

TREE SURVEY  
&  
ARBORICULTURAL REPORT  
  
FOR  
  
Trees at Carron Terrace  
Stonehaven

Requested by: JBA consulting on behalf of Angus Council  
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Report reference: MGL  
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## Summary

This assessment has been carried out at the request of JBA consulting, on behalf of Aberdeenshire Council, in relation to flood alleviation proposals at Carron Terrace and Carron Gardens, Stonehaven. I have been asked to consider the effect on the tree cover of a variety of proposals including flood defence walls and potential reprofiling of the Carron Water

I have surveyed one hundred and eight individual trees and 2 groups of trees on site, near the Carron Water and Burn of Glaslaw. The trees have been assessed in the current context according to their suitability for retention according to BS 5837:2005 and also in relation to the proposals.

The trees are of mixed species age and quality. The most important areas of tree cover from an arboricultural perspective are the row of pollarded Lime trees beside Carron Terrace (assessed as category 'A' trees) and the line of predominantly mature trees T601 to T610 on the south bank of the Carron Water and near the White bridge. These areas provide significant visual amenity of long term potential. Elsewhere, the trees on the raised embankment near the Green Bridge provide effective screening but their potential is limited due to stability issues, with restricted rooting conditions and related structural problems. The tree details are given on the Tree Survey Schedule at appendix 3. The above and below ground tree constraints have been plotted on the Tree Survey and Constraints plan, which accompanies this report.

The vast majority of good quality 'A' category trees are to be retained, including the pollarded Lime trees by Carron Terrace. This can be achieved through use of engineered solutions for low invasive foundations for defence walls and by locating foundations out-with the Root Protection Area of these trees where possible. In the event that the defence wall north of the Green Bridge is sited on the embankment, all existing trees here would require to be removed due to the loss of rooting and the consequent loss of stability and tree condition. This represents a significant short term loss of visual amenity and screening. The trees removed should be replaced with new trees of good quality (on a 3 to 1 basis) to ensure sustained tree cover in keeping with the local landscape and character of the area. A number of standard trees should be planted to provide immediate impact. The trees should be predominantly of native origin. Further details are provided in this report. At the Burn of Glaslaw, the loss of predominantly low quality trees should again be mitigated by new planting of predominantly native trees, with standard trees used to provide immediate impact by Carron Gardens.

Tree protection measures are prescribed that will safeguard the long term well-being of the retained trees and the vegetation.

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# ARBORICULTURAL REPORT

## Carron Terrace, Stonehaven

Brief: This Tree Survey Report has been prepared in relation to proposals for the Stonehaven flood alleviation scheme and to the current planning application. I have been asked to consider the effect on the tree cover of various construction options involving river bank re-profiling in places and locating floodwalls at different locations and adopting various methods of construction.

The trees on site have been assessed in the current context in accordance with British Standard 5837:2005 'Trees in Relation to Construction' and in the light of my own experience, in order to assess the above and below ground constraints which the trees pose to development of the site. This report provides recommendations regarding the tree losses and arboricultural works which will be required due to the proposals. It is expanded to consider protection of retained trees during construction works and suitable tree planting options post construction.

## TREE SURVEY DETAILS

### 1 Scope of limitation of survey

- 1.1. This survey (and report) is concerned with the arboricultural aspects of the site only. The survey was carried out on 5th September 2013.
- 1.2. It is restricted to trees within the site or those immediately out with that may be affected by its re-development only. No other trees have been inspected.
- 1.3. The survey has been carried out following the guidelines detailed in British Standard 5837(2005) 'Trees in relation to construction' (BS 5837).
- 1.4. I understand, from discussions with the Local Authority Tree Officer, that a number of the trees on site are afforded statutory protection: the pollarded Lime trees along Carron Terrace are subject to Tree Preservation Order and the Trees on the South bank of the Carron Water near the White Bridge are located within the Stonehaven Conservation Area. These trees are all under ownership of the Local Authority. The Local Authority should be consulted prior to undertaking any tree work recommended in this report.
- 1.5. Only trees of significant stature have been surveyed: trees with a stem diameter less than 75mm and large shrubs have been excluded.
- 1.6. In some cases groups of trees are discussed collectively where individual identification and separate treatment is considered unnecessary.
- 1.7. No plant tissue samples have been taken and no internal investigation of the tree has been carried out.
- 1.8. No soil samples have been taken and or soil analysis carried out.

- 1.9. I have no detailed knowledge of existing or proposed underground services.
- 1.10. This report should be read in conjunction with the Tree Survey and Constraints Plan – Plan 1 that accompany it (see appendix 4).

## 2 Survey method

- 2.1 The survey has been conducted from ground level with the aid of binoculars.
- 2.2 It is based on an assessment from ground level and examination of external features only – described as the ‘Visual Tree Assessment’ (stage 1) method per Mattheck and Breloer (The Body Language of Trees, DoE booklet Research for Amenity Trees No. 4, 1994).
- 2.3 I have estimated the height of each tree visually having first measured a sample of trees across the site using a hypsometer.
- 2.4 Trunk diameters of single stemmed trees have been measured at 1.5m above ground level. Multi-stemmed trees have been measured immediately above the root flare.
- 2.5 The crown radii have been estimated by pacing and are given for the main compass points: north, south east and west.
- 2.6 Where access to trees was obstructed or obscured, measurements have been estimated.
- 2.7 The details of all inspected trees are given in the Tree Survey Schedule, appendix 3.

### 3 The site

- 3.1 The site is located at Stonehaven, a coastal town in Aberdeenshire. It includes land on the banks of the Carron Water, by Carron Terrace, stretching from below the historic 'White Bridge' (off Cameron Street) and upstream to the Red Bridge' and just beyond.
- 3.2 A smaller area includes land beside the Burn of Glaslaw, by Cameron Gardens, and extending to the edge of the Dunnottar Woods, further south.
- 3.3 There is a line of Pollarded Lime trees running along a thin grass verge, immediately adjacent to the narrow street (at the East end) of Carron Terrace and up to the Green Bridge. These trees lie in close proximity to the residential houses along this part of the street. The river bank varies in width and topography; it is generally narrow, becoming more so with increasing gradients toward the Green Bridge.
- 3.4 It is noticeable that the riparian vegetation is very lush in places, particularly where the bank slopes gently, near the East end of the street.
- 3.5 On the south bank of the Carron, extending west from the White bridge, the relatively wide area of gently sloping banking has a line of prominent mature broadleaved trees; this area acts as a small parkland area with maintained amenity grass.
- 3.6 A relatively narrow, raised embankment has been formed immediately West of the Green Bridge, on the north bank of the Carron Water. Here, the ground slopes steeply to the river. The street is relatively wide here and the houses to the North are set back from the road. The tree cover comprises predominantly Beech, with Sycamore located on the embankment. The trees are generally tall and slender and of variable condition. They provide effective screening of and from the Low Road which runs along the south bank of the river.
- 3.7 The Dunnottar Woods lie to the South of the Carron Water at and beyond the West end of the site. To the North is mature residential housing set back from the Carron Water.
- 3.8 The Burn of Glaslaw runs through a relatively recent residential development at Carron Gardens. The tree cover comprises trees on the banks of the burn, predominantly Elm and Sycamore, and planted amenity trees on maintained areas associated with the development. Further upstream, at the edge of the Dunnottar there are Elm and a stand of closely spaced Ash.
- 3.9 Soils throughout the site appear to be mineral in composition and relatively free draining, although at the south end of Carron Terrace there are areas of lush riparian vegetation indicative of very moist conditions.

## 4 Existing tree resource

### **General**

- 4.1 One hundred and eight individual trees and 2 groups of trees have been surveyed on and immediately adjacent to site. The trees have been tagged with aluminium discs: tree numbers run from 601 to 708.
- 4.2 Trees 601 to 666 are located beside the Carron Water; trees 667 to 708 and groups A and B are located beside the Burn of Glaslaw.
- 4.3 The locations of the trees are shown on the Tree Survey and Constraints Plan, plan 1, appendix 4; the condition categories are shown, colour coded as per BS 5837: 2005. The tree details are shown on the Tree Survey Schedule, at appendix 3.

### **Summary information (age and species)**

- 4.4 The most commonly found species across the site are Lime, Sycamore, and Beech, which together account for almost 60% of the trees (excluding group A and B). Ash and Elm are the next most commonly found trees (predominantly near the Burn of Glaslaw) and account for another 20%. Other species include: Norway Maple (7 trees), Whitebeam (4), Gean (3), Horse Chestnut (3), and Red Oak (2).

|                |          | <b>Number</b>            |
|----------------|----------|--------------------------|
| <b>Species</b> | Lime     | 24                       |
|                | Sycamore | 19                       |
|                | Beech    | 18                       |
|                | Ash      | 12                       |
|                | Elm      | <u>11</u>                |
|                |          | <u>83</u> (of 108 trees) |

The trees are of mixed age range, as follows, with more than half the trees assessed as early-mature:-

|                  |              |            |
|------------------|--------------|------------|
| <b>Age class</b> | Young        | 3          |
|                  | Semi-mature  | 27         |
|                  | Early-mature | 59         |
|                  | Mature       | 15         |
|                  | Over-mature  | <u>4</u>   |
|                  |              | <u>108</u> |

- 4.5 The tree cover includes 4 distinct areas which are described below:-

- Trees on the south bank of the Carron Water near the White bridge
- Pollarded Lime trees beside Carron Terrace
- Trees on raised embankment West of the Green Bridge
- Trees near the Burn of Glaslaw

- 4.6 **Trees T601 to T610:** are sited on a relatively wide area of banking on the south side of the Carron Water, near the White Bridge. They include several large prominent, mature Sycamore: T601 – T603; T605 and T607 and a large Norway Maple: T606. These mature trees are of generally good form, with large symmetric crowns and provide an attractive amenity.
- 4.7 Three trees exhibit signs of crown die-back and some decline in condition, most notably T603: I have noted a small area of *Kretzschmaria deusta* fungal fruiting bodies at the root crown of this tree which is a cause for concern. *Kretzschmaria* is a specialist wood decay fungi which acts on the roots and lower stem. It can ultimately lead to brittle failure of the tree.
- 4.8 **Trees T612 to T632:** form a uniform line of pollarded, early-mature Lime trees along Carron Terrace. From observation and discussion with the Local Authority Tree officer, I understand that the trees are regularly pollarded, every 3-4 years. The pollard heads are located at around 7m height. All trees exhibit vigorous re-growth, with pruning last carried out around 3 years ago. They are as a whole in good physiological condition.
- 4.9 The trees are located in close proximity to houses on Carron Terrace and have restricted space and rooting environments between the road and the banks of the Carron Water. Under such circumstances, regular pollarding appears to be an appropriate management option. Pollarding has traditionally been used in urban situations throughout Europe as a means of restricting the growth of trees where space is limited.
- 4.10 These trees together form an attractive feature providing effective screening of the houses along this part of Carron Terrace (see plates 1a and b).
- 4.11 **Trees T636 to T657:** are located to the west of the Green Bridge, on the made up, raised embankment on the North bank of the Carron Water, beside Carron Terrace. Here, the tree cover is dominated by early-mature Beech of variable quality; there is one large over-mature Lime and 3 early-mature Sycamore.
- 4.12 Being closely spaced, the trees tend to be slender and drawn, with strongly asymmetric or suppressed crowns. There is a tendency for structural problems with a high incidence of weak compression unions with included bark and basal decay (see plate 2). I have noted the raised soil levels around the tree bases: the increase in levels can cause problems with root compaction and consequent root die-back, which can lead to deterioration in tree condition and stability problems.
- 4.13 In general, the trees have restricted rooting between the river and Carron Terrace; this is particularly true to the west of this area, where a combination of short steep banking and retaining walls leaves little space for tree roots (see plate 3). The stability of the trees here is an issue and the tree cover could be said to be somewhat fragile, with the stability of individual trees enhanced by mutual support and shelter.



- 4.14 These trees provide effective screening for and of the nearby mature residential housing as well as shelter from the prevailing South Westerly winds (see plate 4).
- 4.15 **Trees T667 to T708:** are located beside the Burn of Glaslaw, near Carron Gardens. There are naturally regenerated Sycamore and Elm beside the burn, with early-mature Ash, further south at Dunnottar Wood. The 9 Elm are predominantly semi-mature, multi-stemmed trees of fair and poor condition. The Ash are relatively slender, drawn trees, located at the edge of a stand of similar trees. They have high crowns and relatively high height/diameter ratios, typically between 70 and 100.
- 4.16 Located between Carron Gardens and Glaslaw burn on maintained amenity grass are 16 predominantly semi-mature trees: T667-T672 and T678-T687 which include Norway Maple, Cherry, Whitebeam and Red Oak. These trees are of generally good form, although several are potentially unstable, with roots being undermined at the edge of the burn.

