ARBORICULTURAL REPORT

St. Andrews Primary School, Kettering.

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Prepared For
Lend Lease Consulting (EMEA) Ltd

Mr Paul Tuff
Lend Lease Consulting (EMEA) Ltd
John Dryden House
8-10 The Lakes
Northampton
Northamptonshire
NN4 7YD

Prepared By
Lockhart Garratt Ltd

Fairfax House
27 Cromwell Business Park
Chipping Norton
Oxfordshire OX7 5SR

Telephone: 01608 648657
Email: info@lockhart-garratt.co.uk
Web: www.lockhart-garratt.co.uk
Introduction

PURPOSE OF THIS DOCUMENT

This report has been commissioned to provide an assessment of the trees at St. Andrew’s Primary School in accordance with the guidelines provided by BS5837:2012 Trees in relation to design, demolition and construction – Recommendations.

It consists of:

- A Tree Survey that records all relevant information about the trees on or adjacent to the site that may be impacted by the proposals. This includes a Tree Constraints Plan that shows the location of the trees on the site irrespective of any development considerations.

- An Arboricultural Impact Assessment to consider the impact that the development proposal may have on the trees. It provides details of how any adverse impact will be mitigated and includes an Arboricultural Implications Plan. This shows the location of the trees in relation to the proposed development and the above and below ground constraints posed by the trees.

- An Arboricultural Method Statement to provide details on how the retained trees will be protected and managed during the development process. This includes a Tree Protection Plan that provides illustrative guidance on the tree protection measures.

The purpose of this report is to provide the local authority (Kettering Borough Council) with the necessary information to assess the tree issues associated with the planning application, and use it as a basis for issuing planning consent or engaging in further discussions towards that end.

As part of the planning process this document should be available for inspection by interested parties including members of the public. The aim is to present the information in a manner that can easily be understood by people without specific knowledge of tree related matters.

EXECUTIVE SUMMARY OF THE IMPACT OF THE DEVELOPMENT ON THE TREES

The proposed development for the extension of the classrooms at St Andrews Primary School will require the removal of part of one group of trees and one individual tree. Additionally, two trees will require facilitation pruning to allow clear access to the site for construction traffic. The proposed removals will not have an adverse impact on the visual amenity of the school or wider community due to the prominence of the retained trees. The proposed tree works are in line with current industry best practice and within the normal management regime implemented by the school. There will be no impact on the visual amenity offered by these trees in the long term.
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ATTACHMENTS:
   - Tree Constraints Plan (D13-0031 TCP v2)
   - Arboricultural Implications Plan (D13-0314 AIP v2)
   - Tree Protection Plan (D13-0367 TPP v3)
SECTION 1: SITE & TREE SURVEY

1.1 TOPOGRAPHICAL SURVEY

A copy of a topographical plan (MS-3897) drawn by CJC of Brandon Surveys Ltd on September 2012 has been provided for the purpose of this tree report.

1.1.1 Site visit

The site visit was undertaken 2 May 2013. This survey was undertaken with the assistance of David Venables, also of Lockhart Garratt. No members of the school staff were present during the survey although they were aware of our presence.

An additional site visit was conducted on 08 October 2013. This survey was conducted to collect additional tree data. No members of the school staff were present during the survey although they were aware of our presence.

All observations were made from ground level, without detailed investigation with regard to the general condition of the tree.

Trees that are located outside of the site have been considered as part of this survey, and have been annotated on the accompanying plan as such.

The weather at the time of inspection on 02 May 2013 was clear, sunny and visibility was good.

The weather at the time of inspection on 08 October 2013 was overcast, and visibility was poor.

1.2 TREE SURVEY

The assessment of the trees has been carried out in accordance with the guidance provided in Annexe C of BS5837. In summary this requires that any tree on the site with a stem diameter of over 75mm at 1.5m above ground level is recorded.

A copy of the schedule of trees can be found in Appendix 2. The locations of the tree have been plotted on the attached Tree Constraints Plan (TCP).

Stem diameter measurements were taken using a girting tape and are recorded to the nearest full unit or in accordance with the requirements of BS5837. Where access to the base of the tree was not possible for any reason, the diameter has been estimated.

Height measurements are estimated and recorded to the nearest full metre.

Crown spread dimensions have been recorded using a Disto™ laser-ace and are recorded to the nearest full metre.

The trees are then categorised in an order defined in table 1 of BS5837, a copy of which can be seen in Appendix 3, but which can be summarised as:
**A Category**  Trees of high quality and value in such a condition as to be able to make a substantial contribution for a minimum of 40 years

**B Category**  Trees of moderate quality and value in such a condition as to make a significant contribution for a minimum 20 years

**C Category**  Trees of low quality and value currently in adequate condition able to remain until new planting can be established. These trees are expected to remain for a minimum of 10 years. It also includes young trees with a stem diameter less than 150mm measured at 1.5 metres above ground level.

**U Category**  Trees 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 or forestry management.

Additionally, BS5837:2012 provides subcategories 1-3 within the category system outlined above which indicate the area(s) in which a tree or group retention value lies.

1. Mainly arboricultural.
2. Mainly landscape.
3. Mainly cultural, including conservation.

Within the proposed development area and including adjacent land, there are a total of 9 individual and groups of trees that possess the potential to be affected by the development proposals. A summary of my assessment of the quality of these trees is shown in Table 1

**Table 1 - An overview of tree quality within the surveyed area**

<table>
<thead>
<tr>
<th>Category A</th>
<th>Category B</th>
<th>Category C</th>
<th>Category U</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>5</td>
<td>4</td>
<td>-</td>
</tr>
</tbody>
</table>
SECTION 2: ARBORICULTURAL IMPLICATIONS ASSESSMENT

2.1 DEVELOPMENT PROPOSAL

The proposal is for the development of additional classroom facilities at St Andrew's Primary School.

The proposals submitted within this report have been guided and influenced by the constraints posed by the trees as indicated on the tree constraints plan. Where feasible, tree retention has been a key consideration in the overall site design and layout. Tree removal or works has been limited to those that are necessary to enable the development proposal to proceed.

