ISEBROOK SCHOOL, EASTLEIGH ROAD, KETTERING

ARBORICULTURAL IMPACT ASSESSMENT

A Report to: Darnton B3

Report No: RT-MME-14559-01

Date: February 2017
REPORT VERIFICATION

This study has been undertaken in accordance with British Standard 5837:2012 “Trees in relation to design, demolition and construction - Recommendations”.

<table>
<thead>
<tr>
<th>Report Version</th>
<th>Date</th>
<th>Completed by:</th>
<th>Checked by:</th>
<th>Approved by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final</td>
<td>22/02/2017</td>
<td>Dean Moore Dip Arb (Arboricultural Project Officer) &amp; Ben Jones MSc GradCIEEM (Arboricultural Support Officer)</td>
<td>Edmund Lusk HND PTI (Principal Arboricultural Consultant)</td>
<td>Dr Philip Fermor CEnv, MCIEEM (Managing Director)</td>
</tr>
</tbody>
</table>

DISCLAIMER

The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client’s brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

VALIDITY OF DATA

The findings of this study are based upon the data provided by the client (listed within Table 1.1, Section 1.4). If the development proposals change then this report will require updating to assess the impact of the amended development.
CONTENTS

1. INTRODUCTION .................................................................................................................. 3
   1.1 PROJECT BACKGROUND ............................................................................................. 3
   1.2 SITE DESCRIPTION ........................................................................................................ 3
   1.3 DEVELOPMENT PROPOSALS ..................................................................................... 3
   1.4 DOCUMENTATION PROVIDED ..................................................................................... 3

2. STATUTORY PROTECTION .................................................................................................. 5
   2.1 TREE PRESERVATION ORDER AND CONSERVATION AREA DESIGNATIONS .............. 5
   2.2 PROTECTED SPECIES .................................................................................................. 5

3. ARBORICULTURAL IMPACT ASSESSMENT ...................................................................... 6
   3.1 INTRODUCTION ........................................................................................................... 6
   3.2 IMPACTS FROM DEVELOPMENT LAYOUT ................................................................... 6
       3.2.1 Tree Removal ........................................................................................................ 6
       3.2.2 Tree Pruning ......................................................................................................... 6
   3.3 IMPACTS FROM DEMOLITION AND RELATED OPERATIONS ....................................... 7
       3.3.1 Building Demolition ............................................................................................ 7
       3.3.2 Removal of Hard Surfaces .................................................................................... 7
       3.3.3 Removal of Services ............................................................................................. 7
       3.3.4 Ground Remediation ........................................................................................... 7
       3.3.5 Ancillary Operations ............................................................................................ 7
   3.4 DIRECT IMPACTS FROM CONSTRUCTION .................................................................. 8
       3.4.1 Works within RPAs ................................................................................................ 8
       3.4.2 Works within Canopy Spreads ............................................................................. 8
       3.4.3 Working Space .................................................................................................... 9
   3.5 IMPACTS FROM CONSTRUCTION RELATED OPERATIONS ....................................... 9
       3.5.1 Site Access ............................................................................................................ 9
       3.5.2 Delivery and Storage of Materials ....................................................................... 9
       3.5.3 Site Compound .................................................................................................... 9
       3.5.4 Contractor’s Parking ............................................................................................ 9
   3.6 POST-DEVELOPMENT IMPACTS .................................................................................. 9
       3.6.1 Shading ................................................................................................................ 9
       3.6.2 Privacy and Screening ......................................................................................... 9
       3.6.3 Direct Damage to Structures .............................................................................. 9
       3.6.4 Future Pressure for Removal .............................................................................. 9
       3.6.5 Seasonal Nuisance ............................................................................................. 10
   3.7 SUMMARY OF IMPACTS ............................................................................................. 10

