



Tata Steel UK Limited

Electric Air Furnace (EAF)

Stage 1 and 2 Arboricultural Impact





Assessment Report

2483055

Issue for PAC

RSK GENERAL NOTES

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1 INTRODUCTION

1.1 General

This report describes the results of a survey of trees at land north of Heolcae'r-Bont, within the Tata Steel site, Port Talbot. The work was commissioned by Tata Steel in June 2024 and the survey and report was completed by Rob Knight on behalf of RSK Biocensus, in July 2024, updated in September 2024.

1.2 Purpose of the Report

The survey was carried out in connection with the proposed construction of a new electric arc furnace (EAF) based steel production facility (hereafter 'the Proposed Development') located inside the existing Port Talbot Steelworks, in accordance with criteria outlined in the British Standard BS5837:2012¹. The aim was to:

- identify the quality and value of the trees;
- categorise them in respect of their suitability for retention; and
- identify the impacts of the development on the arboricultural features present.

This report is principally concerned with trees in relation to the Proposed Development. Although obvious structural defects and the condition of trees have been noted, this survey was not undertaken with health and safety in mind, and a detailed hazard assessment was not carried out.

The results and recommendations in this report are valid for a maximum of two years.

1.3 Site Context

1.3.1 General

The survey covered a large area of the Tata Steel site with varying land use, from active steel work and associated areas, areas of demolition/construction with earthworks in progress, to a large wetland/agricultural area to the south with blocks of woodland.

1.3.2 Soil

The underlying soil types will affect structural aspects of building designs and foundation depths, and this will need to be considered in relation to existing, proposed and removed trees. To avoid conflicts between trees and built structures, engineering advice will be required, and foundations will need to be designed with due regard for trees and the shrinkable soils.

British Geological Society data indicates that the survey area may be sited on South Wales Lower Coal Measures Formation (Mudstone, Siltstone and Sandstone) with Tidal

¹ British Standards Institute (2012) *BS5837:2012 Trees in Relation to Design, Demolition and Construction-Recommendations*. British Standards Publications Ltd.

Flat Deposits (Clay, Silt And Sand) and Blown Sand superficial deposits recorded². This is only a best estimate as no soil samples were taken or lab analysis carried out for the purpose of this report.

If shrinkable clays are present, foundation design will need to take into account mature tree heights of existing and proposed trees.

1.3.3 Protected Species

The Wildlife and Countryside Act 1981 (as amended), The Conservation of Habitats and Species Regulations 2017 (as amended) and the Countryside and Rights of Way Act 2000 provide statutory protection to species of flora and fauna including birds, bats and other species that are associated with trees.

A licence will be required where there will be impacts on protected species that could result in an offence under the above legislation. Although features suitable for roosting bats or nesting birds may have been noted, this report is not intended to assess the suitability of trees for protected species.

If the presence of a legally protected species is suspected while undertaking any tree work, then the task should be halted immediately, and appropriate advice should be obtained from an ecologist.

1.4 Statutory Designations

Trees can be given statutory protection in a number of ways, including:

- tree preservation orders;
- planning conditions;
- felling licences; and
- location within a designated conservation area.

Protected trees can only be removed or pruned if permission is granted, either as part of a planning permission or in response to a separate application to the local authority (or the Forestry Commission).

The existence of a tree preservation order or conservation area does not automatically mean that a tree deserves to be a material constraint in a planning context. A formally protected tree can be in poor physiological or structural condition, making it unsuitable for retention. In that case it is inappropriate that it should influence the future use of a site.

An email reply on 20/07/24 from the local authority confirmed that there are no TPO's or Conservation areas in the survey area shown on Appendix 2.

1.5 Root Protection Area (RPA)

To ensure that a tree is not harmed by development activities, a theoretical RPA is calculated. The British Standard (BS5837) defines the RPA as 'the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the

² <http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html>

tree's viability'. It is initially plotted as a simple circle on the Tree Constraints Plan (TCP) with roots assumed to have colonised the ground around the tree radially.

The design layout should aim to retain and avoid the root protection areas of the higher category (A and B) trees altogether, so that they may continue to provide benefits without being impacted by construction. Once a design layout has been completed and tree removals agreed, the retained trees should be subject to a fenced zone encompassing the RPA or tree crown (whichever is larger) for the duration of works. No construction, level changes, installation of services, storage of spoil or materials, discharge of chemicals or any other activity which may affect tree health negatively should take place within this area.

In some instances, root growth may have been impeded by inhospitable ground conditions and so a simple circular root protection area may not be relevant to its protection. This may apply near roads, building foundations, retaining walls or water courses and, providing there is suitable rationale, the RPA can be adjusted to reflect this. A similar overall area should be allocated to the tree so that it can continue to thrive.