### **Tree management to date**

- 4.17 The line of Lime trees beside Carron Terrace is regularly pollarded to contain growth due to the restricted site conditions and impact on adjacent houses.
- 4.18 Further west, tree management on the embankment area appears to be largely reactive, with crown lifting and pruning back of trees over the road and garages, and removal of dead and hazardous trees as required. Thinning out trees within this overcrowded area is problematic due to the fragile nature of the tree cover as mentioned above.
- 4.19 Tree condition: Although the assessment of a tree's condition is a subjective process, British Standard 5837: 2005 gives clear guidance on the appropriate criteria for categorising trees and the factors that assist the arboriculturist in determining the suitability of a tree for retention.
- 4.20 Under BS 5837: 2005, trees can be categorised as follows (see appendix 2):-

**Category R:** Trees of poor condition, such that any existing value would be lost within ten years and which, in the current context, should be removed for reasons of sound arboricultural management.

**Category A:** Trees of high quality and value: in such a condition to make a substantial contribution to amenity (a minimum of forty years is suggested).

**Category B:** Trees of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested).

**Category C:** Trees of low quality and value which might remain for a minimum of 10 years, or young trees with uncertain potential.

- 4.21 I have assessed the Lime trees beside Carron Terrace as category 'A': trees of good quality and long term potential. (Lime as a species is well suited to pollarding provided that the practice is carried out earlier enough in the trees life.) There are 4 mature 'A' category trees south of the Carron water near the White bride; these are: T601 and T602 (Sycamore); T606 (Norway Maple) and T609 (Lime). The 2 remaining 'A' category trees are: T660 (Sycamore), a mature tree located south of the Carron Water, above the Green bridge; and T707 (Sycamore) located beside the Burn of Glaslaw.
- 4.22 The tree cover located on the raised embankment is predominantly categorised B2, of low to medium term potential but providing important screening.
- 4.23 Ten trees have been categorised R of poor quality and potential. Four are located between the Green and Red bridges by Carron Water. These are: T649 (Beech); T654 (Beech); T656 (Sycamore); and T658 (Elm). A further 6, of mixed species, are located beside the Burn of Glaslaw: T677; T683; T688; T689; T697 and T705. Of these trees, all except the Elm (T705) are unstable trees located at the edge of the burn. All the R category trees should be considered for removal as part of sound arboricultural management.
- 4.24 The break-down of individual surveyed trees according to condition categories is as follows:-

| Locations                   | BS 5837 categories |           |           |           | Totals     |
|-----------------------------|--------------------|-----------|-----------|-----------|------------|
|                             | A                  | B         | C         | R         |            |
| <b>Carron terrace</b>       |                    |           |           |           |            |
| White Bridge: south bank    | 4                  | 4         | 2         | 0         | 10         |
| Carron Terrace              | 19                 | 3         | 2         | 0         | 24         |
| Raised embankment           | 0                  | 13        | 7         | 3         | 23         |
| Above Green Bridge          | 1                  | 4         | 3         | 1         | 9          |
| <b>Carron Terrace total</b> | <b>24</b>          | <b>24</b> | <b>14</b> | <b>4</b>  | <b>66</b>  |
|                             |                    |           |           |           |            |
| <b>Carron Gardens</b>       | 2                  | 15        | 19        | 6         | 42         |
| <b>Totals</b>               | <b>26</b>          | <b>39</b> | <b>33</b> | <b>10</b> | <b>108</b> |

### Arboricultural recommendations in the current context

- 4.25 Arboricultural recommendations are included in the Tree Survey Schedule for the trees in the current context and irrespective of the flood alleviation proposals. These include the suggested removal of 10 R category trees, as above. I understand that the Lime trees beside Carron Terrace are scheduled to be re-pollarded in the next year or so. The remaining remedial works primarily involve the removal of dead wood over public areas.

### **Tree constraints to development**

- 4.13 The information listed in appendix 3 has been used to provide constraints guidance based on the location of the tree, the crown spread and available rooting.
- 4.14 The Root Protection Areas (RPA's): (the area where ground disturbance must be carefully controlled) have initially been established according to the recommendations set out in table 2 and section 5 of BS 5837: 2005. These have been assessed based on the trunk diameter of the tree.
- 4.15 However, the morphology of tree roots is influenced by past and present site conditions and tree management: for example, the presence of roads, underground services and structures, as well as soil type, drainage and topography. The RPA's of many of the trees are therefore exaggerated.
- 4.16 By Carron Terrace: the roots of the Lime trees are likely to be restricted by compacted soils below the tarmac street; by high moisture content and lush vegetation on gently sloping areas by the burn (see plate 5). Regular pollarding will restrict root growth and is likely to reduce activity in the immediate period following pruning. In my opinion the RPAs should extend to around 3.5m south of these trees.
- 4.17 On the made up, raised embankment: tree roots are likely to be restricted by the tarmac at Carron Terrace. Elsewhere on site adopted roads are also likely to act as a barrier to root egress.
- 4.18 By the White bridge: it is thought that there may be a buried stone wall which may have restricted root development. This should be tested by very careful hand digging under agreement with the Local Authority.
- 4.19 The crown spreads represent the above ground constraints to construction and development. On this site the crowns have been confined over the years through pruning operations and represent a very minor constraint.
- 4.20 The above and below ground constraints, as discussed above, are given in the Tree Survey Schedule and shown on the Tree Survey and Constraints Plan (see plan 1, appendix 4).

## FLOOD PREVENTION MEASURES

### 5 Proposals

- 5.1 The proposals include the use of defence walls located in various positions and of differing design, depending on a variety of issues, with tree rooting a major factor. In addition there are proposals for potential re-profiling.
- 5.2 Through discussions with the engineer, I understand that 2 alternative options have been arrived at in order to facilitate retention of the Lime trees adjacent to Carron Terrace at the locations shown. Details of the proposals can be seen at figures 1 and 2, below:-

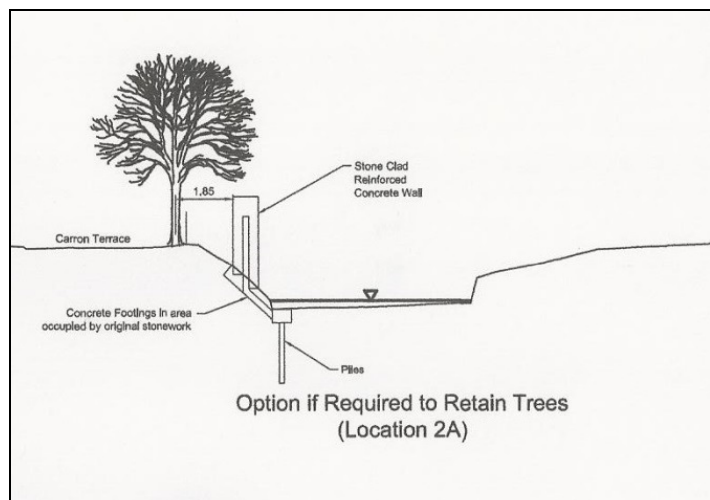


Figure 1: installation of retaining wall beside the Carron Water using mini-piles

**From JBA Consulting Ltd, September 2013**

- 5.3 Figure 1, above shows the potential use of mini-piles to be used in conjunction with concrete footings replacing the original stonework of buried revetment.

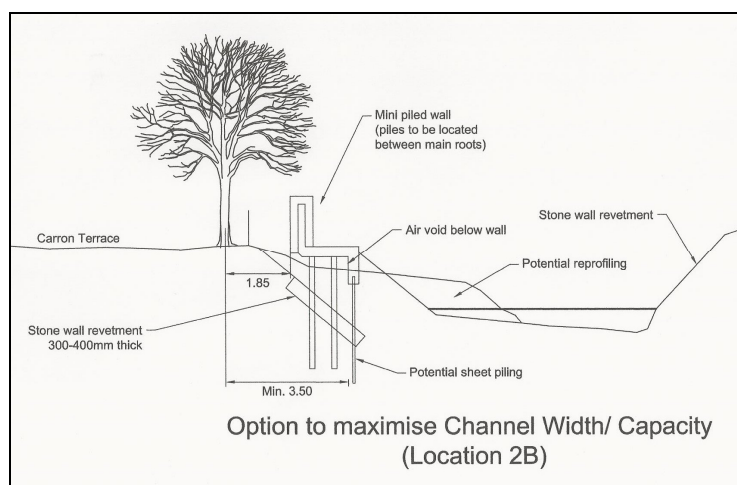


Figure 2: installation of retaining wall by Lime trees using mini-piles. Note: potential use of sheet piling

**From JBA Consulting Ltd., September 2013**

5.4 Figure 2, above shows the potential use of sheet piling to be installed at the extent of the RPA, at a distance of 3.5m from the tree. This option may be preferred to the use of mini-piles in this location in order to address potential permeability issues.

## 6 Trees and construction: overview

6.1 Tree rooting is widely misunderstood and it is a surprising fact that typically, about 80% of roots will be found in the upper half metre of soil and often extend well beyond the canopy spread. The threat to the trees from development comes from:-

- Root severance or fracture
- Compaction of the soil, preventing gaseous exchange and moisture percolation
- Possible changes to moisture gradients due to surface water run-off or interception
- Physical damage to low branches, trunk and root crown

6.2 The consequences for the tree of such damage are:-

- Instability, if severe enough
- Entry points for pathogenic fungi at wounds and fractures
- Loss of vitality and predisposition to pathogens

All of these can lead to root death which can cause a general decline or possible death of the tree.

6.3 As well as the physical footprint of any new structure, allowance needs to be made for the essential space requirements for construction activity. This includes machinery access for foundation excavation and building, space for scaffolding, circulation space, material storage and parking.

## 7 Preliminary arboricultural impact assessment

### **Tree works for development purposes**

- 7.1 The proposals have been drawn up in order to allow for the retention of the trees of good quality and long term potential, in particular the line of Lime trees located along Carron Terrace. This can be achieved by a combination of locating defence walls out-with the RPA of these trees and the use of low impact foundations, located to cause minimum interference to tree rooting (see figures 1 and 2).
- 7.2 By the raised embankment, the width of the road at Carron Terrace potentially provides the opportunity to locate defence walling over the existing road at the south edge of the street, with root disturbance likely to be minimal (see above). Should the wall be position off the road and closer to the trees it would come well within the RPAs and only the use of low impact foundation design such as mini-piles could avoid significant root severance and severe damage. Given the restrictions to tree rooting here and the fragile nature of the tree cover, such damage would inevitably lead to stability problems and probable tree failure.
- 7.3 At the Burn of Glaslaw it is likely that some form of cut off will be required in order to prevent leakage through the defence walls; therefore sheet piling is likely to form at least part of the foundation design.
- 7.4 In assessing the impact of the proposals (see below) I have also taken in to account the effect on the stability of individual trees once adjacent trees have been removed.
- 7.5 Tree retention and removals due to proposals:-

1. **The Lime trees beside Carron Terrace can be retained** (with the adoption of careful design as described above)
2. Raised embankment: the trees of short and medium term potential can be retained depending on the positioning of the defence wall or foundation design. If however, the wall is located on the embankment and intrusive foundations are constructed, this would necessitate the removal of all trees: T635-T637.
3. White Bridge: Any re-profiling near to T601 Sycamore will require the removal of this tree unless investigations on root distribution prove to the contrary.
4. Carron Gardens/Burn of Glaslaw: The following trees will require to be removed to facilitate alleviation measures given the current anticipated design and location of defence walls:-  
**A category trees:** T708  
**B category trees:** T 667 (N. Maple), T669 (W. Cherry), T670 (Sycamore); T684 (S. Whitebeam), T702 and T703 (Ash)

**C category trees:** T668, T672, T673 to T676, T678, T682, T685, T686

Some of these trees could possibly be retained if ground conditions prove such as to allow gaps in the cut off (and therefore the use of mini-piles instead of sheet piling in some locations).

#### 7.6 Arboricultural pruning due to proposals:-

No further arboricultural pruning is required in addition to the tree removals recommended above save for minor crown lifting to 2.5m to make way for defence walls.

