Tree Survey, Arboricultural Impact Assessment and Tree Protection Scheme to BS 5837:2012

St Mary's C E Primary School, Burton Latimer

Client: Fletchers Trees Ltd
Author: Daniel Simpson M.Arbor.A HND.For
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PART 1 - EXECUTIVE SUMMARY

1.1 The proposal is to erect new school buildings and surfaces including a new car park and multi-use games area.

Tree Survey

1.2 A site visit was carried out by the author on 20th August 2012. The weather was calm and sunny. A total of 9 trees were recorded, and two groups of trees, the majority of the trees recorded are in the groups.

1.3 There was a broad mix of trees at different life stages, mostly consisting of native and naturalised species. The majority of the trees were assigned category B, with two trees being given category U due to poor condition. A single category A tree was recorded.

Arboricultural Impact Assessment

1.4 One category B tree is within a proposed building footprint and must be removed to facilitate construction. Due to its small size this loss can be mitigated with replacement planting.

1.5 New surfaces encroach onto Root Protection Areas (RPAs) of four trees. These trees must be protected during development by arboricultural methodology, barriers and ground protection.

Tree Protection Scheme

1.6 Specifications for tree protection barriers and ground protection are provided, along with general advice on tree retention and an arboricultural method statement for tree works with landscaping advice. Tree protection and methodology shall be deployed where indicated on the Tree Protection Plan.

Conclusion

1.7 The arboricultural impact is relatively low as demonstrated in the arboricultural impact assessment. Accordingly the impact can be satisfactorily mitigated as proposed in the tree protection scheme.
PART 2 - GENERAL INFORMATION

The Author / Surveyor

2.1 My name is Daniel Simpson I am a professional member of the Arboricultural Association and Consulting Arborist Society. I have worked in arboriculture for twelve years including a senior post in a Local Planning Authority, and in private practice as a climbing arborist, surveyor and consulting arboriculturalist.

Brief From Client

2.2 To carry out a tree survey to BS 5837 in order to produce a BS 5837 report incorporating Arboricultural Impact Assessment, Tree Protection and Arboricultural Method Statement.

Description of the Proposed Development

2.3 Erection of new school buildings with car parking and multi-use games area.

Documents Referred To

2.4 The British Standard Institute publication BS 5837:2012 ‘Trees in relation to design, demolition and construction - Recommendations’ is referred to throughout this report. This is a nationally recognised standard typically used by Local Planning Authorities (LPAs) to assess planning applications. It is frequently referred to in planning conditions to enforce protection or control of works that may be harmful to trees both on and off the site.

2.5 List of documents received from client or a representative of the client:

- PL06/07/08 Elevations
- PL03/04 Floor Plans
- PL01/02 site plan
- PL05 Section Drawing
- Site Survey
Limitations

2.6 This report was prepared for use by our client in accordance with the terms of the contract and for planning purposes only. It is not a substitute for a tree condition, insurance, or mortgage service. Information provided by third parties used in the preparation of this report is assumed to be correct. The contents are copyright and may not be duplicated or used by third parties without the written consent of Tree Reports Ltd.

Printing

2.7 This report is compiled into a single pdf file designed for electronic release. If printing this document, please note that the plan drawings may be a different size or orientation to the standard A4 / portrait of the rest of the report. It is necessary to print plans at the full size for scaling.

Terms and Definitions

2.8 Arboricultural Method Statement – guidelines for specified working operations near trees to avoid any harmful impact as defined within BS 5837:2012. This can cover a range of works from tree work to operating cranes, installing foundations or services and guidelines for how special engineering must perform to function as a tree protection measure.

2.9 Compression Fork – a weak branch formation resulting from an acute angle between forking branches. This creates pressure between the limbs as they grow and push each other apart at the union creating an increased risk of branch failure. Some species are more prone to compression forks than others.

2.10 Conservation Area – an area of land designated through planning legislation, within which no tree above 7 centimetres stem diameter (at 1.3m above ground level) can be lopped, topped or removed without following a process of notifying the LPA. There are certain notable exceptions in the cases of dead or dangerous trees.

