



ANDERSON

TREE CARE

Arboricultural Contractors and Consultants

Arboricultural Impact Assessment

Site:	Chantry Car Park Inkersall Road Staveley Chesterfield S43 3LJ
Client:	Mr Terry Damms
Date of Survey:	22 nd April 2021
Weather:	Clear and Bright

Appendices:	I. Tree Survey Schedule II. Tree Location Plan
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1 Introduction

1.1 Instruction

- 1.1.1 Anderson Tree Care was instructed by Terry Damms of Staveley Miners Welfare Football Club (SMWFC) to carry out a tree survey and Arboricultural Impact Assessment (AIA) of the trees located on and adjacent to the proposed development area at Chantry Car Park, Inkersall Road, Staveley (fig. 1).

Fig.	Description	Image
1	Plan of the Chantry Car Park site with the planning application boundary in red.	

1.2 BS5837:2012 Trees in relation to design, demolition and construction – Recommendations

- 1.2.1 The survey of the trees on site and the compilation of the AIA was carried out in accordance with *BS5837:2012 Trees in relation to design, demolition and construction – Recommendations*. The aim of the Standard is to achieve a harmonious and sustainable relationship between trees and structures, this will be used by the Local Planning Authority (LPA) as guidance for decision making for the proposed development.

- 1.2.2 The tree survey is intended to supply the information necessary to ascertain which trees are suitable for inclusion in the development project, and how their retention will affect the manner in which the site is developed. The AIA assesses the level of impact, both direct and indirect, that the proposed development will have on the existing woody vegetation on and adjacent to the site. This includes the impact of any proposed losses and remedial measures to offset these losses.
- 1.2.3 If appropriate for the project, the results of the AIA will inform an Arboricultural Method Statement (AMS) and Tree Protection Plan (TPP). These documents specify processes and procedures to be carried out during the construction phase to minimise the impacts on any retained trees.

1.3 Site Overview

- 1.3.1 The site on Inkersall Road is located on the southern edge of Staveley, a former mining town in the borough of Chesterfield, Derbyshire. Chesterfield town centre is 6km to the south west.
- 1.3.2 The main vehicle entrance to the site is from Inkersall Road, this runs along the western edge of the planning area as shown in Figure 1. There is a pedestrian entrance to Inkersall Road north of the vehicle entrance and a second pedestrian entrance from the Trans Pennine Trail to the east. The Trail, which is open to cyclists and walkers, borders the site to the east. Along the northern edge of the area is Cemetery Road which links Inkersall Road to the A6192.
- 1.3.3 The approximately triangular planning area includes the current Trans Pennine Trail Car Park and the surrounding vegetation. The car park is a rough surfaced area with barriers and planters formed by sleepers, the vegetation is contained within three distinct areas to the north, west and east of the car park. Trees are present within the planters of the car park and the three surrounding green areas.

1.4 Statutory Protection

- 1.4.1 It has not been confirmed whether any of the trees on site are already protected by a Tree Protection Order (TPO) or whether the site is located within a Conservation Area, this should be established before any work is carried out.

1.5 Proposed Development

1.5.1 It is proposed that the current car park is redesigned and expanded, this will involve the levelling off of the existing surface and then re-surfacing and marking out of parking bays for 80 vehicles and 4 disabled users (Fig. 2) (taken from supplied plan *SMW-CCP-003 P1.pdf*).

Fig.	Description	Image
2	Proposed design for the development of Chantry car park.	<p>The diagram is a site plan for the Chantry Car Park. It shows a layout of parking spaces, including a designated area for 4 disabled users. Key features include: <ul style="list-style-type: none"> Existing Pedestrian Entrance: Located at the top left. Proposed Pedestrian Crossing Location: Indicated by a dashed line across a path. Proposed Pedestrian Glassfence: A barrier along a path. Existing Vehicular Entrance: Located at the bottom left. Car Park: The main area with parking bays, some marked with 'D' for disabled users. 5m Clear: A clear zone around the car park. Vehicle Height Restriction Banks: Located along the bottom right edge. Footpath / Trail: A path running along the bottom right. Vegetation: Represented by green circles and shaded areas, primarily on the right and bottom right. </p>

1.5.2 The overall layout of the car park is to remain largely the same with the key difference being the creation of parking spaces on the vegetated area between the site and Inkersall Road. The intention of this is not only increase the usability of the space but to increase visibility from the road in order to deter crime.

