

# Arboricultural Impact Assessment (AIA) Arboricultural Method Statement (AMS)

Version 2 updated 29.01.2021

Collyhurst.  
Manchester Northern Gateway

Prepared for: FECIL

Prepared by Simon Brain *Chartered arboriculturist*

## Contents

|                                                                                    |      |
|------------------------------------------------------------------------------------|------|
| 1.0 Introduction (Instruction, Scope, Methodology, Mitigation & Limitations) ..... | 3-4  |
| 2.0 Arboricultural Impact Assessment.....                                          | 5-8  |
| 3.0 Tree Preservation Orders .....                                                 | 8    |
| 4.0 Trees to be removed and retained .....                                         | 8-9  |
| 5.0 Root Protection Areas (RPA)-modifications .....                                | 9-10 |
| 6.0 Post construction considerations .....                                         | 10   |
| 7.0 Tree pruning to facilitate development and future pruning .....                | 9    |
| 8.0 New surfacing and ground level modifications .....                             | 9    |
| 9.0 Construction Exclusion Zones and Special Measure Areas .....                   | 9    |
| 10.0 Site supervision and monitoring .....                                         | 90   |
| 11.0 Installation of below ground infrastructure (utilities) .....                 | 10   |
| 12.0 Design changes .....                                                          | 10   |
| 13.0 Concluding statement .....                                                    | 10   |

## Appendix

- 1 Tree Protection Plan
- 2 Survey sheets (updated as a result of AIA)
- 3 Arboricultural Method Statement

## 1.0 Introduction

## **1.1 Instruction, Scope, Methodology, Mitigation & Limitations**

- 1.2 My name is Simon Brain, I am a chartered arboriculturist, with 15 years' experience and over twenty years field experience holding the LANTRA Professional Tree Inspection certificate. I have been instructed by the client to prepare the following Arboricultural Impact Assessment for land at Collyhurst (Manchester Northern Gateway). It is noted that the site enabling works planning application has been submitted to MCC.
- 1.3 This Arboricultural Implications Assessment (AIA) is based on the proposed developments as shown on the Proposed Site Location Plan 8871 BA MP 00 DR A (04)706 P7 as drawn by Buttress and incorporated into the Tree Protection Plans (TPP) in Appendix 1 of this report.
- 1.4 The assessment will be carried out in line with the recommendations in BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* and will evaluate the direct and indirect impacts of the proposed design and where necessary recommend mitigation.
- 1.5 The AIA considers constraints posed above and below ground and where appropriate makes recommendations to mitigate impacts associated with development sites and retained trees.
- 1.6 Where specialist design, construction techniques or in areas where supervision of the works is required a Special Measure Area (SMA) has been shown on the TPP for the study areas.
- 1.7 Below ground constraints are influenced by the root protection area and are determined in line with the recommendations set out in BS 5837:2012. These recommendations quantify the root protection area based on a measured stem diameter in accordance with Annex C, and the root protection area determined from Annex D.

- 1.8 It is important to understand that when considering the Root Protection Area (RPA) with regards to the circular plot as delineated on the TPP that a number of site factors can influence root morphology and disposition of tree roots.
- 1.9 Above ground constraints are considered above and below ground and in line with the recommendations in BS 5837:2012 to include; shade, dominance, current and future crown spread as well as the ultimate height of those retained trees.
- 1.10 Impacts associated with development sites and retained trees can be associated with single or multiple site operations that can subject trees to multiple impacts (*root severance, compaction, loss of photosynthetic material*), where this is applicable it will be highlighted in the AIA.
- 1.11 The mitigation measures proposed in this report are essential to ensure that trees marked for retention are adequately protected during the period of post/preconstruction.

## **2.0 Arboricultural Impact Assessment**

### **2.1 Area for proposed development**

2.2 The proposed development has been embedded within the Tree Constraints Plan which indicates the following developments associated with this site to have an arboricultural impact:

- Access arrangements and new surfacing (including existing surface removal) in the vicinity of retained trees
- Installation of proposed development infrastructure requiring tree removal

2.3 The arboricultural impacts of these items have been identified below.

2.3.1 Access alignments and new surfacing (including existing surface removal) in the vicinity of retained tree number 69.

A driveway in the RPA of T69 is within a designated Special Measure Area (SMA) and construction will be managed by the following means, and shall be referred to as 'no dig' construction:

- Establishment of the California Bearing Ratio of the land in question order to inform engineers of type and capacity of load bearing cellular confinement system to be used.
- Appoint and confirm engineer for design and supply of a suitable load bearing geo cellular confinement system requiring no more than 25cm of excavation for top soil preparation only.
- Driveway is constructed and finished to the agreed specifications before any other general building activity commences on site.
- The cellular confinement system shall be guaranteed by the supplier so as not to cause subsequent compaction for a period of ten years.

- Typically, a 'no dig' approach (based on APN12 Driveways close to trees) will be taken with the confinement system being laid directly onto the existing ground level; where local cuts and fills are required this shall be no more than 75-100cm in depth.
- Typically, a confinement system of 150mm in depth is used.
- Edge restraints shall be required, and they shall be secured by means of small metal ties approximately 50cm+ long at appropriate intervals.
- The cellular confinement system shall be laid by pedestrian means under the consultant's on-site supervision. Small excavators can be used on the surface when it is newly laid and when ground boarding is provided.
- The system shall be filled with granular material that retains porosity and maintain a porous finished wearing surface such as pea gravel or resin bonded gravel. Proprietary surface coverings that may be suitable for some surfaces include Flexipave and Permadrive.
- All surface construction when complete shall be covered in on ground boarding throughout the SMA for the remainder of the build period.
- All surface construction is located with Special Measure Areas (SMA) which is designated on the Tree Protections Plan (TPP). All construction shall be supervised on site by a qualified arboricultural consultant whom shall record all progress and oversee all new surface installations in the RPA's affected and document the installation in the event of any future third party claims.

A typical no dig specification has been provided in Appendix 3.

NOTE: The chronological order of events shall be as follows.

Following installation of the CEZ access is installed under supervision to no dig specification provided and all new surfacing's are protected by on ground boarding such as scaffold boards prior to any other construction activity commencing in the vicinity. It is however critical that ground boarding is proportionate to the load anticipated to be exerted on the surface. Therefore, in areas of proposed driveway where vehicular (car) and pedestrian traffic is anticipated during / post construction scaffold boarding is enough above the newly laid surface. However, heavier construction related deliveries may be required and ground boarding shall be upgraded to bog mat or similar which must bear the anticipated load. Both types of on ground boarding are required for the construction duration.

A section of an existing footway in the RPA of retained trees and construction will be managed by the following method. The removal of the existing footway within the RPA/SMA shall be conducted under arborist supervision using hand tools. No CEZ relocation can occur without arborist sign off. The arborist shall direct the surface extraction. The proposal is to convert the footway area to grass verge / landscaping strip. The excavated area shall be backfilled with clean and certified topsoil's and re seeded. The area may require de compaction which will be confirmed during the surface removal. Following works the arborist shall sign off the position of the CEZ as per the location provided within the TPP.

2.3.2 Installation of proposed development infrastructure requiring tree removal. The impact of the installation of dwellings, easements (excavations) and general ground level changes requires the removal of the following ninety tree references:

T15;T16;T18;T19;T20;T21;T22;T23;T24;T25;T26;T27;T28;T29;T30;T31  
;T32;T33;T34;T35;T36;T37;T38;T39;T40;T41;T42;T43;T44;T45;T46;T4  
7;T48;T49;T50;T51;T52;T53;T54;T55;T56;T57;T58;T59;T60;T61;T62;T

63;T64;T65;T66;T67;T68;T70;T71;T72;T73;T74;T75;T76;T77;T78;T79;  
T80;T81;T82;T83;T84;T85;T86;T87;T88;T90;T91;T92;G2;G3;G4;G5;G6  
;G7;G8;G9;G10;G12;G13;G14;G15;G16;G17;G18.

