

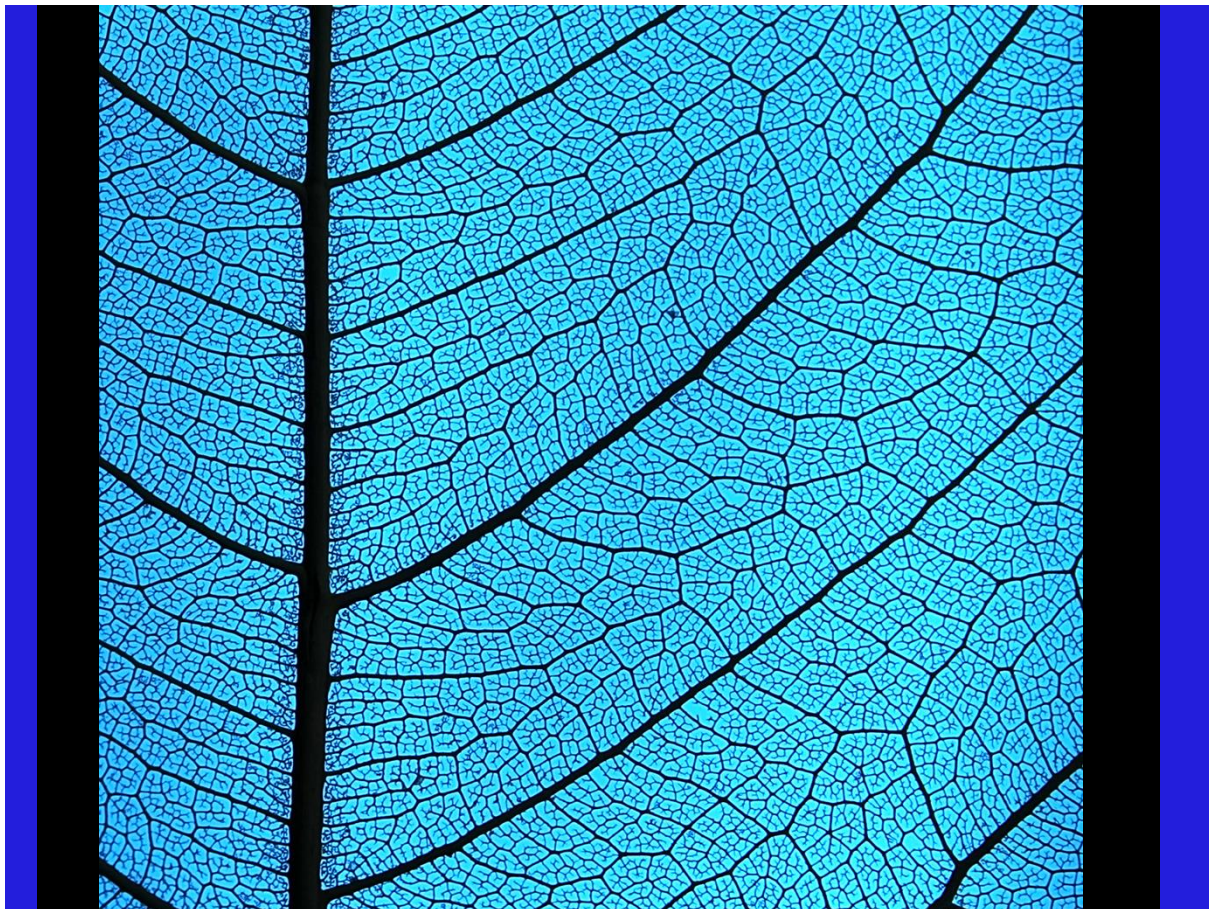
BS5837:2012 Tree Survey Report

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Cleator Moor Connected Town
27 March 2024



BS5837:2012 Tree Survey Report

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Executive summary

On behalf of Cumberland Council, Jacobs UK Limited has carried out a tree survey in accordance with BS 5837:2012 'Trees in Relation to Design, Demolition and Construction- Recommendations' in March 2024 at Cleator Moor.

The survey records all trees within the site and all those which may be affected by any development proposals within the site boundary, recording a number of parameters including species, crown spread and Root Protection Area (RPA).

The RPA of any given tree is the area of ground around that tree which should not be disturbed by excavation, compaction, changes in level or other construction/demolition operations. The extent of the RPA is calculated in accordance with BS 5837:2012, and is an important metric for understanding the impact a proposal will have on tree removal and retention and how to protect those trees retained.

The purpose of this report is to illustrate existing arboricultural constraints on site with the intention to 'design out' adverse impacts to trees and woodlands in the first instance. Design proposals should take into account the findings of this Tree Constraints Report.

The survey recorded 15 tree groups and 12 individual trees.

None of the trees are protected by Cumberland Council Tree Preservation Order (TPO). The site is not located within a Conservation Area. The site contains no veteran trees, Ancient Woodland or registered ancient trees and none have been identified by this survey. However, it should be noted that some areas of woodland surveyed are listed as Priority Habitat Inventory – Deciduous Woodland on MAGIC Maps. Trees and groups affected by this are (G1/G2/T1/T2/G11-G13/T9/T10).

The information contained within this report should be used to inform the detailed design of the scheme and be the basis for an Arboricultural Impact Assessment, Arboricultural Method Statement and a Tree Protection Plan.

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1. Introduction

1.1 Purpose of Report

Jacobs UK Ltd. (Jacobs) were commissioned by Cumberland Council to undertake a BS5837:2012 Tree Survey Report for the Cleator Moor Connected Town scheme (hereafter known as the scheme). The Tree Survey Report has been produced with reference to 'BS5837:2012 – Trees in relation to design, demolition and construction – Recommendations' (BSI, 2012).

1.2 The Scheme

The Connected Town project seeks to deliver a programme of transport and related public realm interventions which will result in Cleator Moor having a high-quality integrated transport network, transforming the accessibility and attractiveness of the town. The project encompasses investment in gateways and corridors to improve connectivity between residential and employment areas; corridor enhancements to improve access on foot; and improved local infrastructure for active travel.

The project objectives are:

- To promote clean growth and decarbonisation. There is opportunity to promote low carbon journeys, with short trips on foot or by bike, creating environmentally low impact clean growth journeys.
- To promote active travel. Ability to capitalise on the town's walkable catchment and flat landscape which lends itself to walking and cycling. This would see Cleator Moor's town centre once again become a viable hub for both the local community and visitors.
- Tackling poor health outcomes. Encouraging participation in active journeys, promoting a healthier lifestyle with increased physical activity.
- Capitalise on existing assets. The Lake District National Park World Heritage Site, employment and services at Whitehaven and Sea to Sea cycling route are significant assets which could be better linked to Cleator Moor.
- Strengthen the attractiveness of Cleator Moor. There is clear opportunity to strengthen perceptions of Cleator Moor by giving the town a better sense of place.

The Project, through the delivery of an integrated walking and cycling network in Cleator Moor, improvements to key roads and junctions, as well as environmental and public realm improvements at key 'gateways' will result in:

- Increase in the number of new and upgraded cycle and walking routes;
- Increase in upgraded road infrastructure; and
- Improved public realm.