1.6 Limitations

1.6.1 Trees are dynamic structures that can never be guaranteed 100% ‘safe’; even those in good health can fail under average conditions. Regular informal inspections can help to identify potential problems before they become acute. The purpose of the survey is not to identify hazardous trees. However, it would be imprudent not to report on any dysfunction or defect identified which would cause a tree to pose an unacceptable level of risk. Any recommended risk mitigation action is included on the survey in bold type under ‘Observations’.

1.6.2 The trees were inspected using Visual Tree Assessment (VTA) techniques from ground level. My inspection was restricted where trees were ivy-clad or located wholly or partially on neighbouring land or where basal growth or other vegetation obscured lower stems and root collars. Where more detailed assessment is required, such as a climbing inspection or invasive investigation, this will be recommended in my conclusion.

- 1.6.3 Observations on the potential arboricultural impact of the development are based upon the proposed site plan provided (*SMW-CCP-003 P1.pdf*). Any modifications made to this plan will invalidate the findings of this assessment and necessitate a review.

2 Tree Assessment Survey

2.1 Methodology

- 2.1.1 The trees on the site with a stem diameter of 75mm or greater measured at 1.5m above ground level were individually assessed for their quality and value. Trees below this size were not included as it is considered that their loss can be easily offset with replanting. Trees not in the proposed area, but considered to have an effect on the design, were also surveyed where possible. All trees and groups were assessed using the criteria found in the cascade chart for tree quality assessment found in *BS5837:2012*. An interpretation of this chart can be found in Table 1.

Category and Definition	Criteria		
	1. Mainly arboricultural qualities	2. Mainly landscape qualities	3. Mainly cultural and/or conservation qualities
U – Expected useful life remaining less than 10 more years.	Trees with serious structural defects which will result in collapse of the tree. Trees which are dead or are in serious and irreversible overall decline. Trees infected with pathogens of significance to the health of other trees nearby. Low quality trees suppressing better trees.		
A – High quality trees with life expectancy of at least 40 more years.	Good examples of species, especially if rare/unusual. Essential components of groups or arboricultural features.	Trees, groups or woodlands with visual arboricultural or landscape value.	Significant conservation, historical, commemorative or other value (e.g. veteran tree).
B – Moderate quality trees with life expectancy of at least 20 more years.	Trees which might be category A but have impaired condition (e.g. defects, storm damage, poor previous management) and are unlikely to be retained beyond 40 years.	Trees in groups which have a higher visual value than the individual trees. Or trees in collectives which have little value to the wider locality.	Trees with material conservation or other cultural value.
C – Low quality trees with life expectancy of at least 10 more years or young tree with stem diameter below 150mm.	Unremarkable trees of limited merit or impaired condition.	Trees in groups which have little impact on the landscapes or individuals with low or temporary landscape benefits.	Trees with no material conservation or other cultural value.

Table 1 – Interpretation of *BS5837:2012* cascade chart for tree quality assessment

- 2.1.2 The survey was carried out on 22nd April 2021 by visual assessment from ground level and measurements were taken using a measurement tape, clinometer or estimated depending on practicality. Whether the aspect of the tree was measured or approximated is identified on the survey and key.
- 2.1.3 Trees growing as groups and hedges are identified and assessed as such where determined to be appropriate. However, an assessment of individuals within any group will still be undertaken if there is a need to differentiate between them, e.g. in order to highlight significant variation in attributes (including physiological or structural condition).
- 2.1.4 The purpose of the survey and assessment is to resolve any conflict between the existing trees and the proposed development; the nature and need for the proposed development is set against the quality and values identified in the survey. This survey can be found as an Appendix to this report along with a key to the column headings.

2.2 Tree Survey Overview

- 2.2.1 The main car park area consists of a vehicle access from Inkersall Road and a small number of unmarked spaces, the surface of this area is a compressed aggregate material (fig. 3). Raised planters have been constructed around the edges of the area and these contain six semi-mature silver birch (*Betula pendula*) G7 in amongst other vegetation. It is evident that these planters have not been managed for a considerable period, so it is unclear whether the birch are planted or self-seeded. Sleepers have been used to construct barriers around the edge of the main parking area and another solid fence exists beyond this to the east and around the edge of G2.

Fig.	Description	Image
3	Photo looking south west from within the car parking area toward the access road.	

