Ben Bailey Homes

Buxton Fire Station, Compton Grove, Buxton

Arboricultural Assessment

28th February 2011

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1.0 INTRODUCTION

1.1 This report has been prepared by FPCR Environment and Design Limited on behalf of Ben Bailey Homes to present the findings of a survey of mature trees on and directly adjacent to Buxton Fire Station, Compton Grove, Buxton, Derbyshire (hereafter referred to as 'the site'). The site is centered on the Ordnance Survey Grid Reference SK 057 726 and is shown as Figure 1. The survey was carried out on the 28th February 2011.

1.2 The purpose of the report is to provide information to High Peak Borough Council following their consultation response to the recent submission of a planning application to develop the site for residential use. The report has presented an assessment of the arboricultural value of the trees based on their current physical condition and quality in accordance with the guidance set out in *BS 5837 Trees in Relation to Construction (2005) – Recommendations,* which will help inform the layout after having made an assessment any significant impacts and conflicts arising from the current proposals. To fully assess the impact of the proposals on trees, the report has included all major trees present within the site and those influencing the site by virtue of their position close to the boundaries.

1.3 It is understood that a number of trees positioned outside the sites southern boundary are included within Tree Preservation Orders.

1.4 Trees, tree groups and woodlands have been considered following evaluation into one of four categories (R, A, B & C) based on tree quality as outlined in *British Standard 5837 (2005).* The categorisation of trees gives an indication of the trees importance in relation to the site and the local landscape as well as their current arboricultural quality. This allows for informed decisions to be made concerning which trees could be removed or retained in the context of any development proposals. For a tree to qualify under any given category it should fall within the scope of that category's definition. In addition to the categories A, B & C which collectively deal with any trees that would be material considerations in the development process, three sub-categories are applied which reflect arboricultural, landscape and cultural values respectively. Category R trees are those specimens which on arboricultural grounds, due to their poor physiological or structural condition, would be lost in the short-term and therefore would not usually considered in the planning process.

1.5 The assessment site, measuring 0.7ha, currently comprises an operational fire station along with training tower, several out buildings, grassed expanses, small shrub borders and areas of hard standing for car parking and access purposes. The entrance to the station turns off Compton Grove and the site is surrounded on the western, eastern and northern boundaries by residential areas. The grounds of a junior school lie to the south. The boundary of the site with the school is separated by a small wooded strip of mature broadleaved trees.

1.6 The surveyed tree cover is principally deciduous and includes mostly mature trees. There is a limited number of trees within the curtilage of the site although there are a number of specimens located around the boundaries either within the grounds of the abovementioned school or within private gardens which would have as much importance in this assessment as those directly within the site, due to their influence on the site from root and crown encroachment. Species found include common beech *Fagus sylvatica,* elm *Ulmus spp.,* cherry *Prunus spp.,* common ash *Fraxinus excelsior* and goat willow *Salix caprea* amongst a few others.

1.7 Following consultation with the Local Planning Authority, High Peak Borough Council, it was concluded that no trees within or close to the development site boundaries are the subjects of Tree Preservation Orders (TPOs) and therefore the trees subjects of this report are not affected by any statutory constraints in respect of TPOs. There is however a Conservation Area that abuts the north western boundary, entitled Buxton – College Conservation Area which would affect a small number of trees along this boundary. The trees concerned are all positioned outside the site boundary.

1.8 Proposals are to demolish the fire station in order to facilitate the space for a residential development utilising the existing access which will extend into a single spine road. It is being proposed the site accommodates 21 dwellings with associated car parking and gardens.

1.9 The report comprises of the following: Chapter 1 provides an introduction to the assessment work, its purpose and background details. Chapter 2 describes the methodology to which the tree assessment has been undertaken. Chapter 3 presents a written description of the results of the data collected during field work discussing any particular trees of note and thereby providing a guide to establishing any specimens that are worthy of retention. Chapter 4 evaluates the findings in respect of the development proposals as an **Arboricultural Implications Assessment (AIA)** and also provides the principal recommendations for tree protection measures to be considered and any 'tree friendly' construction techniques, where it may be required. Chapter 5 presents an indication of the tree protection measures to be required during construction phases in the form of an **Arboricultural Method Statement (AMS),** produced in accordance with guidance in *British Standard 5837 (2005) – Trees in Relation to Construction – recommendations,* Appendix A presents a summary table of the tree survey data as collected from a site visit.

2.0 METHODOLOGY

2.1 Trees have been broadly assessed based on guidance set out within the *British Standard BS 5837: (2005) Trees in Relation to Construction – Recommendations.* This standard provides recommendations and guidance on the principles to be applied to achieve successful integration of development with trees, shrubs and hedgerows. Where development (including demolition) is to occur, the standard provides guidance on the approach needed to decide which trees are appropriate for retention, on the means for protecting these trees during the development (including demolition and construction work) and on the means of incorporating trees into the developed landscape.

2.2 Trees have been divided into one of four categories (based on the cascade chart for tree quality assessment within the British Standard). These are classed as A, B, C & R (Section 4.3 of BS 5837). This gives an indication as to the tree's importance in relation to the site and the local landscape and, also, the value and quality of the existing trees on site. This assists informal decisions concerning which trees should be removed or retained should development occur. For a tree to qualify under any given category it should fall within the scope of that category's definition (see below). Categories A, B & C cover trees that should be a material consideration in the development process, each with three further sub-categories (i, ii, iii) which are intended to reflect arboricultural, landscape and cultural (nature conservation) values.

Category R trees are those which would be lost in the short term for reasons connected with their physiology or structural condition. They are for this reason not considered in the planning process. In assigning trees to the A, B or C categories the presence of any serious disease or tree – related hazards are taken into account. If the disease is considered fatal and / or irremediable, or likely to require sanitation for the protection of other trees it may be categorised as R, even if they are otherwise of considerable value.

2.3 ***Category (A) – (Light Green):*** are trees whose retention is most desirable and are of high quality and value. These trees are considered to be in such a condition as to be able to make a lasting contribution (a minimum of 40 years) and may comprise:

(i) Trees which are particularly good examples of their species especially rare or unusual, or essential components of groups or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue);

(ii) Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups);

(iii) Trees or groups or woodlands of significant conservation, historical, commemorative or other value (eg. Veteran or wood-pasture trees).

2.4 ***Category (B) – (Blue):*** are trees whose retention is considered desirable and are of moderate quality and value. These trees are considered to be in such a condition as to make a significant contribution (a minimum of 20 years) and may comprise:

(i) Trees that might be included in the high category but because of their numbers or slightly impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage), are downgraded in favour of the best individuals;

(ii) Trees present in numbers such that they form distinct landscape features and attract a higher collective rating than they would as individuals. Individually these trees are not essential components of formal or semi-formal arboricultural features, or trees situated mainly internally to the site and have little visual impact beyond the site;

(iii) Trees with clearly identifiable conservation or other cultural benefits.

2.5 ***Category (C) – (Grey)*****:** are trees that could be retained and are considered to be of low quality and value. These trees are in an adequate condition to remain until new planting could be established (a minimum of ten years) or are young trees with a stem diameter below 50mm and may comprise:

(i) Trees not qualifying in higher categories;

(ii) Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value and or trees offering low or only temporary screening benefit;

(iii) Trees with very limited conservation or other cultural benefits.

2.6 ***Category (R) – (Dark Red)*****:** Trees for removal are those trees in such a condition that any existing value would be lost within 10 years and which should in the current context be removed for reasons of sound arboricultural management. Trees within this category are:

(i) Trees that have a serious irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category R trees;

(ii) Trees that are dead or are showing signs of significant, immediate or irreversible overall decline;

(iii) Trees infected with pathogens of significance to the health and or/safety of other trees nearby trees or very low quality trees suppressing adjacent trees of better quality.

2.7 In the tree schedule (Appendix A) species has been recorded in both common and Latin names. Tree height has been estimated in metres and stem diameter measured at 1.5 metres above ground level (recorded in millimetres). Crown spread has been measured in metres and given as a radial spread from the stem.

Crown spreads have been measured to the point of greatest spread in most cases unless a crown is clearly asymmentric, in which case measurements have been recorded as radial distance from the stem in one or more of the corresponding compass points, N, S, E or W.

