

IMPERIAL PARK SUBSTATION

Arboricultural Impact Assessment



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Arboricultural Impact Assessment
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ARBORICULTURAL IMPACT ASSESSMENT

Quality Management

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ARBORICULTURAL IMPACT ASSESSMENT

Contents

1	INTRODUCTION.....	2
2	SITE LOCATION	3
3	SURVEY METHODOLOGY	8
4	APPRAISAL AND RECOMMENDATIONS.....	11
5	ARBORICULTURAL IMPACT ASSESSMENT.....	15
6	SUMMARY	17

Appendices

Appendix A Tree Characteristics Recorded During Survey

Appendix B Tree Survey Schedule

Appendix C Tree Constraints Plan

Appendix D Tree Protection Plan

Appendix E Arboricultural Glossary

Appendix F Site Photographs

No table of contents entries found.

ARBORICULTURAL IMPACT ASSESSMENT

1 INTRODUCTION

- 1.1 This Arboricultural Impact Assessment (AIA) has been prepared by RPS on behalf of SSE Energy in respect of the proposed development at Imperial Park, Celtic Way, Coedkernew, Marshfield, Newport NP10 8BE (hereafter referred to as 'the site').
- 1.2 A tree survey of the application area was carried out by RPS in June 2025 in accordance with the requirements of BS5837:2012. The details recorded during the survey can be seen in the Tree Schedule at Appendix B and displayed spatially on the Tree Constraints Plan at Appendix C.
- 1.3 This report has also been prepared in accordance with the requirements set out in BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'(BS5837:2012).¹
- 1.4 The purpose of this report is to:
- Provide an assessment of the quality of the surveyed trees with reference to the categories and sub-categories listed within Table 1 - BS5837:2012.
 - Assess and quantify the arboricultural impact of the proposed development within the survey area, based on the proposed development layout.
 - Provide additional arboricultural information and advice in relation to the protection of trees throughout the development of the site.
 - Provide a Tree Protection Plan to detail the proposed protective measures to be taken in respect of the trees during development of the site.
- 1.5 The Tree Protection Plan shall be made available to all relevant site operatives prior to and throughout the construction process, so they understand the scope and importance of the tree protection measures.

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

2 SITE LOCATION

- 2.1 The survey site is located at Imperial Park, Celtic Way, Coedkernew, Marshfield, Newport NP10 8BE.
- 2.2 The land is roughly centred on OS grid reference ST 28210 83560. The Local Planning Authority (LPA) governing this site is Newport City Council.
- 2.3 The Soilscape of the area in which the survey site is situated typically consists of a mix of naturally wet loamy and clayey soils and freely draining slightly acid loam².
- 2.4 The site comprised of a metalled road adjacent to agricultural and floodplain land to the south, with an industrial complex to the north. Generally, the topography appears flat, and several trees are present within the area.

Tree Preservation Orders

- 2.5 Unfortunately, there is no interactive map on the council's website to check for the presence of Tree Preservation Orders (TPOs). The LPA have not been contacted directly to see if there are any TPOs located across the site. It is recommended that this is completed before any tree works are carried out on the site.
- 2.6 Trees covered by a Tree Preservation Order are protected under the Town and Country Planning (Trees) (Amendment) (Wales) Regulation 2017. The local authority must be consulted, and permission sought for any works that may affect them.
- 2.7 A Tree Preservation Order (TPO) is an order made by a local planning authority to protect specific trees, groups of trees or woodlands in the interests of amenity. An Order prohibits the:
 - cutting down
 - topping
 - lopping
 - uprooting
 - wilful damage
 - wilful destruction

of trees without the local planning authority's written consent. If consent is given, it can be subject to conditions which have to be followed. Cutting roots is also a prohibited activity and requires the authority's consent.

- 2.8 Exemptions for the need to obtain formal consent include, but are not limited to:
 - Dead trees.
 - The removal of dead branches.
 - Works necessary to remove a risk of serious harm.
 - Works necessary to implement a planning permission (excluding outline planning permission) or where permission is granted under the Town and Country Planning (General permitted Development Order 1995) (as amended).

