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Arboricultural Method Statement and Tree Protection Plan
(Abbreviated as AMS & TPP).
A preliminary Arboricultural Method Statement and Tree Protection Plan derived from the preliminary Arboricultural Implication Assessment reference WP09/D5319 AIA.

Address: Grove Wood Primary School, Grove Road, Rayleigh, SS6 8UA.

Reference:	WP10/D5452 AMS
Client:	Grove Wood Primary School
Date instructed:	02.03.10
Instructed by:	Philip Ruffle, Architect Munday and Cramer Architectural and Building Surveyors Ltd. Thirty Nine Knight Street, South Woodham Ferrers, CM3 5ZL.
Documents referenced:	1) Document WP09/D5452 AIA dated 31.03.10. Arboricultural Implication Assessment.
Prepared by:	M. Davis
Checked by:	J. Mills
Signed:	
Date completed:	31.03.10

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1. Introduction

1.1 Instruction:

- Please see preceding Tree Survey and report for details of instructions and documentation provided.
- This report is structured in accordance with the B.S. 5837 (Sept 2005) 'Trees in relation to construction-Recommendations'.
- This report is referred to as the AMS both in this and the relevant accompanying documents.

1.2 Aspects dealt with within this Method Statement:

- The Arboricultural Method Statement (AMS) is a methodology for the implementation of any aspect of development that has the potential to result in loss of or damage to a tree identified as suitable to be retained.
- The AMS takes into consideration construction operations undertaken in the vicinity of the trees. It will deal with such issues as site access, intensity of construction activity, space needed for works, location of materials and location of service runs.
- This AMS includes with it a Tree Protection Plan (TPP). The TPP outlines trees to be retained, removed, location of barriers and type of barrier to be installed.
- This method statement contains a timetable indicating when and how specific works adjacent to trees should be carried out

1.3 Aspects not dealt with within this Method Statement

Please also refer to Appendix 3.

- This report does not deal with issues relating to Subsidence or Heave either as a result of retention or removal of trees.
- This report does not consider the water demands of the trees present to enable decisions as to foundation type and depth. This can be done if so required.
- Current or proposed structures in relation to the indirect influence of trees are not considered within the report unless directly instructed. It is considered that such considerations are best dealt with in a different report having liaised with the structural engineer.

1.4 Availability of this Method Statement

- Copies of this document will be made available for all site visits.
- The Site Agent and developer will each hold a copy of the document, including the tree protection plan.

3. General site conditions

3.1 Storage of Materials

- A designated area will be decided by the Site Manager before any works can commence.
- Areas are marked out on the Tree Protection Plan (TPP) as to the suitable sites and these are referred to as Construction Compounds/Temporary Storage Areas on the site plan.
- It is advisable to consult with the Arboriculturalist if the storage area deviates from that area as outlined by the TPP.
- The Construction Compound/Storage Areas are temporary and are to be utilised as required while the development progresses.

3.2 Fires

- There will be no fires or burning of waste materials on site.

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3.3 Discharge of Contaminants

- No materials that are likely to have an adverse effect on tree health, such as oil, bitumen or cement will be discharged within the RPA of any of the trees to be retained.
- It is advised that the disposal of all waste materials is carried out in an appropriately sustainable fashion.

3.4 Contingency Plans

- Should there be any contamination of soils either within or adjacent to the RPA these should be dealt with as quickly as possible with a proprietary emergency clean up kit. The situation should then be assessed as to whether it is appropriate to remove soils. An Arboriculturalist should be consulted before a decision is made.
- The protection barriers erected should be able to be removed relatively easily to access the area in event of an emergency.

3.5 Protective Barrier/fencing

- Before the commencement of any works on site (other than those set out in the schedule of tree works contained in this document), protective fencing will be erected in the positions shown on Tree Protection Plan (see Appendix 4).
- The fencing will remain in place until completion of the main construction phase and then only removed with the agreement with the consulting Arboriculturalist.
- Other than works detailed within this method statement or approved in writing by the local planning authority, no works shall take place within the exclusion zones defined by the protective fencing.
- No vehicles will be allowed to enter areas to be protected by fencing.
- Notices will be put on all protective fencing 'Construction exclusion zone - Keep Out'.