4. MITIGATION AND PROTECTION ...................................................................................... 11
   4.1 INTRODUCTION ........................................................................................................... 11
   4.2 GENERAL TREE PROTECTION .................................................................................. 11
       4.2.1 Construction Exclusion Zone .............................................................................. 11
       4.2.2 Tree Protection Barriers ..................................................................................... 11
       4.2.3 Ground Protection .............................................................................................. 11
   4.3 MITIGATION OR AVOIDANCE OF IMPACTS ............................................................... 11
       4.3.1 Design Amendments .......................................................................................... 11
       4.3.2 Proposed Hard Surfacing with RPAs ................................................................. 12
       4.3.3 Proposed Underground Utilities within RPAs ...................................................... 12
       4.3.4 Site Setup and Logistics ...................................................................................... 12

5. ARBORICULTURAL METHOD STATEMENT .................................................................. 13

6. DRAWINGS ......................................................................................................................... 14

REFERENCES AND BIBLIOGRAPHY ....................................................................................... 17
1. INTRODUCTION

1.1 PROJECT BACKGROUND

In February 2017, Darnton B3 commissioned Middlemarch Environmental Ltd to compile an Arboricultural Impact Assessment in respect of the proposed development of land at and adjacent to Isebrook School on Eastleigh Road in Kettering, Northamptonshire.

Middlemarch Environmental Ltd has previously carried out a Preliminary Ecological Appraisal and a Pre-Development Arboricultural Survey for Northamptonshire County Council at this site. The findings of these surveys are detailed in Report Numbers RT-MME-123105-01 and RT-MME-123105-02 respectively.

This report details the impact that the proposed development will have upon the site’s existing tree stock and sets out recommendations for the subsequent mitigation or avoidance of impact. The study has been completed in accordance with guidance contained within British Standard BS5837:2012 ‘Trees in relation to design, demolition and construction – Recommendations’.

1.2 SITE DESCRIPTION

The site under consideration is an irregular shaped parcel of land, approximately 2.3 ha in size, which is located adjacent to Eastleigh Road in Kettering at Ordnance Survey Grid Reference SP 8810 7741.

The site is located within a predominantly residential area on the south-eastern fringes of Kettering, a town on the north-eastern side of the county of Northamptonshire. The surrounding area is dominated by a mix of agricultural fields and the Cook’s Spinney watercourse. To the south the site abuts Barton Road (A6003), with Wicksteed Park beyond. To the west the site abuts school buildings and recreational grounds, beyond which is Windmill Avenue (A6098) and Tresham College.

At the time of the Arboricultural Survey (October 2016), the site was dominated by school buildings and hardstanding, with an area of amenity grassland to the south-east and scattered trees present throughout. The majority of notable vegetative features are located adjacent to or beyond the site boundaries.

The topography of the site is varied with a general slope down from west to east evident.

A total of forty-five individual trees, three groups of trees and four hedgerows were recorded during the survey. The locations of the trees, groups and hedgerows surveyed can be found on Middlemarch Environmental Ltd Drawing Number C124559-01-01, contained within Section 6 of this report.

1.3 DEVELOPMENT PROPOSALS

The proposed development of the site is the construction of a new teaching and creative block and a new multi-use games area (MUGA), as well as associated works including the excavation of a new service trench.

The proposed development has been designed so that safe and healthy existing trees are retained wherever possible and that those trees to be retained are not significantly impacted upon by the development.

1.4 DOCUMENTATION PROVIDED

This assessment is based upon the information provided by the client in addition to information collected by Middlemarch Environmental Ltd during a survey of the site undertaken in October 2016 (RT-MME-123105-01). The documents and drawings considered are detailed within Table 1.1.

<table>
<thead>
<tr>
<th>Author</th>
<th>Document</th>
<th>Drawing Number</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESP Service Consultants</td>
<td>Mechanical Services Incoming Utilities</td>
<td>9700/M/211 Rev T2</td>
<td>Aug 2016</td>
</tr>
<tr>
<td>ESP Service Consultants</td>
<td>Mechanical Services External Sprinkler Proposals</td>
<td>9700/M/212 Rev T2</td>
<td>Aug 2016</td>
</tr>
<tr>
<td>JPP Consulting</td>
<td>Proposed Drainage Layout</td>
<td>U8170AA_E000 T3</td>
<td>Dec 2016</td>
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<tr>
<td>Darnton B3 Architects</td>
<td>Site Location Plan</td>
<td>91428_S_XX_DR_A_181</td>
<td>Jan 2017</td>
</tr>
</tbody>
</table>