Where sites are heavily constrained by trees which can be embraced into the development, there may be a need to build very close to their root protection area and protective fencing. This often leads to issues at the construction build stage, particularly where extreme changes in levels are required. It is therefore prudent to observe a buffer from the edge of a RPA to allow for safe working space. A 5-metre buffer should be sufficient to avoid conflicts at construction stage.

1.6 Supplied Documents

This report was prepared using data collected on site and the following reports and plans:

- TCE.12358A-CV-3005-TR-30011_PR_20211103_UTM (base map)
- A-900001 - Site Location Plan (proposal)

2 METHOD

2.1 General

All inspected trees and tree groups were categorised using the British Standard BS5837:2012 and the attached TCP (Appendix 2) shows tree positions, numbers and retention categories. A schedule of the trees is included in (Appendix 1), which includes species, physiological and structural condition, age, recommendations and retention values.

The survey followed the method described in (Appendix 4) in accordance with guidance in BS5837:2012. The life expectancy and condition of each tree and tree group informs its suitability for retention.

2.2 Tree Categorisation

Trees were categorised in terms of their useful life expectancy and condition as summarised below. Full details of categorisation criteria are given in Appendix 5. Each category has three sub-categories relating to arboricultural (1), landscape (2) and cultural and conservation (3) qualities. Trees that have been categorised as A, B or C should be considered in the planning process whereas trees categorised as U are not a consideration in the planning process.

Table 1: Tree categorisation table

BS5837:2012 Categories	Definitions	Retention implications to a site
Category A (marked light green on the TCP)	Trees of high quality and value able to make a substantial contribution to the site.	Every effort should be made to retain trees and amendments to a proposed scheme should be identified in preference to tree removal.
Category B (marked mid-blue on the TCP)	Trees of moderate quality and value able to make a significant contribution to the site.	Where possible amendments to a proposed scheme should be considered in preference to tree removal.
Category C (marked in grey on the TCP)	Trees of low quality and value in an adequate condition until new planting can be established, trees with impairments downgrading them from A or B category OR young trees with a stem diameter of less than 150 mm.	The retention of trees may be advantageous in the short term, but they should not be seen as a constraint to development.
Category U (marked in dark red on the TCP)	Trees that have limited condition that will fail or die within 10 years and/or should be removed for reasons of arboricultural best practice	Not a material consideration in the planning process but may have other benefits.

2.3 Distinction Between Individual Trees and Tree Groups

Trees have been recorded as individuals or as groups. BS5837:2012 sets out the description of a group as follows: “The term “group” is intended to identify trees that form cohesive arboricultural features either **aerodynamically** (e.g. trees that provide companion shelter), **visually** (e.g. avenues or screens) or **culturally** including for biodiversity (e.g. parkland or wood pasture), in respect to each of the tree subcategories.”

Where a tree in a group has characteristics that distinguish it from the rest of the group, it is generally recorded as an individual. Such trees may *inter alia* include veteran trees, trees with significant defects, and specimen trees that stand out within the feature.

2.4 Constraints and Limitations

The trees were viewed from ground-level and from within the site boundary only. The trees were inspected using the Visual Tree Assessment method (Mattheck & Breloer 2015³) and guidance given in *Principles of Tree Hazard Assessment* (Lonsdale 2007⁴). Detailed inspections such as decay detection, soil assessment or aerial inspections have not been carried out. Inspection may have been restricted in some instances by dense ivy cover, being within third-party gardens or behind security fencing with restricted access.

Trees are living organisms and their health and condition is not static. Health and safety findings and recommendations in this report are therefore only valid for one year. The health and condition of the trees may also change with other factors such as extreme weather or development work.

The presence of shrinkable soils, and their relationship between tree root activity and volumetric changes in soils that may cause structural damage to buildings, is beyond the scope of this report and has not been investigated.

Where tree positions were not shown on the supplied topographical survey, trees were plotted using a handheld GPS device.

Access to some of the trees was limited due to either active steel work related operations, earthwork, ditches, water bodies or dense vegetation. However as much of this was in relation to the large number of Willow groups that dominate the southern survey area, visibility was sufficient in most cases to establish content and likely dimensions. Aerial mapping was also used to refine the group position and extent to be as accurate as possible.

³ Mattheck, C. Breloer, H. (2015) *The Body Language of Trees, Encyclopaedia of Visual Tree Assessment*. Karlsruhe Institute of Technology.

⁴ Lonsdale, D. (2007) *Principles of Tree Hazard Assessment and Management*. The Stationery Office

3 RESULTS

3.1 Summary

A total of 16 groups of trees and 1 hedgerow were recorded. The most prominent feature is G015 towards the centre and west of the site.

