

Ashington

Arboricultural Impact Assessment
Northumberland Line

Northumberland County Council

Project number: 60601435

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Quality information

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1. Introduction

1.1 Background

AECOM has been instructed by Northumberland County Council (The Applicant) to carry out an Arboricultural Impact Assessment of the development proposals identified in Appendix C (the 'Proposed Development') at Ashington ('the Site') in support of a planning application. This report identifies the likely direct and indirect impacts of the Proposed Development along with suitable mitigation measures, as appropriate. The Tree Protection Plan (included within Appendix D) identifies trees to be removed and how retained trees are to be successfully protected.

1.2 Trees and the Planning Process

The National Planning Policy Framework (NPPF) seeks to ensure that new development is sustainable and underlines the importance of Green Infrastructure, of which trees form an integral part. This encompasses a recognition of the importance of trees in relation to the management of air, soil and water quality along with other associated ecosystem services and climate change adaptation. The NPPF also seeks to achieve the protection and enhancement of landscapes and a net gain in biodiversity. Finally it specifically identifies veteran and ancient trees and woodland as a highly valuable and irreplaceable habitat.

Local Planning Authorities (LPA) in England have a statutory duty to consider both the protection and planting of trees when considering planning applications. The potential impact of development on all trees (including those not protected by a Tree Preservation Order or other statutory designation) is therefore a material consideration.

'BS5837:2012 *Trees in relation to design demolition and construction – Recommendations (BS5837)*' provides a framework which sets out how trees should be considered in this context and also explicitly applies to development where planning consent is not required.

BS5837 recommends that a tree survey is undertaken to identify the quality and benefits of trees and the spatial constraints associated with them. This is then used to produce a Tree Constraints Plan showing the above and below ground constraints associated with trees. This drawing is used to inform the design process and to allow the retention of good quality trees where appropriate.

An Arboricultural Impact Assessment is then developed to identify the likely direct and indirect impacts of the Proposed Development, and a Tree Protection Plan is prepared to identify trees to be removed or retained and to illustrate how retained trees are to be protected. An Arboricultural Method Statement is often required as a condition of planning consent to detail how sensitive operations are to be achieved in close proximity to retained trees. These elements are the minimum normally required for a planning application and are intended to ensure both a sustainable and harmonious relationship between trees and new development.

1.2.1 Local Policy Context

Local Planning Authorities have a statutory duty to consider trees when granting planning permission.

The Wansbeck Local Plan (adopted by Wansbeck District Council 2007) set out the spatial planning framework for development for the Site and include the following policies in which trees are considered:

Policy GP6 *Trees and Hedgerows* within the Wansbeck District Local Plan, states that the Local Authority will "seek to protect trees, woodlands and hedgerows in the District and will encourage new planting, particularly of native species. Tree Preservation Orders will be made to protect trees of value judged to be at risk. When planning permission is granted for development, conditions will be applied or planning agreements entered into to secure the protection of existing trees or hedgerows of value on the site and to secure and maintain new planting."

The importance for new developments to retain trees where possible is furthered in Policy GP6, stating "Development which would result in the loss of healthy trees which make an important contribution to the quality of the environment will not be permitted unless there are overriding social or economic benefits to the community

and compensatory off-site provision of landscape infrastructure is made. Healthy trees lost as a consequence of development shall be replaced with trees of an equivalent standard.”

The Northumberland Local Plan is currently undergoing examination by a Planning Inspector and the policies within are likely to form the future planning framework for Northumberland. The following policy within *QOP 4 Landscaping and trees*, which specifically relates to trees and new developments states:

“1. Where relevant, new development will be expected to incorporate well-designed landscaping and respond appropriately to any existing landscape features.

2. Development proposals should ensure that:

- a. Landscaping design is of a high quality, in accordance with the principles set out in Policy QOP 1;*
- b. Existing features which contribute towards the character of the area, or amenity, are retained wherever possible and sympathetically incorporated into the overall design of the scheme;*
- c. Any hard or soft landscaping is appropriate, functional and well-integrated into the design of the development;*
- d. Trees, and other spaces and features that provide green and blue infrastructure, are preserved, enhanced and introduced into the landscaping scheme wherever possible;*
- e. There is no loss of existing trees which are valuable in terms of amenity, biodiversity or the landscape;*
- f. Any tree lost is replaced on-site or at a suitable location in the local area;*
- g. Any protected vegetation, including trees within Conservation Areas, trees with Tree Preservation Orders (TPOs), protected habitats and important hedgerows, are preserved in accordance with the relevant national legislation, policy and guidance;*
- h. Planting schemes are compatible and appropriate to the site and its use; species that may damage other vegetation or wildlife should be avoided; and*
- i. There will be no unacceptable damage to vegetation which is to be retained as part of the landscaping scheme during construction; and*
- j. Provision is made for the long term maintenance of new landscaped areas.*

3. The Council will protect trees and woodlands which are of a high amenity value through TPOs and planning conditions where appropriate. Where the loss of a protected tree is granted permission, replacement compensatory planting will be required.

4. Development resulting in the loss or deterioration of ancient woodland and ancient or veteran trees will not be permitted unless wholly exceptional reasons exist to justify any loss or deterioration and a suitable compensatory strategy has been proposed.”

The above policies demonstrate the importance of appropriate tree retention and protection, and where this is not possible, mitigation for tree loss.

1.3 Methodology

The tree survey has been based on the topographical survey plan provided (ref 60601435-ACM-XX-ZZ-MOD-LEP-000010 by AECOM).

A number of trees were not included on the topographical survey plan and have been plotted indicatively with reference to Site features and publicly available aerial photography. Such trees have been marked with an “*” on the Tree Survey Schedule included as Appendix A. As such all positions for these trees must be considered to be indicative only and the relative distances of features must be measured out on Site as required.

The survey was otherwise conducted in accordance with the requirements of *BS5837*.

The initial fieldwork was undertaken on 2nd, 8th and 10th October 2020, during which dimensional data and observational information were collected. A diameter tape measure was used to measure stem diameters where feasible.

The fieldwork informing this report has comprised a preliminary, non-intrusive, visual survey undertaken from ground level with the specific intention of evaluating the quality and benefits of trees on Site.

Where further inspection is deemed appropriate to ascertain the condition of the tree or other arboreal features, this has been identified within the preliminary management recommendations. Average dimensions or dimensional ranges have occasionally been used, where appropriate, to best describe features.

The Root Protection Area (RPA) is the notional extent of what is considered to be the key rooting area for tree health and function. This is generally depicted as a circle but can be amended to a polygon with an equivalent area in accordance with Section 4.6.2 of BS5837 where the RPA is likely to have developed asymmetrically. The RPA of all surveyed trees is depicted as a circle and no RPAs have been amended.

The tree categorisation process recommended by BS5837:2012 is summarised in the table below and corresponds with the information in the Tree Survey Schedule (Appendix A).

Table 1: BS5837:2012 Tree Categorisation process

Category	Definition
A	High quality, minimum of 40+ years remaining contribution
B	Moderate quality, minimum of 20+ years remaining contribution
C	Low quality, minimum of 10+ years remaining contribution
U	Unsuitable for retention, <10 years remaining contribution
1	Arboricultural value
2	Landscape value
3	Conservation or cultural value

2. General Arboricultural Principles

2.1 General Principles

Trees are dynamic living organisms which provide essential benefits to society and the wider environment. Any Proposed Development with the potential to impact on trees must take into consideration the value of trees on Site; the impact of any proposed activity along with any potential future conflicts on the Site. Suitable measures to safeguard retained trees or mitigate the loss of trees (to be removed) will need to be fully considered and may be subject to a condition of planning consent.

Tree branches and roots frequently grow across site boundaries and off site trees can pose a significant constraint, and should be carefully considered when assessing the developable space within a site.

2.2 Below Ground Constraints

Below ground tree roots and the soil environment in which they grow need to be protected if the tree is to be retained. Trees grow in association with fungi and other soil organisms which are of key importance to tree health. Roots are essential for anchorage, the uptake of water and nutrients, and the storage of energy (carbohydrates) for the future growth and function of the tree.

Roots can be damaged by physical severance or wounding (e.g. following excavation of the soil) which can lead to the development of decay and a decline in vitality and/or instability. Raising the soil level can bury tree roots at a depth where suitable conditions for growth are less available. Toxic materials discharged into the soil (such as cement based aggregates, fuel and chemicals) can lead to root death and dysfunction. Soils can be compacted to levels inhospitable to tree growth with even a single pass of machinery, regular pedestrian traffic or the storage of plant and materials. Relieving compaction can be problematic and may require costly remedial works. Changes in drainage/water levels can also have significant long-term impacts for tree health.

The effects of these incursions may take many years to manifest, with a resulting decline in amenity value and potentially the death or failure of the tree. It should be noted that older trees are particularly sensitive to damage and changes in conditions.

The Root Protection Area (RPA) is a notional area considered to be the minimum zone that must be protected to avoid any adverse impacts on retained trees. This area is deemed to be particularly important for tree stability, growth, function and health. However, roots may extend far greater distances, with the distribution of the root system relating directly to the availability of suitable conditions for growth (namely oxygen, water and nutrients).

It is generally accepted that tree roots are predominantly located in the upper 1000mm of soil; however, roots may develop at deeper levels where conditions allow.

RPAs are calculated as per BS5837: 2012 Annex C, D and Section 4.6 in the BS 5837 2012 Document.

The RPA of the existing tree stock is an important material consideration when considering Site constraints and planning development activities. The RPA of significant trees on Site is shown on the Tree Protection Plan (Appendix D).

The default position must be that all development, including any associated services will occur outside the RPAs of retained trees. Where this is unavoidable, it may be appropriate to use special measures to install structures, services or surfacing within RPAs which allow the protection of roots and soil structure which are essential for tree growth and keep any incursion to a minimum.

Further steps to improve or increase the useable rooting area available to the tree may also be required.

2.3 Soils

On shrinkable clay soil, tree growth can lead to the differential movement of structures as moisture is removed from the soil during the growing season. Soils must be carefully assessed, and any foundations must be installed following the recommendations of National House Building Council (NHBC) Standards Chapter 4.2: *Building Near Trees (2020)* to avoid potential future damage. Where trees which predate existing structures are to be removed, this can result in heave as the soils are re-wet.

The advice of a suitably qualified engineer must be obtained to inform any potential issue of heave. Specific advice in relation to this issue is beyond the scope of this report.

2.4 Above Ground Constraints

Tree stems and branches can restrict available space on Site. Damage or wounding (including excessive pruning) can significantly reduce the amenity contribution of the tree and may lead to the development of dysfunction and decay, with significant long term implications for tree health. The future impact of existing trees should be carefully considered, including individual species characteristics (such as potential future size, fruit fall, shade etc.) and how the tree will interact with any proposed development and future land use. Annual tree growth can lead to direct damage if stems/branches (or roots) come into physical contact with structures and this must also be taken into consideration.

2.5 Trees and Risk in the Context of Development

Tree owners/managers have a legal duty to prevent foreseeable harm. It is generally accepted that this duty can be fulfilled by undertaking proactive inspections of significant trees to identify obvious defects and by taking appropriate remedial action or gaining further advice as appropriate.

AECOM can provide surveys and advice in relation to tree risk management if required. Further guidance is available from the National Tree Safety Group¹.

The tree survey carried out as the basis of this report is primarily for planning purposes, focusing on the quality and benefits of the trees and is not specifically designed to assess the safety of trees on Site. However, when obvious issues have been identified recommendations have been included in the Tree Survey Schedule.

The Construction (Design and Management) Regulations (2015) states that developers and contractors have responsibilities for health and safety as a result of their actions. Should trees be left in an unstable or hazardous condition the Health and Safety Executive (HSE) could seek to prosecute those responsible along with the potential for further Civil claims for damages.

2.6 Trees and Wildlife

Full consideration must be given to the presence of species protected under the Wildlife and Countryside Act (1981 - as amended), the Countryside Rights of Way Act (2000) and the Conservation of Habitats and Species

¹ National Tree Safety Group (NTSG),2011. Common sense risk management of trees. Forestry Commission.

Regulations (2017), in particular the presence of bats and nesting birds. It is recommended that wherever possible, significant tree/hedge works take place outside of the typical bird nesting season of March to September. The advice of a suitably qualified Ecologist is recommended in relation to any potential impacts on protected species.

2.7 Tree Works

Any tree surgery recommendations contained within this report are to be undertaken in accordance with BS3998: 2010 Tree work – Recommendations (BS3998) by suitably qualified and insured contractors. Significant pruning works are best undertaken when trees are dormant or outside periods of high functional activity to reduce the overall impact on energy available to the tree for growth and processes. In general the optimum period for works is between November to February and July to August (subject to the presence of protected species) when the tree is less active and better placed to respond to wounding and a reduction in leaf area.

3. Field Work Observations

3.1 The Site

The Site boundary is shown on the Development Proposals included within Appendix C.

The Site is located to the west of Ashington. The existing use is as a car park with surrounding retail establishments and amenity grass areas. The Site is bordered to the north by Station Road, to the east by the Ashington town centre, to the south by residential areas and to the west by Ashington cricket club.

AECOM checked the Geology of Britain Viewer² on 6th May 2020. The Site bedrock was identified as Pennine Middle Coal Measures Formation - Mudstone, Siltstone and Sandstone. with superficial deposits of Till, Devensian – Diamicton.

AECOM checked Cranfield University's Soilscape Viewer³ on 6th May 2020. Site soils were described as slowly permeable, seasonally wet, slightly acid but base-rich loamy and clayey soils, with impeded drainage.

3.2 The Trees

124 features were included in the survey, consisting of 96 individual trees, 18 tree groups and 10 hedges.

The trees on Site are predominantly semi mature to mature and in a good to fair structural and physiological condition.

Species present include common ash (*Fraxinus excelsior*), sycamore (*Acer pseudoplatanus*), whitebeam (*Sorbus aria*), Swedish whitebeam (*Sorbus intermedia*), silver birch (*Betula pendula*), wild cherry (*Prunus avium*), flowering cherry (*Prunus sp.*), elm (*Ulmus sp.*), smooth leaved elm (*Ulmus minor*), hawthorn (*Crataegus monogyna*), beech (*Fagus sylvatica*), goat willow (*Salix caprea*), field maple (*Acer campestre*), Austrian pine (*Pinus nigra*), London plane (*Platanus x acerifolia*), Norway maple (*Acer platanoides*), crack willow (*Salix fragilis*), common oak (*Quercus robur*), common lime (*Tilia x europaea*), cotoneaster (*Cotoneaster spp.*), Turkey oak (*Quercus cerris*), holly (*Ilex aquifolium*), rowan (*Sorbus aucuparia*), elder (*Sambucus nigra*), common alder (*Alnus glutinosa*), privet (*Ligustrum ovalifolium*), English elm (*Ulmus procera*), cypress (*Chamaecyparis sp.*), Norway maple 'Crimson King' (*Acer platanoides 'Crimson King'*), apple (*Malus sp.*), yew (*Taxus baccata*), Scots pine (*Pinus sylvestris*), hazel (*Corylus avellana*), Tibetan cherry (*Prunus serrula*), blackthorn (*Prunus spinosa*), bird cherry (*Prunus padus*) and Leyland cypress (*X Cupressocyparis leylandii*).

The most significant tree included within the survey is T31 a mature ash, established to the north of an area of formal grassland and dominant within the surrounding landscape and tree canopy. This tree has been identified as high quality due to its prominence in the local landscape, with a high amenity value whilst showing signs of ecological niche habitat (such as a hazard beam), typically only provided by mature and older trees. At the time of surveying, T31 did not show any obvious symptoms of chalara ash dieback (such as a deviation in branching pattern, lesions or browning of young shoots), or other signs (such as fungal fruiting bodies).