The Connected Town Project has divided areas of the town into sections. The sections relevant within this report are Section 5 – Market Square to Cleator Mills Link, Section 6 – Leconfield to Activity Centre Link and Section 7 – Leconfield Industrial Estate Link. The intended developments for each section are listed below:

Town Square to Cleator Mills Link	• Improve signage and wayfinding • Upgrade to shared use path • Improve street lighting • Provide TOUCAN pedestrian crossing on Trumpet Terrace • Introduce traffic calming and 20mph zone on Cragg Road
Leconfield to Activity Centre Link	• Improve signage and wayfinding • Traffic calming on Birks Road including raised crossing, build outs, and surfacing/materials • New active travel link from football club to existing cycle route to the west including ramp access to C2C • New active travel link from activity centre to Birk's Road • Street lighting along proposed links • Planting and street furniture
Leconfield Industrial Estate Links to C2C	• Improve signage and wayfinding • Upgrade existing bridleway (BR403019) to footpath construction to Sanderson Park • Street lighting along proposed links • Traffic calming/ junction build-out at Sanderson Park

The Survey Area (the red line) is shown in Appendix F (Tree Constraints Plan). Note the survey area may differ from the site boundary.

1.3 Methodology and Scope

The tree survey was conducted in line with the methodology detailed within BS 5837:2012 (BSI, 2012) and involved the surveying of trees as individuals or groups of trees within an agreed study area (forming the survey area) supplied by the Jacobs design team. The information collected and methodology used is summarised in Appendix A (Tree Survey Methodology) of this Tree Survey Report.

Trees are reported as individuals or groups. Tree locations were determined on site using digital survey software and hardware which use a combination of georeferenced topographical survey (topographical drawing reference here), aerial imagery and the devices inbuilt Global Position System (GPS). Trees plotted with the internal GPS can be assumed to have an accuracy of +/- 5 m.

Trees were categorised using BS 5837 (BSI, 2012) into four categories (A, B, C, U) and for trees in categories A-C, they also qualified under three subcategories (1, 2, 3). A summary of this classification can be seen in Appendix C.

The tree survey data is shown in Appendix E (Tree Survey Schedule) and was used to produce a Tree Constraints Plan (TCP) in Appendix F, which depicts the existing rooting area and canopy constraints posed by the trees within the Site Boundary.

1.4 Limitations and Assumptions

Limitations to the tree survey include the following key points:

- No soil survey data is included in this report. Due to the potential variances of soil type across a site it is considered to be more appropriate to obtain this information from a suitably qualified professional.
- Indicative Root Protection Areas (RPAs) have been calculated for tree groups based on the maximum stem diameter taken for each group.
- No data for individual trees within surveyed groups was recorded. An exception to this is when a tree was deemed notable within a group.
- First branch height and direction was not recorded for individual trees or groups. We do not consider this information necessary to inform design.
- Where access was restricted, tree measurement data has been estimated. This has been indicated within the Tree Survey Schedule (Appendix E) with the use of an '#' next to the tree number.
- The health and condition of trees can change rapidly and all trees, even healthy ones, are at risk from unpredictable climatic and man-made events. This report is based on the observed health and structural condition of the trees at the time of survey by suitably qualified inspectors. The health, condition and safety of trees should be checked on a basis commensurate with the level of risk and preferably on an annual basis, as recommended in Common Sense Risk Management of Trees (National Tree Safety Group, 2011). The tree survey conducted for this report is not a tree health and safety survey and should not be used as such.
- An RPA provides a notional circular buffer around a given stem based on the stem diameter taken at 1.5m. However, this is not necessarily representative of a tree root system e.g. the roots may extend beyond the RPA boundary on one side and remain inside it on the opposite. The root network extent is dependent on many factors including species, age, soil conditions, topography and exposure etc. The assessment has not taken consideration of these above and shows RPAs as an indicative circular form as per the BS5837:2012 guidance.

Ash Die Back

Ash die back (ADB) also known as Chalara or Chalara dieback of ash, is a disease of ash trees caused by a fungus called *Hymenoscyphus fraxineus*. ADB causes leaf loss, crown dieback and bark lesions in affected trees. Once a tree is infected the disease is usually fatal, either directly or indirectly by weakening the tree to the point where it succumbs more readily to attacks by other pests or pathogens, especially Armillaria fungi, or honey fungus.

It has caused widespread damage to ash populations in continental Europe, where experience indicates that it can kill young ash trees quite quickly, while older trees can resist it for some time, until prolonged exposure or another pest or pathogen attacking them in their weakened state, eventually causes them to succumb.

It is becoming increasingly difficult to assign ash trees a retention category using the BS5837:2012 standards. The general advice from public bodies is to retain ash trees and see how the disease develops within the local population. However, if clear signs of ADB are found on sites, it is likely that most of the ash trees on that site will

succumb in a relatively short period. It would be unreasonable to consider an ash tree a significant constraint to a site, if it is to die within a short period of time.

Evidence from other parts of the country suggest that infected trees rapidly lose structural integrity and are more prone to branch shedding and total collapse. Furthermore, ash, as a species is known for its inability to retain even small deadwood, which it sheds regularly as it appears in the crown.

The Tree Council has produced a document giving guidance on how to deal with ADB to tree owners and managers. 'Ash dieback: an Action Plan Toolkit (Summer 2019)'¹. This excellent document gives guidance on assessing the danger posed by the trees infected by ADB. As suggested in the document, Jacobs have adopted the Suffolk County Council Ash Health Assessment System² below. The system categorises ash trees with the symptoms in 4 categories:

- Ash Health Class (AHC) 1 – 100 – 75% Canopy healthy (Vitality Class 0)
- Ash Health Class (AHC) 2 – 75% -50% Canopy healthy (Vitality Class 1)
- Ash Health Class (AHC) 3 – 50% - 25% Canopy healthy (Vitality Class 2)
- Ash Health Class (AHC) 4 – 25% - 0% Canopy healthy (Vitality Class 3)

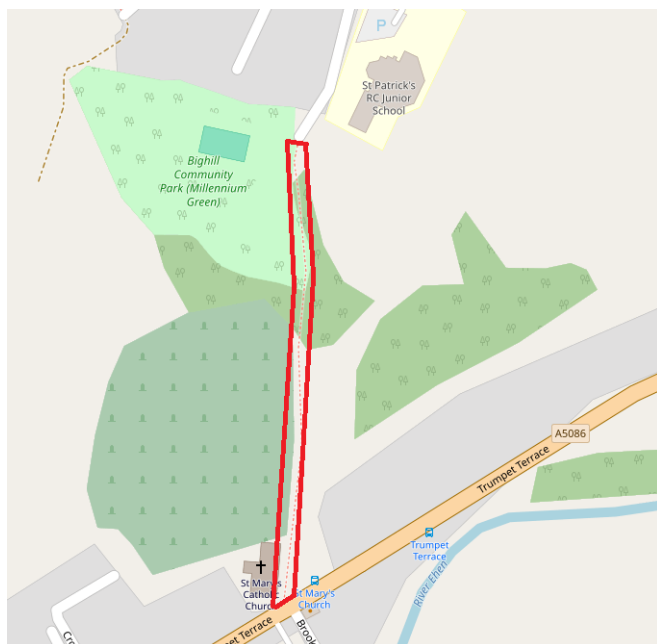
Many local authorities have concluded that any trees which fall within AHC 3 and 4 require management and it seems reasonable to follow a similar system. The priority of that management depends on the severity of the tree's decline with trees progressing from AHC 2 into AHC 3 requiring work as part of a program of regular works. As the trees progress (decline) towards class 4, action becomes more urgent to abate any hazard, assuming the tree is in a high risk area.