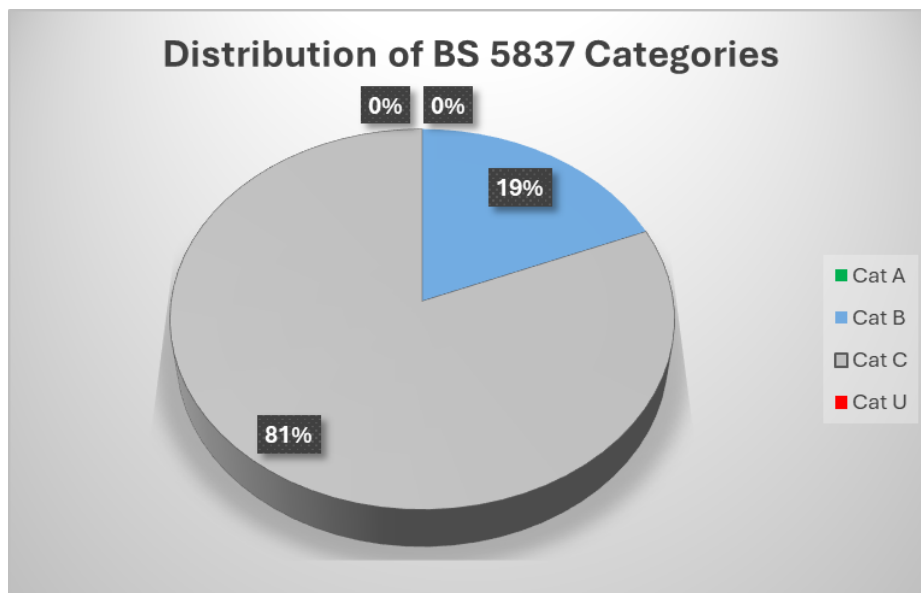
Across the site were the numerous and low in stature Willow groups that were growing along the large network of ditches.

Of the 16 features recorded: 3 were Category B (moderate value) and 13 were Category C (low value) (hedgerows do not qualify for a category).

Chart 1 below, shows the distribution of BS5837 quality categories recorded on site.

Further details on the individual trees and tree groups can be found in Appendix 1- Tree Survey Data.

Chart 1: Distribution of BS 5837 categories recorded



3.2 General Observations

G015 consists of predominantly Italian Alder (*Alnus glutinosa*), with lesser quantities of Poplar (*Populus tremula*), Willow (*Salix sp.*) and Pine (*Pinus sp.*). They were generally densely spaced with similar sized slender stems and limited understorey species present, typical of unmanaged woodlands.

G015 had a typical woodland structure with shorter trees on its perimeter leading inwards to taller trees and a more resilient aerodynamic shape. There was some minor understorey of Elder (*Sambucus nigra*) within the group and also some small areas of clearings towards the southern side of the woodland. As a feature it is important locally although being located well within the Tata Steel land holding it has less significance in the wider landscape.

Elsewhere on site the most frequently recorded trees were the numerous and widespread Willow, Hawthorn (*Crataegus monogyna*) and Blackthorn (*Prunus spinosa*) groups. These were found throughout the survey area and usually adjacent to one of the many ditches and waterbodies that are present.

These predominantly Willow groups are low in stature and usually multi-stemmed form as is typical of the species, with varying sized groups from two or three trees, to much larger cohesive groups of many trees. The majority of these group's interiors were inaccessible due to their densely grown habit as well as where other species of vegetation had established around their perimeter such as Blackthorn or Sea Buckthorn (*Hippophae rhamnoides*).

These groups will have regenerated naturally colonising these wetland and disused areas readily.

4 PROPOSALS AND IMPACTS

4.1 Development Proposal

The Proposed Development will require the demolition of existing buildings and structures, and the construction of a new EAF steel production facility. The Proposed Development also includes a scrap metal handling facility and associated scrap yards, slag processing facility, chemical and material storage structures, buildings, handling systems, electrical control rooms and power infrastructure, laboratories, offices and ancillary facilities, together with new and amended transport infrastructure, landscaping and associated development.

The Proposed Development consists of a large-scale construction operation across much of the northern survey area. A high voltage cable route is proposed, that extends to the south through the wetland and agricultural area and leading southeast off site. This is expected to be laid underground via trenching for much of the route apart from a tunnelling section that is proposed to pass beneath the railway and public highway, at the wooded southeast corner of the survey area.

The planning application is to be submitted as a hybrid application, with part in full and the remainder in outline. Full details of the proposal for the outline element will be agreed at the reserved matters stage.

4.2 Tree Removals

Under the current proposed layout, 7 features are likely to be required to be removed. These are all category C features.

All but one of the losses are relating to the ditch side groups in the southern fields which comprise predominantly Willow and Hawthorn groups of low value from an arboricultural perspective, many with sections of low level shrubs and reeds with no trees. One group (G022) may require partial removal to facilitate the proposed scrap storage area and access track.

