



Hallam Land Management

Land off Carr Road, Deepcar

Arboricultural Assessment

November 2017

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1.0 INTRODUCTION

- 1.1 This report has been prepared by FPCR Environment and Design Limited on behalf of Hallam Land Management to present the findings of an Arboricultural Assessment and survey of trees located on land off Carr Road, Deepcar, Sheffield (hereafter referred to as the site), OS Grid Ref SK 277 974, as shown in Figure 1. The survey was carried out on 18th May 2016.
- 1.2 The tree survey and assessment of existing trees has been carried out in accordance with guidance contained within British Standard 5837:2012 '*Trees in Relation to Design, Demolition and Construction - Recommendations*' (hereafter referred to as BS5837). The guidelines set out a structured assessment methodology to assist in determining which trees would be deemed either as being suitable or unsuitable for retention.
- 1.3 The guidance also provides recommendations for considering the relationship between existing trees and how those trees may integrate into designs for development; demolition operations and future construction processes so that a harmonious and sustainable relationship between any retained trees and built structures can be achieved.
- 1.4 The purpose of the report is therefore to firstly present the results of an assessment of the existing trees' arboricultural value, based on their current condition and quality and to secondly provide an assessment of impact arising from the proposed development of the site.
- 1.5 This report has been produced to accompany a planning application for small residential scheme and has included an assessment of any impact to the tree cover. The survey has therefore focused on any trees present within or bordering the site that may potentially be affected by the future proposals or will pose a constraint to any proposed development.
- 1.6 The site is positioned on the southern edge of Deepcar, between Carr Road and Hollin Busk Lane and is currently being used as grazing land. The site is in an elevated position but not exposed fully to the prevailing winds, being below the crest of the hill that runs along the southern edge of Stocksbridge and Deepcar. The tree stock assessed was mainly early mature with some mature and over mature specimens in occasional pockets, though most were positioned outside the site. Included within the assessment were numerous trees within highway verges of the surrounding road network.
- 1.7 It is understood following consultation with the Local Planning Authority, that there are no tree preservation orders or Conservation Area designations that would apply to any trees present on, or in close proximity to the assessment site and therefore no statutory constraints would apply to the development in respect of trees.
- 1.8 It must be understood that should any specific tree protection be required, this would need to be separately considered where needs arise prior to the commencement of construction activity following approval of the application. This should be in the form of an Arboricultural Method Statement produced in accordance with guidance in BS5837 and is beyond the scope of this Arboricultural Assessment.

2.0 METHODOLOGY

- 2.1 The survey of trees has been carried out in accordance with the criteria set out in Chapter 4 of BS5837. The survey has been undertaken by a suitably qualified and experienced arboriculturalist and has recorded information relating to all those trees within the site and those adjacent to the site which may be of influence to any proposals. Trees were assessed for their arboricultural quality and benefits within the context of the proposed development in a transparent, understandable and systematic way.
- 2.2 Trees have been assessed as groups or woodlands where it has been determined appropriate. The term group has been applied where trees form cohesive arboricultural features either aerodynamically, visually or culturally including biodiversity or habitat potential for example parkland or wood pasture. An assessment of individual trees within groups or woodlands has been made where a clear need to differentiate between them, for example, in order to highlight significant variation between attributes including physiological or structural condition or where a potential conflict may arise.
- 2.3 Trees have been divided into one of four categories based on Table 1 of BS5837, '*Cascade chart for tree quality assessment*'. For a tree to qualify under any given category it should fall within the scope of that category's definition (see below). Category U 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 on arboricultural grounds. Categories A, B and C are applied to trees that should be of material considerations in the development process. Each category also having one of three further sub-categories (i, ii, iii) which are intended to reflect arboricultural, landscape and cultural or conservation values accordingly.
- 2.4 **Category (U) – (Red):** Trees which are unsuitable for retention and are in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years. Trees within this category are:
- Trees that have a serious irremediable structural defect such that their early loss is expected due to collapse and includes trees that will become unviable after removal of other category U trees.
 - Trees that are dead or are showing signs of significant, immediate or irreversible overall decline.
 - Trees that are infected with pathogens of significance to the health and/ or safety of other nearby trees or are very low quality trees suppressing adjacent trees of better quality.
 - Certain category U trees can have existing or potential conservation value which may make it desirable to preserve.
- 2.5 **Category (A) – (Green):** Trees that are considered for retention and are of high quality with an estimated remaining life expectancy of at least 40 years with potential to make a lasting contribution. Such trees may comprise:
- Sub category (i) trees that are particularly good examples of their species, especially if rare or unusual, or are essential components of groups such as formal or semi-formal arboricultural features for example the dominant and/or principal trees within an avenue.

- Sub category (ii) trees, groups or woodlands of particular visual importance as arboricultural and / or landscape features.
- Sub category (iii) trees, groups or woodlands of significant conservation, historical, commemorative or other value for example veteran or wood pasture.

2.6 **Category (B) – (Blue):** Trees that are considered for retention and are of moderate quality with an estimated remaining life expectancy of at least 20 years with potential to make a significant contribution. Such trees may comprise:

- Sub category (i) trees that might be included in category A but are downgraded because of impaired condition for example the presence of significant though remediable defects, including unsympathetic past management and storm damage.
- Sub category (ii) trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.
- Sub category (iii) trees with material conservation or other cultural value.

2.7 **Category (C) – (Grey):** Trees that are considered for retention and are of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm. Such trees may comprise:

- Sub category (i) unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.
- Sub category (ii) trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value or trees offering low or only temporary / transient screening benefits.
- Sub category (iii) trees with no material conservation or other cultural value.

Veteran Trees

2.8 Veteran trees are important components of the landscape, their importance can be for a number of reasons including that of their ecological, social, cultural and historic value. Veteran Trees are a material consideration within the planning process and their importance is specifically recognised within the National Planning Policy Framework 2012. Should any veteran trees be identified during the initial level 2 BS5837 assessment further survey work of those trees and their communities will be required sufficient to meet planning application needs. From an ecological perspective veteran trees provide a rare and specialist niche habitat and therefore preservation of this habitat is considered highly important. Veteran trees and many of their associated specialised species are becoming increasingly rare within the landscape and therefore some veteran tree landscapes and their associated species are now protected, both nationally and Europe wide through the Natura 2000 Directive.

Tree Schedule

- 2.9 Appendix A presents details of any individual trees, groups, hedgerows and woodlands found during the assessment including heights, diameters at breast height, crown spread (given as a radial measurement from the stem), age class, comments as to the overall condition at the time of inspection, BS5837 category of quality and suitability for retention and the root protection area.
- 2.10 General observations particularly of structural and physiological condition for example the presence of any decay and physical defect and preliminary management recommendations have also been recorded where appropriate.

Hedgerows

- 2.11 For the purposes of this assessment, a hedgerow is described as any boundary line of trees or shrubs less than 5m wide at the base and are managed under a regular pruning regime. Hedgerows and substantial internal or boundary hedges (including evergreen screens) have been recorded including lateral spread, height and stem diameter(s). Where trees are present within a hedgerow that are significantly different in character from the remainder, these have been identified and recorded separately.
- 2.12 A tree survey in accordance with BS5837 does not assess hedgerows against the Hedgerow Regulations 1997 or specifically from an ecological perspective, and is outside the scope of this assessment.

Other Considerations

- 2.13 It may be necessary during detailed design to undertake further assessment and accurate positioning of woody species within hedgerows and tree groups to assist structural calculations for foundation design of structures in accordance with current building regulations. Knowledge of soil type was not known at the time of this tree assessment. If a current soil survey of the site has taken place then it must be read in conjunction with the results of the tree survey.
- 2.14 The exact position of individual trees or species included as part of a tree group, hedgerow or woodland should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculating foundation depths in accordance with NHBC Chapter 4.2 Building near Trees.