Due to the rapid change in tree health associated with ADB infections, it is strongly recommended a resurvey of all ash trees recorded in this survey is conducted before any detailed design work and associated specific tree retention methods are considered.

¹ <https://treecouncil.org.uk/what-we-do/science-and-research/ash-dieback/local-authority-ash-dieback-action-plan-toolkit/>

² <chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.suffolk.gov.uk/assets/planning-waste-and-environment/suffolks-countryside-and-wildlife/Chalara-Action-Kit.pdf>

Figure 2-2 General Location



General site locations, red squares (not to scale) © OpenStreetMap contributors

2.2 Site Observations

The survey areas are a number of locations around Cleator Moor. The northern area, a Public Right of Way (PRoW) bridleway (BR403019), which follows a disused historic railway line adjacent to the Nor Beck largely consists of two main woodland groups on both sides of the pathway, the pathway was muddy under foot and slightly waterlogged in some areas. It appeared to be less favoured than the concrete pathway primarily used for the Coast to Coast (C2C). This area is largely flat topographically with a slight bank at the extremities of each woodland.

The area west of Cleator Moor Dental Centre is situated adjacent to the C2C PRoW and consists of a restricted access woodland group and largely scrub like area. This area is densely populated with scrub like plants with a mixed understorey with some infrequent taller trees.

The area adjacent to the Cleator Moor Activity Centre had restrictive access to the area surrounding the cadet centre building. There is a densely populated scrub like area with some taller trees and a separating wall acting as a boundary between the Activity Centre and Cadet Centre. The eastern portion of the survey area is accessible via the Activity Centre car park, and consists of pioneer tree species and developing hawthorn scrub.

The area between Todholes Road and Trumpet Terrace is a PRoW with a concrete/tarmac pathway. The southern portion has a boundary hedgerow for the St Mary's Catholic Church and some smaller groups of trees on the opposite side of the pathway. If travelling northbound, there is a slight incline. Most trees within this area were clearly visible. However, some were growing through fencing or behind mesh fencing making it difficult to obtain accurate measurements. Multiple woodland groups with more mature trees are situated either side of the northern portion of this PRoW. It should be noted that these groups are listed as Priority Habitat Inventory – Deciduous Woodland on MAGIC maps.

2.3 Tree Preservation Orders and Conservation Areas

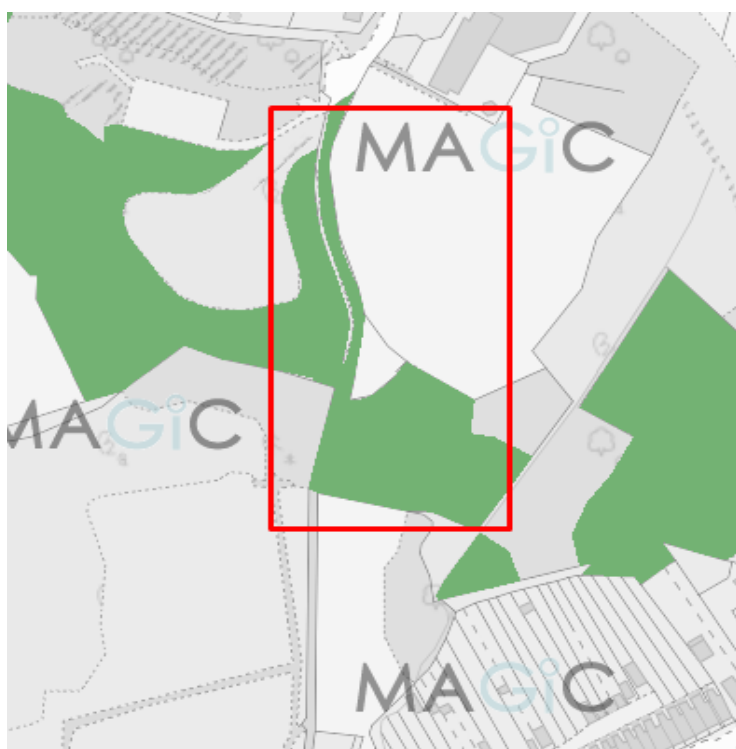
A Tree Preservation Order (TPO) and Conservation Area (CA) check was conducted using the interactive map found on the Cumberland Council website (<https://www.allerdale.gov.uk/en/planning-building-control/planning-policy/conservation-natural-historic-environment/trees-hedges/>, undated) on 20th March 2024 to identify the presence of TPOs or CAs within the survey area. No TPOs listed on this interactive map appear within the Survey Area. The Survey Area is not covered by a CA.

2.4 Ancient Woodland

No part of the site is listed in the Ancient Woodland Inventory, as shown on the Multi-Agency Geographical Information for the Countryside (MAGIC) website (www.magic.defra.gov.uk). This is a spatial dataset that describes the geographic extent and location of Natural Environment and Rural Communities Act (2006) Section 41 habitats of principal importance. However, areas of the site are situated directly within or adjacent to Priority Habitat Inventory – Deciduous Woodland as shown on Figures 2-3 and 2-4 below. This inventory replaces Natural England's previous separate Biodiversity Action Plan habitat inventories.

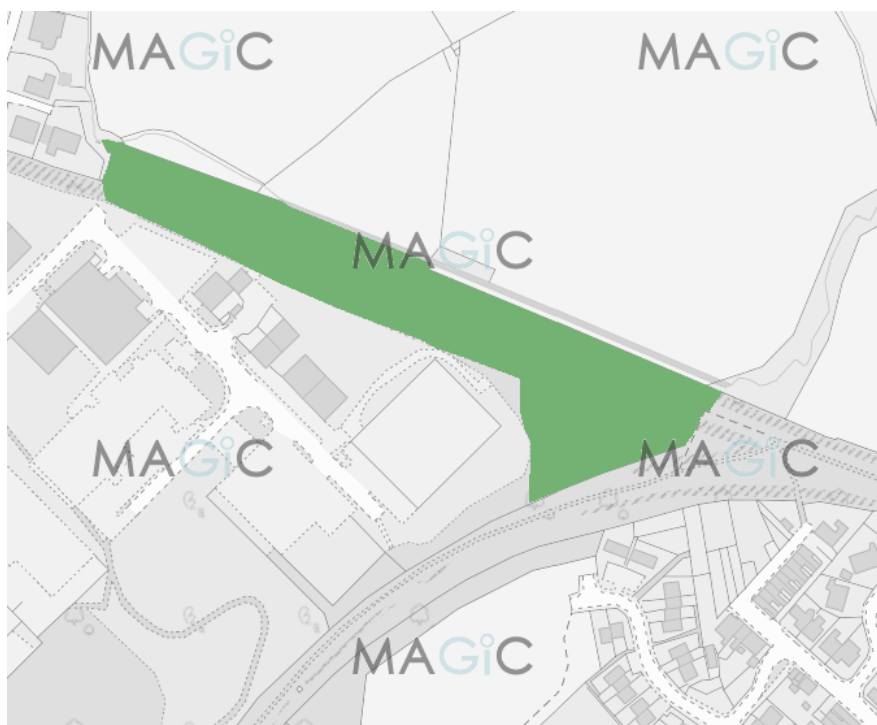
The area shown in Figure 2 had numerous ancient woodland indicator species present on the path verges at the time of surveying. Some of the species included wood sorrel (*Oxalis acetosella*), wood anemone (*Anemonoides nemorosa*), dog's mercury (*Mercurialis perennis*) and lesser celandine (*Ficaria verna*).

