall take place until written consent to the agreed setting out of vision splays and other related public highway constraints has been received by the contractor and approved by A2D.

2.7 Working Hours

2.7.1 The Contractor shall restrict all work to between the hours of 8am to 5pm. Weekend work will be permitted only by prior agreement with the Landscape Architect and the site operations manager.

2.8 Nesting Birds

2.8.1 The Contractor shall satisfy himself that there are no nesting birds within hedgerows and / or trees immediately prior to operations. Confirmation should be provided in writing to the project Landscape Architect.

3 Specification

3.1 Tree and Hedgerow Works

The following tree works shall be required before commencement of construction or demolition activity:

Table 1: Tree work schedule

Action	Trees	Reason
Fell	T5, T29, T31, T33, T34, T35	Good arboricultural practice
Fell	T7, T8, T9, T10, T11	In order to facilitate the proposed development.
Translocate Sections within	G1, G2, G2a*, G4 and sections of hedgerows.	In order to facilitate the proposed development.

* Not referenced as hedgerow in Tree Survey / Arboricultural Statement

All works to be carried out in accordance with BS5837: 2005 Trees in Relation to Construction, Recommendations, BS 3998:2010 Tree Work Recommendations, and in accordance with this method statement.

3.2 Hedgerow breakthrough

3.2.1 All areas of hedgerow breakthrough have been identified on the AHTAW plans. It is anticipated that all removed sections will be translocated to an appropriate recipient site within the proposed development.

3.3 Hedgerow and tree translocation

3.3.1 Hedgerow and tree translocation works will be carried out under direct arboricultural and landscape architect / ecological supervision.

3.4 Preparation of donor vegetation

3.4.1 Woody vegetation that has been selected for translocation will be clearly marked. Vegetation will be stooled (using chainsaws and/or hand tools as appropriate to ensure clean pruning wounds) to reduce the above ground weight and therefore the demand for water and nutrients from the crown and to remove potential habitat to prevent nesting birds prior to translocation.

3.4.2 Pruning works will be overseen by the supervising arboriculturalist / landscape architect / ecologist in order that the extent of crown reduction and/or finished stooled / pollarded height can be appropriately determined for each tree/shrub.

3.4.3 Crown reduction and pollarding operations will ensure that a minimum stem height (above stem base) is retained to promote new growth following translocation, but should not be sufficient for nesting birds habitat prior to relocation of the hedgerow.

3.4.4 All hedgerows to be translocated should receive advanced undercutting to a depth of approximately 600mm (2') to both sides, using a JCB category machine fitted with a 2 metre wide toothed bucket on a telescopic arm, or similar method to be agreed between contractor and Landscape Architect. This operation should be carried out to maximise the available rootball to be translocated with each hedge section.

3.4.5 Wherever practicable, exposed roots will be clean-sawn with a chainsaw prior to tree/shrub removal, thereby minimising root shearing damage during the translocation process. This is particularly important for the larger roots of more mature specimens. Immediately following tree/shrub removal, and prior to translocation, all accessible roots above 10mm diameter will be trimmed back (using loppers or secateurs) to produce a clean cut, whilst preserving the maximum length of root.

3.5 Recipient / Receptor site preparation

3.5.1 Receptor site preparation will be overseen by the supervising arboriculturalist / landscape architect / ecologist

3.5.2 All donor vegetation will be translocated into specially prepared trenches, dug to a depth sufficient to ensure that at least 85% of retained roots are situated below the existing ground level on each receptor site.

3.5.3 Prepare recipient trench to receive translocated hedge. Trench width to be no wider than excavated rootball. Trench depth to allow for snug burial of translocated hedge, assuring stability. Hedge sections replaced along new alignment and firmed in.

3.5.4 A working methodology will be adopted that seeks to minimise any soil and moisture changes between donor and receptor sites. In addition to those detailed here, specific measures to be implemented during the translocation process are described below.

3.5.5 Soil excavated from the receptor site during trench preparation should be stockpiled adjacent to the trench for backfilling in three separate piles. Surplus arisings from new trench used to fill trench left by existing hedge.

3.5.6 If trenches are left open over night planks should be put in from base of the trench to its upper edge to allow mammals to get out.

3.6 The translocation process

3.6.1 All hedgerow operations to be carried out, as far as possible, within the dormant season for trees and shrubs, from the 31st October to the 31st March following.

3.6.2 Hedgerow operations shall be carried out as far as possible within the dormant season but not during periods of frost, drought, cold drying winds or when the soil is waterlogged, or when the moisture content of the soil exceeds field capacity.

3.6.3 Where obstruction to adjoining highways may be affected, no hedgerow translocation operations shall be carried out until appropriate provision for alerting traffic of work is in place.

3.6.4 A brief method statement for alerting traffic to work operations shall be submitted to the Local Authority and to the Landscape Architect for approval. No operations shall commence until such approval has been given from the Local Authority and the Landscape Architect.

3.6.5 The Contractor shall set out the required vision splay as indicated on drawings and to the Oxfordshire County Council highways dept. Requirements (contact Mike Harris at OCC). The Contractor shall seek approval of all setting out from the approving Authority, the highways engineering consultant and the project landscape architect prior to the lifting of hedgerows.

