1025 Arboricultural Impact Assessment

(inc Arboricultural Method Statement)

For
Frank H Dale Ltd

Proposed Mixed Use Development,
Land at Mill Street, Leominster

For Planning
Rev B

October 2013

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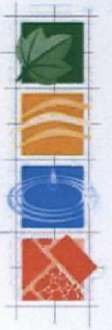

Arboricultural Method Statement for Proposed Development, Land at Mill Street, Leominster on behalf of Frank H Dale Ltd.

Written by:	Revision:	Checked by:	Date:
DP	*	Arthur Amos	24/01/2013
DP	A	Arthur Amos	21/02/2012
DP	B	DP	08/10/2013

This document should be read in conjunction with the following suite of AAA drawings:

- **1025-01 Tree Survey Plan**
- **1025-02D Tree Removal, Retention & Protection Plan**
- **1025-03E Outline Soft Landscape Proposals**
- **1025-04G Detailed Soft Landscape Proposals**

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1.0 Introduction, working conditions and arrangements for Arboricultural works

1.1 Location

The proposed development site is located at land at Mill Street, Leominster.

The site is the area as shown on Arthur Amos Associates (AAA) drawings 1025-01, 1025-02D, 1025-03E and 1025-04G.

1.2 Development proposals

Proposals consist of a hybrid planning application (part detailed / part outline) for the part demolition of existing buildings and structures and mixed use development of the site to provide a retail store (Use Class A1), petrol filling station (sui generis), residential (Use Class C3) and associated works and improvements including access, car parking, earthworks, landscaping and drainage infrastructure.

1.3 Working hours and noise

Contractors shall nominally operate the works between the hours of 8am and 5pm. Weekend and Bank Holiday working will not normally be permitted.

Machinery must not be left running during break times or during other periods of inactivity. Contractors will take all reasonable steps to ensure that noise pollution is minimised.

1.4 Welfare

Operatives, their supervisors, and visitors, shall be able to make use of one portable toilet for every ten such persons on site if there are none provided by the Client and / or Landowner. If such a facility is required, it is to be kept properly serviced, ventilated, and locked outside working hours and located in the contractor's compound.

The area of works may be crossed by underground public utilities and service cables. Contractors are to consult the Main Contractor, who may on request issue a set of service location drawings.

1.5 Traffic management

Traffic management must comply with any Local Authority requirements and with Chapter 8 of Traffic Safety Measures For Road Works (DOT). Where appropriate pavements and cycle ways must be isolated from work areas using appropriate measures.

Contractors are to take adequate precautions to prevent mud and debris being deposited on the highway. Such precautions may include washing vehicle tyres and brushing soil and debris from machinery.

1.6 Contractor qualifications, competence and working practices.

Contractors are required to.

- Be members of the Arboricultural Association.
- Be on the local authority's approved list.
- Unless otherwise instructed, work in accordance with the relevant recommendations of BS 3998 2010.
- Attend site meetings to agree the locations of trees requiring treatment and the extent of the works.
- Avoid damaging neighbouring trees, plants and property.
- Comply with the terms and conditions of their contracts.
- Ensure that machinery operatives hold the required levels of certification.

2.0 Implementation, Supervision and Monitoring of Arboricultural Works

2.1 Tree Protection Plan

(refer to **Section 6.0** for details)
The erection of the protective fencing will be in accordance with AAA Drawing 1025-02D Tree Retention, Removal & Protection Plan and directed and supervised by the Main Contractor, and monitored by the arboricultural consultant appointed by the Client.

2.2 Tree Works

(refer to **Sections 4.0** and **5.0** for detail)
The arboricultural works, including tree removal, pruning works, and stump treatment will be directed and supervised by the Main Contractor, and monitored by the arboricultural consultant appointed by the Client. The Contractor will give the Council Tree Officer and the appointed arboricultural consultant 5 days notice before commencing any tree works, or any notice period which may be attached as condition to consent.