Table 1.1: Documentation Provided (continues)
<table>
<thead>
<tr>
<th>Author</th>
<th>Document</th>
<th>Drawing Number</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Darnton B3 Architects</td>
<td>Proposed Extension &amp; Alterations</td>
<td>91428_S_XX_DR_A_185</td>
<td>Jan 2017</td>
</tr>
<tr>
<td>JPP Consulting</td>
<td>Proposed External Works Layout</td>
<td>U8170AA_E010 T2</td>
<td>Jan 2017</td>
</tr>
</tbody>
</table>

Table 1.1 (cont’d): Documentation Provided
2. STATUTORY PROTECTION

2.1 TREE PRESERVATION ORDER AND CONSERVATION AREA DESIGNATIONS

An internet search using online mapping provided by Kettering Borough Council ([http://maps.kettering.gov.uk](http://maps.kettering.gov.uk)) confirms that there are no trees within or closely surrounding the site subject to Tree Preservation Orders and that the site is not situated within a Conservation Area.

2.2 PROTECTED SPECIES

**Bats**

Mature trees often contain cavities, hollows, peeling bark or woodpecker holes which provide potential roosting locations for bats. Bats and the places they use for shelter or protection (i.e. roosts) receive European protection under The Conservation of Habitats and Species Regulations 2010 (Habitats Regulations 2010, as amended). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. Consequently causing damage to a bat roost constitutes an offence.

Generally should the presence of a bat roost be suspected whilst completing works on any trees on site then an appropriately licensed bat worker should be consulted for advice.

**Birds**

Trees and hedgerows offer potential habitat for nesting birds which are protected under the Wildlife and Countryside Act WCA 1981 (as amended). Some species (listed in Schedule 1 of the WCA) are protected by special penalties. This legislation makes it an offence to intentionally or recklessly damage or destroy an active bird nest or part thereof.

As the trees on, and adjacent, to the site provide potential habitat for nesting birds all tree work should ideally be completed outside the nesting bird season (Generally March to September).

If this is not possible then the vegetation should be subject to a nesting bird inspection by a suitably experienced ecologist prior to commencement of works. If any active nests are identified then the vegetation, and a defined buffer zone, will need to remain in place until the young have naturally fledged.
3. ARBORICULTURAL IMPACT ASSESSMENT

3.1 INTRODUCTION

This section of the report details the potential impacts that the proposed development may have upon the site’s tree stock. The assessment has been based upon the documents detailed in Table 1.1 with reference to the results of the Arboricultural Survey undertaken in October 2016 (RT-MME-123105-02).

The location of the trees can be found on Drawing Number C123105-02-01 in Section 6 and a schedule of the trees surveyed can be found within the Arboricultural Survey (RT-MME-123105-02).

3.2 IMPACTS FROM DEVELOPMENT LAYOUT

3.2.1 Tree Removal

The proposed development has been designed so that, where possible, existing trees are retained. In particular the linear groups of trees adjacent to the eastern and western boundaries of the site, which have good screening value, are to be retained. However to accommodate the proposed development it will be necessary to remove a small number of trees within the site.

The trees to be removed are detailed within Table 3.1 additionally they are identified on the Draft Tree Protection Plan, Drawing Number C124559-01-01, in Section 6 of this report.

<table>
<thead>
<tr>
<th>Tree Number</th>
<th>Species</th>
<th>BS5837 Category</th>
<th>Reason for Removal</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Lombardy Poplar</td>
<td>U</td>
<td>Removal required due to poor condition.</td>
</tr>
<tr>
<td>11</td>
<td>Lombardy Poplar</td>
<td>U</td>
<td>Removal required due to poor condition.</td>
</tr>
<tr>
<td>35</td>
<td>Rowan</td>
<td>U</td>
<td>Removal required due to poor condition.</td>
</tr>
<tr>
<td>H1</td>
<td>Leyland Cypress</td>
<td>C3</td>
<td>Removal required to allow for proposed service trench excavation.</td>
</tr>
<tr>
<td>H3*</td>
<td>Mixed Species</td>
<td>C3</td>
<td>Partial removal required to allow for construction access to the site.</td>
</tr>
</tbody>
</table>

Key

*: Partial removal of trees within group or hedgerow features.