2.8 In the assessment particular consideration has been given to the following when considering the appropriate British Standard Category and Sub-Category allocation:

(a) The health, vigour and condition of each tree;

(b) The presence of any structural defects in each tree and its remaining contribution in years (i.e. future life expectancy);

(c) The size and form of each tree and its suitability within the context of a proposed development for residential land use;

(d) The location of each tree relative to existing site features, e.g. its value as a screen or as a skyline feature.

2.9 Age class is assessed according to the age class categories referred to in BS 5837.

YNG; Young trees up to five years of age.

SM: Semi-mature, trees less than 1/3 life expectancy.

EM: Early mature, trees 1/3 – 2/3 life expectancy.

M: Mature trees over 2/3 life expectancy.

OM: Over mature – declining or moribund trees of low vigor.

V: – Veteran status - Veteran Characteristics have been noted where a tree possesses certain attributes relating to veteran trees.

2.10 The overall condition of the tree, or group of trees, has been referred to as one of the following. A summary has been noted in the Tree Schedule and discussed in the Report.

G **Good**: A sound tree/trees needing little if any attention.

F **Fair**: A tree/trees with minor but rectifiable defects or in the early stages of stress, from which it may recover.

P **Poor**: A tree/trees with major structural and physiological defects or stressed such that it would be very expensive and inappropriate to retain.

D **Dead**: A tree/trees no longer alive. However, this could also apply to those trees that are dying and will be unlikely to recover, or have become dangerous.

2.11 Major defects or diseases and relevant observations have also been recorded under Structural Condition. The assessment for structural condition has included inspection of the following defects:

- The presence of fungal fruiting bodies around the base of the tree or on the stem, as they could possibly indicate the presence of possible internal decay.
- Soil cracks and any heaving of the soil around the base
- Any abrupt bends in branches and limbs resulting from past pruning,
- Tight or weak 'V' shaped forks and co-dominant stems
- Hazard beam formations and other such biomechanical related defects (as described by Claus Mattheck, Body Language of Trees HMSO Research for Amenity Trees No. 4 1994)
- Cavities as a result of limb losses or past pruning
- Broken branches
- Storm damage
- Canker formations
- Loose bark
- Damage to roots
- Basal, stem or branch / limb cavities
- Crown die-back
- Abnormal foliage size and colour
- Any changes to the timing of normal leaf flush and leaf fall patterns
- Other pathological diseases affecting any part of the tree

2.12 Major defects or diseases and relevant observations have also been recorded. Dead wood has been defined as the following:

Twigs and small branch material	Up to 5cm in diameter
Minor dead wood	5cm to 10cm in diameter
Major dead wood	10cm in diameter and above

Conditions of Tree Survey

2.13 The survey was completed from ground level only and from within the boundary of the site. Aerial inspection of trees was not undertaken at this stage. Investigations as to the internal condition of a tree have not been undertaken, being also beyond the immediate scope of this assessment.

Evaluation of tree condition given within this assessment applies to the date of survey and cannot be assumed to remain unchanged. It may be necessary to review these within 12 months, in accordance with sound arboricultural practice.

Site Plans & Tree Schedules

2.14 The individual positions of trees and groups of trees recorded in the Tree Assessment Report have been shown on the Tree Location, Quality and Constraints Plan, Figure 2 (Drawing no. 4389-A-01). The tree quality element shows the relevant *BS 5837 (2005)* categories for retention considered for each tree and groups of trees. The positions of trees have been based on a topographical plan supplied by the client in .dwg format for the purpose of accurately illustrating the Root Protection Areas (RPAs) required. The RPAs to be required by the individual and groups of trees are indicated by the Tree Constraints element of the above plan and form the basis for a Tree Constraints Plan (TCP).

Tree Constraints and Root Protection Area (RPA)

2.15 Below ground constraints to future development is represented by the area surrounding the tree that contains sufficient rooting volume to ensure survival of the tree, which need protecting in order for the tree to be incorporated into any future scheme, without adverse harm to the tree or structural integrity of buildings. This is referred to as the RPA and is shown as a circle of a given radius, calculated using the formula below. The circle may be modified in shape to maintain a similar total area depending on the presence of surrounding obstacles. Where groups of trees have been assessed, the RPA has been shown based on the maximum sized tree in any one group and so would exceed the RPAs required for many of the individual specimens within the group. A RPA is equivalent to a circle with a radius 12x the stem diameter for single stem trees and 10x the basal diameter for trees with more than one stem arising less than 1.5 meters above ground level.

Table 1: Formula for calculating Root Protection Area

RPA (m^2) = (stem diameter (mm) x 12 / 1000) ^{2} x 3.142
This figure should be capped to 707m^2, that is, equivalent to a circle with a radius of 15m, or a square with approximately 26m sides

Taken from Table 2: Calculating the RPA , contained within *BS 5837 (2005)*.

3.0 RESULTS OF TREE SURVEY

3.1 Following the survey a total of seventeen individual trees and three groups of trees were assessed across the site. Refer to Figure 2 – Tree Location, Quality and Constraints Plan (drawing no. 4635-A-02) and Appendix A – Tree Schedule. Specific details of the individual trees and groups of trees including heights, diameters at breast height (measured at 1.5m), crown spread in metres given as a radial measurement from the stem, age class, comments as to the overall condition at the time of inspection, British Standard category of quality and suitability for retention and the root protection distances have been tabulated in Appendix A – Tree Schedule.

3.2 The British Standard element to the assessment derives from the values assigned principally by the trees contribution to the local area in terms its arboricultural quality, landscape and ecological value. Sub-categories (i), (ii) or (iii), in accordance with *British Standard 5837 (2005) Trees in Relation to Construction* have been applied in each assessment of category A, B and C trees to reflect the arboricultural, landscape and cultural / ecological values respectively.

3.3 T1 was a young whitebeam *Sorbus aria* approximately 8m in height positioned within the frontage of an adjoining residential property in Compton Grove close to the fire station. It possessed a clear stem for a height of 2m before it sub-divide into four main lead stems at the bole. The stem was heavily mossed however there were generally no obvious defects. Overall, T2 would be considered as retention category C (i).

3.4 T2 was a mature common beech *Fagus sylvatica* approximately 6m in height positioned outside the site boundary by approximately 1m, within an adjoining private garden of a property to the west of the site. At the time of survey, the specimen had been recently subjected to severe crown pruning works whereby all the main growth had been reduced to a series of large branch stubs. Very little of the original crown structure remained. Noted to the north west side of T2 was a mature sycamore with a DBH est. as 500mm. The stems of T2 and the adjacent sycamore were approximately 1m apart. Overall, due to the recent works, T2 would be downgraded to retention category C (i).

3.5 T3 and T4 were a mature flowering cherry *Prunus avium 'Plena´* and a young sycamore *Acer pseudoplatanus.* The stems were also located outside the site boundary by approximately 1m within the grounds of the same adjoining private garden. T3, being the dominant specimen of the two was approximately 14m in height. T4 was a self set example currently only 8m in height. T3 comprised either of two separate stems, therefore being two trees, or was of twin-stemmed from ground level. This was not possible to determine during the survey due to raised ground levels around the base (consisting of composted garden waste). The specimen was typically characteristic in growth habit thus presenting an open and spreading form. T4, due to growing directly beneath T3 had subsequently developed a significant leaning stem to the south direction as it reached for light and space in which to grow. Also due to the lean, the stem of the tree had begun to envelop to metal railing of the boundary. The stem bifurcated at 2m above ground level into two lead stems with the fork union being open with no evidence of included bark. Both trees would be considered as retention category C (i).

3.6 T5 was a mature silver birch *Betula pendula* approximately 11m in height located within the grounds of an adjoining private garden. The ground levels directly around the base of the stem had been raised and its stem leant towards the north. The lower part of stem was distinctively "s-shaped" but had corrected to upright form beyond this height. The main stem was bifurcated at approximately 3m above ground level and displayed an open formation with no signs of included bark. The crown had been pruned in the past to create good clearance for the house however due to the presence of the property the crown of the tree had developed a slightly one-sided form to the north. The stem of the specimen was set back from a low level boundary wall by approximately 1.5m. Overall, T5 would be considered as retention category C (i).