2.11 Coppice - A traditional management technique in which broadleaved trees are cut to just above ground level and the resulting shoots are then harvested on a cycle and used for a wide variety of purposes such as wood fuel and hurdle making. Most coniferous / evergreen trees do not coppice.

2.12 Ground Protection – in this context the term refers to a method for preventing the ground from being disturbed, usually within the Root Protection Areas of retained trees. Other uses
include protection areas to be planted. The way ground protection should be designed to perform is typically described within an Arboricultural Method Statement.

2.13 **Local Planning Authority** – Typically a department of the local council that manages planning and protected tree issues.

2.14 **Root Protection Area (RPA)** – a minimum recommended area for tree protection in ‘BS 5837:2012 Tree in Relation to Construction’. In these areas works should be avoided where possible. Where work in these areas cannot be avoided, it should be carried out in accordance with a Tree Protection Plan and / or Arboricultural Method Statement.

2.15 **Tree Constraints Plan** – as defined within BS 5837:2012. This plan shows above and below ground constraints that may impact on a planning proposal such as the tree branch spread and Root Protection Area...

2.16 **Tree Preservation Order (TPO)** – a type of land charge which specifies certain trees for protection under the Town and Country Planning Act (1990). It makes it necessary to make an application to the LPA to work on them (with notable exceptions). And a criminal offence to otherwise damage or destroy them.

2.17 **Tree Protection Plan** – as defined within BS 5837:2012. This shows the layout of protective measures for retained trees in, typically including tree protective fencing and / or ground protection. And in some cases, shows where special working methods recommended in the Arboricultural Method Statement in this report will be adopted. This is intended to be used for planning purposes and also as a reference on-site.
PART 3 – TREE SURVEY

3.1 METHODOLOGY

3.1.1 Data was collected in accordance with the requirements of British Standard 5837:2012. All observations were from ground level without detailed or invasive investigations. Measurements were taken using a diameter tape, digital clinometer and laser measure. Where this was not possible or reasonably practical, measurements have been estimated by eye.

3.1.2 The trees were surveyed and assessed impartially and irrespective of the proposed development. Management recommendations should be implemented regardless of any proposed development for reasons of sound arboricultural management or safety.

3.1.3 BS 5837:2012 requires retention of better quality (category A and B trees) where possible. Planning permission overrides a Tree Preservation Order and Conservation Area. Furthermore, trees are a material consideration in the UK planning system irrespective of their legal status. It is therefore not considered necessary to highlight or give additional merit to trees that have legal protection. Trees in land adjacent to the site are considered where they may be impacted by development. For example when roots or branches encroach onto the site.

3.1.4 Trees may be recorded as group or woodland where

   i) The canopies touch.
   ii) The trees have more group value than individual merit.
   iii) They are part of a formal landscape feature like an avenue.
   iv) It is impractical to record them individually.

3.1.5 Trees within groups or woodlands etc. are recorded individually where it is necessary to distinguish them from others.
3.2 ANALYSIS

Species

3.2.1 The scientific names for the species recorded only in common names are as follows:

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rowan</td>
<td>Sorbus aucuparia</td>
</tr>
<tr>
<td>Purple plum</td>
<td>Prunus cerasifera</td>
</tr>
<tr>
<td>Holly</td>
<td>Ilex aquifolium</td>
</tr>
<tr>
<td>Sitka spruce</td>
<td>Picea stichensis</td>
</tr>
<tr>
<td>False acacia</td>
<td>Robinia pseudoacacia</td>
</tr>
<tr>
<td>Sweet chestnut</td>
<td>Castanea sativa</td>
</tr>
<tr>
<td>English oak</td>
<td>Quercus robur</td>
</tr>
<tr>
<td>Hazel</td>
<td>Corylus avellana</td>
</tr>
<tr>
<td>Lombardy poplar</td>
<td>Populus nigra ’italica’</td>
</tr>
<tr>
<td>Wild cherry</td>
<td>Prunus avium</td>
</tr>
<tr>
<td>Ornamental cherry</td>
<td>Prunus spp.</td>
</tr>
<tr>
<td>Sycamore</td>
<td>Acer pseudoplatanus</td>
</tr>
<tr>
<td>Ash</td>
<td>Fraxinus excelsior</td>
</tr>
<tr>
<td>Horse chestnut</td>
<td>Aesculus hippocastanum</td>
</tr>
<tr>
<td>Alder</td>
<td>Alnus glutinosa</td>
</tr>
</tbody>
</table>