2.3 Construction Works within Root Protection Areas

(refer to **Sections 6.0** through to **11.0** for details)
Construction works within tree root protection areas and construction exclusion zones will be directed and supervised by the Main Contractor, and monitored by the arboricultural consultant appointed by the Client. The period of notice required is as set out in para 2.2 above.

3.0 Timing and Phasing of Arboricultural Works

Tree removal and development facilitation pruning works to be carried out prior to commencement of store extension development construction works, including erection of temporary store and construction compound. Exact timing and programme of construction works, and arboricultural works to be advised by appointed contractor.

Arboricultural works to remove and prune trees shall not be carried out during the bird nesting season. If it is necessary to carry out arboricultural works during the bird nesting season, the trees shall be checked by an ecologist to confirm that no birds are nesting prior to commencement of works each day. If there are birds nesting the arboricultural works shall be delayed until the young birds have fledged and flown the nest.

4.0 Tree Removal

4.1 Tree Survey

A BS 5837 tree survey was undertaken by Arthur Amos Associates on 3rd January 2013. The findings of the survey are appended and should be read in conjunction with AAA drawing nos:

- **1025-01 Tree Survey Plan**
- **1025-02D Tree Removal, Retention & Protection Plan**

4.2 Tree Removal

AAA Drawing 1025-02D indicates the positions of all trees proposed to be removed and Table 1 (below) provides justifications for their removal.

Table 1 Trees to be removed

Tree Number	Species	BS 5837 Category	Justification for removal	
			Arboricultural	Development
9	Betula pendula	B		To accommodate the proposed changes to boundary of retained office building required to accommodate proposed access arrangement from Mill Street
10	Chamaecyparis spp.	B		As above tree 9
13	Malus spp.	C	Fair, physiological condition , structurally leans 20 degrees	To accommodate footway construction to proposed entrance arrangement from Mill Street
15	Malus spp.	C	Fair, physiological condition , structurally leans 10 degrees	To accommodate footway construction and proposed boundary fencing adjacent to proposed pedestrian

				crossing
25	Quercus robur	U	Structurally unsound, hollow base, fire damage 50% major limb lost eastward.	Retention would raise safety issues, tree lies within proposed amenity space for proposed residential layout
26	Quercus robur	B	Structural: leans 25%	Within proposed perimeter boundary fence of proposed residential development, significant change in levels proposed with removal of existing bund
27	Crataegus spp	C	Fair physiological, structurally 2 intertwines stems affecting long-term development	See above tree 26
28	Quercus robur	U	Nearly dead, poor structural condition most limbs removed	Within proposed pedestrian link between existing and proposed residential development, significant change in levels proposed with removal of existing bund
G29	Crataegus sp	C		See above tree 26
G41	Crataegus sp	C		Partial removal to accommodate proposed boundary treatment to rear of store
G44	Alnus glutinosa	U	In decline, 50% dead, ivy covered, partial retention not viable	Partially within footprint of car parking arrangement of proposed store, remainder immediately adjacent would conflict with parking arrangement
45	Crataegus spp	C	Ivy covered overgrown hedge	See above tree 26
46	Crataegus spp	C	Ivy covered overgrown hedge	See above tree 26
47	Crataegus spp	C	Ivy covered overgrown hedge	See above tree 26
G48	Crataegus monogyna	C	Fair condition, overgrown hedge	See above tree 26
49	Fraxinus	U	Physiological,	See above tree 26

	excelsior		extensive rot and hollow at base. Structural, spreading, shedding major limbs, collapsing pollard	
G50	Crateagus monogyna	C		See above tree 26
51	Salix fragilis	U	Physiological extensive rot and hollow. Structural,overmature unstable pollard	See above tree 26
52	Sambucus nigra	C	Extensive dieback, narrow forks potential long term structural issue	See above tree 26
53	Fraxinus excelsior	B		See above tree 26
54	Aesculus hippocastanum	C		See above tree 26
55	Crataegus monogyna	C		See above tree 26