Table 2: Tree removals and impacts

Tree id	Species	BS5837:2012 Categories	Removal/ Impact
G008	Willow (<i>Salix sp.</i>)	C	Removal required (1465 m ²)
G009	Hawthorn (<i>Crataegus sp.</i>) Willow (<i>Salix sp.</i>)	C	Removal required (2330 m ²)
G010	Willow	C	Removal required (2516 m ²)

Tree id	Species	BS5837:2012 Categories	Removal/ Impact
	<i>(Salix sp.)</i>		
G011	Blackthorn <i>(Prunus spinosa)</i>	C	Removal required (4265 m ²)
G012	Blackthorn <i>(Prunus spinosa)</i> Willow <i>(Salix sp.)</i>	C	Removal required (2190 m ²)
G013	Willow <i>(Salix sp.)</i> Blackthorn <i>(Prunus spinosa)</i>	C	Removal required (2893 m ²)
G022	Willow <i>(Salix sp.)</i>	C	Partial removal required (2277 m ²)

4.3 Retained Trees

4.3.1 General

Of the retained trees, the majority appear to be located well away from proposed work areas or are within areas where the cable route will pass through, but potentially by means of horizontal directional drilling (HDD) beneath the trees. The entry and exit pits have not been detailed yet, but these will need to be positioned well outside of all RPA's (where trees are to be retained).

Protective fencing will be required around the retained trees, and this should be to a sufficiently robust specification to ensure protection of its surrounding ground conditions.

4.3.2 Root Protection Areas (RPA)

Where retained trees have RPAs that are impacted by proposed construction work arboricultural supervision may be required in order to assess the impacts and any remedial action required. This will form part of the Arboricultural Method Statement.

Details of proposed drainage, and other underground services have yet to be provided. However, it is feasible to install these elements without any damage to retained trees by locating them away from all RPAs.

4.3.3 Post-development Pressure

It is considered that the majority of trees being retained will not be subjected to any further pressures than they are currently exposed to.

Any additional pressures as a result of the proposal will be focused on the retained parts of tree groups that will be in close proximity. This will need to be assessed once the extent of retention is established, if it is reduced from the current removal extent shown.

4.4 Impact Assessment Summary

Due to part of the proposal being taken forward in outline, the removals shown are a worst case scenario and a reduction may be possible once details are refined at reserved matters stage.

The loss of these features will need to be replaced to compensate. However, due to the remote location and the nature of the site with limited public access, compensation is more related to the habitat loss and impact to the features affected, compared to a wider amenity or landscape value perspective.

5 GENERAL PROTECTION MEASURES

5.1 Pre-construction

5.1.1 Arboricultural Method Statement (Stage 3)

Once the construction details are provided, a detailed arboricultural method statement (AMS) should be compiled detailing the exact location and nature of protective fencing, tree pruning, signage, timings and methods of works and other protection measures. All site operatives must be made aware of the nature of the protection detailed in the AMS and it should remain in place throughout construction.

5.1.2 Tree Works

Any tree works or tree removals required to facilitate the development should be carried out before construction begins and be in accordance with the British Standard, BS 3998:2010 Tree Work – Recommendations, once planning approval has been granted.

5.1.3 Tree Protection Measures

Any site offices, welfare units, and storage areas must respect the trees and their root protection areas, shown in purple on the supplied plans. These should be sited outside tree protection areas.

Tree protection fencing should be installed prior to demolition and any construction. This is to avoid damage to trees and preserve soil structure. The default BS5837 specification for fencing should be used for the large part of the site.

The fenced area will form a Construction Exclusion Zone and must remain undisturbed for the duration of demolition and construction unless approved works are required within it, such as removal of hard surfaces or installation of boundary treatments under arboricultural supervision and in line with an approved method statement. All site operatives should be made aware of the need to respect the fencing, and signage should be affixed to every third panel to ensure it is not moved.

Service runs and installation of utility cables also need to respect trees and their root protection areas. If any conflicts are highlighted, then the advice of either a consultant arboriculturist or the council Arboricultural Officer should be obtained.

The following precautions should be observed when working near to the Construction Exclusion Zone.

- No fires should be lit on site.
- No spoil, plant, machinery, construction materials or vehicles should track or be stored within the fenced area or leant against the fence panels.
- No fuel, chemical or other contaminated liquids must be discharged in proximity to trees or where it may flow toward tree root protection areas.
- No construction activity of any kind should take place within the fenced areas and fencing must not to be moved.
- No spoil or materials to be stored or leant against fencing.

- Damage to fencing must be reported to the site manager and rectified as soon as possible. All fencing should be maintained so that it is fit for purpose.

5.2 Post-construction

5.2.1 Replacement Planting

Suitable ground conditions and aftercare are vital to the success of new trees, and the recommendations provided in the British Standard, BS 8545⁵ and the Trees and Design Action Group publication – Trees in the hardscape⁶ should be followed. This includes ensuring that soils are not compacted prior to planting and that adequate below ground space is provided with suitable volume requirements to support mature root growth and withstand compaction. Aftercare in the form of watering and sympathetic formative pruning in the first five years after planting will also help to ensure that the replacement trees thrive.