- 2.2.2 Aside from the overgrown planters, the encroaching vegetation and low overhanging trees around the edges of the parking area and access indicate a degree of neglect of the site. As shown in Figure 3, even on a bright day the access to the site is dark and enclosed. During my visit there was evidence of recent fly-tipping, and it was not surprising in view of the concealed nature of the site.
- 2.2.3 The existing surface consists of an aggregate of fines and coarse chippings which have been compressed by vehicle movement over many years to create a solid, essentially impermeable surface. This type of surface is unfavourable for root development and growth; roots require water percolation and aeration to create a nutrient rich soil environment. This means that the roots of trees around the edge will have preferentially grown elsewhere, not only due to the lack of permeability but also because root penetration pressure is greatly limited in poor, compacted soils (Roberts, J., Jackson, N. & Smith, M., 2006. *Tree Roots in the Built Environment*). The resulting root morphology of the trees at the edges of groups G1, G2 and G3 are highly likely to be biased toward the centre of the groups rather than the outside.
- 2.2.4 To the north of the car park is the woodland group G1. This is comprised of semi-mature to mature broadleaf tree species, namely English oak (*Quercus robur*), silver birch, cherry plum (*Prunus cersifera*), field maple (*Acer campestre*), common ash (*Fraxinus excelsior*), wild cherry (*Prunus avius*), goat willow (*Salix caprea*), horse chestnut (*Aesculus hippocastanum*) and small leaved lime (*Tilia cordata*). The understorey layer is predominantly blackthorn

(*Prunus spinosa*), hawthorn (*Crataegus monogyna*), hazel (*Corylus avellana*) with bramble (*Rubus fruticosus*) and dog rose (*Rosa canina*) ground cover.

- 2.2.5 The majority of the established trees in G1 are the same age and have been planted with regular spacing, this is likely to have been done approximately 20 years ago. The occasional mature trees (willow, horse chestnut and lime) all pre-date this planting. The trees at the car park edge, mostly goat willow, have all been cut to ground level within the last ten years and the vegetation here is now formed by dense coppice regrowth from the stumps. There is no other evidence of management of this group.
- 2.2.6 The planted trees are all growing well with the exception of a small number of failures and the group is at the stage where it is necessary to thin the population. This involves removing approximately one third of the trees to reduce competition to the better specimens so that they may develop better forms. At present, the biodiversity in the group is very low with little variation in ground cover, thinning also helps light reach this area and encourage new species establishment. The removed trees are selected based on their overall health and their proximity to good specimens, this operation is a vital part of good silvicultural management and if not carried out trees will develop overly slender forms.
- 2.2.7 There are a small number of ash trees present within the group, these are in the centre of the group away from the edges. Although ash dieback disease (*Hymenocyphus fraxineus*) has not been reported in the area (see <http://chalamap.fera.defra.gov.uk>), it is present in all of the surrounding areas and highly likely to be present here. It is currently difficult to assess the degree of impact of this disease due to the lack of leaves on the trees, but the amount of new leaf buds present indicates that there is yet to be any significant crown loss.
- 2.2.8 Due to their current size and location, these trees do not pose a risk to the public even if they are affected by ash dieback disease and in accordance with Forest Research recommendations pre-emptive felling should not be carried out. However, if thinning is to be carried out, then the limited life expectancy of ash trees means that they should be removed as part of this operation. A better assessment of the trees can be made when the trees are in full leaf in mid to late summer.
- 2.2.9 The lack of previous management means that trees at the edge of the group, adjacent to targets such as highways, have not been managed for risk mitigation and height clearance. In particular on the boundary with Cemetery Road (fig. 4) there is one dead tree which has failed toward the road and caught in another tree and other trees have been damaged by impacts with high sided commercial vehicles. Frequent safety inspections of trees which are

accessible to the public or have the potential to impact public area should form part of reasonable tree management.

Fig.	Description	Image
4	The northern edge of G1 as viewed from the bridge over Cemetery Road.	

2.2.10 To the east of the car park is a second woodland group G2 which is broadly the same in character and composition as G1. This group forms a narrow strip between the Trans Pennine Trail and the car park and runs south below the existing vehicle entrance.

2.2.11 The ash tree T6 has been individually identified due to its size and location on the corner south of the existing entrance. It has a reduced bud density in the crown which indicates that it has a reduction in vitality consistent with advanced ash dieback disease colonisation. Due to its proximity to Inkersall Road and the risk this tree will present to the public once crown loss exceeds 50%, it is likely this tree will require removal within the coming years. Considering this, this tree cannot be graded any higher than U.

