Arboricultural Report

Harringworth & Shotley, Corby

For Anglian Water @ One Alliance

Oct 2011
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1.0 Introduction

Client
1.1 The following Arboricultural Report has been produced for Anglian Water @ One Alliance in relation to the proposed pumping station and pipe line installation at Harringworth and Shotley, Corby.

Scope
1.2 This purpose of this Arboricultural Report is to assess the impact of the proposed pumping station and pipe line works on the existing trees located within the site.

2.0 Tree Survey

Scope of survey
2.1 The survey is concerned with arboricultural aspects of the site only.

2.2 Tree survey was undertaken in accordance with BS:5837:2005 ‘Trees in relation to construction – Recommendations. (parts 4.2-4.5) The trees have been categorised in accordance with the BS 5837:2005 Cascade Chart – Table 1.

The Tree Survey, Key and Cascade Chart can be found in Appendix A

2.3 Tree survey was carried out on 10th of October 2011 by Mr. M. Watson Ground Control Arboricultural Manager.

2.4 The surveyed trees have not been tagged.

2.5 The survey was based on the on a Topographical Survey drawing (ref: 1198/NP/2B) prepared by Randall Surveys.

2.6 The survey was undertaken on only the specific trees highlighted by the client at the time of tender for the works.

Statutory Designations
2.7 Ground Control undertook an online search (Magic Maps) to enquire of any statutory landscape designations in relation to the subject trees. For the purpose of the report no designations were present (SSI, conservation areas, areas of outstanding natural beauty). We are unaware of any TPO designations relating to the surveyed trees.

3.0 The Site

3.1 The proposed pumping station is located 275 m north of Harringworth along Seaton Road and new proposed compound area is located 715m east of Shotley along Wakerley Road. Proposed pipe line runs from west of Harringworth through to east of Shotley along Wakerley Road and north of Harringworth.

4.0 Subject Trees

4.1 A schedule of the 26 trees and 1 group surveyed is included within Appendix B.

4.2 A Tree Survey Plan has been prepared plotting the tree canopies in accordance with the branch spread details within the tree survey schedule.

A copy of the Tree Survey Plan can be found in Appendix C.

4.3 In accordance with B 5837:2005 cascade chart the trees have been categorised as follows;

- No category ‘A’ trees; those of high quality and value.
- X8 category ‘B’ trees; Those of moderate quality and value.
X18 category 'C' trees; those of low quality and value:
X1 category 'R' trees: Those in such a condition that any existing value would be lost within 10 years and which should, in the current context be removed for reasons of sound arboricultural management.

5.0 The Development

5.1 The proposed pipe line (foul sewer, pumping main) will be installed within the site through the technique of directional drill to avoid possible conflict. Manholes are located along the course of the proposed pipe line. A manhole is typically a pre cast concrete unit within 1200mm diameter rings, these act as collection points connected to surrounding properties to collect effluent to feed into the proposed sewer network. Reception pit for the manholes will be 2.5m by 2.5m and deep as manholes depths required. (Refer to Anglian Water drawing no: SEW-08020-HAWRST-2A-LON-100-A).

6.0 Arboricultural Impact

6.1 To assess the Arboricultural Impact of the surveyed trees and offer guidance on associated protection measures for any retained trees the following drawings have been prepared and can be found in Appendix D:

- Tree Constraints and Protection Plan (TCPP)

6.2 The root protection area (RPA’s) have been calculated in accordance with guidelines within BS 5837: 2005, as highlighted on the tree survey schedule. Due to the nature and constraints of the existing site, the RPA’s of some trees have been offset/adapted to suit envisaged root growth areas.

No Impact

6.3 The development will have no impact on 14 of the 26 surveyed trees. These trees include; T4-T8, T10-11, T15, T17-T20 and T25.

Direct Loss

6.4 T26 and the existing shrubs will be lost due to the proposed new concrete access road to sewerage treatment works and providing suitable visibility.

Indirect Impact

6.5 The development proposals will see indirect impact on 12 number trees and 1 of the 1 group listed below.

- T1-T2, T12 –T13, T24 and G1 (Ash) Fraxinus excelsior
- T3 and T22 (Hawthorn) Crataegus monogyna
- T9 and T16, (Horse-chestnut) Aesculus hippocastanum
- T21 (Common apple) Malus domestica
- T23 (Birch) Betula pendula

6.6 The trees will see the following works carried out within part of their root protection areas:

- Trees T1 –T3, T12-T14,T16,T21-T24 and G1– The proposed foul sewer/pumping main pipe lines will run through the RPA. It has been confirmed that a technique of directional drilling will be used to install the pipeline at a depth below the expected root plate of the trees. On this basis it is our opinion that there will be no detrimental impact on these trees.