⁵ British Standards Institute (2014) *BS 8545:2014 Trees: from nursery to independence in the landscape – Recommendations*. British Standards Publications Ltd.

⁶ Trees and Design Action Group (2014) *Trees in Hard Landscapes: A Guide for Delivery*. TDAG Publication.

6 APPENDICES

APPENDIX 1: TREE SURVEY DATA

BS5837 Report

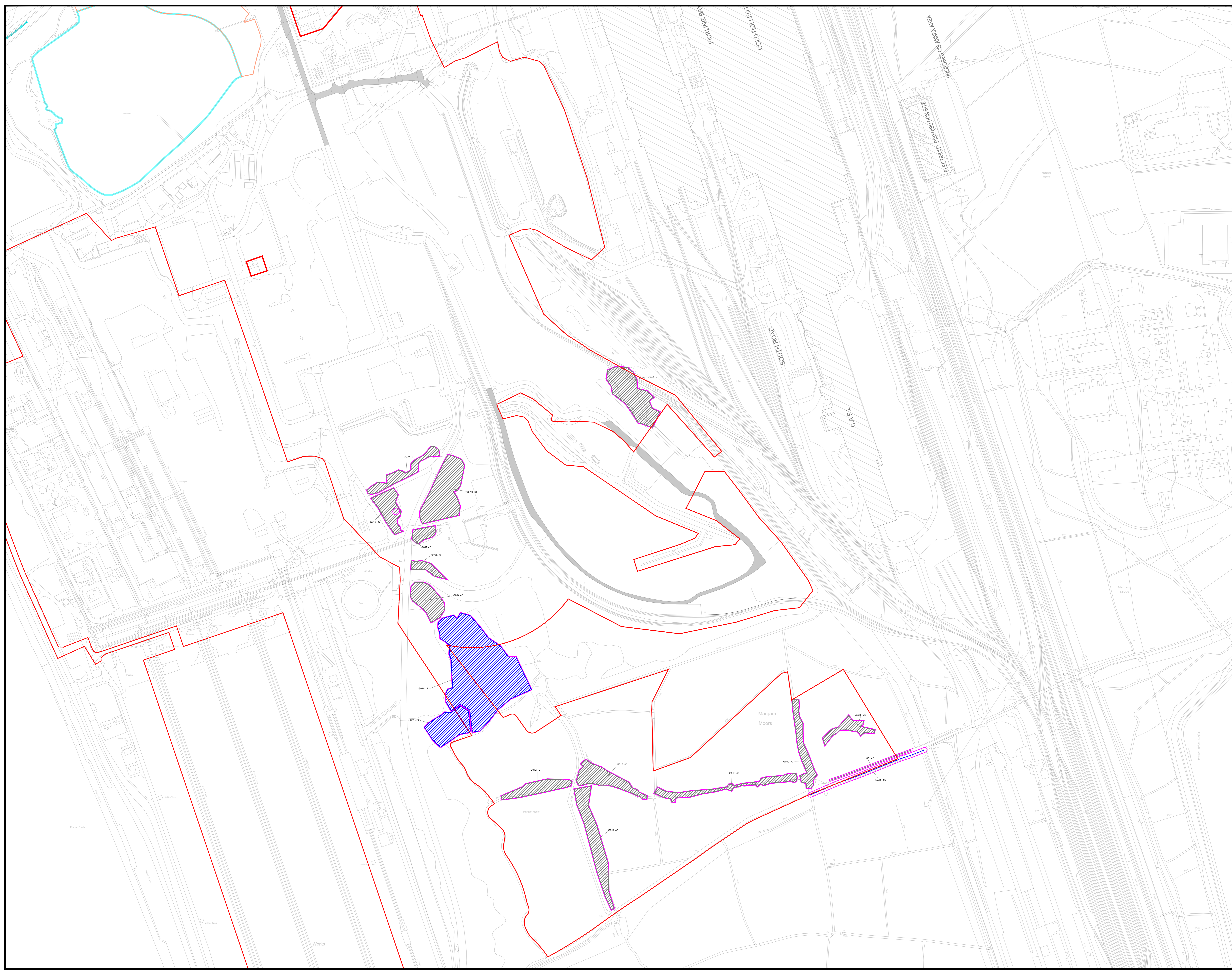
TATA Steel
Port Talbot EAF

Ref.	Species	Measurements	General Observations	Comments	Retention Category	RPA	Measurements2
G008	Willow (<i>Salix sp.</i>)	Height (m): 4 Stem Diam(mm): 100 Spread (m): 1.5N, 1.5E, 1.5S, 1.5W Crown Clearance (m): 0 Life Stage: Semi Mature Rem. Contrib.: 10 - 20 Years	Small willow thickets, dotted in scrub line.	Unable to inspect stem due to undergrowth - data estimated Not plotted on topo, position estimated	C2	Area: 1466 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
G009	Hawthorn (<i>Crataegus sp.</i>) Willow (<i>Salix sp.</i>)	Height (m): 8 2 stems, avg.(mm): 200 Spread (m): 3N, 3E, 3S, 3W Crown Clearance (m): 0 Life Stage: Semi Mature Rem. Contrib.: 10 - 20 Years	Group of willow multistemmed at base. Access limited.	Unable to inspect stem due to undergrowth.	C	Area: 2362 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
G010	Willow (<i>Salix sp.</i>)	Height (m): 6 Stem Diam(mm): 200 Spread (m): 2.5N, 2.5E, 2.5S, 2.5W Crown Clearance (m): 0 Life Stage: Semi Mature Rem. Contrib.: 10 - 20 Years	Linear group on ditch across field. Small willow thickets, dotted in scrub line.	Unable to inspect stem due to undergrowth - data estimated Not plotted on topo, position estimated	C	Area: 2514 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
G011	Blackthorn (<i>Prunus spinosa</i>)	Stem Diam(mm): 150 Life Stage: Semi Mature Rem. Contrib.: 10 - 20 Years	Reed bed with very occasional black thorn, hawthorn and willow.		C	Area: 4315 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
G012	Blackthorn (<i>Prunus spinosa</i>) Willow (<i>Salix sp.</i>)	Height (m): 4 2 stems, avg.(mm): 200 Spread (m): 1N, 1E, 1S, 1W Crown Clearance (m): 0 Life Stage: Semi Mature Rem. Contrib.: 10 - 20 Years	Scrub group dense dotted with some willow/blackthorn thickets.	Unable to inspect stem due to undergrowth - data estimated Not plotted on topo, position estimated	C	Area: 2196 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
G013	Willow (<i>Salix sp.</i>) Blackthorn (<i>Prunus spinosa</i>)	Height (m): 4 2 stems, avg.(mm): 200 Spread (m): 1N, 1E, 1S, 1W Crown Clearance (m): 0 Life Stage: Semi Mature Rem. Contrib.: 10 - 20 Years	Scrub group dense dotted with some willow/blackthorn thickets.	Unable to inspect stem due to undergrowth - data estimated Not plotted on topo, position estimated	C	Area: 2970 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair

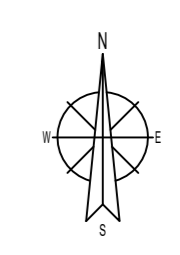
Ref.	Species	Measurements	General Observations	Comments	Retention Category	RPA	Measurements2