Conditions of Tree Survey

- 2.15 The survey was completed from ground level only and from within the boundary of the site. Aerial tree inspections or the internal condition of the stem/s or branches were not undertaken at this stage as this level of survey is beyond the scope of the initial 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

- 2.16 Figure 1 identifies the assessment area including trees beyond the application boundary that may be affected by future development of the site and should not be considered as the application boundary.
- 2.17 The individual positions of trees and groups have been shown on the Tree Survey Plan, Figure 2. The positions of trees are based on a topographical / land survey, as far as possible, supplied by the client. Where topographical information has not identified the position of trees and hedgerows, their relation to any existing surrounding features has been plotted using a global positioning system and aerial photography to provide approximate locations. The crown spread, root protection area and shade pattern (where appropriate) are also indicated on this plan.
- 2.18 As part of the Arboricultural Impact Assessment, a Tree Retention Plan, Figure 3 has been prepared to show the proposed layout in relation to the existing tree cover allowing an assessment of any potential conflicts. The plan also identifies which trees would be required to be removed or retained as part of the proposed development.

Tree Constraints and Root Protection Areas

- 2.19 Below ground constraints to future development are represented by the area surrounding the tree containing sufficient rooting volume for the specimen to have the best chance of survival in the long term which is identified as the root protection area (RPA). The RPA has been calculated in accordance with section 4.6 of BS5837 and requires suitable protection in order for the tree to be successfully incorporated into any future scheme. Where applicable the shape of the Root Protection Area has been modified to take into account the presence of any nearby obstacles (existing or past) which may have restricted root growth and the likely root distribution i.e. the presence of hard standing, structures and underground apparatus.
- 2.20 Where groups of trees have been assessed, the Root Protection Area has been shown based on the maximum sized tree in any one group and so may exceed the Root Protection Area required for some of the individual specimens within the group. Further detailed inspection of the individual trees forming a group may be required where development impacts upon the group.
- 2.21 Above ground constraints such as the current and potential crown spread of the trees and an illustration of the shade pattern (where appropriate) have been considered and identified within the Tree Survey Plan and Tree Retention Plan plans to indicate their potential area of shading influence.

3.0 RESULTS

3.1 A total of fifty-four individual trees, five groups of trees and three hedgerows were surveyed as part of the Arboricultural Assessment. Trees were surveyed as individual trees and groups of trees where examples are clearly present as per the description. Refer to Figure 2 . Tree Survey Plan and Appendix A . Tree Schedule for full details of the trees included in this assessment. The table below summarises the trees assessed. Several of the trees have been discussed in more detail following the table, owing to their physical condition or arboricultural significance.

Results Summary

- 3.2 The elevated position of the site meant that many trees were stunted, in height only, due to the prevailing winds. The tree stock was however generally in good health and even ornamental highway specimens had become well established. The site is currently being used as grazing land for a mix of sheep and horses and very few trees were present within the field parcels probably as a result of this land use over the years.
- 3.3 The site presented few trees of merit within the field parcels and the boundary trees provided the highest quality specimens. The most dominant species were hawthorn *Crataegus monogyna* and sycamore *Acer pseudoplatanus* however there were many species recorded in the large northern boundary groups which has affected the analysis on page 2 of Appendix A.

Table 1: Summary of Trees by Retention Category

	Individual Trees	Total	Groups of Trees	Total
Category U - Unsuitable				
Category A (High Quality / Value)	T26, T39, T40, T43, T44	5	G1, G3	2
Category B (Moderate Quality / Value)	T3, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15, T19, T20, T23, T24, T35, T36, T42, T47, T48, T49, T50, T51	23	G4, G5, H1, H2, H3	5
Category C (Low Quality / Value)	T1, T2, T4, T5, T16, T17, T18, T21, T22, T25, T27, T28, T29, T30, T31, T32, T33, T34, T37, T38, T41, T45, T46, T52, T53, T54	26	G2	1

- 3.4 The northern boundary presented a continuous tree line which has been separated into different components within this assessment to enable a full impression of the trees along this boundary to be understood. The main group, G3, is a woodland which borders the site and extends north east to the Fox Glen Recreation Ground. Within this woodland are numerous paths both informal and formal. The trees within G3 were a typical mix of species and had established a good canopy structure and age range. From the perspective of future development of the site the stems of the trees were generally small for the size of specimens and also set back from the site's boundary. The exceptions to this were picked out individually as T39 and T40.
- 3.5 T39 and T40 were both large sycamore specimens situated 4m from the site boundary which presented larger stems than others trees along the boundary of G3. The trees displayed typical minor defects, however, they were important trees within group due to their age and size and were considered Category A, sub-category (ii).

- 3.6 Group G5 was also situated along the northern boundary and was separated from G3, a category A group, due to the much smaller proportions and the mix of species present which were shorter lived smaller trees such as holly *Ilex aquifolium* and hazel *Corylus avellana*. It is possible that this line of trees originated as a hedgerow on the edge of the woodland, however, if that was the case its management has lapsed and the trees have suffered as a result. The group was considered category B for its moderate arboricultural and landscape value.
- 3.7 At the western end of the woodland were three large ash *Fraxinus excelsior* specimens, T42, T43 and T44. Two of these specimens were considered to be veteran trees having followed an initial assessment using a level 3 approach to the Specialist Survey Method. Veteran features are further described in closer detail in the English Nature Veteran Tree Initiative . Specialist Survey Method (SSM) (Fay & de Berker 1997) and include dead wood, holes, hollowing, bark wounds and rot. To summarise, it is considered that the greater the number and extent of these features present within a given tree, the greater the ecological habitat value.
- 3.8 T42 and T44 were within the site, at the top of a steep bank which led down to a small brook. They presented features considered as markers of a veteran tree such as, decay holes, cavities and specialist insect habitat. Considering their importance to the ecology and bio-diversity of the immediate area both T42 and T44 should be retained as part of any future development of the site.
- 3.9 T43 was positioned just outside the site, at the bottom of the steep bank and against the woodland edge of G3. The specimen was considered to provide enough features to fall into the veteran criteria. It was, however, a tree in good health that formed a clear end to the woodland group G5.
- 3.10 Within the site itself, were a small number of trees positioned usually along field boundaries, namely T38, T41 and T46. These trees were all considered to be category C, mainly due to their small size but also poor forms of crown development was noted.
- 3.11 Along some stretches of the site boundary were residential properties. Here the boundary of the site was often composed of ornamental species, walls and hedgerows and many of the immediate neighbours were screened from the site at ground level. The trees and hedgerows along these borders were therefore generally worthy of category B, sub-category (ii) for their landscape benefit.
- 3.12 The assessment boundary included many sections of the highway verge which were mainly grassland with occasional street trees. The trees on Carr Road, appeared to be self-seeded and were of lower quality and smaller proportions these were all therefore considered category C. Hollins Busk Lane however had a mix of moderate and low quality trees. The category B specimens were generally flowering cherry species which had established well and were positioned on the opposite side of the road to the site.
- 3.13 The small section of highway at the junction of Coal Pit Lane and Hollins Busk Lane housed seven trees within the highway verge and one specimen within the curtilage of a property on the corner. There were five specimens considered to be category B due to their maturity and well-formed crowns; all of these were positioned along Coal Pit Lane.

4.0 ARBORICULTURAL IMPACT ASSESSMENT

- 4.1 The following paragraphs present a summary of the tree survey and discussion of particular trees and groups recorded in the context of any proposed development in the form of an Arboricultural Impact Assessment in accordance with section 5.4 of BS5837. Any final tree retentions will need to be reconciled with the advice contained within this report.
- 4.2 The AIA has been based upon the Concept Masterplan SK08 and seeks to outline the relationship between the proposals and the existing trees and hedgerows. The above drawing shows the proposals for a residential development which includes a minor road network, public open space and SUDS facilities. An overlay of the above layout has been incorporated in the Tree Retention Plan (Figure 3) to assist in identifying the relationship and any potential conflicts between the proposals and the existing trees and hedgerows.
- 4.3 The proposals allow for a single access point into the site, from Carr Road to the east. The point of access onto Carr Road, will require the removal of two trees, T28 and T29, considered to be category C which were small trees whose loss can be easily mitigated through new tree planting. The boundary is heavily stocked with trees against this part of Carr Road and as such tree removal has been kept to a minimum by the position of this access point.
- 4.4 The most important features from an arboricultural perspective, the northern boundary and the category A trees adjacent to Carr Road, can all be retained within the proposed layout. The boundary of the site will be enhanced by the landscape proposals and it would be possible to forge a footpath link between the proposed public open space and the footpath within G3 without the loss of any trees. Detailed design of which will need to be worked up later but could utilise no-dig construction and the removal of a small section of the boundary wall.
- 4.5 The main development parcel and housing plots are cited away from the edges of the site which will enable the retention of all the boundary trees, except where noted above for access, but will require the removal of four trees; T37, T38 and T41 which were located within the site. These specimens were all considered category C and were small trees whose loss would be replaced by the landscape proposals.