4.3 Tree Removal : Work Method Statement

- Carry out all works to trees in accordance with the relevant recommendations of BS 3998:1989 and Forestry and Arboriculture Training and Safety Council Safety Guides.
- Tree work must be carried out by an Arboricultural Association or similar approved contractor.
- Work involving chain saws must be carried out by holders of a Certificate of Competence.
- Contractor to allow for meeting with Council Tree Officer and Arboricultural Consultant on site to mark out and agree trees to be removed prior to works commencing.
- Check for above ground services in the vicinity of the trees before commencing works.
- Within the Root Protection Area of adjoining trees or close to underground services or structures, tree stumps should not be dug or pulled out; but may be ground out, if their removal is required.
- Avoid damage to neighbouring trees, plants and property/structures.
- Take down large trees carefully using chainsaw or bow saw; heavy branches should be removed in sections, and where necessary should be lowered with ropes to avoid damage to surroundings.
- Ensure machinery is properly maintained, and check for oil leaks before use.
- Remove all arisings from the site to contractors licensed tip. Chippings should not be spread on site.

5.0 Tree Surgery

5.1 Tree Surgery Requirements

No tree surgery is required to accommodate the proposed development but may be required under the following circumstances, both with the prior notification and consent of the LPA:

- Rectification of accidental damage
- That required to install protective fencing adequately and in accordance with measures shown on AAA drawing 1025-02D.

5.2 Tree work standards

All tree work undertaken on the site is to meet the recommendations of BS 3998: 2010

All tree surgery works are to be undertaken by Arboricultural contractors selected from those approved by the local authority.

All personnel shall be suitably trained, supervised and competent in their tasks. All equipment shall be maintained in good working order, and all cutting equipment shall be kept well sharpened. Appropriate safety measures shall be taken at all times. Handsaws are to be used for the removal of primary or secondary branches under 50mm diameter. First under cutting and then top cutting to cleanly remove the bulk of the branch weight before executing a neat finishing cut close to the branch origin and within 30 degrees of square across the alignment of the branch being cut. Larger branches may be removed similarly in stages to minimise risk, using a small power saw designed for use by climbers. The saw size should be appropriate to the size of cut required and no larger. Larger power saws may be used on the ground by those clearing fallen branches and for felling trees.

Where pruning by secateurs is appropriate to achieve the desired canopy profile then prune to healthy bud or growth point.

6.0 Protection of retained trees before and during development

6.1 Introduction

This section should be read in conjunction with AAA drawing 1025-02D Tree Removal, Retention & Protection Plan.

6.2 Root Protection

British Standard 5937:2012 describes a Root Protection Area (RPA) and the tree it encloses as concentric circles. The area and shape of a root zone may be changed if local conditions dictate or the trees' condition indicates that a larger area is required. In the absence of any reasons for altering its shape or area, a RPA is assumed to have a radius whose diameter is twelve times the trunk diameter of the enclosed tree stem. However RPA diameters are not required to exceed 15 metres.

The RPAs of trees near to the proposed developments are indicated on AAA drawing 1025-02D. Although this drawing shows all RPAs as being circular, their shape may differ. Preserving the environment within a trees root protection area is the most reliable way to way to ensure its survival through and beyond development. Method statements provide specifications to maintain the condition and health of root systems thus enabling owners to discharge their duties under relevant statutes and planning conditions. Method statements are based upon the tree survey and should be read in conjunction with it and the preceding sections of this report.

6.3 Construction Exclusion Zone

The broken black lines on AAA drawing 1025-02D indicate the boundary face of the construction exclusion zones. These are contiguous with RPA boundaries except where a trees canopy extends beyond its RPA, in which case the construction exclusion zone boundary sometimes follows the canopy edge. Before development white painted wooden pegs shall be driven into the ground along these boundaries, or where surrounding ground is hard surfaced, white markers painted onto the surface along these boundaries. These shall be supplied by the Contractor and their locations checked by the Contract Administrator. Marker pegs are to remain in position until completion of work. "Heras" type fencing is to be erected a minimum distance of 25mm from the perimeters indicated by these pegs. Access into the construction exclusion zones shall only be permitted to undertake the works described under Section 3.5 below.
Access into the construction exclusion zones is not permitted until completion of all work outside its boundary. The Local Authority and the Contract Administrator shall be given 5 days written notice before work starts.