- 7.7 It would be sensible to re-pollard the Lime trees by Carron Terrace prior to undertaking development activity since this would accord with the current and past pruning regime for these trees and would provide additional space on site. The likely reduction in required root activity following pollarding would also be of benefit to the trees in relation to construction activity.

### **Discussion**

- 7.8 From an arboricultural perspective the retention of good quality 'A' category trees beside Carron Terrace is important. The potential long term impact from the loss of predominantly low quality trees of short term potential from the raised embankment and at Carron Gardens is low. The main impact is in short term visual amenity, particularly in respect of the raised embankment due to the screening effect of these trees. This would be significant in the short term and would require comprehensive mitigation measures. The short term impact of tree losses at the west end of Carron Gardens is low due to the abundance of tree cover at Dunnottar Wood.
- 7.9 The loss of trees due to the flood defence proposals can be mitigated by new planting of good quality trees in keeping with the character and local landscape. At the raised embankment, trees should be planted in order to maintain the boundary screening effect and to provide continued support for the embankment. I would recommend the use of native broadleaved species including Rowan, Birch and Hazel. Tree replacement planting should be carried out here on a 2 for 1 basis, with approximately 50 trees planted. I would recommend the use of whips in conjunction with groups of standard trees (10-12cm girth) for initial impact. At Carron Gardens a mix of riparian planting and good quality specimen tree planting will be needed. Further details can be supplied if required. All newly planted trees should be protected by growth tubes or rabbit proof fencing, as appropriate, and maintained through weeding and replacement of loss plants for at least 3 growing seasons.

## 8 Protection of trees during construction

- 8.1 In order for retained trees to flourish, it will be essential to prevent root severance or compaction of soil within the Root Protection Areas. To achieve this, a stout fence should be erected, preferably at the limit of the RPA, (or in positions to be agreed once further detailed proposals are available). This should be done before any construction activity takes place or machinery is brought to site.
- 8.2 The design of fencing suitable for purpose and compliant with BS 5837 is given in appendix 1. On this site a post and wire fence may be considered appropriate in places where use of Heras fencing is not practical due to topography.
- 8.3 BS 5837 allows for the use of ground protection in conjunction with protective fencing. Where temporary access for small scale machinery is needed within the RPA, ground protection should be used as per the drawing at appendix 2. Ground protection should be of sufficient strength and rigidity to prevent soil disturbance and compaction. A geotextile membrane should be used to prevent contamination of soil below by toxic substances.
- 8.4 Further details of alleviating specific conflict between trees and construction on this site can be provided if required.

## 9 CONCLUSIONS

- 9.1 The existing tree cover and proposals have been assessed in the light of my experience and in accordance with BS5837: 2005 'Trees in relation to construction'.
- 9.2 The proposals would allow for the retention of the vast majority of 'A' category trees on site, including the row of pollarded Lime trees at Carron Terrace. The potential loss of trees located on the raised embankment west of the Green Bridge would represent a significant loss of short term visual amenity due to the screening effect of these trees.
- 9.3 The trees identified for removal should be removed in the interests of good arboricultural practice.
- 9.4 There is scope and a requirement for new replacement planting to ensure continued screening and long term tree cover and amenity. Such planting should take full account of the local landscape and character of the area.



## 10 RECOMMENDATIONS

- 10.1 The tree works and removals recommended in this report should be carried out by suitably experienced tree surgeons. All tree works should comply with BS 3998: 2010 '*Tree Work-recommendations*'. Tree stumps and roots should be retained in order to help consolidate the embankment.
- 10.2 **Statutory wildlife obligations:** The Wildlife and Countryside Act 1981 as amended by the Nature Conservation (Scotland) Act 2004 provide statutory protection to birds, bats and other species that inhabit trees. All tree work operations are covered by these provisions. Prior to undertaking any tree work, the Contractor should make a visual inspection of the tree for Bat roosts. If Bats and/or roosts are identified, Scottish Natural Heritage (SNH) should be contacted and an agreement made with regard to measures to be undertaken to protect Bats before undertaking any work which might constitute an offence.
- 10.3 Tree protection measures as detailed in this report should be used to protect the retained trees and prevent disturbance to vegetation during construction.
- 10.4 Appropriate replacement tree planting should be carried out post-construction to ensure sustained, effective long term tree cover on site.

Martin Langton  
Bsc (Hons) For MICFor, CEnv

## Site Photographs



Plate 1a: view west showing pollarded Lime trees by Carron Terrace. Note: effective screening



Plate 1b: Pollarded Lime trees providing effective screening along Carron Terrace



Plate 2: Trees on raised embankment with high incidence of structural defects. Note: weak compression union with included bark



## Photographs continued



Plate 3: Beech on embankment by Carron Terrace. Note: restricted rooting affected by retaining wall and steep banking



Plate 4: View west from Green Bridge. Note: screening from trees located on raised embankment



Plate 5: View west showing lush riparian vegetation near pollarded Lime trees

## Appendix 1: Tree protection measures

### Tree Protection Fencing

Specifications (specifically outlined by outline box)

#### **1.5m (min) Chestnut Paling Fence on Scaffold**

Chestnut Paling to be affixed to a scaffold framework comprising two horizontal braces (top and bottom) supported by vertical scaffold posts driven firmly into the ground at 4.0m or less. Angled supporting struts are to be affixed 'tree-side' as appropriate.

#### **1.5m (min) Chestnut Paling on wooden supporting frame**

Stakes – 1.8m half round 100mm diameter untreated posts @ 1.8m centres (or as directed).

- 2 x 38 x 87mm rails (motorway)
- 1.2m Chestnut Paling will be industrially stapled to the rails

Extra wooden supports to be affixed at an angle on the tree side of the fence.

#### **2.4m Hoarding**

3.0m 100 x 100mm square wooden posts

3 x 38 x 87mm wooden rails affixed to posts

2.4m x 1200mm outside grade ply panels (12mm) affixed to rails.

50 x 100mm angled supporting struts affixed internally (quantity as required).

(Supporting posts fixed into position using concrete. All posts holes to be hand excavated. Post holes to be no larger than 300 x 300mm.)

#### **Heras Fencing**

Heras fencing describes the 2.4m galvanised steel mesh panelled fencing normally supplied with pre-cast concrete bases. **Bases are to be replaced with a fixed wooden frame to which panels are clamped/firmly fixed.** For extra stability, scaffold poles/4 x 4 wooden posts are to be firmed in to the ground as supporting posts and supporting struts are to be attached at a 45 degree angle on the 'tree side' of the fencing and fixed in to the ground, as required.

## Appendix 1 continued

### 9.3 Ground protection

**9.3.1** Where it has been agreed during the design stage, and shown on the tree protection plan, that vehicular or pedestrian access for the construction operation may take place within the root protection area (RPA), the possible effects of construction activity should be addressed by a combination of barriers and ground protection. The position of the barrier may be shown within the RPA at the edge of the agreed working zone but the soil structure beyond the barrier to the edge of the RPA should be protected with ground protection.

**9.3.2** For pedestrian movements within the RPA the installation of ground protection in the form of a single thickness of scaffold boards on top of a compressible layer laid onto a geotextile, or supported by scaffold, may be acceptable (see Figure 3).

**9.3.3** For wheeled or tracked construction traffic movements within the RPA the ground protection should be designed by an engineer to accommodate the likely loading and may involve the use of proprietary systems or reinforced concrete slabs (see 11.8 and 11.9).

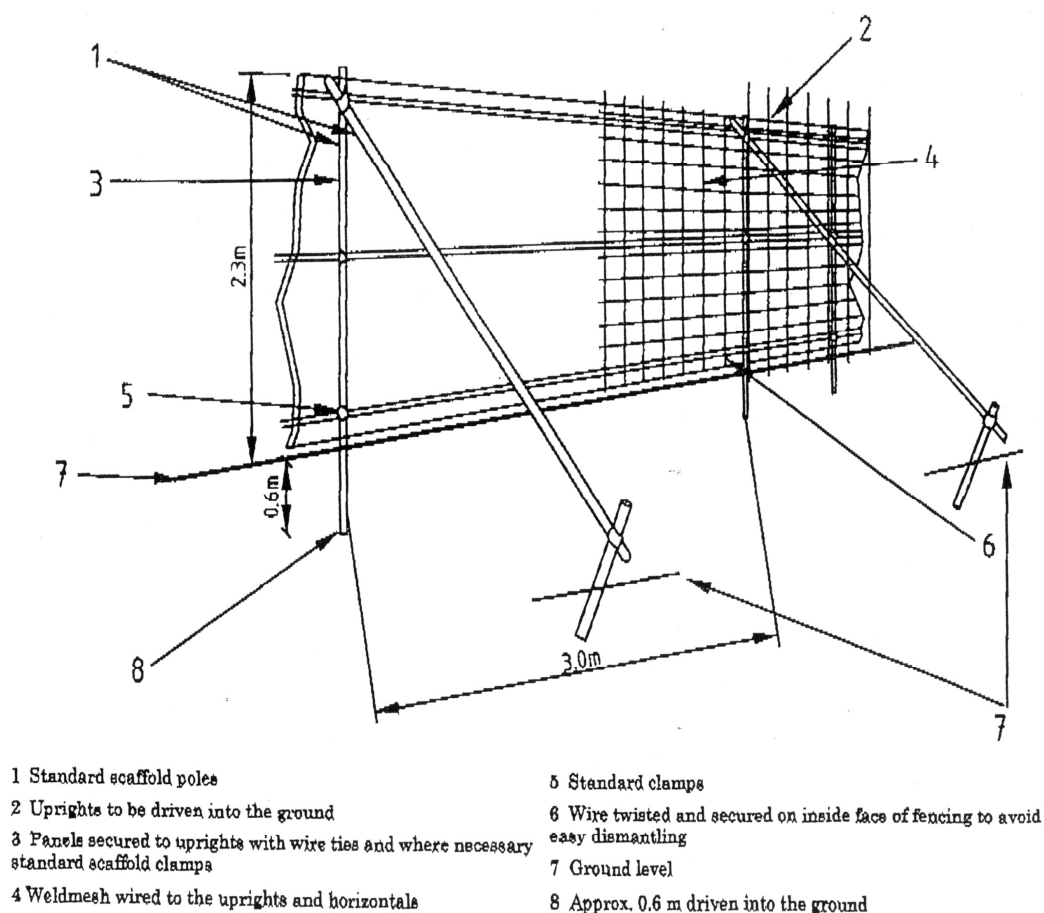


Figure 2 — Protective barrier

## APPENDIX 2: Cascade chart for tree quality assessment (from British Standard 5837:2005)

| TREES FOR REMOVAL  |   |   |  |                        |
|--|---|---|--|------------------------|
| Category and definition  | Criteria  |   |  | Identification on plan |
| <b>Category R</b><br>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                     | <ul style="list-style-type: none"><li>Trees that have a serious, irredeemable, 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).</li><li>Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline.</li><li>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.</li></ul> NOTE Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of a bat box in nearby tree) |   |  | DARK RED               |
| TREES TO BE CONSIDERED FOR RETENTION   |   |   |  |                        |
| Category and definition  | Criteria – Subcategories  |   |  | Identification on plan |
|  | 1 Mainly arboricultural values  | 2 Mainly landscape values   | 3 Mainly cultural values, including conservation   |                        |
| <b>Category A</b><br>Those of high quality and value; in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested)  | Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of semi-formal arboricultural features (e.g. the dominant an/or principal trees within an avenue)  | Trees, groups or woodlands provide a definite screening or softening effect to the locality in relation to views into or out of the site, of these in particular visual importance (e.g. avenues or other arboricultural features assessed as groups)   | Trees, groups or woodlands of significant conservation, historic, or commemorative or other value (e.g. veteran trees or wood-pasture) | LIGHT GREEN            |
| <b>Category B</b><br>Those of moderate quality and value: those in such a condition 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               |
| <b>Category C</b><br>Those of low quality and value; currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm | Trees not qualifying in higher categories   | Trees present in groups or woodlands, but without this conferring on them significantly greater landscape values, 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 150mm should be considered for relocation  |   |  |                        |

## Appendix 3: Tree Survey Schedule

# Appendix 3

## Tree Survey Schedule of Trees at Carronn Terrace, Stonehaven

Requested by: JBA Consulting  
 Site: Carron Terrace, Stonehaven  
 Date of Survey: 5th September 2013  
 Arboricultural consultant/surveyor: Martin Langton  
 Weather: Dry with bright intervals.