3.6.6 Once the supervising arboriculturalist / landscape architect / ecologist has confirmed that the donor vegetation has been sufficiently crown-reduced or stooled and that the receptor site has been appropriately prepared, the individual trees and shrubs and associated ground flora will be excavated using the largest available toothed excavator bucket (hardened steel), to excavate the greatest possible depth of earth in order to maximise the amount of viable root material recovered intact, with the aim being to excavate to the same position established during undercutting.

3.6.7 Undercut hedge section to be lifted using a minimum 20 tonne heavy duty excavator', fitted with a Cherry Products heavy duty, hardened steel, toothed bucket with a 1.20m³ capacity, mounted on a telescopic arm.

3.6.8 Undercut the hedgerow by inserting the bucket below the root ball area, prior to executing a subtle lift and release 'rocking' motion, ensuring that all roots are severed. Each tree/shrub will be excavated complete with the block of soil, roots, coppiced stems and any associated ground flora. Repeat procedure for whole length.

3.6.9 Carefully lift hedge using an excavator fitted with a wide and deep toothed bucket to include as large an undisturbed root ball as possible. It is vital that the toothed bucket is not 'shaken' to remove excess material, as this will denude the roots. The hedge will be lifted in sections using an excavator with a toothed bucket and will include as large an undisturbed rootball as possible with roots and branches of adjoining sections being carefully eased apart.

3.6.10 Ensure that groups of trees and shrubs from the same donor site are established together within the same receptor site where possible, thereby maximising habitat and environmental continuity, unless shown on and in accordance with the drawings.

3.6.12 Finished soil levels will be reinstated around all translocated stems to carefully match those to which the vegetation has grown accustomed prior to translocation. However, the exposed ends of any significant above-ground roots should be covered with at least 150mm of lightly compacted topsoil (prepared as a 50/50 mix of donor site and receptor site topsoil). This will prevent desiccation and drought-stress in newly translocated trees, and will significantly aid root growth within the receptor site.

3.6.13 Where above-ground roots are not present on donor vegetation, existing soil adjacent to tree stems should not be covered following translocation, in order to maintain consistent conditions for any translocated ground flora species situated within donor vegetation.

3.6.14 Following excavation, hedge sections / donor vegetation will be transferred to and temporarily positioned off the new alignment / recipient location, within the proposed development site.

3.6.15 All other hedge trench preparations shall be in accordance with the specification.

3.6.16 Repeat, in reverse order, operations under clause 3.6.10.

2.6.17 Easing the lifted hedgerow into the recipient hedge trench.

3.6.18 Fill the original hedge trench using surplus arisings from the recipient hedge trench, lightly compacting the fill in layers no more than 150mm deep. Marry finished levels with existing surrounding levels.

3.6.19 If weather during translocation period is dry the hedgerow should be watered. This should be agreed with the onsite Landscape Architect. This will be up to the end of the default JCLI Works Contract rectification period.

3.7.20 Contractor will replace dead specimens during the following planting season. This will be up to the end of the default JCLI Works Contract rectification period.

3.7 Turf and ground cover vegetation; topsoil from the upper soil horizon; and subsoil.

3.7.1 Wherever possible, receptor site topsoil and subsoil layers should be mixed with soil from the equivalent donor site layer prior to backfilling. This greatly increases successful establishment and accelerates post-translocation tree growth by encouraging early root proliferation beyond the zone of translocated soil.

3.7.2 Individual trees/shrubs should be transferred to the appropriate receptor site, in the same bucket in which they were excavated, and carefully placed into the receptor trench.

3.7.3 Prior to the placement of translocated vegetation, the receptor trench will be prepared by loosening the top 300mm of soil in the base of the trench. Air pockets left between the trench base and the roots of translocated vegetation can result in root stress or dieback, and may become waterlogged, further reducing the chances of survival. Gentle rocking of the translocated vegetation during installation will further reduce the likelihood of air pockets.

3.7.4 The supervising arboriculturalist/ecologist will advise on the precise location of translocated vegetation, ensuring the appropriate placement of below-ground roots to maximise both plant survival and future stability. This operation may have to be aided by a banksman.

3.7.5 The translocation process has been designed to minimise the length of time between excavation and subsequent burial. However, on windy, warm or sunny days, it may be necessary to employ additional measures to alleviate root desiccation, as follows:

- Immediately following root trimming, any exposed roots should be wrapped in lightly dampened hessian sacking until ready to be lowered into the receptor trench.

- Should receptor site soil have dried, this will need to be lightly watered prior to placement of translocated vegetation.

3.7.6 Once in place, the receptor trench should be carefully back-filled, using the prepared subsoil mix for initial backfill, followed by the topsoil mix.

3.7.7 Where areas of bare soil remain, turf and ground cover material may be used to aid establishment, as directed by the supervising arboriculturalist / landscape architect / ecologist. Soil should be backfilled in layers of approximately 100mm, ensuring that successive layers fill all air pockets between roots, and are gently compacted using hand tools such as tampers where necessary.

3.7.8 It is vital that both the root bark of retained vegetation and the above ground stems and branches are not damaged during this process.

3.8 Watering and Establishment

3.8.1 Contractor is to ensure that all translocated hedgerows and trees and associated vegetation is thoroughly watered in.

3.8.2 Additional watering to be undertaken by contractor as necessary and at frequencies sufficient to promote and ensure the establishment of translocated hedgerows and trees.