² <https://mapapps.bgs.ac.uk/geologyofbritain/home.html>

³ <http://www.landis.org.uk/soilscape/>



Figure 1. T31, visible left, dominant in tree group.



Figure 2. T31, looking north.

More broadly, to the north of the Site, the trees are predominantly of moderate quality (Category B), forming formal plantings around managed grassland and a memorial site, providing good amenity value. Most notably, this includes trees established to the north of the grass area, forming a tree group and pseudo-avenue feature for the highway extending east into the car park.

Surrounding the car park area are various trees of low quality (Category C) either due to physiological or structural defects. A number of trees were identified as unsuitable for retention (Category U), either due to their inappropriate positions likely to cause future infrastructure damage or due to dead or dangerous condition.

To the south of the car park is a field dominated by predominantly alder regeneration, likely subject to frequent clearance operations. Bordering the southern boundary to the scrubland are various trees of predominantly moderate quality, established within an alleyway hedgerow, providing good amenity and landscape value.



Figure 3. G68 in foreground with T86-T89 in background.

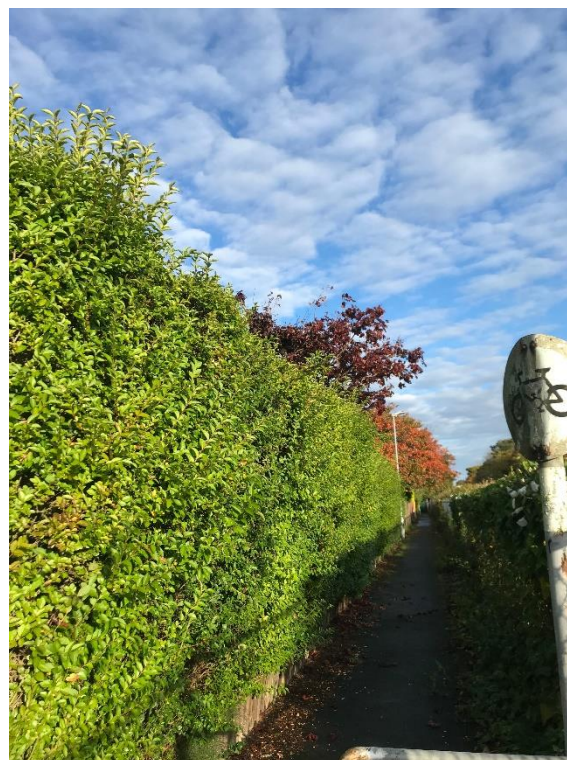


Figure 4. Showing alleyways with boundary hedgerows and small third party trees.

South of the public areas are various alleyways bordered by managed hedgerows and trees established in third party land. Predominantly, these trees and hedgerows are of low arboricultural value, either due to previous poor management practises or due to their overall size and therefore age, meaning replacement utilising like for like planting is likely achievable.

East of the railway, the trees form an avenue to the west of John Street. The majority of the trees situated in the avenue are of moderate quality. A number of ash trees within the avenue (namely T50, T51 and T54) were noted to be in severe decline, likely due to ash dieback. Due to the condition, position and size of these trees, they were categorised as unsuitable for retention and are recommended for removal.

During the survey, it was noted within this area that development works were recently undertaken, including the installation of hard surfacing immediately adjacent to the tree avenue. Mounded soil and concrete at the base of trees and severed roots present on the ground were noted. It is recommended that the extent of potential damage resulting from these works is investigated utilising hand excavation techniques only to determine the potential extent of root severance.

To the south of the avenue is a large group of new tree planting, comprised of a large variety of tree species, identified as low quality (Category C) due to their overall age and size and therefore their replaceability. This tree group however has high future potential and will likely provide good screening of the railway.

Details of work recommendations are given in Appendix A and should be actioned as per the Tree Survey Schedule.

Site photography can be found at Appendix B located to the rear of this report.

3.3 Statutory and Non Statutory Designations

3.3.1 Statutory Designations

AECOM emailed Northumberland County Council on 21st August 2020, and it was confirmed by return email that no Tree Preservation Orders are present within or immediately adjacent to the Site.

AECOM accessed Northumberland County Council's online mapping⁴ on 6th May 2020. No Conservation Areas were identified within or immediately adjacent to the Site.

Following a review of Magic Map⁵, no Sites of Special Scientific Interest (SSSI) were identified which could affect trees within or immediately adjacent to the Site.

Additional Regulations and Consents

The Hedgerow Regulations (1997) protect agricultural or countryside hedgerows which meet the requirements of an 'important hedgerow'. These include a minimum length of 20m (or meets another hedge at each end) and a minimum age of at least 30 years. A wide range of other ecological and archaeological/heritage features can constitute an important hedgerow and further advice from a qualified ecologist is recommended in advance of any planned works which could impact established hedgerows on or bordering agricultural or countryside land. Prior to the removal or destruction of a protected hedgerow an application must be made to the Local Planning Authority. Full planning consent is an exemption to this requirement.

A felling licence may be required by the Forestry Commission to fell more than 5m³ in any calendar quarter (subject to relevant exceptions including trees in gardens, designated public open spaces or churchyards).

Full planning consent is an exemption from the need to apply for consent for works to trees protected by a Tree Preservation Order, the need to give notice of the intention to undertake works within a Conservation Area and the need to apply for a Felling Licence with the Forestry Commission (to fell more than 5m³ per calendar quarter). Prior to any tree works the status of trees to be removed or pruned must be verified with the Northumberland County Council and the Forestry Commission as appropriate.

3.3.2 Non Statutory Designations

Following a review of Magic Map on 6th May 2020, the Site contains no semi-natural ancient woodland, replanted ancient woodland, or BAP Priority Habitats.

Following a review of the Woodland Trust's Ancient Tree Inventory⁶ on 6th May 2020, the Site contains no recorded trees identified as ancient, veteran, notable or as having any other specialist designations.

4. The Proposed Development

The Proposed Development is detailed on the Tree Protection Plan included as Appendix D (ref 60601435-ACM-XX-ZZ-DRG-EEN-0000(37-40)) and includes the development of a new station and associated infrastructure at Ashington, including a new station platform, a car parking area and associated soft and hard landscaping works.

5. Arboricultural Impact Assessment

5.1 Purpose

This impact assessment sets out the likely principal direct and indirect impacts of the Proposed Development on the trees on or immediately adjacent to the Site and suitable mitigation measures to allow for the successful retention of significant trees or to compensate for trees to be removed, where appropriate.

A brief summary of trees to be removed, tree works and incursions related to the Proposed Development are detailed within the table below.

⁴ <https://www.northumberland.gov.uk/About/Maps/Digital-maps.aspx>

⁵ <https://magic.defra.gov.uk/MagicMap.aspx>

⁶ <https://ati.woodlandtrust.org.uk/tree-search/?v=1800046&ml=map&z=13&nwLat=53.39894185801315&nwLng=-1.578489159545935&seLat=53.363308687217376&seLng=-1.361680840454138>

Table 2: Summary of Removals, Incursions and Pruning to Facilitate the Proposed Development

Impact	Category A	Category B	Category C	Category U
Trees to be removed to facilitate the Proposed Development	T31.	T23, T25 and G77.	T6, T20, T22, T24, T28, T33, T41, T42, T52, T53, G59, T60, G67, G68, T72, T78, G79 and H97.	T4, G14, T26, T29, T32, T39, T63, T65, T66, T69, and T92.
Total	One Individual Tree	Two Individual Trees and One Tree Group	13 Individual Trees, Four Tree Groups and One Hedge.	Ten Individual Trees and One Tree Group
Trees which may require some incursion into their construction exclusion zone to allow the Proposed Development.	0	G7, T15, T16, T35, T45, T86, T89, T93, T94, T98, T101, T103, T104, T106 and T107.	T12, T17, T18, T19, T57, T87, T88, T90, T91, T95, T99 and T100.	0
Total	0	14 Individual Trees and One Tree Group	12 Individual Trees	0
Trees to be pruned to facilitate the Proposed Development	0	T35 and T45.	T57.	0
Total	0	Two Individual Trees	One Individual Tree	0

5.2 Trees to be Removed

In total, 33 tree features are to be removed to facilitate the Proposed Development. This includes one tree classed as high quality (Category A); two individual trees and one group classed as moderate quality (Category B); 13 individuals, four groups and one hedge classified as low quality (Category C); and the remaining ten individual trees and one tree group classed as unsuitable for retention (Category U).

All of the trees to be removed are within the red line application boundary. Prior to any works, the ownership of these trees must be established and the consent of the tree owner obtained in writing.

In addition, a further eight individual trees and one group were identified as unsuitable for retention (Category U) in the context of the current land use are also recommended for removal. These trees are arguably not suitable for long term retention and their removal is justified regardless of the Proposed Development.

Tree removals are required to facilitate a new station platform, a car parking area and associated infrastructure. Tree removals are required where the layout of the Proposed Development cannot accommodate existing trees, either due to anticipated future conflicts with trees and proposed infrastructure, and/or where the likely direct and indirect effects of development installation adjacent to trees cannot be realistically mitigated with specialist installation techniques.

Tree removals will be mitigated with a high-quality scheme of new tree planting and associated landscaping works will represent an opportunity to enhance the quality, benefits and resilience of trees on Site.

All of the remaining recorded trees can be retained and protected.

5.3 Tree Works

Tree removals to facilitate the Proposed Development are detailed in the Tree Survey Schedule included as Appendix A.

Three trees require pruning to facilitate the Proposed Development, including: two individual trees (T35 and T45) of moderate quality (Category B) and one individual tree (T57) of low quality (Category C). All three trees are to be pruned at the crown periphery west, back from the proposed fence line, to the nearest suitable lateral branch. These pruning works are necessary to facilitate the installation of the new fence, which will increase the permanent protection of these retained trees on Site. Furthermore, this level of pruning is not likely to affect the trees' health or amenity.

No additional works to retained trees are likely to be required. All tree work is to follow the principles of *BS3998: 2010 Treework – Recommendations* and must be carried out by suitably qualified and insured contractors. The Arboricultural Association provides a list of contractors who meet these requirements which can be found at www.trees.org.uk.

Should the requirement for additional tree works be identified, this will be discussed with an arboriculturist and no works will be undertaken without the consent of the Local Planning Authority (Northumberland County Council).

5.4 Incursions within the RPA or Canopy Spread

Tree roots are typically found in the top 1.5m of soil, with the volume of roots expected to increase through the soil horizon towards the surface. The majority of these roots are likely to be within the top 600mm of soil. Tree roots are heavily influenced by numerous biotic and abiotic factors, including soil water availability, soil nutritional content and soil bulk density. Soil bulk density is likely to be heavily affected by development activities, with normal root functional likely significantly affected by bulk densities ranging from 1.4g per cm³ for clay soils, to 1.75g per cm³ for sandy soils. Where any of the aforementioned factors are significantly affected, premature tree death is likely.

Unmade ground within RPAs must have adequate ground protection where access is required, including for pedestrian and plant access. Details on adequate ground protection are included as Appendix E to the rear of this report.

In order to prevent potential damage to tree rooting environments, the following specialist installation methodologies and materials are to be utilised when implementing the Proposed Development in any RPAs of retained trees on Site.

5.4.1 Existing Hard Surfacing

One individual tree group and two trees (G7, T12 and T35) are likely require the amelioration and potential replacement of hard surfacing within their RPAs to facilitate the Proposed Development.

Where existing hard surfacing is present within the RPAs of any retained trees, care must be taken when ameliorating the surfacing to avoid any potential damage to underlying roots.

Surfacing

Roots are highly likely to develop immediately below engineered surfaces within the subgrade, where water, air infiltration and soil bulk densities allow.

Prior to undertaking any resurfacing works, the hard surfacing will be inspected by an arboriculturist to identify and assess any potential surface rooting protruding through the existing hard surfacing.

Where feasible, amelioration of hard surfacing shall utilise the existing subbase. Hard surfacing may be removed to the subbase by plant working from either the existing hard surfacing or from unmade ground utilising suitable ground protection (included as Appendix E). The subbase may then be constructed upon, or where required, ameliorated by hand to prevent contact damage to any potential roots below.

Where amelioration of the existing subbase is not feasible, the existing subbase may be carefully removed by hand taking care to avoid damaging any roots which may be present beneath the subbase. Where significant roots are present (> 25mm in diameter), preventing the relaying of the new subbase, the utilisation of a proprietary three-dimensional cellular raft system may be required.

Kerbs

Where in close proximity to established trees, kerb stones may be in direct contact with tree roots. Care must be taken to avoid damaging any roots in direct contact or in close proximity to kerb stones. Standard kerb installation is highly likely to damage roots where cut and fill excavation is employed to facilitate installation of kerb bedding.

Where feasible, the existing kerb edging should be utilised.

Where replacement edging is required, kerb stones may be carefully removed by hand with the existing bedding ameliorated and utilised, or alternative edging types may be utilised such as peg and board edging or similar.

Where peg and board edging or the existing bedding may not be utilised, bedding may be cast directly into the existing void from previous bedding removal level, utilising robust impermeable polyethene sheeting to prevent the leaching of any toxic chemicals into the surrounding soils. Alternatively, peg and board edging may be utilised where kerb stone installation is not feasible.

All excavations within RPAs are to be supervised by the Site Arboriculturist.

5.4.2 Car Park and Hard Surfacing

The Proposed Development requires a car park and associated hard surfacing within the RPAs of three trees of moderate quality (T15, T16 and T89) and four trees of low quality (T17, T18, T19 and T88).

BS5837 states that new permanent hard surfacing should not exceed 20% of any existing unsurfaced ground within an RPA.

In our experience, where hard surfacing facilitates diffusion of air, percolation of water and preserves soil bulk densities within acceptable limits, hard surfacing may occupy a greater proportion of a RPA with little detrimental impact on the tree.

When installing the proposed hard surfacing, precautions must be taken within any RPAs of retained trees on Site to limit soil compaction, avoid the severance of roots and where necessary allow for future tree growth.

Proprietary Three-dimensional Cellular Raft System

Where footpath surfacing is to be installed within RPAs a proprietary three-dimensional cellular raft system (such as Cellweb, ArborRaft or equivalent) will be utilised. This will facilitate the Proposed Development, whilst mitigating against direct and indirect damage to retained trees from development works. An example is given below as Figure 5.

The proposed hard surfacing within the RPAs of T88 and T89 will be installed upon a three-dimensional cellular raft system utilising 'no-dig' techniques will ensure that soil structure and root integrity are maintained whilst facilitating the development. The raft will be filled with washed inert angular material.

The raft system will act to prevent distortion from any surface rooting which would likely occur where standard footway construction methodologies are utilised.

The installation of the raft (such as Cellweb, ArborRaft or equivalent) must be installed in accordance with the manufacturers specification and be supervised by an Arboriculturist.

The raft will be installed a minimum of 500mm from any tree stem which will prevent any potential for distortion from secondary growth.