| Tag | Species                                 | Height (m) | Diam (m) | Stem Br <1.5m | Crown Spreads (m) |     |     |     | Height CC (m) | RPA Rad (m) | Age Class   | Phys Cond | Comments  | Recommendations                                | Years Left | BS Cat |
|-----|---|------------|----------|---------------|-------------------|-----|-----|-----|---------------|-------------|-------------|-----------|---|--|------------|--------|
| 601 | Sycamore<br><i>Acer pseudoplatanus</i>  | 19         | 0.85     | 1             | 6.0               | 7.0 | 5.0 | 5.5 | 3.0           | 10.20       | Mature      | Fair      | Large attractive prominent tree with open grown crown and generally good form. Clean stem to 4m. Large decurrent crown from multiple unions at 5m. Minor dead wood (<50mm dia).   | -  | 20 to 40   | A2     |
| 602 | Sycamore<br><i>Acer pseudoplatanus</i>  | 14         | 0.60     | 1             | 5.0               | 5.0 | 5.5 | 3.5 | 2.0           | 7.20        | Mature      | Fair      | Generally healthy tree with minor structural defects. Attractive prominent tree with open crown and good form. Historic occluded pruning wounds. Minor dead wood (<50mm dia).   | -  | 30 to 40   | A2     |
| 603 | Sycamore<br><i>Acer pseudoplatanus</i>  | 21         | 0.95     | 1             | 6.5               | 6.0 | 4.0 | 5.0 | 2.0           | 11.40       | Over-mature | Poor      | Large attractive tree of generally good form. Crown die-back. <i>Kretzschmaria deusta</i> fungal fruiting bodies noted at root crown [W]. Clean stem to 4m. Good basal flare. Major dead wood (>50mm dia) at 6m.                                  | Remove dead wood. [consider removing tree]     | 5 to 20    | B3/R   |
| 604 | Norway Maple<br><i>Acer platanoides</i> | 7          | 0.20     | 1             | 3.5               | 3.5 | 3.5 | 3.5 | 2.0           | 2.40        | Young       | Good      | Healthy tree of good form. Crown becoming restricted under T603.  | -  | 20 to 40   | B2     |
| 605 | Sycamore<br><i>Acer pseudoplatanus</i>  | 21         | 0.85     | 1             | 6.0               | 6.0 | 5.0 | 4.0 | 2.5           | 10.20       | Over-mature | Fair-poor | Large attractive prominent tree with large, open decurrent crown from multiple unions at 5m. Clean stem to 4m. Exposed structural roots with minor decay. Minor crown dieback. 50mm dead branch over grass at 5m and minor dead wood (<50mm dia). | -  | 20 to 40   | B3     |
| 606 | Norway Maple<br><i>Acer platanoides</i> | 22         | 0.80     | 1             | 4.5               | 7.5 | 3.5 | 4.5 | 3.5           | 9.60        | Mature      | Good      | Generally healthy tree with minor structural defects. 4 large upright stems arise from 3m to form decurrent crown. Minor girdling root [E]. Large decaying branch stub at 5m [W]. Minor dead wood (<50mm dia).                                    | Remove dead wood: large branch stub at 5m [W]. | 20 to 40   | A2     |
| 607 | Sycamore<br><i>Acer pseudoplatanus</i>  | 19         | 0.85     | 1             | 6.0               | 7.0 | 3.0 | 5.0 | 2.5           | 10.20       | Over-mature | Fair-poor | Attractive tree of generally good form; clean stem to 3m. Included bark, weak main fork: 2 erect stems from 3.5 [N/S]. Crown die-back: tree in decline. Major dead wood (>50mm dia).  | Remove dead wood. Monitor condition.           | 5 to 20    | B3     |
| 608 | Norway Maple<br><i>Acer platanoides</i> | 8          | 0.20     | 1             | 3.0               | 2.5 | 2.0 | 2.5 | 1.5           | 2.40        | Young       | Good      | Erect tree with partially restricted crown and included unions.   | -  | 10 to 20   | C1     |
| 609 | Lime species<br><i>Tilia spp.</i>       | 21         | 0.80     | 1             | 5.0               | 4.0 | 4.5 | 5.5 | 0.5           | 9.60        | Mature      | Good      | Tree of generally good form on banking [3m from edge]. Restricted rooting due to ground conditions. Excessive epicormic growth at 1m.   | -  | 20 to 40   | A2     |



## Appendix 3

## Tree Survey Schedule of Trees at Carronn Terrace, Stonehaven

| Tag   | Species   | Height (m) | Diam (m) | Stem Br <1.5m | Crown Spreads (m) |     |     |     | Height CC (m) | RPA Rad (m) | Age Class    | Phys Cond | Comments  | Recommendations                  | Years Left | BS Cat |
|---|---|------------|----------|---------------|-------------------|-----|-----|-----|---------------|-------------|--------------|-----------|---|----------------------------------|------------|--------|
| 610   | Horse chestnut<br><i>Aesculus hippocastanum</i> | 5          | 0.20     | 1             | 2.5               | 3.0 | 2.0 | 2.5 | 1.5           | 2.40        | Young        | Poor      | Restricted rooting due to ground conditions. Crown snapped at 3.5. Limited potential.   | -                                | 10 to 20   | C1     |
| 611   | Sycamore<br><i>Acer pseudoplatanus</i>          | 11         | 0.35     | 1             | 3.0               | 3.5 | 3.0 | 2.5 | 3.0           | 4.20        | Semi-mature  | Fair      | Restricted rooting due to ground conditions. Generally good form, located in small planter. Small pruning wounds with minor decay.  | -                                | 20 to 40   | B1     |
| Row of pollarded Lime trees (T612 to T632) beside Carron Terrace; located on narrow grass verge |   |            |          |               |                   |     |     |     |               |             |              |           |   |                                  |            |        |
| 612   | Lime species<br><i>Tilia spp.</i>               | 10         | 0.35     | 1             | 3.5               | 3.5 | 3.5 | 3.5 | 3.0           | 4.20        | Early-mature | Good      | Restricted rooting immediately adjacent to road. Minor cavity/decay in stem at ground level. Pollarded at 7m with vigorous re-growth. Minor stem decay.   | Re-pollard regularly (3-5 years) | 20 to 40   | B1,2   |
| 613   | Lime species<br><i>Tilia spp.</i>               | 10         | 0.45     | 1             | 3.0               | 4.0 | 3.5 | 3.5 | 3.0           | 5.40        | Early-mature | Fair      | Restricted rooting immediately adjacent to road. Pollarded at 7m with vigorous re-growth. Sited at top of banking on verge. Large basal cavity with hollowing [70%] extends below ground level. | Re-pollard regularly (3-5 years) | 20 to 40   | B3     |
| 614   | Lime species<br><i>Tilia spp.</i>               | 10         | 0.50     | 1             | 3.0               | 4.0 | 3.5 | 3.5 | 2.5           | 6.00        | Early-mature | Good      | Restricted rooting due to ground conditions. Minor cavity/decay in stem at 2m. Pollarded to 7m with vigorous re-growth.   | Re-pollard regularly (3-5 years) | >40        | A2     |
| 615   | Lime species<br><i>Tilia spp.</i>               | 10         | 0.45     | 1             | 3.0               | 3.5 | 3.5 | 3.5 | 2.5           | 5.40        | Early-mature | Good      | Restricted rooting due to ground conditions. Excessive epicormic growth. Physical damage to bark at 2m. Pollarded to 7m with vigorous re-growth.  | Re-pollard regularly (3-5 years) | 20 to 40   | A2     |
| 616   | Lime species<br><i>Tilia spp.</i>               | 11         | 0.50     | 1             | 3.0               | 3.0 | 3.5 | 3.5 | 2.5           | 6.00        | Early-mature | Fair      | Excessive epicormic growth at ground level. Pollarded to 7m with vigorous re-growth. Notable decay at 4-6m to pollard head with wound wood forming.   | Re-pollard regularly (3-5 years) | >40        | A2     |
| 617   | Lime species<br><i>Tilia spp.</i>               | 11         | 0.50     | 1             | 3.0               | 4.0 | 3.0 | 4.0 | 2.5           | 6.00        | Early-mature | Good      | Pollarded to 7m with vigorous re-growth.  | Re-pollard regularly (3-5 years) | >40        | A2     |
| 618   | Lime species<br><i>Tilia spp.</i>               | 10         | 0.30     | 1             | 3.0               | 3.0 | 3.0 | 3.0 | 2.5           | 3.60        | Semi-mature  | Good      | Minor cavity/decay in stem at 2m. Pollarded to 7m with vigorous re-growth.  | Re-pollard regularly (3-5 years) | >40        | A2     |
| 619   | Lime species<br><i>Tilia spp.</i>               | 11         | 0.50     | 1             | 3.5               | 4.0 | 3.5 | 3.5 | 2.5           | 6.00        | Early-mature | Good      | Pollarded to 7m with vigorous re-growth. Heavier erect stems developing in north crown. Occluded wound at 1m.   | Re-pollard regularly (3-5 years) | >40        | A2     |
| 620   | Lime species<br><i>Tilia spp.</i>               | 11         | 0.50     | 1             | 3.5               | 4.0 | 3.0 | 3.5 | 0.5           | 6.00        | Early-mature | Good      | Pollarded to 7m with vigorous re-growth. Large symmetric crown.   | Re-pollard regularly (3-5 years) | >40        | A2     |
| 621   | Lime species<br><i>Tilia spp.</i>               | 11         | 0.45     | 1             | 3.0               | 3.5 | 3.0 | 2.5 | 2.0           | 5.40        | Early-mature | Good      | Excessive epicormic growth. Minor cavity/decay in stem at 3m. Pollarded to 7m with vigorous re-growth.  | Re-pollard regularly (3-5 years) | >40        | A2     |
| 622   | Lime species<br><i>Tilia spp.</i>               | 11         | 0.45     | 1             | 3.5               | 4.0 | 4.0 | 4.0 | 2.0           | 5.40        | Early-mature | Good      | Physical damage to bark at 3m. Pollarded to 6m with vigorous re-growth forming large congested crown. Damage to bark from 2-3m [N].   | Re-pollard regularly (3-5 years) | >40        | A2     |