Table 3.1: Tree Removal

Overall the proposed development will require the removal of three individual trees and one hedgerow. The partial removal of a further hedgerow and some shrub bed clearance will also be required.

It should be noted that all of the individual trees identified for removal were considered to be unsuitable for long-term retention in the Arboricultural Survey of the site. The removal of these trees would be required irrespective of the proposed development due to their poor condition and as such their loss should not be seen as a material consideration in the planning process.

The hedgerows that will require complete or partial removal are both specimens that were considered to be of a low retention value in the Arboricultural Survey. It is not considered that the removal of these hedgerows should be seen as a constraint to the development of the site as they are not in such a condition that they are likely to make a lasting contribution to the landscape character of the site.

3.2.2 Tree Pruning

In addition to the proposed tree removal there are areas on site where it will be necessary to undertake access facilitation pruning works to retained trees present on the site to minimise the potential for branch damage to occur during construction. Trees requiring pruning works are detailed in Table 3.2 and are illustrated on the Draft Tree Protection Plan, Drawing Number C124559-01-01, in Section 6 of this report.
<table>
<thead>
<tr>
<th>Tree Number</th>
<th>Species</th>
<th>BS5837 Category</th>
<th>Pruning Works Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Purple Leaved Plum</td>
<td>B1</td>
<td>Lift crown to adequate height (i.e. 3.5 m) to provide clearance for proposed road construction.</td>
</tr>
<tr>
<td>3</td>
<td>Sycamore</td>
<td>A1</td>
<td>Lift crown to adequate height (i.e. 3.5 m) to provide clearance for proposed road construction.</td>
</tr>
<tr>
<td>12</td>
<td>Sycamore</td>
<td>C1</td>
<td>Lift crown to adequate height (i.e. 3.5 m) to provide clearance for proposed service trench excavation.</td>
</tr>
<tr>
<td>13</td>
<td>Sycamore</td>
<td>A1</td>
<td>Lift crown to adequate height (i.e. 3.5 m) to provide clearance for proposed service trench excavation.</td>
</tr>
<tr>
<td>17</td>
<td>Sycamore</td>
<td>A1</td>
<td>Lift crown to adequate height (i.e. 3.5 m) to provide clearance for proposed service trench excavation.</td>
</tr>
<tr>
<td>19</td>
<td>Sycamore</td>
<td>A1</td>
<td>Lift crown to adequate height (i.e. 3.5 m) to provide clearance for proposed service trench excavation.</td>
</tr>
<tr>
<td>33</td>
<td>English Oak</td>
<td>A1</td>
<td>Lift crown to adequate height (i.e. 3.5 m) and prune back towards eastern site boundary to provide clearance for proposed multi-use games area (MUGA) construction.</td>
</tr>
<tr>
<td>41</td>
<td>English Oak</td>
<td>A1</td>
<td>Lift crown to adequate height (i.e. 4.0 m) to provide clearance for proposed temporary construction access road.</td>
</tr>
<tr>
<td>44</td>
<td>Purple Leaved Plum</td>
<td>C1</td>
<td>Lift crown to adequate height (i.e. 4.0 m) to provide clearance for construction access to the site.</td>
</tr>
<tr>
<td>45</td>
<td>Silver Maple</td>
<td>A1</td>
<td>Lift crown to adequate height (i.e. 4.0 m) to provide clearance for construction access to the site.</td>
</tr>
</tbody>
</table>

Table 3.2: Tree Pruning Works

All of the tree pruning works required are likely to be of a minor extent and of a routine nature. As such it is not considered that they will have a significant impact upon the long-term health, or visual quality, of the trees.

3.3 IMPACTS FROM DEMOLITION AND RELATED OPERATIONS

3.3.1 Building Demolition

There are no areas on site where the demolition of existing buildings is required within close proximity to the Root Protection Areas of retained trees. As such, impacts to retained trees from this aspect of development are not anticipated.