3.7 T6 was a mature common beech approximately 16m in height positioned outside the site within a private garden adjoining the south western boundary. The specimen housed a prominent side limb on the north east side (into the site) which sub-divided from the main stem at approximately 3m above ground level. The limb housed a considerable quantity of branch structure and thus made up a significant part of the overall crown on the north east side. The crown development generally was one sided to the north east (into the site) and stem leant slightly in this direction. A number of lower branches had been removed in the past to create a high crown despite the presence of the aforementioned side limb. Ground levels at the base of the stem were approximately 1.5m higher than ground levels in the site due to a change in levels in this part of the site. The garden was contained by a stone retaining wall approximately 2m in height. Overall, T6 would be considered as retention category B (i).

3.8 T7 and T8 were a mature sycamore and an elm *Ulmus spp.* respectively, being approximately 16m in height, and were positioned to the west side of T6 within the same private garden. Both specimens were tall and drawn in form due to being within a closely spaced grouping of trees and showed no obvious defects, although only assessed at a distance from within the site. Overall, T7 and T8 would be considered as retention category B (i).

3.9 T9 was a mature common beech approximately 14m in height also located outside the site boundary within the adjacent private garden. As above, the base of T9 was also at a higher ground level as that of the site levels. It was a single straight stemmed specimen that was free of lateral branches until approximately 7m above ground level. The upper crown branches showed misshapen form where apical dominance had been lost in the past. Overall, T9 would be considered as retention category B (i).

3.10 T10 was an early mature elm of approximately 7m in height positioned within the site directly adjacent to a low level boundary wall. The stem was heavily leaning the east approximately 40 degrees off vertical and to the west side of the stem there was a prominent surface root heading underneath the boundary wall. Overall, T10 would be considered as retention category C (i).

3.11 T11 was a mature Norway maple *Acer platanoides* approximately 18m in height located outside the site boundary less than 1m away from the low level boundary wall and within the grounds of the school. The crown development was significantly one-sided to the north east and there was noted to have been some minor past pruning works to branches in the crown that overhang into the site in order to raise level of the growth. The crown supported a small quantity of minor dead wood but otherwise showed no other obvious defects. Overall, T11 would be considered retention category B (i)

3.12 T12 was a mature common ash of approximately 10m in height located within the site close to the boundary wall. The stem was heavily leaning to the north east direction and comprises a main stem and smaller side stem on the south east side which sub-divided from ground level. There was a prominent surface root on the north side and the crown was very low hanging. There was substantial crown extension to the north east direction over the site. Overall, T12 would be considered as retention category C (i).

3.13 T13 was a mature common beech located within the grounds of the school and was approximately 18m in height. It formed part of the mature tree cover within the grounds of the school that stretched along most of the south western boundary of the site.

The specimen has been included within the report due to its crown extension over the site which would constitute a constraint to the development. The stem leant to the east and was set back approximately 4m from the boundary wall. Overall, T13 would be considered as retention category B (i).

3.14 T14 was a free standing mature beech (a previous ecological assessment of the site undertaken during the summer 2010 noted the variety as being copper). It was approximately 11m in height and located within the grass area to the south east side of the current fire station. The stem was clear of branches for approximately 1.5m above ground level before it sub-divided into three main lead stems from a distinctive bole. The crown form was evenly balanced, low and spreading. There had been some past pruning of lower secondary lateral branches to raise the level of the crown but overall there were no obvious defects. T14 would be considered as retention category A (i).

3.15 T15 was a further beech, early mature in age and approximately 6m in height. It was positioned to the north side of T14. Noted were areas of basal damage to the stem caused by mowers whereby heartwood had become exposed. The form was densely branched and multiple leadered from a 2m clear stem with no clear apical dominance. Although it showed no other major defects, overall T15 would be considered as retention category C (i)

3.16 T16 was a mature willow *Salix spp.* approximately 7m in height positioned within a small shrub bed at the frontage of the fire station. It was triple stemmed from ground level with signs of included bark within the tightly formed unions. The crown displayed several crossing and rubbing branches yet overall the crown was evenly balanced. Overall, T16 would be considered as retention category C (i).

3.17 T17 was a stump of goat willow *Salix caprea.* The stump was actively producing re-growth but would only be considered as retention category C (i).

Groups of Trees

3.18 TG1 was a small group of mixed species including rowan *Sorbus aucuparia,* silver birch and cherry of young ages, positioned along the frontage of a private property in Compton Grove close to the fire station. Possibly originally being intended as a hedge, all the specimens had been "topped" of growth at approximately 2-3m above the ground which had subsequently resulted in re-generated branch growth. Stems were spaced at approximately 1m intervals. Overall TG1 would be considered as retention category C (ii).

3.19 TG2 was a group of five mature trees including Norway maple, common ash, common beech and elm. These large specimens were located outside the site boundary within the grounds of the adjacent school and formed part of the belt of trees along the south western boundary of the site. Due to the presence of further trees to their south side and their influence on each other, most stems tended to lean towards the site in a northerly direction. Overall, TG2 would be considered as retention category B (ii).

3.20 TG3 was a pair of early mature sycamore up to 8m in height positioned outside the sites western boundary, yet directly on the boundary, within the adjoining garden. One specimen was twin-stemmed from 0.5m and displayed an open fork, the other specimen being single stemmed,

There was evidence of minor past pruning of lower branches yet overall both trees were typically characteristic for the species with no obvious defects. Overall, TG3 would be considered as retention category C (ii).

4.0 ARBORICULTURAL IMPLICATIONS ASSESSMENT - DISCUSSION AND RECOMMENDATIONS

4.1 The following section presents a summary of the tree survey in terms of the collective results and offers a discussion of particular trees and groups that were recorded in the context of the proposed development. Considerations by way of the arboricultural implications brought about as the result of implementation of the current development layout are also included in this section of the report.

Summary

4.2 The trees of the assessment were early mature and mature, comprising solely of deciduous species such as common beech *Fagus sylvatica,* common ash *Fraxinus excelsior,* sycamore *Acer pseudoplatanus,* elm *Ulmus spp.,* silver birch *Betula pendula,* norway maple *Acer platanoides* and flowering cherry *Prunus avium 'Plena'.* Overall there were very few trees present within the site although in various positions within close proximity of the site, either directly on the boundary or slightly set back in adjoining gardens, were a number of other trees around the perimeters. Particularly significant were a belt of mature mixed species, broadleaved trees which formed a wooded strip extending across the southern boundary, although outside the site itself within the grounds of the adjoining school and private residential gardens.

4.3 Overall, the quality of trees was good although arboriculturally many of the specimens would be downgraded to retention category C due to possessing either poor forms, impaired conditions or by virtue of being young in age. Typically trees displayed some dead wood although of those trees elevated to category B, overall they were found to be in generally good physical health and condition.

Category R - Remove

4.4 There were no trees considered of this category.

Retention Category C – Low Quality and Value

4.5 Following the assessment ten of the trees and two groups were considered as retention category C (low quality and value), namely T1 - T5, T10, T12, T15 - T17, TG1 and TG3. Category C trees are those which displayed a number of physical defects, and/or were in a poor condition or were young in age meaning their contribution to the area could be compensated for with replacement planting within a relatively short period of time. There would be a strong justification to remove category C specimens if required to facilitate the development proposals and provide replacement tree planting more appropriate to the proposed site use elsewhere within the site.

4.6 In any new development it would generally be encouraged that some category C specimens be retained where possible, providing their retention was suitable within the context of the proposals. The short term retention of such trees would provide an instant level of maturity to a new development but it would need to be appreciated that they would only have a short term benefit,

a maximum of 20 years, in terms of amenity value, and could possibly be retained whilst new replacement landscape planting becomes established. Once any new planting has become fairly established there would be justification to remove them.

Retention Category B – Moderate Quality and Value

4.7 Six of the trees and the remaining group were assessed as being of a suitable condition for consideration as retention category B (moderate quality and value), namely T6 – T9, T11, T13 and TG2. Category B specimens are those which displayed fewer defects than category C trees and appeared in fair or good health at the time of inspection. The individual specimens considered as category B were deemed to be of higher amenity value due to their good condition, remaining life expectancies and contribution to the local area in terms of their amenity.

4.8 Within the British Standard, those trees / tree groups considered as retention category B would be those specimens that clearly demonstrate ability to contribute a minimum of 20 years to the proposed development in terms of health and amenity value and it would therefore be encouraged to retain these specimens, if appropriate, within the context of the proposals.