Figure 2-3 Priority Habitat Inventory – Deciduous Woodland: Trumpet Terrace/Todholes Road Connecting Public Right of Way – (Section 5: Town Square to Cleator Mills Link)



Extract from MAGIC maps <https://magic.defra.gov.uk/magicmap.aspx>

Figure 2-4 Priority Habitat Inventory – Deciduous Woodland: Disused Railway (Section 7: Leconfield Industrial Estate Links to C2C)



Extract from MAGIC maps <https://magic.defra.gov.uk/magicmap.aspx>

2.5 Ancient and Veteran Trees

The Ancient Tree Inventory (Woodland Trust, 2021) was checked on 20th March 2024 for the presence of verified veteran/ancient trees within the survey area. National Planning Policy Framework (Ministry of Housing, Communities & Local Government, 2021) refers to veteran trees as “*irreplaceable habitat*” which due to their “*age, size and condition, is of exceptional biodiversity, cultural or heritage value*”.

Jacobs arboriculturists base their assessment of potential veteran (ancient and notable) trees on the guidance provided by the Ancient Tree Forum and the Woodland Trust, specifically the document *Practical Guidance, Ancient Tree Guide 4: What are ancient, veteran, and other trees of special interest, November 2008, Woodland Trust*³ and the species-specific guidance on the Ancient Tree Inventory website⁴.

No trees within the Site Boundary appeared within this inventory. Jacobs qualified arboriculturists did not identify any trees, during survey, which they considered ancient or veteran.

2.6 Tree Survey Results and Plans

The site was visited and surveyed by a qualified Jacobs arboriculturist on the 22nd March 2024.

The full findings of the tree survey are presented in the Tree Survey Schedule, Appendix E and the Tree Constraints Plan, Appendix F

³ <https://www.woodlandtrust.org.uk/media/1836/what-are-ancient-trees.pdf>

⁴ <https://ati.woodlandtrust.org.uk/how-to-record/species-guides/>

Table 2.1, below, summarises the total number of trees surveyed and their relative BS5837:2012 categories.

Table 2.1: Summary of arboricultural features included in the survey

BS5837:2012 Category	Trees	Tree Groups	SUB TOTALS
A	0	0	0
B	3	6	9
C	8	9	17
U	1	0	1
SUB TOTALS	12	15	27

- 'A' grade trees are of high quality and value and should be retained.
- 'B' grade trees are of moderate quality and value and should be considered for retention where possible, although care should be taken to avoid misplaced retention. Any scheme should consider the retention and protection of trees, but also the tree's future growth.
- The 'C' grade trees are of low quality and value and should not place a constraint on the proposals.
- From an arboricultural point of view, the 'U' grade trees cannot realistically be considered for retention as a living tree in the context of the current land use due to their low life expectancy of less than 10 years in their current poor condition.

In recognition of the important ecological and ecosystem services performed by trees the default position when designing any forthcoming scheme should be the retention of all items, as so far as is practicable, regardless of category grading. All trees provide positive environmental and ecological contributions, irrespective of current condition.

2.7 General Tree Observations

The trees surveyed are typical of those found on waste ground and disused railways lines. An abundance of goat willow (*Salix caprea*), blackthorn (*Prunus spinosa*), hawthorn (*Crataegus monogyna*), ash (*Fraxinus excelsior*), pedunculate oak (*Quercus robur*), silver birch (*Betula pendula*) and sycamore (*Acer pseudoplatanus*) are all within the survey areas with occasional other tree species recorded.

The trees within the survey areas throughout Cleator Moor are mostly early-mature to mature specimens with minimal areas of young planting or semi-mature specimens. Many of the areas surveyed comprise of groups of trees, with some individual trees recorded alongside, adjacent to or within the groups.

The northern survey area, the PRoW adjacent to the Nor Beck, comprises of two main woodland groups (G1/G2) on both sides of the pathway (a disused railway line). These woodland groups were of mixed species with a dense understorey of bramble and other mixed species. Most trees within these woodland groups are early-mature or mature with vigorous canopies and minimal dysfunction. At the time of surveying, the woodland groups appeared largely unmanaged, with the only remedial works being in relation to clearance for the pathway. Some trees within proximity to the pathway appeared to have pathogenic issues, with fungal colonisation present on some trees. One of the younger trees in proximity to the pathway appeared to have *Kretzschmaria deusta*, which is a fungal species that typically develops a soft rot with potential selective white rot in woody tissues within tree stems. This fungus typically affects the base of the tree and lower stem. This tree had evident soft rot, with an existing wound and extensive decay within the stem. Additionally, some trees in proximity to the pathway had frequent deadwood within the canopies, typically a sign of physiological issues which can lead to structural defects. Within this survey area, two individual trees were additionally recorded (T1/T2). These trees are both goat willows and are the largest trees within this area. These trees are large, multi-stemmed specimens with expansive canopy spread and extensively weighted limbs. Deadwood was noted throughout both trees, but the

trees still appear to have vigorous canopies with new growth and successful bud production. Additionally, these trees have moss and lichen colonisation throughout the stem and canopy, typically a sign of good air quality. It is noted that the roots of trees directly adjacent to the pathway may be partially blocked by soil compaction due to pathway use and may seek deeper soil or stimulate root growth around these points of compaction. This survey area is listed as Priority Habitat Inventory – Deciduous Woodland on the DEFRA MAGIC map.

The survey area west of the dental centre consists of five groups (G3-G7) and a single individually recorded tree (T3). This survey area is situated directly north of the Leconfield Industrial Estate and directly east of a segment of the C2C pathway. G3 is a woodland group with restricted access, consisting of early-mature to mature trees with overall fair health and vigorous canopies. Boundary fencing is in place around some areas of this woodland. G4 and G5 are of mixed species, mainly comprising of goat willow and hawthorn with occasional other species mixed within the area. G4 is pioneer scrubland which is largely inaccessible after following the existing path where a gap in the fence exists.

A dense understorey is present with some slight pathing, potentially used by local wildlife as runs. Taller trees are mixed within the group; however, most trees are only a few metres in height and densely situated, making access difficult. This is typical of pioneer species such as hawthorn and blackthorn.

G5 is comprised of mainly early mature goat willow with occasional hawthorn and follows the boundary fencing of the dental centre/G3. The willow within the group are tall and are typical in physiological and structural condition for the age class and genetic tendencies of the species, with many being multi stemmed and similar to T1/T2 of the previous groups discussed.

T3 is an additional goat willow recorded as an individual tree on the edge of G5. Following the trend of what is found within G5, it is a large, multi-stemmed tree with some amenity value when found amongst the surrounding groups of scrub.