### **3.0 Tree Preservation Orders**

- 3.1 There are no known Conservation Areas or TPOs within or adjacent to the boundary of the site.

### **4.0 Trees to be removed and retained**

- 4.1 The following trees have been identified for removal due to their condition (Category U): T14, T17 and T89.
- 4.2 A total of one hundred and twenty five trees are identified to be removed for the direct impact of development as listed in section 2.3.2
- 4.3 The remaining trees are due to be retained and protected as outlined on the TPP.
- 4.4 Retained and removed trees – analysis.

The removal of one hundred and twenty five trees across this site is required. The application has an opportunity to replace the lost trees in the wider landscape. Planting could be reinforced by using Fastigate forms of trees which provide an opportunity to plant highly sustainable trees with significant wider and local amenity value that limit objections from residents. Fastigate forms can reach 10-30m and with only small canopy spreads of 2-4m allowing some green component in even the tightest urban situation (Barrel Fastigate trees: fool's gold or winning strategy BTC/17/2004). The following specific plants are recommended for this site: Quercus robur 'fastigate Koster', Quercus castaneifolia 'Green Spire', Quercus ilex 'Olive Pillar', Fagus sylvatica 'Dawyck', Acer campestre 'William Caldwell' and Sorbus 'Autumn Spire (Flanrock).

## **5.0 Root Protection Areas (RPA)-modifications**

- 5.1 Root Protection Areas have been plotted in line with the guidance given in BS 5837: 2012 where ground constraints have had or are likely to effect the root morphology of trees e.g. where underground utilities or building foundations have obstructed root growth this shall require formal confirmation by excavation to establish presence or absence of significant rooting material. No RPA modifications have been shown for this scheme.

## **6.0 Post construction considerations**

- 6.1 Not applicable due to numerical tree loss.

## **7.0 Tree pruning to facilitate development and future pruning**

- 7.1 There are no requirements for minor levels of tree pruning

## **8.0 New surfacing and ground level modifications**

- 8.1 New surfacing is required in SMA/RPA of retained trees. Where necessary old surfacing requires removal in the SMA/RPA of T69. Refer to section 2.3.1 and appendix 3 for details of construction.

## **9.0 Construction Exclusion Zones and Special Measure Areas**

- 9.1 The Construction Exclusion Zone has been shown as a black fenced polyline on the TPP in Appendix 1 and shall be constructed using heras panels and rubber feet securely staked to the ground.
- 9.2 The CEZ is purposefully located to prompt site supervision and wider protective measures when new surfacing is installed.
- 9.3 The CEZ must be installed as signed off as fit for purpose before any other works commence on site.

## **10.0 Site supervision and monitoring**

- 10.1 Where a tree has been delineated on the TPP as requiring retention there will be a requirement to oversee construction operations in these areas in order to ensure that no damage occurs to the retained tree.
- 10.2 To ensure that there is an auditable system of site monitoring, reports will be compiled by an appointed arborist and following site visits they issued to the site manager and design team, copies of which will be available on site at all times for inspection by a Council planning/Tree officer.

## **11.0 Installation of below ground infrastructure**

- 11.1 The utilities plans have been coordinated with the landscape proposals.

## **12.0 Design change requirements**

- 12.1 Not required.

## **13.0 Concluding statement**

- 13.1 The proposed scheme was assessed in line with guidance provided in BS 5837:2012 *Trees in relation to design demolition and construction – Recommendations* with the aim to achieve a harmonious relationship between trees and structures that can be sustained in the long term.
- 13.2 It is my professional opinion as an arboriculturist that the proposed development should be allowed to proceed claiming the design proposal has achieved a harmonious balance of retained and removed trees.
- 14.3 It is considered that a significant improvement in the longer term plantings associated with the proposed site will materialise through the landscaping plan.

## **Appendix 1 Tree Protection Plan**

Drg No: TR-01 Revision: V2



### TREE PROTECTION PLAN

**Retention value key**

(RETENTION VALUE A)

(RETENTION VALUE C)

(RETENTION VALUE B)

(RETENTION VALUE U)

**Root Protection Areas (RPA) & Construction Exclusion Zones (CEZ)**

Root Protection Areas (RPA's) have been identified and are based on BS5837:2012. RPA's and Construction Exclusion Zones (CEZ) have been shown as detailed below. The CEZ shall act as the protective barrier for retained trees.

CEZ (Protective barrier)

RPA

Canopy extent

**CEZ**  
The CEZ's will require installation as shown on the TPP.

**Special Measure Areas (SMA)**  
Special Measure Areas (SMA's) have been identified for construction in these areas and they have been shown as detailed below.

SMA1. New permanent hard surfacing proposed. All surfacing to be no dig and installed under arboricultural supervision.

Refer to Arboricultural Implications Assessment (AIA) for details of recommended construction in SMA's.

|           |                       |          |
|-----------|-----------------------|----------|
| Client:   | FECIL                 |          |
| Project:  | Northern Gateway      |          |
| Detail:   | TREE PROTECTIONS PLAN |          |
| Drawn By: | Date:                 | Scale:   |
| SB        | 09.12.2020            | 1:500@A3 |
| Drg No:   | Revision:             |          |
| TR-01     | V2                    |          |



RETENTION VALUE A

RETENTION VALUE B

RETENTION VALUE C

RETENTION VALUE U

CEZ (Protective barrier)

RPA

Canopy extent

CEZ

The CEZ's will require installation as shown on the TPP.

SMA1. New permanent hard surfacing proposed. All surfacing to be no dig and installed under arboricultural supervision.

Refer to Arboricultural Implications Assessment (AIA) for details of recommended construction in SMA's.

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| Client:   | FECIL                 |          |
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| Drawn By: | Date:                 | Scale:   |
| SB        | 09.12.2020            | 1:500@A3 |
| Drg No:   | Revision:             |          |
| TR-01     | V2                    |          |