Retention Category A – High Quality and Value

4.9 There was one specimen, T14, assessed as possessing high enough arboricultural quality and amenity value, with a minimum of 40 years in remaining contribution, to be considered retention category A. This specimen displayed good form and health and would have considerable longevity. Specimens considered as retention category A are carefully assessed for their designation as Category A status. The loss of this category A specimen from the site would be considered as having a negative impact on future visual amenity of the local area and as such its retention and protection is highly desirable.

COMMENTS IN RESPECT OF THE DEVELOPMENT PROPOSALS

4.10 The proposed layout plan entitled Proposed Site Layout, 31st January 2011, showing the housing development and which was submitted for planning has now been carefully appraised for any arboricultural implications to trees that are present both in the site and close to the sites boundaries. The proposed residential development is to accommodate 21 dwellings utilizing the existing access off Compton Grove. The arboricultural implications brought about as the result of implementation of the development layout as shown are set out below.

4.11 To facilitate the current layout only a small number of direct tree losses would occur. Those specimens to be removed would be T16 and T17. Both trees were assessed as retention category C, low quality and value, and therefore from an arboricultural perspective, no particular concern would be raised to their loss from the site.

4.12 The remainder of the trees subjects of this report are to be retained, however from an arboricultural perspective there would be a number of points to consider in respect of their future integration into the new development which would firstly require slight modification to the layout in a couple of instances; some specific design related considerations in order to protect root protection areas; building design and the implementation of targeted tree surgery works.

4.13 Firstly, the current layout potentially presents a conflict between the proposed plot no. 9 and tree T6. T6 is positioned within an adjoining private garden and although it is considered that there would be minimal impact to the root protection area due to the fact that the tree is positioned at a higher ground level to that of the site, there would be an issue arising in terms of the above ground constraint presented by the crown of the specimen. In order to construct the unit closest to T6, it may be difficult to erect scaffolding to the required height and in turn have sufficient room to build upwards as the specimen possesses a low lateral limb over the site. One solution to the above ground constraint would be to address the matter of the overhanging limb through appropriate tree surgery, by either removing the entire limb back to main stem origin, which would require the owner's permission to access the tree to carry out the work; or in part through the removal of secondary lateral branches back to a suitable growth point whilst retaining the balance of the limb itself. The pruning work would result in creating a sufficient amount of crown clearance for working room for construction and the required space to house the new property.

4.14 There is to be a shared garage for plots 1 and 2 which will be in close proximity to trees T3 and T4. Both trees are located outside the site boundary and as their root protection area requirement extends within the site, it will be necessary to consider the ultimate design of proposed garage in relation to the calculated root protection area of T3 in particular, being the larger of the two trees. The long term retention of T4 would not considered essential due to its poor form, although permission to remove this tree at the construction stage would need to be sought from the owner. Should it be found that the footprint of the garage encroaches into the root protection area, firstly it would be recommended that a slight modification to the layout be applied to move the position of the garage from the area of constraint. If this should not be possible, it would be necessary to look at the foundation design of the garage to be "tree friendly" i.e. piled foundations. The crown of the tree was also low hanging and therefore is likely to require pruning to raise the level above the new garden area upon completion of the development.

4.15 Trees long the southern boundary are tall mature specimens and although are outside the site boundary, due to their closeness to the proposed development site, the rear gardens of plots 10 – 14 will be directly facing the trees. Therefore by virtue of the trees position on the south side of the proposed dwellings, could cause problems of shading. At present, the crowns of most specimens also significantly overhang the site and would require tree surgery to address the worst areas. It is well known that the presence of large trees close to residential areas can create problems for occupants especially from fear of tree / branch failure and loss of light. It is appreciated that in the circumstances at the Compton Grove site, there is potential for this to arise and for an increased level of pressure on the trees in the future from the new occupants, although it is thought this could be reduced through intervention of an effective amount of tree surgery which may include crown lifting and lateral branch reductions, at an appropriate to the trees concerned, without detracting from the overall amenity of the group.

4.16 In addition, to manage the effect of light loss in the five properties of plots 10 – 14 it would be a suggestion to consider the design of the houses in respect of their principal windows. By providing larger apertures for those windows facing south, there would be a greater opportunity to light gathering thus reducing the impact of shading.

4.17 T14 was considered a category A specimen and therefore its retention and protection during construction is highly desirable. The current layout shows retention of the tree and for it to be straddled between the rear gardens of plots 16 and 17.

The specimen may require a small amount of tree surgery to raise the level of the crown to successfully integrate it into the new site use, however this should not detract from its overall amenity value.

4.18 To effectively integrate the retained trees and protect them during construction it will be essential to ensure that the prescribed root protection areas for all retained trees can be adequately protected by the erection of the requisite tree protection barriers, whilst allowing sufficient access/construction zone for the implementation of the proposed layout.

4.19 In summary, the development layout proposes retention of all the significant surveyed tree cover and overall is considered satisfactory in respect of tree retentions. The above mentioned issues should be given due consideration prior to final decisions being taken. All those specimens to be retained should hence be adequately safeguarded from any conflicts that may arise, providing the requisite tree protection measures i.e. protective fencing / barriers, are put into place during construction.

Other Design Related Considerations in Respect of Retained Trees

4.20 In addition, when considering layouts in relation to calculated root protection areas for retained trees, an important element of detailed design would be to consider the eventual positioning of any utility services that may be required to supply the new development prior to its installation. Services, where possible, should not encroach upon root protection areas of retained trees. If below-ground services are proposed within or close to the calculated root protection areas, modifications to the alignment of service roots may need to be made to retain, where possible, the full extent of the RPA to minimise adverse effects of the development on tree-health. Consideration may also need to be given to the potential for tree roots of newly planted material to affect / compromise any future services.

4.21 As far as feasible, services near any new trees should be ducted for ease of access / maintenance following construction and where possible should be kept together, to minimise future disturbance to roots. If services are required within the RPA, the extent of this encroachment should be re-assessed at the time and appropriate mitigation taken to ensure the safe incorporation of the trees without potential damage to services from tree roots.

4.22 Additionally in design, account should be taken of the foundation construction of existing and proposed nearby structures where existing and new trees are concerned. Any new planting should not compromise the structural performance of foundations and root barriers or tree planting pits should be considered in the designs.

Arboricultural Method Statements (AMS) and Tree Protection Plan (TPP)

4.23 Once the layout has been finalized and approved, a TPP should be prepared to contain the following:

I. trees selected for retention, numbered and clearly identified on a plan;

II. trees to be removed also clearly identified and numbered;

III. the precise location for erection of protective barriers and any other relevant physical protection, including ground protection to protect the RPA and marked as a construction exclusion zone on the plan;

IV. design details (specifications) for the means of protection, including any necessary facilitation pruning i.e. crown lifting work.

4.24 In order to avoid disturbance to the physical protection forming the construction exclusion zone, once fencing is installed consideration should be made for all construction operations which might need to be completed in the vicinity of trees, including the following.

All of the listed activities have potential to cause long term damage to trees if not carefully managed. It is paramount that the calculated area around trees remains undisturbed, unless 'special circumstances' prevail, whereby specific techniques and methodologies may be required to resolve such conflicts. Section 5 – Tree Protection measures provides further details in respect of tree protection.

- site construction access;
- contractor's car parking;
- phasing of construction works;
- space needed for all foundation excavations and construction works;
- the location and space required for services, including foul and surface water drains, land drains, soakaways, gas, oil, water, electricity, telephone, television or other communication cables;
- all changes in ground level, including the location of retaining walls, steps and making adequate allowance for foundations of such walls and back fillings;
- space for site huts, temporary latrines (including drainage) and other structures;
- the type and extent of landscape works which will be needed within the protected areas and the effects these will have on the root system;
- space for storing (whether temporary or long-term) materials, spoil and fuel and the mixing of cement and concrete;
- the effects of slope on the movement of potentially harmful liquid spillages towards or into protected areas.

Mitigation for Tree Losses

4.25 As part of the development proposals a supporting landscaping scheme should be considered to compensate for the loss of any trees. New tree planting is an integral part of any new development and should support the future site use and improve and enhance the local tree population.