- Tree T9 – Excavation of drill pit (2.5m by 2.5m) within the existing tree root protection area.
Although the above works will encroach within part of the tree root protection area, in accordance with BS 5837:2005 guidelines the works fall within an acceptable level (less than 20%) for all of the tree.

6.9 It is our opinion that although there will be some impact on one tree as a result of the development works there will be no long term detrimental effect on the trees as long all works are carried out and trees are protected in accordance with the recommendations below as outlined in BS 5837:2005.

Recommended for Removal

6.10 The tree survey has categorized T21 as ‘R’ and recommended for removal. The existing hedgerow to the west side of the sewerage treatments works (Site 2) has recommended for removal due to being surveyed as dead. In addition the part of the existing vegetation to the west side of the pumping station (Site 1) along Seaton Road has recommended for removal due to proposal works.

7.0 Conclusion

General

7.1 It is clear from the above report and associated drawings that the proposed development will have a minimal impact on the existing trees along the course of the proposed pumping station, pipe line, man holes and new compound area. Directional drilling has been confirmed to be carried out within the all site to avoid any unnecessary damage with the drilling taking place below the existing trees root plate.

With the exception of T26 we conclude the remaining trees may be retained. In order for installation of the proposed new concrete access road to sewerage treatment works and providing suitable visibility, the removal of T26 and hedge is required.

Protection of retained trees

7.2 To ensure the protection of the existing retained trees, RPA’s and CEZ’s have been shown clearly within Appendix D. Here site traffic and materials should not encroach within these areas. If traffic routes must pass through these areas appropriate protection methods should be put into place in accordance with BS 5837:2005.

7.3 To ensure the protection of the existing trees, tree protection fencing details have been proposed as outlined within Appendix E and located within Appendix D. Tree protection fencing has been position to protect the trees during construction. Fencing must remain within its show location throughout construction works.
8.0 Document Control

8.1 Report Prepared by;

Nilufer Danis, Landscape Architect
Mark Watson, Arboricultural Manager

21th October 2011

8.2 Report Authorised by;

Mr. Mark Watson, Arboricultural Manager
21th October 2011

8.3 Revisions;
Appendix A– Tree Survey Key & BS 5837:2005 Cascade Chart – Table 1

Tree Survey Key

Tree Reference Number: As recorded on tree survey plan.
Species: Scientific name – where possible.
Height: In metres overall height of the tree from ground level.
Stem Diameter: In millimeters at 1.5m above adjacent ground level or immediately above the root flare for multi-stemmed trees.
Branch Spread: In metres taken at four cardinal points (North, East, South, West) to derive an accurate representation of the crown as recorded in the Tree Survey Plan.
Height of Crown Clearance: In metres above adjacent ground level to inform on ground clearance, crown stem ratio and shading.
Age Class: Young(Y), Middle Aged (MA), Mature(M), Over Mature(OM), Veteran(V)
Vitality: Physiological condition (e.g. good, average, poor, dead)
Structural Condition: e.g. collapsing, leaning, presence of decay, physical defects, etc.
RPA: Root Protection Area calculated from BS5837:2005 Trees in Relation to Construction – Recommendations in sq/m’s. Where indicated, dimensions of radius of RPA circle based around centre point of trunk calculated for design purposes.
Category Grading: R or A to C category grading to be recorded in plan on Tree Survey Plan in accordance with Table 1 in following page.
Comments: Preliminary management recommendations, including further investigation of suspected defects that require more detailed assessment and potential for wildlife habitat.
### Table 1 — Cascade chart for tree quality assessment

<table>
<thead>
<tr>
<th>Category and definition</th>
<th>Criteria</th>
<th>Identification on plan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category R</strong>&lt;br&gt;Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management</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 unviable after removal of other R category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)&lt;br&gt; * Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline&lt;br&gt; * Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality&lt;br&gt;NOTE Habitat reinstatement may be appropriate (e.g. R category tree used as a butt root: installation of butt box in nearby tree).</td>
<td>DARK RED</td>
</tr>
</tbody>
</table>

| **Category A**<br> Those of high quality and values: in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested) | 1 Mainly arboricultural values<br>Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue) | 2 Mainly landscape values<br>Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups) | 3 Mainly cultural values, including conservation<br>Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or woodland pasture) | LIGHT GREEN |

| **Category B**<br> Those of moderate quality and values: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested) | Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage) | Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality | Trees with clearly identifiable conservation or other cultural benefits | MID BLUE |

| **Category C**<br> Those of low quality and values: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150 mm | Trees not qualifying in higher categories | Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit | Trees with very limited conservation or other cultural benefits | GREY |