| Tree No. | Common Name  | Latin name             | Age | Diameter(mm) | Stems | Height (m) | Crown Height (m) | North (m) | South(m) | East (m) | West (m) | Category | Life Exp | Comments                                                            | Recommendations following AIA         | RPA-R | RPA-Sqm |
|----------|--------------|------------------------|-----|--------------|-------|------------|------------------|-----------|----------|----------|----------|----------|----------|---------------------------------------------------------------------|---------------------------------------|-------|---------|
| T1       | Whitebeam    | Sorbus aria            | M   | 592          | 5     | 7          | 2                | 4         | 4        | 4        | 4        | C2       | 40+      | Multiple stems at ground level. Included                            | Not within red line on submitted plan | 7.1   | 159     |
| T2       | Norway Maple | Acer platanoides       | M   | 391          | 2     | 7          | 2                | 4         | 4        | 4        | 4        | C2       | 40+      |                                                                     | Not within red line on submitted plan | 4.7   | 69      |
| T3       | Norway Maple | Acer platanoides       | M   | 935          | 3     | 13         | 2                | 5         | 5        | 5        | 5        | C2       | 40+      | Multiple stems at ground level. Included bark present in main fork. | Not within red line on submitted plan | 11.2  | 395     |
| T4       | Goat Willow  | Salix caprea           | M   | 346          | 3     | 10         | 2                | 4         | 4        | 4        | 4        | C2       | 40+      | Multiple stems at ground level. Included bark present in main fork. | Not within red line on submitted plan | 4.2   | 54      |
| T5       | Silver Birch | Betula pendula Youngii | M   | 150          | 1     | 5          | 2                | 1         | 1        | 1        | 1        | C2       | 40+      |                                                                     | Not within red line on submitted plan | 1.8   | 10      |
| T6       | Goat Willow  | Salix caprea           | M   | 212          | 2     | 6          | 2                | 2         | 2        | 2        | 2        | C2       | 40+      |                                                                     | Not within red line on submitted plan | 2.5   | 20      |
| T7       | Silver Birch | Betula pendula Youngii | M   | 150          | 1     | 5          | 2                | 1         | 1        | 1        | 1        | C2       | 40+      |                                                                     | Not within red line on submitted plan | 1.8   | 10      |
| T8       | Sycamore     | Acer pseudoplatanus    | M   | 150          | 1     | 5          | 2                | 1         | 1        | 1        | 1        | C2       | 40+      |                                                                     | Not within red line on submitted plan | 1.8   | 10      |
| T9       | Bird Cherry  | Prunus padus           | M   | 520          | 1     | 7          | 2                | 6         | 6        | 6        | 6        | B2       | 40+      |                                                                     | Not within red line on submitted plan | 6.2   | 122     |
| T10      | Bird Cherry  | Prunus padus           | M   | 450          | 1     | 7          | 2                | 5         | 5        | 5        | 5        | B2       | 40+      |                                                                     | Not within red line on submitted plan | 5.4   | 92      |
| T11      | Silver Birch | Betula pendula         | M   | 450          | 1     | 10         | 2                | 5         | 5        | 3        | 5        | B2       | 40+      |                                                                     | Not within red line on submitted plan | 5.4   | 92      |
| T12      | Silver Birch | Betula pendula         | M   | 475          | 1     | 10         | 2                | 4         | 5        | 4        | 6        | B2       | 40+      |                                                                     | Not within red line on submitted plan | 5.7   | 102     |
| T13      | Silver Birch | Betula pendula         | M   | 325          | 1     | 10         | 2                | 3         | 2        | 3        | 3        | B2       | 40+      |                                                                     | Not within red line on submitted plan | 3.9   | 48      |

| Tree No. | Common Name  | Latin name          | Age | Diameter(mm) | Stems | Height (m) | Crown Height (m) | North (m) | South(m) | East (m) | West (m) | Category | Life Exp | Comments                                                            | Recommendations following AIA | RPA-R | RPA-Sqm |
|----------|--------------|---------------------|-----|--------------|-------|------------|------------------|-----------|----------|----------|----------|----------|----------|---------------------------------------------------------------------|-------------------------------|-------|---------|
| T14      | Ash          | Fraxinus excelsior  | OM  | 260          | 1     | 8          | 2                | 0         | 3        | 2        | 2        | U        | 40+      | Cavity on stem. Major bark wounding on stem. Self set regeneration. | Lost for condition            | 3.1   | 31      |
| T15      | Sycamore     | Acer pseudoplatanus | M   | 384          | 5     | 9          | 2                | 4         | 4        | 4        | 4        | C2       | 40+      | Self set regeneration.                                              | Remove for development        | 4.6   | 67      |
| T16      | Common Lime  | Tilia X europaea    | M   | 375          | 1     | 9          | 2                | 4         | 4        | 4        | 4        | B2       | 40+      |                                                                     | Remove for development        | 4.5   | 64      |
| T17      | Common Lime  | Tilia X europaea    | M   | 375          | 1     | 9          | 2                | 4         | 4        | 4        | 4        | U        | 10+      | Major bark wounding on stem.                                        | Lost for condition            | 4.5   | 64      |
| T18      | Sycamore     | Acer pseudoplatanus | M   | 313          | 3     | 9          | 2                | 3         | 3        | 3        | 3        | C2       | 20+      | Multiple stems at ground level. Included bark present in main fork. | Remove for development        | 3.8   | 44      |
| T19      | Common Alder | Alnus glutinosa     | M   | 248          | 2     | 9          | 2                | 3         | 3        | 3        | 3        | C2       | 20+      | Multiple stems at ground level. Included bark present in main fork. | Remove for development        | 3     | 28      |
| T20      | Sycamore     | Acer pseudoplatanus | EM  | 290          | 3     | 9          | 2                | 3         | 3        | 3        | 1        | C2       | 20+      | Multiple stems at ground level. Included bark present in main fork. | Remove for development        | 3.5   | 38      |
| T21      | Silver Birch | Betula pendula      | M   | 325          | 1     | 11         | 2                | 4         | 4        | 4        | 4        | C2       | 20+      |                                                                     | Remove for development        | 3.9   | 48      |
| T22      | Goat Willow  | Salix caprea        | M   | 160          | 1     | 6          | 2                | 3         | 3        | 3        | 3        | C2       | 20+      |                                                                     | Remove for development        | 1.9   | 12      |
| T23      | Silver Birch | Betula pendula      | M   | 470          | 1     | 12         | 2                | 4         | 5        | 4        | 4        | B2       | 20+      |                                                                     | Remove for development        | 5.6   | 100     |
| T24      | Silver Maple | Acer saccharinum    | M   | 430          | 1     | 12         | 2                | 5         | 5        | 3        | 5        | B2       | 40+      |                                                                     | Remove for development        | 5.2   | 84      |
| T25      | Silver Maple | Acer saccharinum    | M   | 410          | 1     | 12         | 2                | 5         | 3        | 3        | 3        | B2       | 40+      | Crown distorted due to group pressure.                              | Remove for development        | 4.9   | 76      |
| T26      | Silver Birch | Betula pendula      | EM  | 200          | 1     | 12         | 2                | 3         | 2        | 2        | 2        | C2       | 20+      |                                                                     | Remove for development        | 2.4   | 18      |
| T27      | Sycamore     | Acer pseudoplatanus | M   | 361          | 2     | 8          | 2                | 5         | 2        | 3        | 3        | C2       | 20+      |                                                                     | Remove for development        | 4.3   | 59      |
| T28      | Ash          | Fraxinus excelsior  | M   | 450          | 1     | 11         | 2                | 5         | 5        | 5        | 5        | A2       | 40+      |                                                                     | Remove for development        | 5.4   | 92      |
| T29      | Hawthorn     | Crataegus monogyna  | M   | 240          | 1     | 7          | 2                | 3         | 3        | 3        | 3        | A2       | 40+      |                                                                     | Remove for development        | 2.9   | 26      |