## Appendix 3

## Tree Survey Schedule of Trees at Carronn Terrace, Stonehaven

| Tag  | Species                                | Height (m) | Diam (m) | Stem Br <1.5m | Crown Spreads (m) |     |     |     | Height CC (m) | RPA Rad (m) | Age Class    | Phys Cond | Comments  | Recommendations                  | Years Left | BS Cat |
|--|--|------------|----------|---------------|-------------------|-----|-----|-----|---------------|-------------|--------------|-----------|---|----------------------------------|------------|--------|
| 623  | Lime species<br><i>Tilia spp.</i>      | 12         | 0.55     | 1             | 3.5               | 4.0 | 4.0 | 4.0 | 2.5           | 6.60        | Early-mature | Good      | Restricted rooting due to ground conditions. Pollarded to 7m with vigorous re-growth forming large congested crown. Minor stem decay - pruning wounds.  | Re-pollard regularly (3-5 years) | >40        | A2     |
| 624  | Lime species<br><i>Tilia spp.</i>      | 11         | 0.45     | 1             | 3.0               | 3.5 | 3.0 | 3.5 | 2.0           | 5.40        | Early-mature | Good      | Excessive epicormic growth at base. Large occluded pruning wound at 1m [s]. Pollarded to 7m with vigorous re-growth.  | Re-pollard regularly (3-5 years) | 20 to 40   | A2     |
| 625  | Lime species<br><i>Tilia spp.</i>      | 11         | 0.50     | 1             | 3.5               | 4.0 | 3.0 | 3.5 | 3.0           | 6.00        | Early-mature | Good      | Pollarded to 7m with vigorous re-growth forming congested crown. Excessive epicormic growth at base.  | Re-pollard regularly (3-5 years) | >40        | A2     |
| 626  | Lime species<br><i>Tilia spp.</i>      | 11         | 0.50     | 1             | 3.0               | 4.0 |     |     | 2.0           | 6.00        | Early-mature | Good      | Pollarded to 7m with vigorous re-growth forming congested crown. Small pruning wounds with minor decay.   | Re-pollard regularly (3-5 years) | >40        | A2     |
| 627  | Lime species<br><i>Tilia spp.</i>      | 11         | 0.45     | 1             | 3.0               | 3.5 | 3.0 | 3.0 | 2.0           | 5.40        | Early-mature | Good      | Excessive epicormic growth. Pollarded to 7m with vigorous re-growth.  | Re-pollard regularly (3-5 years) | >40        | A2     |
| 628  | Lime species<br><i>Tilia spp.</i>      | 11         | 0.45     | 1             | 3.0               | 4.0 | 3.5 | 3.5 | 2.5           | 5.40        | Early-mature | Good      | Pollarded to 7m with vigorous re-growth. Minor cavity/decay in stem at 2m.  | Re-pollard regularly (3-5 years) | >40        | A2     |
| 629  | Lime species<br><i>Tilia spp.</i>      | 11         | 0.50     | 1             | 3.0               | 3.5 | 3.0 | 3.5 | 2.0           | 6.00        | Early-mature | Good      | Included bark, weak main fork at 2m. Pollarded to 7m with vigorous re-growth. Sited between man hole and bench. Restricted rooting due to ground conditions.  | Re-pollard regularly (3-5 years) | >40        | A2     |
| 630  | Lime species<br><i>Tilia spp.</i>      | 11         | 0.50     | 1             | 3.0               | 3.5 | 3.5 | 3.0 | 2.5           | 6.00        | Early-mature | Good      | Pollarded to 7m with vigorous re-growth. Minor stem decay.  | Re-pollard regularly (3-5 years) | >40        | A2     |
| 631  | Lime species<br><i>Tilia spp.</i>      | 11         | 0.45     | 1             | 3.0               | 3.0 | 3.5 | 3.0 | 2.5           | 5.40        | Early-mature | Good      | Pollarded to 7m with vigorous re-growth forming congested crown. Small occluding pruning wounds with minor decay.   | Re-pollard regularly (3-5 years) | >40        | A2     |
| 632  | Lime species<br><i>Tilia spp.</i>      | 11         | 0.45     | 1             | 2.5               | 3.5 | 3.5 | 3.5 | 2.5           | 5.40        | Early-mature | Good      | Restricted rooting due to ground conditions. Pollarded to 7m with vigorous re-growth forming congested crown. <i>Note: young ash and sycamore regeneration behind 632 - 633.</i>  | Re-pollard regularly (3-5 years) | >40        | A2     |
| 633  | Ash<br><i>Fraxinus excelsior</i>       | 8          | 0.40     | 2             | 4.0               | 4.0 | 2.0 | 2.0 | 4.0           | 4.00        | Semi-mature  | Fair-poor | Tree of poor form: regrowth from distorted stem.  | -                                | 10 to 20   | C1     |
| 634  | Sycamore<br><i>Acer pseudoplatanus</i> | 15         | 0.40     | 1             | 4.0               | 4.5 | 5.0 | 4.0 | 2.5           | 4.80        | Early-mature | Fair-poor | Restricted rooting due to location (near river bank). 3 adjacent stems, each with notable decay and cankers. South stem with weak compression union with included bark at 2m. Limited potential: due to condition and location. | Monitor.                         | 10 to 20   | C1     |
| Trees (T635 - T655) located on raised banking on North bank of Carron Water, beside Carron Terrace |  |            |          |               |                   |     |     |     |               |             |              |           |   |                                  |            |        |
| 635  | Hawthorn<br><i>Crataegus monogyna</i>  | <5         | 0.30     | M             | 3.0               | 2.0 | 2.0 | 2.5 | 0.5           | 3.00        | Semi-mature  | Fair      | Restricted rooting due to ground conditions. Minor crown dieback. Restricted space.   | -                                | 10 to 20   | C2     |

## Appendix 3

## Tree Survey Schedule of Trees at Carronn Terrace, Stonehaven

| Tag | Species                           | Height (m) | Diam (m) | Stem Br <1.5m | Crown Spreads (m) |      |     |     | Height CC (m) | RPA Rad (m) | Age Class    | Phys Cond | Comments  | Recommendations                        | Years Left | BS Cat |
|-----|-----------------------------------|------------|----------|---------------|-------------------|------|-----|-----|---------------|-------------|--------------|-----------|---|--|------------|--------|
| 636 | Beech<br><i>Fagus sylvatica</i>   | 16         | 0.60     | 2             | 1.5               | 4.0  | 1.5 | 4.0 | 3.0           | 6.00        | Early-mature | Fair-poor | Located on top of made up banking with raised soil levels. Included bark, weak main fork at 1m. North stem with further compression union with included bark at 1.6m. Lean and crown weighted, South towards space.   | Monitor.                               | 20 to 40   | B2     |
| 637 | Beech<br><i>Fagus sylvatica</i>   | 15         | 0.35     | 1             | 1.0               | 4.5  | 4.0 | 2.0 | 3.5           | 4.20        | Early-mature | Fair-poor | Correcting lean North and bias towards space. Decay and accumulated bark at base [N].   | -                                      | 10 to 20   | B2     |
| 638 | Lime species<br><i>Tilia spp.</i> | 25         | 0.95     | 1             | 6.0               | 6.0  | 3.0 | 4.0 | 3.0           | 11.40       | Over-mature  | Fair      | Restricted rooting due to ground conditions. Excessive epicormic growth at base. Branch stubs from past pruning/storm damage. Co-dominant stems arise from tension fork at 4m.  | Monitor.                               | 20 to 40   | B1     |
| 639 | Beech<br><i>Fagus sylvatica</i>   | 22         | 0.95     | M             | 6.0               | 7.0  | 4.5 | 3.0 | 2.5           | 9.50        | Mature       | Fair-poor | Minor cavity/decay in stem at 2m. 3 main stems [N/S] from weak Compression union with included bark at 0.5m-1m [S]. Outer stems lean to North and South.  | Monitor weak included union.           | 10 to 20   | C1     |
| 640 | Beech<br><i>Fagus sylvatica</i>   | 22         | 0.40     | 1             | 3.5               | 3.5  | 2.5 | 0.5 | 6.0           | 4.80        | Early-mature | Fair      | Drawn tree with restricted, asymmetric crown. Basal decay with wound wood forming.  | Monitor.                               | 10 to 20   | C1     |
| 641 | Beech<br><i>Fagus sylvatica</i>   | 22         | 0.80     | 2             | 7.0               | 10.0 | 2.0 | 4.0 | 2.0           | 8.00        | Mature       | Fair-poor | Large tree providing screening and with significant structural defects. Physical damage to bark at 1m. Included bark, weak fork in main scaffold limb at 3m. Compression unions with included bark at 1m and 3m; both limbs extend south over river. Crossing stems at 4m, with minor wounding. | Monitor.                               | 10 to 25   | B3     |
| 642 | Beech<br><i>Fagus sylvatica</i>   | <5         | 0.20     | 1             | 0.5               | 3.5  | 1.0 | 1.0 | 0.5           | 2.40        | Semi-mature  | Poor      | Canopy suppressed, poor crown form.   | -                                      | 10 to 20   | C1     |
| 643 | Beech<br><i>Fagus sylvatica</i>   | 17         | 0.45     | 1             | 1.0               | 8.0  | 4.0 | 2.0 | 4.0           | 5.40        | Early-mature | Fair-poor | Canopy 1-sided. Crown lift pruning wounds with minor decay [S]. Notable stem lean north towards space; stem bend at 1.5m - potential weakness.  | Monitor.                               | 20 to 40   | B2     |
| 644 | Beech<br><i>Fagus sylvatica</i>   | 18         | 0.30     | 1             | 2.5               | 2.5  | 2.0 | 1.0 | 8.0           | 3.60        | Early-mature | Fair-poor | Significant cavity/decay in stem at 6m. Slender drawn tree with restricted crown.   | Monitor.<br>[consider crown reduction] | 10 to 20   | C1     |
| 645 | Beech<br><i>Fagus sylvatica</i>   | 22         | 0.90     | M             | 8.0               | 6.0  | 2.0 | 4.0 | 2.0           | 9.00        | Mature       | Fair-poor | North limb from weak compression union, with included bark at 1m, extends north towards space: upswept contorted form. South West stem with lean, South, over river; decay at base [N].   | Monitor.                               | 20 to 40   | B2     |
| 646 | Beech<br><i>Fagus sylvatica</i>   | 18         | 0.45     | 1             | 1.5               | 6.0  | 1.5 | 1.5 | 4.0           | 5.40        | Early-mature | Fair      | Single stem - drawn tree with restricted crown. Lean and crown bias South towards space.  | -                                      | 20 to 40   | B2     |
| 647 | Beech<br><i>Fagus sylvatica</i>   | 16         | 0.30     | 1             | 4.0               | 3.0  | 1.5 | 2.5 | 2.0           | 3.60        | Early-mature | Fair      | Erect tree with restricted crown. Stem canker at 0.5m [N].  | Monitor.                               | 20 to 40   | B2     |

## Appendix 3

## Tree Survey Schedule of Trees at Carronn Terrace, Stonehaven

| Tag   | Species                                | Height (m) | Diam (m) | Stem Br <1.5m | Crown Spreads (m) |     |     |     | Height CC (m) | RPA Rad (m) | Age Class    | Phys Cond | Comments   | Recommendations   | Years Left | BS Cat |
|---|--|------------|----------|---------------|-------------------|-----|-----|-----|---------------|-------------|--------------|-----------|--|---|------------|--------|
| 648   | Beech<br><i>Fagus sylvatica</i>        | 19         | 0.80     | M             | 4.0               | 3.0 | 5.0 | 1.5 | 4.0           | 8.00        | Early-mature | Fair-poor | Very restricted rooting - immediately adjacent to garage; short steep banking to river. Included bark, weak main fork at 1m. Canopy suppressed, poor crown form.       | Monitor.  | <20        | C2     |
| 649   | Beech<br><i>Fagus sylvatica</i>        | 25         | 0.80     | 2             | 5.0               | 5.0 | 2.0 | 4.5 | 5.0           | 8.00        | Mature       | Fair-poor | Very restricted rooting - immediately adjacent to retaining wall/steep banking (to river). 2 large stems. Tree has out-grown location. [Stem diameters: 400mm, 450mm]. | Consider removing tree.                                   | <10        | R      |
| 650   | Beech<br><i>Fagus sylvatica</i>        | 15         | 0.45     | 1             | 3.0               | 2.5 | 2.0 | 2.5 | 4.0           | 5.40        | Early-mature | Fair      | Erect tree with restricted crown. Restricted rooting by retaining wall.  | -   | 10 to 20   | B2     |
| 651   | Beech<br><i>Fagus sylvatica</i>        | 21         | 0.55     | 1             | 7.0               | 3.0 | 2.0 | 5.0 | 4.0           | 6.60        | Mature       | Fair-poor | Restricted rooting due to ground conditions. Minor crown dieback. Correcting lean north towards space. Branch stubs [N] from recent crown lift pruning.                | Monitor stability [Poor rooting on, south, tensile side]. | 10 to 20   | B2     |
| 652   | Beech<br><i>Fagus sylvatica</i>        | 12         | 0.40     | M             | 3.0               | 4.0 | 3.5 | 3.5 | 3.0           | 4.00        | Early-mature | Fair-poor | Poor distorted form. Weak included unions.   | -   | 10 to 20   | C1     |
| 653   | Sycamore<br><i>Acer pseudoplatanus</i> | 22         | 0.65     | 1             | 1.5               | 6.5 | 2.0 | 3.5 | 4.0           | 7.80        | Early-mature | Fair      | Located on steep banking by river. Erect tree with crown bias south towards space. Drawn North stem from tension fork at 1.8m.   | -   | 20 to 40   | B2     |
| 654   | Beech<br><i>Fagus sylvatica</i>        | 7          | 0.40     | 2             | 2.0               | 7.0 | 2.0 | 3.0 | 1.0           | 4.00        | Semi-mature  | Fair-poor | Poor/distorted form.   | -   | <10        | R      |
| 655   | Sycamore<br><i>Acer pseudoplatanus</i> | 18         | 0.35     | 1             | 1.5               | 3.0 | 1.5 | 3.5 | 4.5           | 4.20        | Early-mature | Good      | Restricted rooting due to ground conditions. Erect drawn tree located on steep banking immediately adjacent to river.  | -   | 20 to 40   | B2     |
| 656   | Sycamore<br><i>Acer pseudoplatanus</i> | 15         | 0.35     | 1             | 4.0               | 0.5 | 3.5 | 2.0 | 2.0           | 4.20        | Early-mature | Fair-poor | Restricted rooting due to ground conditions. Lean North, towards space. Located between garage and wall; self-seeded tree outgrown location.                           | Consider removing tree.                                   | <10        | R      |
| 657   | Ash<br><i>Fraxinus excelsior</i>       | 18         | 0.30     | 1             | 2.5               | 3.0 | 2.0 | 2.5 | 4.0           | 3.60        | Early-mature | Good      | Erect tree of generally good form; located in residential garden, adjacent to wall [E].  | -   | 20 to 40   | B1     |
| Trees located on South Bank of Carron Water |  |            |          |               |                   |     |     |     |               |             |              |           |  |   |            |        |
| 658   | Elm<br><i>Ulmus glabra</i>             | 15         | 0.45     | 1             | N/A               | N/A | N/A | N/A | 4.0           | 5.40        | Mature       | Dead      | Dead tree on banking.  | Fell.   | <10        | R      |
| 659   | Sycamore<br><i>Acer pseudoplatanus</i> | 19         | 0.50     | 1             | 1.5               | 3.0 | 1.5 | 2.5 | 4.0           | 6.00        | Early-mature | Fair-poor | Excavations/level changes in root zone. Poor basal flare; erect tree with narrow crown.  | -   | 20 to 40   | B2     |
| 660   | Sycamore<br><i>Acer pseudoplatanus</i> | 23         | 0.75     | 1             | 5.0               | 4.0 | 3.0 | 4.0 | 7.0           | 9.00        | Mature       | Good      | Attractive erect tree of generally good form. Main tension fork at 8m; 2 erect stems.  | -   | 20 to 40   | A2     |
| 661   | Elm<br><i>Ulmus glabra</i>             | 11         | 0.35     | 1             | 4.0               | 3.5 | 1.5 | 3.5 | 2.0           | 4.20        | Semi-mature  | Fair-poor | Canopy suppressed, poor crown form. Branch stubs from past pruning/storm damage. Minor branches affecting street lamp.   | Minor pruning away from lamp.                             | 10 to 20   | C1     |