4.26 Native species (for their low maintenance requirements and nature conservation value) and ornamental species (for their contribution to urban design and amenity value), should be planted in the proposed landscape areas and include species selected on the basis of their suitability for the final site use. This should include consideration of ultimate size, canopy spread, height, blossom, autumn leaf colour, etc. Species should be selected to be suitable to the new environment, therefore focusing on species that are considered suitable for restricted spaces i.e. small to medium sized species.

Tree Surgery

4.27 All retained trees should be subjected to sound arboricultural management by means of the following where appropriate: Annual inspections and inspections following major storms by an experienced arborist or tree surgeon to identify any potential public health and safety risks and to agree remedial works as required, Tree surgery including operations such as removal of dead wood for reasons of safety; crown lifting works for access and improvement of overall visual appearance; possible crown reduction works, pollarding, crown thinning and crown balancing works; tree felling; and climbing inspections. It may be required for reasons of safety that certain defects are further investigated to establish the true conditions. All tree surgery should comply with *British Standard 3998 'Recommendations for Tree Work' (1989)*

4.28 The trees subject to this report were inspected from the ground only and therefore where any tree surgery is undertaken a thorough climbing inspection should be undertaken at the same time to determine the precise condition of the crown. Any cavities or areas of decay should be described with reference to its dimensions on the surface, its depth and an estimate of the proportion of the cross-sectional area of the limb / branch or trunk affected and an assessment of the success of compartmentalisation. It is further recommended that no action be taken on the strength of such a report until it has been seen and endorsed by a suitably qualified person. A decision could then be made on the most appropriate course of treatment.

4.29 Depending upon the results of such an inspection it may require the allocation given to the tree / trees in respect of suitability for retention within new development, in accordance with *BS 5837 (2005) 'Trees in Relation to Construction' - Recommendations* to be revised. All tree works undertaken should be carried out by skilled tree surgeons, and it is therefore recommended that quotations for such work be obtained from Arboricultural Association Approved Contractors only, as this is the recognised authority for certification of tree work contractors

4.30 All vegetation and, particularly, woody vegetation proposed for clearance should be removed outside of the bird-breeding season (April – August inclusive) as all birds are protected under the Wildlife and Countryside Act, 1981 (as amended) whilst on the nest. Where this is not possible, vegetation should be checked for the presence of nesting birds prior to removal by an experienced ecologist.

Protection of Trees Close to the Site

4.31 All trees located outside the boundaries of the assessment site yet within close proximity to works should be adequately protected during the course of the development by barriers or ground protection around the calculated RPA. The following section describes tree protection measures in further detail. Any trees which are to be retained and whose RPAs may be affected by the development should be monitored to identify any alterations in quality with time and to assess and undertake any remedial works required as a result.

5.0 ARBORICULTURAL METHOD STATEMENT

5.1 It will be required that retained trees be adequately protected during works. Measures to protect trees should follow the best practice principles set out in *British Standard 5837: Trees in Relation to Construction - Recommendations (2005).* These have been broadly summarised below.

General Information and Recommendations

5.2 All trees retained on site will be protected by barriers and may also include ground protection around the calculated Root Protection Area (RPA) as indicated within the Constraints element of Figure 2 (Drawing number 4635-A-02).

5.3 Fencing will be erected prior to commencement of any construction / demolition activity including the erection of any temporary structures. Once in place fences should not be removed or altered without prior consultation with the arboricultural advisor or Local Authority Tree Officer if required.

5.4 Arrangements should be made for an arboriculturalist to supervise works and tree protection where trees are particularly vulnerable or sited close to access points.

5.5 Pre-development works may be undertaken prior to the installation of fencing only with the agreement of the local planning authority.

5.6 Any trees that are not retained should be felled prior to the erection of protective fencing. Particular attention needs to be given by approved contractors to minimise damage or disturbance to retained specimens. Any trees which need to be felled adjacent to or are present within a continuous canopy of retained trees must be removed with due care. Good industry practice procedures should be followed at all times.

Fencing Specifications

5.7 Fencing should be strong and suitable for the location, type and proximity of construction activity. These must remain rigid and complete throughout the duration of works. Typical fencing specifications are illustrated in Figure 3 and are in accordance with BS: 5837.

5.8 Fencing should comprise a scaffold framework comprising vertical and horizontal sections. Vertical sections should be secured into the ground.

5.9 Weld mesh panels should be wired or clamped to the above framework and diagonal supports perpendicular to the line of fencing attached to prevent the framework from falling inward (towards the protected area).

5.10 For particular areas where construction activity is anticipated to be intense higher fencing may be necessary. It may be appropriate on some sites to use temporary site offices as components of the protection barriers.

Ground protection

5.11 Where it has been agreed, construction access may take place within the RPA if suitable ground protection measures are in place. This may comprise single scaffold boards over a compressible layer, laid onto geo-textile materials, for pedestrian movements. Vehicular movements over the RPA will require the calculation of expected loading and may require the use of proprietary load spreading systems.

Protection outside the exclusion zone

5.12 Once the areas around trees have been protected by the fencing, any works on the remaining site area may be commenced providing activities do not impinge on protected areas. Notices should be placed on fencing to indicate that operations are not permitted within the fenced area.

5.13 Wide or tall loads etc should not come into contact with retained trees. Banksman should supervise transit of vehicles, jibs, booms etc where this is in close proximity to retained trees.

5.14 Oil, bitumen, cement or other material that is potentially injurious to trees should not be stacked or discharged within 10m of a tree bole. No concrete mixing should be done within 10m of a tree. Allowance should be made for the slope of ground to prevent materials running towards the tree.

5.15 No fires will be lit where flames are anticipated to extend to within 5m of tree foliage, branches or trunk, taking into consideration wind direction and size of fire.

5.16 Notice boards, telephone cables or other services should not be attached to any part of a retained tree.

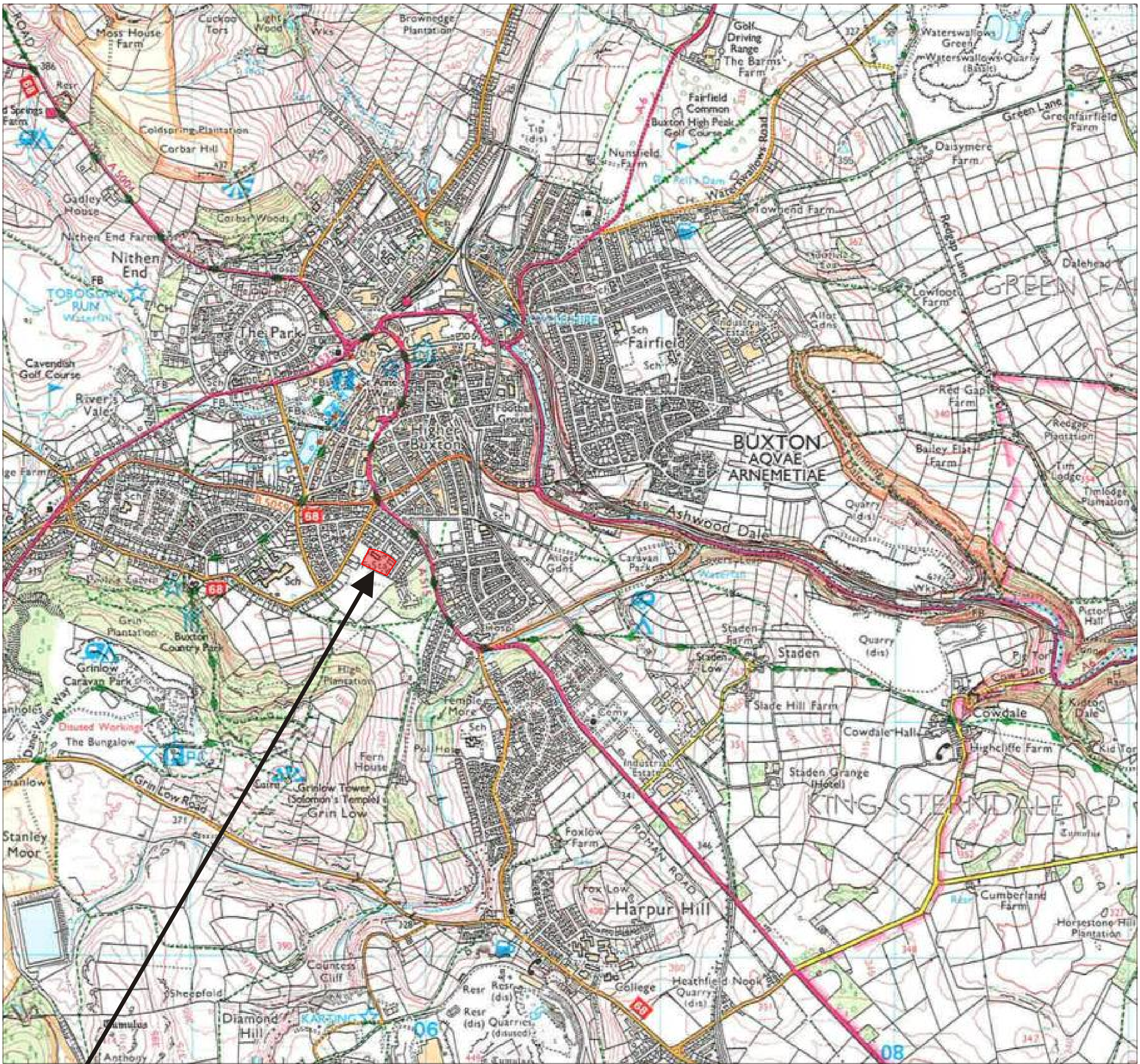
Protection for Aerial Parts of Retained Trees