² <https://www.landis.org.uk/soilsclapes/>

Conservation Areas

- 2.9 It is an offence to carry out work on a tree (with a trunk diameter of more than 75mm (3") measured 1.5 metres (5") above natural ground level) which lies within a Conservation Area without providing at least 6 weeks' notice. This includes felling any tree or some of the tree's branches, pruning, uprooting, etc.³
- 2.10 The presence of a Conservation Area has been assessed using the Data Map Wales interactive Map⁴ which confirms the site is not situated within a local Conservation Area.

Planning Policy Wales (Edition 12) February 2024

Trees, Woodlands and Hedgerows

- 2.11 6.4.37 Trees, hedgerows, groups of trees and areas of woodland are of great importance for biodiversity. They are important connecting habitats for resilient ecological networks and make an essential wider contribution to landscape character, culture, heritage and sense of place, air quality, recreation and local climate moderation. They also play a vital role in tackling the climate emergency by locking up carbon, and can provide shade, shelter and foraging opportunities, wider landscape benefits such as air and diffuse pollution interception, natural flood management, and building materials. The importance of trees, in particular urban trees, in creating distinctive and natural places which deliver health and well-being benefits to communities, now and in the future should be promoted as part of plan making and decision taking. Planning authorities must promote the planting of new trees, hedgerows, groups of trees and areas of woodland as part of new development.
- 2.12 6.4.38 Welsh native tree and hedge species, characteristic of the local area, provide a strong ecosystem resilience function, and they provide resources for local wildlife, particularly other native plants and species. Native tree and hedge species can also complement opportunities for natural regeneration. Alongside broader woodland habitat types, such as wood pasture, parkland and traditional orchards, native tree and hedge species help to define our cultural heritage and landscape, creating a strong sense of place and connection to the past.
- 2.13 6.4.39 Planning authorities must protect trees, hedgerows, groups of trees and areas of woodland where they have ecological value, contribute to the character or amenity of a particular locality, or perform a beneficial green infrastructure function. Planning authorities should consider the importance of trees and woodland, particularly native woodland and valued trees, and should have regard to local authority tree strategies or SPG and the Green Infrastructure Assessment. Planning authorities should adopt appropriate, locally relevant, time sensitive, minimum tree canopy cover targets for their authority area to guide the protection and where appropriate the expansion of canopy cover. The Green Infrastructure Assessment and tools such as NRW's Tree Cover in Wales' Towns and Cities study and Forest Research's i-Tree Eco tool will help establish a baseline of canopy cover and guide the identification of appropriate and measurable canopy targets. Tools to help with design and species choice in urban areas are also available.
- 2.14 6.4.40 Where trees, woodland and hedgerows are present, their retention, protection and integration should be identified within planning applications. Where surveys identify trees, hedgerows, groups of trees and areas of woodland capable of making a significant contribution

³ <https://www.gwynedd.llyw.cymru/en/Residents/Planning-and-building-control/Trees-and-hedges/Trees-in-Conservation-Areas.aspx#:~:text=It%20is%20an%20offence%20to,%2C%20pruning%2C%20uprooting%2C%20etc.>