## Appendix 3

## Tree Survey Schedule of Trees at Carronn Terrace, Stonehaven

| Tag                                       | Species   | Height (m) | Diam (m) | Stem Br <1.5m | Crown Spreads (m) |     |     |     | Height CC (m) | RPA Rad (m) | Age Class    | Phys Cond | Comments  | Recommendations                      | Years Left | BS Cat |
|---|---|------------|----------|---------------|-------------------|-----|-----|-----|---------------|-------------|--------------|-----------|---|--------------------------------------|------------|--------|
| 662                                       | Lime species<br><i>Tilia spp.</i>               | 18         | 0.75     | 1             | 5.0               | 5.0 | 4.0 | 5.0 | 2.0           | 9.00        | Mature       | Fair      | Located beside river. Lean North over river. Generally good form. Suckering from base [S].  | -                                    | 20 to 40   | B1     |
| 663                                       | Sycamore<br><i>Acer pseudoplatanus</i>          | 14         | 0.35     | M             | 3.0               | 4.0 | 4.0 | 3.5 | 2.5           | 3.50        | Semi-mature  | Good      | Self-seeded tree with several slender erect stems from base. Included unions.   | -                                    | 10 to 20   | C1     |
| 664                                       | Horse chestnut<br><i>Aesculus hippocastanum</i> | 15         | 0.55     | 1             | 5.0               | 8.0 | 4.0 | 4.0 | 1.0           | 6.60        | Mature       | Poor      | Located adjacent to river: restricted rooting due to ground conditions. Significant cavity/decay in stem at 1m. Notable crown die-back. Pronounced lean north over river. | Monitor.<br>[Consider removing tree] | <10        | C2     |
| 665                                       | Horse chestnut<br><i>Aesculus hippocastanum</i> | 19         | 0.50     | 1             | 3.0               | 5.0 | 4.0 | 3.0 | 2.0           | 6.00        | Early-mature | Fair      | Minor dead wood (<50mm dia). Stem lean East. Poor basal flare.  | -                                    | 20 to 40   | B2     |
| 666                                       | Lime species<br><i>Tilia spp.</i>               | 16         | 0.70     | M             | 5.0               | 8.0 | 4.0 | 4.0 | 2.0           | 7.00        | Early-mature | Fair      | Main stem with lean North over river: 3 main stems arise from 4m. 3 suckering stems from base, with extended lean South towards road.                                     | -                                    | 20 to 40   | B3     |
| Trees near Carron Gardens/Burn of Glaslaw |   |            |          |               |                   |     |     |     |               |             |              |           |   |                                      |            |        |
| 667                                       | Norway Maple<br><i>Acer platanoides</i>         | 10         | 0.40     | 1             | 3.5               | 5.0 | 6.0 | 3.5 | 2.5           | 4.80        | Early-mature | Good      | Healthy tree with no serious structural issues observed. Significant cavity/decay in main scaffold limb at 7m. [n]. Located by retaining wall [E]: 1m.                    | -                                    | 20 to 40   | B2     |
| 668                                       | Hawthorn<br><i>Crataegus monogyna</i>           | <5         | 0.15     | 1             | 1.5               | 1.5 | 1.5 | 1.5 | 2.0           | 1.80        | Semi-mature  | Fair      | 2 trees in pair, located on amenity grass.  | -                                    | 10 to 20   | C1     |
| 669                                       | Wild Cherry<br><i>Prunus avium</i>              | 6          | 0.25     | 1             | 4.0               | 4.0 | 2.0 | 2.0 | 2.0           | 3.00        | Semi-mature  | Fair      | Open grown tree of generally good form in group. Generally healthy tree with minor structural defects. Minor decay in buttress.   | -                                    | 20 to 40   | B1     |
| 670                                       | Sycamore<br><i>Acer pseudoplatanus</i>          | 16         | 0.90     | 2             | 6.0               | 4.5 | 7.0 | 4.0 | 2.0           | 9.00        | Mature       | Fair      | Restricted rooting due to ground conditions, located adjacent to burn. 2 large upright stems arise from base. Wide spreading crown.                                       | -                                    | 10 to 20   | B2     |
| 671                                       | Ash<br><i>Fraxinus excelsior</i>                | 12         | 0.30     | 1             | 2.0               | 2.0 | 2.5 | 4.5 | 3.0           | 3.60        | Semi-mature  | Fair      | Adjacent to burn. Minor stem lean to West. Restricted rooting due to ground conditions. Minor dead wood (<50mm dia).  | -                                    | 10 to 20   | C1     |
| 672                                       | Whitebeam<br><i>Sorbus aria</i>                 | 5          | 0.20     | 1             | 2.5               | 2.5 | 2.5 | 2.5 | 1.5           | 2.40        | Semi-mature  | Fair      | Group of 3 trees. Minor cavity/decay in stem. Included bark, weak main fork at 1m.  | -                                    | 20 to 40   | C1     |
| 673                                       | Elm<br><i>Ulmus glabra</i>                      | 15         | 0.90     | M             | 4.0               | 4.0 | 4.0 | 4.0 | 2.0           | 9.00        | Semi-mature  | Fair-poor | Numerous slender upright stems arise from base [100mm - 180mm]. Crown die-back /disease.  | Monitor.                             | 10 to 20   | C2     |
| 674                                       | Norway Maple<br><i>Acer platanoides</i>         | 10         | 0.30     | 2             | 3.5               | 4.0 | 3.5 | 2.0 | 2.0           | 3.00        | Semi-mature  | Fair      | Significant decay at base [S]. Weak main fork at 1m with large area of included bark.   | -                                    | 10 to 20   | C1     |
| 675                                       | Elm<br><i>Ulmus glabra</i>                      | 8          | 0.50     | M             | 3.5               |     |     |     | 1.0           | 5.00        | Semi-mature  | Fair-poor | Poor distorted form.  | -                                    | 10 to 20   | C1     |

## Appendix 3

## Tree Survey Schedule of Trees at Carronn Terrace, Stonehaven

| Tag | Species                                       | Height (m) | Diam (m) | Stem Br <1.5m | Crown Spreads (m) |     |     |     | Height CC (m) | RPA Rad (m) | Age Class    | Phys Cond | Comments   | Recommendations         | Years Left | BS Cat |
|-----|---|------------|----------|---------------|-------------------|-----|-----|-----|---------------|-------------|--------------|-----------|--|-------------------------|------------|--------|
| 676 | Elm<br><i>Ulmus glabra</i>                    | 7          | 0.80     | M             | 3.0               | 1.5 | 3.0 | 3.0 | 0.5           | 8.00        | Semi-mature  | Fair-poor | Numerous slender upright stems. Potentially unstable at edge of burn.  | -                       | 10 to 20   | C1     |
| 677 | Elm<br><i>Ulmus glabra</i>                    | 7          | 0.35     | 1             | 2.0               | 6.0 | 2.0 | 2.0 | 3.0           | 4.20        | Semi-mature  | Fair-poor | Collapsing at edge of burn.  | Fell.                   | <10        | R      |
| 678 | Norway Maple<br><i>Acer platanoides</i>       | 12         | 0.35     | 1             | 5.0               | 3.5 | 2.0 | 5.5 | 3.0           | 4.20        | Early-mature | Fair      | Restricted rooting due to ground conditions. Canopy 1-sided. Large primary branch extends over road from 3m.       | -                       | 10 to 20   | C2     |
| 679 | Alder species<br><i>Alnus</i> spp.            | 8          | 0.20     | 2             | 5.0               | 1.0 | 1.0 | 1.0 | 1.5           | 2.00        | Semi-mature  | Fair-poor | Canopy suppressed, poor crown form.  | -                       | 10 to 20   | C1     |
| 680 | Wild Cherry<br><i>Prunus avium</i>            | 9          | 0.35     | 1             | 4.0               | 2.0 | 4.0 | 6.0 | 2.0           | 4.20        | Early-mature | Fair      | Generally good form with restricted crown.   | -                       | 20 to 40   | B2     |
| 681 | Whitebeam<br><i>Sorbus aria</i>               | 10         | 0.30     | 1             | 2.5               | 2.5 | 2.5 | 2.5 | 2.0           | 3.60        | Early-mature | Fair-poor | Drawn tree with bolting crown, by burn.  | -                       | 10 to 20   | C1     |
| 682 | Norway Maple<br><i>Acer platanoides</i>       | 11         | 0.30     | 1             | 3.5               | 3.5 | 3.5 | 3.5 | 1.5           | 3.60        | Early-mature | Good      | Restricted rooting due to ground conditions: 1.4m from edge of steep eroding bank. Good form.                      | -                       | 10 to 20   | C1     |
| 683 | Swedish Whitebeam<br><i>Sorbus intermedia</i> | 8          | 0.30     | 1             | 4.0               | 3.0 | 2.0 | 4.5 | 3.0           | 3.60        | Early-mature | Fair-poor | Located on amenity grass by burn; roots being undermined: <1m from edge of bank.                                   | Consider removing tree. | <10        | R      |
| 684 | Swedish Whitebeam<br><i>Sorbus intermedia</i> | 8          | 0.30     | 1             | 3.0               | 3.0 | 1.5 | 4.5 | 2.0           | 3.60        | Early-mature | Fair      | Crown bias, West towards space. Located near bank of burn with restricted rooting. Roots being undermined at bank. | Monitor.                | 5 to 25    | B2     |
| 685 | Red Oak<br><i>Quercus rubra</i>               | 8          | 0.30     | 1             | 3.0               | 2.0 | 1.5 | 4.5 | 2.5           | 3.60        | Semi-mature  | Fair      | Located 1m from edge of banking by burn. Notable lean and crown bias, West, towards space.                         | -                       | 10 to 20   | C2     |
| 686 | Red Oak<br><i>Quercus rubra</i>               | 8          | 0.25     | 1             | 3.0               | 2.0 | 1.5 | 5.0 | 2.5           | 3.00        | Semi-mature  | Fair      | Located 1.5m from edge of banking by burn; roots being undermined. Major crown bias, West, towards space.          | -                       | 10 to 20   | C2     |
| 687 | Silver Birch<br><i>Betula pendula</i>         | 11         | 0.25     | 1             | 2.0               | 2.0 | 2.0 | 2.0 | 5.0           | 3.00        | Semi-mature  | Poor      | Located near house on amenity grass. Generally good form with high crown; minor lean, West.                        | -                       | 10 to 30   | B2     |
| 688 | Wild Cherry<br><i>Prunus avium</i>            | 6          | 0.23     | 2             | 1.5               | 1.5 | 1.5 | 8.0 | 1.0           | 2.30        | Semi-mature  | Poor      | Collapsing over burn.  | Fell.                   | <10        | R      |
| 689 | Ash<br><i>Fraxinus excelsior</i>              | 10         | 0.20     | 1             | 2.0               | 2.0 | 2.0 | 2.0 | 4.0           | 2.00        | Semi-mature  | Poor      | Slender tree on edge of burn, collapsing towards garden  | Fell.                   | <10        | R      |
| 690 | Ash<br><i>Fraxinus excelsior</i>              | 22         | 0.25     | 1             | 2.0               | 1.0 | 1.0 | 3.0 | 13.0          | 3.00        | Semi-mature  | Fair      | Slender, drawn tree with lollipop high crown.  | Monitor.                | 10 to 20   | C2     |
| 691 | Ash<br><i>Fraxinus excelsior</i>              | 22         | 0.25     | 1             | 4.0               | 1.0 | 1.0 | 3.0 | 13.0          | 3.00        | Early-mature | Fair      | Slender, drawn tree with high crown. Roots being undermined: 1m from edge of banking at burn. Lean West over burn. | Consider removing tree. | 10 to 20   | C2     |
| 692 | Sitka Spruce<br><i>Picea sitchensis</i>       | 20         | 0.35     | 1             | 1.5               | 1.5 | 1.5 | 1.5 | 18.0          | 4.20        | Early-mature | Poor      | Very small remaining live crown.   | -                       | 5 to 15    | C1     |