2.2.12 Similar to G1, this group should be thinned to improve conditions for the better specimens and increase light levels on the ground to improve diversity. The ash trees within this group are growing close to the access road boundary and as such could pose a risk if significantly affected by ash dieback disease. Organisations which manage large ash tree populations

such as Sheffield City Council and the National Trust are using 50% crown loss or greater as the criterion for felling affected ash trees and I believe this is reasonable.

2.2.13 The final group G3 west

of the access road is best described as an overgrown verge rather than a woodland group. Two early mature trees are present within the group, wild cherry T4 and cherry plum T5, but aside from those the area is populated by young self-seeded and coppice growth hawthorn, ash, goat willow, wild cherry, cherry plum and blackthorn. This creates a dense screen of vegetation between the car park and the road (Fig. 5).

Fig.	Description	Image
5	G3 as viewed from the car park looking west toward Inkersall Road.	

2.2.14 Much like the other groups, there is little evidence of any management of the trees in this area, the vegetation on the western edge is encroaching on the pavement (Fig. 6) and causing damage to the boundary fence. There is also a gap in the group where a tree has failed to the east in recent years, whether this failure was foreseeable is unknown but failure to the west would have impacted the road.

Fig.	Description	Image
6	Looking north along Inkersall road with the G3 on the right of the photo and wild cherry T4 in the foreground.	

2.2.15 Wild cherry T4 is the most prominent within the group due to its size and position at the northern corner of the vehicle entrance. Other than its relative size within the group, it is a poor tree which has developed twin stems from ground level with a weak compression union between the primary stems. As the stems increase in diameter they will contact at the union and exert lateral force on each other acting to push the union apart. These unions have a higher likelihood of failure than well-formed tension unions, particularly in strong winds.

2.2.16 Cherry plum T5 has been individually identified due to its larger stem diameter than other trees in the group. Aside from this it is an unremarkable tree with a poor crown structure containing multiple crossing branches and minor compression unions.

3 Arboricultural Impact Assessment

3.1 Direct Impacts

3.1.1 The redesigning of the current car park will require the removal of the vegetation west of the access road, this is group G3 which includes the wild cherry T4 and cherry plum T5.

3.1.2 The vegetation in this area is all of low quality and its presence reduces the useability of the car park. Regardless of the proposed redesigning, its removal would be recommended on the grounds of general management for both the car park and the pavement it is

encroaching upon. The visibility of this vegetation from Inkersall Road means that this will have an impact on visual amenity but the resulting revealing of the higher quality trees beyond in group G2 means that this will only be minor. This can further be negated by including a planting scheme in the car park design.

- 3.1.3 The resurfacing of the main car parking area will require the removal of the raised planters which contain 6 semi mature birch trees G7.
- 3.1.4 The birch trees are all of low quality and have little visual significance within the planning area due to the high density of trees in the surrounding woodland groups G1 and G2. They are currently only visible to users of the car park so their loss would have a negligible impact on visual amenity.
- 3.1.5 The poor quality of proposed removals and the presence of large retained woodland groups within the planning area means that the proposed redesign will have a minor negative arboricultural impact. Regardless of the development, the majority of this vegetation would need to be removed as part of management to improve the car park.

3.2 Indirect Impacts

- 3.2.1 Due to the degree of overhanging branches into the car park area from woodland groups G1 and G2 it will be necessary to carry out work to cut back the crowns of the trees to create clearance for construction vehicles and the resurfacing work.
- 3.2.2 Similar to the tree removals, this cutting back would be necessary as part of general management of the site regardless of the proposed development. The majority of this work would be recoppicing previously coppiced trees with some minor crown lifting and selective branch shortening. The density of these two groups means that this work would have a negligible impact on the visual amenity of the groups.
- 3.2.3 Providing that all tree work is carried out in compliance with *BS3998:2010 Tree Work – Recommendations*, this pruning will not have a long-term impact on the life expectancy of the trees.
- 3.2.4 The resurfacing of the car park will require minor excavation within the rooting areas of the edge trees to the south and the west of retained groups G1 and G2 respectively. As discussed in 2.2.3, the root density here is likely to be much lower than within the groups due to the unfavourable surface. Any roots which are found will be from the coppice stools at the edges. Providing that no excavation takes place beyond the edges of the existing

impermeable surface, this work is unlikely to have any impact on T6 and the trees within the groups G1 and G2.