The proposed layout of the development is shown on the attached Arboricultural Implications Plan (AIP).

2.2 CONSTRAINTS POSED BY EXISTING TREES

Development proposals can impact on trees by causing them to be removed either immediately or in the future. It does this by adversely affecting their potential for retention either through disturbance to the root protection area (RPA) or through the need for pruning.

Illustrative guidance of the constraints posed by the trees to the site can be seen on the attached Tree Constraints Plan (TCP). Where trees pose a constraint to the proposed development, these constraints have influenced the final design and layout proposals as shown on the TCP. Mitigation measures have been proposed to minimise the impact on the trees from the proposed development.

Within the site, 7 individual or groups of trees have the potential to be impacted by the proposed development and as such pose a constraint to the plan.

2.2.1 Above ground constraints & proximity of trees to structures

Where the current and/or ultimate height of a Category A, B or C tree will cause an unreasonable obstruction to the proposed development, this must be considered as a constraint. This is usually considered in terms of issues relating to shade and light, but also factor in aspects such as:

- Shading (of buildings and open space)
- Direct damage to structures
- Future pressure for removal
- Seasonal nuisance (e.g. leaf fall blocking gutters, fruit fall creating slippery patches and honey dew dripping on vehicles and surfaces)

Consideration is also given to species characteristics such as:

- Deciduous or evergreen;
- Density of foliage;

The above ground constraints are marked on the attached TCP as a continuous green line around each tree.
7 individual or groups of trees have the potential for their above ground parts to be impacted as a direct result of this development proposal.

2.2.2 Below ground constraints

The below ground constraints are defined as the likely spread and disposition of the root system of the tree and are plotted on the attached TCP as a magenta circle around each tree.

The RPA is defined as the minimum area (in m$^2$) around the tree that is deemed to contain sufficient roots and rooting volume to maintain the tree’s viability, and where the protection of the roots and soil structure is treated as a priority.

Section 4.6.2 & 4.6.3 of BS5837 allows for the shape of the RPA to be changed for the likely spread of the roots, taking into account factors such as:

- Past or existing site conditions;
- Soil type and structure;
- Topography and drainage.

The total area of the RPA cannot be changed during any adjustment to the likely root spread. Section 5.3 (a) of BS5837 requires that any encroachment of the RPA by the proposed development must be justified and it must be demonstrated that the tree can remain viable. The area lost to encroachment must be compensated for elsewhere, contiguous with its RPA.

None of the trees on this site will be affected by encroachment of their RPA.
2.3 **Summary of the impact of the proposal**

My assessment of the impact of this proposal on the trees is summarised in Table 2.

**Table 2 - Summary of trees that will be affected by the proposed development**

<table>
<thead>
<tr>
<th>Impact</th>
<th>Reason</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trees to be removed</td>
<td>To enable the proposed development to take place and for access to the site by vehicles</td>
<td>-</td>
<td>-</td>
<td>T8 &amp; G9 (part of)</td>
</tr>
<tr>
<td>Retained trees that will potentially be affected through disturbance to RPAs</td>
<td>To allow the construction of two additional classrooms and three extensions</td>
<td>-</td>
<td>T1 – T5</td>
<td>T6, T7 &amp; G9</td>
</tr>
<tr>
<td>Retained trees to be pruned</td>
<td>To create sufficient clearance to allow vehicular access to the site during and post development.</td>
<td>-</td>
<td>T1, T2, T3 &amp; T5</td>
<td>-</td>
</tr>
</tbody>
</table>

2.4 **Detailed Impact Appraisal**

2.4.1 **Trees to be removed**

A total of one tree and part of one group, of category C grade (T8 & G9) are proposed for removal.

T8 is a young silver birch tree located within a planting area on the northern boundary of the school playground. This tree has been proposed for removal to facilitate the installation of a new bike shed. It is also proposed that a very young variegated holly and low-cut box hedge are removed to facilitate this installation. Table 1 of BS5837 recommends that all trees below 150mm stem diameter are recorded as Category C and Paragraph 4.5.10 notes that the loss of such trees is normally acceptable due to the relative ease of mitigation for the loss through replacement planting.

G9 consists of early-mature densely clustered Leyland cypress that forms a screen around the school playground on the north western and southern boundary. The trees have been regularly topped to maintain a screen at 4m height. Part of this group, closest to the pedestrian access point, is proposed for removal to facilitate a new bin store.

2.4.2 **Retained trees that will be affected through disturbance to the RPAs**

A total of 8 trees or groups of trees, of category B and C grade, (T1 – T7 & G9) have the potential for disturbance to their RPAs.

T1 is a semi-mature lime tree which is currently managed through a regular pollarding cycle. The tree is located against the northern boundary of the site, growing within the site boundary, adjacent to the main entrance to the school grounds and within the car parking area. The tree has a partially derelict brick plinth surrounding its base, including a small bench. The existing tarmac surface provides the necessary protection to the root system from the limited volume of site traffic that will be required to pass over this area during the construction works proposed on the
eastern side of the school building. Protection measures will be required on the main stem of this tree during the construction phase.

T2 is a semi-mature sycamore which is currently managed through a regular pollarding cycle. The tree is located within the school playground area and is situated on the south side of the site. The tree is growing within the site boundary, directly adjacent to a brick wall which runs along Spencer Street, and has a brick and paving slab plinth situated directly around the stem base. The proposed development will involve marginal encroachment into the RPA of this tree RPA as a result of the demolition and reconstruction of the boundary wall and the construction of a new access point. There is potential for some disturbance to the root system of this tree as a result of these operations and protection measures will be required to ensure that there is no detrimental impact on the long term health of this tree.