Categories

3.2.2 The distribution of categories of individual trees and groups is as follows:

<table>
<thead>
<tr>
<th>BS 5837 Category</th>
<th>Number of Trees</th>
<th>% of Trees</th>
<th>Number of Groups</th>
<th>% of Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1</td>
<td>11.1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>5</td>
<td>55.5</td>
<td>2</td>
<td>100</td>
</tr>
<tr>
<td>C</td>
<td>1</td>
<td>11.1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>R</td>
<td>2</td>
<td>22.2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>100</td>
<td>2</td>
<td>100</td>
</tr>
</tbody>
</table>
3.2.3 The life stages recorded for individual trees are summarised as follows:

<table>
<thead>
<tr>
<th>Life Stage</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>0</td>
</tr>
<tr>
<td>Early-mature</td>
<td>0</td>
</tr>
<tr>
<td>Middle-aged</td>
<td>5</td>
</tr>
<tr>
<td>Mature</td>
<td>4</td>
</tr>
<tr>
<td>Over-mature</td>
<td>0</td>
</tr>
</tbody>
</table>
| Veteran / ancient | 0 |}

3.2.4 The life stages of groups are expressed as ranges due to varying age of trees within as follows:

| Young – Early Mature | 1   |
| Early-mature – Middle-aged | 1 |
3.3  KEY TO TREE SURVEY AND PLANS

**Ref:**

3.3.1  The reference number assigned to that item with a code to help identify the type or structure such as:

<table>
<thead>
<tr>
<th>Ref</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>T#</td>
<td>Tree</td>
</tr>
<tr>
<td>S#</td>
<td>Shrub</td>
</tr>
<tr>
<td>TG#</td>
<td>Group of Trees</td>
</tr>
<tr>
<td>SG#</td>
<td>Group of Shrubs</td>
</tr>
<tr>
<td>O#</td>
<td>Orchard</td>
</tr>
<tr>
<td>W#</td>
<td>Woodland</td>
</tr>
<tr>
<td>H#</td>
<td>Hedgerow</td>
</tr>
</tbody>
</table>

**Hgt (m):**

3.3.2  Height of the tree in metres rounded up to the nearest half metre.

**DBH**

3.3.3  ‘Diameter at Breast Height’ – the stem diameter measured in millimetres at 1.5m above ground level. Where the ground around the base of the tree is not level this is taken 1.5m above the upper side of the slope.

**Root Protection Area (RPA)**

3.3.4  This appears on the survey plan and is calculated by multiplying the stem diameter using one of three methods specified in BS 5837:2010 depending on the number of stems the tree has. This should be considered an indication only as various factors may influence the size and shape of the RPA, such as below ground constraints. In the first instance, development should not be located inside an RPA where it can be avoided. Where it cannot be avoided the Council will usually expect further advice such as an Arboricultural Impact Assessment.

**Crown Spread**

3.3.5  The crown spread is given to four cardinal points, rounded up to the nearest half metre.
Clr

3.3.6 The height of crown clearance of the lowest branch above ground level, with the general
direction it is growing to a cardinal point.

Life Stage

3.3.7 Recorded with codes as follows, and relative to the species of the tree:

<table>
<thead>
<tr>
<th>Code</th>
<th>Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Young</td>
</tr>
<tr>
<td>EM</td>
<td>Early-mature</td>
</tr>
<tr>
<td>MA</td>
<td>Middle-aged</td>
</tr>
<tr>
<td>M</td>
<td>Mature</td>
</tr>
<tr>
<td>OM</td>
<td>Over-mature</td>
</tr>
<tr>
<td>V</td>
<td>Veteran</td>
</tr>
</tbody>
</table>

General observations

3.3.8 Will include notes on structural defects, physiological problems, special features, decay and
management recommendations. Please note that management recommendations do not
constitute a specification for any required works.

ERC

3.3.9 Means ‘estimated remaining contribution’, recorded in a range of years. It is the amount of
time the tree can realistically be retained for.