3.3 Mitigation

- 3.3.1 Considering the high density of retained trees within groups G1 and G2 it should be considered unnecessary to require replacement planting for the proposed removals.
- 3.3.2 However, a low-key planting scheme which includes a few high habitat value trees which are not already present, such as rowan (*Sorbus aucuparia*), would be recommended to improve the appearance of the main car park area. These could also be planted at suitable intervals along the boundary with Inkersall Road providing they do not create any visual obstruction.
- 3.3.3 During the work to facilitate the car park construction, general management work should be carried out on the woodland groups G1 and G2. This should involve selective thinning by the removal of trees with poor forms, those which are suppressing better specimens and those which are dead, dying and diseased. Trees in group G1 which are adjacent to Inkersall Road and Cemetery Road should also be crown lifted to a height of 5.5m to prevent any further impact damage from vehicles.
- 3.3.4 The trees which are to be retained should be protected during construction work with the adoption of an Arboricultural Method Statement (AMS) in accordance with *BS5837:2012 – Trees in Relation to Design, Demolition and Construction*.
- 3.3.5 As well as measures to restrict general site activities, this will mainly involve the specification for fencing to protect the rooting areas of G1 and G2.

4 Appendix

- I. Tree Survey Schedule
- II. Tree Location Plan

Ref.	Species	Ht. (m)	Stem Dia. @ 1.5m (mm)	Life Stage	Estimated Remaining Contribution	General Observations - Recommendations in bold	Retention Category
G1	Mixed	14 Max.	500 Max.	Y-M	20+	Woodland group north of the existing car park, good variation of broadleaf species which are a mixture of self-seeded and planted. Coppice willow regrowth adjacent to the car park and vegetation generally beginning to encroach. Dead, diseased and dying trees within the group which is overdue for thinning. Poor ground flora diversity. Remove hung up failed tree on northern edge and crown lift over Cemetery Road to 5.5m.	B2
G2	Mixed	17 Max.	650 Max.	Y-M	20+	Woodland group between the car park and the Tran Pennine Trail. Similar to G1, mix of self-seeded and planted broadleaf species with a number of mature willow present. Branches and coppice regrowth adjacent to access road creates limited height clearance.	B2
G3	Mixed	7 Max	150 Max.	Y	10+	Scrubby area between the access road and Inkersall Road. High proportion of willow saplings, possibly coppice regrowth, with occasional other species present. Encroaching on the pavement and 1 larger failed tree present.	C2
T4	Wild Cherry (<i>Prunus avium</i>)	11	350 350	EM	10+	Largest tree within G3 and a prominent location on the corner. Twin stemmed from ground level with a compression union between the stems. Balanced form and good vitality.	C1
T5	Cherry plum (<i>Prunus cerasifera</i>)	7	270	EM	10+	Form and branch structure typical of the species; multiple crossing branches and compression unions present in the crown. Balanced form and normal vitality.	C1
T6	Common ash (<i>Fraxinus excelsior</i>)	14	750*	M	<10	Twin stemmed from 1.5m with good union formed between the stems. Sparse crown appearance with high proportion of deadwood, possibly a result of ash dieback disease. * Estimated due to lack of access	U
G7	Silver Birch (<i>Betula pendula</i>)	12 Max.	180 Max.	SM	10+	Growing from neglected planters within the car park, likely to be self-seeded. All single stemmed and slender due to competition with surrounding vegetation, a number have historic damage to their lower stems.	C1

Survey Key

Ref.:	Reference to location of tree or group on site plan
Species:	Common name
Ht.:	Tree height estimated to top of crown in metres
Stem dia. @1.5m:	Trunk diameter measured in millimetres at 1.5m metres above ground level. For leaning and multi-stemmed trees refer to <i>BS5837:2012 Annex C</i> for measurement methodology
Life Stage:	Age class of tree relative to species: Y Young – A tree in the first third of its natural lifespan SM Semi-Mature – A tree in the middle third of its natural lifespan M Mature – A tree in the final third of its lifespan OM Over mature – A tree in natural decline D Dead – A tree which is devoid of living tissue and no longer functions
Est. remaining contribution	Estimated remaining useful contribution in range of years; <10, 10+, 20+, 40+
General Observations:	General observations, particularly of structural and/or physiological condition (e.g. the presence of any decay and physical defect), and/or preliminary management recommendations given in bold type. AGL – above ground level.
Retention Category	Category grading according to cascade chart for tree quality assessment found in <i>BS5837:2012</i>



Chantry Car Park Tree Location Plan
Taken from supplied plans - Locations approximate
04.2021