T3, T4, T5 and T6 form a small linear group of trees running north to south. The trees consist of a pollarded semi-mature lime (T3), mature sycamore (T4), mature horse chestnut (T5) and a semi-mature sycamore (T6). The trees are situated centrally to the site, growing within a small grassy area and overhanging the school playground. The proposed development has the potential to impact upon the root systems of these trees as a consequence of the removal and replacement of existing tarmac. This operation will require the supervision of a retained Arboricultural Clerk of Works (ACoW) to ensure there is no disturbance to the root system.

T7 is a young silver birch located within the site against the northern boundary, adjacent to the school playground and overhanging an external footpath. The existing tarmac surface will provide the necessary protection to the root system of this tree.

G9 consists of early-mature densely clustered leylandii that form a screen around the school playground on the north western and southern boundary. The trees have been regularly topped to maintain a screen at 4m height. The canopy of this group partially overhangs the school playground and adjacent footpath. The existing tarmac playground surface will provide the necessary protection to the root system of this group.

The retention and protection of these trees is a desirable outcome of this proposal and as such, special precautions will be implemented to provide protection of the trees and their root systems in order to ensure their sustainability for the long-term benefit of the community.

### 2.4.3 Retained trees to be pruned

One semi-mature lime tree (T1) and one semi-mature sycamore tree (T2) will require pruning works in order to ensure there is clear access to the full height of the proposed development during the construction phase. The scope of the works has been limited to that which is necessary to allow site access without damage to the long term health of the trees.

The work required will involve the re-pollarding and removal of new branch growth of T1 and T2. This practice has been used as a management technique previously, and although not within the usual timing cycle for this technique, the action will provide the necessary clearance for the site traffic accessing the site for the proposed development. This pruning work will have no long-term impact on the health of the
trees, as this is a regular practice used for managing these particular trees and is the most appropriate action for this development proposal.

The trees have been pollarded in the past so it will have no impact on the local character or visual amenity of the area surrounding St Andrew’s Primary School.

Two additional trees (T3 & T5) will require minor pruning works in order to enable the site cabins to be installed below the canopy. These trees have a canopy clearance of 2.5m, and it is recommended that the canopy be lift to 3m in order to create the necessary clearance above the cabins. This work is minor and will have no impact on the long term health of the tree or the visual amenity provided by the trees.

2.5 PROPOSAL TO MITIGATE ANY IMPACT

2.5.1 Protection of retained trees

The existing surface of the school playground is tarmac which is providing a hard surface protective layer over the rooting system of the trees. There are no proposals to remove this surface and this will continue to provide the protection required for the movement of machinery and materials within the RPA of the retained trees.

The successful retention of those trees that will remain on the site will be dependent upon the quality and maintenance of any protection system that is put in place. An Arboricultural Method Statement, provided in section 3 of this report, details how the necessary tree protection can be implemented. The processes of construction are highly unlikely to have a detrimental effect upon the health of the retained trees assuming recommendations made in this report are adhered to at all times by the contractors.

2.6 INFRASTRUCTURE REQUIREMENTS

Utilities services to this site will connect to the existing service runs. There will be no encroachment or disturbance to the RPA of any retained tree at this site.

2.7 SUMMARY OF THE IMPACT ON LOCAL AMENITY AND CHARACTER

The proposed development for the extension of the classrooms at St Andrews Primary School will require the removal of part of one group of trees and one individual tree. Additionally, two trees will require facilitation pruning to allow clear access to the site for construction traffic. The proposed removals will not have an adverse impact on the visual amenity of the school or wider community due to the prominence of the retained trees. The proposed tree works are in line with current industry best practice and within the normal management regime implemented by the school and therefore there will be no impact on the visual amenity offered by these trees in the long term.
SECTION 3: ARBORICULTURAL METHOD STATEMENT

3.1 OVERVIEW

The following explanations relate specifically to this site and they should be read in conjunction with the indicative Tree Protection Plan (TPP).

A copy of this report must be kept on site and be permanently available of the duration of the development. It can be:

- Included in the tender documents to identify and quantify the tree protection and management requirements;
- Used to plan the timing of site operations to minimise the impact on trees, and;
- Referenced on site for practical guidance on how to protect trees.

This document is designed to demonstrate how tree protection measures can be used to protect the trees. It is likely that the LPA will make a condition of any consent the production of a detailed and specific AMS.

3.2 ARBORICULTURAL SUPERVISION

A competent person will be appointed Arboricultural Clerk of Works (ACoW) for the supervision of arboricultural matters by the developer to advise on the tree management for the site and to attend:

- The pre-commencement meeting before any works start
- As needed to oversee specific works that could affect trees;
- A final meeting to confirm that all protective measures can be removed

3.3 SEQUENCING AND TIMING

Effective tree protection relies upon following a logical sequence of events and arboricultural inspection/supervision.

It is the developer’s responsibility to ensure that details of this AMS and any agreed amendments are known and understood by all site personnel.

The final details of supervision and the frequency of inspection visits will be agreed at the pre-commencement meeting. The supervision arrangement will be sufficiently flexible to allow the supervision of all sensitive works as they occur.

The ACoW will make a record of the visits and these will be attached to the site copy of the AMS for inspection. A further copy will be sent to the LPA. The purpose of these written records is firstly to provide proof of compliance that will allow the developer to robustly demonstrate adherence to best practice in the event of any dispute. Secondly it will help the LPA efficiently discharge the relevant planning conditions.
Appendix 4 gives a sample copy of a site inspection record.