New Tree Planting

- 4.6 New tree planting will form an integral part of the new development however, proposals for new tree planting should be appropriate for the future use of the site and not just aim to improve the existing tree population.
- 4.7 As part of the development proposals an adequate quantity of structured tree planting has been demonstrated predominantly within or close to hard landscaped areas of car parking or alongside the primary access roads within the roadside verges.
- 4.8 The success of any landscaping scheme relies on making sure that there is adequate provision of an environment within which trees can thrive and reach their full potential. Planting trees with due care and consideration can, in the long term, provide a greater return on a schemes green investment and ensure trees remain healthy and grow to mature proportions.

- 4.9 The planting of trees within confined urban environments should consider the use of appropriately designed planting pits specifically engineered to promote tree health and longevity. The rooting environment will need to provide an adequate volume of quality soil for roots to suitably develop by calculating the amount of available soil volumes needed and selecting species whose mature size is compatible with the site. This is an integral component of the planning stage (Lindsey & Bassuk, 1991).
- 4.10 Wherever possible, following discussions with the developer and utility companies, common service trenches should be specified to minimise land take associated with underground service provision and facilitation access for future maintenance.
- 4.11 The landscaping scheme should consider the use of both native tree species (for their low maintenance requirements and nature conservation value) and ornamental species (for their contribution to urban design and amenity value). Species choices should be selected on the basis of their suitability for the final site use. Furthermore, during the design process consultation should be made with the Local Planning Authority to obtain information on their tree strategy and incorporate the planting proposals with any local policies and initiatives and/or Biodiversity Action Plans (BAP).
- 4.12 Careful consideration would need to be given to the following: ultimate height and canopy spread, form, habit, density of crown, potential shading effect, colour, water demand, soil type and maintenance requirements in relation to both the built form of the new development and existing properties. Through careful species selection, the landscape scheme shall reduce the risk of trees being removed in the future on the grounds of nuisance. Nuisance can be perceived in a number of ways and vary from person to person however most commonly, within the context of trees, low overhanging branches, excessive shading, seasonal leaf fall and the misinformed perception that trees close to buildings cause damage.
- 4.13 Tree planting should be avoided where they may obstruct overhead power lines or cables. Any underground apparatus should be ducted or otherwise protected at the time of construction to enable trees to be planted without resulting in future conflicts.

Tree Management

- 4.14 All retained trees should be subjected to sound arboricultural management as recommended within section 8.8.3 of BS5837 *Post Development Management of Existing Trees*, where there is a potential for public access in order to satisfy the landowner's duty of care. Additionally, inspections annually and following major storms should be carried out by an experienced arboriculturalist or arborist to identify any potential public safety risks and to agree remedial works as required.
- 4.15 All tree works undertaken should comply with British Standard 3998:2010 and should therefore be carried out by skilled tree surgeons. It would be recommended that quotations for such work be obtained from Arboricultural Association Approved Contractors as this is the recognised authority for certification of tree work contractors.

- 4.16 All vegetation and, particularly, woody vegetation proposed for clearance should be removed outside of the bird-breeding season (March - September 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.

General Design Principles in Relation to Retained Trees

- 4.17 The routing of below ground services should also be considered with regard to the retained trees as part of a subsequent reserved matters application pursuant to layout. As recommended by the guidance given in section 7.7 of BS5837 services, where possible, should not encroach within the Root Protection Areas of retained trees. If below-ground services are proposed within a Root Protection Area, modifications to the alignment of the service route may need to be made in order to minimise adverse effects on root stability and overall tree health.
- 4.18 Consideration may also need to be given to the potential for tree roots of newly planted trees and hedgerows to affect or compromise the future services. As far as feasible, it would be preferable that proposed services near both the existing and any new planting should be ducted for ease of access and maintenance and grouped together to minimise any future disturbance.

5.0 TREE PROTECTION MEASURES

- 5.1 Retained trees will be adequately protected during works ensuring that the calculated root protection area for all retained trees can be appropriately protected through the erection of the requisite tree protection barriers. Measures to protect trees should follow the guidance in BS5837 and will be applied where necessary for the purpose of protecting trees within the site whilst allowing sufficient access for the implementation of the proposed layout. These have been broadly summarised below.

General Information and Recommendations

- 5.2 All trees retained on site will be protected by suitable barriers or ground protection measures around the calculated RPA, crown spread of the tree or other defined constraints of this assessment as detailed by section 6 and 7 of BS5837.
- 5.3 Barriers will be erected prior to commencement of any construction work and before demolition including erection of any temporary structures. Once installed, the area protected by fencing or other barriers will be regarded as a construction exclusion zone. Fencing and barriers will not be removed or altered without prior consultation with the Project Arboriculturalist.
- 5.4 Any trees that are not to be retained as part of the proposals should be felled prior to the erection of protective barriers. Particular attention needs to be given by site contractors to minimise damage or disturbance to retained specimens.

- 5.5 Where it has been agreed, construction access may take place within the root protection area if suitable ground protection measures are in place. This may comprise single scaffold boards over a compressible layer laid onto a geo-textile membrane for pedestrian movements. Vehicular movements over the root protection area will require the calculation of expected loading and the use of proprietary protection systems.
- 5.6 Confirmation that tree protective fencing or other barriers have been set out correctly should be gained prior to the commencement of site activity.

Tree Protection Barriers

- 5.7 Tree protection fencing should be fit for the purpose of excluding any type of construction activity and suitable for the degree and proximity of works to retained trees. Barriers must be maintained to ensure that they remain rigid and complete for the duration of construction activities on site.
- 5.8 In most situations, fencing should comprise typical construction fencing panels attached to scaffold poles driven vertically into the ground. For particular areas where construction activity is anticipated to be of a more intense nature, supporting struts, acting as a brace should be added and fixed into position through the application of metal pins driven into the ground to offer additional resistance against impacts. Where site circumstances and the risk to retained trees do not necessitate the default level of protection an alternative will be specified appropriate to the level / nature of anticipated construction activity. The recommended methods of fencing specifications for this site have been illustrated in Appendix B.
- 5.9 It may be appropriate on some sites to use temporary site offices, hoardings and lower level barrier protection as components of the tree protection barriers. Details of the specific protection barriers for the site can be provided should the application be approved, as part of a site specific Arboricultural Method Statement for a Reserved Matters application and in accordance with the guidance contained within BS5837.

Protection outside the exclusion zone

- 5.10 Once the areas around trees have been protected by the barriers, any works on the remaining site area may be commenced providing activities do not impinge on protected areas.
- 5.11 All weather notices should be attached to the protective fencing to indicate that construction activities are not permitted within the fenced area. The area within the protective barriers will then remain a construction exclusion zone throughout the duration of the construction phase of the proposed development. Protection fencing signs can be provided upon request.
- 5.12 Wide or tall loads etc should not come into contact with retained trees. Banksman should supervise transit of vehicles where they are in close proximity to retained trees.
- 5.13 Oil, bitumen, cement or other material that is potentially injurious to trees should not be stacked or discharged within 10m of a tree stem. No concrete should be mixed within 10m of a tree. Allowance should be made for the slope of ground to prevent materials running towards the tree.
- 5.14 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.

- 5.15 Notice boards, telephone cables or other services should not be attached to any part of a retained tree.
- 5.16 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 (it may be necessary to remove such trees in sections).

Protection of Trees Close to the Site

- 5.17 A number of trees were located on the boundaries of the site and therefore the root protection area and crown spread of these trees will need to be protected in the same way as all the retained trees within the site. 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 root protection area.
- 5.18 Any trees which are to be retained and whose Root Protection Areas may be affected by the development should be monitored, during and after construction, to identify any alterations in quality with time and to assess and undertake any remedial works required as a result.