G6 and G7 are both groups that are situated within allotments directly adjacent to the boundary of the dental centre car park. G6 consists of multi-stemmed privet (*Ligustrum ovalifolium*) and willow which are encroaching onto the pathway. This group is typical of the age class and genetic tendencies of the species. G7 is a group of Leyland cypress (*Cupressocyparis leylandii*) which appear to be an outgrown hedge now around 7 metres at their upper height. Again, these trees are typical of the age and species, with sparse growth near the base and dense canopies.

The area adjacent to the Cleator Moor Activity Centre consists of three groups (G8/G9/G10) and four individual trees (T4-T8). G8 consists of ash, silver birch, and goat willow with some areas of dense understorey. This group has restricted access and is situated around the activity centre boundary wall between the centre and the cadet building to the west. The birch and willow are the largest trees within this group, with the remainder being of fair overall health and condition and overall typical of the age class and species mix. T4 is a multi-stemmed silver birch above the boundary wall, this tree has some crown dieback with areas of deadwood within the crown.

T5-T7 are all early mature elder (*Sambucus nigra*), scrub like in nature directly adjacent to the boundary walls of private gardens which back out onto the activity centre. Typical of the species, these trees were only around 5 metres in height with dense canopies and scrub like growth. T8 is a goat willow situated within proximity to the cadet centre boundary fencing. This tree is limited to Category C and is typical of the species and age class of the tree.

G9 and G10 are both situated in proximity to the activity centre car park, G9 is a mixed species group, mostly scrub like in nature with infrequent taller trees within. One taller tree within the group to note is a common alder (*Alnus glutinosa*). It should be noted that areas of ground within G9 were waterlogged and had existing vehicle tracks around the edge of the car park, likely used by vehicles for manoeuvring or turning, creating compaction and damage to the topsoil layer. G10 is a pioneer group of willow and birch with typical attributes of their species.

The survey area between Todholes Road and Trumpet Terrace is a PRow with a concrete/tarmac pathway. The southern portion has a boundary hedgerow for the St Mary's Catholic Church and some smaller groups and individual trees along the pathway all recorded as Category C (G14/G15/T11/T12). G14 is a mixed shrub like group which appears largely unmanaged, except for pathway clearance. Some of the trees are growing through the fencing, with most having epicormic growth at the base or within the canopy. It is likely that this group is self-

seeding from historic planting in the area. T11 is a scrubby, multi stemmed buddleja (*Buddleja sp.*) with an existing wound in the form of a snapped limb, at the time of surveying it was encroaching on the pathway and growing within the base of the boundary fencing. T12 is a white cedar (*Thuja occidentalis*) which is considered typical of the age and species, again this tree was growing within the fencing and starting to lean north. G15 is an off-site group comprising of rowan (*Sorbus aucuparia*) and a cedar (*Cedrus sp.*) within the church grounds.

On the northern portion of this area there is three groups and two individual trees recorded as part of the survey area (G11-G13/T9/T10). G11-G13 are all groups of Category B and are listed as Priority Habitat Inventory – Deciduous Woodland on the DEFRA MAGIC map. This listing includes T9/T10. G11 and G13 are coppice groups, comprising of common hazel (*Corylus avellana*), alder, ash, and hawthorn. At the time of surveying, the ground flora had evidence of ancient woodland indicator species (AWIS). Reinforcing this Priority Habitat Inventory status. AWIS are synonymous with woodlands throughout Britain which have long standing history and are usually rich in habitat benefit. G12 is a woodland group of taller trees adjacent to the pathway behind a boundary fence. Multiple paths run through this woodland which are likely used by dog walkers and other local people.

The trees within this group are vigorous, with minimal areas of dysfunction, some deadwood was noted at the time of surveying. Ivy is extensive within some of the trees in this group, obscuring the view of some stems and the lower canopy. The southern most area of G12 comprises of mostly Norway spruce (*Picea abies*) which are tall, expansive trees with significant canopies. These trees are separate from the main woodland block of G12 and are separated by a path. T9 is the only Category U tree surveyed, it is a large, twin stemmed ash tree with significant basal decay. One of the stems has entirely failed and is resting in hawthorn on the east, the remaining stem remained upright at the time of surveying but has questionable longevity due to the extent of decay within the base. T10 is a large beech (*Fagus sylvatica*) of Category B which is typical for its age class and genetic tendencies of the species. The pathway and use of it will likely have caused significant compaction, leading to somewhat effective root barriers for the trees directly adjacent to the concrete. It is likely that these trees have less root growth within the pathway area.

Overall, the quality of individual trees is limited to Category B, with three trees in this category providing the most value, being of the best quality and the most visually impactful within the survey areas. The Category B trees are all situated within the Priority Habitat Inventory – Deciduous Woodland areas on DEFRA MAGIC map as listed in the figures in section 2.4. The remainder of trees are Category C or U, with only a single tree being of Category U due to its physiological and structural deficiencies. All groups of Category B except for G3 are Priority Habitat Inventory and therefore may have some constraint in relation to development. The remainder of groups are of Category C, with most being scrub like and of dense, unmanaged growth.

3. Conclusions and Recommendations

The survey has identified no trees or groups of A category quality or trees of veteran or ancient status. The groups surveyed of Priority Habitat Inventory will likely add some constraint to development due to their value for biodiversity. Limited tree removals could be compensated for with high quality new planting which is maintained and given space to develop into full canopied, quality specimens. The ash tree of Category U is recommended for removal due to its lack of structural integrity and potential risk to people or property due to its proximity to the public right of way.

It is recommended that once a fix scheme layout is developed the tree schedule date and tree constraints plan is used to carry out an Arboricultural Impact Assessment (AIA) of the scheme. This document will assess the impact of the proposals on the current stock and will identify trees which will need to be removed, which can be retained, and which trees may require special measure adopting to allow for their retention should their RPA be compromised by the development.

Following the production of the AIA a site-specific Arboricultural Method Statement (AMS) should be produced. This document will set out, chronographically the steps which need to be taken onsite to protect the retained trees during construction. The document should be supported by a Tree Protection Plan (TPP) which indicates the alignment of tree protection fencing, construction exclusion zones and any other specific tree protection measures deemed necessary.

3.1 Arboricultural Action Required - Next Steps

Table 3.1 lists the standard elements, as referenced in BS 5837:2012 (BSI, 2012), recommended to satisfy planning concerns for this scheme and to ensure appropriate tree protection is considered and applied throughout the duration of the works.

Table 3.1 - Follow up Arboricultural input relating to this scheme

Recommended arboricultural input	Purpose	Timing
Assessment of impacts to trees during design and once construction information is available. Arboricultural Impact Assessment (AIA)	To reduce the severity of the impact to trees by reducing working space required and informing of any design alterations where possible. Design alterations should be mindful of retention of key trees and tree screens where possible.	During detailed design following the planning process submission and following the appointment of a contractor, if the scheme continues through to construction.
Site specific Arboricultural Method Statement (AMS)	Work information package designed to provide contractors with details on how specific operations need to be performed to protect trees including use of ground protection.	Following final design agreement and usually as a part of planning conditions. Produced by the contractor for review by the client and/or Local Planning Authority following agreement.
Tree Protection Plan	Provide schematic details of how protective fencing shall be installed and any other pre-planned targeted tree protection.	Following final design agreement in conjunction with the site-specific AMS

Recommended arboricultural input	Purpose	Timing
AIA revisions	Further detail of impacts on key areas. OR Whenever a design change/addition is finalised or proposed.	Following any change in the design. The process could be either desktop based or require further site visits, depending on the scope of the original survey.
On site monitoring	To ensure protection measures and the method statement are being implemented correctly.	At agreed intervals before and during the construction phase of the project.