Table 3 - Sequencing and ACoW Supervision

<table>
<thead>
<tr>
<th>Stage</th>
<th>Action</th>
<th>Arboricultural Input Required</th>
<th>Report Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pre-commencement meeting</td>
<td>Attend</td>
<td>3.4</td>
</tr>
<tr>
<td>2</td>
<td>Tree Works</td>
<td>N/A</td>
<td>3.5</td>
</tr>
<tr>
<td>3</td>
<td>Tree Protective Fencing</td>
<td>N/A</td>
<td>3.6</td>
</tr>
<tr>
<td>4</td>
<td>Construction of special surfaces</td>
<td>Supervise</td>
<td>3.7</td>
</tr>
<tr>
<td>5</td>
<td>Specific tree protection measures</td>
<td>Inspect</td>
<td>3.8</td>
</tr>
<tr>
<td>6</td>
<td>Demolition</td>
<td>N/A</td>
<td>3.10</td>
</tr>
<tr>
<td>8</td>
<td>Development Phase</td>
<td>N/A</td>
<td>3.11</td>
</tr>
<tr>
<td>9</td>
<td>Remove temporary surfaces</td>
<td>N/A</td>
<td>3.12.1</td>
</tr>
<tr>
<td>10</td>
<td>Remove tree protective fencing</td>
<td>Inspect</td>
<td>3.12.2</td>
</tr>
<tr>
<td>11</td>
<td>Landscaping &amp; replacement planting</td>
<td>N/A</td>
<td>3.12.3</td>
</tr>
</tbody>
</table>

### 3.4 Pre-commencement Meeting

A pre-commencement site meeting involving the land owner, representative of the development company, ACoW, contractors and engineers (as appropriate), and relevant LPA officers will be held to ensure that all aspects of the tree protection processes are understood and agreed.

The meeting is where the details of the programme of tree protection will be agreed and finalised, which will then form the basis of any supervision arrangements between the ACoW and the developer.

The ACoW will send a record of the meeting to all parties.

### 3.5 Tree Removal and Works

The day to day running of the site will take full account of the tree protection measures set out in this document. All site personnel will be briefed on the tree protection requirements as part of the site induction procedure.

The tree management has been specifically designed towards doing the minimum work necessary to accommodate the development structures, establish acceptable levels of safety and reduce the destructive impact of existing trees on adjacent, better trees.

All tree works will be carried out by a suitably qualified contractor, and in accordance with BS3998:2010 *Tree Works – Recommendations* and industry best practice.

#### 3.5.1 Tree Removal

Part of one group of trees (G9) and one individual tree (T8) will require removal as a direct consequence of this proposal.

All tree works will be carried out by a suitably qualified contractor, and in accordance with BS3998:2010 *Tree Works – Recommendations* and industry best practice.
3.5.2 Tree works
The details of trees works have been set out in the schedule in Appendix 2. Obvious pruning to allow the installation of the structure has been listed, but additional minor pruning may be necessary to address unanticipated local problems with individual branches. Any additional works will be assessed and authorised as necessary by the ACoW. Where necessary, the LPA tree officer will be notified of any additional tree works.

3.6 Barriers and Ground Protection

3.6.1 The Construction Exclusion Zone
The primary means of protecting the Root Protection Area (RPA) of trees is through the use of barriers formed by protective fencing. The enclosed area is the Construction Exclusion Zone (CEZ).

The CEZs are to be afforded protection at all times and will be protected by fencing. The type of fencing is detailed in section 3.6.2, below.

No works will be undertaken within any CEZ that causes compaction to the soil or severance of tree roots.

3.6.2 Tree Protective Fencing
A protective fence will be erected around the trees, prior to the commencement of any site works i.e. before any materials or machinery are brought on site, development or the stripping of soil commences. The tree protective fencing west of T6 should be secured in place against the existing knee-high wooden rail to prevent movement. This will allow school pupils to continue using the habitat area and ensure that the CEZ remains free from any construction activities or personnel.

The fence will have signs attached to it stating that this is a CEZ and that “NO WORKS are permitted within the fence”. No notice boards, cables or other services will be attached to any tree.

The fence is to be sited in accordance with the TPP enclosed with this method statement. This is shown as a black dashed line with diagonal orange hatching indicating the enclosed CEZ. Details of minimum distances for the barriers from the trees can be seen in Appendix 5.

The precise form of fencing can vary provided it is fit for purpose and prevents damaging activities within the CEZ. For a proposal of this nature, the Heras 151 system of fencing will provide the necessary protection to the CEZ. A copy of this figure can be seen in Appendix 6.

The protective fence may only be removed following completion of all construction works.
3.7 CONSTRUCTION OF SPECIAL SURFACES

3.7.1 Temporary Ground Protection
No temporary ground protection measures are required on this site.

If temporary access is required to a CEZ then access may only be gained after consultation with the ACoW and following placement of materials that will spread the weight of any vehicular load and prevent compaction to the soil.

For pedestrian movements within any CEZ then a single thickness scaffold board on top of a compressible layer (eg wood chip mulch) laid onto a geotextile fabric may be acceptable.

3.7.2 Permanent hard surfaces within the RPA
The removal of five plantings rings within the RPAs of T4, T5 and T6 is required within this development scheme. The rings are illustrated in Photograph 1 below. Insufficient information regarding the installation and footings of these rings is currently available. Therefore the method below should be adopted under supervision of the retained ACoW so that any onsite issues can be addressed.

Photograph 1

The removal of these rings will be conducted by a small excavator, positioned outside the RPAs of the retained trees. The excavator will reach into the RPA and use the bucket on the western side of the ring and lever the ring towards the existing school building. The rings can then be dragged across the existing hard surface out of the RPAs.

Once all five rings have been removed the exposed ground will be tarmacked. The precise method of installation for this element of work will be provided in a separate addendum to this AMS. This document will only be written once the rings have been removed and the exact extent of works has been established. There will be no
excavation into ground with the RPA, and there will be no-compaction of any material used. A no-dig solution will be devised for the area.

Removal and replacement of the tarmac within these RPAs should be supervised by the ACoW and unless otherwise agreed, only the method above is permitted.

3.7.3 Additional precautions outside the exclusion zone

Any risk from activities outside RPAs but close enough to have an impact will be assessed during the day-to-day running of the site, and appropriate precautions put in place to reduce that risk.

It is a presumption of this report that all RPAs that have been identified for protection but which lie outside of the protective fencing, will be protected from soil degradation at all times during construction activity.