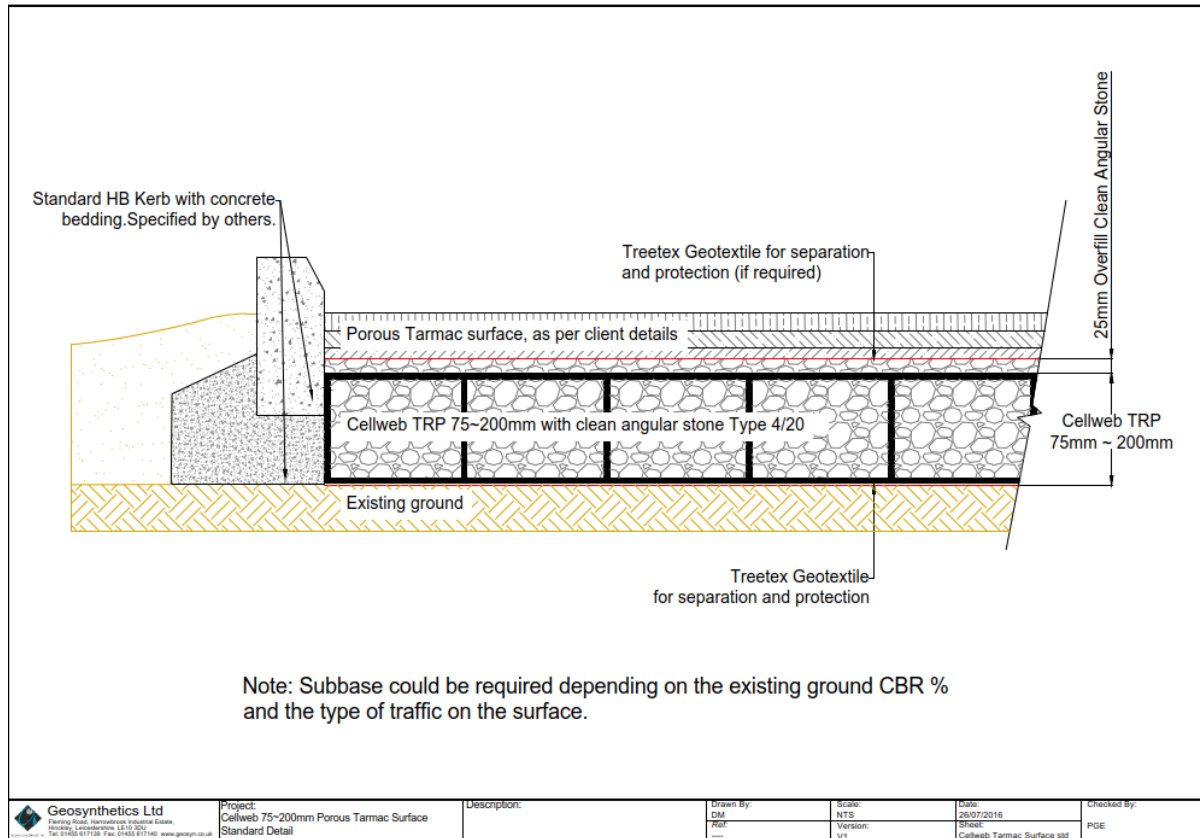


Figure 5. Example of three-dimensional raft system.

Trees T15, T16, T17, T18 and T19 are located immediately to the north of an existing hard surfaced access road. New hard surfacing on existing unsurfaced ground is required to widen the access road to the south, resulting in additional hard surfacing proposed within the RPA of T16. This will be achieved utilising a three-dimensional raft system, installed using no dig methodology. Where existing hard surfacing is in situ, this will be utilised as the base for the new footway and northern section of the access road. Where the existing surfacing is in place, and the existing subbase can be retained intact, no three-dimensional systems will be required within RPAs (likely to apply to T15, T17, T18 and T19). Edging is to utilise principles identified in Section 6.4.1.

Raft Depth

Standard raft depths for light vehicle and carpark use are normally between 100mm to 150mm and 75mm for pedestrian and cycleway use. Level changes must be considered, however it is generally feasible to gradually ramp down to the adjacent level outside of the area of constraint associated with the RPAs.

Wearing Course

Where feasible, the wearing course of the raft system will utilise inert granular material, such as gravel. Where this is not achievable, a permeable material should be considered (such as a permeable resin) to facilitate water infiltration below the engineered surface.

Edging

Edging isn't typically a structural requirement for no dig surfacing. Where edging is to be implemented the installation of edging is to avoid excavations within RPA's and utilise alternative installation techniques, such as peg and board edging or pinned systems such as *PaveEDGE* or equivalent. If a standard kerb is required, this can typically be cast directly onto the three-dimensional raft system without excavation.

5.4.3 Soil Regrading

Soil regrading is required on the periphery of the RPAs of six trees (T86, T89, T93, T94, T98 and T101) of moderate quality and five trees (T87, T88, T90, T93 and T95) of low quality, to facilitate the installation of the Proposed Development.

Considering the position of the regrading works on the outer peripheries of the RPAs, and the temporary loss of rooting volume, the regrading works will likely not have a significant negative impact on the health and amenity of these trees.

Soil utilised for regrading will be of good quality topsoil or similar, with any site won topsoil assessed, handled and utilised as per BS3882:2015 Specification for topsoil. Regrading will utilise the minimum volume of topsoil, with the soil compacted to the minimum extent feasible to ensure underlying soil health is maintained within the existing subgrade.

5.4.4 Fencing

New fencing is proposed within the RPA of retained trees T86, T87, T88, T89, T90, T91, T93, T94, T95, T98, T99, T100, T101, T103, T104, T106 and T107.

Fencing footings (which must be the smallest footprint feasible) are to be undertaken utilising hand-dig methodologies only, under the supervision of the Site Arboriculturist.

Excavations are to ensure that any significant roots (> 25mm in diameter) are retained and worked around. Any roots less than 25mm in diameter may be severed back to the face of the excavation utilising a sharp tool or secateurs. Where significant roots are found the post hole should be repositioned.

Reinstated soil must not be significantly compacted and must be lightly hand tamped only. Where footings require the use of concrete, excavations are to be lined with impermeable membrane, such as robust polythene sheeting, to avoid the leaching of toxic chemicals into the surrounding soils where necessary.

5.4.5 Soft Landscaping

All soft landscaping operations undertaken within RPAs (such as T35, T45, T57, T86, T87, T88, T89, T90, T91, T93, T94, T95, T98, T99, T100, T101, T103, T104 and T106) must be carried out by hand and be achieved without any mechanical cultivation of the soil, including rotovation.

The default position is that no alterations in ground level are to take place within RPAs. Where fill material is essential, this must not exceed 100mm in depth and must be achieved using inert granular fill, such as a sandy loam or sharp sand and/or good quality topsoil.

5.5 The Future Impact of Retained Trees

The future impact of retained trees in conjunction with the Proposed Development and future use of the Site has been considered in detail below.

5.5.1 Tree Maintenance

The Site contains a moderate population of trees, consisting of various sizes and conditions.

Retained trees will require periodic inspection to assess their structural condition and safety by a competent person to ensure that any risks from tree failure are managed in accordance with best practice.

Occasional removal of dead wood or other remedial works to address significant defects may be required in areas of frequent access. This is unlikely to be overly onerous and will be the responsibility of the tree owner. This will not represent a significant change from the current situation on Site.

All tree works recommended as a result of the preliminary tree survey of the Site which considered trees in the context of the current use of the Site (these works are included as preliminary management recommendations in the Tree Schedule in Appendix A of this report) should be actioned within the recommended timescales.

5.5.2 Future Growth

Young and semi mature trees are may significantly increase in size through annual incremental growth. Where young trees are located in close proximity to structures and urban infrastructure, this may cause conflicts through

direct contact with below ground tree anatomy (such as root lifting of hard surfacing) and branch and stem contact (such as branches contacting building interfaces).

This may be mitigated by positioning structures or planting young trees at adequate distances, or by utilising formative pruning to form adequate height and distance clearances to infrastructure from retained trees.

This is likely to apply to the proposed car park's southern boundary trees (T86 - T106) and the young, newly planted tree group (G119) to the immediate east of the railway to the Site's southern extent.

5.5.3 Leaf Fall

The majority of trees on the Site are broadleaved and will drop leaves and fruits in autumn and will produce flowers in the spring. This can affect the use of adjacent land and can block gutters where tree branches overhang roofs.

No trees will significantly overhang structures, such as station platforms, which will reduce the potential nuisance associated with this issue.

Gutter guards or equivalent can be used to prevent leaf ingress into guttering if required however, this is unlikely to be required.

5.5.4 Shade

Trees located to the south of structures are likely to cast the greatest degree of shade, which likely applies to the proposed car parks' southern boundary tree group (T86 – T107). Shade cast by these trees is likely to provide screening to pedestrians and parked cars in summer months. It is considered therefore that the provision of shade by these trees is a benefit to the Site.

5.6 Tree Protection

Retained trees are vulnerable to damage from construction activities which can include physical damage to stems and branches following impacts with plant. Root severance following trenching, root death or dysfunction following damage to soil structure (caused by the movement of people or machinery on unsurfaced ground) or via the spillage of materials toxic to tree health. The default position is that the RPA and canopy spread of trees to be retained will form an effective Construction Exclusion Zone, secured with robust fencing where no access will be permitted. Where access is necessary within this area special measures such as the use of ground protection and arboricultural supervision are generally required.

Outline tree protection measures are considered in Appendix E of this report. An Arboricultural Method Statement is often required as a condition of planning consent to set out the phasing of site operations, the finalised tree protection measures for the site and to provide detail on how sensitive elements of work are to be achieved in proximity to retained trees. Issues to be addressed by the Method Statement are listed in the Conclusion of this report.

5.7 Site Organisation, Storage and Use of Materials, Plant and Machinery.

All construction site facilities including site huts, staff and contractor parking and areas for storage will be located outside of the RPA or crown spread of retained trees, including those not specifically covered in this report. Space is likely to be constrained on Site and will need to be carefully considered. The Construction Exclusion Zones identified on the Tree Protection Plan must be fully respected and their location and significance is to be highlighted to all site staff and contractors during the formal site briefing.

The use, mixing and washing of materials can lead to run off or inadvertent spillage into tree root zones. Many substances often used on construction sites can be toxic to tree roots (such as concrete, fuels, salts, builder's sand and herbicides) and can result in the death of tree roots and beneficial soil organisms and can have a significant impact on the future health and appearance of the tree.

The storage of materials and arising's can result in an effective raised soil level. This buries tree roots at depths where air and water are less available and can lead to the decline or death of the tree.

For these reasons the storage of materials and any washing, mixing or refuelling will take place in agreed allocated areas at least 5m from the edge of the RPA of retained trees.

Any slope effect must be taken into account and where there is a potential for run off, heavy duty polythene sheeting and sandbags must be in place as bunding to prevent toxic materials reaching RPAs.

Particular care is required where high sided vehicles, long reach machinery and plant with jibs, booms and counterweights are to operate with in proximity to retained trees. A banksman will be used where the movement of plant or long reach machinery occurs within 5m of any part of a retained tree to ensure no damage is sustained.

5.8 Tree Planting

Existing areas of unsurfaced ground must be protected during the demolition and construction phases if they are to be re-used for new plantings. Protection can be achieved using fit for purpose ground protection measures as set out in BS5837:2012 Section 6.2.3 or by creating a fenced exclusion zone. Where protection is not feasible, soil amelioration or replacement works will be required to ensure suitable growing conditions for new trees to fully establish.

Where new trees are to be planted, the minimum planting distances detailed in Annexe A, Table A.1 of BS5837:2012 must be adhered to, to prevent direct damage to services and structures from future tree growth.

New tree planting should be implemented in accordance with the guidance set out in BS8545: 2014 Trees: from nursery to establishment in the landscape – Recommendations.

5.9 Services

No information in relation to new or diverted services has been made available at this stage.

Where existing services become redundant within the RPA of a retained tree, the default position must be that they be decommissioned and left in situ. Where this is not feasible the following principles are to be observed.

Existing services are to be removed by winching out from an access/inspection chamber located outside of an RPA. It may be acceptable to fill redundant pipe work with an inert material or undertake pipe bursting where necessary within the RPA of retained trees.

Excavation to install services has the potential to result in unacceptable root severance which could result in instability, dysfunction or the death of trees. Repeated incursions are particularly damaging and must be avoided by bundling services wherever possible.

The default position will therefore be that all services be routed outside of the RPA of retained trees. The following general principles will apply and where services must be routed within the RPA of a retained tree this process will be subject to a detailed method statement with approval from the Planning Authority. The principles of the National Joint Utilities Group (NJUG) Volume 4 guidance must be adhered to.

All services must be bundled as far as possible and installed within RPAs using hand/compressed air excavation (e.g. for shallow service runs) or trenchless techniques such as impact moling (thrust boring) with all access pits and inspection chambers being located outside of the RPA. The route must run as far from the main stem of a retained tree as possible and must be at a minimum depth so that the upper 1m of the soil profile is undisturbed. The depth of the run may need to be adjusted to account for soil type and species variation and this must be determined subject to the advice of an arboriculturist.

This operation must take place as specified in a Method Statement. Any water pipes must be constructed so as to be resistant to ingress by tree roots (both existing trees, and newly planted trees) which could include the use of root barriers where appropriate.

6. Conclusions

In total, 33 tree features are to be removed to facilitate the Proposed Development. This includes one tree classed as high quality (Category A); two individual trees and one group classed as moderate quality (Category B); 13 individuals, four groups and one hedge classified as low quality (Category C); and the remaining ten individual trees and one tree group classed as unsuitable for retention (Category U).

In addition, a further eight individual trees and one group were identified as unsuitable for retention (Category U) in the context of the current land use are also recommended for removal. These trees are arguably not suitable for long term retention and their removal is justified regardless of the Proposed Development.

All of the trees identified for removal are within the red line application boundary. Prior to any works the ownership of these trees must be established and the consent of the tree owner obtained in writing.

Tree removals are required to facilitate the installation of a new station platform, a car parking area and associated infrastructure. Tree removals are required where the layout of the Proposed Development cannot accommodate existing trees, either due to anticipated future conflicts with trees and proposed infrastructure, and/or where the likely direct and indirect effects of development installation cannot be realistically mitigated with specialist installation techniques.

Tree loss will be mitigated with new planting which represents an opportunity to increase the diversity and resilience of the local tree and plant stock.

Soil structure for areas of new tree planting where the ground is currently unsurfaced will either be protected using ground protection or fenced exclusion zones; or the soil structure will be ameliorated or replaced following the completion of construction works on Site.