Protection for Aerial Parts of Retained Trees

- 5.19 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 the construction works it is best advised that appropriate, but limited tree surgery, be carried out beforehand to remove any obstructive branches. Any such equipment would have potential to cause damage to parts of the crown material, i.e. low branches and limbs, of retained trees within the protective barriers. This is termed as ~~access~~ facilitation pruning within BS5837. Any such pruning should be undertaken in accordance with a specification prepared by an arboriculturalist.
- 5.20 A pre-commencement site meeting with contractors who are responsible for operating machinery will be required, as described above, to firstly highlight the potential for damage occurring to tree crowns and to ensure that extra care is applied when manoeuvring machinery during such operations within close proximity to retained trees to avoid any contact.
- 5.21 In the event of having caused any branch or limb damage to retained trees it is strongly recommended that suitable tree surgery be carried out, in accordance with British Standard 3998:2010 and in agreement with the Local Planning Authority prior to correcting the damage, upon completion of development.

6.0 CONCLUSION

- 6.1 The site is in an elevated position but not exposed fully to the prevailing winds, being below the crest of the hill that runs along the southern edge of Stocksbridge and Deepcar. Much of the assessed tree stock was, however, stunted in height to a moderate extent. The tree stock was however generally in good health and even ornamental highway specimens had become well established. The site is currently being used as grazing land for a mix of sheep and horses and very few trees were present within the field parcels, probably as a result of this land use over the years. The site presented few trees of merit within the field parcels and the boundary trees provided the highest quality specimens.
- 6.2 The northern boundary presented a woodland which extends north east to the Fox Glen Recreation Ground. The trees within G3 were a typical mix of species and had established a good canopy structure and age range. At the western end of the woodland were three large ash specimens, T42, T43 and T44. Two of these specimens were considered to be veteran trees having followed an initial assessment using a level 3 approach from the Specialist Survey Method.
- 6.3 The proposals a single access point into the site from Carr Road will require the removal of two trees, T28 and T29, whose loss can be easily mitigated through new tree planting. The most important features from an arboricultural perspective, the northern boundary and the category A trees adjacent to Carr Road, can all be retained within the proposed layout. The boundary of the site will be enhanced by the landscape proposals and it may be possible to forge a footpath link between the proposed public open space and the footpath within G3 subject to further discussion and design.
- 6.4 The main development parcel and housing plots are cited away from the edges of the site which will enable the retention of all the boundary trees, but will require the removal of four trees; T37, T38 and T41 due to their location within the central area. These specimens were all considered category C and were small trees whose loss would be replaced by new planting shown on the landscape proposals.
- 6.5 The overall impact of the proposals on the tree stock would be negligible and will be more than mitigated for by the landscape proposals of the scheme. It has been shown that all the main arboricultural features which border the site can be retained and afforded adequate room for their protection during and post construction.



KEY



Assessment Boundary

rev	date	description	by
-	19.05.2016	First Issue	AAB



- masterplanning
 - environmental assessment
 - landscape design
 - urban design
 - ecology
 - architecture
 - arboriculture
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client
Hallam Land Management

project
**Carr Road
 Deepcar, Sheffield**

drawing title
**ASSESSMENT BOUNDARY PLAN
 FIGURE 1**

scale
 1:25000 @ A4

drawn
 AAB

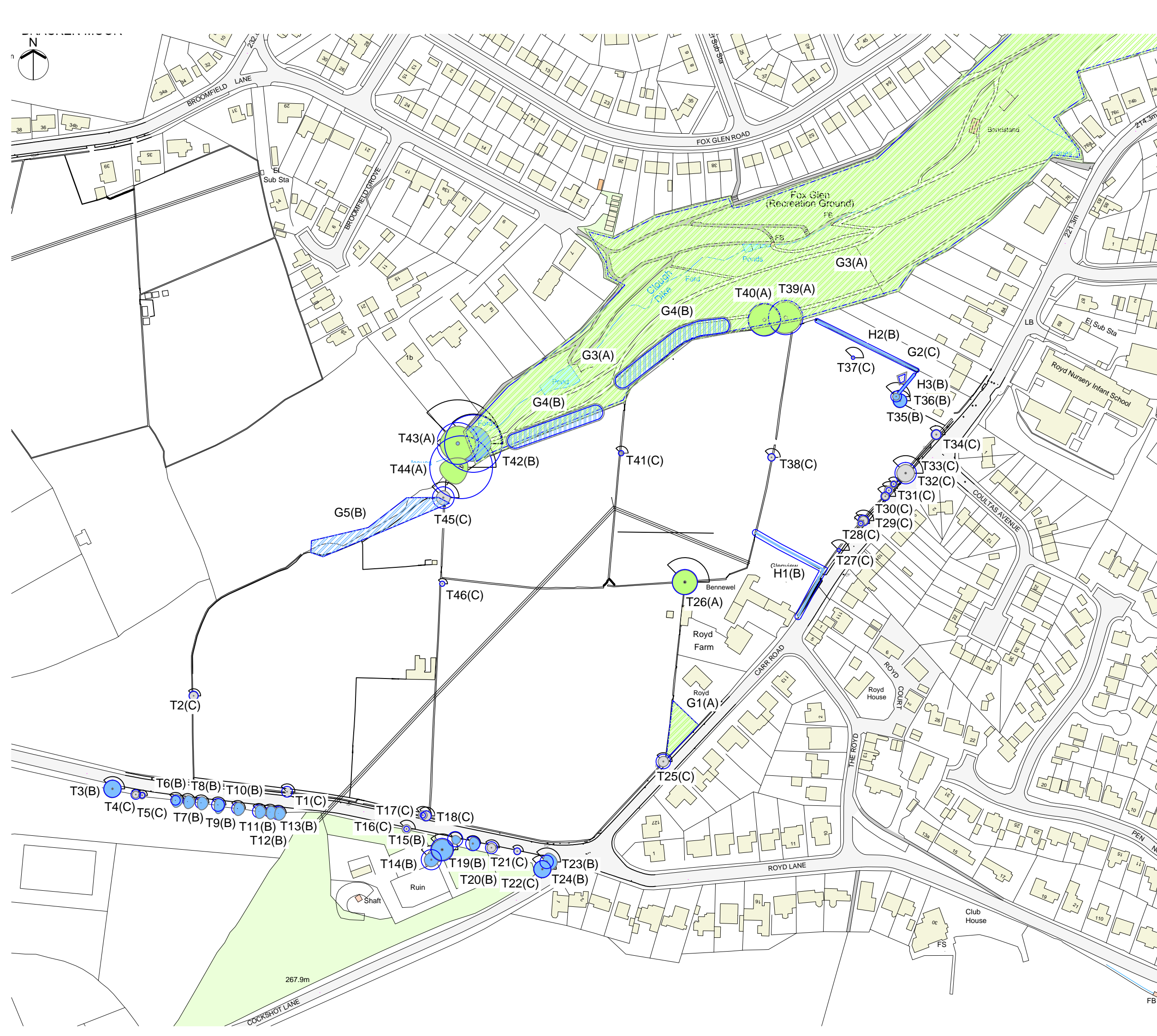
date
 May 2016

drawing number
7301-A-01









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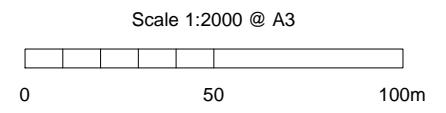
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KEY

-  Category U - Trees / Groups Unsuitable for Retention (BS 5837:2012)
-  Category A - Trees / Groups of High Quality (BS 5837:2012)
-  Category B - Trees / Groups of Moderate Quality (BS 5837:2012)
-  Category C - Trees / Groups of Low Quality (BS 5837:2012)
-  Hedgerow (Colour indicates BS5837:2012 Category)
-  Root Protection Area (The RPA has been altered where appropriate to reflect underground constraints)
-  Individual / Group Number and BS5837:2012 Category
-  Indicative Shade Pattern (in accordance with BS5837:2012 where appropriate)



NOTES

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Trees are living organisms that change over time, the condition of all trees illustrated herein, are to be checked by the project Arboriculturalist should works commence 12 months after the date of this survey.

SOME TREES MAY BE SUBJECT TO STATUTORY CONSTRAINTS. IT IS THEREFORE ADVISED THAT NO WORKS SHOULD BE UNDERTAKEN TO ANY TREES ILLUSTRATED HEREIN WITHOUT FIRST OBTAINING THE RELEVANT AUTHORISATION TO DO SO UNLESS AGREED AS PER THE APPROVED PLANS THROUGH PLANNING CONSENT.