<table>
<thead>
<tr>
<th>Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10</td>
<td>Unsuitable for retention</td>
</tr>
<tr>
<td>10 - 20</td>
<td>Can be retained in the short term</td>
</tr>
<tr>
<td>20 – 40</td>
<td>Will continue to offer benefits for the foreseeable future</td>
</tr>
<tr>
<td>40+</td>
<td>Good longevity potential</td>
</tr>
</tbody>
</table>

Cat.

3.3.10 Means ‘category grading’, a full explanation of the categories is given in an excerpt from BS
5837:2012 in the Tree Survey Schedule section.
### TREES FOR REMOVAL

<table>
<thead>
<tr>
<th>Category and definition</th>
<th>Criteria</th>
<th>Colour on Plan</th>
</tr>
</thead>
</table>
| **Category R** - Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management | • Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other R category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)  
• Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline  
• Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality NOTE Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of bat box in nearby tree). | DARK RED |

### TREES TO BE CONSIDERED FOR RETENTION

<table>
<thead>
<tr>
<th>Category and definition</th>
<th>Criteria — Subcategories</th>
<th>Colour on Plan</th>
</tr>
</thead>
</table>
| **Category A** - Those of high quality and value: in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested) | 1 Mainly arboricultural values  
2 Mainly landscape values  
3 Mainly cultural values, including conservation | LIGHT GREEN |

- Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)
- Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups)
- Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality
- Trees with clearly identifiable conservation or other cultural benefits

| **Category B** - Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested) | 1 Mainly arboricultural values  
2 Mainly landscape values  
3 Mainly cultural values, including conservation | MID BLUE |

- Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)
- Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality
- Trees with clearly identifiable conservation or other cultural benefits

| **Category C** - Those of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm | 1 Mainly arboricultural values  
2 Mainly landscape values  
3 Mainly cultural values, including conservation | GREY |

- Trees not qualifying in higher categories  
- Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit
- Trees with very limited conservation or other cultural benefits

NOTE: Whilst 'C' category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150 mm should be considered for relocation.
## BS 5837:2012 Tree Survey

**Site:** St Mary's C E Primary School, High Street, Burton Latimer, Kettering, Northamptonshire NN15 5RL  
**Client:** Fletchers Trees  
**Surveyor:** Daniel Simpson  
**Date:** 20.08.2012  
**Weather:** Calm and sunny