5.17 Where it is deemed necessary to operate a wide or tall load plant, bearing booms, jibs and counterweights or other such equipment, as part of construction works these could have potential to cause injurious contact with crown material i.e. low branches and limbs, of retained trees within the RPA fencing. It would therefore be advised that appropriate tree surgery be carried out beforehand to remove any obvious problem branches. This is classed as 'Facilitation Pruning', *British Standard 5837 (2005) 9.4.2 and 11.2.1*. Any such pruning should be undertaken in accordance with a specification prepared by an arboriculturalist and be carried out using suitably qualified tree surgeons.

5.18 It is strongly advised that a Pre-Commencement Site Meeting is held with contractors who are responsible for operating machinery, as described above, to firstly highlight the potential for damage occurring to tree crowns and to ensure that extra care is applied when maneuvering machinery during such operations within close proximity to retained trees to avoid any contact.

5.19 In the event of having caused any such branch or limb damage to retained trees during construction works it is strongly recommended that suitable tree surgery be carried out, in accordance with *British Standard 3998 (1989) Recommendations for Tree Work*, to correct the damage, upon completion of development.

5.20 All of the above precautionary measures should be applied to minimise the effect of any damage to long-term tree health and safety.



Assessment Boundary

fpcr

Ben Bailey Homes

Buxton Fire Station
Compton Grove, Buxton

SITE LOCATION PLAN

N

1:25000 @ A4 | DS/NJG | 28.02.2011

Figure 1 **4635-A-01**

J:\4600\4635\Arboriculture\Site Location Plan-Figure 1.cdr

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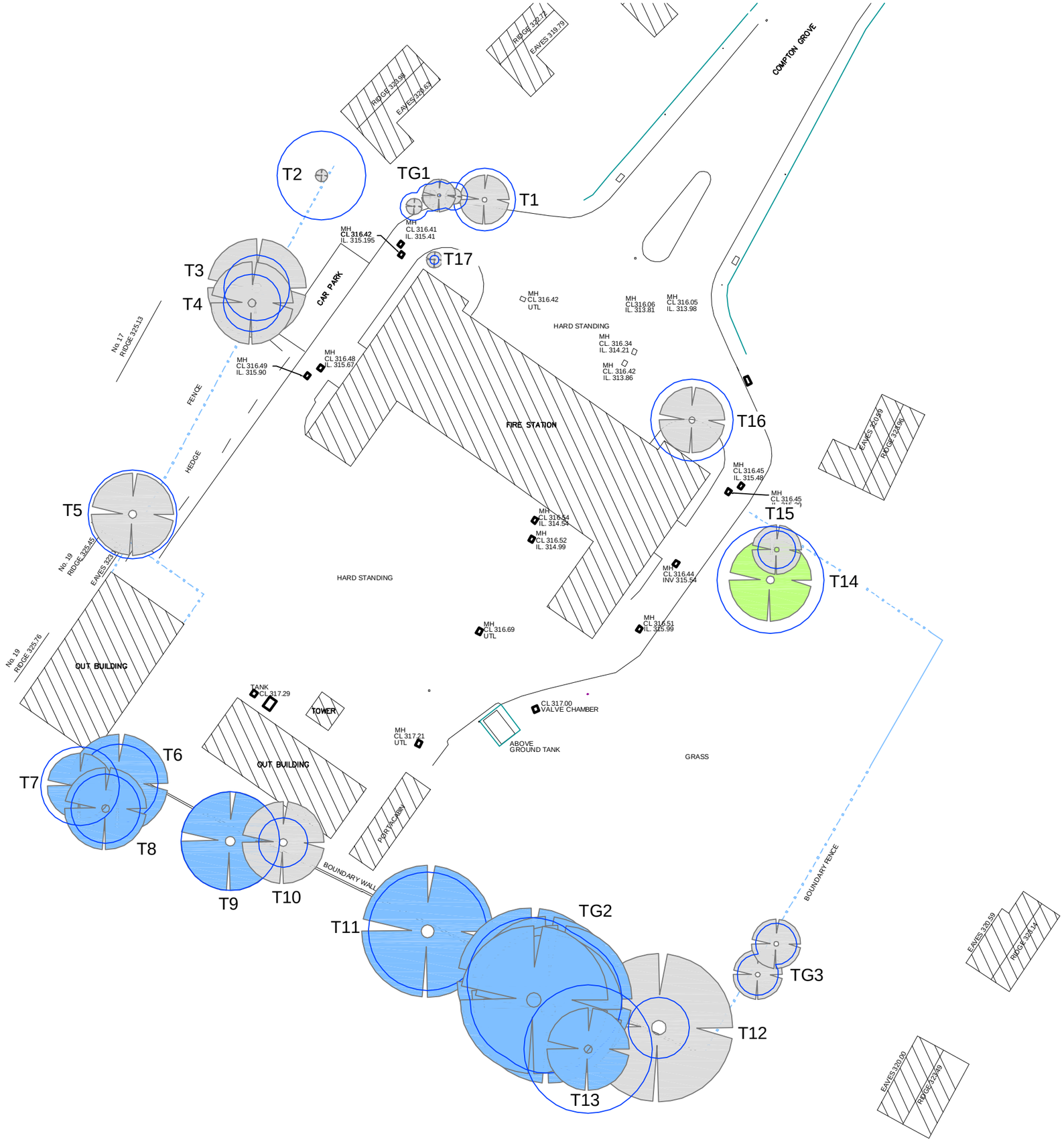

NOTES

All dimensions to be verified on site. Do not scale this drawing. All discrepancies to be clarified with project Arboriculturalist.

KEY

- Retention Category A - High (BS 5837:2005)
- Retention Category B - Moderate (BS 5837:2005)
- Retention Category C - Low (BS 5837:2005)
- Category R - Remove (BS 5837:2005)
- Root Protection Area (Calculated according to BS 5837:2005 formula)
- T1 / TG1 — Tree Number / Tree Group Number

CAVEAT

1. Drawing for PLANNING.
2. Drawing to be read in conjunction with Tree Report and Tree Schedule.
3. Drawing based on digital information supplied by the client in dwg format. The exact position of trees are to be checked and verified on site prior to construction.
4. Crown spreads are illustrative only please refer to tree schedule for measurements.
5. Trees are living organisms that change over time, the condition of all trees illustrated herein, are to be checked and verified by a qualified arboriculturalist or tree surgeon should works commence 12 months after the time of this survey.
6. Please note that no works should be undertaken to any trees illustrated herein without first obtaining the proper authorisation to do so.

rev	date	description	by
-	03.03.11	First issue.	FPCR

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environmental assessment
landscape design
urban design
ecology
architecture
arboriculture