| Tree No. | Common Name                           | Latin name                                                                        | Age | Diameter(mm) | Stems | Height (m) | Crown Height (m) | North (m) | South(m) | East (m) | West (m) | Category | Life Exp | Comments                            | Recommendations following AIA | RPA-R | RPA-Sqm |
|----------|---------------------------------------|-----------------------------------------------------------------------------------|-----|--------------|-------|------------|------------------|-----------|----------|----------|----------|----------|----------|-------------------------------------|-------------------------------|-------|---------|
| T30      | Sycamore                              | Acer pseudoplatanus                                                               | M   | 450          | 1     | 10         | 2                | 5         | 5        | 5        | 5        | B2       | 40+      | Included bark present in main fork. | Remove for development        | 5.4   | 92      |
| T31      | Hawthorn                              | Crataegus monogyna                                                                | M   | 220          | 1     | 7          | 2                | 3         | 3        | 3        | 3        | A2       | 40+      |                                     | Remove for development        | 2.6   | 22      |
| T32      | Ash                                   | Fraxinus excelsior                                                                | M   | 350          | 1     | 11         | 2                | 2         | 4        | 4        | 4        | A2       | 40+      |                                     | Remove for development        | 4.2   | 55      |
| T33      | Ash                                   | Fraxinus excelsior                                                                | M   | 440          | 1     | 11         | 2                | 5         | 3        | 3        | 3        | A2       | 40+      |                                     | Remove for development        | 5.3   | 88      |
| T34      | Sycamore                              | Acer pseudoplatanus                                                               | M   | 200          | 1     | 11         | 2                | 2         | 2        | 1        | 4        | C2       | 40+      | Unbalanced crown shape.             | Remove for development        | 2.4   | 18      |
| T35      | Ash                                   | Fraxinus excelsior                                                                | M   | 250          | 1     | 9          | 2                | 3         | 3        | 3        | 3        | B2       | 40+      |                                     | Remove for development        | 3     | 28      |
| T36      | Norway Maple                          | Acer platanoides                                                                  | M   | 325          | 1     | 10.5       | 2                | 2         | 4        | 3        | 3        | B2       | 40+      | Exudation on stem.                  | Remove for development        | 3.9   | 48      |
| T37      | Norway Maple                          | Acer platanoides                                                                  | M   | 450          | 1     | 11         | 2                | 5         | 4        | 4        | 4        | B2       | 40+      |                                     | Remove for development        | 5.4   | 92      |
| T38      | Whitebeam                             | Sorbus aria                                                                       | M   | 260          | 1     | 8          | 2                | 2         | 0        | 2        | 2        | B2       | 40+      |                                     | Remove for development        | 3.1   | 31      |
| T39      | Common Lime                           | Tilia X europaea                                                                  | M   | 400          | 1     | 11         | 2                | 4         | 4        | 4        | 4        | A2       | 40+      |                                     | Remove for development        | 4.8   | 72      |
| T40      | Whitebeam                             | Sorbus aria                                                                       | M   | 325          | 1     | 8          | 2                | 4         | 4        | 4        | 4        | A2       | 40+      |                                     | Remove for development        | 3.9   | 48      |
| T41      | Norway Maple                          | Acer platanoides                                                                  | M   | 375          | 1     | 11         | 2                | 4         | 4        | 4        | 4        | A2       | 40+      |                                     | Remove for development        | 4.5   | 64      |
| T42      | Red Oak                               | Quercus rubra                                                                     | M   | 390          | 1     | 11         | 2                | 4         | 4        | 2        | 5        | A2       | 40+      |                                     | Remove for development        | 4.7   | 69      |
| T43      | Silver Birch                          | Betula pendula                                                                    | M   | 390          | 1     | 11         | 2                | 3         | 3        | 3        | 3        | A2       | 40+      |                                     | Remove for development        | 4.7   | 69      |
| T44      | Silver Birch                          | Betula pendula                                                                    | M   | 425          | 1     | 14         | 2                | 4         | 4        | 4        | 4        | A2       | 40+      |                                     | Remove for development        | 5.1   | 82      |
| T45      | Common Lime                           | Tilia X europaea                                                                  | M   | 425          | 1     | 14         | 2                | 5         | 5        | 5        | 5        | A2       | 40+      |                                     | Remove for development        | 5.1   | 82      |
| T46      | Common Lime                           | Tilia X europaea                                                                  | M   | 290          | 1     | 10         | 2                | 3         | 3        | 0        | 3        | B2       | 40+      | Included bark present in main fork. | Remove for development        | 3.5   | 38      |
| T47      | Silver Birch<br>Rowan Ash             | Betula pendula,<br>Sorbus aucuparia,<br>Fraxinus excelsior                        | M   | 470          | 1     | 12         | 2                | 6         | 6        | 6        | 6        | A1       | 40+      |                                     | Remove for development        | 5.6   | 100     |
| T48      | Silver Birch<br>Rowan Ash<br>Hawthorn | Betula pendula,<br>Sorbus aucuparia,<br>Fraxinus excelsior,<br>Crataegus monogyna | M   | 280          | 1     | 7          | 2                | 3         | 3        | 3        | 3        | A1       | 40+      |                                     | Remove for development        | 3.4   | 35      |
| T49      | Common Lime                           | Tilia X europaea                                                                  | M   | 450          | 1     | 12         | 2                | 4         | 4        | 4        | 4        | A2       | 40+      |                                     | Remove for development        | 5.4   | 92      |

| Tree No. | Common Name  | Latin name          | Age | Diameter(mm) | Stems | Height (m) | Crown Height (m) | North (m) | South(m) | East (m) | West (m) | Category | Life Exp | Comments                                | Recommendations following AIA | RPA-R | RPA-Sqm |
|----------|--------------|---------------------|-----|--------------|-------|------------|------------------|-----------|----------|----------|----------|----------|----------|-----------------------------------------|-------------------------------|-------|---------|
| T50      | Sycamore     | Acer pseudoplatanus | M   | 450          | 1     | 12         | 2                | 5         | 5        | 5        | 5        | A2       | 40+      |                                         | Remove for development        | 5.4   | 92      |
| T51      | Sycamore     | Acer pseudoplatanus | M   | 450          | 1     | 12         | 2                | 5         | 5        | 5        | 5        | A2       | 40+      |                                         | Remove for development        | 5.4   | 92      |
| T52      | Common Lime  | Tilia X europaea    | M   | 375          | 1     | 13         | 2                | 5         | 5        | 5        | 5        | A1       | 40+      |                                         | Remove for development        | 4.5   | 64      |
| T53      | Ash          | Fraxinus excelsior  | EM  | 270          | 1     | 8          | 2                | 2         | 3        | 2        | 2        | C2       | 20+      | Dieback in crown. Low bud/leaf density. | Remove for development        | 3.2   | 33      |
| T54      | Norway Maple | Acer platanoides    | M   | 475          | 1     | 13         | 2                | 5         | 4        | 5        | 5        | A2       | 40+      |                                         | Remove for development        | 5.7   | 102     |
| T55      | Norway Maple | Acer platanoides    | M   | 485          | 1     | 13         | 2                | 5         | 5        | 5        | 3        | A2       | 40+      |                                         | Remove for development        | 5.8   | 106     |
| T56      | Norway Maple | Acer platanoides    | M   | 650          | 1     | 15         | 2                | 6         | 6        | 6        | 6        | A1       | 40+      |                                         | Remove for development        | 7.8   | 191     |
| T57      | Common Lime  | Tilia X europaea    | M   | 350          | 1     | 11         | 2                | 3         | 3        | 3        | 3        | A1       | 40+      |                                         | Remove for development        | 4.2   | 55      |
| T58      | Sycamore     | Acer pseudoplatanus | M   | 280          | 1     | 11         | 2                | 3         | 3        | 1        | 3        | C1       | 40+      | Poor shape & form.                      | Remove for development        | 3.4   | 35      |
| T59      | Sycamore     | Acer pseudoplatanus | M   | 325          | 1     | 11         | 2                | 3         | 4        | 3        | 3        | B2       | 40+      |                                         | Remove for development        | 3.9   | 48      |
| T60      | Silver Birch | Betula pendula      | M   | 340          | 1     | 11         | 2                | 4         | 4        | 4        | 4        | B2       | 40+      |                                         | Remove for development        | 4.1   | 52      |
| T61      | Aspen        | Populus tremula     | M   | 901          | 3     | 11         | 2                | 8         | 2        | 4        | 4        | B2       | 40+      |                                         | Remove for development        | 10.8  | 367     |
| T62      | Ash          | Fraxinus excelsior  | M   | 480          | 1     | 14         | 2                | 6         | 5        | 5        | 5        | A2       | 40+      |                                         | Remove for development        | 5.8   | 104     |
| T63      | Ash          | Fraxinus excelsior  | M   | 510          | 1     | 14         | 2                | 6         | 6        | 7        | 6        | A2       | 40+      |                                         | Remove for development        | 6.1   | 118     |
| T64      | Common Lime  | Tilia X europaea    | M   | 280          | 1     | 14         | 2                | 3         | 3        | 3        | 3        | A2       | 40+      |                                         | Remove for development        | 3.4   | 35      |
| T65      | Sycamore     | Acer pseudoplatanus | M   | 565          | 1     | 14         | 2                | 5         | 5        | 5        | 6        | B2       | 40+      | Major bark wounding on stem.            | Remove for development        | 6.8   | 144     |
| T66      | Sycamore     | Acer pseudoplatanus | M   | 300          | 1     | 14         | 2                | 3         | 3        | 3        | 3        | B2       | 40+      |                                         | Remove for development        | 3.6   | 41      |
| T67      | Sycamore     | Acer pseudoplatanus | M   | 480          | 1     | 14         | 2                | 4         | 4        | 5        | 4        | A2       | 40+      |                                         | Remove for development        | 5.8   | 104     |
| T68      | Sycamore     | Acer pseudoplatanus | M   | 480          | 1     | 14         | 2                | 5         | 5        | 5        | 5        | A2       | 40+      |                                         | Remove for development        | 5.8   | 104     |
| T69      | Common Lime  | Tilia X europaea    | M   | 350          | 1     | 10         | 2                | 4         | 4        | 4        | 4        | A2       | 40+      |                                         | Remove for development        | 4.2   | 55      |
| T70      | Norway Maple | Acer platanoides    | M   | 440          | 1     | 13         | 2                | 4         | 4        | 5        | 5        | A2       | 40+      |                                         | Remove for development        | 5.3   | 88      |
| T71      | Apple        | Malus               | M   | 250          | 1     | 6          | 2                | 2         | 2        | 1        | 4        | B2       | 40+      | Crown distorted due to group pressure.  | Remove for development        | 3     | 28      |