3.3.2 Removal of Hard Surfaces

There are no areas on site where the removal of existing hardstanding will require works within the RPAs of retained trees. As such, impacts to retained trees from this aspect of development are not anticipated.

3.3.3 Removal of Services

There are no areas on site where the removal of existing underground services are likely to require works within the RPAs of retained trees. However it is noted that the crowns of a number of trees along the eastern site boundary are touching lampposts. Should the removal of these lampposts be required, appropriate working practices must be adopted to ensure that harm to the crown of the tree does not occur.

3.3.4 Ground Remediation

No information regarding proposed soil remediation works have been considered. However the previous usage of the site is considered unlikely to have resulted in areas of soil contamination that would require excavation and disposal, or treatment works, to be undertaken. As such it is not considered that ground remediation works are likely to impact upon retained trees.

3.3.5 Ancillary Operations

Access to the site for demolition plant will be via the existing track. As noted in Section 3.2.2 some access facilitation works to the crowns of trees overhanging the access track may be required to minimise the potential for harm to occur to overhanging branches. The works required will be of a routine nature, and of a minor extent, and as such it is not considered that they will have a significant impact upon the long-term health of the trees.
3.4 Direct Impacts from Construction

3.4.1 Works within RPAs

The proposed development has been designed so that major works are not required within the Root Protection Areas (RPAs) of retained trees. However, as detailed within Table 3.3, there are some aspects of the development that will require works to be undertaken within the RPAs of retained trees.

<table>
<thead>
<tr>
<th>Tree Number</th>
<th>Species</th>
<th>BS5837 Category</th>
<th>Works within RPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Purple Leaved Plum</td>
<td>B1</td>
<td>Proposed road construction.</td>
</tr>
<tr>
<td>3</td>
<td>Sycamore</td>
<td>A1</td>
<td>Proposed road construction.</td>
</tr>
<tr>
<td>4</td>
<td>Sycamore</td>
<td>B1</td>
<td>Proposed road construction.</td>
</tr>
<tr>
<td>5</td>
<td>Sycamore</td>
<td>B1</td>
<td>Proposed road construction.</td>
</tr>
<tr>
<td>13</td>
<td>Sycamore</td>
<td>A1</td>
<td>Excavation works for proposed service trench.</td>
</tr>
<tr>
<td>14</td>
<td>Sycamore</td>
<td>A1</td>
<td>Excavation works for proposed service trench.</td>
</tr>
<tr>
<td>16</td>
<td>Sycamore</td>
<td>A1</td>
<td>Excavation works for proposed service trench.</td>
</tr>
<tr>
<td>17</td>
<td>Sycamore</td>
<td>A1</td>
<td>Excavation works for proposed service trench.</td>
</tr>
<tr>
<td>19</td>
<td>Sycamore</td>
<td>A1</td>
<td>Excavation works for proposed service trench.</td>
</tr>
<tr>
<td>20</td>
<td>Sycamore</td>
<td>A1</td>
<td>Excavation works for proposed service trench.</td>
</tr>
<tr>
<td>33</td>
<td>English Oak</td>
<td>A1</td>
<td>Construction of proposed retaining wall for multi-use games area (MUGA).</td>
</tr>
<tr>
<td>41</td>
<td>English Oak</td>
<td>A1</td>
<td>Construction of proposed temporary construction access road.</td>
</tr>
</tbody>
</table>

Table 3.3: Works in RPAs

The proposed construction of a new road in the north of the site will require works within the RPAs of a number of high quality retained trees (numbers 2, 3, 4 and 5). In order to prevent harm occurring to the roots of the trees, it is recommended that these works proceed according to a no-dig construction methodology, as detailed in Section 4.3.2.

The installation of the proposed service trench will require excavation works within the RPAs of a number of trees located along the eastern site boundary. It is understood that all excavation works required within the RPAs of retained trees will be carried out by hand in order to minimise the potential for harm occurring to root systems. It is further recommended that these works are conducted under the supervision of a suitably qualified arboriculturist. Appropriate working practices for excavations within RPAs are detailed in Section 4.3.3.