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client
Ben Bailey Homes

project
Buxton Fire Station
Compton Grove, Buxton

drawing title
TREE LOCATION, QUALITY AND CONSTRAINTS PLAN - FIGURE 2

scale	drawn	date
1:500 @ A3	DS	02/02/ 2011

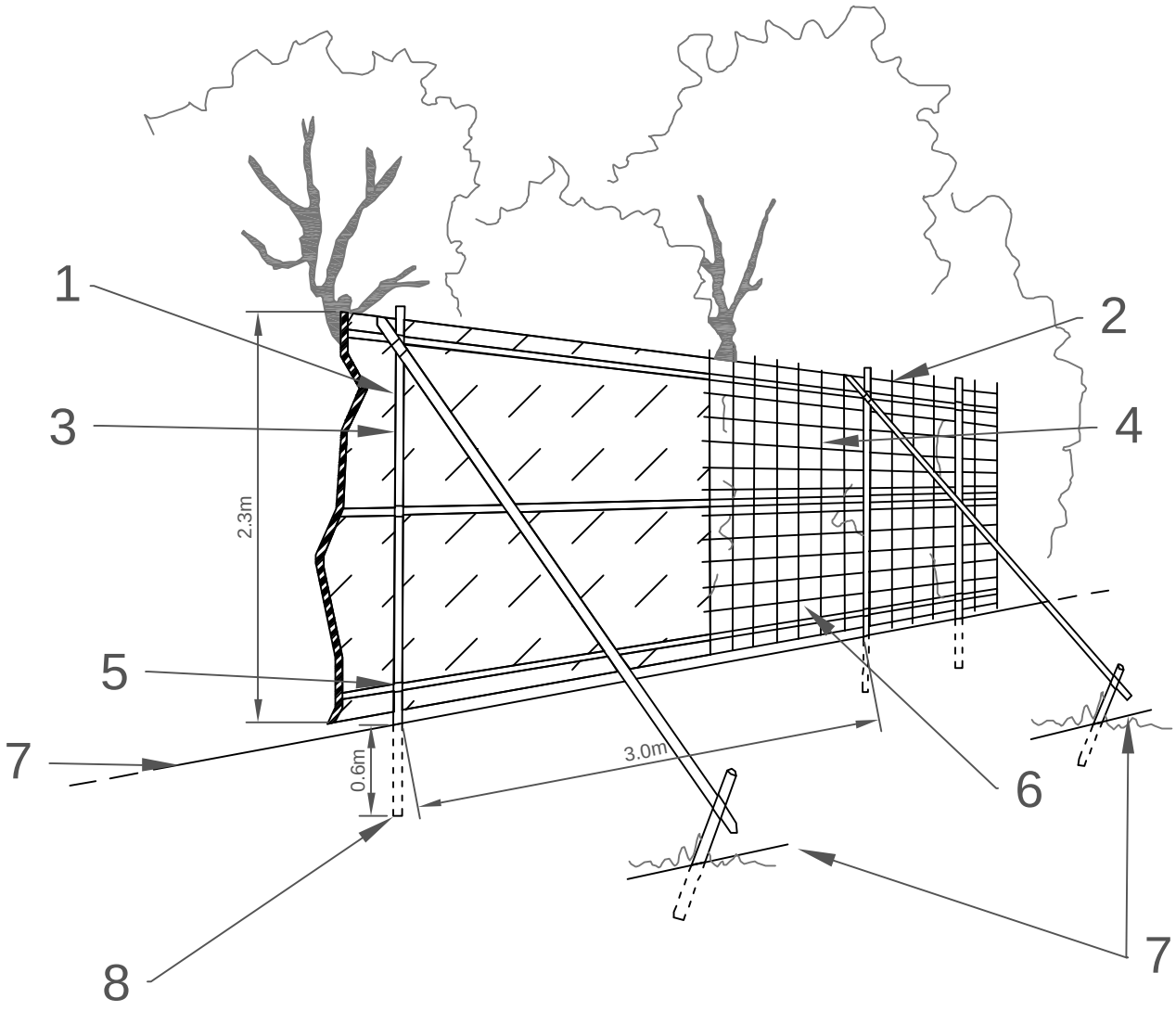
drawing number
4635-A-02

rev
-

CAD file: J:\4600\4635\ARB\TLQC - Figure 2.dwg

PROTECTIVE FENCING SPECIFICATIONS

Based on BS5837 *Trees in Relation to Construction (2005) - Recommendations*



1. Standard scaffold poles.
2. Uprights to be driven into the ground.
3. Panels secured to uprights with wire ties and where necessary with standard scaffold clamps.
4. Weldmesh wired to the uprights and horizontals.
5. Standard clamps
6. Wire twisted and secured on the inside face of fencing to avoid easy dismantling.
7. Ground level
8. Approximately 0.6m driven into the ground.

NOTES

All dimensions to be verified on site. Do not scale this drawing.
All discrepancies to be clarified with project Arboriculturalist.

rev	date	description	by

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landscape design
urban design
ecology
architecture
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project
Buxton Fire Station
Compton Grove, Buxton

drawing title
Protective Fencing Specifications
FIGURE 3

scale	drawn	date
Not to scale	Njg	March 2011

drawing number
4635-A-03

rev
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APPENDIX A

TREE SCHEDULE

Key:	**Measurements**	**Age Class**	**Overall condition**	**BS 5837 2005: Cascade Chart for Quality Assessment/Retention Category**	
		YNG - Young	G - Good	A - High	
	Height - Estimated in metres	SM - Semi-mature	F - Fair	B - Moderate	
	DBH - Stem Dia. at 1.5m above ground level in millimetres	EM - Early Mature	P - Poor	C - Low	
	Crown - Radial crown spread in metres	M - Mature	D - Dead	R - Trees for removal for reasons of safety i.e. dead or generally unsafe	
		OM - Over-mature		**Sub-Categories:** (i) - Mainly Arboricultural quality (ii) - Mainly Landscape value (iii) - Mainly Cultural/Historic Value	
RPA - Root protection area (equivalent to a circle with a radius 12x the stem diameter for single trees and 10x the basal diameter for trees with more than one stem arising below 1.5m above ground level					

Tree No	Species	Height	DBH	Crown Spread	Age Class	Overall condition	Structural Defects	Tree Work Recommendations and Comments Re: Protection Measures	RPA m²	RPA radius (m)	BS:5837 Category
INDIVIDUAL TREES											
T1	Whitebeam *Sorbus aria*	8.0	320	Up to 3	EM	G	2m clear stem before sub-dividing into four main lead stems at the bole Heavily mossed stem No obvious defects	No tree surgery required Will require tree protective fencing erected at the calculated root protection area for construction phases	46.3	3.8	C (i)
T2	Common Beech *Fagus sylvatica*	6.0	Est. 450 as outside site boundary	Less than 1	M	P	At the time of survey, specimen had been recently subjected to severe crown pruning whereby all main growth had been reduced to a series of large stubs Specimen currently standing at approximately 6m in height Epicormic growth shoots present on the lower stem Specimen located outside the site boundary, the stem being set back from a low level boundary wall by approximately 1m Noted to the north east side of T2 was a mature sycamore with a DBH est. as 500mm, stems approximately 1m apart	Will require tree protective fencing erected at the calculated root protection area for construction phases	91.6	5.4	C (i)
T3	Flowering Cherry *Prunus avium 'Plena'*	14.0	Est. 400 as outside site boundary	Up to 6	M	F	Specimen comprised either of two separate stems, therefore two trees, or being twin-stemmed from ground level although this was not possible to ascertain during the survey due to raised ground levels around the base (composted garden waste) Specimen typically characteristic in growth habit - open and spreading in form Specimen located outside the site boundary, the stem being set back from a metal railing fence	Specimen may require crown lifting work to raise the level of crown growth over the proposed garden Will require tree protective fencing erected at the calculated root protection area for construction phases	50.3	4.0	C (i)
T4	Sycamore *Acer pseudoplatanus*	8.0	Est. 290 as outside site boundary	4 - S and W	EM	P	Specimen has begun to envelop to metal railing Leaning stem to the south west direction into the site Stem bifurcates at 2m above ground level into two lead stems - fork union open with no included bark Specimen located outside the site boundary, although directly on the boundary fence line	Remove specimen as possesses limited future life expectancy due to poor form	38.1	3.5	C (i)
T5	Silver Birch *Betula pendula*	11.0	Est. 450 as outside site boundary	5 - NW and up to 3 for the rest	M	F	Ground level directly around the base of the stem has been raised Leaning stem to the north direction Lower part of stem distinctively "s-shaped" but correcting to upright form beyond Bifurcated main stem at approximately 3m above ground level - open form union with no signs of included bark High crown form created through past pruning Due to presence of adjacent property to the south east side, the crown of the tree has developed slightly one-sided form to the north Specimen located outside the site boundary, the stem being set back from a low level boundary wall by approximately 1.5m	Will require tree protective fencing erected at the calculated root protection area for construction phases	91.6	5.4	C (i)