⁴ https://datamap.gov.wales/maps/new?layer=inspire-wg:conservation_areas#/

ARBORICULTURAL IMPACT ASSESSMENT

- to the area, these trees should be retained and protected. The provision of services and utilities infrastructure to the application site should also avoid the loss of trees, woodlands or hedges and must be considered as part of the development proposal; where such trees are lost, they will be subject to the replacement planting ratios set out below.
- 2.15 6.4.41 Whilst most focus within the planning system is targeted at urban trees, planning authorities should recognise the importance of trees within the countryside, either as woodlands, within hedgerows and hedge banks, or free-standing trees in fields, or as wood pasture. This is particularly important as the effects of climate change are leading towards pests and diseases that are damaging many of our native species in the rural landscape. Positive mechanisms of rural tree retention should be considered, and measures taken to replace them in an effective and economic manner, either with new planting or by allowing them to grow to their full potential.
- 2.16 6.4.42 Permanent removal of trees, woodland and hedgerows will only be permitted where it would achieve significant and clearly defined public benefits. Where individual or groups of trees and hedgerows are removed as part of a proposed scheme, planning authorities must first follow the step-wise approach as set out in paragraph 6.4.15. Where loss is unavoidable developers will be required to provide compensatory planting (which is proportionate to the proposed loss as identified through an assessment of green infrastructure value including biodiversity, landscape value and carbon capture). Replacement planting shall be at a ratio equivalent to the quality, environmental and ecological importance of the tree(s) lost and this must be preferably onsite, or immediately adjacent to the site, and at a minimum ratio of at least 3 trees of a similar type and compensatory size planted for every 1 lost. Where a woodland or a shelterbelt area is lost as part of a proposed scheme, the compensation planting must be at a scale, design and species mix reflective of that area lost. In such circumstances, the planting rate must be at a minimum of 1600 trees per hectare for broadleaves, and 2500 trees per hectare for conifers. The planting position for each replacement tree shall be fit to support its establishment and health and ensure its unconstrained long-term growth to optimise the environmental and ecological benefits it affords.
- 2.17 6.4.43 Ancient woodland, semi-natural woodlands, individual ancient, veteran and heritage trees and ancient hedgerows are irreplaceable natural resources, and have significant landscape, biodiversity and cultural value. Such trees, woodlands and hedgerows are to be afforded protection from development which would result in their loss or deterioration unless very exceptionally there are significant and clearly defined public benefits; this protection must prevent potentially damaging operations and their unnecessary loss. In the case of a site recorded on the Ancient Woodland Inventory, authorities should consider the advice of NRW. Planning authorities should also have regard to the Ancient Tree Inventory, work to improve its completeness and use it to ensure the protection of trees and woodland and identify opportunities for more planting as part of the Green Infrastructure Assessment, particularly in terms of canopy cover.
- 2.18 6.4.44 The protection and planting of trees and hedgerows should be delivered, where appropriate, through locally-specific strategies and policies, through imposing conditions when granting planning permission, and/or by making Tree Preservation Orders (TPOs). They should also be incorporated into Green Infrastructure Assessments and plans.

Ancient Woodland and Veteran Trees

- 2.19 Planning Policy Wales recognises the significant value of ancient woodlands and makes provision for their protection against damage or loss.
- 2.20 Natural Resources Wales advises that planning permission should be refused if development will result in the loss or deterioration of ancient woodland, given that ancient woodland is irreplaceable unless there are wholly exceptional reasons.
- 2.21 Where a decision maker is satisfied there is a wholly exceptional reason, every endeavour should be made to minimise and compensate for loss. Although a compensation strategy cannot fully compensate for loss of ancient woodland it should include:
- planting new native woodland or wood pasture to improve the resilience of ancient woodland;
 - restoration of or managing other ancient woodland, including plantations on ancient woodland sites, and wood pasture;
 - proposals connecting woodland and ancient and veteran trees separated by development with green infrastructure;
 - long-term management plans for new woodland and ancient woodland;
 - planting individual trees that could become veteran and ancient trees in future;
 - monitoring the ecology of the site over an agreed period.
- 2.22 The Data Map Wales inventory can be used to help decide whether a stand-off zone is needed to protect the ancient woodland from the potential impacts of the development proposed. The stand-off or protection zone should be based on evidenced survey and assessment.
- 2.23 A stand-off or protection zone's purpose is to protect ancient woodland. The size and type of stand-off or protection zone should vary depending on the scale, type and impact of the development.
- 2.24 Some zones may only require a root protection area to prevent negative impacts on individual trees or groups of trees, and others are likely to extend further. Where possible, a stand-off or protection zone should:
- contribute to wider ecological networks;
 - be part of the green infrastructure of the area.
- 2.25 It should consist of retained semi-natural habitats such as woodland and/or a mix of native scrub, grassland, heathland and wetland.
- 2.26 Developers should consider if public access is appropriate and only allow access on foot to stand-off or protection zones if the habitat is not harmed by trampling. Developers should avoid including gardens in stand-off or protection zones.
- 2.27 A desktop investigation using the Natural Resources Wales interactive map⁵ confirmed that there are no Ancient Woodland designations on or adjacent to the site.