G014	Willow (<i>Salix sp.</i>) Blackthorn (<i>Prunus spinosa</i>) Birch (<i>Betula sp.</i>)	Height (m): 6 3 stems, avg.(mm): 250 Spread (m): 2N, 2E, 2S, 2W Crown Clearance (m): 0 Life Stage: Semi Mature Rem. Contrib.: 10 - 20 Years	Predominantly willow thicket, on edge of woodland block. Group of Willow and Birch on edge of woodland.	Unable to inspect stem due to undergrowth - data estimated Not plotted on topo, position estimated	C	Area: 2594 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
G015	Italian alder (<i>Alnus cordata</i>) Black hybrid poplar (<i>Populus x canadensis</i>) Elder (<i>Sambucus nigra</i>) Birch (<i>Betula sp.</i>) Ash (<i>Fraxinus sp.</i>)	Height (m): 14 5 stems, avg.(mm): 400 Spread (m): 4N, 4E, 4S, 4W Crown Clearance (m): 0 Life Stage: Early Mature Rem. Contrib.: 20 - 40 Years	Dense woodland of predominantly Alder with lesser amount of Ash, Sycamore, Poplar and Pine. DBH of 50-250mm (max of a few 400mm) . The larger stems being mainly Alder. Understorey sparse with Elder and extensive bramble and coal dust covering stems throughout. Planted woodland group assumed for screen/dust function. Access limited due to dense surrounding vegetation.	Unable to inspect stem due to undergrowth - data estimated Not plotted on topo, position estimated	B2	Area: 18144 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
G016	Willow (<i>Salix sp.</i>)	Height (m): 6 Stem Diam(mm): 150 Spread (m): 1.5N, 1.5E, 1.5S, 1.5W Crown Clearance (m): 0 Life Stage: Semi Mature Rem. Contrib.: 10 - 20 Years	Dense group on edge of active area. Predominantly Willow and scrub.	Unable to inspect stem due to undergrowth - data estimated Not plotted on topo, position estimated	C	Area: 885 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
G017	Willow (<i>Salix sp.</i>)	Height (m): 4 Stem Diam(mm): 150 Spread (m): 1N, 1E, 1S, 1W Crown Clearance (m): 0 Life Stage: Semi Mature Rem. Contrib.: 10 - 20 Years	Dense group on edge of active area. Predominantly Willow and scrub.	Unable to inspect stem due to undergrowth - data estimated Not plotted on topo, position estimated	C	Area: 894 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
G018	Willow (<i>Salix sp.</i>)	Height (m): 12 Stem Diam(mm): 150 Spread (m): 3N, 3E, 3S, 3W Crown Clearance (m): 0 Life Stage: Semi Mature Rem. Contrib.: 10 - 20 Years	Intermittent scrub group with one larger willow on raised ground plotted approx.	Unable to inspect stem due to undergrowth - data estimated Not plotted on topo, position estimated	C	Area: 2295 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
G019	Mixed species (<i>Mixed species</i>)	Height (m): 8 Stem Diam(mm): 250 Spread (m): 2N, 2E, 2S, 2W Crown Clearance (m): 0 Life Stage: Semi Mature Rem. Contrib.: 10 - 20 Years	Dense group of mainly willow and scrub surrounding. Inaccessible due to scrub and earthworks in progress. Viewed from a distance. Data estimated. Viewed from haul road.	Unable to inspect stem due to undergrowth - data estimated Not plotted on topo, position estimated	C	Area: 5614 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair

Ref.	Species	Measurements	General Observations	Comments	Retention Category	RPA	Measurements2
G020	Willow (<i>Salix sp.</i>)	Height (m): 3 Stem Diam(mm): 150 Spread (m): 1N, 1E, 1S, 1W Crown Clearance (m): 0 Life Stage: Semi Mature Rem. Contrib.: 10 - 20 Years	Intermittent group of dense low level willow with sections of scrub	Unable to inspect stem due to undergrowth - data estimated Not plotted on topo, position estimated	C	Area: 2107 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
G021	Corsican pine (<i>Pinus nigra laricio</i>) Italian alder (<i>Alnus cordata</i>) Hazel (<i>Corylus avellana</i>) Ash (<i>Fraxinus sp.</i>) Birch (<i>Betula sp.</i>)	Height (m): 16 5 stems, avg.(mm): 400 Spread (m): 4N, 4E, 4S, 4W Crown Clearance (m): 1 Life Stage: Semi Mature Rem. Contrib.: 20 - 40 Years	Group of trees that are positioned on the lower lying land to the east of the haul road and link to the adjacent woodland. Appear to be a belt of planting for shelter belt/screening. Largest trees in group are the alder, with pine, birch, and mixed understory.	Unable to inspect stem due to undergrowth.	B2	Area: 3452 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
G022	Willow (<i>Salix sp.</i>)	Height (m): 8 Stem Diam(mm): 200 Spread (m): 3N, 3E, 3S, 3W Crown Clearance (m): 0 Life Stage: Semi Mature Rem. Contrib.: 10 - 20 Years	Group of willow multistemmed at base, large group wetland within.	Unable to inspect stem due to undergrowth and machine activity adjacent.	C	Area: 4841 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
G023	Willow (<i>Salix sp.</i>) Sycamore (<i>Acer pseudoplatanus</i>)	Height (m): 10 2 stems, avg.(mm): 350 Spread (m): 4N, 4E, 4S, 4W Life Stage: Semi Mature Rem. Contrib.: 20 - 40 Years	South Side hedge. Significant feature, predominantly willow with sycamore along deep drainage channel. Off site.	Unable to inspect stem due to undergrowth - data estimated Not plotted on topo, position estimated	B2	Radius: 4.2m. Area: 1836 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair
H001	Common hawthorn (<i>Crataegus monogyna</i>)	Height (m): 4 Stem Diam(mm): 150 Spread (m): 1N, 1E, 1S, 1W Life Stage: Semi Mature Rem. Contrib.: 10 - 20 Years	Intermittent hawthorn hedgerow, many gaps with just low level vegetation.	Unable to inspect stem due to undergrowth - data estimated Not plotted on topo, position estimated	C	Radius: 1.8m. Area: 554 sq m.	Other Reference: Physiological Cond: Fair Structural Cond: Fair

APPENDIX 2: TREE CONSTRAINTS PLAN



- Legend**
- Tree Group Category A
 - Tree Group Category B
 - Tree Group Category C
 - Tree Group Category U
 - Tree Category A
 - Tree Category B
 - Tree Category C
 - Tree Category U
 - Root Protection Area
 - Tree or tree group number



Rev	Date	Amendment	Drawn	Checkd	Appr



Client
Tata Steel

Project Title
EAF

Drawing Title
TREE CONSTRAINTS PLAN

Drawn	Date	Checked	Date	Approved	Date
RK	110924	JB	110924	JB	110924

Scale	Orig Size	Dimensions
1:2000	A0	METRES

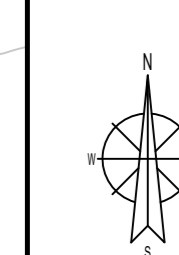
Project No.	Drawing File
2483055	

Drawing No.	Rev.
1	2

APPENDIX 3: TREE IMPACT AND RETENTION PLAN



- Legend**
- Groups Retained
 - Groups Removed
 - Trees Retained
 - Trees Removed
 - Root Protection Area
 - Tree or tree group number



Rev	Date	Amendment	Drawn	Checkd	Appd



Client
Tata Steel UK Ltd.