It is recommended to maintain contact with the project arboriculturist throughout the planning and design stage for the relevant additional input to be addressed at the appropriate point.

Impacts to the trees, as outlined within an AIA report, could alter with any changes to the current design proposals. Tree impacts should therefore be reviewed as the design process progresses with all relevant parties informed of the changes, where appropriate.

4. Legal Considerations

4.1 Town and Country Planning Act

Prior to the removal of the trees or groups listed in this report, or any tree pruning works being undertaken, it is essential that the trees are assessed again for legal protected status. These include TPOs and Conservation Areas (CA), Sites of Special Scientific Interest, locally or nationally designated sites, designed landscapes and ancient woodland.

Works (either above or below ground) to trees protected by TPO or CA is an offence under the Town and Country Planning Act 1990 (as amended), and in the Town and Country Planning (Tree Preservation) (England) Regulations 2012 and Section 192 of the Planning Act 2008.

4.2 Felling Licence

The felling of trees is regulated in England by the Forestry Act 1967 (the Act). The Forestry Commission is the government regulator that enforces the provisions of the Act.

The felling of growing trees in England is restricted under section 9 of the Act. It requires that felling is either authorised by a felling licence issued by the FC or the felling activity is excepted from the need for a licence. There are many exceptions to the need for a licence, based on the type of the tree, the location of the tree, the size of the tree, the nature and scope of the felling activity and the person responsible for the felling. These are primarily set out in section 9 of the Act as well as the Forestry (Exceptions from Restriction of Felling) Regulations 1979.

The most relevant exemption is;

'Section 9 - Requirement of licence for felling (1) A felling licence granted by the appropriate forestry authority shall be required for the felling of growing trees, except in a case where by or under the following provisions of this Part of this Act this subsection is expressed not to apply...

(d) is immediately required for the purpose of carrying out development authorised by planning permission granted or deemed to be granted under the Town and Country Planning Act 1990 or the enactments replaced by that Act, or under the Town and Country Planning (Scotland) Act 1997.

Advice from a suitably qualified arboriculturalist should be sought before any felling takes place onsite.

The granting of permission to remove trees covered by a TPO by the Local Planning Authority does not remove the need to obtain a felling licence from FC if more than 5 m³ of timber are to be felled in a calendar quarter and none of the exemptions apply.

4.3 Wildlife

Bats are afforded special protection by law. If a roost is discovered, all work in the vicinity should cease immediately and the appropriate authorities informed (Natural England). Roosts need to be inspected by a project Ecologist before work can recommence.

Under the Wildlife and Countryside Act 1981 (as amended) it is an offence to take, disturb or destroy the nest or eggs of any wild bird during its breeding season.

5. References

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Appendix A. Survey Methodology

Table 5.1: Methodology

Parameters Recorded	Collection Methodology
Tree location	Handheld tablet with GPS functionality.
Crown spread, clearance and first branch break/direction	Metres measured with laser measure, direction with compass
Height and diameter	Clinometer and diameter tape at 1.5 meters above ground
Structural and physiological condition	External visual tree assessment (from the ground) – The Body Language of Trees, Research for Amenity Trees No 4 (Mattheck and Breloer, 1994)
Root Protection Area (RPA)	Calculation method in BS 5837:2012 (BSI, 2012)

Appendix B. Comprehensive Glossary of Arboricultural Terms

- AIA: Arboricultural Impact Assessment.
- AMS: Arboricultural Method Statement.
- Ancient tree: An ancient tree is exceptionally valuable attributed with great age/size/cultural heritage/biodiversity value as a result of significant wood decay and the habitat created from the ageing process. All ancient trees are veteran trees with very few trees of any species reaching the ancient life-stage.
- Bark: A term usually applied to all the tissues of a woody plant lying outside the vascular cambium.
- Buttress zone: The region at the base of a tree where the major lateral roots join the stem, with buttress-like formations on the upper side of their junction.
- Canker: A lesion formed by the death of bark and cambium often due to fungal or bacterial infection.
- Condition: An indication of the physiological vitality of the tree. Where the term 'condition' is used in a report, it should not be taken as an indication of the stability of the tree.
- Conservation Area: A designated area that requires notice (currently six weeks) to be given to the local planning authority prior to the commencement of any tree works.
- Construction exclusion zone: Area based on the Root Protection Area (in square metres) to be protected during development, by the use of barriers and/or ground protection.
- Crown/Canopy: The main foliage bearing section of the tree.
- Crown lifting: A term used to describe the removal of limbs and small branches to a specified height above ground level.
- Deadwood: Branch or stem wood bearing no live tissues. Retention of deadwood provides valuable habitat for a wide range of species and seldom represents a threat to the health of the tree. Removal of deadwood can result in the ingress of decay to otherwise sound tissues and climbing operations to access deadwood can cause significant damage to a tree. Removal of deadwood is generally recommended only where it represents an unacceptable level of hazard.
- Dieback: The death of parts of a woody plant, starting at shoot-tips or root-tips.
- Diameter at Breast Height (DBH): Stem diameter measured at a height of 1.5 metres (UK) or the nearest measurable point. Where measurement at a height of 1.5 metres is not possible, another height may be specified.
- Habit: The overall growth characteristics, shape of the tree and branch structure.
- Hazard beam: An upwardly curved part of a tree in which strong internal stresses may occur without being reduced by adaptive growth; prone to longitudinal splitting.
- Minor deadwood: Dead wood of a diameter less than 25mm and or unlikely to cause significant harm or damage upon impact with a target beneath the tree.
- Notable: Notable trees are usually mature trees which may stand out in the local environment because they are large in comparison with other trees around them
- Pollarding: is the removal of the tree canopy, back to the stem or primary branches. Pollarding may involve the removal of the entire canopy in one operation or may be phased over several years. The period of safe retention of trees having been pollarded varies with species and individuals. It is usually necessary to re-pollard on a regular basis, annually in the case of some species.
- Primary branch: A major branch, generally having a basal diameter greater than 0.25 x stem diameter.
- Pruning: The removal or cutting back of twigs or branches, sometimes applied to twigs or small branches only, but often used to describe most activities involving the cutting of trees or shrubs.
- Root protection area (RPA): An area of ground surrounding a tree that contains sufficient rooting volume to ensure the tree's survival, calculated with reference to Table 2 of BS5837 (2005).
- Snag/stub: In woody plants, a portion of a cut or broken stem, branch or root which extends beyond any growing-point or dormant bud; a snag usually tends to die back to the nearest growing point.
- Stem/s: The main supporting structure/s, from ground level up to the first major division into branches.
- Topping: In arboriculture it is the removal of the crown of a tree, or of a major proportion of it.
- Tree Preservation Order (TPO): Is an order made by the local authority and placed upon individual trees, groups of trees or areas of trees. The local authority must usually grant permission prior to any works undertaken to affected trees.
- Veteran tree: A loosely defined term for an old specimen that is of interest biologically, culturally or aesthetically because of its age, size or condition and which has usually lived longer than the typical upper age range for the species concerned.

