

**B.S. 5837 Arboricultural
Method Statement
at
10 -14 The Green
West Drayton
Middx
HP9 2DG
Rev A**

Client: M E Rumble and Sons Ltd.

Important note for demolition and construction contractors

This document includes requirements for arboricultural supervision by a suitably qualified arboricultural consultant in certain areas and techniques that may involve a specialised input. Adherence to these requirements is necessary for this document to comply with the Town and Country Planning Act 1990

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1.0 Brief:

- 1.1 I am instructed by M E Rumble and Sons Ltd to prepare an Arboricultural Method Statement (AMS) in respect of a proposed development at 10 -14 The Green West Drayton. The method statement is required to support a planning application for a development of the site.
- 1.2 The proposals are for the development of the site including the erection of a two storey building containing two houses and conversion of the existing two storey Bakehouse building No.14B.
- 1.3 The method statement is based on the best available information at this stage of the planning process and may need to be updated in the context of a specific planning condition when the detail is known.
- 1.4 The purpose of the method statement is to explain how and when the protection measures should be installed, and how they are to be maintained for the duration of the development activity.

2.0 Arboricultural Supervision

- 2.1 An arboricultural consultant will be appointed by the developer prior to the commencement of any works on the site.
- 2.2 Prior to the commencement of works a set up meeting between the main contractor, any (relevant) sub-contractors, a representative from the LPA and the arboricultural consultant will take place. In the event the representative from the LPA is unable to attend, the arboricultural consultant will make a note of discussions and will advise the LPA in writing.
- 2.3 The meeting will establish a line of communication between the working parties and to understand the parameters of the site, underlining the importance of maintaining and respecting tree protection barriers.
- 2.4 At the meeting the Arboricultural Method Statement (AMS) is to be signed off by the person responsible for the day to day running of the site (normally the site foreman).
- 2.5 By signing off the AMS, the responsible person agrees that he/she has read and understood the method statement and agrees to adhere to it.
- 2.6 In the event of the responsible person being replaced at any time during the development it will be their responsibility to ensure the new person responsible for the site is made aware of the method statement and the need to adhere to the method statement.
- 2.7 A copy of this report will be permanently available on site for the duration of the development activity. It can also be copied for the purposes of tendering, planning the timing of operations and used as a reference as a general guide on

how to protect important trees.

- 2.8 Full scale (1:200) copies of the tree protection plans (appendices 1 and 2) are to be available at all times on site including a scale bar.
- 2.9 The tree work, that is agreed as part of the planning permission needed to implement the proposed scheme (i.e. felling or pruning works), will be undertaken before other works commence on site.
- 2.10 No other tree work is to take place without obtaining, in writing, the express consent of the Local Authority.
- 2.11 Once the site becomes active the Local Authority will be able to visit and monitor the site and to take enforcement action against any breaches of the planning permission including the failure to adhere to this method statement.
- 2.12 If required, the arboricultural consultant will be able to visit to record specific stages of the development (e.g. any specialised or sensitive stages of the construction process) and to be on hand to advise as necessary.
- 2.13 All site visits are to be recorded on paper and with accompanying photographs. The purpose of recording the visits is to
 - (a) Provide the developer with proof of compliance in the event of any dispute
 - (b) Allow the LPA to discharge the relevant planning conditions

3.0 The development

3.1 Overview

- 3.1.1 The expected programme of site development where arboricultural input is required is as follows:

- 1. Pre commencement meeting
- 2. Installation of protective fencing
- 3. Installation of ground protection
- 4. Installation of services
- 5. Main building phase
- 6. Removal of tree protection measures
- 7. Installation of cellular confinement product
- 8. Final landscaping

3.2 Erection of fencing

- 3.2.1 The tree protection plan (appendix 1) shows the line and position of the root protection fencing to be erected prior to any other works taking place on site.

- 3.2.2 The root protection fencing installation shall be approached from within the central working zone to avoid damage within the root protection area itself, in accordance with the recommendations of BS 5837/2012 illustrated by Fig. 1.