3.8 Specific tree protection measures

Specific tree protection operations are detailed below. Illustrative guidance is included below to aid in the descriptive narrative of the text:

Due to the location of T1 against an existing boundary and adjacent to the site entrance point. The access point that will be used for construction traffic is regularly used by both pedestrians and vehicles to enter school grounds and consist of tarmac permanent hard standing. Additionally, the location of T2 is similar to that of T1 in that it is located against a boundary wall and adjacent to an access point. The tree is located within the school playground and has a pedestrian access gate directly west of the main stem. Installation of tree protection fencing, to standard practice, is inappropriate as this would prevent access to the site.

In order to ensure adequate tree protection, fencing will be used to directly protect the stems of the trees from daily construction activities. Fencing will be fixed in a position for the duration of the construction period and should be erected in such a way to withstand daily construction activities.

Photograph 2 provides an example of the tree protection fencing that will be required for T1 and T2. An alternative method of protection for this tree will be the installation of two Heras panels in a triangular shape, with the wall as the base of the triangle. This method of protection may be more appropriate if the regular access through the gateways will be blocked for the duration of this phase of works. This fencing will need to remain in place until this phase of works has been completed. Once this has occurred and this area returned to the school for normal use, the protective fence can be removed.

Photographs 3 & 4 illustrate T1 at the time of inspection, highlighting the location of the tree in relation to the access point.

Photograph 5 illustrates T2 at the time of inspection and highlights the location of the tree in relation to the access point which will continue to be used throughout the construction process.
Arboricultural Method Statement

Photograph 2

Photograph 3
3.9 **Inspection & Supervision**

After the protective fencing has been erected, the ACoW will visit the site. The purpose of the visit will be to check that the fencing has been correctly installed so as to provide protection to the trees. The local authority tree officer will also be invited to inspect the tree protection measures prior to any works commencing.

The ACoW will provide a written report confirming satisfactory completion of this task. A copy of this report will be sent to the local planning authority.
Throughout the development scheme monthly file notes will be compiled by Lend Lease Consulting Ltd. This will include photographs of tree protection measures and will be distributed to the project team, including the local planning authority.

3.10 DEMOLITION

There is the requirement for the demolition of an existing retaining wall on the southern side of the site. This demolition is outside the RPAs of any trees on this site. It is anticipated that no tree roots will be found during this work, however, if any tree roots are found all works should cease and the retained ACoW contacted for further guidance.

3.11 DEVELOPMENT

Once all trees works and protective fencing have been completed, the developer can commence the on-site preparation works and construction can begin.

3.11.1 Site Storage, Cement Mixing and Washing Points

No storage of materials will take place within a CEZ.

No mixing or storage of materials will take place up a slope where they may leak into a CEZ. Where contours of the site create a risk of polluted water running into RPAs, precautionary measures of using heavy duty plastic sheeting and sandbags with the ability to contain accidental spillage will be put in place to prevent contamination.

3.11.2 Contractors Parking

Contractors parking will not be within or in close proximity to a CEZ.

3.11.3 Utility Services

All utility services will connect internally to the property. There is no requirement for any service to be installed within a CEZ.

3.11.4 Fires

No fires will be lit on this site.

3.11.5 Site Gradient

There will no changes to any levels on this site.

3.11.6 Use of Herbicides

There is no requirement for any herbicide to be used on this site.

3.11.7 Use of Sub-contractors

The main contractor will be responsible for ensuring sub-contractors do not carry out any process or operation that is likely to adversely impact upon any tree on site.

3.11.8 Contingency planning

Water will be kept readily available on site and will be used to flush spilt materials through the soil and avoid contamination to tree roots.

At the time of any spillage the main contractor will contact the ACoW for advice.
3.12 POST DEVELOPMENT

3.12.1 Removal of temporary surfaces
There are no temporary surfaces that require removing as part of this development scheme.

3.12.2 Removal of protective fencing
When the development is complete, all drainage and service runs are in place and the main site machinery has been removed, the CEZ protective fencing will be dismantled.
This will be supervised by the ACoW to ensure that no damage to done to the protected areas during this process.

3.12.3 Landscaping within the tree canopies
There are no landscape proposals for this development scheme.

3.13 RESPONSIBILITIES

It is the responsibility of the main contractor to ensure that the planning conditions attached to planning consent are adhered to at all times and that a monitoring regime in regards to tree protection is adopted on site.

The main contractor will be responsible for contacting the Local Planning Authority at any time issues are raised related to the trees on site.

If at any time pruning works are required permission must be sought from the Local Planning Authority first and then carried out in accordance with BS3998:2010 Tree Works – Recommendations and industry best practice.

The main contractor will ensure the build sequence is appropriate to ensure that no damage occurs to the trees during the construction processes. Protective fences will remain in position until completion of ALL construction works on the site.

The fencing and signs must be maintained in position at all times and checked on a regular basis by an onsite person designated that responsibility.

3.14 COMPLETION MEETING

Upon completion of all works specified above and all procedures detailed, the ACoW will invite the LPA tree officer to meet on site to discuss the process and agree any final remedial works which may be required.
3.15 CONTACTS

Shows a list of all relevant contacts for this development:

<table>
<thead>
<tr>
<th>Title</th>
<th>Name</th>
<th>Contact Number</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landowner/Developer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LPA Tree Officer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Manager</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACoW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tree Surgeon</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

THIS AMS IS NOT A CONTRACT. THE RETENTION OF A COMPETENT PERSON FOR SUPERVISION AND MONITORING MUST BE AGREED PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY.

Stephen Westmore BSc (Hons) MSc TechArborA
4 November 2013
SECTION 4: APPENDICES

4.1 APPENDIX 1 – ADMINISTRATIVE BACKGROUND

4.1.1 Instruction

Written instruction was received on 19 April 2013 from Paul Tuff of Lend Lease Consulting (EMEA) Ltd to carry out a survey of the trees at St. Andrew’s Primary School.

The survey was to be carried out in accordance with the recommendations laid down by BS5837: Trees in relation to construction, and to assist in the preparation of a report to accompany a planning application. The report was to include:

- A schedule of the relevant trees to include basis data and condition assessment
- An appraisal of the impact that the proposed development may have on the trees, and the resulting impact this may have on the local amenity.
- An arboricultural method statement dealing with protection and the management of the trees to be retained.