| Tree No. | Common Name       | Latin name              | Age | Diameter(mm) | Stems | Height (m) | Crown Height (m) | North (m) | South(m) | East (m) | West (m) | Category | Life Exp | Comments                                                     | Recommendations following AIA | RPA-R | RPA-Sqm |
|----------|-------------------|-------------------------|-----|--------------|-------|------------|------------------|-----------|----------|----------|----------|----------|----------|--------------------------------------------------------------|-------------------------------|-------|---------|
| T72      | Norway Maple      | Acer platanoides        | M   | 510          | 1     | 15         | 2                | 4         | 4        | 6        | 5        | A2       | 40+      |                                                              | Remove for development        | 6.1   | 118     |
| T73      | Norway Maple      | Acer platanoides        | M   | 480          | 1     | 15         | 2                | 4         | 4        | 4        | 4        | A2       | 40+      |                                                              | Remove for development        | 5.8   | 104     |
| T74      | Norway Maple      | Acer platanoides        | M   | 480          | 1     | 15         | 2                | 5         | 5        | 6        | 5        | A2       | 40+      |                                                              | Remove for development        | 5.8   | 104     |
| T75      | Ash               | Fraxinus excelsior      | M   | 450          | 1     | 12         | 2                | 4         | 4        | 4        | 5        | A2       | 40+      |                                                              | Remove for development        | 5.4   | 92      |
| T76      | Ash               | Fraxinus excelsior      | M   | 290          | 1     | 12         | 2                | 3         | 3        | 3        | 3        | A2       | 40+      |                                                              | Remove for development        | 3.5   | 38      |
| T77      | Ash               | Fraxinus excelsior      | M   | 350          | 1     | 12         | 2                | 1         | 3        | 4        | 1        | B2       | 40+      | Part of linear group. Crown distorted due to group pressure. | Remove for development        | 4.2   | 55      |
| T78      | Swedish Whitebeam | Sorbus intermedia       | M   | 600          | 1     | 9          | 2                | 3         | 6        | 4        | 4        | A2       | 40+      | Part of linear group. Crown distorted due to group pressure. | Remove for development        | 7.2   | 163     |
| T79      | Lombardy Poplar   | Populus nigra 'Italica' | OM  | 800          | 1     | 20         | 2                | 6         | 6        | 6        | 6        | C2       | 20+      | Part of linear group.                                        | Remove for development        | 9.6   | 290     |
| T80      | Crack Willow      | Salix fragilis          | M   | 940          | 1     | 20         | 2                | 6         | 6        | 6        | 6        | B2       | 20+      | Part of linear group.                                        | Remove for development        | 11.3  | 400     |
| T81      | Silver Birch      | Betula pendula          | M   | 375          | 1     | 11         | 2                | 4         | 4        | 4        | 4        | B2       | 40+      | Part of linear group.                                        | Remove for development        | 4.5   | 64      |
| T82      | Aspen             | Populus tremula         | M   | 650          | 1     | 16         | 2                | 5         | 5        | 6        | 5        | A1       | 40+      | Part of linear group.                                        | Remove for development        | 7.8   | 191     |
| T83      | Wild Cherry       | Prunus avium            | M   | 450          | 1     | 9          | 2                | 4         | 4        | 4        | 4        | B1       | 40+      | Part of linear group.                                        | Remove for development        | 5.4   | 92      |
| T84      | Wild Cherry       | Prunus avium            | M   | 350          | 1     | 9          | 2                | 4         | 4        | 4        | 4        | B1       | 40+      | Part of linear group.                                        | Remove for development        | 4.2   | 55      |
| T85      | Sycamore          | Acer pseudoplatanus     | M   | 430          | 1     | 11         | 2                | 2         | 6        | 5        | 2        | B2       | 40+      | Part of linear group.                                        | Remove for development        | 5.2   | 84      |
| T86      | Silver Birch      | Betula pendula          | M   | 300          | 1     | 11         | 2                | 3         | 3        | 5        | 3        | B2       | 40+      | Part of linear group.                                        | Remove for development        | 3.6   | 41      |
| T87      | Whitebeam         | Sorbus aria             | M   | 240          | 1     | 8          | 2                | 3         | 3        | 3        | 3        | B2       | 40+      | Part of linear group.                                        | Remove for development        | 2.9   | 26      |
| T88      | Wild Cherry       | Prunus avium            | M   | 300          | 1     | 8          | 2                | 3         | 3        | 3        | 3        | B2       | 40+      | Part of linear group.                                        | Remove for development        | 3.6   | 41      |
| T89      | Common Lime       | Tilia X europaea        | M   | 300          | 1     | 8          | 2                | 3         | 3        | 3        | 3        | U        | <10      | Dead.                                                        | Lost for condition            | 3.6   | 41      |
| T90      | Ash               | Fraxinus excelsior      | M   | 450          | 1     | 14         | 2                | 4         | 4        | 4        | 5        | A1       | 40+      | Part of linear group.                                        | Remove for development        | 5.4   | 92      |
| T91      | Ash               | Fraxinus excelsior      | M   | 250          | 1     | 10         | 2                | 2         | 4        | 3        | 3        | B2       | 40+      | Part of linear group. Unbalanced crown shape.                | Remove for development        | 3     | 28      |