## Appendix 3

## Tree Survey Schedule of Trees at Carronn Terrace, Stonehaven

| Tag | Species                                | Height (m) | Diam (m) | Stem Br <1.5m | Crown Spreads (m) |     |     |     | Height CC (m) | RPA Rad (m) | Age Class    | Phys Cond | Comments   | Recommendations  | Years Left | BS Cat |
|-----|--|------------|----------|---------------|-------------------|-----|-----|-----|---------------|-------------|--------------|-----------|--|------------------|------------|--------|
| 693 | Sycamore<br><i>Acer pseudoplatanus</i> | 16         | 0.30     | 1             | 1.0               | 3.0 | 2.0 | 2.5 | 2.0           | 3.60        | Semi-mature  | Fair      | Located at edge of burn - gravel/cobbles. Generally good form and partially restricted crown.          | -                | 10 to 20   | C1     |
| 694 | Elm<br><i>Ulmus glabra</i>             | 19         | 0.40     | 1             | 4.0               | 1.0 | 3.0 | 4.0 | 2.0           | 4.80        | Early-mature | Fair      | Located at edge of burn with restricted rooting. Crown bias, towards garden.                           | Monitor.         | 10 to 30   | B2     |
| 695 | Elm<br><i>Ulmus glabra</i>             | 18         | 0.35     | 1             | 3.0               | 2.0 | 4.0 | 2.0 | 2.0           | 4.20        | Early-mature | Fair      | Located 1.5m from burn. Tree of generally good form; 1-sided crown.                                    | -                | 20 to 30   | B1     |
| 696 | Elm<br><i>Ulmus glabra</i>             | 16         | 0.30     | 1             | 1.5               | 3.0 | 2.0 | 2.0 | 2.0           | 3.60        | Semi-mature  | Fair      | Erect tree of generally good form; located 1.5m from burn.   | -                | 20 to 30   | B1     |
| 697 | Elm<br><i>Ulmus glabra</i>             | 19         | 0.90     | 2             | 4.0               | 2.0 | 2.0 | 2.0 | 3.0           | 9.00        | Early-mature | Fair-poor | 2 upright stems growing from large decaying stump - unstable. North stem with lean towards garage.     | Fell both stems. | <10        | R      |
| 698 | Elm<br><i>Ulmus glabra</i>             | 19         | 0.36     | 1             | 4.0               | 2.0 | 2.0 | 2.0 | 2.0           | 4.32        | Early-mature | Fair-poor | Generally good form with correcting lean West.   | -                | 10 to 30   | B2     |
| 699 | Ash<br><i>Fraxinus excelsior</i>       | 28         | 0.37     | 1             | 3.0               | 1.5 | 2.5 | 2.5 | 7.0           | 4.44        | Early-mature | Fair      | Damp rooting zone. Erect tree at North edge of stand.  | -                | 10 to 30   | B2     |
| 700 | Ash<br><i>Fraxinus excelsior</i>       | 26         | 0.28     | 1             | 4.0               | 2.0 | 1.5 | 1.5 | 10.0          | 3.36        | Early-mature | Fair      | Very slender, dawn tree with high crown, at North edge of stand.                                       | -                | 10 to 30   | B2     |
| 701 | Ash<br><i>Fraxinus excelsior</i>       | 26         | 0.36     | 1             | 3.0               | 1.5 | 1.0 | 3.0 | 15.0          | 4.32        | Early-mature | Fair      | Slender tree located by path (in Dunnottar Woodland). Erect, slender, co-dominant stems arise from 6m. | -                | 10 to 30   | B2     |
| 702 | Ash<br><i>Fraxinus excelsior</i>       | 25         | 0.36     | 1             | 1.5               | 3.0 | 4.0 | 3.0 | 2.0           | 4.32        | Early-mature | Good      | Located 2m North of path. Genrally good form; minor dead wood (<50mm).                                 | -                | 20 to 40   | B1,2   |
| 703 | Ash<br><i>Fraxinus excelsior</i>       | 25         | 0.40     | 1             | 4.0               | 1.0 | 3.0 | 4.0 | 4.0           | 4.80        | Mature       | Fair      | Edge tree with crown bias, North. Small diameter dead wood. Minor past drought stress.                 | -                | 20 to 40   | B1,2   |
| 704 | Beech<br><i>Fagus sylvatica</i>        | 16         | 0.38     | 1             | 2.0               | 2.0 | 2.0 | 4.0 | 2.0           | 4.56        | Early-mature | Fair      | Tree of moderate form; crown bias, West towards garden. Located 2.5m from burn.                        | -                | 10 to 20   | C1,2   |
| 705 | Ash<br><i>Fraxinus excelsior</i>       | 9          | 0.25     | 1             | 2.0               | 2.0 | 2.0 | 7.0 | 1.0           | 3.00        | Semi-mature  | Fair-poor | Suppressed, with extended lean over burn.  | Fell             | <10        | R      |
| 706 | Sycamore<br><i>Acer pseudoplatanus</i> | 22         | 0.30     | 1             | 1.5               | 1.5 | 1.5 | 2.5 | 6.0           | 3.60        | Early-mature | Fair      | Slender, drawn tree near burn.   | -                | 20 to 30   | B1     |
| 707 | Sycamore<br><i>Acer pseudoplatanus</i> | 22         | 0.40     | 1             | 1.0               | 5.0 | 2.0 | 2.0 | 10.0          | 4.80        | Early-mature | Good      | Clean stem. Drawn, upright crown: good plantation tree of generally good form.                         | -                | 30 to 40   | A2     |

## Appendix 3

## Tree Survey Schedule of Trees at Carronn Terrace, Stonehaven

| Tag     | Species                                | Height (m) | Diam (m) | Stem Br <1.5m | Crown Spreads (m) |     |     |     | Height CC (m) | RPA Rad (m) | Age Class    | Phys Cond | Comments   | Recommendations | Years Left | BS Cat |
|---------|--|------------|----------|---------------|-------------------|-----|-----|-----|---------------|-------------|--------------|-----------|--|-----------------|------------|--------|
| 708     | Sycamore<br><i>Acer pseudoplatanus</i> | 20         | 0.50     | 1             | 3.0               | 2.0 | 2.0 | 2.0 | 10.0          | 6.00        | Early-mature | Good      | Tree of generally good form with upright crown.  | -               | 30 to 40   | A2     |
| Group A | Ash<br><i>Fraxinus excelsior</i>       | 15         | 0.25     | 1             | 4.0               | 2.0 | 2.0 | 2.0 | 2.0           | 3.00        | Semi-mature  | Fair      | Row of slender, drawn Ash (parallel to burn) with crowns weighted towards burn. Closely spaced, with stand of Beech higher up banking.         | -               | 10 to 30   | C1,2   |
| Group B | Beech<br><i>Fagus sylvatica</i>        | 19         | 0.27     | 1             | 1.5               | 1.5 | 1.5 | 2.0 | 6.0           | 3.24        | Semi-mature  | Fair      | Trees planted at close spacing - 1m to 1.5m centres - on steep banking. Drawn slender trees (diameter range: 0.20 to 0.35m). 50 trees, approx. | -               | 20 to 40   | B2     |

C S S: Crown spread to south

Ht CC Height of crown clearance

RPA radius: radius of Root Protection Area

Phys cond: Physiological condition

Prel. Man. Res.: Preliminary management recommendations

Cat Grading: Category grading as per B.S. 5837: 2005.



## Appendix 4: Tree Survey and Constraints Plan (plan 1)



KEY

Tree Categories

Canopy spreads and tree number have been plotted in different colours according to the 'Retention Category' assigned to the tree. (see categories below)

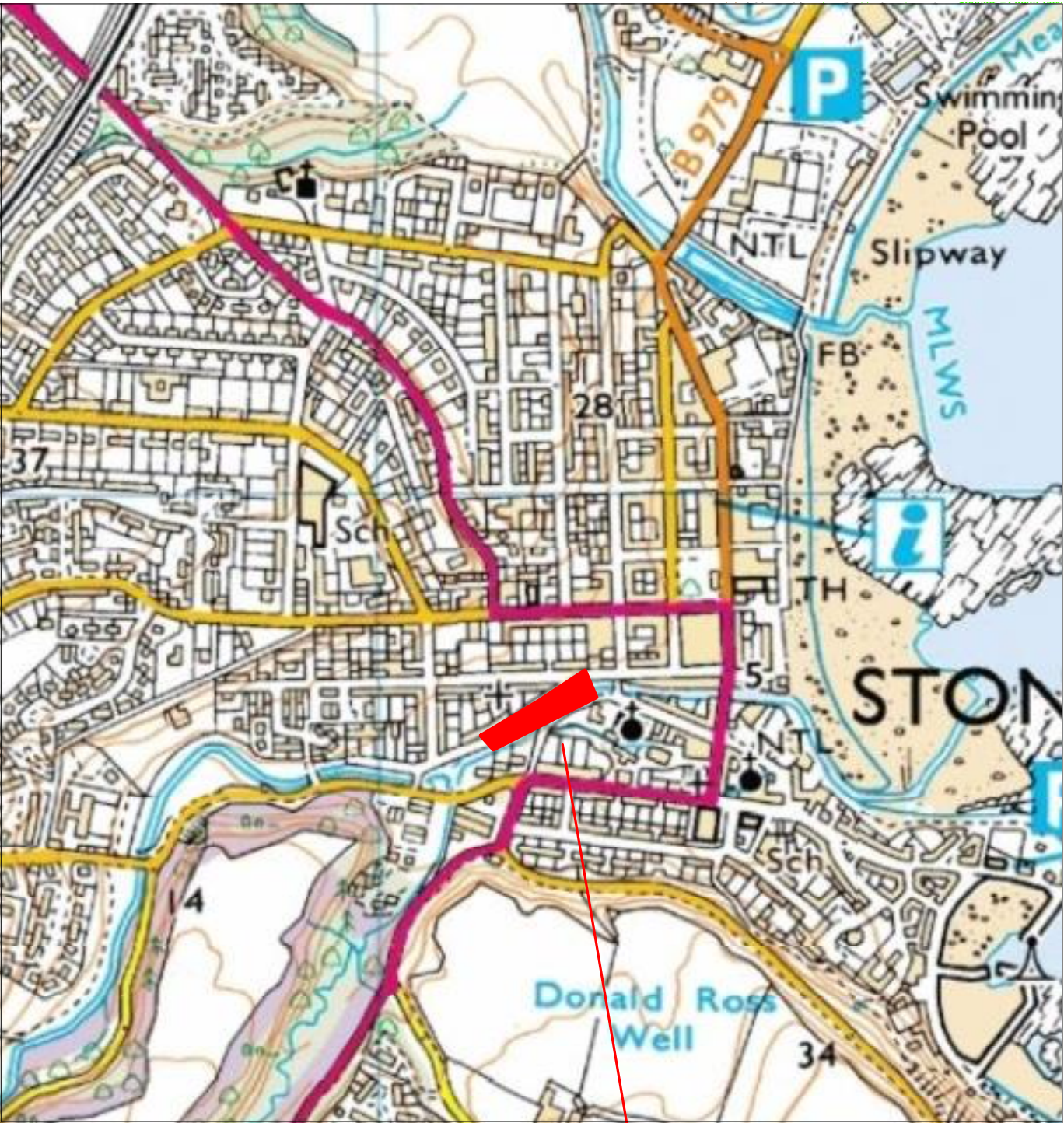
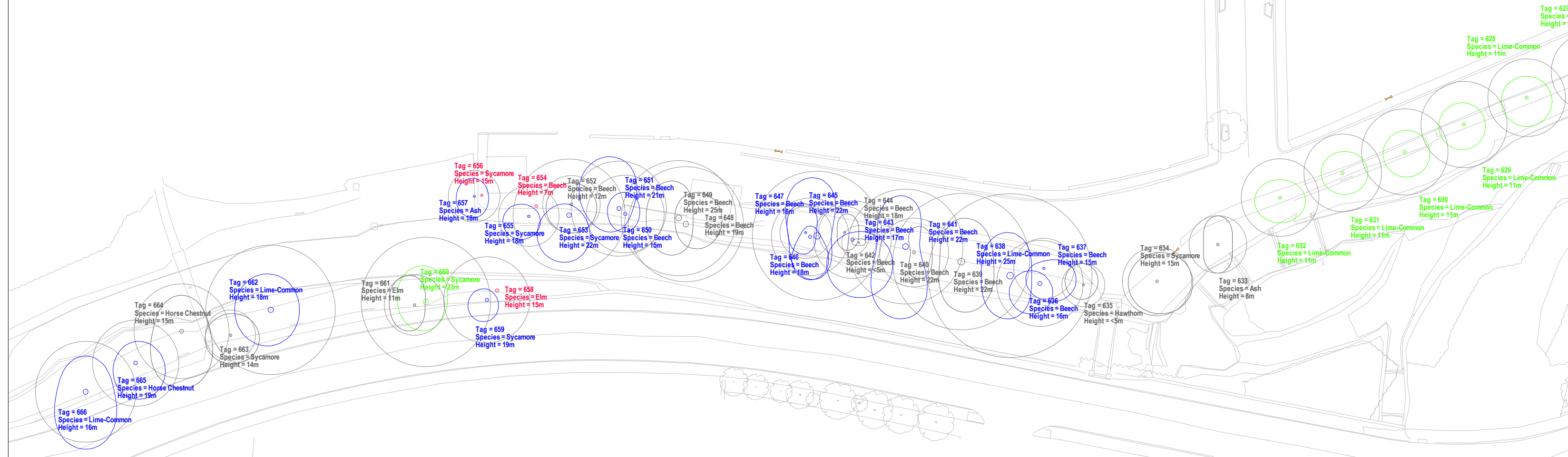
- Tree Category A (Green) - (BS 5837-2005)
- Tree Category B (Blue)
- Tree Category C (Grey)
- Tree Category R (Red)