3.6 Specification of Barrier/ Fencing

- The fencing will comprise a 2.4 metre high scaffold framework supporting either exterior grade plywood with a minimum thickness of 20mm, or wire mesh panels (e.g. Herras).
- See Appendix 1 re. Specification of fencing.
- This specification may vary where installation of such protection is impractical. In which instance Herras fencing securely bolted and stabilised with suitable blocks is recommended.
- The fencing will comprise of Herras fencing bolted together with an extra section placed at right angles at the union for additional strength.
- Herras fencing to be securely bolted and stabilised with suitable blocks which are to be held firm with metal pins banged into the ground.
- It is considered that the current permanent boundary fencing situated between the current reception class building and T1, T2, and T3 Oak is adequate to protect the trees from the effects of the construction as long as the concrete path adjacent to the trees is undisturbed. This will eliminate the need for protective fence will not be installed along this boundary.

3.7 Access to the area of proposed works

- Main access to the site is from the existing access to the north of the proposed build.
- It is considered that this is the main access into the site for the purposes of developing the site.
- If there are any other proposed access points into the site, this should be agreed prior to use with the Arboriculturalist.

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4. Schedule of Tree Works

4.1 In depth survey of trees required prior to progression of works

- Initial survey highlighted issues or further survey required to trees.
- This should be carried out before erection of protective fencing or construction works.

Tree Number	Species	Schedule of works
T1	Oak	Remove detritus to base of tree and check for root plate heave.

4.2 Tree works to be carried out prior to installation of protective Barriers

- It is considered that there is no necessary tree works to be carried out before the installation of protective barriers.

4.3 Tree works to be carried out post-construction

- It is not considered that there will be tree works to existing vegetation to be carried out immediately post- construction

5. Construction Works and Landscaping Within Exclusion Zones

5.1 Works within RPAs of trees

- There are currently construction works that will need to be carried out within the RPA of T1 and T3 Oak.
- It is considered that an Offset of the RPA by 20% of T1 and 10% of T3 Oak will be adequate to eliminate construction works within the RPA.
- The ground surrounding the proposed build is currently tarmac and concrete hard surfacing. It is considered that ground protection surrounding the rooting area of T1 Oak is not necessary as there is already an established hard surface directly below the tree to the west. Ground protection will need to be assessed only if the current hard surface is to be removed.
- It is suggested that the concrete beams that are understood to be used in the foundation construction are constructed above ground, rather than excavating to install them if possible. This will eliminate any damage to the existing roots. There may be issues with the floor levels between the existing building and proposed building. Feasibility will have to be addressed by the architect and engineers if this method is possible.

5.2 Remediation techniques

5.2.1 Air injection and feeding

- Air injection is a recognised method to alleviate the effect of compaction by creating cracks and fissures in soils to improve porosity. This method of air injection is generically known as 'Terra-venting'.
- This method requires the discharge of air into soils via a spike inserted into the ground.
- Conditions for root growth will be further improved by the addition of suitable feed whilst injecting.

5.2.2 Additional feeding of roots

- Feeding of roots is a simple, but effective way of promoting growth of damaged root systems.

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- The addition of feeds and Mychorrhizal Fungi is recommended to be added following aeration of the compacted soil.
- Mychorrhizal Fungi have a symbiotic relationship with trees, providing moisture and mineral nutrients to roots which have been absorbed from the soil.
- The Macro-nutrient Potassium increases root growth of plants and the addition of this feed to the aerated soils would be beneficial to those retained trees.

5.3 Landscaping operations

- Landscaping operations should be carried out with minimum disruption to the existing landscape avoiding removal of topsoil and re-introduction of foreign soils.
- Areas to be re-turfed should be considered with minimum disruption to the soils, removing little (25 to 50mm) to no topsoil.
- Installation of new turf should not result in increased ground levels particularly at the base of the tree.