6.1 Issues to be addressed by an Arboricultural Method Statement:

- Conditions of planning consent
- Pre commencement meeting and site briefing
- Order and phasing of operations
- Tree works
- Tree protection fencing
- Ground protection
- Site storage and facilities
- Movement of people, plant and materials
- Installation of new surfacing
- Installation of new services and/or diversion of existing services
- Hard landscaping
- Soft Landscaping
- Removal of tree protection measures

References

- British Standards Institution (BSI), BS5837:2012. Trees in relation to design, demolition and construction – Recommendations. BSI
- British Standards Institution (BSI), BS3998:2010. Tree work – Recommendations. BSI
- British Standards Institution (BSI) BS8545: 2014 Trees: from the nursery to independence in the landscape - Recommendations
- British Standards Institution (BSI) BS3882:2015 Specification for topsoil
- Geosynthetics Ltd, (2016). Cellweb 75~200mm Porous Tarmac Surface Standard Detail. Cellweb Tarmac Surface std. Provided by email on 5th January 2021.
- Ministry of Housing, Communities and Local Government (MHCLG), 2019. National Planning Policy Framework (NPPF). MHCLG
- National House Building Council (NHBC) Standards, (2020). Chapter 4.2: Building Near Trees
- National Joint Utilities Group (NJUG) Volume 4, Issue 2, (2007). NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees.
- National Tree Safety Group (NTSG), 2011. Common sense risk management of trees. Forestry Commission.
- Northumberland County Council (2019). Northumberland Local Plan. Publication Draft Plan (Regulation 19). Retrieved from Northumberland County Council:
<https://www.northumberland.gov.uk/NorthumberlandCountyCouncil/media/Planning-and-Building/planning%20policy/Local%20Plan/Northumberland-Local-Plan-Reg-19-Publication-Draft-January-2019-Web-PDF-Version.pdf>
- Wansbeck District Council (2007). Wansbeck District Local Plan. Retrieved from Northumberland County Council:
<https://www.northumberland.gov.uk/NorthumberlandCountyCouncil/media/Planning-and-Building/planning%20policy/Consolidated%20Planning%20Policy%20Framework/Section%20A/Part%201%20-%20Adopted%20Statutory%20DPDs/9.%20Wansbeck/Wansbeck-District-Local-Plan.pdf>

Appendix A Tree Survey Schedule

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Works to Facilitate the Proposed Development	Estimated Remaining Contribution	Category
G1*	Ash (Fraxinus excelsior), Sycamore (Acer pseudoplatanus),	4	100 Av	1	1	1	1	n/a	n/a	Good - Fair	Y	Good - Fair	- Young regeneration, immediately adjacent, to railway fence, unsuitable for retention due to likely future infrastructure conflict.	Fell (When funds allow)		<10	U1
T2	Sycamore (Acer pseudoplatanus)	15	480	5	6	3	4	5.0/N	4	Good	M	Good	- Suspected raised ground levels around base. - Significant buttress formation. - Sign installed approximately 1m from base. - Part of railside avenue feature. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.			20+	B1,2
G3*	Sycamore (Acer pseudoplatanus), Whitebeam (Sorbus aria)	5	150 Av	3	3	3	3	n/a	n/a	Good - Fair	Y-SM	Good - Fair	- Likely self sown along railway boundary fence.			10+	C2
T4*	Sycamore (Acer pseudoplatanus)	6	100#	2	2	2	2	1.5/W	3	Fair	Y	Fair	- Established at railway fence boundary, no access, DBH estimated -Unsuitable for retention as group is likely to cause infrastructure conflict in future.		Fell.	<10	U1
T5	Sycamore (Acer pseudoplatanus)	16	690	6	6	6	6	3.0/N	4	Good	M	Fair	- Forms part of avenue feature. - Concrete laid around base, severed roots visible. - Codominant stem with compressive union, large aspect ratio, upright with adaptive growth. - Significant wound south at 2m, 350mm x 300mm, decay/dysfunction visible, peripheral ring of wound wood. - Numerous pruning wounds with varying levels of occlusion. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.	- Remove concrete carefully utilising hand tools only. Reinstate path utilising specialist techniques. (ASAP) - Investigate potential root severance. (ASAP)		20+	B1,2
T6	Swedish Whitebeam (Sorbus intermedia)	10	315,350	4	4	4	4	2.0/S	2	Fair	M	Poor	- Established at railway fence boundary, stem a in contact with fence. - Secondary limbs with 100mm clearance. - Significant underpinning of roots west. - Compressive included union of secondary stems t 0.5m, no adaptive growth visible, upright. - Previous pruning, stub retained, peripheral wound wood. - Low height impact damage, peripheral wound wood. - Inappropriate position however, now well established.		Fell.	10+	C1

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Works to Facilitate the Proposed Development	Estimated Remaining Contribution	Category
G7*	Whitebeam (Sorbus aria), Sycamore (Acer pseudoplatanus)	15	< 500	5	5	5	5	n/a	n/a	Good - Fair	EM-M	Good - Fair	- High landscape value, established memorial park trees.			20+	B1,2
T8*	Whitebeam (Sorbus aria)	8	295	4	4	4	4	3.0/E	3	Good	EM	Fair	- Forms part of avenue feature. - Recent contact damage to base east, sap bleed. - Disturbed ground around base, likely tilled or similar. Significant root visible above ground level, severed. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.	Investigate potential root severance via hand tool excavation. (ASAP)		20+	B2
T9*	Whitebeam (Sorbus aria)	8	345	3	4	4	4	3.0/NW	4	Good	EM	Fair	- Forms part of avenue feature. - Raised ground levels around base, soil mounded around stem circa 150mm in depth. - Two severed significant roots present on soil top, likely severed from path development, unknown origin. - Recently crown raised, pruning wounds back to branch collar. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.			20+	B2
T10*	Silver Birch (Betula pendula)	7	250	3	3	3.5	2	3.0/S	4	Good	SM	Fair	- Forms part of avenue feature. - Development of main stem, adaptive thickening, potentially reactive growth of main stem at likely higher stress areas. - Numerous pruning wounds with varying levels of occlusion. - Patches of prolific shoot flush, likely cambial disturbance from bacteria/fungi such as witch's broom or similar. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.			10+	C1,2
G11*	Sycamore (Acer pseudoplatanus), Wild Cherry (Prunus avium), Silver Birch (Betula pendula), Elm (Ulmus sp)	12	270#	2	2	2	2	n/a	n/a	Good - Fair	Y-SM	Good - Fair	- No access. Limited visual of bases - Established immediately adjacent to railway boundary. Modest screening value, likely easily replaceable.			10+	C2
T12*	Silver Birch (Betula pendula)	10	190	3	2	2	3	2.5/N	2	Good	SM	Fair	- Wounding to base, partially occluded. - Wooden post support installed under 100mm from base. - Previous heavy crown raise over streetlight, pruning wounds with varying levels of decay/dysfunction (small cavitation) and occlusion. - Immediately adjacent to BT box, car charging station and lighting infrastructure. - Will likely lead to future disturbance requiring mitigation by pruning. - No deviation in crown branching pattern. - Likely newly planted hedge, managed.			10+	C2
H13*	Hawthorn (Crataegus monogyna), Beech (Fagus sylvatica), Goat Willow (Salix caprea)	1.5	75 Av	0.5	0.5	0.5	0.5	n/a	n/a	Good - Fair	Y	Good - Fair	- Likely newly planted hedge, managed.			10+	C2

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Works to Facilitate the Proposed Development	Estimated Remaining Contribution	Category
G14*	Sycamore (Acer pseudoplatanus),	4	150 Av	2	2	2	2	n/a	n/a	Good - Fair	Y-SM	Good - Fair	Young regrowth, unsuitable for retention.	Fell (When funds allow)	Fell.	<10	U2
T15*	Whitebeam (Sorbus aria)	10	350	5	3	5	5	2.5/N	2	Good	M	Fair	- Minor contact wound to base, peripheral wound wood. - Twin stem from 3m, upright form, no obvious compressive stress visible.			20+	B2
T16*	Beech (Fagus sylvatica)	13	950	7	7	7	7	2.0/NW	2	Good	M	Fair	- Buttressing up to kerb edge. Contact wounding to buttressing, peripheral wound wood. - Cavity at circa 1.3m south, partially occluded, holding water. - Minor deadwood in crown. - Small seam of included bark at secondary branch union south at 3m.			20+	B1,2,3
T17*	Beech (Fagus sylvatica)	10	360	5	5	2	2	1.8/N	4	Fair	SM	Fair	- Established approximately 200mm from curb/highway edge. - Surface rooting adjacent to kerb with contact wounding. - Major deadwood in crown. - Asymmetrical crown due to previously felled neighbouring tree west. - Wound to base north, partially occluded, dysfunction of exposed wood visible.	Remove major deadwood. (< 1 month)		10+	C1,2
T18*	Beech (Fagus sylvatica)	9	260	4	3	3	2	2.0/N	1.5	Good	SM	Fair	- Established approximately 200mm from curb/highway edge. - Contact wounding to limbs south over road, peripheral wound wood.			10+	C1,2
T19*	Beech (Fagus sylvatica)	12	450	6	6	3	6	2.0/NW	1.5	Fair	EM	Fair	- Established approximately 200mm from curb/highway edge. - Early leaf drop, buds appear visually normal, no obvious deviation in branching pattern. - Small black marks to base, likely stem bleed or similar.			10+	C1,2
T20*	Field Maple (Acer campestre)	2	70	1	1	1	1	1.5/N	1.5	Good	Y	Good	- Within grated planting pit.		Fell.	10+	C1
T21*	Wild Cherry (Prunus avium)	5	265	6	1	6	3	2.0/W	3	Good	SM	Fair				10+	C1,2
T22	Wild Cherry (Prunus avium)	7	180	0.5	3	5	0.5	3.0/E	3	Good	SM	Fair	- Asymmetrical crown, likely due to pine and birch west, increased likelihood of failure due to increased lever arm. - Multiple minor wounds in crown, likely previous union failures, varying levels of wound wood present. - Scion growing faster than graft. - Significant wounding to buttress, peripheral wound wood. - Scar in ground circa 2m east of base, likely newly dug trench excavation or equivalent.		Fell.	10+	C1

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Works to Facilitate the Proposed Development	Estimated Remaining Contribution	Category
T23	Austrian Pine (Pinus nigra)	15	530	5	4	2	4	6.0/N	6	Good	M	Fair	- Established in formal park grassland. - Codominant in canopy. High landscape value - Large aspect ratio limb at 3m north, secondary limb. Upright, no obvious compressive stresses visible.		Fell.	20+	B1,2
T24*	Austrian Pine (Pinus nigra)	11	435	4	0.1	8	0.1	6.0/N	7	Good	EM	Poor	- Established in formal park grassland. - Subdominant in canopy. - Two Large pruning wounds to main stem north at circa 5m and 6m. Wound approximately 150mm in diameter. Resin bleed visible, unlikely to occlude. - Asymmetrical crown, significant overextension northeast. - Crown beginning is over 8m from base. High risk of windthrow. - Topo point for tree is in wrong position, stem 2m from curb.		Fell.	10+	C1
T25	Austrian Pine (Pinus nigra)	16	540	3	4	5	2.5	8.0/E	6	Good	M	Fair	- Established in formal park grassland. - Codominant in canopy. High landscape value - Triple secondary stems from 8m, Multiple attachment points increase likelihood of union failure. No union defects visible at present e.g. cracking. No symptoms of branch abortion present. - Bird's nest visible in crown. - Prolific deadwood in lower crown, likely natural pruning from over-shading. - Surface root east of base, potentially girdling, sever.	Sever potentially girdling root. (< 3 months)	Fell.	20+	B1,2
T26*	Swedish Whitebeam (Sorbus intermedia)	5	200,350	3	3	4	5	3.0/S	2	Fair	M	Poor	- Established at railway fence boundary, stem and secondary limbs in contact with fence. - Lower stem/buttrressing growing under fenceline, distorting railing. - Main stem and base entirely obscured by ivy. - Inappropriate position.	Fell (< 3 months)	Fell.	<10	U1
T27*	London plane (Platanus x acerifolia)	15	480	7	7	7	7	2.5/SW	4	Good	M	Good	- Cavity at 2m north on main stem, partially occluded, adaptive growth around wound. - Dominant in group. - Large recent pruning wound to secondary limb east. - Part of railside avenue feature. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.			20+	B1,2
T28	Silver Birch (Betula pendula)	9	265	3	3	4	2	4.0/W	3	Good	SM	Fair	- Asymmetrical crown, likely due to pine and birch west, increased likelihood of failure due to increased lever arm. - Multiple past pruning wounds to main stem, partially occluded, hollowing present Minor adaptive growth visible round cavities. - Minor wounding to buttress east, peripheral wound wood. - Likely easily replaceable with short timeframe.		Fell.	10+	C1,2
T29	Silver Birch (Betula pendula)	9	270	0.1	4	5	1	4.0/E	5	Fair	SM	Poor	- Established under pine canopy. No symptoms of subdominance e.g. leans or crown orientation. - Contact wounding to buttress, likely mechanical, peripheral wound wood. - Third order limb south at circa 4m, previously failed at 1.5m along branch. Fruiting body present circa 400mm below wound, likely <i>Fomitopsis betulina</i> . - Clumps of shoots across limb structure, likely witches broom. Deadwood present		Fell.	< 10	U1

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													within crown. - Very limited retention value beyond 10years.				
T30*	Norway Maple (Acer platanoides)	10	280	3	4	7	1	3.0/E	2	Good	SM	Fair	- Forms part of avenue feature. - Structurally suppressed. - Recent crown raising works, pruning wounds back to collars or parent stem. - Potential girdling root over northwest buttress, sever. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.	Sever potentially girdling root. (< 3 months)		20+	B2
T31	Ash (Fraxinus excelsior)	20	520,595	8	9	5	6	1.6/NW	4	Fair	M	Fair	- Established in formal park grassland. Dominant in landscape and canopy. - Large likely previous secondary limb now codominant from 1.5m forming circa 1/3 of crown. - Multiple minor contact wounds to base, likely mechanical, partially occluded. - Deadwood throughout crown. One hazard beam limb north at circa 9m, peripheral wound wood, partially hung up. - Crown previously pruned back north, internodal pruning,		Fell.	40+	A2
T32	Wild Cherry (Prunus avium)	6	270	1	4	4	1	2.5/N	3	Dead	EM	Dead	- Asymmetrical crown, overextended east. - Desiccated buds, no leaves present, yellow paint marker on stem.	Fell (< 1 month)	Fell.	<10	U1
T33	Ash (Fraxinus excelsior)	14	330,420	7	8	8	1	1.5/SW	4	Fair	EM	Poor	- Established in formal park grassland. - Subdominant in canopy. - Multiple minor contact wounds to base, likely mechanical, partially occluded. - Asymmetrical crown, extending east, increased lever arm. - Major deadwood north over road from dead third order limb. - Secondary limb north at 3m, previously pruned, now dying back, desiccated fruiting bodies on limb, likely jelly ear fungus. - High risk of windthrow if neighbouring tree is removed.		Fell.	10+	C1
T34*	Crack Willow (Salix fragilis)	15	570	3	3	8	2	2.0/NW	7	Fair	M	Poor	- Part of avenue feature. - Wound to main stem southwest, from ground level to 1.8m. Partially occluded. - Buttressing at base of wound decayed, brittle, looks severed. Fruiting body visible on third order limb south at 6m. Apical dieback on individual limbs in crown. - Numerous large significant pruning wounds to main stem east. - Large diameter wound over 100mm to secondary limb. Recent. poor species wood durability. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance. - Bird's nest present.	Fell (< 3 months)		<10	U1
T35	Wild Cherry (Prunus avium)	7	340	5	4	4	4	1.7/S	1.5	Good	M	Fair	- Surfacing rooting 1m from stem, contact wounding, no wound wood visible, dysfunction of exposed wood. - Minor helical rib crack on mainstem, partially and fully occluded in segments. - Expansion seams with adaptive growth			20+	B2

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Works to Facilitate the Proposed Development	Estimated Remaining Contribution	Category
													across main stem and secondary limbs. - Bird's nest present. - Previous pruning to main stem, stubs with epicormic flushing.				
T36*	London plane (Platanus x acerifolia)	10	280	3	2	1	5	2.0/S	4	Fair	SM	Fair	- Structurally suppressed. - Secondary limb north with cavity at 'dogs-leg' union, high likelihood of failure. Target of railway fence. Removal will leave significant wound, highly unlikely to occlude. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.	Fell (< 12 months)		<10	U1
T37*	Crack Willow (Salix fragilis)	12	420	1	5	8	1	1.4/N	7	Good	Y	Fair	- Codominant. - Small crack/cavity at base with adaptive growth column either side, likely localised cambial dieback. - Numerous pruning wounds across branching structure, likely excessively crown raised. fruiting body, likely jelly ear fungus visible on wound south at 3m. - Small diameter deadwood in crown, typical of species. - Large diameter wound, over 100mm to secondary limb. Likely recent. Poor species wood durability. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.			10+	C1,2
T38*	Crack Willow (Salix fragilis)	14	540	4	5	2	4	1.8/S	1	Good	M	Fair	- Codominant. - Ivy and herb layer limiting visual inspection. - Major deadwood in crown, typical of species. - Part of avenue feature. - Large diameter wound, over 100mm in diameter to secondary limb. Likely recent. Poor species wood durability. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.			20+	B2
T39*	Swedish Whitebeam (Sorbus intermedia)	5	150,320	2	2	4	4	1.5/N	1.5	Good	M	Poor	- Stem and secondary limbs in contact with fence. Lower stem/buttrressing growing under fence line, distorting railing. - Brick likely retaining wall, three bricks high built under base, in poor state. - Included bark union of secondary limb north, increased likelihood of failure. - Inappropriate positioning.	Fell (< 3 months)	Fell.	<10	U1
T40*	Common Oak (Quercus robur)	14	330	2	1	5	4	4.0/N	4	Good	SM	Good	- Codominant. - Part of avenue feature. - Wounding to buttressing, likely mechanical contact damage, wounds with varying levels of peripheral wound wood. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.			20+	B2
T41*	Field Maple (Acer campestre)	2	70	1	1	1	1	1.5/N	1.5	Good	Y	Good	- Within grated planting pit.		Fell.	10+	C1