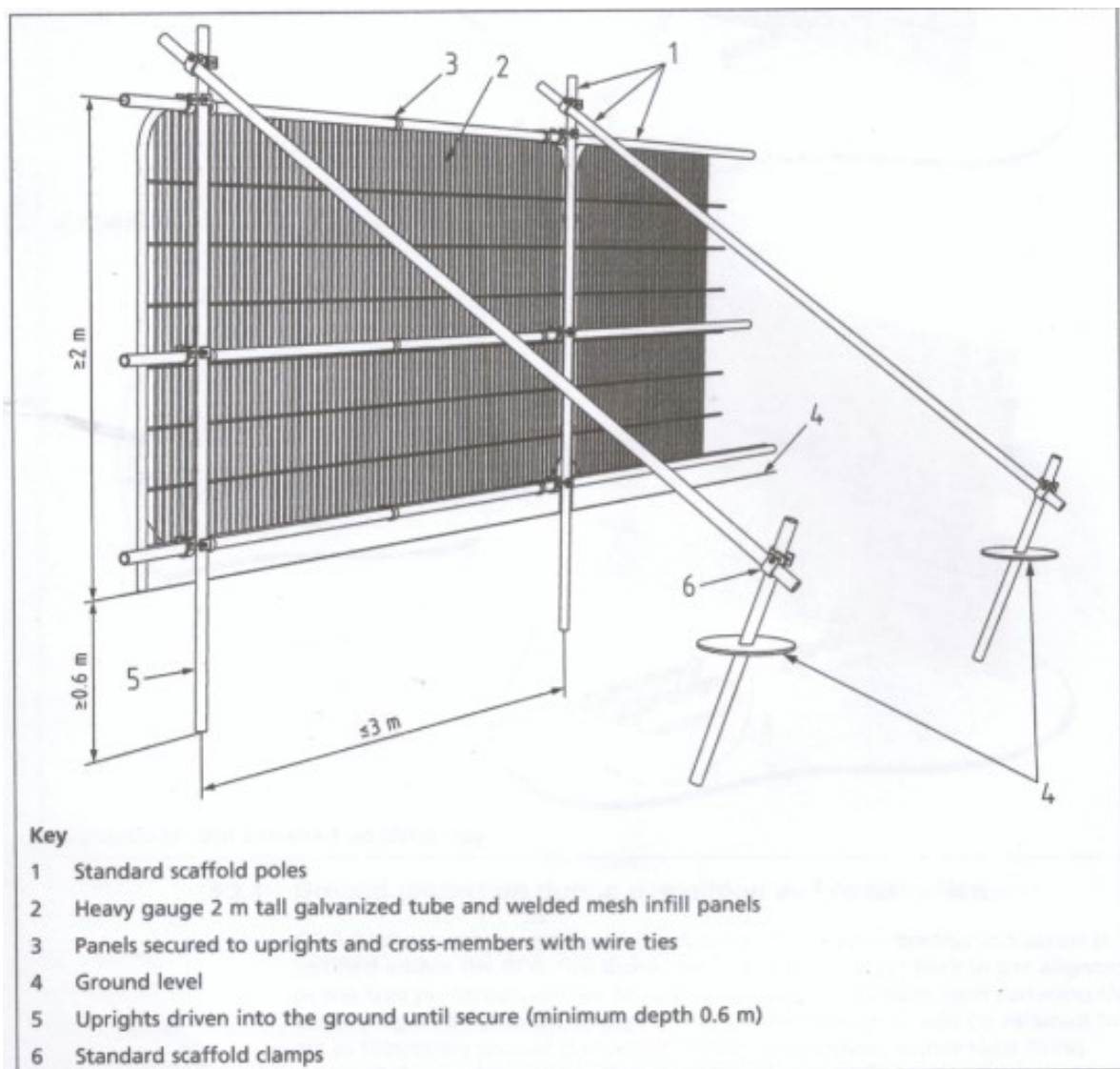


Fig. 1 Protective fencing in accordance with B.S. 5837

- 3.2.3 The fencing for the root protection zones shall be constructed of scaffold tube uprights (set at 3m intervals with diagonal braces driven securely into the ground). Thereafter 'Heras' type fencing shall be attached to the scaffold framework using either steel strapping or scaffold clamps. The fencing shall comply with the requirements of the British Standard B.S. 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'.
- 3.2.4 The fenced off areas are to be regarded as a Construction Exclusion Zone (CEZ). This area is to be considered sacrosanct and strictly off limits to any construction activity including any movement of machinery, storage of materials or parking of contractors' vehicles
- 3.2.5 The fencing protecting the RPA is not to be moved under any circumstances

unless this has been specifically detailed in the AMS or agreed on site with the arboricultural consultant present.

- 3.2.6 Ignoring the fencing barriers may constitute a breach of the planning permission and may also be regarded as in contravention of any formal tree protection that applies (Tree Preservation Orders/ Conservation Areas).
- 3.2.7 There is to be no burning of any materials or substances within 10m of the root protection barriers.
- 3.2.8 There is to be no storage of cement bags, chemicals or any other toxic or potentially toxic substances within the CEZ.
- 3.2.9 Once the fencing has been properly installed, the retained arboricultural consultant will visit the site to confirm the correct installation of the fencing.
- 3.2.10 The installation of the fencing will be photographed and recorded and a record of this will be passed on to the arboricultural officer at the Local Authority.



Fig 2. Signage attached to fencing reinforces the protection afforded by these barriers

3.3 The installation of ground protection

- 3.3.1 The tree protection plan (appendix 1) shows the position of the ground protection measures do be put into place prior to any other works taking place on site.
- 3.3.2 The areas illustrated will be covered by ground protection matting (such as Ground Guards – Maxi Trak Extra Heavy duty), suited to supporting the weight of construction traffic (recommended load bearing 50t – maximum 80t)