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-	01.06.2016	First Issue	AAB
-	28.07.2016	Updated to show G4	NJG
rev	date	description	by



- masterplanning
- environmental assessment
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- ecology
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- arboriculture

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client
Hallam Land Management

project
**Land at Deepcar
 Sheffield, Yorkshire**

drawing title
**TREE SURVEY PLAN
 FIGURE 2**

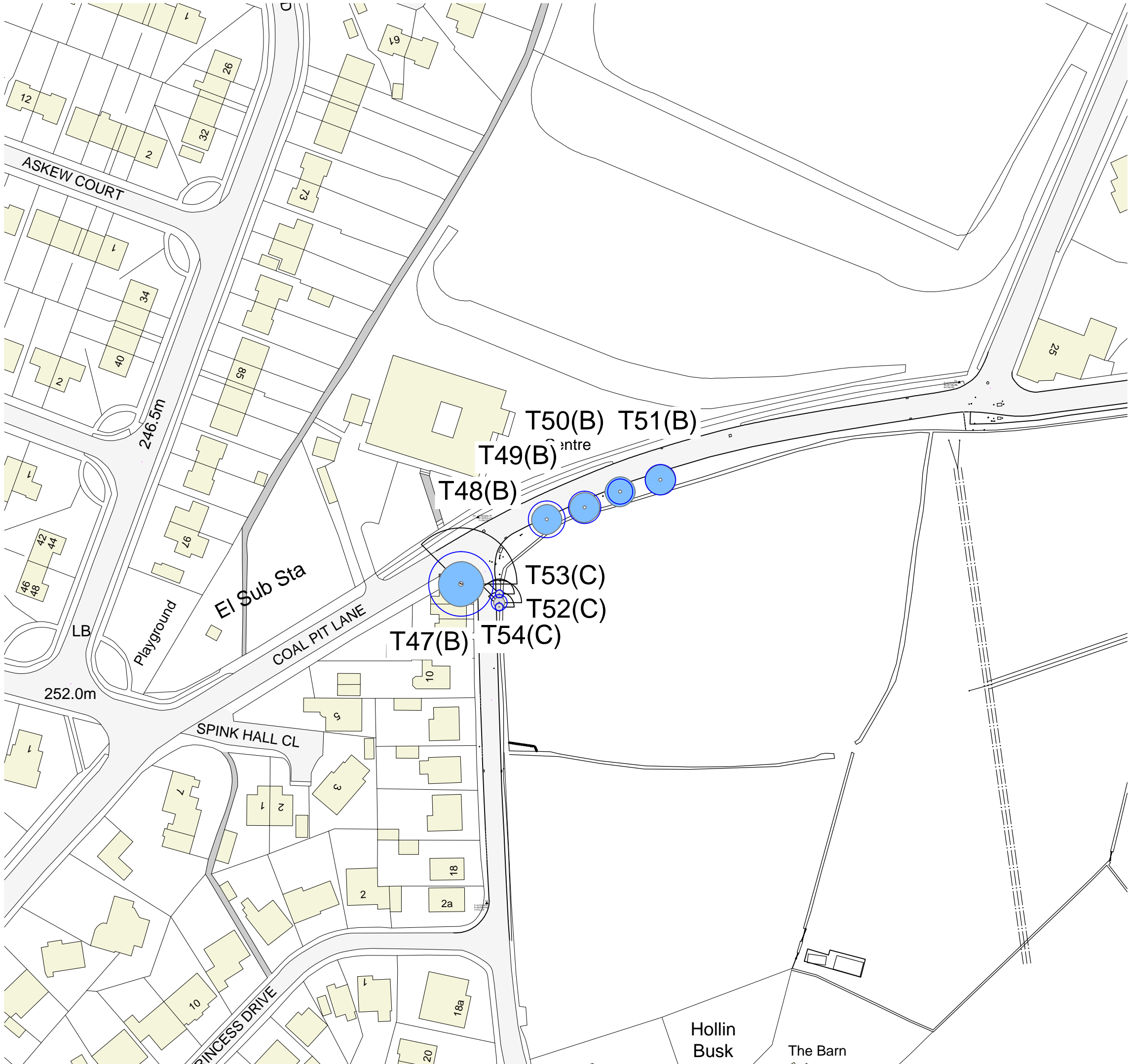
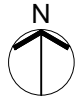
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drawn
 AAB









date
 June 2016

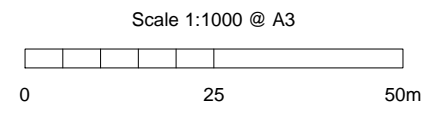
drawing number
7301-A-02.1

rev
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KEY

-  Category U - Trees / Groups Unsuitable for Retention (BS 5837:2012)
-  Category A - Trees / Groups of High Quality (BS 5837:2012)
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NOTES

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-	01.06.2016	First Issue	AAB



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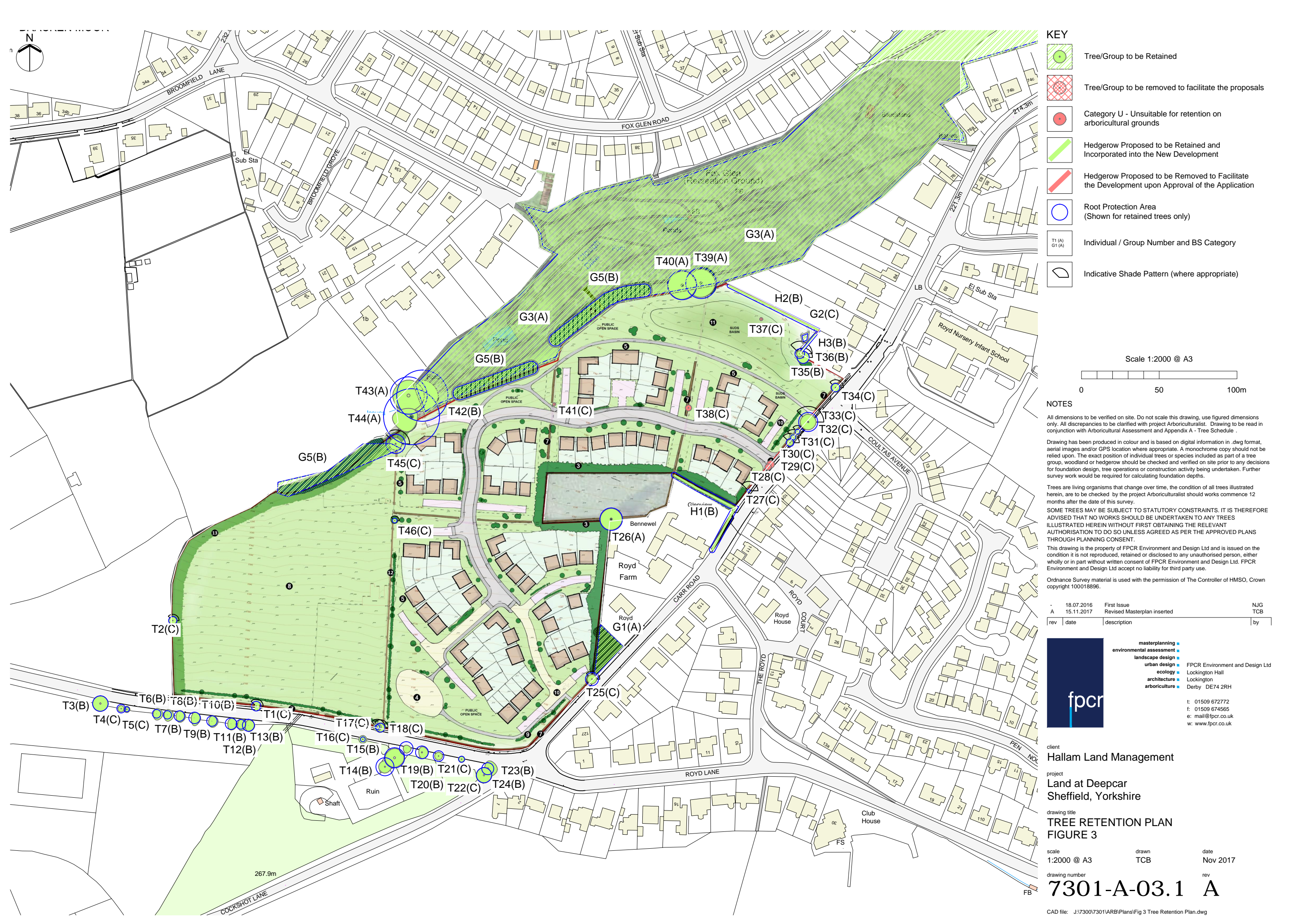
project
**Land at Deepcar
Sheffield, Yorkshire**