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T42	Wild Cherry (Prunus avium)	6	310	5	5	5	2	2.0/NW	2	Good	EM	Fair	- Lean of main stem east, likely historic planting defect, crown with corrective growth. - Significant wound to base, likely impact damage. Wound 800mm x 200mm. - Peripheral wound wood formation, adaptive swelling around wound. - Contact wounding to surface rooting southwest, up to 1m from base. Likely cyclical mechanical contact wounding.		Fell.	10+	C1
T43*	Sycamore (Acer pseudoplatanus)	6	100	2	2	1	2		1	Good	Y	Good	- Established on retaining wall. - Future growth likely to cause infrastructure conflicts.	Fell (When funds allow)		<10	U1
T44*	Common Oak (Quercus robur)	14	340	4	1	1	5	3.0/S	1	Good	SM	Good	- Codominant. - One dead stub visible. - Part of avenue feature. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.			20+	B2
T45	Wild Cherry (Prunus avium)	7	450	6	6	6	4	2.0/N	2	Good	M	Fair	- Contact wounding to base, partially occluded. - Surface rooting north by approximate 1m, prolific contact wounding. Circa 300mm from path edge, wooden edging. - Asymmetrical crown, likely from previous pruning over highway. - Expansion seams with adaptive growth across main stem and secondary limbs.			20+	B2
T46*	Silver Birch (Betula pendula)	7	130#	2	2	2	2	1.0/S	1.5	Good	SM	Good	- No access, within garden. - Likely replaceable with like for like planting.			10+	C1,2
T47	Sycamore (Acer pseudoplatanus)	15	540	5	3	8	4	3.0/W	3	Good	M	Fair	- Small cavity between buttressing west at ground level, peripheral wound wood present, no signs of fungus. - Recently pruned over road, large diameter, over 50mm back to branch collars. Contact damage below cut, likely high sided vehicle damage or equivalent. - Lean east, likely due to codominance with neighbouring trees west. - Part of avenue feature. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.			20+	B1,2
T48	Sycamore (Acer pseudoplatanus)	15	440	4	3	6	5	2.0/W	6	Good	M	Fair	- Lean of main stem east, corrective growth of secondary limbs and crown. - Minor deadwood in crown. Two Dead stubs retained, likely from internodal pruning. - Part of avenue feature. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.			20+	B1,2
T49	Sycamore (Acer pseudoplatanus)	15	310	1	4	7	1	4.0/S	6	Good	EM	Good	- Codominant in avenue, asymmetrical crown likely due to structural suppression from neighbouring tree west. - Part of avenue feature. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.			20+	B2

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T50	Ash (Fraxinus excelsior)	15	420	3	2	1	5	2.0/N	4	Poor	M	Poor	- High crown sparsity, deviation in branching pattern, deadwood throughout crown. Likely ash dieback. No lesions visible on main stem. - Part of avenue feature. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.	Fell (3 months)		<10	U1
T51	Ash (Fraxinus excelsior)	15	390	4	2	7	4	6.0/S	9	Poor	M	Poor	- High crown sparsity, deviation in branching pattern, deadwood throughout crown. Likely ash dieback. No lesions visible on main stem. - Greater leaf volume throughout crown than neighbouring trees. Potentially in a more robust condition. Level of potential wood embrittlement unknown. - Part of avenue feature. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.	Fell (12 months)		<10	U1
T52	Wild Cherry (Prunus avium)	6	250	1	4	5	0.1	2.0/S	2	Good	SM	Good	- Lean of main stem east, asymmetrical crown formation. Likely desiccation of buds from exposure limiting western growth. - Multiple wounds to underside of second and third order limbs east, partially occluded. - Contact wounding o surface rooting west, peripheral wound wood.		Fell.	10+	C1
T53*	Field Maple (Acer campestre)	3	80	1	1	1	1	1.5/SW	2	Good	Y	Good	- Within grated planting pit.		Fell.	10+	C1
T54	Ash (Fraxinus excelsior)	16	445	7	7	7	7	4.0/SW	2	Poor	M	Poor	- High crown sparsity, deviation in branching pattern, deadwood throughout crown. Likely ash dieback. No lesions visible on main stem. - Part of avenue feature. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.	Fell (3 months)		<10	U1
T55	Common Lime (Tilia X europaea)	10	340	1	1	7	1	3.0/N	7	Fair	EM	Fair	- Subdominant, suppressed by ash west. - Potential girdling roots over buttress south and north, sever. - Recently crown raised over road, pruning back to branch collars. - Part of avenue feature. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.	Sever girdling roots. (12 months)		20+	B2
T56	Silver Birch (Betula pendula)	7	200	2	2	0.5	4	3.0/W	3	Good	SM	Fair	- Structurally suppressed. - Wound to base east, likely mechanical contact damage.			10+	C2
T57	Wild Cherry (Prunus avium)	7	440	7	7	7	7	3.0/S	2	Good	M	Poor	- Contact wounding to base, partially occluded. - large area of sunken bar on main stem with significant swelling. Likely cankering. - Large wound to main stem north at 2m, wound rising circa 300mm above likely previously pruned limb, likely point of previous cankering. Wound wood partially visible. - Gumosis across woody scaffold. - Previously pruned back from street light.			10+	C1

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T58	Common Lime (Tilia X europaea)	12	360	2	3	5	4	6.0/W	4	Good	EM	Fair	- Codominant in avenue. - Recent pruning, crown raising works, pruning back to branch collar. - Codominant union at 2.5m, upright form. - Bird's nest present. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.			20+	B1,2
G59*	Sycamore (Acer pseudoplatanus), Ash (Fraxinus excelsior), Swedish Whitebeam (Sorbus intermedia), Cotoneaster (Cotoneaster sp.)	12	300#	3	3	3	3	n/a	n/a	Good - Fair	Y-SM	Good - Fair	- Group established at car park edge, no access to bases, stems estimated. - Underplanting of predominantly cotoneaster. - Ash in poor to dead condition. Limited value, likely easily replaceable. Sycamore and ash likely self sown.	Fell dead ash. (< 1 month)	Fell.	10+	C2
T60	Field Maple (Acer campestre)	4	115	1	1	1	1	0.5/S	0.5	Good	Y	Good	- Fastigate. - Young tree in planting cage, staked with watering tube.		Fell.	10+	C1
T61	Norway Maple (Acer platanoides)	15	390	3	5	6	3	3.0/E	4	Good	M	Fair	- Codominant in avenue. - Previous wound to main stem from ground level to 1.6m, almost fully occluded with included bark seam. - Codominant union at 2m cup formation, adaptive growth. Previous pruning, wounds with asymmetrical wound wood formation. - Part of avenue feature. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.			20+	B1,2
T62	Turkey Oak (Quercus cerris)	15	650	5	5	5	5	4.0/E	2	Good	M	Good	- Dominant in avenue. - Ivy established across main stem and secondary limbs, limiting visual inspecting. Minor deadwood in crown. - High future potential. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.			20+	B1,2
T63	Wild Cherry (Prunus avium)	6	360	4	4	4	4	2.0/S	2	Good	M	Poor	- Contact wounding to base, partially occluded. - Likely Historic split of codominant stem at 3m in central crown, at oblique angle with peripheral wound wood, exposed inner wood dysfunction visible. - No canopy gaps. - Each limb supporting 50% crown, high likelihood of failure.	Fell (< 3 months)	Fell.	<10	U1
T64	London plane (Platanus x acerifolia)	15	600#	4	5	10	8	3.0/SE	0.5	Fair	M	Fair	- Dominant in avenue. - Dbh estimated. - Significant establishment of ivy, sever. Damage to underlying bark visible. Ivy preventing visual inspection. - Recently crown raised over road east, pruning back to collar. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.	Sever Ivy. (< 3 months)		20+	B1,2
T65*	Wild Cherry (Prunus avium)	3	60,70#	0.5	0.5	2	0.5	2.0/NE	2	Poor	SM	Poor	- Dbh estimated. - Significant dieback of crown, deadwood present, deviation in branching pattern.	Fell (< 3 months)	Fell.	<10	U1

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T66*	Wild Cherry (Prunus avium)	4	250#	3	3	3	3	2.0/NE	2	Poor	EM	Poor	- Dbh estimated. - Stem entirely obscured by ivy. - Significant dieback of crown deadwood, deviation in branching pattern, leaf flush in centre of crown.	Fell (3 months)	Fell.	<10	U1
G67*	Sycamore (Acer pseudoplatanus), Ash (Fraxinus excelsior), Wild Cherry (Prunus avium)	3	75 Av	1	1	1	1	n/a	n/a	Good - Fair	Y-SM	Good - Fair	- Understory of briar rose and cotoneaster. - Established at edge of car park, likely part of previous landscape scheme. - Ash and sycamore likely self sown.		Fell.	10+	C2
G68*	Sycamore (Acer pseudoplatanus), Ash (Fraxinus excelsior), Wild Cherry (Prunus avium), Holly (Ilex aquifolium)	3	150 Av	1	1	1	1	n/a	n/a	Good - Fair	Y-SM	Good - Fair	- Understory of briar rose, cotoneaster and privet - Established at edge of car park, likely part of previous landscape scheme. - Ash and sycamore likely self sown.		Fell.	10+	C2
T69	Wild Cherry (Prunus avium)	6	400	4	4	4	4	2.5/W	1	Good	M	Poor	- Potentially girdling roots at base, contact wounding, partially occluded. - Major wound to main stem/secondary limbs north at 2m, likely historic failure of crown or desiccation by canker. - Decay dysfunction of exposed wood visible, wound at secondary limb attachment points, high likelihood of failure.	Fell (3 months)	Fell.	<10	U1
T70*	Wild Cherry (Prunus avium)	4	180#	3	2	2	2	1.0/W	2	Good	SM	Good	- No access, within garden, only crown and upper main stem visible. - Third party. - Likely replaceable with like for like planting.			10+	C1,2
H71*	Ornamental Plant Mix (N/A)	1	25#	1	1	1	1	n/a	n/a	Good	Y	Good	- Third party, no access. - Ornamental shrub hedge.			10+	C2
T72*	Silver Birch (Betula pendula)	4	75,70	2	2	2	2	0.2/NE	0.1	Fair	Y	Poor	- Likely self sown, established at field boundary. - Wounding to base of secondary limbs, clumped attachment points at 100mm above ground level. - Likely to develop inherently weak structure over time. Suitable established in current land use.		Fell.	10+	C3
T73*	London plane (Platanus x acerifolia)	4	75	2	2	2	2		0.5	Good	Y	Fair	- Multiple stems regenerating from ground level, likely from recent clearance.			10+	C1
T74	Norway Maple (Acer platanoides)	14	470	6	6	6	6	4.0/W	2	Good	M	Fair	- Dominant in avenue. - Codominant union at 3m, acute angle, adaptive growth. - Slight lean of main stem southeast, normal crown orientation. - Bird's nest present. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.			20+	B1,2

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T75	Rowan (Sorbus aucuparia)	6	180	1	1	2	1	2.0/NE	4	Poor	SM	Poor	- Significant physiological and structural suppression from neighbouring trees. - 50% crown death, major deadwood - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.	Fell (When funds allow)		<10	U1
T76	Wild Cherry (Prunus avium)	10	270	3	3	3	3	3.0/W	3	Good	EM	Good	- Previously crown raise east, large diameter pruning wounds, peripheral wound wood. - significant buttressing/surface root formation west. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.			20+	B2
G77*	Sycamore (Acer pseudoplatanus), Hawthorn (Crataegus monogyna), Elder (Sambucus nigra)	8	350#	3	3	3	3	n/a	n/a	Good - Fair	Y-SM	Good - Fair	- No access, group behind electrical infrastructure, amenity bins and thick thorn hedge. - Likely self sown, forms good screen of infrastructure and railway. - One tree, dominant in group to very south immediately adjacent to fencing, likely to cause infrastructure conflict in near future from incremental growth.	Remove tree in group in significant proximity to fence. (When funds allow)	Fell.	20+	B2
T78*	Wild Cherry (Prunus avium)	4	200	3	3	5	3	3.0/W	1	Good	EM	Fair	- Under 500mm from wall west, crack in wall immediately adjacent. - Basal inspection obscured by herb layer. - Significant large aspect ratio secondary limbs from circa 2.5m, increased likelihood of failure.		Fell.	10+	C1
G79*	Common Alder (Alnus glutinosa)	2	75 Av	1	1	1	1	n/a	n/a	Good	Y	Good	- Prolific alder regeneration, likely from stump and or suckering. Likely subject to routine clearance works.		Fell.	10+	C2
G80*	Elm (Ulmus minor), Ash (Fraxinus excelsior)	9	250#	4	4	4	4	n/a	n/a	Good - Fair	Y-SM	Good - Fair	- No access. Limited visual of bases.			10+	C2
G81*	Common Oak (Quercus robur)	9	150 Av	1	1	1	1	n/a	n/a	Good	Y	Good	- Planted, formal avenue feature formed of fastigate oak at cricket ground boundary. - Young tree planting to immediate south.			10+	C1,2
T82	Silver Birch (Betula pendula)	10	275	4	2	4	4	2.5/E	2.5	Good	M	Good	- Previous small diameter pruning wounds east, wounds with varying levels of wound wood. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance.			20+	B2
T83	Whitebeam (Sorbus aria)	10	280	4	4	4	4	2.0/S	3	Good	M	Good	- Previous poor pruning, internodal with small diameter limb dieback. - One significant dead limb in lower crown south. - Contact wounding across stem, peripheral wound wood. - New surfacing installed east of base. Looks to be below existing ground levels resulting in potential root severance. - Part of avenue feature.			20+	B2