In order to allow for level changes required to facilitate the proposed multi-use games area (MUGA), it will be necessary to install a gabion retaining wall. This in turn will require works within the RPA of a large English Oak (tree number 33) located along the eastern site boundary. It is noted that the proposed works encroach by approximately 11% into the tree’s overall RPA and as such it is not considered that significant impacts to the tree’s long-term health are likely to occur. Nonetheless, it is recommended that any excavation works required are conducted by hand and under supervision of a suitably qualified arboriculturist.

Finally, it is understood that a temporary construction access road will be installed off Barton Road at the southern site boundary, which will require some construction vehicle passage within the RPA of a large Oak tree on the boundary (number 41). In order to prevent harm occurring to the roots of the tree through soil compaction, it will be necessary to install ground protection measures where the proposed access road overlaps with the RPA of the tree.

3.4.2 Works within Canopy Spreads

Excavation of the proposed service trench will require works to be undertaken beneath the canopies of retained trees, specifically tree numbers 16 and 20. To minimise the potential for branch damage to occur some access facilitation pruning works, as detailed in Section 3.2.2, will need to be undertaken. Following on from this the adoption of an appropriate working methodology will ensure that harm to the retained trees is avoided.
3.4.3 **Working Space**

Proposed excavation works for the service trench running parallel to the eastern site boundary will require the provision of working space within the RPAs of retained trees. In these areas it is recommended that ground protection measures, as illustrated on the Draft Tree Protection Plan (Drawing Number C124559-01, Section 5), be installed to minimise potential impacts to the roots of retained trees.

3.5 **IMPACTS FROM CONSTRUCTION RELATED OPERATIONS**

3.5.1 **Site Access**

It is understood that construction access to the site will be provided along the existing access track. As noted in Section 3.2.2 it will be necessary to undertake some access facilitation pruning works to minimise the potential for branch damage to occur due to the passage of construction plant. It will also be necessary to ensure retained trees adjacent to the access route are protected from potential impact damage by the installation of tree protection barriers prior to the commencement of the development.

3.5.2 **Delivery and Storage of Materials**

Material deliveries to the site will utilise the existing access track. Retained trees will be protected from harm by the prior installation of tree protection barriers and the completion of access facilitation pruning works.

Areas for materials storage within the site have not been identified at this stage, however the nature of the site is such that ample opportunities exist for the storage of materials in areas well away from retained trees.

3.5.3 **Site Compound**

The proposed location for the contractor’s compound during development of the site has not been identified at this stage, however the nature of the site is such that ample opportunities exist to create a site compound in areas away from retained trees.

3.5.4 **Contractor’s Parking**

The locations for contractor’s parking have not been identified at this stage, however the nature of the site is such that ample opportunities exist to provide contractor car parking in areas outside of the RPAs of retained trees.

3.6 **POST-DEVELOPMENT IMPACTS**

3.6.1 **Shading**

The orientation of the site is such that the largest retained trees are located adjacent to the eastern and western boundaries, with some smaller trees present along the northern and southern boundaries. The proposed new building has been sited so as not to be in such close proximity to retained trees that significant shading of classroom spaces is considered likely to occur. As such it is not considered that a significant conflict between retained trees and the proposed building as a result of shading is likely to occur.

3.6.2 **Privacy and Screening**

The proposed development has been designed so that the majority of the trees adjacent to the eastern and western site boundaries are retained to provide privacy and screening. On this basis it is evident that privacy and screening has been provided for.

3.6.3 **Direct Damage to Structures**

There are no areas on site where retained trees will be in such close proximity to the new development that direct damage, through branch whipping or root growth, are likely to occur.

3.6.4 **Future Pressure for Removal**

The nature of the proposed development is such that future pressure for tree removal is generally considered unlikely to occur.
3.6.5 Seasonal Nuisance

The nature of the development is such that significant conflicts between buildings and retained trees as a result of seasonal nuisance are not considered likely to occur. As such, future pressure for tree removal from this aspect of development is not anticipated.