- 3.3.3 The separate mats are joined together using joiner kits to lock the panels together.



Fig. 3 Ground Guards – Maxi Trak Heavy duty is ideal for the ground protection required here.

3.4 Drains and services

- 3.4.1 Where the services and drains run passes within the restrictions of RPA's, these shall be installed using a directional drilling method. This approach adopts a steered technique (using Bluetooth technology) suitable for single or multiple pipes with a diameter between 25mm to 900mm.
- 3.4.2 The technique requires an entry point at either end of the pipework. The proposed entry points are as shown on the Tree Protection Plan. British Standard 5837 indicates at section 7.7.2 that where trenchless drilling methods are used, entry and retrieval pits should be located outside the Root Protection Area of the trees.
- 3.4.3 It is expected that the installation of the services using the directional drilling will be undertaken by a specialist company.

3.5 Storage of materials

- 3.5.1 Materials are to be delivered by way of the existing entrance to the site off The Green to the working area (the car parking area to the side) initially and from there to the various parts of the site where they are needed.
- 3.5.2 Materials shall be moved to the working areas by fork lift truck, dumper truck or by hand where they can be distributed to where they are needed according to the different phases of the development.

3.6 Excavation of piles

- 3.6.1 A piling rig will be driven to the site by way of the existing driveway and manoeuvred into position, sitting inside the footprint of the proposed building.
- 3.6.2 The piling rig will work from back to front so that the rig can exit by way of the existing driveway if there is any reason the movement of the rig would otherwise be impeded.
- 3.6.3 Excavated soil will be moved to the front of the site for disposal by tipper lorry.
- 3.6.4 Concrete for the piles will be delivered by cement mixer. The mixer will be positioned on the existing driveway at the side of the site and the concrete will be channelled to the working area by chute to where it is needed.
- 3.6.5 Once the piles have set and have been capped off, the beams can be cast in situ over the piles and allowed to set. In order to protect the ground underneath the shuttering of the beams, a polythene sheet shall be laid down at the start of the operation.