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T84	Whitebeam (Sorbus aria)	10	270	4	4	4	3	3.0/N	6	Fair	M	Fair	- High crown beginning, previous poor pruning with peripheral wound wood. Recent pruning back to branch collars. - Contact wounding across stem, peripheral wound wood. - New surfacing installed under 1.5m from base. Looks to be below existing ground levels resulting in potential root severance.			20+	B2
T85	Whitebeam (Sorbus aria)	10	310	2	4	4	2	3.0/SE	3	Poor	M	Poor	- Large fruiting body at base, likely <i>Meripilus giganteus</i> , crown sparsity, prolific bindweed throughout crown. - Deadwood in crown.	Fell (< 3 months)		<10	U1
T86	Common Alder (Alnus glutinosa)	14	550#	6	6	6	4	3.0/N	1	Good	M	Good	- Poor visibility of base due to herb layer and brambles. - No access to base, prolific brambles. - Fly tipping at base. - Good crown form and leaf density. Dominant.			20+	B1,2
T87	Sycamore (Acer pseudoplatanus)	7	220#	4	4	4	4	2.0/N	2	Fair	SM	Fair	- Poor visibility of base due to herb layer and brambles. - No access to base, prolific brambles. fly tipping at base. - Deadwood in lower crown. Moderate crown sparsity. - Prolific coral spot throughout crown.			10+	C2
T88	Sycamore (Acer pseudoplatanus)	16	450#	5	5	2	2	2.0/N	3	Fair	M	Poor	- Poor visibility of base due to herb layer and brambles. - No access to base, prolific brambles. Fly tipping at base. - Significant wound to base, circa 150mmx500mm. Wound wood formation, unlikely to fully occlude. - Prolific coral spot throughout crown. - Apical crown dieback, deadwood at apices. - Wounding to stem at circa 1.8m east, minor cavity visible, partially occluded.			10+	C1,2
T89	Sycamore (Acer pseudoplatanus)	16	450#	6	6	6	6	2.0/N	3	Good	M	Fair	- Poor visibility of base due to herb layer and brambles. - No access to base, prolific brambles. - Dominant in row. - Prolific coral spot throughout crown. - Large aspect secondary limb arising from 2m north. Expansion seams on main stem. Crown form and leaf density normal.			20+	B1,2
T90	Sycamore (Acer pseudoplatanus)	6	250#	3	3	2	4	2.0/NW	2	Poor	SM	Good	- Poor visibility of base due to herb layer and brambles. - No access to base, prolific brambles. - Codominant in row. - Prolific coral spot throughout crown. - High crown sparsity. One dead limb in lower crown east. Stubs retained, pruning collars partially occluded.			10+	C2
T91	Sycamore (Acer pseudoplatanus)	7	320	5	5	5	3	2.5/NW	2	Good	SM	Good	- Poor visibility of base due to herb layer and brambles. - Limited access to base, prolific brambles. - Codominant in row. - Prolific coral spot throughout crown. - Moderate crown sparsity. Major deadwood in crown.			10+	C1,2
T92*	Unknown	3	200	0.1	0.1	0.1	0.1		0	Dead	SM	Dead	- Monolith.	Fell. Retain arisings. (< 1 month)	Fell.	<10	U1

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Works to Facilitate the Proposed Development	Estimated Remaining Contribution	Category
T93	Sycamore (Acer pseudoplatanus)	10	320	4	4	4	4	2.0/E	2	Good	SM	Fair	- Poor visibility of base due to herb layer and brambles. - Limited access to base, prolific brambles. - Codominant in row. - Prolific coral spot throughout crown. - Large aspect ratio secondary limb at 2m southeast. - Bird's nest visible.			20+	B2
T94	Sycamore (Acer pseudoplatanus)	10	370#	6	6	6	6	2.0/W	2	Good	EM	Good	- Poor visibility of base due to herb layer and brambles. - No access to base, prolific brambles. - Dominant in row. - Prolific coral spot throughout crown.			20+	B1,2
T95	Common Alder (Alnus glutinosa)	9	400#	6	3	4	5	2.0/W	0.5	Good	EM	Poor	- Poor visibility of base due to herb layer and brambles. - No access to base, prolific brambles. - Codominant union from 2m, oblique angle, stem contact, likely beginning of natural bracing, visible on secondary limb east.			10+	C1,2
T96*	Wild Cherry (Prunus avium)	8	380#	9	7	8	5	2.0/S	2	Good	M	Good	- No access, viewed from footway. - Dbh estimated. - Crown overhangs footway and road by circa 3m. - Good landscape value. - Dominant in group.			20+	B1,2
H97*	Hawthorn (Crataegus monogyna), Sycamore (Acer pseudoplatanus), Privet (Ligustrum ovalifolium)	2.5	100 Av	1	1	1	1	n/a	n/a	Good - Fair	Y-SM	Good - Fair	- Partially managed hedgerow, likely pruned on long rotation, no evidence of recent cutting, dense regrowth.		Fell.	10+	C2
T98	Common Alder (Alnus glutinosa)	11	280#	4	4	4	4	3.0/W	2	Good	SM	Good	- Poor visibility of base due to herb layer and brambles. - No access to base, prolific brambles. - Minor crown sparsity, crown form normal. - Minor wound visible in crown apex west, likely previous small branch failure or similar.			20+	B2
T99*	Sycamore (Acer pseudoplatanus)	7	150#	2	3	2	3	1.0/N	1	Fair	SM	Fair	- Poor visibility of base due to herb layer and brambles. - No access to base, prolific brambles. - Likely self sown, coral spot throughout crown.			10+	C1
T100*	Silver Birch (Betula pendula)	7	150#	2	2	2	2	3.0/N	6	Poor	SM	Fair	- Poor visibility of base due to herb layer and brambles. - No access to base, viewed from grass. - High crown sparsity. Deadwood in lower crown.			10+	C1
T101	Sycamore (Acer pseudoplatanus)	10	370	5	3	5	3	2.0/NW	2	Fair	EM	Good	- Poor visibility of base due to herb layer and brambles. - Codominant crown canopy. - Prolific coral spot throughout crown.			20+	B2

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Works to Facilitate the Proposed Development	Estimated Remaining Contribution	Category
H102*	Privet (<i>Ligustrum ovalifolium</i>)	2.5	20 Av	1	1	1	1	n/a	n/a	Good	Y	Good	- Third party managed privet hedge.			10+	C2
T103	Sycamore (<i>Acer pseudoplatanus</i>)	8	310	5	1	5	3	2.0/E	2	Fair	SM	Good	- Poor visibility of base due to herb layer and brambles. - Codominant union from 2m. - Previous poor pruning of lower limbs. - Prolific coral spot throughout crown.			20+	B2
T104*	Sycamore (<i>Acer pseudoplatanus</i>)	7	370	6	6	6	6	3.0/W	2	Fair	M	Good	- Established on grass verge, south of hedge. - Previous pruning wounds to main stem, now fully occluded. - Minor crown sparsity. - Contact wounding to base in patches, peripheral wound wood.			20+	B2
H105*	Beech (<i>Fagus sylvatica</i>), Privet (<i>Ligustrum ovalifolium</i>)	2.5	20 Av	1	1	1	1	n/a	n/a	Good	Y	Good	- Third party managed hedge.			10+	C2
T106*	English Elm (<i>Ulmus procera</i>)	12	490	6	3	6	6	3.5/NW	3	Good	EM	Good	- Established on grass verge, immediately adjacent to BT box. - Canopy beginning above reach of bud inspection. - Pruning wounds to main stem, partially occluded. - Deadwood in crown. - Large contact wound to buttress south, peripheral wound wood formation. - No buttress formation to north of base, swelling of main stem from ground level to circa 1.3m visible. Sounding test, wood density normal.	Remove dead wood (< 1 month) Reinspect after leaf flush in 2021 to determine physiological health.		20+	B2
T107*	Sycamore (<i>Acer pseudoplatanus</i>)	10	450	5	5	5	5	6.0/W	3	Good	M	Good	- Established on grass verge, south of hedge. - Previous pruning wounds to main stem, now fully occluded. - Third order limb pruned back to branch union at circa 5m south, initial wound wood formation visible, no occlusion. - Contact wounding to base in patches, peripheral wound wood.			20+	B1,2
T108*	Whitebeam (<i>Sorbus aria</i>)	9	380	1	3	4	4	3.0/E	3	Good	M	Good	- Established on grass verge, south of hedge. - Pruning wounds to main stem southeast, partially occluded, epicormic flushing. - Rib formation on secondary limb northeast, wound wood with included seam, likely historic crack or similar. - Contact wounding to lower stem, partially occluded.			20+	B2
T109*	Silver Birch (<i>Betula pendula</i>)	7	320	3	4	4	3	2.0/S	2	Good	EM	Good	- Established to the immediate south of metal railing, 200mm average clearance. - Codominant stem from 2m, U-shaped union. Adaptive thickening of main stem. - Prolific shoot development at 5m west in crown, likely bacterial disturbance of cambium, witch's broom or similar.			20+	B2

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Works to Facilitate the Proposed Development	Estimated Remaining Contribution	Category
T110*	Wild Cherry (Prunus avium)	5	250#	4	4	4	4	1.0/E	3	Fair	EM	Good	- No access, within back garden, only crown visible. Third party tree. - Central and upper crown dieback, desiccated buds, good crown development east over footpath and west. Potentially topped or heavily pruned in central crown, unconfirmed. - Good central crown development			20+	B2
H111*	Privet (Ligustrum ovalifolium)	2.5	20 Av	1	1	1	1	n/a	n/a	Good	Y	Good	- Third party managed privet hedge.			10+	C2
H112*	Privet (Ligustrum ovalifolium)	2	75 Av	1	1	1	1	n/a	n/a	Good	Y	Good	- Third party managed privet hedge.			10+	C2
T113*	Wild Cherry (Prunus avium)	4	300#	5	5	4	4	1.0/E	3	Fair	EM	Good	- No access, within back garden, only crown visible, third party. - Desiccated buds in central crown of apices. Central mid to lower crown with good leaf flush. Previous poor pruning throughout crown, internodal, individual branch dieback, some epicormic flushing from pruning cuts visible.			20+	B2
G114*	Sycamore (Acer pseudoplatanus), Whitebeam (Sorbus aria), Swedish Whitebeam (Sorbus intermedia),	11	250 Av	3	3	3	3	n/a	n/a	Good - Fair	Y-SM	Good - Fair	- No access, behind railway fence. Limited visuals of bases. - Sycamore establishing from likely previously clearance, stool regrowth.			10+	C2
H115*	Cypress (Chamaecyparis sp)	3.5	100 Av	1	1	1	1	n/a	n/a	Good	Y	Good	Cypress hedge.			10+	C2
T116*	Swedish Whitebeam (Sorbus intermedia)	8	380#	4	4	4	4	2.0/N	2.5	Good	M	Good	- No access, within back garden, only crown visible, third party. - Good crown form and leaf density. - Bird's nest present.			20+	B1,2
H117*	Privet (Ligustrum ovalifolium)	3	25	1	1	1	1	n/a	n/a	Good	Y	Good	- Hedgerow, managed.			10+	C2
T118*	Norway Maple 'Crimson King' (Acer platanoides 'Crimson King')	5	150#	2	2	2	2		4	Good	SM	Good	- No access, within back garden, only crown visible, third party. - Likely replaceable with like for like planting.			10+	C1,2
G119*	Silver Birch (Betula pendula), Wild Cherry (Prunus avium), Apple (Malus sp), Sycamore (Acer pseudoplatanus), Hawthorn	6	150 Av	2	2	2	2	n/a	n/a	Good - Dead	Y-SM	Good - Dead	- Young amenity plantings with likely self sown semi mature sycamore. - Trees in varying conditions, three dead young trees, majority in good condition. - Damage to bases, likely mechanical wounding from grass cutting operation or similar. - Likely replaceable with like for like planting.	Remove dead trees. (< 3 months)		10+	C2

Tree ID	Species	Estimated Height (m)	Stem Diameter (mm)	Canopy Spread (N)	Canopy Spread (S)	Canopy Spread (E)	Canopy Spread (W)	First Significant Branch (m)	Canopy Clearance (m)	Physiological Condition	Life Stage	Structural Condition	Condition Comments	Preliminary Management Comments	Works to Facilitate the Proposed Development	Estimated Remaining Contribution	Category
	(Crataegus monogyna), Yew (Taxus baccata), Rowan (Sorbus aucuparia), Elder (Sambucus nigra), Ash (Fraxinus excelsior), Scots Pine (Pinus Sylvestris), Hazel (Corylus avellana), Goat Willow (Salix caprea), Tibetan cherry (Prunus serrula), Blackthorn (Prunus spinosa), Bird Cherry (Prunus padus), Field Maple (Acer campestre).																
G120*	Goat Willow (Salix caprea), Elder (Sambucus nigra)	8	250#	4	4	4	4	n/a	n/a	Fair	SM	Fair	- No access, behind railway fence. - Dense stand of goat willow, likely self sown. - No visual of base, potentially arising from number of coppice stools from routine clearance. - Deadwood over grass verge. Contact wounding to underside of limbs, cracking visible below points of impact, minor. - Tree is suppressing landscaping scheme of higher quality and value.			10+	C2
H121*	Privet (Ligustrum ovalifolium)	3	25 Av	1	1	1	1	n/a	n/a	Good	Y	Good				10+	C2
G122*	Cypress (Chamaecyparis sp), Pine (Pinus sp)	3	100 Av	1	1	1	1	n/a	n/a	Good	Y	Good				10+	C2
G123*	Crack Willow (Salix fragilis), Sycamore (Acer pseudoplatanus), Leyland Cypress (X Cupressocyparis leylandii), Elder (Sambucus nigra), English oak (Quercus robur).	15	400#	5	5	5	5	n/a	n/a	Good - Fair	Y-EM	Good - Fair	- Third party, no access. Within back gardens or established just beyond within railway boundary. - Crown vitalities normal, branching pattern and leaf density normal.			20+	B1,2
G124*	Swedish Whitebeam (Sorbus intermedia)	12	400#	4	4	4	4	n/a	n/a	Good - Fair	M	Good - Fair	- Codominant, contact wounding to surface rooting, likely mechanical, minor contact damage to term, likely vandalism, peripheral wound wood. - Good landscape value. - Species with limited long term retention at maturity.			20+	B2

Key to Abbreviations Used in the Survey

Ref No	Specific identification number given to each tree or group. T=Tree/H=Hedge/G=Group.	
Species	Common name followed by botanical name shown in <i>italics</i>	
RPA	Root Protection Area (As defined by BS5837)	
Stem diameter	Diameter of main stem, measured in millimetres at 1.5 m above ground level. (MS = Multi-stem tree measured in accordance with BS5837 Annexe C)	Av / Average: indicates an average representative measured dimension for the group or feature
Spread	The width and breadth of the crown. Estimated on the four compass points in metres.	
Crown clearance	The estimated height (in metres) above ground level of the lowest significant branch attachments.	
#	Estimated dimensions	
*	Indicates estimated position of tree (not indicated on topographical survey).	
Category	Categorisation of the quality and benefits of trees on Site as per Table 1 and 2 of BS5837:2012. 1=Arboricultural quality/value 2=Landscape quality/value 3=Cultural quality/value (including conservation)	
	A=High quality/value 40yrs+ (light green). B=Moderate quality/value 20yrs+ (mid blue) C=Low quality/value min 10yrs/stem diameter less than 150mm (grey). U=Unsuitable for retention (dark red).	
Life stage	<p>Young (Y): Newly planted tree 0-10 years.</p> <p>Semi-Mature (SM): Tree in the first third of its normal life expectancy for the species (significant potential for future growth in size).</p> <p>Early Mature (EM): Tree in the second third of its normal life expectancy for the species (some potential for future growth in size)</p> <p>Mature (M): Tree in the final third of its normal life expectancy for the species (having typically reached its approximate ultimate size).</p> <p>Over Mature (OM): Tree beyond the normal life expectancy for the species.</p> <p>Veteran (V): Tree which is of interest biologically, aesthetically or culturally because of its condition, size or age.</p>	
Structural condition	<p>Good: No significant structural defects</p> <p>Fair: Structural defects which can be resolved via remedial works.</p> <p>Poor: Structural defects which cannot be resolved via remedial works.</p> <p>Dead: Dead.</p>	
Physiological condition	<p>Good: Normal vitality including leaf size, bud growth, density of crown and wound wood development.</p> <p>Fair: Lower than normal vitality, reduced bud development, reduced crown density, reduced response to wounds.</p> <p>Poor: Low vitality, low development and distribution of buds, discoloured leaves, low crown density, little extension growth for the species.</p> <p>Dead: Dead</p> <p>Fair/Good = Indicates an intermediate condition</p> <p>Fair – Good = Indicates a range of conditions (e.g. within a group)</p>	
Preliminary management recommendations	Works identified during the tree survey as part of sound arboricultural management, based on the current context of the Site (where relevant reference has been made to tree management based on the potential future context of the site).	