Appendix C. Cascade Chart of Tree Quality Assessment (taken from BS 5837:2012)

Category and definition	Criteria (including subcategories where appropriate)		
Trees unsuitable for retention (see note)			
Category U			
Those 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 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 U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)		
	Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline		
	Trees infected with pathogens of significance to health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality. NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve.		
Trees to be considered for retention			
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values including conservation
Category A			
Trees of high quality with an remaining estimated life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran or semi-formal arboricultural trees or wood-pasture)
Category B			
Trees of moderate quality with an remaining estimated life expectancy of at least 20 years	Trees that might be included in Category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such as they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	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	Trees with material conservation or other cultural value
Category C			
Trees of low quality with an remaining estimated life expectancy of at least 10 years, or younger trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value

Appendix D. Tree Survey Schedule Key

Column Header	Explanation
Tree ID	T – Tree G – Group/Hedgerow/Woodland H- Hedgerow
Diameter at breast height (DBH)	Tree stem diameter measured at 1.5m from the ground. This reported figure relates to either single stemmed trees or the calculated DBH for multi-stemmed trees. In some instances, DBH will be taken from a different height as specified in 'Observations'.
Canopy spread – N E S W	Canopy extents from main stem of individual tree will be shown using cardinal points in metres i.e. N (north) 7, E (east) 6, S (south) 5, W (west) 7. Single largest canopy extent reported for groups/woodland/hedgerows.
Crown Clearance	To inform on ground clearance.
Age Class	Young (Y) – A tree in the first quarter of its life span. Semi Mature (SM) – A tree in the latter stages of its first quarter, well established. Early Mature (EM) – A tree halfway through its life span, significant further growth potential. Mature (M) – A tree at or near its potential maximum size which is still growing vigorously in its third quarter of life span. Over Mature (OM) – A tree in decline in its final quarter of life span. Potential Veteran (V) – A tree which, because of its age, size, and condition, is of exceptional biodiversity, cultural or heritage value
Structural condition (S)	Good (G) - No signs of decay or structural weakness. Fair (F) - Minor defects not causing structural weakness. Poor (P) - Severe decay in the main stem or branches/structurally weak.
Physiological condition (P)	Good (G) - Showing no adverse risk of failure/defects. Fair (F) - Showing minor signs of deterioration. Poor (P) - Unlikely to recover to a good condition.
Estimated Remaining Contribution (ERC)	<10 - Less than 10 years of normal life expectancy remaining. 10+ - Between 10 and 20 years of normal life expectancy remaining. 20+ - Between 20 and 40 years of normal life expectancy remaining. 40+ - Tree would normally expect to live for more than 40 more years.
Root Protection Area (RPA)	Root Protection Area dimensions as calculated using formulae in BS5837:2012. Applied as either radially from an individual tree stem (individually surveyed trees)

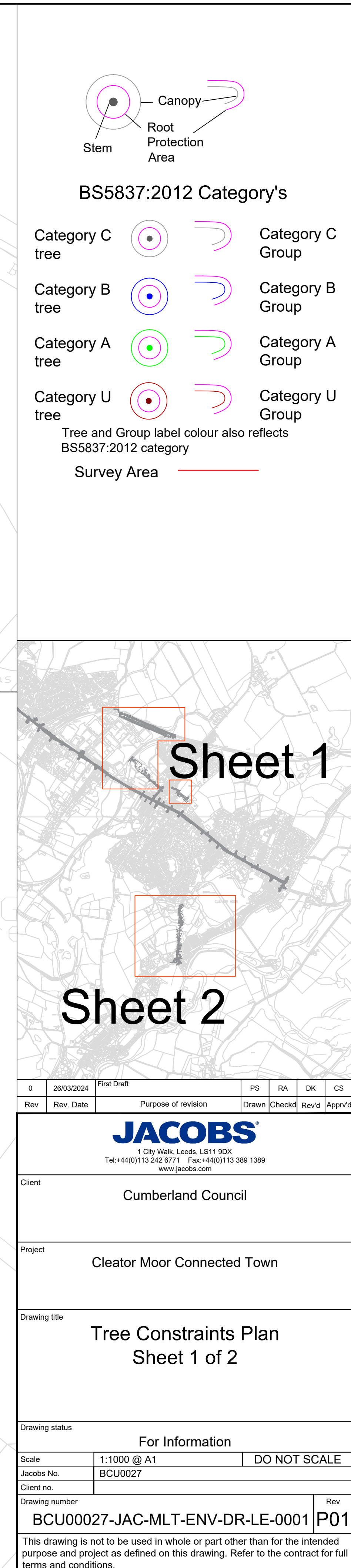
	or as an offset from the canopy extents of a collective feature (tree group, hedgerow, or woodland).
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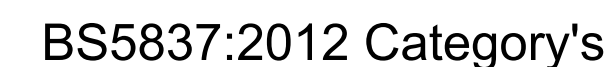
Appendix E. Tree Survey Schedule