5.4 Installation of permanent boundary fences

- Installation of fences that will involve working within the RPA will be carried out at the time of carrying out the soft landscaping.
- Where possible and outside of a 2m radius of the main stem of any tree it is suggested a product such as Met-post is used to avoid excavation of holes.
- If excavation for upright posts is to be carried out this should be done after liaison with the Arboricultural consultant in order to minimise disturbance to roots.

5.5 Trenching

- Under current considerations it would appear there is no necessity for carrying out any trenching operations within the RPA of the retained trees.
- Service installation will no doubt be required and so considerations will need to be made if trenching, digging or any type of disruption to the root system may occur as a consequence of installation within the RPA of trees to be retained
- Areas to be excavated should be cleared with use of an air spade to reveal existing roots.
- Areas less densely populated with roots should be appropriated for use of trenching.
- Where possible thrust boring techniques should be used to install underground services rather than digging. (This often requires a large ingress excavation which must be accounted for).
- Where boring is not possible trenches must be hand excavated taking care not to sever or damage large groups of roots (regardless of the stem diameter), or any roots exceeding 25mm in diameter.
- Trenches dug must not leave roots exposed and it is recommended that they are wrapped with a hydro-gel and geo-textile membrane.

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6. Supervision and Monitoring

6.1 Role of the Arboricultural Consultant

- An Arboricultural consultant will be responsible for monitoring of all the tree works and matters pertaining to works related to or affecting the trees.
- In addition, an Arboricultural consultant will inspect the protective fencing and monitor any works within exclusion zone.
- On completion of works an Arboricultural consultant will inspect trees giving an assessment of condition and recommended management of works to retained trees.
- An Arboricultural consultant will also inspect all newly planted trees and advise on management regimes as necessary.

6.2 Record of monitoring

- All site visits will be recorded and findings made available to the developer/ agent and local authority.

7. Sequence of Events

- It is considered that prior to each event all matters pertaining to the trees should be checked and liaison made with an Arboriculturalist, including a site inspection where necessary.

Sequence	Brief outline of event
1	In depth survey of trees required prior to progression of works
2	Tree works to be carried out prior to installation of protective fencing
3	Installation of scaffold protective fencing
4	Establishment of Temporary Storage Areas
5	Commencement of build
6	Completion of all build construction
7	Soft landscaping under taken. (Liaison with an Arboriculturalist over methodology of soft landscaping proposed).
8	Un-install all protective fencing
9	Re- survey all retained trees.