Appendix B Site Photography



Figure 6. View south down John Street.



Figure 7. Typical alleyway scene on Site.



Figure 8. View north along the railway.

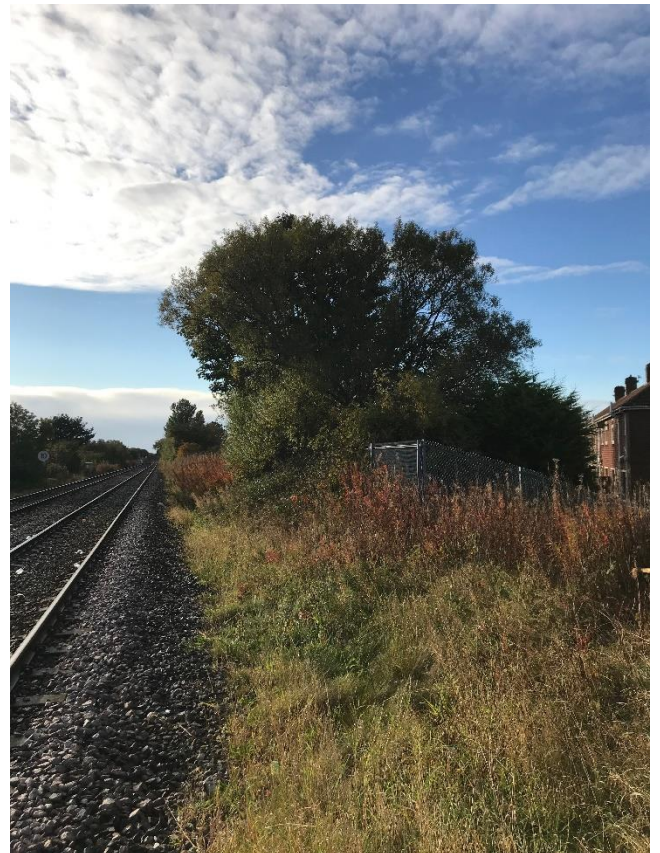


Figure 9. View south along the railway, showing G123.



Figure 10. Showing new tree planting, G119.



Figure 11. Tree group west of John street, looking southwest.

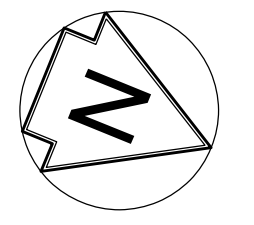


Figure 12. T40, looking north.



Figure 13. G1, looking northwest.

Appendix C Development Proposals



SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX
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- Notes
- GENERAL NOTES**
1. CHAINAGE IS IN METRES.
 2. CHAINAGE 0m DATUM IS AT 3117 POINTS TOES ON BENTON NORTH JUNCTION OF THE EAST COAST MAINLINE.
 3. PROPOSALS SHOWN ARE BASED ON A WORK IN PROGRESS OUTLINE DESIGNS AND ARE THEREFORE SUBJECT TO CHANGE.

- KEY**
- CARRIAGEWAY
 - FOOTWAY
 - FOOTPATH & LIFT
 - PLATFORM
 - VERGE
 - LANDSCAPING
 - TACTILE PAVING
 - FENCING
 - SECURE FENCING
 - STREET LIGHTING
 - BOLLARD
 - EXISTING TREES
 - SPECIMEN TREES
 - SHRUB PLANTING
 - HEDGE
 - WILDFLOWER MEADOW
 - AMENITY GRASS
 - REDLINE BOUNDARY

Issue For Land Boundary	RP	DF	DF	14/05/20	P01
WIP GRIP 4 UPDATE				14/05/20	P02.2
Revision Details	By	Chkd	Appd	Checked Date	Suffix
Purpose of Issue	WIP-S0 SUITABILITY				
GRP Stage	GRIP 4				

Client
Northumberland County Council

Project Title
NORTHUMBERLAND LINE

Drawing Title
**ASHINGTON
 PLATFORM DRAWING
 GENERAL ARRANGEMENT
 LEVEL OPTION**

Designed	Drawn	Checked	Approved	Date
Signed	Signed	Signed	Signed	
Subsidiary	AECOM Internal Project No.	Engineering Manager		
Scale @ 594 x 841	60601435	Alexsair Bathie		
1:500	Zone / ELR / M/Stage	alexsair_bathie@aecom.com		
	---	0141 354 5912		

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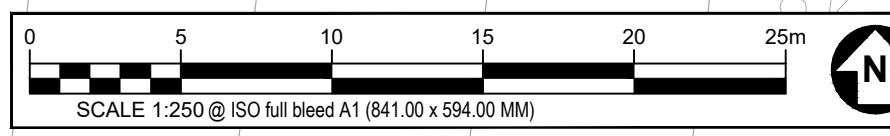
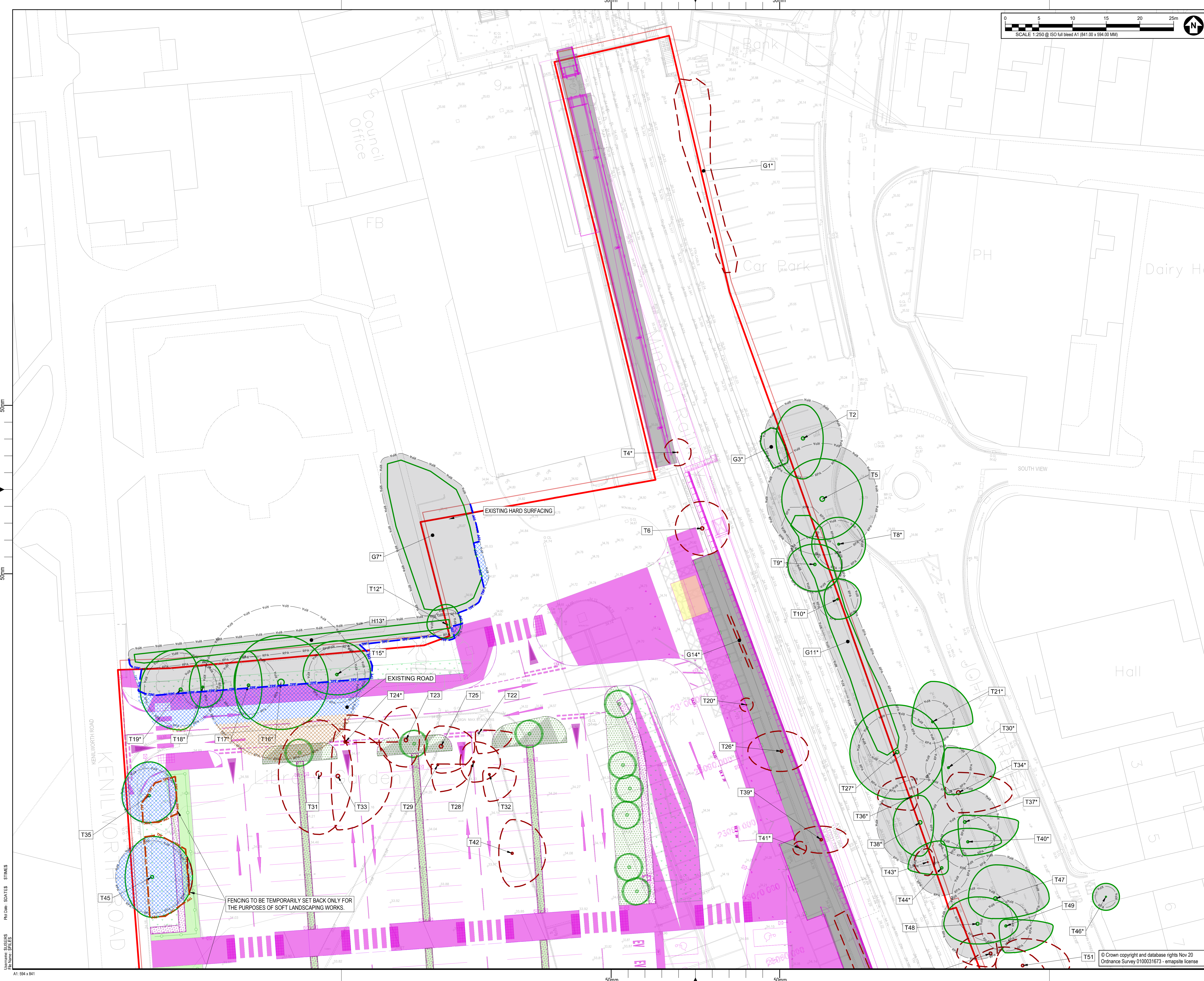
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Drawing Number	Rev
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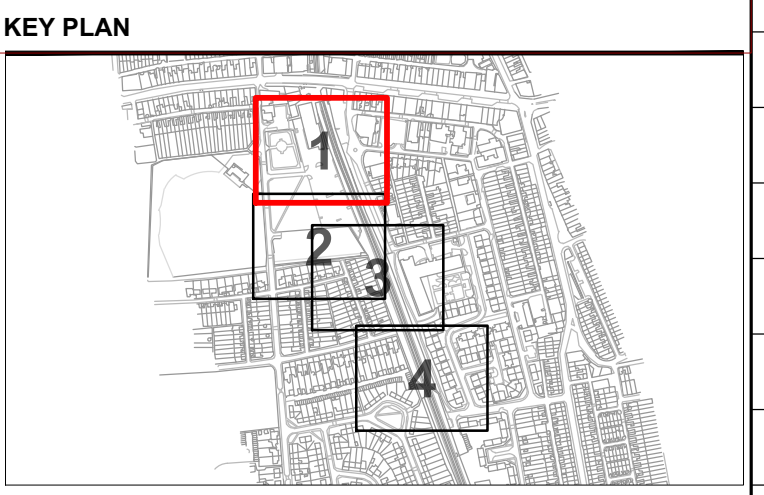
Appendix D Tree Protection Plan



SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX
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- GENERAL NOTES**
- TREE CATEGORIES AS DEFINED BY BS 5837:2012
 - TREE LOCATIONS ARE BASED ON THE TOPOGRAPHICAL SURVEY AND GPS CO-ORDINATES FROM ON SITE WALKOVER
 - * INDICATES A TREE / GROUP WHOSE POSITION IS APPROXIMATE AS BASED UPON AERIAL PHOTOGRAPHY AND ON SITE OBSERVATIONS
 - PLANS SHOULD BE READ IN CONJUNCTION WITH THE AECOM ARBORICULTURAL REPORT
 - THE ORIGINAL OF THIS DRAWING WAS PRODUCED IN COLOUR - A MONOCHROME COPY SHOULD NOT BE RELIED UPON
 - DRAWING REFERENCES: Route Mastermap - Merged_National_Grid.dwg
 60601435-ACM-XX-ZZ-MOD-EEN-000030.dwg
 60601435-ACM-XX-ZZ-MOD-LEP-000010.dwg
 60601435-ACM-XX-ZZ-MOD-ESI-000012.dwg
 60601435-ACM-XX-ZZ-MOD-EEN-000033.dwg
 60601435-ACM-XX-ZZ-MOD-EEN-000032.dwg

- KEY**
- SITE BOUNDARY**
 - EXISTING TREE, GROUP, WOODLAND, OR HEDGE TO BE RETAINED**
 - EXISTING TREE, GROUP, WOODLAND, OR HEDGE TO BE REMOVED**
 - ROOT PROTECTION AREA OF RETAINED TREES (AS DEFINED BY BS 5837:2012)**
 - TREE PROTECTION FENCING**
 - CONSTRUCTION EXCLUSION ZONE (TRACKING OF PLANT, MATERIALS STORAGE, EXCAVATION AND ALL OTHER CONSTRUCTION ACTIVITIES ARE EXCLUDED WITHIN THESE AREAS FOR THE PURPOSES OF PROTECTING TREE HEALTH)**
 - CONSTRUCTION WORKING ZONE (MANAGED CONSTRUCTION PROCESSES PERMITTED IN ACCORDANCE WITH THE PRINCIPLES SET OUT WITHIN THE ARBORICULTURAL IMPACT ASSESSMENT)**
 - PROPOSED DEVELOPMENT LAYOUT (BASED UPON DRAWING REFERENCES LISTED IN THE GENERAL NOTES SECTION)**
 - SET BACK TREE PROTECTION FENCE LINE (WITH APPROVAL FROM SITE ARBORICULTURIST)**
 - GROUND PROTECTION ZONE (MANAGED CONSTRUCTION PROCESSES PERMITTED IN ACCORDANCE WITH THE PRINCIPLES SET OUT WITHIN THE ARBORICULTURAL IMPACT ASSESSMENT)**



First Issue	19/12/20	P01.1			
Revision Details	By	Chk	Appd	Checked Date	Suffix
Purpose of Issue	WIP-S0 SUITABILITY				
GRIP Stage					

Client
 Northumberland County Council

Project Title
NORTHUMBERLAND LINE

Drawing Title
ASHINGTON STATION TREE PROTECTION PLAN SHEET 1

Designed T.Rawling	Drawn ---	Checked ---	Approved ---	Date ---
Signed	Signed	Signed	Signed	
Suitability S0	AECOM Internal Project No. 60601435	Engineering Manager Alasdair Bathie	alasdair.bathie@aecom.com 0141 354 5868	
Scale @ 594 x 841 1:250	Zone / ELR / Mileage -- / -- / --			