drawing title
**TREE SURVEY PLAN
FIGURE 2**

scale 1:1000 @ A3 drawn AAB date June 2016

drawing number **7301-A-02.2** rev -

Hollin Busk
The Barn



KEY

- Tree/Group to be Retained
- Tree/Group to be removed to facilitate the proposals
- Category U - Unsuitable for retention on arboricultural grounds
- Hedgerow Proposed to be Retained and Incorporated into the New Development
- Hedgerow Proposed to be Removed to Facilitate the Development upon Approval of the Application
- Root Protection Area (Shown for retained trees only)
- T1 (A)
G1 (A) Individual / Group Number and BS Category
- Indicative Shade Pattern (where appropriate)

Scale 1:2000 @ A3

0 50 100m

NOTES

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-	18.07.2016	First Issue	NJG
A	15.11.2017	Revised Masterplan inserted	TCB
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project
**Land at Deepcar
Sheffield, Yorkshire**

drawing title
**TREE RETENTION PLAN
FIGURE 3**

scale
1:2000 @ A3

drawn
TCB

date
Nov 2017

drawing number
7301-A-03.1

rev
A

Appendix A - Tree Schedule

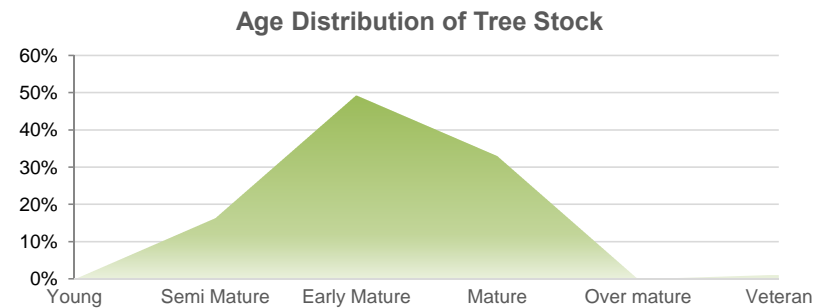
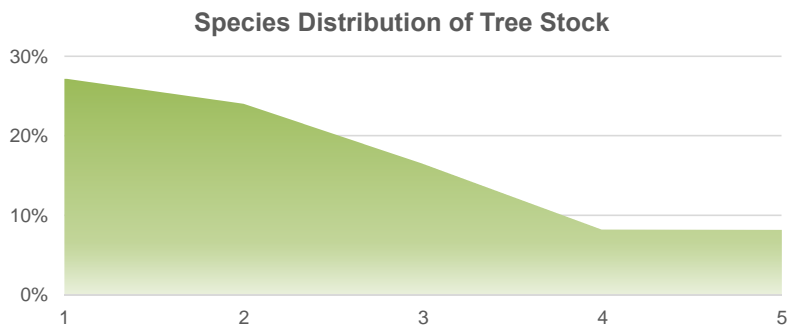
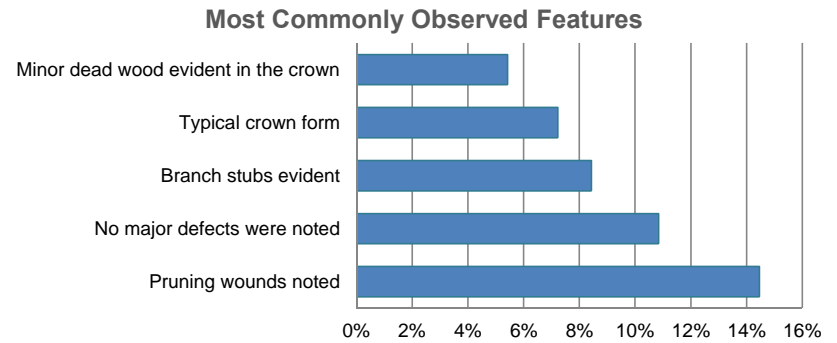
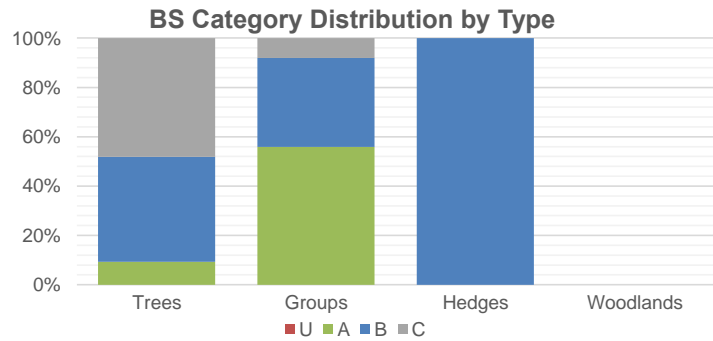
Measurements	Age Class	Overall Condition	Root Protection Area (RPA)
Height - Measured using a digital laser clinometer (m)	YNG: Young trees up to ten years of age	G - Good: Trees with only a few minor defects and in good overall health needing little, if any attention	" The RPA Radius column provides the extent of an equivalent circle from the centre of the stem (m). " The RPA is calculated using the formulae described in paragraph 4.6.1 of British Standard 5837: 2012 and is indicative of the rooting area required for a tree to be successfully retained. Tree roots extend beyond the calculated RPA in many cases and where possible a greater distance should be protected. " Where veteran trees have been identified the RPA has been calculated in accordance with Natural England guidance i.e. 15x the stem diameter, uncapped.
Stem Dia. - Diameter measured (mm) in accordance with Annex C of the BS5837	SM: Semi-mature trees less than 1/3 life expectancy	F - Fair: Trees with minor rectifiable defects or in the early stages of stress from which it may recover	
Crown Radius - Measured using a digital laser clinometer radially from the main stem (m)	EM: Early mature trees 1/3 . 2/3 life expectancy	P - Poor: Trees with major structural and/or physiological defects such that it is unlikely the tree will recover in the long term	
Abbreviations est - Estimated stem diameter avg - Average stem diameter for multiple stems upto - Maximum stem diameter of a group	M: Mature trees over 2/3 life expectancy	D - Dead: This could also apply to trees in an advanced state of decline and unlikely to recover	
	OM: Over mature declining or moribund trees of low vigour	The BS categorisation has paid particular consideration to the following " The health, vigour and condition of each tree " The presence of any structural defects in each tree/group and its future life expectancy " The size and form of each tree/group and its suitability within the context of a proposed development " The location of each tree relative to existing site features e.g. its screening value or landscape features " Age class and life expectancy	
	V: Veteran tree possessing certain attributes relating to veteran trees		

Structural Condition
The following is an example of considerations when inspecting structural condition: <ul style="list-style-type: none"> • 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 • Cavities in the stem or as a result of limb losses or past pruning
NOTES
The exact position of individual trees or species included as part of a tree group, hedgerow or woodland should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculating foundation design in accordance with NHBC Chapter 4.2 'Building near Trees'.