6.4 Management of work outside the RPA.

Outside the construction exclusion zones, work is to be planned to avoid contamination of RPAs through the discharge of chemicals, oils, fuels and mixer washings. Fires must not be lit on site.

Care must be taken to ensure that trees are not damaged by planning/resurfacing machinery, cranes or other lifting equipment and their loads particularly where their canopies extend beyond the construction exclusion zone boundaries. Site operations should be planned to ensure that wide or tall loads, and plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Plant moving or working near to trees must be supervised by a banksman, to ensure that adequate clearance from trees is maintained at all times.

Site work may not begin until construction exclusion zones have been fenced and any required ground protection laid.

Areas subject to pedestrian access: A single layer of scaffold boards may protect ground subject to pedestrian access, or where additional protection is required the boards may be placed on top of a compressible layer over a permeable geo textile membrane.

6.5 Working inside Construction Exclusion Zones and RPAs

Where construction exclusion zone boundaries have to be breached, fencing shall be dismantled and moved closer to the protected trees to provide the minimum working space required to undertake the works. The contractor shall give the Local

Authority Tree Officer and Contract Administrator five days notice before undertaking any work within breached construction exclusion zones areas. Prior to and during the period of working in these areas, the contractor shall comply with any reasonable requests made by the Local Authority Tree Officer and the Contract Administrator.

6.6 Car park re-surfacing and white lining works

Car park surfacing and white lining works in the vicinity of trees shall be deferred until all other construction work in those areas are complete. The construction exclusion zone boundary protective fencing around trees within the car park shall be erected prior to commencement of construction works. When car park re-surfacing works are due to commence, the protective fencing shall be dismantled to enable the works to be carried out. Care must be taken to ensure that trees are not damaged by planing/resurfacing machinery, cranes or other lifting equipment and their loads. Site operations should be planned to ensure that wide or tall loads, and plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Plant moving or working near to trees must be supervised by a banksman, to ensure that adequate clearance from trees is maintained at all times.

7.0 General Guidance for working within all Root Protection Areas

7.1 Preventing adverse impact to the RPA beyond the immediate work area

Any part of the RPA beyond the agreed work area must be isolated from the work operations by protective barriers or ground protection to at least the minimum standard described in BS 5837:2012 for the duration of the work.

7.2 Excavation and dealing with roots

All excavation must be carried out carefully using spades, forks and trowels, taking care not to damage the bark and wood of any roots. Specialist tools for removing soil around roots using compressed air may be an appropriate alternative to hand digging, if available. All soil removal must be undertaken with care to minimise the disturbance of roots beyond the immediate area of excavation.
Where possible, flexible clumps of smaller roots, including fibrous roots, should be retained if they can be displaced temporarily or permanently beyond the excavation without damage. If digging by hand, a fork should be used to loosen the soil and help locate any substantial roots. Once roots have been located, the trowel should be used to clear the soil away from them without damaging the bark. Exposed roots to be removed should be cut cleanly with a sharp saw or secateurs 10–20cm behind the final face of the excavation. Roots temporarily exposed must be protected from direct sunlight, drying out and extremes of temperature by appropriate covering. Roots greater than 2.5cm in diameter should be retained where possible. Roots 2.5–10cm in diameter should only be cut in exceptional circumstances. Roots greater than 10cm in diameter should only be cut after consultation with the appropriate supervisory officer.

7.3 Arboricultural supervision

Any work within RPAs requires a high level of care. Qualified arboricultural supervision is essential to minimise the risk of misunderstanding and misinterpretation. Site personnel must be properly briefed before any work starts. Ongoing work must be inspected regularly and, on completion, the work must be signed off by the arboriculturist to confirm compliance by the contractor. In the context of this guidance, an appropriate supervising officer would normally be an arboriculturist.