3.7 Mortar mixing

- 3.7.1 Concrete and mortar will be mixed in a dedicated area at the side of the site. The area shall be isolated, well away from the RPA of trees to be retained.
- 3.7.2 All mortar mixing and handling of any other hazardous materials shall take place outside the rpa's of trees. Water run-off from the cleaning of either a mortar tower or concrete mixers is to be directed away from rpa's and should take place as far from trees as possible.
- 3.7.3 A confinement area controlling the run-off shall be installed, incorporating an impermeable layer of strong plastic sheeting held within a raised bed. Washing of cement mixers shall take place only within the confined area.

4.0 Post construction

4.1 Final removal of tree protective fencing

- 4.1.1 Following the conclusion of all construction operations, site huts, scaffolding, protective fencing and ground protection measures will be removed to allow for landscaping operations such as hard surfacing and planting to take place.
- 4.1.2 Great care is needed at this stage from ground work contractors to continue to observe tree protection requirements. No machines are to be used within rpa's which specifically includes rotovators.

4.2 Installation of cellular confinement system

- 4.2.1 The tree protection plan shows then areas where a cellular confinement system is to be installed to create the new driveway surface.
- 4.2.2 The exact specification for the cellular confinement system will be determined by engineers employed by the supplier of the product according to soil bearing tests, predicted usage and manufacturers recommendations. If necessary a planning condition requiring this detail, prior to the commencement of works can be used.
- 4.2.3 The principles of laying a cellular confinement system are set out in the Arboricultural Association Guidance Note12 'The Use of Cellular Confinement Systems near Trees: A Guide to Good Practice.' Broadly speaking the method followed is replicated each time such a system is installed and is as follows:-
- 4.2.4 The materials for the no-dig driveway shall be delivered to an area adjacent to the main entrance and stored there, ready for moving onto the working area. No machine or vehicle is to move onto the working area at any time prior to the laying of the cellular confinement system.
- 4.2.5 Prior to the laying of the cellular confinement system, the soil will be made level (by building up), removing any vegetation by hand and removing tree roots using a stump grinder if needed. Sharp sand shall be used to ramp up over any protruding roots.
- 4.2.6 Small voids will be filled with clean sharp sand (not builders sand).
- 4.2.7 A glyphosate based systemic herbicide will be carefully applied to any turf or other vegetation in advance of laying the cellular confinement system.
- 4.2.8 The use of heavy machinery to install the cellular confinement system shall be avoided to minimise the risk of causing soil compaction within the RPA. The product shall be installed using a wheelbarrow and a shovel.
- 4.2.9 The stone aggregate used to backfill the cells shall be stored within the materials storage area, adjacent of the cellular confinement system.
- 4.2.10 A base geotextile layer made of polypropylene or polyester (min 300g/m²) with a CBR puncture resistance of 4000N shall be laid out covering the entire area to be surfaced. If more than one sheet is needed the sheets shall overlap by at least 30cm.
- 4.2.11 With the geotextile layer laid down, the panels of the cellular confinement system shall be stretched out to cover the area required. The panels shall be held in place using J-hooks (steel reinforcing bars bent into a 'candy-cane' shape) or similar (e.g. construction pins or wooden stakes).
- 4.2.12 Working from outside the no-dig area inwards, the backfill shall be added to

create a surface on which workers can then step on in order to continue filling in the product. The backfill shall be made up of a free draining subbase material using crushed 20/40 stone that has been screened and washed. If 20/40 is not available, 4/20 stone can be used provided it has been washed or graded to contain no fine particles (fines).