Client:	Cumberland Council										Site:	Cleator Moor						
Date of Survey:	22nd March 2024										Consultant	PS/RA						
Tagged	No										Weather	Fair and mild						
Reference No.	Species		Height (m)	Stem Diameter (mm)	Branch Spread (m)				Canopy Clearance (m)	Life Stage	Physiological Condition	Structural Condition	Comments / Notes	Management Recommendations (Priority)	Estimated Remaining Contribution (Years)	Category Grading	Root Protection Radius (m)	
	Common	Latin			North	East	South	West										
T01	Goat willow <i>Salix caprea</i>		15	546.81 280 260 250 280	6	6	6	6	280	Mature	Fair	Fair	Difficult to measure due to understorey. Significant deadwood but still vigorous areas of canopy.	Crown lift, Deadwood - Remove major deadwood (>25mm)	20+	B1, 2	6.56	
T02	Goat willow <i>Salix caprea</i>		18	8x1414.21	7	7	7	7	0	Mature	Fair	Fair	Large multi stemmed tree on path side possibly coppicing from old stumps typical of species	No Work Recommended	20+	B2	15	
T03	Goat willow <i>Salix caprea</i>		16	824.62 600 400 400	6	6	6	6	0	Early-mature	Fair	Fair	Typical of species	No Work Recommended	10+	C2	9.9	
T04	Silver birch <i>Betula pendula</i>		10	263.25 180 150 120	3	3	3	3	0	Mature	Fair	Poor	Multi stemmed tree with some die back no access to measure canopy	No Work Recommended	10+	C2	3.16	
T05	Elder <i>Sambucus nigra</i>		5	230	3	3	3	3	0	Early-mature	Fair	Fair	Condition considered typical of species and age Scrubby elder adjacent to private garden wall	No Work Recommended	10+	C2	2.76	
T06	Elder <i>Sambucus nigra</i>		5	230	3	3	3	3	0	Early-mature	Fair	Fair	Condition considered typical of species and age Scrubby elder adjacent to private garden wall	No Work Recommended	10+	C2	2.76	
T07	Elder <i>Sambucus nigra</i>		3	180	2	2	2	2	0	Early-mature	Fair	Fair	Condition considered typical of species and age Scrubby elder adjacent to private garden wall	No Work Recommended	10+	C2	2.16	
T08	Goat willow <i>Salix caprea</i>		6	190	2.5	2.5	2.5	2.5	0	Semi-mature	Fair	Fair	Typical of species	No Work Recommended	10+	C2	2.28	
T09	Common ash <i>Fraxinus excelsior</i>		16	410.12 290 290	6	1	1	1	0	Mature	Poor	Poor	Twin stemmed ash one stem failed to the east and resting in hawthorn upright stem has large basal cavity. Fell	Fell tree	<10	U	4.92	
T10	Beech <i>Fagus sylvatica</i>		20	550	6	6	6	6	0	Early-mature	Good	Good	No Significant Faults Observed	No Work Recommended	20+	B2	6.6	
T11	Buddleja sp. <i>Buddleja sp.</i>		3	160.16 75 120 75	2	2	2	2	0	Mature	Fair	Fair	Condition considered typical of species and age Scrubby buddleja with previous snap outs. Slightly overhanging pathway	No Work Recommended	10+	C2	1.92	
T12	White cedar <i>Thuja occidentalis</i>		2	100	1	1	1	1	0	Semi-mature	Fair	Fair	Typical of species	No Work Recommended	10+	C2	1.2	
GROUPS																		
			Upper Height Range [m]	Upper Stem Diameter [mm]														
G01	Mixed Broadleaf, Common hawthorn, English oak, Silver birch, Sycamore, Willow sp.		16	400	As per plan				1	Early-mature	Fair	Fair	Mixed group adjacent to pathway. Bramble and scrub understorey. Some trees with significant dysfunction but overall fair merit.	No Work Recommended	Medium (20 to 40 years)	B2	As per plan	
G02	Blackthorn, Common ash, Common hawthorn, English oak, Goat willow, Sycamore		10	300	As per plan				0	Early-mature	Fair	Fair	Linear woodland group on old railway line, many multi stemmed trees, typical of trees found on disused railways.	No Work Recommended	Medium (20 to 40 years)	B2	As per plan	
G03	Common ash, Goat willow, Grey alder		18	500	As per plan				2	Mature	Fair	Fair	Restricted access woodland with mostly taller, mature trees. Mixed planting. Minimal dysfunction noted.	No Work Recommended	Medium (20 to 40 years)	B2	As per plan	
G04	Common hawthorn, English oak, Goat willow, Grey alder		12	300	As per plan				1	Mature	Fair	Fair	Scrubland with naturally successive plant life. Some taller trees mixed in. Somewhat inaccessible unless following roughly marked paths.	No Work Recommended	Medium (20 to 40 years)	C2	As per plan	
G05	Common hawthorn, Goat willow		16	600	As per plan				1	Early-mature	Fair	Fair	Group of larger willows, typical of species, many multi stemmed, occasional hawthorn	No Work Recommended	Medium (20 to 40 years)	C2	As per plan	
G06	Goat willow, Privet		4	80	As per plan				0	Early-mature	Fair	Fair	Multi stemmed privet and willow, privet encroaching on to path	No Work Recommended	Medium (20 to 40 years)	C2	As per plan	
G07	Leyland cypress		7	190	As per plan				2	Early-mature	Fair	Fair	Outgrown hedgerow, behind fence	No Work Recommended	Short (10 to 20 years)	C2	As per plan	
G08	Common ash, Goat willow, Silver birch		8	300	As per plan				1	Mature	Fair	Fair	Restricted access group over activity centre wall. Birch and willow of merit with some understorey.	No Work Recommended	Medium (20 to 40 years)	C2	As per plan	
G09	Common alder, Silver birch, Willow sp.		6	120	As per plan				1	Early-mature	Fair	Fair	Mixed group on scrubland adjacent to activity centre.. mostly scrubby like stems with some taller trees	No Work Recommended	Medium (20 to 40 years)	C2	As per plan	

Reference No.	Species		Height (m)	Stem Diameter (mm)	Branch Spread (m)				Canopy Clearance (m)	Life Stage	Physiological Condition	Structural Condition	Comments / Notes	Management Recommendations (Priority)	Estimated Remaining Contribution (Years)	Category Grading	Root Protection Radius (m)
	Common	Latin			North	East	South	West									
G10	Goat willow, Silver birch <i>Salix caprea</i> , <i>Betula pendula</i>		10	150	As per plan				1	Semi-mature	Fair	Fair	Young pioneer willows and birch	No Work Recommended	Medium (20 to 40 years)	C2	As per plan
G11	Common hazel <i>Corylus avellana</i>		10	150	As per plan				1.5	Mature	Good	Good	Line of mature coppice hawthorn, AWI below, some low branches over the path	No Work Recommended	Medium (20 to 40 years)	B2	As per plan
G12	Mixed Broadleaf, Common <i>Mixed Broadleaf</i> , <i>Alnus</i> alder, Common ash, Goat <i>glutinosa</i> , <i>Fraxinus excelsior</i> , willow, Sycamore, Norway <i>Salix caprea</i> , <i>Acer</i> spruce <i>pseudoplatanus</i> , <i>Picea abies</i>		18	750	As per plan				1	Mature	Fair	Fair	Woodland group adjacent to pathway. Tall trees with vigorous canopies. Some areas of deadwood and ivy established. Conifer group on southern boundary	No Work Recommended	Long (>40 years)	B2	As per plan
G13	Common alder, Common <i>Alnus glutinosa</i> , <i>Fraxinus</i> ash, Common hawthorn, <i>excelsior</i> , <i>Crataegus</i> Common hazel <i>monogyna</i> , <i>Corylus avellana</i>		15	300	As per plan					Early-mature	Fair	Fair	Hazel coppice woodland, some AW indicators, one fallen tree close to path encroaching slightly	No Work Recommended	Long (>40 years)	B2	As per plan
G14	Elder, Rowan, Buddleja sp. <i>Sambucus nigra</i> , <i>Sorbus aucuparia</i> , <i>Buddleja</i> sp.		4	400	As per plan				1	Mature	Fair	Fair	Mixed group that appears to be largely unmanaged. Some areas of epicormic and deadwood. Some growing through chain link fence	No Work Recommended	Short (10 to 20 years)	C2	As per plan
G15	Rowan, Cedar <i>Sorbus aucuparia</i> , <i>Cedrus</i> sp.		6	100	As per plan				2	Semi-mature	Fair	Fair	Small group of off site trees, rowan multi stemmed, in grounds of church	No Work Recommended	Medium (20 to 40 years)	C2	As per plan

Appendix F. Tree Constraints Plan





Category U tree   Category U Group

Tree and Group label colour also reflects BS5837:2012 category

Survey Area



0	26/03/2024	First Draft	PS	RA	DK	C
Rev	Rev. Date	Purpose of revision	Drawn	Checkd	Rev'd	App'd

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Project Cleator Moor Connected Town
Sheet 2 of 2

Drawing title

Tree Constraints Plan
Sheet 2 of 2

Drawing status	For Information
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Scale	1:1000 @ A1	DO NOT SCALE
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Client no.	
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Drawing number	BCU00027-JAC-MLT-ENV-DR-LE-0002	Revised by	PC
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