Root Protection Areas (RPA's)

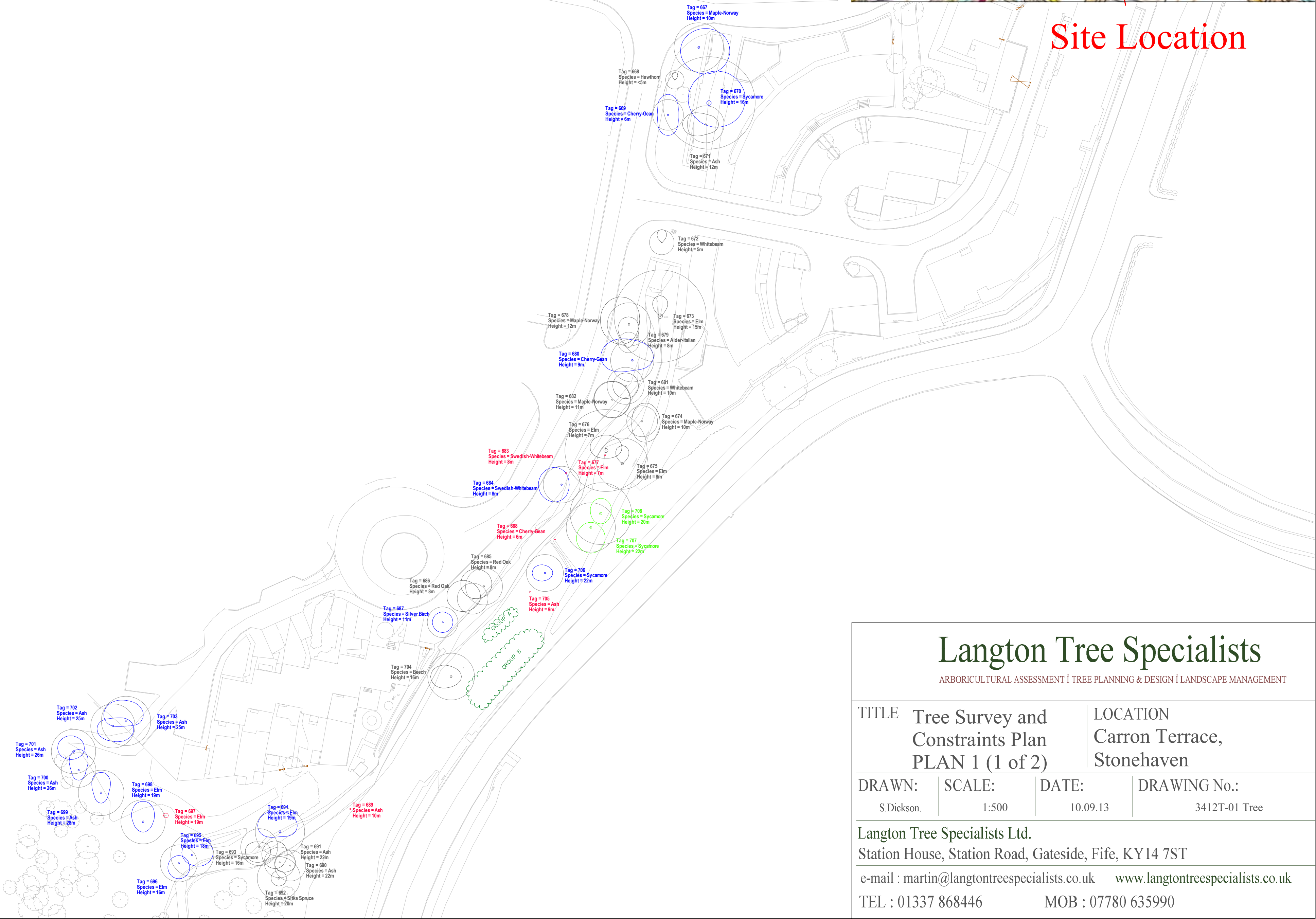
RPA's are indicated by a black circle centred on the corresponding tree



RPA's



Site Location



Langton Tree Specialists

ARBORICULTURAL ASSESSMENT | TREE PLANNING & DESIGN | LANDSCAPE MANAGEMENT

|                                  |        |                            |               |
|----------------------------------|--------|----------------------------|---------------|
| TITLE                            |        | LOCATION                   |               |
| Tree Survey and Constraints Plan |        | Carron Terrace, Stonehaven |               |
| PLAN 1 (1 of 2)                  |        |                            |               |
| DRAWN:                           | SCALE: | DATE:                      | DRAWING No.:  |
| S.Dickson.                       | 1:500  | 10.09.13                   | 3412T-01 Tree |

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KEY

Tree Categories

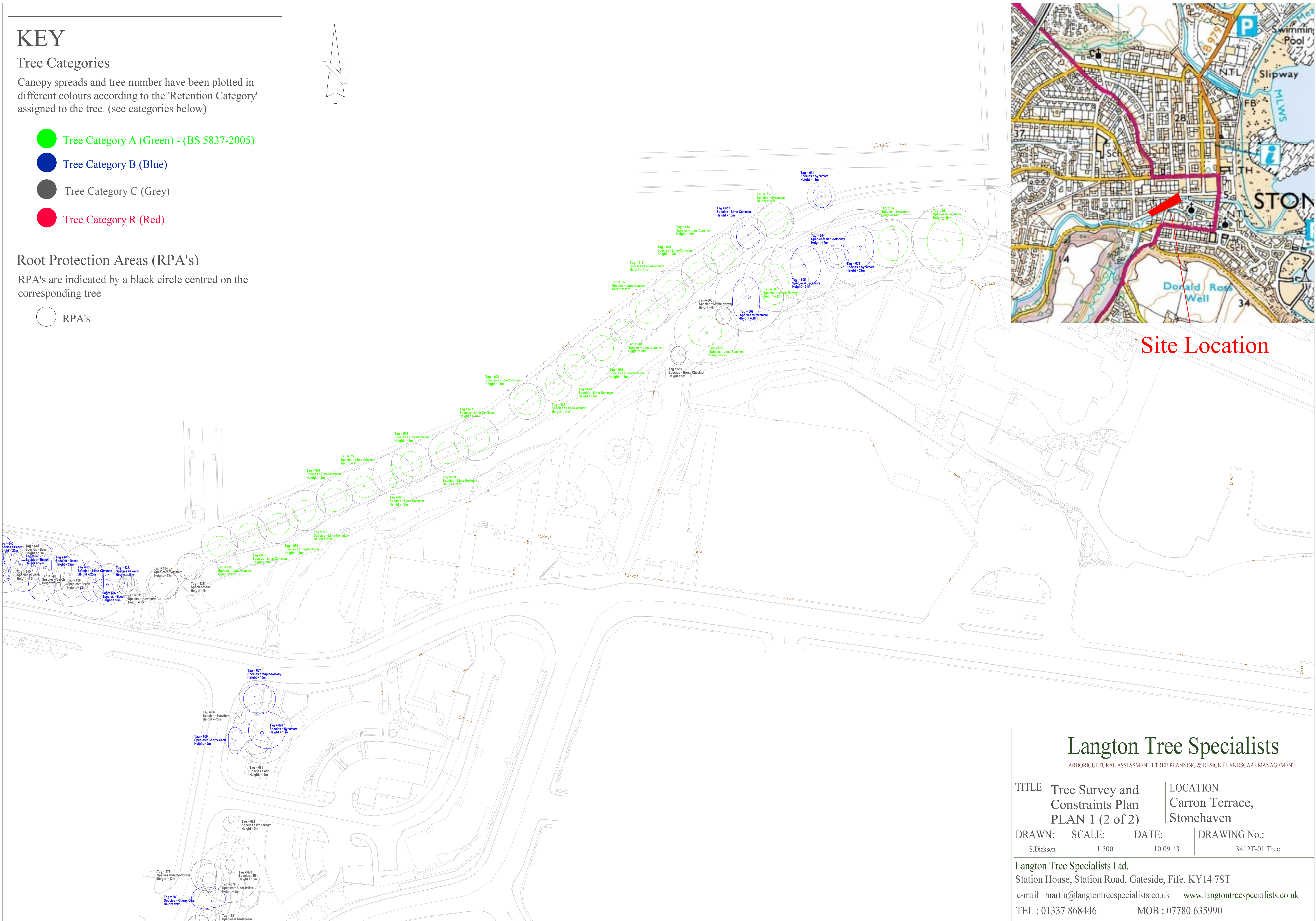
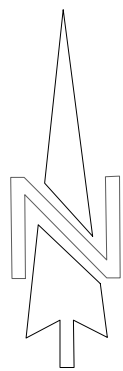
Canopy spreads and tree number have been plotted in different colours according to the 'Retention Category' assigned to the tree. (see categories below)

- Tree Category A (Green) - (BS 5837-2005)
- Tree Category B (Blue)
- Tree Category C (Grey)
- Tree Category R (Red)

Root Protection Areas (RPA's)

RPA's are indicated by a black circle centred on the corresponding tree

- RPA's



Site Location

Langton Tree Specialists

ARBORICULTURAL ASSESSMENT | TREE PLANNING & DESIGN | LANDSCAPE MANAGEMENT

|                                  |        |                            |               |
|----------------------------------|--------|----------------------------|---------------|
| TITLE                            |        | LOCATION                   |               |
| Tree Survey and Constraints Plan |        | Carron Terrace, Stonehaven |               |
| PLAN 1 (2 of 2)                  |        |                            |               |
| DRAWN:                           | SCALE: | DATE:                      | DRAWING No.:  |
| S.Dickson.                       | 1:500  | 10.09.13                   | 3412T-01 Tree |

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