8.0 Removing existing surfacing or structures within RPAs

8.1 Access for works

Roots frequently grow adjacent to and beneath existing surfacing/structures so great care is needed during access and designated removals. Damage can occur through physical disturbance of roots and/or the compaction of soil around them from the weight of machinery or repeated pedestrian passage. This is not generally a problem whilst surfacing/structures are in place because they spread the load on the soil beneath and further protective measures are not normally necessary. However, once they are removed and the soil below is newly exposed, damage to roots becomes an issue and the following guidance must be observed:

- No vehicular or repeated pedestrian access into RPAs unless on existing hard surfacing or custom designed ground protection.
- Regular vehicular and pedestrian access routes must be protected from compaction with temporary ground protection as set out in BS 5837.
- RPAs exposed by the work must be protected as set out in BS 5837 until there is no risk of damage from the development activity.

8.2 Removal works

Removing existing surfacing/structures is a high-risk activity for any adjacent roots and the following guidance must be observed:

- Appropriate tools for manually removing debris may include a pneumatic breaker, crow bar, sledgehammer, pick, mattock, shovel, spade, trowel, fork and wheelbarrow. Secateurs and a handsaw must also be available to deal with any exposed roots that have to be cut.
- Machines with a long reach may be used if they can work from outside RPAs or from protected areas within RPAs. They must not encroach onto unprotected soil in RPAs.
- Debris to be removed from RPAs manually must be moved across existing hard surfacing or temporary ground protection in a way that prevents compaction of soil. Alternatively, it can be lifted out by machines provided this does not disturb RPAs.
- Great care must be taken throughout these operations not to damage roots as set out in 5.2 above.
- If appropriate, leaving below ground structures in place should be considered if their removal may cause excessive root disturbance.

9.0 Installation of new surfacing within RPAs

9.1 Basic principles

New surfacing is potentially damaging to trees because it may require changes to existing ground levels, result in localised soil structure degradation and/or disrupt the efficient exchange of water and gases in and out of the soil. Mature and overmature trees are much more prone to suffer because of these changes than young and maturing trees. Adverse impact on trees can be reduced by minimising the extent of these changes in RPAs. Generally, the most suitable surfacing will be relatively permeable to allow water and gas movement, load spreading to avoid localised compaction and require little or no excavation to limit direct damage. The actual specification of the surfacing is an engineering issue that needs to be considered in the context of the bearing capacity of the soil, the intended loading and the frequency of loading. The detail of product and specification are beyond the scope of this guidance and must be provided separately by the appropriate specialist.

9.2 Depth of excavation and surfacing gradient

The precise location and depth of roots within the soil is unpredictable and will only be known when careful digging starts on site. Ideally, all new surfacing in RPAs should be no-dig, i.e. requiring no excavation whatsoever, but this is rarely possible on undulating surfaces. New surfacing normally requires an evenly graded sub-base layer, which can be made up to any high points with granular, permeable fills such as crushed stone or sharp sand. This sub-base must not be compacted as would happen in conventional surface installation. Some limited excavation is usually necessary to achieve this and need not be damaging to trees if carried out carefully and large roots are not cut. Tree roots and grass roots rarely occupy the same soil volume at the top of the soil profile, so the removal of a turf layer up to 5cm is unlikely to be damaging to trees. It may be possible to dig to a greater depth depending on local conditions but this would need to be assessed by an arboriculturist if excavation beyond 5cm is anticipated. On undulating surfaces, finished gradients/levels must be planned with sufficient flexibility to allow on-site adjustment if excavation of any high points reveals large unexpected roots near the surface. If the roots are less than 2.5cm in diameter, it would normally be acceptable to cut them and the gradient formed with the preferred minimal excavation of up to 5cm. However, if roots over 2.5cm in diameter are exposed, cutting them may be too damaging and further excavation may not be possible. If that is the case, the surrounding levels must be adjusted to take account of these high points by filling with suitable material. If this is not practical and large roots have to be cut, the situation should be discussed with the supervising officer before a final decision is made.