<table>
<thead>
<tr>
<th>Ref</th>
<th>Species (Common name)</th>
<th>Hgt (m)</th>
<th>DBH (mm)</th>
<th>Branch Spread</th>
<th>Clr. (m)</th>
<th>Life Stage</th>
<th>General Observations</th>
<th>ERC</th>
<th>Cat.</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>Rowan</td>
<td>6</td>
<td>200</td>
<td>4 3 3 3 4</td>
<td>1</td>
<td>MA</td>
<td>Fused branches at 2 metres above ground level - no implications.</td>
<td>10 - 20</td>
<td>B2</td>
</tr>
<tr>
<td>T2</td>
<td>Purple leaf plum</td>
<td>7</td>
<td>300</td>
<td>3 3 5 3</td>
<td>1.5</td>
<td>M</td>
<td>Adjacent wall has cracks, possible direct damage from growth of tree - no access to base.</td>
<td>10-20</td>
<td>A2</td>
</tr>
<tr>
<td>T3</td>
<td>Holly</td>
<td>7</td>
<td>200</td>
<td>3 3 3 3</td>
<td>1.8</td>
<td>MA</td>
<td>Adjacent wall has cracks, possible direct damage from growth of tree - no access to base.</td>
<td>10 -20</td>
<td>C2</td>
</tr>
<tr>
<td>T4</td>
<td>Sitka spruce</td>
<td>16.5</td>
<td>300</td>
<td>5 5 5 5</td>
<td>2</td>
<td>MA</td>
<td>Notably sparse, 30% normal crown density. Appears to be drying.</td>
<td>&lt;10</td>
<td>U</td>
</tr>
<tr>
<td>T5</td>
<td>False acacia</td>
<td>12</td>
<td>320</td>
<td>4 4 4 4</td>
<td>1.8</td>
<td>M</td>
<td>Dying back at tips, swelling at base, and evidence of honey fungus - remove tree.</td>
<td>&lt;10</td>
<td>U</td>
</tr>
<tr>
<td>T6</td>
<td>Purple leaf plum</td>
<td>7</td>
<td>320</td>
<td>3 4.5 4.5 3</td>
<td>1</td>
<td>M</td>
<td>Compression fork at 0.5m above ground level.</td>
<td>10 - 20</td>
<td>B2</td>
</tr>
<tr>
<td>T7</td>
<td>Sweet chestnut</td>
<td>7</td>
<td>330</td>
<td>3 4 0 0</td>
<td>2.5</td>
<td>MA</td>
<td>Crown lifted to 3m, and lions tail branch formations due to uneven thinning.</td>
<td>10 - 20</td>
<td>B2</td>
</tr>
<tr>
<td>T8</td>
<td>English oak</td>
<td>7</td>
<td>250</td>
<td>1 4 4 4</td>
<td>2.5</td>
<td>MA</td>
<td>Crown lifted to 3m, and lions tail branch formations due to uneven thinning.</td>
<td>10 - 20</td>
<td>B2</td>
</tr>
<tr>
<td>T9</td>
<td>Hazel</td>
<td>7</td>
<td>600</td>
<td>6 3 6 3</td>
<td>1.2</td>
<td>M</td>
<td>No significant defects.</td>
<td>40+</td>
<td>B2</td>
</tr>
<tr>
<td>Group</td>
<td>Trees</td>
<td>Age</td>
<td>Height</td>
<td>Diameter</td>
<td>Health</td>
<td>Condition</td>
<td>Comments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>-------------------------------------------</td>
<td>-----</td>
<td>--------</td>
<td>----------</td>
<td>---------</td>
<td>------------</td>
<td>--------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G1</td>
<td>Lombardy poplar, English oak, sweet chestnut, cherry, sycamore, ash, horse chestnut, Rowan, alder.</td>
<td>5-22</td>
<td>up to 670</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>EM-M</td>
<td>The caretaker informed me that the 2 mature poplars are due to be reduced by 50% according to the caretaker, which I would recommend due to their age and location. The outer bark was stripped from one of the branches.</td>
</tr>
<tr>
<td>G2</td>
<td>English oak, ornamental cherry</td>
<td>Up to 7</td>
<td>Av. 175</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.5</td>
<td>Y-EM</td>
<td>Some trees, notably the cherries, have had outer bark stripped, and although they are likely to survive, this sort of damage could kill the trees and guards should be fitted.</td>
</tr>
</tbody>
</table>

40+ B2
PART 4 – ARBORICULTURAL IMPACT ASSESSMENT

4.1 INTRODUCTION

4.1.1 BS 5837:2012 provides a methodology for determining the above and below ground constraints presented by trees on and adjacent to the site. These have been recorded and presented visually on the plans in this report and the appended tree survey table.

Development Background

4.1.2 The site currently consists of school buildings of varying ages with associated hard and soft landscaping and car parking. The entrance to the main building is off high street. Vehicular access to the site is via the Latimer Close entrance.

4.2 OBSERVATIONS

Root Protection Areas

4.2.1 Proposed new surfaces encroaches into the RPAs of off-site trees T3 Holly (<5% of the area), and T2 (less than 20% of the total area). However, it is anticipated that the boundary wall with have acted as a barrier to roots entering the site. It is unlikely therefore that this incursion will affect the long-term health of the tree. Arboricultural methodology can be adopted as a precaution.

4.2.2 The RPAs of all other trees can be safely protected from compaction or other disturbance with barriers. T2, T3 and T9 will require ground protection.

There is slight incursion into the RPAs of two trees in G1. But with the amount of additional rooting area protected and beyond the site, it is considered that the long-term health and longevity of the trees will not be affected. Arboricultural methodology must be adopted for works in the RPA in case tree roots are discovered.

Loss of trees

4.2.3 The development footprint does not allow the retention of T1 Rowan (Category B, middle aged). This tree could easily be replaced with a new specimen of similar dimensions. The client has informed me that T6 must also be removed to facilitate construction.
Above ground constraints

4.2.4 The trees would not cast excessive shade on the proposed development, and due to the use of the site, shade is not considered to be an issue.