- 4.2.13 The aggregate shall be overfilled by a minimum 25mm to help to protect the geocells. Where possible vehicle use shall be restricted to outside the RPA but where the use of tracked vehicles across the RPA is unavoidable, vehicles shall continue to work progressively beyond the RPA in order to avoid manoeuvring which could result in distortion of the cellular confinement product.
- 4.2.14 The settlement of the infill material shall be achieved by a minimum of four passes of a smooth roller (max. weight 1000kg/m width without vibration) or alternatively by several passes with a tracked excavator.
- 4.2.15 The cellular confinement system shall be held in place at the edges using a peg and board edging, using thick tanalised boards, spacing the pegs at 1m intervals to prevent bowing.
- 4.2.16 The upper layer shall then be completely covered by a geo-textile fabric with an overlap of at least 20mm at the edges to prevent any particles migrating from the upper surface into the cells. If more than one sheet is needed they shall overlap by at least 30cm. The geotextile layer shall be made of polypropylene or polyester (min 300g/m²) with a CBR puncture resistance of 4000N.
- 4.2.17 The finished surface of the cellular confinement system shall be permeable to allow the continued passage of air and water to the soil below. If necessary fresh geotextile layer shall be laid down (replacing the old one) onto the aggregate of the panel to act as a separation layer to ensure there is no contamination of dust and dirt seeping through from the finished layer to the cells below.
- 4.2.18 The final surface layer of the road is yet to be agreed but will need to include a permeable upper layer.

Arboricultural checklist

<i>Ref</i>	<i>Work Activity</i>	<i>Schedule of Works</i>	<i>Refer</i>	<i>Recommendations</i>
General site works and tree related operations				
01	Pre-start site meeting	Pre-start site meeting with site manager, client representative and arboricultural consultant to agree scope of any works, where required		
02	Protect trees to be retained	Barriers should be fit for the purpose of excluding construction activity and should remain rigid and complete. Barriers are to be located in accordance with Merewood Tree Protection Plans	B.S. 5837:2012 Trees in relation to design, demolition and construction: Section 6.2 Merewood Tree Protection Plan	Ongoing monitoring by appointed person
03	Protect trees to be retained	Ground protection mats should be fit for the purpose and should remain complete. Mats are to be located in accordance with Merewood Tree Protection Plans	B.S. 5837:2012 Trees in relation to design, demolition and construction: Section 6.2 Merewood Tree Protection Plan	Ongoing monitoring by appointed person
04	Works within the Root Protection Area (RPA)	Adopt hand dig methods for reducing levels to avoid damage to roots. Where limited root pruning is unavoidable it should be made at a suitable place within the root system, avoiding damage to surrounding tissue. Final pruning cuts shall be made at right angles to the axis of the root. The final cut wound should be smooth and as small as possible, free from ragged torn ends. Where root pruning is required to roots	Arboricultural Association Standard Conditions Of Contract And Specifications For Tree Works (2008) Edition BS 3998:2010 Tree Work Merewood Tree Protection Plan	All tree work should be carried out by a suitably tree qualified tree surgeon, preferably an Arboricultural Association approved contractor.

		over 25mm in diameter, works should be overseen by a suitably qualified Arboriculturist. Any root pruning should be completed in accordance with BS 3998:2010.		
05	Works within the Root Protection Area (RPA)	Use of piles to minimise root damage	B.S. 5837:2012 Trees in relation to design, demolition and construction: Section 7.5 Merewood Tree Protection Plan	Piling work to be undertaken by a specialist contractor
06	Works within the Root Protection Area (RPA)	Installation of services using directional drilling	B.S. 5837:2012 Trees in relation to design, demolition and construction: Section 7.7 Merewood Tree Protection Plan	Directional drilling to be undertaken by a specialist contractor
07	New surfacing works with Root Protection Areas (RPA)	New surfacing works shall be permeable.	BS 5837:2012 Trees in relation to design, demolition and construction. Tree Work APN 12 'Through the Trees to Development'	Engagement of an engineer will be required

Signatures:

I confirm that I have attended a pre-application site meeting with the contractors and have gone through the requirements of the Arboricultural Method Statement and that a copy is available in the site office.

Arboricultural Consultant

I confirm that I have attended a pre-application site meeting with the arboricultural consultant and that I am responsible for the correct procedures being followed in accordance with the Arboricultural Method Statement and that a copy is available in the site office.

Site Manager/Foreman**Contact details:**

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Architects – Dale Venn Architects 01895 237 345

London Borough of Hillingdon – Planning 01895 250 230

Appendix 1

Tree Protection Plan