4.1.2 Documents provided

The plan is derived from the following provided information:

- Topographical survey MS-3897 prepared by Brandon Surveys Ltd on September 2012.
- Layout drawings 4025/103, 4025/110 & 4025/151 prepared by PHP Architects, received by email on October 2013.

4.1.3 Limitations of this report

The following limitations apply to this report:

Statutory Protection: The existence of tree preservation order or conservation area protection does not automatically mean trees are worthy of being a material constraint in a planning context. Trees can be formally protected but be in poor structural condition or in declining health, which means they are unsuitable for retention or influencing the future use of the site. Furthermore a planning consent automatically takes precedent over these forms of protection, which makes them of secondary importance. For these reasons, I do not check statutory protection as a matter of course in the process of preparing this report. However if any tree works are proposed before a planning consent is given, then the existence of any statutory protection must be checked with the local authority.

Ecology and Archaeology: Although trees can be a valuable ecological habitat and can grow in archeologically sensitive areas, I have no specialist expertise in these disciplines and this report does not consider those aspects.

Tree Safety: While every effort has been made to ensure that comments relating to the tree surveyed are accurate, it must be noted that no tree have been climbed, no internal inspections carried out and no excavation of root areas has taken place. As such this report should not be taken to mean or imply that any of the inspected trees
should be considered safe. No tree can be guaranteed to be 100% safe as some defects are not detectable by visual non-climbed, non-invasive inspection. Failure of an apparently healthy tree, either in part or totally may occur as a result of physical or physiological stress.

4.1.4 Technical References

The arboricultural method statement is based purely on the following technical references:


4.1.5 Qualifications and Experience

Stephen is an Arboricultural Graduate Assistant at Lockhart Garratt Ltd. Stephen has worked in Forestry and Arboricultural related industries for 3 years and has recently finished an MSc in Arboriculture and Urban Forestry (Myerscough College and University of Central Lancashire). Stephen also has a BSc degree in Countryside Management, which was awarded by Harper Adams University College and is currently undergoing the graduate training package offered by Lockhart Garratt Ltd.

Assistance and guidance on this report has been provided by Nicholas Bolton, Senior Arboricultural Consultant at Lockhart Garratt Ltd. Nick has eleven year’s experience working in the arboricultural industry and has a BSc degree in Arboriculture from Myerscough College.
## APPENDIX 2 – TREE SURVEY

<table>
<thead>
<tr>
<th>Tree No.</th>
<th>Tag No.</th>
<th>Species</th>
<th>Botanical Name</th>
<th>H (m)</th>
<th>Stem Dia.</th>
<th>No. of Branches</th>
<th>Branch Spread (m)</th>
<th>DBH (cm)</th>
<th>Age</th>
<th>PC</th>
<th>BC</th>
<th>Comments</th>
<th>ULE</th>
<th>Cat</th>
<th>RPA (m²)</th>
<th>RPA Medcl (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>390</td>
<td>Lime (Lime leaf)</td>
<td>Tilia x euchlora</td>
<td>3</td>
<td>600</td>
<td>1</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>8</td>
<td>Wood</td>
<td>Fair</td>
<td>Fair</td>
<td>25-40</td>
<td>83</td>
</tr>
<tr>
<td>2</td>
<td>391</td>
<td>Sycamore</td>
<td>Acer pseudoplatanus</td>
<td>2.5</td>
<td>650</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>East</td>
<td>Fair</td>
<td>Fair</td>
<td>30-40</td>
<td>83</td>
</tr>
<tr>
<td>3</td>
<td>392</td>
<td>Lime (Lime leaf)</td>
<td>Tilia x euchlora</td>
<td>3</td>
<td>540</td>
<td>1</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>North</td>
<td>Fair</td>
<td>Fair</td>
<td>30-40</td>
<td>83</td>
</tr>
<tr>
<td>4</td>
<td>393</td>
<td>Sycamore</td>
<td>Acer pseudoplatanus</td>
<td>17</td>
<td>750</td>
<td>1</td>
<td>5</td>
<td>10</td>
<td>9</td>
<td>7</td>
<td>3</td>
<td>West, Ne</td>
<td>Good</td>
<td>Good</td>
<td>20-40</td>
<td>83</td>
</tr>
<tr>
<td>5</td>
<td>394</td>
<td>Horse Chestnut</td>
<td>Aesculus hippocastanum</td>
<td>18</td>
<td>720</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>North, Ne</td>
<td>Good</td>
<td>Good</td>
<td>90-120</td>
<td>83</td>
</tr>
<tr>
<td>6</td>
<td>395</td>
<td>Sycamore</td>
<td>Acer pseudoplatanus</td>
<td>15</td>
<td>666</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>East</td>
<td>Poor</td>
<td>Poor</td>
<td>10-30</td>
<td>83</td>
</tr>
<tr>
<td>7</td>
<td>396</td>
<td>Willow (Sycamore)</td>
<td>Tilia x euchlora</td>
<td>5</td>
<td>140</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>East, Y</td>
<td>Good</td>
<td>Good</td>
<td>45+</td>
<td>83</td>
</tr>
</tbody>
</table>
# Key to Notations

<table>
<thead>
<tr>
<th>Age Class</th>
<th>Definition</th>
<th>Category</th>
<th>Category Grading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Young</td>
<td>A</td>
<td>ULE</td>
</tr>
<tr>
<td>M</td>
<td>Mature</td>
<td>I</td>
<td>ULE</td>
</tr>
<tr>
<td>V</td>
<td>Veteran</td>
<td>G</td>
<td>ULE</td>
</tr>
</tbody>
</table>

# Physiological Condition

- **Stent**: Overgrown or Pivoted
- **Stunt**: Significant branches or limbs missing
- **Shade**: Significant shade from tree
- **Shrew**: Significant shrew activity