Quality Assessment of BS Category
Category U - Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.
Category A - Trees of high quality with an estimated remaining life expectancy of at least 40 years.
Category B - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
Category C - Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.
Sub-categories of the four categories above: (i) - Mainly arboricultural value (ii) - Mainly landscape value (iii) - Mainly cultural or conservation value

Appendix Summary

	Individual Trees	Totals	Tree Groups and Hedgerows	Totals
Category U		0		0
Category A	T26, T39, T40, T43, T44	5	G1, G3	2
Category B	T3, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15, T19, T20, T23, T24, T35, T36, T42, T47, T48, T49, T50, T51	23	G4, G5, H1, H2, H3	5
Category C	T1, T2, T4, T5, T16, T17, T18, T21, T22, T25, T27, T28, T29, T30, T31, T32, T33, T34, T37, T38, T41, T45, T46, T52, T53, T54	26	G2	1
	Total	54	Total	8



Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
INDIVIDUAL TREES										
T1	Hawthorn <i>Crataegus monogyna</i>	4.5	180 150 100	N - 2.5 S - 2.5 E - 2 W - 0.5	M	F	Broken branches evident Crossing and rubbing branches Flail damage evident Low crown form Multi stemmed from base	29	3.1	C (i)
T2	Hawthorn <i>Crataegus monogyna</i>	4	220	2.5	M	F	Broken branches evident Browsing damage noted on main stem Crossing and rubbing branches	22	2.6	C (i)
T3	Japanese Cherry <i>Prunus spp.</i>	7	410	5	M	F	Branch stubs evident Even crown form Multi leadered form Pruning wounds noted Occluded bark between leaders Mower damage to roots	76	4.9	B (i)
T4	Elder <i>Sambucus nigra</i>	3	11x 70	2	EM	P	Dense undergrowth at the base Multi stemmed from base Dead stems	24	2.8	C (i)
T5	Mountain Ash <i>Sorbus aucuparia</i>	3	130	2	SM	F	Bark wounds noted Leaning stem	8	1.6	C (i)
T6	Japanese Cherry <i>Prunus spp.</i>	4.5	230	N - 3.5 S - 4 E - 4 W - 2	EM	G	Pruning wounds noted Typical crown form Leaning from prevailing wind	24	2.8	B (ii)
T7	Japanese Cherry <i>Prunus spp.</i>	4.5	220	N - 3.5 S - 4 E - 4 W - 2	EM	G	Pruning wounds noted Typical crown form Leaning from prevailing wind	22	2.6	B (ii)
T8	Japanese Cherry <i>Prunus spp.</i>	4.5	280	N - 3.5 S - 4 E - 4 W - 2	EM	G	Pruning wounds noted Typical crown form Leaning from prevailing wind	35	3.4	B (ii)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T9	Japanese Cherry Prunus spp.	4.5	310	N - 3.5 S - 5 E - 4 W - 2	EM	G	Pruning wounds noted Typical crown form Leaning from prevailing wind bark wound at 1.5m Exposed heartwood	43	3.7	B (ii)
T10	Japanese Cherry Prunus spp.	4.5	280	N - 3.5 S - 4 E - 4 W - 2	EM	G	Pruning wounds noted Typical crown form Leaning from prevailing wind	35	3.4	B (ii)
T11	Japanese Cherry Prunus spp.	4.5	200 170 120 100	N - 3.5 S - 4 E - 4 W - 2	EM	G	Pruning wounds noted Typical crown form Leaning from prevailing wind	42	3.7	B (ii)
T12	Japanese Cherry Prunus spp.	4.5	260	N - 3.5 S - 4 E - 4 W - 2	EM	G	Pruning wounds noted Typical crown form Leaning from prevailing wind	31	3.1	B (ii)
T13	Japanese Cherry Prunus spp.	4.5	320	N - 3.5 S - 4 E - 4 W - 2	EM	G	Pruning wounds noted Typical crown form Leaning from prevailing wind	46	3.8	B (ii)
T14	Ash Fraxinus excelsior	8	350 330	4	M	F	Basal suckers present Branch stubs evident Pruning wounds noted Twin stemmed from base	105	5.8	B (i)
T15	Ash Fraxinus excelsior	9	540	6	M	G	Basal suckers present Minor dead wood evident in the crown (<75mm) Pruning wounds noted	132	6.5	B (i)
T16	Ash Fraxinus excelsior	5	130	2.5	SM	G	Basal suckers present No major defects were noted Growing from base of wall	8	1.6	C (i)
T17	Ash Fraxinus excelsior	5	130	2.5	SM	G	Basal suckers present No major defects were noted Growing from base of wall	8	1.6	C (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T18	Ash <i>Fraxinus excelsior</i>	5	140 190	3	SM	G	Basal suckers present No major defects were noted Growing from base of wall	25	2.8	C (i)
T19	Japanese Cherry <i>Prunus spp.</i>	4	360	N - 2 S - 3 E - 3 W - 2	EM	G	Broken branches evident Pruning wounds noted Typical crown form Leaning from prevailing wind	59	4.3	B (ii)
T20	Japanese Cherry <i>Prunus spp.</i>	4.5	240 240	N - 3.5 S - 4 E - 4 W - 2	EM	G	Pruning wounds noted Typical crown form Leaning from prevailing wind	52	4.1	B (ii)
T21	Japanese Cherry <i>Prunus spp.</i>	4.5	170 170 150	2.5	EM	G	No major defects were noted Typical crown form	36	3.4	C (i)
T22	Hawthorn <i>Crataegus monogyna</i>	3.5	100 100 70	2	M	F	Broken branches evident Crossing and rubbing branches Low crown form	11	1.9	C (i)
T23	Japanese Cherry <i>Prunus spp.</i>	8	320	N - 5 S - 5 E - 6 W - 2	EM	F	Bark wounds noted Branch stubs evident Pruning wounds noted Suppressed crown	46	3.8	B (i)
T24	Japanese Cherry <i>Prunus spp.</i>	8	280 290	5	EM	F	No major defects were noted Twin stemmed from base Typical crown form	74	4.8	B (i)
T25	Horse Chestnut <i>Aesculus hippocastanum</i>	5	350	3	EM	F	Branch stubs evident Low crown form Old laid forms Pruning wounds noted Situated offsite	55	4.2	C (i)
T26	Sycamore <i>Acer pseudoplatanus</i>	14	est 600	7	M	G	Base obscured Even crown form No major defects were noted Situated offsite Unable to gain access	163	7.2	A (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T27	Ash Fraxinus excelsior	6	80	1	SM	F	Beneath power lines	3	1.0	C (i)
T28	Swedish Whitebeam Sorbus intermedia	5	110	2	SM	F	Bark wounds noted Even crown form Multi leadered form Adjacent to power lines and pole	5	1.3	C (i)
T29	Ash Fraxinus excelsior	6	150 130 130 90	2.5	SM	P	Bark wounds noted Branch stubs evident Minor dead wood evident in the crown (<75mm) Multi stemmed from base Beneath power lines	29	3.0	C (i)
T30	Ash Fraxinus excelsior	6	150 130 70	2	SM	P	Bark wounds noted Crown had been topped Minor dead wood evident in the crown (<75mm) Multi stemmed from base Beneath power lines	20	2.5	C (i)
T31	English Oak Quercus robur	5	140	2.5	SM	P	Beneath power lines occluded wire fence at 1m	9	1.7	C (i)
T32	English Oak Quercus robur	4	120	2	SM	P	Beneath power lines	7	1.4	C (i)
T33	Sycamore Acer pseudoplatanus	10	6x 210	5	M	P	Bark wounds noted Basal suckers present Branch stubs evident Crown had been topped Minor dead wood evident in the crown (<75mm) Multi stemmed from base Overhead cables	120	6.2	C (i)
T34	English Oak Quercus robur	5	220	3	SM	G	No major defects were noted Overhead cables	22	2.6	C (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T35	English Oak <i>Quercus robur</i>	6	320	4	SM	G	Broken branches evident No major defects were noted Situated offsite	46	3.8	B (i)
T36	Norway Spruce <i>Picea abies</i>	8	260	2	SM	F	Base obscured Branch stubs evident No major defects were noted	31	3.1	B (i)
T37	Ash <i>Fraxinus excelsior</i>	6	80	1	SM	P	Bark wounds noted Browsing damage noted on main stem Etiolated form	3	1.0	C (i)
T38	Hawthorn <i>Crataegus monogyna</i>	5	120 100 90	2	EM	F	Broken branches evident Browsing damage noted on main stem Low crown form Multi stemmed from base	15	2.2	C (i)
T39	Sycamore <i>Acer pseudoplatanus</i>	18	820	9	M	G	Branch stubs evident Even crown form Major dead wood evident in the crown (>75mm) No major defects were noted Situated offsite Situated 4m from boundary	304	9.8	A (ii)
T40	Sycamore <i>Acer pseudoplatanus</i>	18	780	9	M	G	Branch stubs evident Even crown form Major dead wood evident in the crown (>75mm) No major defects were noted Situated offsite Situated 4m from boundary	275	9.4	A (ii)
T41	Hawthorn <i>Crataegus monogyna</i>	4	130	1	EM	F	Browsing damage noted on main stem	8	1.6	C (i)