| Tree No. | Common Name  | Latin name                | Age | Diameter(mm) | Stems | Height (m) | Crown Height (m) | North (m) | South(m) | East (m) | West (m) | Category | Life Exp | Comments                                                                             | Recommendations following AIA         | RPA-R | RPA-Sqm |
|----------|--------------|---------------------------|-----|--------------|-------|------------|------------------|-----------|----------|----------|----------|----------|----------|--------------------------------------------------------------------------------------|---------------------------------------|-------|---------|
| T92      | Silver Birch | Betula pendula            | M   | 250          | 1     | 10         | 2                | 4         | 4        | 4        | 4        | B2       | 40+      | Part of linear group.                                                                | Remove for development                | 3     | 28      |
| T93      | Silver Birch | Betula pendula            | M   | 300          | 1     | 10         | 2                | 4         | 4        | 4        | 4        | B2       | 40+      | Part of linear group.                                                                | Unaffected. Install CEZ to RPA edge   | 3.6   | 41      |
| T94      | Ash          | Fraxinus excelsior        | M   | 430          | 1     | 12         | 2                | 5         | 4        | 4        | 4        | B2       | 40+      | Part of linear group.                                                                | Unaffected. Install CEZ to RPA edge   | 5.2   | 84      |
| T95      | Damson       | Prunus domestica          | M   | 554          | 2     | 7          | 2                | 5         | 4        | 5        | 4        | B2       | 40+      | Part of linear group.                                                                | Unaffected. Install CEZ to RPA edge   | 6.6   | 139     |
| T96      | Ash          | Fraxinus excelsior        | EM  | 325          | 1     | 9          | 2                | 3         | 3        | 3        | 3        | C2       | 40+      | Part of linear group. Cavity on stem. Major bark wounding on stem.                   | Unaffected. Install CEZ to RPA edge   | 3.9   | 48      |
| T97      | Sycamore     | Acer pseudoplatanus       | M   | 325          | 1     | 9          | 2                | 4         | 4        | 4        | 4        | C2       | 40+      | Part of linear group.                                                                | Not within red line on submitted plan | 3.9   | 48      |
| T98      | Ash Apple    | Fraxinus excelsior, Malus | M   | 271          | 3     | 9          | 2                | 3         | 3        | 3        | 3        | C2       | 40+      | Part of linear group.                                                                | Not within red line on submitted plan | 3.3   | 33      |
| T99      | Sycamore     | Acer pseudoplatanus       | M   | 738          | 3     | 16         | 2                | 7         | 7        | 7        | 7        | B2       | 40+      | Part of linear group. Included bark present in main fork.                            | Not within red line on submitted plan | 8.9   | 246     |
| T100     | Sycamore     | Acer pseudoplatanus       | M   | 325          | 1     | 10         | 2                | 2         | 4        | 6.5      | 2        | B2       | 40+      | Part of linear group. Unbalanced crown shape. Crown distorted due to group pressure. | Not within red line on submitted plan | 3.9   | 48      |
| T101     | Sycamore     | Acer pseudoplatanus       | M   | 625          | 1     | 15         | 2                | 5         | 5        | 5        | 5        | A1       | 40+      | Part of linear group.                                                                | Not within red line on submitted plan | 7.5   | 177     |
| T102     | Sycamore     | Acer pseudoplatanus       | M   | 600          | 1     | 15         | 2                | 5         | 5        | 5        | 6        | A1       | 40+      | Part of linear group.                                                                | Not within red line on submitted plan | 7.2   | 163     |
| T103     | Sycamore     | Acer pseudoplatanus       | M   | 650          | 1     | 15         | 2                | 5         | 5        | 5        | 5        | A1       | 40+      | Part of linear group.                                                                | Not within red line on submitted plan | 7.8   | 191     |
| T104     | Ash          | Fraxinus excelsior        | M   | 550          | 1     | 15         | 2                | 6         | 6        | 6        | 6        | A1       | 40+      | Part of linear group.                                                                | Not within red line on submitted plan | 6.6   | 137     |
| T105     | Ash          | Fraxinus excelsior        | M   | 500          | 1     | 15         | 2                | 6         | 6        | 6        | 6        | A1       | 40+      | Part of linear group.                                                                | Not within red line on submitted plan | 6     | 113     |

| Tree No. | Common Name              | Latin name                                        | Age | Diameter(mm) | Stems | Height (m) | Crown Height (m) | North (m) | South(m) | East (m) | West (m) | Category | Life Exp | Comments                                                           | Recommendations following AIA         | RPA-R | RPA-Sqm |
|----------|--------------------------|---------------------------------------------------|-----|--------------|-------|------------|------------------|-----------|----------|----------|----------|----------|----------|--------------------------------------------------------------------|---------------------------------------|-------|---------|
| T106     | Sycamore                 | Acer pseudoplatanus                               | M   | 400          | 1     | 15         | 2                | 4         | 4        | 4        | 4        | B2       | 40+      | Part of linear group. Cavity on stem. Major bark wounding on stem. | Not within red line on submitted plan | 4.8   | 72      |
| T107     | Sycamore                 | Acer pseudoplatanus                               | M   | 400          | 1     | 15         | 2                | 4         | 4        | 4        | 4        | B2       | 40+      | Part of linear group. Cavity on stem. Major bark wounding on stem. | Not within red line on submitted plan | 4.8   | 72      |
| T108     | Sycamore                 | Acer pseudoplatanus                               | M   | 300          | 1     | 9          | 2                | 3         | 3        | 3        | 3        | B2       | 40+      | Part of linear group. Cavity on stem. Major bark wounding on stem. | Not within red line on submitted plan | 3.6   | 41      |
| T109     | Sycamore                 | Acer pseudoplatanus                               | M   | 250          | 1     | 11         | 2                | 2         | 2        | 2        | 2        | B2       | 40+      | Part of linear group. Cavity on stem. Major bark wounding on stem. | Not within red line on submitted plan | 3     | 28      |
| T110     | Goat Willow              | Salix caprea                                      | M   | 515          | 2     | 11         | 2                | 2         | 6        | 3        | 3        | C2       | 40+      | Part of linear group. Decay present on stem.                       | Not within red line on submitted plan | 6.2   | 120     |
| T111     | Sycamore                 | Acer pseudoplatanus                               | M   | 475          | 1     | 15         | 2                | 5         | 5        | 5        | 5        | A1       | 40+      | Part of linear group.                                              | Not within red line on submitted plan | 5.7   | 102     |
| T112     | Ash                      | Fraxinus excelsior                                | M   | 525          | 1     | 11         | 2                | 6         | 6        | 6        | 6        | A2       | 40+      | Part of linear group.                                              | Not within red line on submitted plan | 6.3   | 125     |
| T113     | Silver Birch             | Betula pendula                                    | M   | 375          | 1     | 15         | 2                | 3         | 3        | 3        | 3        | B2       | 40+      | Part of linear group.                                              | Not within red line on submitted plan | 4.5   | 64      |
| T114     | Sycamore                 | Acer pseudoplatanus                               | M   | 290          | 1     | 9          | 2                | 3         | 3        | 3        | 3        | C2       | 40+      | Part of linear group.                                              | Not within red line on submitted plan | 3.5   | 38      |
| T115     | Sycamore                 | Acer pseudoplatanus                               | M   | 400          | 1     | 11         | 2                | 4         | 4        | 4        | 4        | B1       | 40+      | Part of linear group.                                              | Not within red line on submitted plan | 4.8   | 72      |
| G1       | Sycamore<br>Silver Birch | Acer pseudoplatanus,<br>Betula pendula<br>Youngii | EM  | 220          | 1     | 7          | 2                | 2         | 2        | 2        | 2        | C2       | 40+      | Growing mainly on edge of retaining wall.                          | Not within red line on submitted plan | 2.6   | 22      |
| G2       | Bird Cherry<br>Sycamore  | Prunus padus, Acer pseudoplatanus                 | EM  | 200          | 1     | 8          | 2                | 2         | 2        | 2        | 2        | C2       | 40+      | Self set regeneration.                                             | Remove for development                | 2.4   | 18      |
| G3       | Hawthorn                 | Crataegus monogyna                                | M   | 260          | 1     | 8          | 2                | 3         | 3        | 3        | 3        | C2       | 40+      | Self set regeneration.                                             | Remove for development                | 3.1   | 31      |
| G4       | Norway Maple             | Acer platanoides                                  | M   | 480          | 1     | 12         | 2                | 4         | 4        | 4        | 4        | B2       | 40+      |                                                                    | Remove for development                | 5.8   | 104     |