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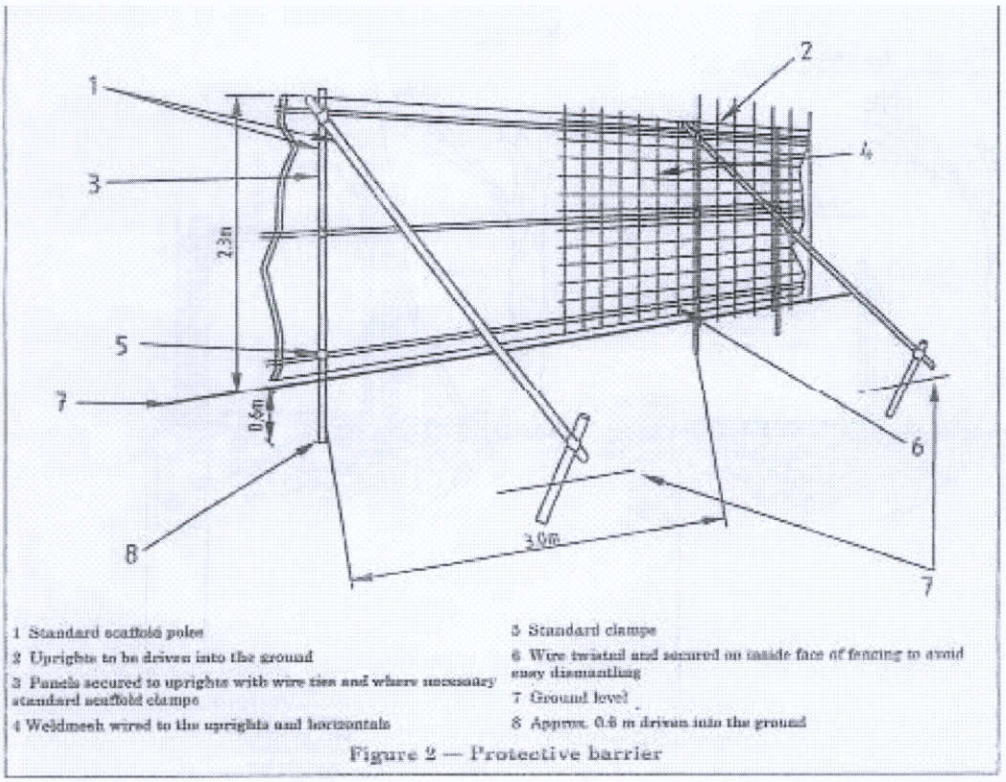
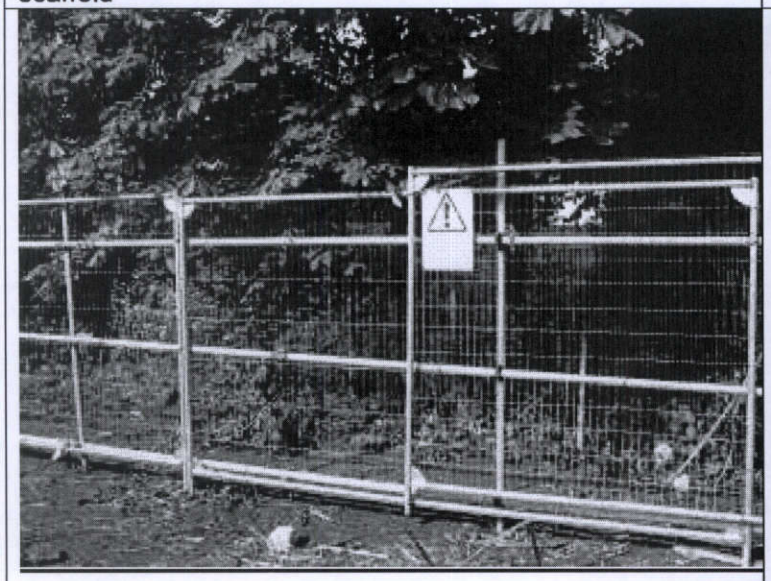
Appendix 1: Specification and Design of Protective Fencing