9.3 Base and finishing layers

Once the sub-base has been formed, the load spreading construction is installed on top without compaction. In principle, the load spreading formation will normally be cellular and filled with crushed stone although the detail may vary with different products. Suitable surface finishes include washed gravel, permeable tarmac or block paviours set on a sand base. However, for lightly loaded surfacing of limited widths (<3m) such as pedestrian paths, pre-formed concrete slabs may be appropriate if the sub-base preparation is as set out above. In some situations, limited width floating concrete rafts constructed directly on to the soil surface may be acceptable but the design must not include any strip-dug supports.

9.4 Edge retention

Conventional kerb edge retention set in concrete filled excavated trenches is likely to result in damage to roots and should be avoided. Effective edge retention in RPAs must be custom designed to avoid any significant excavation into existing soil levels. For most surfaces, the use of pre-formed edging secured by metal pins or wooden pegs is normally an effective way of minimising any adverse impact on trees from the retention structure.

9.5 Installing new surfacing on top of existing surfacing

In some instances, existing surfacing can be retained and used as a base for new surfacing. Normally, this will not result in significant excavation that could expose roots so special precautions are not necessary. However, if large roots already protrude above the proposed sub-base level, then the precautions and procedures set out above must be observed.

10.0 Installation of new structures within RPAs

10.1 Basic principles

New structures in RPAs are potentially damaging to trees because they may disturb the soil and disrupt the existing exchange of water and gases in and out of it. Mature and over-mature trees are much more prone to suffer because of these changes than young and maturing trees. Adverse impact on trees can be reduced by minimising the extent of these changes in RPAs. This can be done by constructing the main structures above ground level on piled supports and redirecting water to where it is needed. The detailed design and specification of such structures is an engineering issue that should be informed and guided by tree expertise.

10.2 New services or modification to existing services

It is often difficult to clearly establish the detail of services until the construction is in progress. Where possible, it is proposed to use the existing services into the site and keep all new services outside RPAs. Excavation to upgrade existing services or install new services in RPAs may damage retained trees and should only be chosen as a last resort. In the event that excavation emerges as the preferred option, the decision should be reviewed by the supervising officer before any work is carried out. If excavation is agreed, all digging should be done carefully and follow the guidance set out in 5.2 above.

11.0 Soft landscaping within RPAs

Soft landscaping includes the reprofiling of existing soil levels and covering the soil surface with new plants or an organic covering (mulch). It does not include the installation of solid structures or compacted surfacing. Soft landscaping activity after construction can be extremely damaging to trees. No significant excavation or cultivation, especially by rotovators, should occur within RPAs. Where new designs require levels to be increased to tie in with new structures or the removal of an existing structure has left a void below the surrounding ground level, good quality and relatively permeable top soil should be used for the fill. It should be firmed into place

but not over compacted in preparation for shrub planting. Ideally, all areas close to tree trunks should be kept at the original ground level.

- Carry out all ground preparation and seeding works in accordance with the relevant recommendations of BS 4428:1989 Code of practice for general landscape operations (excluding hard surfaces).
- Carry out all works within the vicinity of trees in accordance with the relevant recommendations of BS 3998:2010 Recommendations for tree work.
- Under no circumstances shall existing levels be reduced or skimmed.
- Cultivation and planting works to be carried out by hand with great care to avoid damage to retained tree roots.
- Soil drainage shall remain unchanged.

12.0 Provision for long term tree retention and tree management.

Trees are an important component of the landscape and as such require management for their protection and conservation. Although none is foreseen, damage sustained by trees during the development period should be rectified by tree surgery undertaken in accordance with BS 3998.

Following completion of the development, retained trees and those planted as part of the landscape works shown on AAA drawings 1025-03E and 1025-04G or subsequently, should be periodically inspected by a qualified Arboriculturist, for evidence of physiological decline or damage. Work identified by inspections shall be carried out in accordance with BS3998; as should any pruning or other tree work required for site operational and management reasons.