| Tree No. | Common Name                                                 | Latin name                                                                            | Age | Diameter(mm) | Stems | Height (m) | Crown Height (m) | North (m) | South(m) | East (m) | West (m) | Category | Life Exp | Comments                                            | Recommendations following AIA | RPA-R | RPA-Sqm |
|----------|-------------------------------------------------------------|---------------------------------------------------------------------------------------|-----|--------------|-------|------------|------------------|-----------|----------|----------|----------|----------|----------|-----------------------------------------------------|-------------------------------|-------|---------|
| G5       | Sycamore<br>Silver Birch                                    | Acer pseudoplatanus,<br>Betula pendula                                                | EM  | 250          | 1     | 9          | 2                | 2         | 2        | 2        | 2        | C2       | 40+      | Self set regeneration.<br>Some dead tree s.         | Remove for development        | 3     | 28      |
| G6       | Silver Birch                                                | Betula pendula                                                                        | EM  | 200          | 1     | 12         | 2                | 3         | 2        | 2        | 2        | C2       | 20+      |                                                     | Remove for development        | 2.4   | 18      |
| G7       | Silver Birch<br>Rowan                                       | Betula pendula,<br>Sorbus aucuparia                                                   | EM  | 250          | 1     | 8          | 2                | 2         | 2        | 2        | 2        | B2       | 40+      |                                                     | Remove for development        | 3     | 28      |
| G8       | Hornbeam                                                    | Carpinus betulus                                                                      | M   | 300          | 1     | 10         | 2                | 3         | 3        | 3        | 3        | A2       | 40+      |                                                     | Remove for development        | 3.6   | 41      |
| G9       | Sycamore<br>Common Lime<br>Hawthorn<br>Swedish<br>Whitebeam | Acer pseudoplatanus,<br>Tilia X europaea,<br>Crataegus monogyna,<br>Sorbus intermedia | M   | 300          | 1     | 8          | 2                | 2         | 2        | 2        | 2        | B2       | 40+      |                                                     | Remove for development        | 3.6   | 41      |
| G10      | Swedish<br>Whitebeam<br>Silver Birch<br>Common Alder        | Sorbus intermedia,<br>Betula pendula, Alnus<br>glutinosa                              | SM  | 200          | 1     | 9          | 2                | 3         | 3        | 3        | 3        | C2       | 40+      | Part of linear group.                               | Remove for development        | 2.4   | 18      |
| G11      | Aspen                                                       | Populus tremula                                                                       | SM  | 300          | 1     | 9          | 2                | 6         | 0        | 3        | 3        | U        | 40+      | Part of linear group.<br>Unbalanced crown<br>shape. | Lost for condition            | 3.6   | 41      |
| G12      | Hornbeam<br>Common Lime                                     | Carpinus betulus, Tilia<br>X europaea                                                 | SM  | 280          | 1     | 9          | 2                | 3         | 3        | 3        | 3        | B2       | 20+      | Part of linear group.                               | Remove for development        | 3.4   | 35      |
| G13      | Hornbeam<br>Common Lime<br>Sycamore                         | Carpinus betulus, Tilia<br>X europaea, Acer<br>pseudoplatanus                         | M   | 450          | 1     | 10         | 2                | 4         | 4        | 4        | 4        | A2       | 40+      | Part of linear group.                               | Remove for development        | 5.4   | 92      |
| G14      | Silver Birch<br>Crack Willow<br>Ash                         | Betula pendula, Salix<br>fragilis, Fraxinus<br>excelsior                              | SM  | 250          | 1     | 10         | 2                | 2         | 2        | 2        | 2        | C2       | 40+      | Part of linear group.<br>Self set regeneration.     | Remove for development        | 3     | 28      |
| G15      | Ash Sycamore                                                | Fraxinus excelsior,<br>Acer pseudoplatanus                                            | M   | 500          | 1     | 15         | 2                | 5         | 5        | 5        | 5        | A1       | 40+      | Part of linear group.                               | Remove for development        | 6     | 113     |
| G16      | Sycamore<br>Goat Willow                                     | Acer pseudoplatanus,<br>Salix caprea                                                  | M   | 300          | 1     | 10         | 2                | 3         | 3        | 3        | 3        | C2       | 40+      | Part of linear group.<br>Self set regeneration.     | Remove for development        | 3.6   | 41      |
| G17      | Sycamore<br>Goat Willow<br>Silver Birch                     | Acer pseudoplatanus,<br>Salix caprea, Betula<br>pendula                               | EM  | 200          | 1     | 10         | 2                | 2         | 2        | 2        | 2        | C2       | 40+      | Part of linear group.<br>Self set regeneration.     | Remove for development        | 2.4   | 18      |
| G18      | Sycamore<br>Silver Birch                                    | Acer pseudoplatanus,<br>Betula pendula                                                | EM  | 200          | 1     | 11         | 2                | 2         | 2        | 2        | 2        | C2       | 40+      | Self set regeneration.                              | Remove for development        | 2.4   | 18      |

# Arboricultural Method Statement

## Contents

|                                                            |     |
|------------------------------------------------------------|-----|
| 1.0 Introduction .....                                     | 3   |
| 2.0 Communication Details, Monitoring and Compliance ..... | 3-4 |
| 3.0 Tree pruning.....                                      | 4   |
| 4.0 Protective barrier.....                                | 4-5 |
| 5.0 Additional precautionary measures .....                | 5   |
| 6.0 Method for pathway design and construction .....       | 5-6 |
| 7.0 Edge supports.....                                     | 6-7 |
| 8.0 Services within the RPA.....                           | 7   |
| 9.0 Site contacts .....                                    | 8   |

Figure 1 – Typical cellular confinement specification

## **1.0 Introduction**

- 1.1 The scope of this report is to provide an arboricultural method statement, specifically in relation to the construction of pathways within a tree rooting zone or RPA of T69 and T90. To demonstrate the methods for working in or adjacent to root protection areas in order to avoid unacceptable impacts between the proposed design and retained trees and offer a level of protection for those trees that are to be retained on site.
- 1.2 It is important that the guidance in the method statement is followed and understood by all persons involved in the design and construction of the proposed scheme.

## **2.0 Communication Details, Monitoring and Compliance**

- 2.1 It will be the responsibility of the site manager and appointed arboricultural consultant to brief all contractors on site as to the adherence to the arboricultural method statement. A copy of this method statement will be made available to site contractors at all times during the period of development.
- 2.2 A list of site contacts is available to the rear of this document.
- 2.3 All Special Measure Area works (no dig surfacing) shall be fully supervised on site by the arborist.
- 2.4 In order to outline working methods in relation to trees prior to any construction activity on site, a site meeting shall take place between the main contractor and arboricultural clerk of works. The organisations and individuals performing these roles shall be appointed prior to a pre start meeting. A record of the meeting will be taken and distributed to relevant parties and the meeting will confirm the duration of the works and any phasing implications or specific contractor related issues and how they are to be resolved.