Tree No	Species	Height	DBH	Crown Spread	Age Class	Overall condition	Structural Defects	Tree Work Recommendations and Comments Re: Protection Measures	RPA m²	RPA radius (m)	BS:5837 Category
T6	Common Beech *Fagus sylvatica*	16.0	Est. 500 as outside site boundary	6 - N	M	G	Specimen houses a prominent side limb on the north side (into site) sub-dividing at approximately 3m above ground level Limb houses considerable quantity of branch structure and contributes a significant part of the overall crown on the north side Crown development generally one sided to the north (into site) and stem leans slightly in this direction Lower branches have been removed in the past to create a high crown despite the presence of the aforementioned side limb Specimen is located outside the site boundary and is positioned within the adjoining garden Ground levels at the base of the stem are approximately 1.5m higher than ground levels in the site Garden contained by a stone retaining wall approximately 2m in height	Low side limb on north side may require a reduction in overall length to facilitate room to construct the proposed dwelling, or be removed in entirety back to main stem origin should it not be possible to modify the layout to re-site the property from underneath the limb	113.1	6.0	B (i)
T7	Sycamore *Acer pseudoplatanus*	15.0	Est. 400 as outside site boundary	Up to 4	M	G	Specimen tall and drawn in form due to being within a closely spaced grouping of trees No obvious defects Observed at a distance only Specimen located outside the site boundary with the adjacent garden	No tree surgery required Specimen should not be affected by the proposals as at an adequate distance from the works	72.4	4.8	B (i)
T8	Elm *Ulmus spp.*	16.0	Est. 350 as outside site boundary	Up to 5	M	G	Specimen tall and drawn in form due to being within a closely spaced grouping of trees No obvious defects Observed at a distance only Specimen located outside the site boundary with the adjacent garden	No tree surgery required Specimen should not be affected by the proposals as at an adequate distance from the works	55.4	4.2	B (i)
T9	Common Beech *Fagus sylvatica*	14.0	Est. 500 as outside site boundary	6 - N and up to 5 for the rest	M	G	Single straight stemmed specimen unbranched until approximately 7m above ground level Upper crown branches showed misshapen form where apical dominance has been lost in the past Specimen is located outside the site boundary and is positioned within the adjoining garden	No tree surgery required Will require tree protective fencing erected at the calculated root protection area for construction phases	113.1	6.0	B (i)
T10	Elm *Ulmus spp.*	7.0	250	5 - N and up to 4 for the rest	EM	F	Leaning stem to the north direction of approximately 40 degrees off vertical East side of the stem displays a prominent surface root heading underneath the boundary wall Epicormic growth shoots present Specimen is located within the site directly adjacent to a low level boundary wall	Remove specimen as possesses limited future life expectancy due to poor form	28.3	3.0	C (i)
T11	Norway Maple *Acer pseudoplatanus*	18.0	Est. 600 as outside site boundary	8 into the site - S	M	G	One-sided crown development to the north direction Minor past pruning works to branches in the crown overhanging the site to raise level of the growth Crown supports a small quantity of minor dead wood No other obvious defects Specimen is located outside the site boundary less than 1m back from the low level boundary wall	Specimen may require tree surgery to raise the level of the crown Will require tree protective fencing erected at the calculated root protection area for construction phases	162.9	7.2	B (i)

Tree No	Species	Height	DBH	Crown Spread	Age Class	Overall condition	Structural Defects	Tree Work Recommendations and Comments Re: Protection Measures	RPA m²	RPA radius (m)	BS:5837 Category
T12	Common Ash *Fraxinus excelsior*	10.0	370 for main stem and 210 for side stem - SW	Up to 9 into site - S	M	F	Heavily leaning stems to the north west direction Specimen comprises a main stem and smaller side stem on the south west side sub-dividing from ground level Surface root prominent on the north side Low crown Substantial crown extension to the north over the site Specimen located within the site	Remove specimen as possesses limited future life expectancy due to poor form	43.0	3.7	C (i)
T13	Common Beech *Fagus sylvatica*	18.0	Est. 650 as outside site boundary	Up to 5 into site - S	M	G	Leaning stem to the west direction Specimen located outside the site boundary and set back approximately 4m Crown spread over site is considerable and would present an above ground constraint	Specimen may require tree surgery to raise the level of the crown and address the crown extension over the proposed garden Will require tree protective fencing erected at the calculated root protection area for construction phases	191.2	7.8	B (i)
T14	Common Beech *Fagus sylvatica*	11.0	540	Up to 5 all round	M	G	Free standing specimen within the grass area to the south west side of the current fire station Previous ecological appraisal commented that the specimen is Copper variety 1m clear stem before sub-dividing into three main lead stems from a distinctive bole Evenly balanced, low and spreading form Some past pruning of lower secondary lateral branches to raise the level of the crown No obvious defects	Specimen may require further tree surgery to raise the level of the crown Will require tree protective fencing erected at the calculated root protection area for construction phases	131.9	6.5	A (i)
T15	Common Beech *Fagus sylvatica*	6.0	190	2 to 3	EM	G	Basal damage to the stem caused by mowers - exposed heartwood Amenity specimen showing no apical dominance and a typical multiple leadered crown from a 2m clear stem Dense and compact crown form No obvious defects	No tree surgery required	16.3	2.3	C (i)
T16	Willow *Salix spp.*	7.0	500 around all three stems close to ground level	Up to 4 all round	M	F	Triple stemmed from ground level with signs of included bark and tight overall unions Crossing and rubbing branches within the crown Evenly balanced crown	Remove specimen as possesses limited future life expectancy due to poor form	78.6	5.0	C (i)

Tree No	Species	Height	DBH	Crown Spread	Age Class	Overall condition	Structural Defects	Tree Work Recommendations and Comments Re: Protection Measures	RPA m²	RPA radius (m)	BS:5837 Category
T17	Goat Willow *Salix caprea*	1.5	NA	NA	NA	NA	Multiple stemmed coppiced stump showing active re-growth	Specimen has limited arboricultrual value and as such should not be considered a constraint to the proposals	NA	NA	C (i)
GROUPS OF TREES											
TG1	1 Rowan *Sorbus aucuparia* 1 Cherry *Prunus spp.* 1 Sycamore *Acer pseudoplatanus* 1 Silver Birch *Betula pendula* 1 Blackthorn *Prunus spinosa*	5	Largest measured stem of 170	1 to 2	EM	G	Small cluster of trees planted along the perimeter of the property, possibly originally intended as a hedge All specimens had been "topped" of growth at approximately 2-3m above the ground which had subsequently resulted in re-generated branch growth Stems spaced at approximately 1m intervals	If retained, group will require tree protective fencing erected at the calculated root protection area for construction phases	9.1	1.7	C (ii)
TG2	1 Norway Maple *Acer platanoides* 1 Common Ash *Fraxinus excelsior* 1 Common Beech *Fagus sylvatica* 2 Elm *Ulmus spp.*	18 to 20	Est. 650 as outside site boundary	Up to 9 into site - S	M	G	Large specimens located outside the site boundary within the grounds of the adjacent school Due to the presence of further trees to their south side and their influence on each other, most stems tended to lean towards the site in a northerly direction	Specimens within the group will require tree surgery to raise the level of the crown and address the crown extension over the proposed gardens Will require tree protective fencing erected at the calculated root protection area for construction phases	191.2	7.8	B (ii)
TG3	2 Sycamore *Acer pseudoplatanus*	8.0	Est. 250 as outside site boundary	Up to 3 into site - E	EM	F	Two trees located outside the site boundary, directly on the boundary, within the adjoining garden One specimen is twin-stemmed from 0.5m displaying an open fork, the other is single stemmed Minor past pruning of lower branches evident Typically characteristic for the species No obvious defects	Will require tree protective fencing erected at the calculated root protection area for construction phases	19.6	2.5	C (ii)