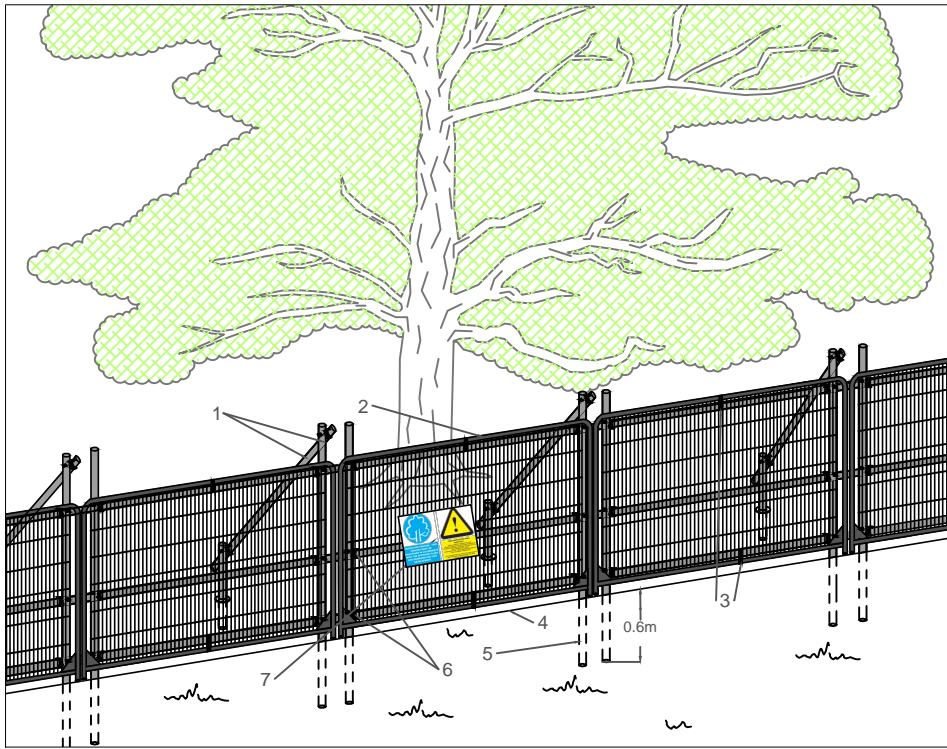
Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T42	Ash Fraxinus excelsior	17	1100	10	V	F	Basal cavity observed Branch socket cavities observed Branch stubs evident Even crown form Major dead wood evident in the crown (>75mm) Multi leadered form Growing at top of bank exposed root buttresses Cavity 450mm x 500mm	855	16.5	B (i)
T43	Ash Fraxinus excelsior	25	est 1000	10	M	G	Light ivy cover Minor dead wood evident in the crown (<75mm) No major defects were noted Growing at base of bank adjacent to stream	452	12.0	A (i)
T44	Ash Fraxinus excelsior	20	est 1200	N - 5 S - 10 E - 4 W - 12	V	P	Basal cavity observed Branch stubs evident Dense undergrowth at the base Lateral lever arm observed Major dead wood evident in the crown (>75mm) Specimen in extensive decline Storm damage present Main stem hollow to 4m with large entrance Lever arm to West attached at 4m Large dead stubs	1018	18.0	A (iii)
T45	Ash Fraxinus excelsior	9	190 230 240 220 270	4	EM	P	Branch stubs evident Multi stemmed from base Pruning wounds noted Waterlogged ground Rubble and rubbish at base	121	6.2	C (i)
T46	Hawthorn Crataegus monogyna	3	50 100 50	1.5	SM	F	Bark wounds noted Branch stubs evident	7	1.5	C (i)
T47	Sycamore Acer pseudoplatanus	15	est 720	6	M	G	Even crown form Minor dead wood evident in the crown (<75mm) No major defects were noted Overhead cables Pruning wounds noted Light ivy on main stem In garden of property	235	8.6	B (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T48	Sycamore Acer pseudoplatanus	13	410	4	M	G	No major defects were noted Pruning wounds noted Damage to roots for recent road surfacing works	76	4.9	B (i)
T49	Sycamore Acer pseudoplatanus	9	360	4	M	G	No major defects were noted Pruning wounds noted	59	4.3	B (i)
T50	Sycamore Acer pseudoplatanus	8	280	4	M	G	No major defects were noted Pruning wounds noted	35	3.4	B (i)
T51	Sycamore Acer pseudoplatanus	14	340	4	M	G	No major defects were noted Pruning wounds noted	52	4.1	B (i)
T52	Sycamore Acer pseudoplatanus	4	90	1	SM	F	Pruning wounds noted	4	1.1	C (i)
T53	Sycamore Acer pseudoplatanus	6	120 130	1.5	SM	F	Pruning wounds noted	14	2.1	C (i)
T54	Sycamore Acer pseudoplatanus	4	90	1	SM	F	Pruning wounds noted	4	1.1	C (i)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
GROUPS OF TREES										
G1	Ash Fraxinus excelsior Beech Fagus sylvatica Hawthorn Crataegus monogyna Horse Chestnut Aesculus hippocastanum Sycamore Acer pseudoplatanus	14	est 500	6	EM / M	F / G	Branch stubs evident Interlocking crowns Minor dead wood evident in the crown (<75mm) No major defects were noted	113	6.0	A (ii)
G2	Wild Cherry Prunus avium	8	100	2	SM	P	Single stem forms Suckered from old stump Some multi stemmed	5	1.2	C (ii)
G3	Ash Fraxinus excelsior Elder Sambucus nigra English Oak Quercus robur Goat Willow Salix caprea Hawthorn Crataegus monogyna Horse Chestnut Aesculus hippocastanum Sycamore Acer pseudoplatanus Mountain Ash Sorbus aucuparia	16	est 400	6	EM / M	F / G	Broken branches evident Failed trees Minor dead wood evident in the crown (<75mm) Forms part of wider group Typical defects noted Overhang of site 3m	72	4.8	A (ii)
G4	Ash Fraxinus excelsior Hawthorn Crataegus monogyna	16	350	5	EM	F	Broken branches evident Dense ivy cover on main stem Dense undergrowth at the base Even crown form Minor dead wood evident in the crown (<75mm)	55	4.2	B (ii)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G5	Elder Sambucus nigra Hawthorn Crataegus monogyna Hazel Corylus avellana Holly Ilex aquifolium Mountain Ash Sorbus aucuparia	5	est 10x 80	3	EM / M	F	Coppiced form Sporadic group Possibly lapsed hedge on top of bank	29	3.0	B (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
HEDGEROWS										
H1	Leyland Cypress Cupressocyparis leylandii	4	est 150	0.5	EM	G	Maintained hedgerow Solid screening value	10	1.8	B (ii)
H2	Leyland Cypress Cupressocyparis leylandii	1.5	avg 100	0.5	SM	G	Maintained hedgerow Situated offsite	5	1.2	B (ii)
H3	Beech Fagus sylvatica	2	est 70	0.5	EM	G	Maintained hedgerow Situated offsite	2	0.8	B (ii)



Standard specification for protective barrier

1. Standard scaffold poles
2. Heavy gauge 2m tall galvanized tube and welded mesh infill panels
3. Panels secured to scaffold frame with wire ties
4. Ground level
5. Uprights driven into the ground until secure (min depth of 0.6m)
6. Standard scaffold clamps
7. Construction Exclusion Zone signs



Above ground stabilising systems

1. Stabiliser strut with base plate secured with ground pins
2. Feet blocks secured with ground pins
3. Construction Exclusion Zone signs

Protective Fencing to be positioned to the specified dimensions in accordance with Figure 3 Tree Retention Plan

NOTES

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APPENDIX B PROTECTIVE FENCING SPECIFICATIONS

CAD file: S:\Arb resources\Basic Templates\Tree Protection\Appendix B - Protective Fencing A4.dwg