3.7 SUMMARY OF IMPACTS

Overall it is understood that the proposed development will require the removal of three individual trees and one hedgerow, as well as the clearance of some shrub vegetation and the partial removal of a further hedgerow. It will also be necessary to undertake some access facilitation pruning works in a number of areas within the site. Additionally some aspects of the proposed development will require works to be undertaken within the Root Protection Areas (RPAs) of retained trees.

It is considered that the proposed development of the site will not have a significant impact upon the visual amenity of the local area as a result of the proposed tree removal necessary to implement it. Additionally the proposed works are unlikely to impact significantly upon the long-term health of retained trees. Whilst some works are to be undertaken within the RPAs of retained trees the nature of those works are such that they can be completed without impacting significantly upon the trees subject to the adoption of appropriate working practices.
4. MITIGATION AND PROTECTION

4.1 INTRODUCTION
This section of the report details the initial protection, mitigation and avoidance measures suggested to prevent harm to the retained trees.

4.2 GENERAL TREE PROTECTION

4.2.1 Construction Exclusion Zone
To minimise the potential for harm to occur to the root systems and canopies of retained trees during development it will be necessary to implement construction exclusion zones throughout the site. These are areas surrounding the trees’ RPAs and canopies in which no construction works, or related activities, will be undertaken.

It is recommended that the exclusion zones are afforded protection at all times through the use of tree protection barriers and/or ground protection (specified in accordance with BS5837:2012). No works that cause compaction of the soil or severance of tree roots, except where undertaken in accordance with the guidance provided within this document, will be undertaken within any exclusion zone.

Where construction operations, such as the excavation of new service trenches, are to be undertaken within the construction exclusion zone the working practices detailed in Section 4.3 should be followed.

4.2.2 Tree Protection Barriers
The protective barriers should be erected prior to the commencement of any site works e.g. before any materials or machinery are brought on site or the stripping of soil commences.

Drawing Number C124559-01-01, in Section 6, provides a Draft Tree Protection Plan indicating the potential location of protective barriers.

The protective barriers are to be constructed in accordance with the specification detailed in BS5837:2012 (Figure 2; Appendix 2). Any variation to the specification of the protective barrier will be agreed with the Local Planning Authority Arboricultural Officer.

4.2.3 Ground Protection
Where proposed works overlap with the Root Protection Areas (RPAs) of retained trees, it will be necessary to install ground protection measures.

With respect to the proposed excavation works for the new service trench adjacent to the eastern site boundary, as only pedestrian access will be permitted within the RPAs of retained trees the use of oriented strand board (OSB) on top of a compressible layer (e.g. woodchip) laid onto a geo-textile fabric would provide suitable ground protection. This approach should prove to be adequate for the expected loadings.

It is understood that the temporary construction access road off Barton Road along the southern boundary will require the passage of construction vehicles within the RPA of tree number 41. As such it is recommended that the road be installed using a cellular confinement system, such as Geosynthetics 100 or 150 mm Cellweb or similar, and according to a no-dig construction methodology.

Any ground protection to be installed must be capable of supporting the expected loads and avoid compaction and damage to the soil.

4.3 MITIGATION OR AVOIDANCE OF IMPACTS

4.3.1 Design Amendments
It is recommended that the route of the proposed temporary access road off Barton Road be reconfigured so as to not encroach into the Root Protection Area (RPA) of the large Oak tree along the southern site boundary (tree number 41).
4.3.2 Proposed Hard Surfacing with RPAs

There are areas of hardstanding to be located within the RPAs of retained trees, these areas are currently not covered by hardstanding and where works are proposed within the RPA, and a no dig methodology is to be utilised where possible. The location of the ‘no dig’ sections of hardstanding are illustrated on the Tree Protection Plan Drawing Number C124559-01-01. Where hardstanding is located within the RPAs of retained trees it will have a permeable surface treatment.

In this respect, the use of a cellular confinement system, such as Geosynthetics 100 or 150 mm Cellweb, is recommended. A full methodology for no-dig construction within the RPAs of retained trees should be detailed within an Arboricultural Method Statement.