4.2.5 The canopies of most retained trees can be protected with barriers, but where this is not possible (T2, T3, T4 and T9) – arboricultural methodology will be required to control nearby works to prevent collision. T9 is a coppice stool and could be cut back from the proposed Multi-Use Games Area or at ground level and it would sprout new growth.

4.3 CONCLUSIONS

4.3.1 The arboricultural impact is relatively low, and can be mitigated with tree works, landscaping, protective barriers, ground protection and arboricultural methodology as set out in Part 5.
PART 5 – TREE PROTECTION SCHEME

5.1 GENERAL

Distribution

5.1.1 It is important to ensure everyone involved in the planning and design of the proposed development is aware of this report and has access to a copy as soon as it is released.

Responsibilities

5.1.2 Successful implementation of tree protection measures and long term tree retention depends on co-ordination between the client and key personnel involved in the development.

5.1.3 The client and agent shall ensure that:

- the site manager and all other personnel are provided with this document;
- all planning conditions relating to underground works, services, trees and landscaping are cleared before development commences;
- all requirements of this Tree Protection Scheme are adhered to;
- the site manager is updated of any approved changes or variations to this document.

5.1.4 The client and site manager shall ensure that:

- a copy of this document with the plan in appendix III is easily accessible for site personnel to refer to before and during the time construction activity is taking place;
- all personnel working on the site are made aware of the tree protection plan and arboricultural method statements covering any activities they will undertake. This duty includes delegating the task of briefing personnel in the absence of the site manager.
- The tree protection measures are left in place until the construction phase of development is completed, except with the written consent of the LPA.
- site personnel are updated of any approved changes or variations to the approved tree protection measures.

5.1.5 All personnel must work in accordance with this document at all times, or in accordance with any approved variation.
Procedures for incidents

5.1.6 If any breach of the approved tree protection measures occurs:

- The Local Planning Authority Tree officer or other Planning Officer and Tree Reports Ltd shall be notified.
- The site manager must be informed immediately.
- Swift action must be taken to halt the breach and prevent any further breach.
- Damage mitigation measures appropriate to the scale of the incident will be deployed where required.

Prohibited Activities

5.1.7 The following must not be carried out under any circumstances:

- Cutting down, uprooting, damaging or otherwise destroying any retained tree.
- Lighting a fire within 10 metres of the canopy of any retained tree.
- Equipment, signage, fencing, tree protection barriers, materials, components, vehicles or structures shall not be attached to or supported by a retained tree.
- Mixing cement, chemical toilets and other use or storage of anything that would be harmful to trees shall not take place within, or close to a Root Protection Area (RPA). The distance away from the RPA must be sufficient, and the slope of the site must be such that contamination of soil in the RPA would not occur if there were spillage, seepage or displacement.
- No plant or equipment or vehicle with a hydraulic arm such as a mini digger shall be operated within striking distance of the stem and branches or the RPA of any retained tree unless otherwise specified in this report.

5.1.8 No alterations or variations shall be made to the approved tree protection measures without written approval from the LPA.
Timing and order of operations

5.1.9 The development must be carried out in the following order unless otherwise agreed in writing with the LPA. Each step must be completed before moving onto the next:

i. Tree Works
ii. Installation of tree protection barriers and temporary ground protection in areas indicated on plan and areas of special engineering.
iii. Construction
iv. Removal of the remaining ground protection and barriers.
v. Landscaping

5.2 PROTECTIVE BARRIERS AND GROUND PROTECTION

Barriers

5.2.1 The barriers shall be installed and removed in accordance with the timing of operations above and laid out in accordance with the appended Tree Protection Plan. The appended notice should be used to create all weather notices that must be added to the tree protection barriers or suitable intervals. For this site, the existing boundary fence may be used as a tree protection barrier. In the event of any panel or support becoming damaged, this must be immediately reinforced by adding panels with the designs below as appropriate.