<table>
<thead>
<tr>
<th>Structure Condition</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>Significant damage with no remedy</td>
</tr>
<tr>
<td>Fair</td>
<td>No significant defects</td>
</tr>
</tbody>
</table>

## Tree Survey

<table>
<thead>
<tr>
<th>Tree No.</th>
<th>Tag Nr.</th>
<th>Species</th>
<th>Botanical Name</th>
<th>H (m)</th>
<th>Stem Dia</th>
<th>No of Stems</th>
<th>Branch Spread (m)</th>
<th>CC (m)</th>
<th>LB (m)</th>
<th>ELB (m)</th>
<th>Age</th>
<th>PC</th>
<th>SC</th>
<th>Comments</th>
<th>ULE</th>
<th>Cat.</th>
<th>RPA (m³)</th>
<th>RPA Radial Distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>N/A</td>
<td>Silver Birch</td>
<td>Betula pendula</td>
<td>5</td>
<td>1.10</td>
<td>1</td>
<td>3 3 2</td>
<td>2 1 1</td>
<td>North</td>
<td>Y</td>
<td>Fair</td>
<td></td>
<td></td>
<td>Growing within planting area, supressed, variegated, holly to north and low out box hedge extending towards edge of building. Tree overhangs footpath and playground.</td>
<td>-40</td>
<td>C1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>GB</td>
<td>Liquidambar</td>
<td>Liquidambar</td>
<td>4</td>
<td>1.80</td>
<td>1</td>
<td>3 3 3</td>
<td>3 1</td>
<td>North</td>
<td>EM</td>
<td>Good</td>
<td>Fair</td>
<td></td>
<td>Significant damage from root lift, tree trunk 3.5m away from other trees.</td>
<td>20-40</td>
<td>C2</td>
<td>40</td>
<td>4</td>
</tr>
</tbody>
</table>
### Table 1 - Cascade chart for two quality assessment

<table>
<thead>
<tr>
<th>Category and definition</th>
<th>Criteria (including subcategories where appropriate)</th>
<th>Identification on plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trees unsuitable for retention (see Note)</td>
<td></td>
<td>See Table 2</td>
</tr>
<tr>
<td>Category U</td>
<td>Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Trees that have a serious, irreparable, structural defect, such that their early loss is expected due to collapse, including those that will become unsuitable after removal of other category U trees (e.g. where, for whatever reason, the loss of comparison shelter cannot be mitigated by pruning)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Trees to be considered for retention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category A</td>
<td>Trees that are particularly good examples of their species, especially if rare or unusual, or those that are essential components of groups or formal or semi-formal arboreocultural features (e.g. the dominant and/or principal trees within an avenue)</td>
</tr>
<tr>
<td>Category B</td>
<td>Trees present in numbers usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals, or trees occurring as collectives but situated so as to make little visual contribution to the wider locality</td>
</tr>
<tr>
<td>Category C</td>
<td>Trees present in groups or woodlands, but without this containing on them significantly greater collective landscape value and/or trees offering low or only temporary/short-term landscape benefits</td>
</tr>
</tbody>
</table>

[BRITISH STANDARD BS 5837:2012]
### 4.4 Appendix 4 – Sample Site Inspection Record

<table>
<thead>
<tr>
<th>Site:</th>
<th>Date:</th>
<th>Ref No:</th>
<th>Surveyor:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developer:</td>
<td>Planning Application No.</td>
<td>Site Agent:</td>
<td>Contact No:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Was all tree protective fencing in place?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Give details</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Was CEZ to agreed dimensions</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Give details</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ACTION**

<table>
<thead>
<tr>
<th>Was debris/storage/groundwork evident within CEZ?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Give details</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ACTION**

<table>
<thead>
<tr>
<th>Was there any evidence of damage to trees?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Give details</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ACTION**

<table>
<thead>
<tr>
<th>Any amendments proposed to plan</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Give details</td>
<td></td>
</tr>
</tbody>
</table>

**ACTION**

Signed:

Name:

Consulting arborist for and on behalf of:

Company:

<table>
<thead>
<tr>
<th>Circulation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
</tbody>
</table>

| LPA |
| Developer H.O. |
| Site agent |
| Architect |
| ACoW |

4 Add photographs as required
### APPENDIX 5 – TREE CONSTRAINTS DATA

<table>
<thead>
<tr>
<th>Tree No</th>
<th>Species</th>
<th>Stem Diameter (mm)</th>
<th>Circle Radius (m)</th>
<th>RPA (m$^2$)</th>
<th>Length of sides of a square (m)</th>
<th>Minimum barrier distance (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lime (Large leaf)</td>
<td>600</td>
<td>7.2</td>
<td>163</td>
<td>13</td>
<td>6.4</td>
</tr>
<tr>
<td>2</td>
<td>Sycamore</td>
<td>440</td>
<td>5.3</td>
<td>88</td>
<td>9</td>
<td>4.7</td>
</tr>
<tr>
<td>3</td>
<td>Lime (Large leaf)</td>
<td>540</td>
<td>6.5</td>
<td>132</td>
<td>11</td>
<td>5.7</td>
</tr>
<tr>
<td>4</td>
<td>Sycamore</td>
<td>750</td>
<td>9.0</td>
<td>254</td>
<td>16</td>
<td>8.0</td>
</tr>
<tr>
<td>5</td>
<td>Horse Chestnut</td>
<td>720</td>
<td>8.6</td>
<td>235</td>
<td>15</td>
<td>7.7</td>
</tr>
<tr>
<td>6</td>
<td>Sycamore</td>
<td>460</td>
<td>5.5</td>
<td>96</td>
<td>10</td>
<td>4.9</td>
</tr>
<tr>
<td>7</td>
<td>Silver Birch</td>
<td>140</td>
<td>1.7</td>
<td>9</td>
<td>3</td>
<td>1.5</td>
</tr>
<tr>
<td>8</td>
<td>Silver Birch</td>
<td>110</td>
<td>1.3</td>
<td>5</td>
<td>2</td>
<td>1.2</td>
</tr>
<tr>
<td>9</td>
<td>Leylandii</td>
<td>320</td>
<td>3.8</td>
<td>46</td>
<td>7</td>
<td>3.4</td>
</tr>
</tbody>
</table>

**Explanatory Notes**

**General:** The basic data listed in the first two columns is identical to that listed in the schedule in Appendix 2. The data in columns 3-5 are derived from the stem diameter by a simple calculation as described in BS5837 and summarised Appendix 2.