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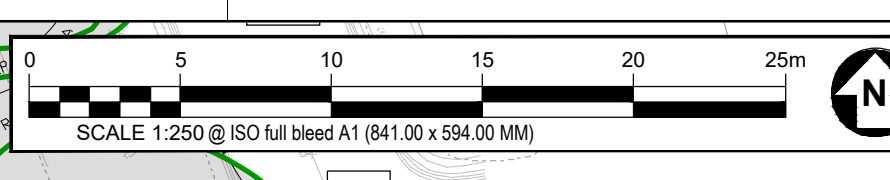
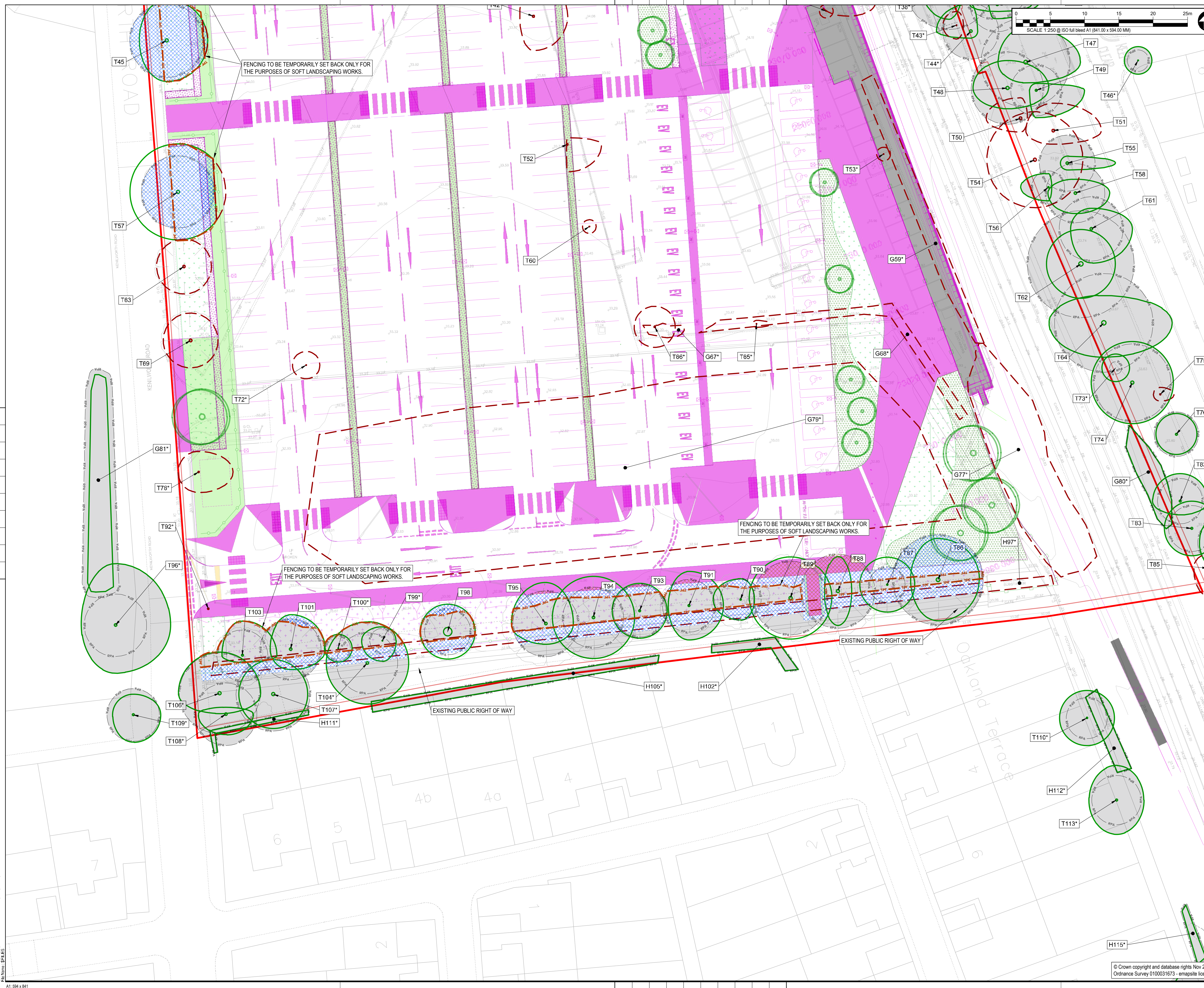
www.aecom.com	Drawing Number 60601435-ACM-XX-ZZ-DRG-EEN-000037	Rev P01.1
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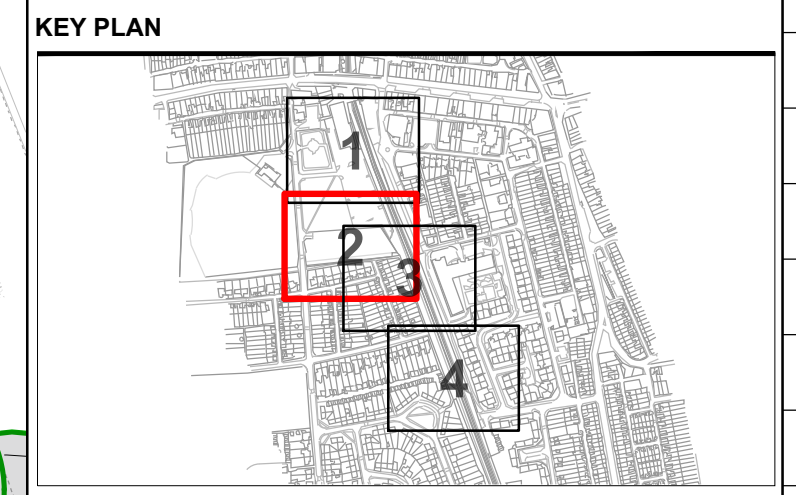
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First Issue	18/12/20	P01.1			
Revision Details	By	Chk	Appd	Checked Date	Suffix

Purpose of Issue: WIP-S0 SUITABILITY

Client: Northumberland County Council

Project Title: NORTHUMBERLAND LINE

Drawing Title: ASHINGTON STATION TREE PROTECTION PLAN SHEET 2

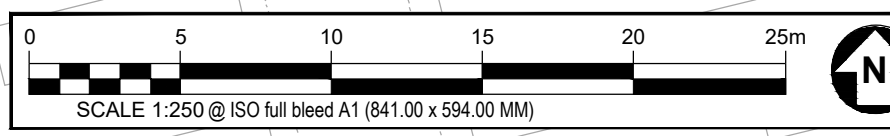
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T. Rawling	---	---	---	---
Signed	Signed	Signed	Signed	
Suitability	AECOM Internal Project No.	Engineering Manager		
S0	60601435	Alasdair Bathie		
Scale @ 594 x 841	Zone / ELR / Mileage	alasdair.bathie@aecom.com		
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Revision Details	By	Chkd	Appd	Checked Date	Suffix
Purpose of Issue	WIP-S0 SUITABILITY				
GRIP Stage					

Client
 Northumberland County Council

Project Title
NORTHUMBERLAND LINE

Drawing Title
ASHINGTON STATION TREE PROTECTION PLAN SHEET 3

Designed	Drawn	Checked	Approved	Date
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Signed	Signed	Signed	Signed	
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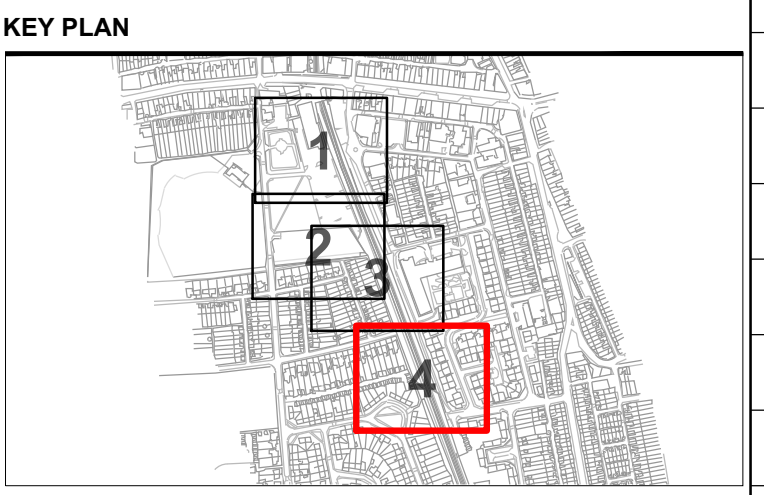
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Client
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Project Title
NORTHUMBERLAND LINE

Drawing Title
ASHINGTON STATION TREE PROTECTION PLAN SHEET 4

Designed T. Rawling	Drawn ---	Checked ---	Approved ---	Date ---
Signed	Signed	Signed	Signed	
Suitability S0	AECOM Internal Project No. 60601435	Engineering Manager Alasdair Bathie alasdair.bathie@aecom.com	0141 354 5868	
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Usernames: SUBSETERS, SDATES, STIMES, PLOT, SIZES, SFILES

Appendix E Outline Tree Protection Measures

E.1 Outline Tree Protection Measures

Default Specification

The default position as set out by BS 5837:2012 is that retained trees must be protected from construction operations with the erection of robust protective fencing positioned on the outer edge of the RPA or crown spread (whichever is greatest). All site operations will be restricted to the area outside of tree protection fencing and this area will form a Construction Exclusion Zone (CEZ) unless agreed otherwise. Protection measures will be installed as set out in the Tree Protection Plan included as Appendix D of this report.

The area inside the fence and any additional tree protection measures will be sacrosanct and must not be removed or altered without the prior approval of the Northumberland County Council's Tree Officer. Any damage to tree protection measures must be reported immediately.

Fencing shall be constructed with robust vertical and horizontal scaffold framework with weldmesh panels firmly attached as per BS 5837:2012 Figure 2 (included below as Figure 14). Vertical support poles and bracing poles must be located with care to avoid underground utility services and will be sited to avoid the structural roots of retained trees.

Alternative equivalent robust and immovable fencing specification including site hoarding will also be appropriate.

Suitable all weather signage will be fixed to fencing to notify site staff and visitors of the construction exclusion zone and its purpose (example included as Appendix F).

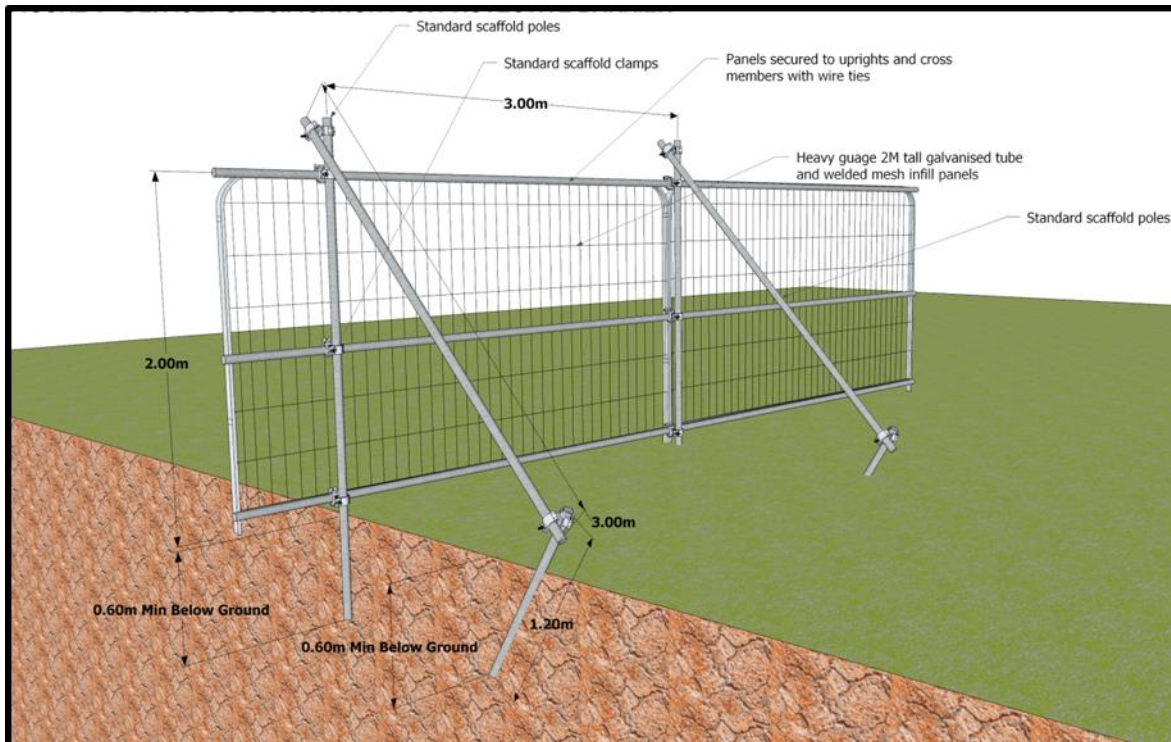


Figure 14 Default specification for protective barrier

E.2 Ground Protection

Should access be unavoidable within the RPA of a retained tree, fit for purpose ground protection must be in place which is sufficient to protect the structure of the soil from damage based on the heaviest anticipated load.

As set out in section 6.2.3.3 of BS5837:2012 the following ground protection measures will be appropriate:

- Suitable ground protection for pedestrian only access will comprise a single thickness of scaffold boards set on a compressible layer of 100mm of woodchip on a geotextile separation layer.
- Pedestrian operated plant up to two tonnes in weight would require the use of a proprietary ground protection system (such as Ground Guards or Eve Trakway or equivalent) set on a minimum depth of 150mm woodchip or sharp sand.
- Heavier loads will require ground protection to an engineering specification in conjunction with arboricultural advice.

As a guide the threshold beyond which root development is significantly affected is a bulk density ranging from 1.4g per cm³ for clay soils, to 1.75g per cm³ for sandy soils.

Tree protective measures shall stay in place until all construction operations are completed and removal is agreed with the Site arboriculturist and/or the Local Authority Tree Officer as appropriate.

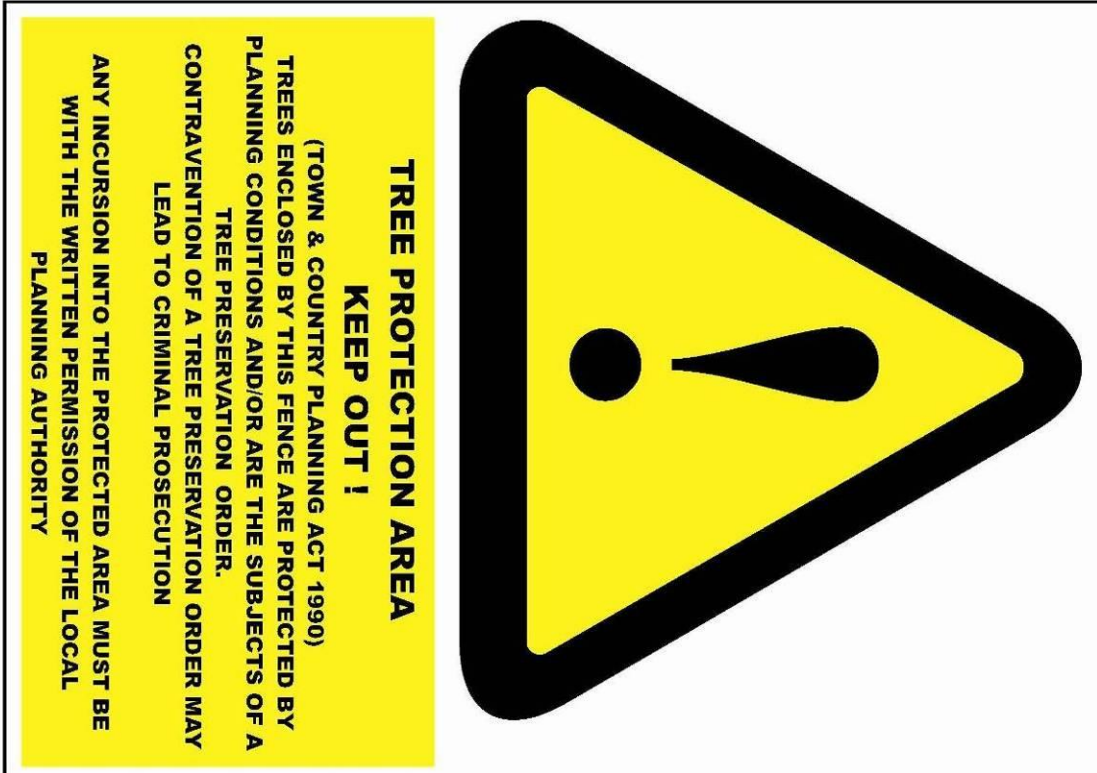
E.3 General guidance for the management of exposed roots

Excavation must only take place within the RPA of a retained tree with the prior agreement of an arboriculturist and the Local Authority Tree Officer. All excavation must be undertaken using hand tools or compressed air (such as an air spade).

The following general principles will apply:

- Individual or small groups of roots less than 25mm in diameter will be retained where possible but can be severed with a sharp tool such as secateurs or pruning saws to leave a clean cut end (ideally 100mm back from the face of the excavation to account for future regrowth) where they pose an obstruction.
- Where roots are encountered which are larger than 25mm in diameter or where significant groups of smaller roots are found, the advice of an arboriculturist must be sought to decide an appropriate course of action (following consultation with the Local Authority Tree Officer where appropriate).
- Roots must only be exposed for the minimum period possible. In the interim period any exposed roots must be completely covered with dampened hessian sacking (which may require ongoing re wetting) to avoid drying out and exposure to light (which can result in the death of roots). Backfill for excavations should utilise the parent material and must not be significantly compacted.

Appendix F Tree Protection Signage (Example)



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