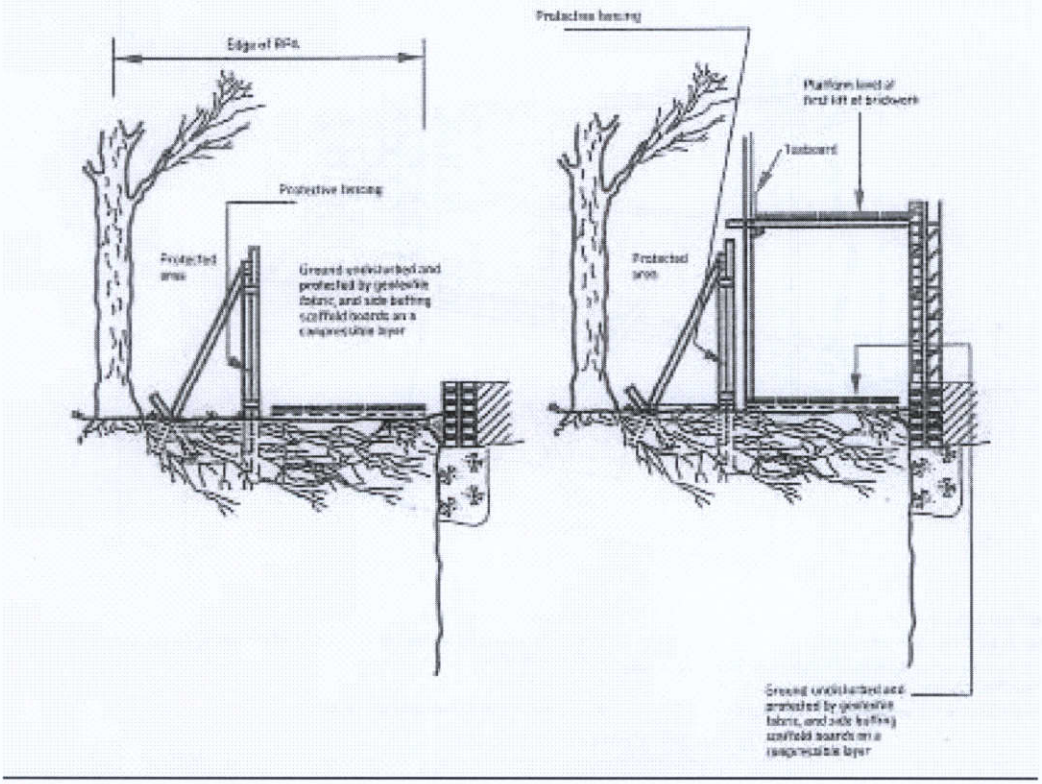


1 Standard scaffold poles
2 Uprights to be driven into the ground
3 Panels secured to uprights with wire ties and where necessary standard scaffold clamps
4 Weldmesh wired to the uprights and horizontals
5 Standard clamps
6 Wire twisted and secured on inside face of fencing to avoid easy dismantling
7 Ground level
8 Approx. 0.6 m driven into the ground

Figure 2 — Protective barrier

Example Photograph of Herras fence panels affixed to scaffold	Example of suitable warning sign on fencing
	

Appendix 2: Specification of Scaffold Construction within RPA



Appendix 3: Limitations of Arboricultural Method Statement

Limitations of the Report

Please also refer to sections 1.2 and 1.3 at the beginning of this report.

- The report is based on information provided by third parties and the specifications and recommendations is dependent upon information provided there in.
- A site visit has been made to check on unspecified trees, no other data has been checked.
- This report does not consider the possible implications to any present or future built structures other than those considered within the report.

Findings of the Survey and the Report

- Validity, accuracy and findings of the report will directly relate to the accuracy of information provided at the time of the survey.

Timing of the Survey and the Report

- The considerations/ findings in this method statement are only valid for one year.
- Such considerations/ findings will become invalid if any building works are undertaken, soil levels are altered or tree work undertaken out side of the scope of works as detailed and presented at the time of compiling this report.
- If there is any alterations to either the property or soil levels, or if tree works are carried out, it is recommended that a new tree report is undertaken.

Trees in relation to other Properties:

- This report/survey only considers the trees in relation to the site as identified.
- It does not comment on possible effects of trees on neighbouring properties, including in relation to subsidence or heave, or with regard to possible hazards presented by trees surveyed.
- Neighbouring owners of trees that are identified as posing a possible risk to the property/site in question should seek their own advice as to possible effects of the recommendations given within this report.
- Damage to, or possibility of damage to, any other structure that is not referred to within the report is not considered unless otherwise specified. This includes both neighbouring structures and any other structure on the property.

Trees in Relation to Subsidence, Heave and Direct damage

- This report does not deal with issues relating to subsidence or heave in relation to any built structures and surrounding vegetation whether the structure or vegetation falls within the boundaries as considered or lies beyond the boundaries.
- The report does not consider issues relating to subsidence or heave in relation to any proposed built structures or future vegetation whether within the boundaries as considered or beyond the boundaries
- It is prudent to consider the effects of heave on any property if trees are removed.
- Similarly the issue of direct damage (when the roots of a tree have physical contact with a structure) is not considered within this report.

Trees subject to statutory controls:

- If the trees are covered by a Tree Preservation Order or are located in a conservation area it will be necessary to consult the local authority before any pruning works, other than certain exemptions, can be carried out.
- The works specified above are necessary for reasonable management and should be acceptable to the local authority. However, tree owners should appreciate that the local authority may take an alternative point of view and have the option to refuse consent.

Trees are subject to changes outside man's control:

- Trees are living organisms subject to changes outside man's control. Trees and environment alter with the seasons it is as well to inspect trees whilst in full leaf and when out of leaf.
- If there are any harsh or unexpected weather conditions, or heavy storms it is also prudent to inspect trees.
- Changes to ground water conditions will affect the root growth of a tree. Such changes are not always the result of man's influence and others factors maybe involved.

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