The following will be explained at the pre start meeting:

- The central aspect of tree protection on this site is that the area of new surfacing located in protected areas (Special Measure Areas SMA) shall be complete and protected before any other construction works commence thereby avoiding the typical construction related issues such as compaction or direct damage from excavation that occur during site works and prior to new surfacing being installed.

- The Construction Exclusion Zone is purposefully located within the permanent works (dwelling elevation and new surfacing). This is to ensure the SMA associated with new surfacing remains undisturbed. When the new surfacing is complete the CEZ will be relocated following arborist confirmation. Ground boarding to protect the Special Measure Areas (SMA) will be installed immediately over the new surface and it will be required for the construction duration.
- It is noted that arboricultural input is prior to construction (pre start) and whilst supervision is required throughout the build period all operations in the SMA must be overseen by the arboricultural clerk of works and must be carried out prior to any other works on site unless otherwise agreed with the LPA.
- Seasonally these works shall be carried out when the ground is dry and preferably in summer after which main construction can begin, the purpose of this is to avoid detrimental damage such as compaction of soils caused by traffic in wet conditions.

### **3.0 Tree pruning**

- 3.1 Only tree works permitted and agreed with the subsequent planning permission shall be permitted. Where tree pruning is required in addition to that already specified in the preliminary tree survey schedule, it will be agreed in writing with the LPA Tree Officer prior to commencement.
- 3.2 All arboricultural works shall conform to the recommendations of BS3998:2010 British Standard Recommendations for Tree Work unless otherwise specified.

### **4.0 Protective barrier**

- 4.1 Before commencing any site works Construction Exclusion Zones (CEZ) will be constructed in line with the Tree Protection Plan (TPP) and specification for the CEZ contained within the plan.
- 4.2 The protective barriers will be constructed to the specification as detailed in BS 5837:2012 and consist of a 2m high steel mesh panels (Heras panels) secured to the ground via rubber feet and metal stakes. The fencing will be secured by uprights driven into the ground to a minimum depth of 0.4m. Please refer to Appendix 2 showing a detailed specification for the construction of the barrier fencing within the Tree Protection Plan.

- 4.3 All weather notices will be secured to the barriers showing the following wording:  
“CONSTRUCTION EXCLUSION ZONE – NO ACCESS”.
- 4.4 Once installed all fencing will be inspected by the consulting arboriculturist and signed off as secure prior to any works.

## **5.0 Additional precautionary measures**

- 5.1 Plant and materials will be stored in designated areas outside the CEZ.
- 5.2 Movement of cranes on site will be conducted under the supervision of a banks man to ensure that a suitable distance is maintained from trees on site.
- 5.3 Materials will be stored in such a way that if spillage did occur no chemicals would leach into the CEZ.
- 5.4 Wash points for tools and equipment will be placed outside of the CEZ. When determining the proposed location for wash point's consideration will be given to the design of the station to ensure that run off does leach into the RPA.
- 5.5 Fires on site will be no be permitted

## **6.0 Method for pathway design and construction**

- 6.1 The pathway proposal crosses the RPA of retained tree number T69 and T90 and therefore the pathway is to be constructed by the use of a no dig method as detailed in BS5837:2012 Trees in relation to design, demolition, and construction recommendations subsection 7.4.2. As a result of this measure the TPP has a designated Special Measure Area (SMA) where the new surface shall be laid.
- 6.2 The design will consist of a three dimensional cellular confinement system (cross section detailed in Appendix 1 and will be employed as a sub-base to a depth suitable for pedestrian use. The cellular system will be laid onto a geotextile membrane in order to prevent pollution contaminating the rooting area. The cellular structure is then expanded and pinned in place using steel rods and back filled using an angular aggregate that contains no fines.

*Note: The infill aggregate must not contain any fines as these become compacted overtime and reduce water infiltration. The recommended size of aggregate is 20-40mm in diameter.*

- 6.3 In order for the system to allow for gaseous exchange and water infiltration the finished surface treatment will be permeable to allow for water infiltration. In such cases where vehicles or pedestrians are intending to use the new driveway the use of permeable resin bounded gravel would be recommended. (Hoggin or self-binding gravel will not be used as they compact easily and prevent water infiltration).
- 6.4 The finished permeable surface will be protected during construction works in order to prevent the interstices from becoming blocked by excessive construction debris.
- 6.6 Where ground vegetation is present and requires removing in order to construct the cellular system the vegetation will be cleared using hand tools only.
- 6.7 Where the topography of the ground is such that required levels are not met for installing the cellular system, the levelling of the area can be achieved by using sharp sand in order to create an even surface.

*Note: Builders sand is not to be used to create a level surface due to the high salt content.*

- 6.8 Consideration will be given to ground conditions at the time of installation as during the winter months the ground is more likely to be saturated leading to an increased risk of compaction.
- 6.9 The operator will take care not to place an exaggerated angular force on the cellular system when filling with the aggregate to prevent compaction and smearing of the soil subgrade layer.
- 6.10 The granular infill will be spread using hand tools and be loaded from outside the area of works. Machinery will only access the cellular system once a suitable area has been prepared by hand in order to prevent compaction and damage to the cellular system.

*Note: a single passage of machinery over a root protection area can cause irreparable damage to tree roots, 90% of which are located within the top 400mm of the soil.*

## **7.0 Edge supports**

- 7.1 Edge supports will consist of a peg and board system. Where a more stable option is required, railway sleepers may be used and secured in place by steel pins. Excavation will not take place in order to secure edging or kerbing in place due to the damage caused by root severance.

## **8.0 Services within the RPA**

- 8.1 At present there are no plans for services in the RPA of retained trees. Where there is a need to route services with an RPA technical design, plans will be produced in association with the arboriculturist to ensure that the least destructive path is identified. Specialist equipment (ground penetrating radar) may be required in order to accurately map the root system to ensure that the route of least impact is found. It is preferable that where the need to route services through a trees rooting zone, all apparatus will be located together in common ducts. Inspection chambers will be located outside of the RPA.

*Note: The desired option will always be to route the proposed new services away from the RPA due to the high probability of significant damage occurring to tree roots.*

- 9.2 The favoured method of insertion for services is a trenchless insertion method which differs on the requirement of the utility apparatus and includes micro-tunnelling, surface launched directional drilling, pipe ramming and impact moling. Where any of these methods is utilised then the entry and retrieval pits will be located outside of the RPA.

*Ref: Volume 4: NJUG Guidelines For The Planning, Installation And Maintenance Of Utility Apparatus In Proximity To Trees (Issue 2) – Operatives Handbook*

- 9.3 Any roots un-earthed during the excavation are to be pruned in accordance with British Standard BS5837:2012. Pruning of roots in excess of 25mm is to be agreed with the LPA's Tree Officer and pruning is to be carried out under supervision of the consultant arboriculturist. Exposed roots not to be pruned are to be covered immediately in order to prevent desiccation and to protect from rapid changes in temperature. All protective materials shall be removed prior to infilling with topsoil; care will be taken to ensure that no contaminated material is introduced into the excavation.

## 10.0 Contact details

10.1 The following list details key project consultants and officers who can provide appropriate advice on arboricultural matters relating to the above project.

**Site manager:**

**Site supervisor:**

**Arboricultural consultant:**

Amenity Tree Care Ltd  
Burwardsley  
Chester  
Tel: 01829 770075

Please do not hesitate to contact me should you require further assistance.

Yours sincerely



Simon Brain *Ba. Tech Cert Arb. PG Cert (Bio Rec)*  
*Chartered arboriculturist. ecologist*  
Managing Director

Figure 1

Cellular confinement specification