4.3.3 Proposed Underground Utilities within RPAs

The proposed service trench running parallel with the eastern site boundary will require works within or in close proximity to the Root Protection Areas (RPAs) of a number of trees along this boundary. In order to minimise the potential for harm to occur to root systems, it is understood that excavation works within the RPAs of retained trees are to be carried out by hand. In this respect, the use of airspades or similar hand held tools is recommended.

The following precautions are also to be taken to prevent harm occurring to retained trees as a result of service installation.

The below ground services within the site are to be at a minimum depth of 750 mm below existing ground level. Where the works are to occur within the RPAs of retained trees the protection of tree roots is imperative and as such traditional trenching will not be permitted.

To prevent severance of tree roots the use of trenchless insertion methods, such as micro-tunneling, for the installation of the new services is recommended. Where such an approach is adopted entry and retrieval pits must be sited outside the root protection area of any retained tree.

As an alternative to micro-tunneling a combination of manual excavation utilising tools such as a pneumatic airspade and vacuum soil excavation may be used to provide a trench for service installation, subject to the following provisions:

- The route of the proposed manually excavated trench shall be determined in discussion with the project arboriculturist and marked out on site.
- Ground protection mats shall be installed adjacent to the proposed trench route to permit access for the vacuum excavator and air compressor.
- Upon commencement of the works the aim will be to excavate the soil along the route of the proposed service trench to a minimum depth of 750 mm below ground level whilst retaining as many tree roots as feasible.
- Whilst roots smaller than 25 mm in diameter may be pruned back to permit access for the vacuum excavator nozzle such works shall only be completed under the direction of a suitably qualified and experienced arboriculturist.
- All exposed roots must be wrapped or covered with damp hessian or similar material, as soon as possible, to prevent desiccation and to protect them from rapid temperature changes.
- Once the trench is completed the proposed service duct or pipe can be inserted into the trench below the network of retained tree roots.
- Prior to backfilling all root coverings shall be removed and retained roots shall, where possible, be surrounded with topsoil and compacted sharp sand, or other loose inert granular fill, before soil or other suitable material is replaced into the excavated area. The fill material shall be free of contaminants and other foreign objects potentially injurious to tree roots.
- All works will be supervised by an experienced arboriculturist.
- Works will not occur where temperatures of less than +4 degrees Celsius are forecast.

4.3.4 Site Setup and Logistics

Prior to commencement of development a plan should be prepared detailing the locations in which activities related to the establishment of a site compound, contractors car parking areas, material storage areas and associated works are to occur. All such areas should be located outside of the RPAs of retained trees.
5. ARBORICULTURAL METHOD STATEMENT

An Arboricultural Method Statement will be required for the site as various aspects of the proposed development will require works to be undertaken within the RPAs of retained trees.

The purpose of a method statement is to ensure that all site operations can occur with minimal risk of adverse impact upon trees that are to be retained. The document will identify all areas where specific working methods will be required to ensure protection to trees. The document will also specify the location and extent of tree protection barriers and ground protection.

In relation to this development the method statement should address the following:

- Suitable site access, material storage and site compound locations.
- Final protective barrier and ground protection locations and specifications.
- Phased approach to development works to ensure retained trees are not impacted upon from demolition and new access construction works.
- Extent of access facilitation pruning works to be undertaken to permit site access and installation of acoustic fence.
- Pre-commencement site meeting.
- Supervision of hand-dig excavation works for proposed service trench and retaining gabion wall within RPAs of retained trees.
- Methodology for No-Dig Construction of hardstanding within RPAs of retained trees.
6. DRAWINGS

Drawing Number C123501-02-01 – Tree Constraints Plan

Drawing Number C124559-01-01 – Draft Tree Protection Plan
Legend
- Category A tree
- Category B tree
- Category C tree
- Category U tree
- Category A group
- Category B group
- Category C group / hedgerow
- Shrub bed
- Current canopy extent
- Root Protection Area
- Site boundary

The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

Isabrook School, Eastleigh Road, Kettering

Tree Constraints Plan
Northamptonshire County Council

C123105-02-01
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October 2016
DM
GP

Triumph House, Birmingham Road, Allesley, Coventry CV5 9AZ
T:01676 525880   F:01676 521400
E:admin@middlemarch-environmental.com

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