**NOTE** Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150 mm should be considered for relocation.
### Appendix B – Tree Survey Key & BS 5837:2005 Cascade Chart – Table 1

<table>
<thead>
<tr>
<th>Tree Reference Number</th>
<th>Species</th>
<th>Height (m)</th>
<th>Stem Diameter (mm)</th>
<th>Branch Spread (m)</th>
<th>Height of Crown Clearance</th>
<th>Age Class</th>
<th>Vitality</th>
<th>Structural Condition</th>
<th>RPA Metres Squared</th>
<th>Category Grading BS5837</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>Fraxinus excelsior</td>
<td>21</td>
<td>1202</td>
<td>8,11,11,9</td>
<td>2.5</td>
<td>om</td>
<td>l</td>
<td>f</td>
<td>653.7</td>
<td>b</td>
<td>Historical pollard at 2.5m with large spreading canopy and some deadwood in crown and caught up</td>
</tr>
<tr>
<td>T2</td>
<td>Fraxinus excelsior</td>
<td>13</td>
<td>620</td>
<td>5756</td>
<td>3.5</td>
<td>m</td>
<td>low</td>
<td>f</td>
<td>173.92</td>
<td>c</td>
<td>Ivy up to mid canopy</td>
</tr>
<tr>
<td>T3</td>
<td>Crataegus monogyna</td>
<td>5</td>
<td>450</td>
<td>3321</td>
<td>1</td>
<td>m</td>
<td>n</td>
<td>f</td>
<td>63.63</td>
<td>c</td>
<td>MS</td>
</tr>
<tr>
<td>T4</td>
<td>Crataegus monogyna</td>
<td>3</td>
<td>200</td>
<td>1111</td>
<td>2</td>
<td>ma</td>
<td>n</td>
<td>f</td>
<td>18.1</td>
<td>c</td>
<td>Ivy incipient canopy</td>
</tr>
<tr>
<td>T5</td>
<td>Crataegus monogyna</td>
<td>6</td>
<td>240</td>
<td>3233</td>
<td>0</td>
<td>m</td>
<td>n</td>
<td>f</td>
<td>26.06</td>
<td>c</td>
<td>Ivy incipient canopy</td>
</tr>
<tr>
<td>T6</td>
<td>Alnus glutinosa</td>
<td>8</td>
<td>200</td>
<td>4444</td>
<td>2</td>
<td>sm</td>
<td>n</td>
<td>f</td>
<td>18.1</td>
<td>c</td>
<td>Crown pruned for road acc</td>
</tr>
<tr>
<td>T7</td>
<td>Alnus glutinosa</td>
<td>7</td>
<td>230</td>
<td>3333</td>
<td>2</td>
<td>sm</td>
<td>n</td>
<td>f</td>
<td>23.93</td>
<td>c</td>
<td>Crownpruned for road acc</td>
</tr>
<tr>
<td>T8</td>
<td>Acer platanus</td>
<td>6</td>
<td>250</td>
<td>4443</td>
<td>2</td>
<td>sm</td>
<td>n</td>
<td>f</td>
<td>23.93</td>
<td>c</td>
<td></td>
</tr>
<tr>
<td>T9</td>
<td>Aesculus hippocastanum</td>
<td>7</td>
<td>340</td>
<td>6453</td>
<td>2</td>
<td>sm</td>
<td>n</td>
<td>f</td>
<td>52.3</td>
<td>c</td>
<td>Bleeding canker</td>
</tr>
<tr>
<td>T10</td>
<td>Fraxinus excelsior</td>
<td>21</td>
<td>800</td>
<td>8888</td>
<td>3</td>
<td>m</td>
<td>n</td>
<td>f</td>
<td>289.57</td>
<td>c</td>
<td>Codominant stems fr 3m</td>
</tr>
<tr>
<td>T11</td>
<td>Salix fragilis</td>
<td>18</td>
<td>1100</td>
<td>89911</td>
<td>4</td>
<td>m</td>
<td>n</td>
<td>f</td>
<td>547.4</td>
<td>b</td>
<td></td>
</tr>
<tr>
<td>T12</td>
<td>Fraxinus excelsior</td>
<td>18</td>
<td>400</td>
<td>6554</td>
<td>3</td>
<td>ma</td>
<td>n</td>
<td>f</td>
<td>72.39</td>
<td>b</td>
<td></td>
</tr>
<tr>
<td>T13</td>
<td>Fraxinus excelsior</td>
<td>19</td>
<td>400</td>
<td>6554</td>
<td>3</td>
<td>ma</td>
<td>n</td>
<td>f</td>
<td>72.39</td>
<td>b</td>
<td></td>
</tr>
<tr>
<td>T14</td>