5.2.2 The default specification is a vertical and horizontal scaffold framework, braced to resist impacts, as per figure 1 below. The vertical tubes are spaced at a maximum interval of 3 m and these are driven securely into the ground. Welded mesh panels are securely attached to the frame. During installation it is important to consider the position of below ground services and structural roots, which must not be damaged. Where these constraints prevent the use of this specification, an alternative specification is given below. See figure 1 below:
Alternative tree protection barrier design

5.2.3 2 metre tall welded mesh panels standing in rubber or concrete feet joined using a minimum of two anti-tamper couplers installed so they can only be removed from inside the protected area. The fence couplers should be at spaced least 1 m apart, but uniformly across the whole barrier. These panels must be supported within the protected area with struts attached to a base plate secured by ground pins as per figure 2a.
5.2.4 Where the fencing is installed above retained hard surfacing and / or it is otherwise not feasible to use ground pins (e.g. due to underlying services or structural roots), the struts can be mounted on a block tray as per figure 2b.

Figure 2 – above ground stabilising systems:

a) Stabilizer strut with base plate secured with ground pins

b) Stabilizer strut mounted on block tray
5.3 ARBORICULTURAL METHOD STATEMENT

Tree Works

5.3.1 All tree works should be carried out by professional arboricultural contractors with appropriate qualifications, experience and public liability insurance. The work should be carried out in accordance with British Standard document number 3998:2010 “Recommendations for Tree Work”.

<table>
<thead>
<tr>
<th>Survey Ref</th>
<th>Description of works</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>Fell to ground level and grind out / dig out stump.</td>
</tr>
<tr>
<td>T9</td>
<td>Cut back away from proposed new Multi Use Games Area or coppice.</td>
</tr>
</tbody>
</table>

New permanent hard surface in Root Protection Areas and new Multi Use Games Area (MUGA)

5.3.2 Where the development footprint encroaches onto the RPA of T2, T3 and T9, any excavation must be by hand. Any tree roots found up to 25mm diameter can be pruned back with sharp secateurs leaving a wound of the smallest diameter possible. If any roots over 25mm are found, these must be retained undamaged, and further advice from Tree Reports Ltd sought.

Landscaping

5.3.3 The landscaping shall include at least two trees. The trees shall be at least of a medium size (final height 15 metres) and 14-16cm stem girth at the time of planting.

5.3.4 The landscaping plan shall clearly show the location of the proposed trees and any existing trees to be removed that has not already been shown on the tree protection plan.

5.3.5 If within a period of four years from the date of planting of any tree that tree, or any tree planted in replacement for it, is removed, uprooted, destroyed or dies, (or becomes in the opinion of the LPA seriously damaged or defective), another tree of the same species and size
originally planted shall be planted at the same place within 12 months, unless otherwise agreed in writing with the LPA.

5.3.6 All trees selected shall meet BS 3936-1:1992 “Nursery Stock – Part 1: Specification for trees and shrubs”. Essentially they will be of good structural form both above and below ground with a well developed root system. The trees shall be physiologically healthy, free of pests and diseases, dead branches and entwining branches. The trees should need little or no formative pruning at the time of planting, better quality stock should be chosen instead.

5.3.7 Great care must be taken to prevent any damage to trees during handling and transportation. The contractor(s) charged with supplying the trees shall ensure that the trees are handled in accordance with the Plant Handling Code, from selection at the nursery to planting on site. The trees will be well packed and secured onto the vehicle during transit, so as to avoid any damage.

5.3.8 The contractor shall replace any trees that are damaged on site or during transportation from the nursery to the site.

5.3.9 The planting pits shall be twice the diameter and depth of the tree roots. Care will be taken to ensure the tree is planted at an appropriate depth so that the root collar is just below ground level. The soil removed from the planting pit shall be well broken before backfilling, and an appropriate slow release fertiliser will be mixed into the backfill soil in accordance with the manufacturer’s instructions. The trees will be well firmed with the ball of the foot.

5.3.10 Each tree shall be well watered at the time of planting.
This area contains trees which must be retained as part of the planning permission. Additional legal protection may also apply e.g. a Tree Preservation Order. Removing or damaging trees in this area may be a breach of planning permission. Damage to protected trees may lead to a criminal conviction and / or a fine.

Only the site manager may permit for the removal or moving of tree protection measures. This should always be in accordance with the planning permission.