Project Title
EAF

Drawing Title
TREE RETENTION PLAN

Drawn	Date	Checked	Date	Approved	Date
RK	100924	JB	100924	JB	100924

Scale	Orig Size	Dimensions
1:2000	A0	METRES

Project No.	Drawing File
2483055	

Drawing No.	Rev.
1	3

APPENDIX 4: TREE SURVEY KEY

Reference

Each tree or group has been assigned a sequential number.

T- Tree

G-Group

Species

Represents the genus, species and if appropriate cultivar of the tree. The information is given first in the scientific name and common in brackets.

Stems

Number of stems present.

Measurements

- DBH - Stem diameter in millimetres measured at 1.5m above ground level. Where the stem is divided below 1.5m, measurement is taken as directed by BS 5837 Annex C.
- Height – Tree height measure in metres to the nearest half metre,
- Lower crown height – Lower crown height above ground in metres of the first lowest significant branch.

Age Classification

The following classification is employed:

- Y - Young: Saplings and young trees under 10 years of age
- SM – Semi Mature: Trees older than 10 years but less than one third of the life expectancy of their species, normally making substantial extension growth.
- EM – Early Mature: Trees between one third and two thirds of the life expectancy of their species. More or less full Height and large girth, increasing only slowly.
- M – Mature: Trees beyond two thirds of the life expectancy of their species. No significant extension growth.
- OM – Over Mature - a tree having reached its maximum life span and is declining in health and size due to old age.
- V – Veteran: Trees that shows features of biological, cultural or aesthetic value that are characteristic of an individual surviving beyond the typical age range for the species.

Structure Condition

An assessment of the structural/safe condition of the tree categorised into:

- GOOD - a tree in a safe condition with no significant defects,
- FAIR - a tree in a safe condition at present but with defects or with significant defects that can be remediated,

- POOR - a tree with significant defects that can't be remediated.

Physiological Condition

An assessment of the physiological condition (i.e. health/vitality) of the tree categorised into:

- GOOD - a tree in a healthy condition with no significant problems
- FAIR - a tree generally in good health with some problems that can be remediated
- POOR - a tree in poor health with significant problems that can't be remediated
- DEAD - a tree without sufficient live material to sustain life

General Observations

Observations made by the assessor relating to the category classification and arboricultural merits or concerns.

Estimated Remaining Contribution in Years

The estimated remaining contribution in years is an estimate based on currently known factors of the possible remaining life of the tree as an asset. Clearly, it is impossible to predict changes in condition which may occur in the future and this reflects what is considered reasonable under existing circumstances, the classification that has been used is in accordance with the British Standard 5837.

The estimated remaining contribution in years will be dependent on the interaction of the typical longevity of the species, its current age and condition with prevailing environmental factors. The estimated remaining contribution in years also dependent on future tree management that can extend useful life in some instances.

Tree Categorisation Using BS 5837 Methodology

The trees surveyed were categorised using the method explained in BS5837 Trees in Relation to Construction 2012. This method categorizes individual trees, groups and woodlands in a systematic way.

Groups are identified as those trees forming a single arboricultural feature with trees that provide companion shelter, are avenues or screens or cultural.

Initially the surveyor will determine if the tree should be regarded as a U category tree. U category trees are those that are low value trees that have little future due to physiological and structural condition.

Other trees are graded A, B or C. The initial category should reflex the trees value in making an important contribution to the amenity of the site over a period of time. The higher the tree category the longer the perceived time period.

A subcategory is included 1, 2 or 3. This subcategory reflects the type of value the surveyor feels the tree presents in regards its value to 1 – arboricultural, 2 – landscape, 3 – cultural or conservation.

The cascade chart used is included as Appendix 5 of this report.

APPENDIX 5: BS5837:2012 CASCADE CHART

BS5837:2012

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)	Identification on plan
Trees unsuitable for retention (see Note)		
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	<ul style="list-style-type: none"> Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <p><i>NOTE</i> Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</p>	See Table 2
	1 Mainly arboricultural qualities	2 Mainly landscape qualities
		3 Mainly cultural values, including conservation
Trees to be considered for retention		
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees with no material conservation or other cultural value
		Trees with material conservation or other cultural value
		Trees with significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)
		See Table 2
		See Table 2
		See Table 2