<td>Acer platanus purple</td>
<td>7</td>
<td>250</td>
<td>3444</td>
<td>2</td>
<td>ma</td>
<td>n</td>
<td>f</td>
<td>28.28</td>
<td>c</td>
<td>Minor deadwood</td>
</tr>
<tr>
<td>T15</td>
<td>Acer pseudoplatanus</td>
<td>18</td>
<td>700</td>
<td>7658</td>
<td>2</td>
<td>m</td>
<td>n</td>
<td>f</td>
<td>221.7</td>
<td>b</td>
<td>Ivy in crown</td>
</tr>
<tr>
<td>T16</td>
<td>Aesculus hippocastanum</td>
<td>19</td>
<td>1103</td>
<td>8,8,10,10</td>
<td>1</td>
<td>m</td>
<td>n</td>
<td>f</td>
<td>550.45</td>
<td>b</td>
<td>Leaf miner. Tpo</td>
</tr>
<tr>
<td>T17</td>
<td>Tilia x europaea</td>
<td>9</td>
<td>300</td>
<td>2334</td>
<td>2</td>
<td>sm</td>
<td>n</td>
<td>f</td>
<td>40.72</td>
<td>c</td>
<td>Suppressed</td>
</tr>
<tr>
<td>T18</td>
<td>Tilia x europaea</td>
<td>9</td>
<td>430</td>
<td>4444</td>
<td>2</td>
<td>sm</td>
<td>n</td>
<td>f</td>
<td>83.66</td>
<td>c</td>
<td></td>
</tr>
<tr>
<td>T19</td>
<td>Pyrus communis</td>
<td>7</td>
<td>370</td>
<td>3144</td>
<td>2</td>
<td>m</td>
<td>n</td>
<td>f</td>
<td>43.01</td>
<td>c</td>
<td>Dual stem</td>
</tr>
<tr>
<td>T20</td>
<td>Pyrus communis</td>
<td>7</td>
<td>380</td>
<td>3443</td>
<td>2</td>
<td>m</td>
<td>n</td>
<td>f</td>
<td>65.33</td>
<td>c</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Total</strong></td>
<td><strong>8</strong></td>
<td><strong>476</strong></td>
<td><strong>4444</strong></td>
<td><strong>1</strong></td>
<td><strong>m</strong></td>
<td><strong>n</strong></td>
<td><strong>f</strong></td>
<td><strong>104.26</strong></td>
<td><strong>c</strong></td>
<td></td>
</tr>
<tr>
<td>T22</td>
<td>Crataegus monogyna</td>
<td>480</td>
<td>4444</td>
<td>1</td>
<td>m</td>
<td>n</td>
<td>f</td>
<td>f</td>
<td>94.74</td>
<td>c</td>
<td>Tree back at top large cavity in stem</td>
</tr>
<tr>
<td>T23</td>
<td>Betula pendula</td>
<td>7</td>
<td>150</td>
<td>3222</td>
<td>2</td>
<td>y</td>
<td>n</td>
<td>f</td>
<td>10.18</td>
<td>c</td>
<td>Dual stem Ivy</td>
</tr>
<tr>
<td>T24</td>
<td>Fraxinus excelsior</td>
<td>16</td>
<td>1150</td>
<td>9,10,9,10</td>
<td>3</td>
<td>m</td>
<td>low</td>
<td>p</td>
<td>598.36</td>
<td>c</td>
<td>Deadwood thru canopy sparse foliage fungal decay brackets at base incnotus</td>
</tr>
<tr>
<td>G1</td>
<td>Fraxinus excelsior</td>
<td>13</td>
<td>570</td>
<td>6666</td>
<td>1</td>
<td>ma</td>
<td>n</td>
<td>f</td>
<td>147</td>
<td>b</td>
<td>4 trees</td>
</tr>
<tr>
<td>T25</td>
<td>Tilia x europaea</td>
<td>7</td>
<td>380</td>
<td>3343</td>
<td>1</td>
<td>ma</td>
<td>n</td>
<td>f</td>
<td>65.33</td>
<td>b</td>
<td></td>
</tr>
<tr>
<td>T26</td>
<td>Tilia x europaea</td>
<td>7</td>
<td>320</td>
<td>3442</td>
<td>0</td>
<td>ma</td>
<td>n</td>
<td>f</td>
<td>46.33</td>
<td>b</td>
<td></td>
</tr>
</tbody>
</table>

**RPA = Root Protection Area**  
**SM = Semi-Mature / M = Mature / Y = Young**
Appendix C – Tree Survey Plan & Schedule (GC.57433.001)
Appendix F – Tree Protection Fencing Detail
Tree Protection Fence X-Section Detail 1:20@A1

Tree Protection Fence Elevation Detail 1:50@A1