**Circle Radius:** The circle radius has been calculated by obtaining the stem diameter (measured at 1.5m above the ground) in millimetres and multiplying it by 12. Where the tree is multi-stemmed, an average stem diameter is calculated by the following formula specified in section 4.6.1 (a) & (b) of BS5837:

For trees with two to five stems, the combined stem diameter should be calculated as follows:

$$\sqrt{(\text{stem diameter }1)^2 + (\text{stem diameter }2)^2 \ldots + (\text{stem diameter }5)^2}$$

For trees with more than five stems (not illustrated in Annex C), the combined stem diameter should be calculated as follows:

$$\sqrt{(\text{mean stem diameter})^2 \times \text{number of stems}}$$

This total is then divided by 1000 to provide a circle radius in metres.
**Appendices**

**RPA Areas:** The RPA has been assessed according to the recommendations set out in section 4.6 of BS5837. It is calculated by multiplying the radius squared by 3.142 ($\pi$).

**Length of sides of a square:** Section 5.5.3 of BS5837 recommends that the ground protection and barriers should be shown as a polygon surrounding the stem of the tree. With a circle, the distance from the edge of the circle to the centre will remain constant, but with a square, the distance from the centre of the tree to the sides of the square is less than the distance to the corner of the square. The area of the square must remain the same as the area of the circle. In order to ensure that it is the case, the length of side of the square is calculated at the square root of the RPA area.

**Minimum barrier distance:** This is the closest point that a side of the square can be to the centre of the tree. Figure 1 graphically illustrates the differences between a square and a circle in area. Where the distance from the centre of the tree to the corner of the square (A) is greater than the radius of the circle (r), but the distance from the centre of the tree to the side of the square (B) is greater than the radius of the circle (r), the total area will remain the same. The minimum barrier distance from the tree is calculated by taking the length of the side and dividing it by two.

Figure 1 - Graphical explanation for calculating the RPA

---

**Clarification note on the RPA radius:** The RPA radius is not the automatic minimum distance of the tree protection. It is a notional figure for use as a means of calculating the actual area of the RPA. BS5837 clarifies this at:

3.7 root protection area (RPA) – layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the trees viability, and where the protection of the roots and soil structure is treated as a priority.
4.6 APPENDIX 6 – TREE PROTECTIVE FENCING
## BSS5837: 2012 Tree Survey

**Client:** Lend Lease Consulting  
**Site:** St Andrews Primary School, Kettering  
**Surveyor:** David Venables / Stephen Westmore  
**Date of survey:** 02/04/2013  

### Key to Notations

<table>
<thead>
<tr>
<th>Stem Dia.</th>
<th>Definition</th>
<th>Category</th>
<th>ULE</th>
<th>Sub category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Young</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Early</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>Mature</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>Over</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Dead</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Beyond</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Age Class

- **1st 1/3rd of life expectancy**
- **2nd 1/3rd of life expectancy**
- **Final 1/3rd of life expectancy**

### Category Grading

- **A:** High Quality & Value
- **B:** Moderate Quality & Value
- **C:** Low Quality & Value
- **D:** Mainly cultural value
- **E:** Mainly arboricultural value
- **F:** Mainly landscape value
- **G:** Significant ill health
- **H:** Significant defects with no remedy

### Physiological condition

- **Good**
- **Fair**
- **Poor**

### Structural condition

- **Good**
- **Fair**
- **Poor**

### Sub category

- **Mainly landscape value**
- **Mainly cultural value**

### Significant defects that can be remediated

- **Significant ill health**

### Significant defects with no remedy

- **Significant ill health**

## Tree Survey

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<tr>
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<th>Species</th>
<th>Botanical Name</th>
<th>H (m)</th>
<th>Stem Dia.</th>
<th>No of Stems</th>
<th>Branch Spread (m)</th>
<th>CC (m)</th>
<th>LB (m)</th>
<th>DLB (m)</th>
<th>Age</th>
<th>PC</th>
<th>SC</th>
<th>Comments</th>
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</tbody>
</table>

### Key to Notations

- **LB:** Lowest branch height in meters
- **CC:** Height of crown clearance above ground level
- **CC:** Lowest branch height in meters
- **D.L.B.:** Direction of Lowest Branch
- **U.L.E.:** Useful Life Expectancy of tree in years
- **RPA:** Radial distance (m)
- **RPA:** E radius (m)

## Surveyor

David Venables / Stephen Westmore

## Reference

3372/27

## Survey Notes

- Pollarded at 5.5m, epicormic growth at base, branch stubs with decay throughout, raised birch on western Side, over hanging carpale, grafton road and entrance gate. Tarmac within 0.5m of stembase
-污染于3.5m, strong regrowth, branch stubs with decay formingcavities, stem base surrounded by back paved platform, overhanging play ground and footpath
- Barbox on north side of stem, multi stemmed at 5m, small deadwood throughout crown and hanging branches.
- Birdbox on east side of stem, some deadwood in crown, multi stemmed at 5.5m, overhanging playground, included bark at stem junction, previously crown lifted and wounds healing
- Reinspect when in full leaf to assess tree health, previously crown lifted with evidence A decay in crown lift wounds, dieback at branch tips and Sparse crown cover
- Single stemmed and overhanging footpath

## Tree Health

- **Significant ill health**
- **Significant defects with no remedy**

## Physiological condition

- **Good**
- **Fair**
- **Poor**

## Structural condition

- **Good**
- **Fair**
- **Poor**

## Age Class

- **1st 1/3rd of life expectancy**
- **2nd 1/3rd of life expectancy**
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