⁵ <https://experience.arcgis.com/experience/dd852f0e12864928973e3e165a1b4631/>

Local Planning Policy⁶

- 2.28 The Newport Local Development Plan 2011-2026 emphasises strong protection and enhancement of trees, woodlands, and hedgerows due to their importance to the city's character, biodiversity, and environmental benefits such as improving air quality and reducing noise. Developments must avoid unacceptable harm to these features and incorporate tree retention and planting where suitable. The Council administers Tree Preservation Orders and protects trees in Conservation Areas, often requiring arboricultural surveys to assess impacts. Landscape schemes should use native species and integrate green infrastructure to support ecological connectivity and climate adaptation. Special Landscape Areas and Environmental Spaces that include significant tree cover are safeguarded, with development required to respect their qualities. New detailed guidance on trees and development will be provided through supplementary planning guidance. The Plan also includes monitoring to prevent net loss of protected trees and woodlands, insisting on mitigation where impacts occur. Overall, the Plan ensures trees are a key consideration in sustainable development and environmental conservation throughout Newport.

⁶ <https://democracy.newport.gov.uk/documents/s18403/09a%20LDP%20October%20Cabinet.pdf?LLL=0>

3 SURVEY METHODOLOGY

- 3.1 The tree survey was completed and the report written by Charlie Moore of RPS and authorised by David Cox, a professional member of the Arboricultural Association and Chartered Landscape Architect of RPS Group.
- 3.2 The tree survey was carried out in accordance with the requirements set out in BS 5837:2012 “Trees in Relation to Design, Demolition and Construction – Recommendations”. The survey does not constitute a full arboricultural condition assessment involving the detailed inspection of trees in relation to their structural condition, decay, and any other physical and pathogenic defects.
- 3.3 During the survey, all information was digitally captured on site, using a tablet running Axciscap 4.07 software. This is a program specifically designed for arboricultural surveying, which allows trees to be located directly onto a digital copy of a sites topographical survey.
- 3.4 The tree survey involved a visual inspection from the ground of individual specimens and where deemed appropriate, trees have been assessed as groups of trees, woodland and hedgerows. Characteristics such as their amenity value, condition and dimensions have been recorded. A full breakdown of tree characteristics recorded during the survey can be seen in Appendix A.
- 3.5 Each arboricultural feature is marked on the Tree Constraints Plan at Appendix C with an identification number (T1, G1, H1, W1 etc), which can be seen at and cross referenced with the Tree Schedule at Appendix B. The Tree Schedule shows a breakdown of the raw data collected during the site visit.
- 3.6 The locations of the trees are based upon a topographic survey (Drawing no. 6621) produced by Geo-Info LTD in June 2023.
- 3.7 Measurements for tree height, minimum crown clearance and crown spread were rounded to the nearest 0.5m. Stem diameter measurements were recorded to the nearest 10 mm using a diameter tape where access to the stem was possible.
- 3.8 Trees retention categories were assigned by the following criteria and have been differentiated on the Tree Plans using the following colours:

Category A: Trees of high quality with an estimated remaining life expectancy of at least 40 years.
Category B: Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
Category C: Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm.
Category U: Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years. However, it may be possible to retain some trees assigned to retention Category U, where public access to them is limited, as they may exhibit conservation value providing unique wildlife habitat.
- 3.9 Categories A, B and C have further sub-categories with regards to the reasons for tree retention:
 - 1) Mainly arboricultural qualities.
 - 2) Mainly landscape qualities.
 - 3) Mainly cultural values, including conservation.

ROOT PROTECTION AREA

- 3.10 The protection of the roots and soil structure within the RPA should be treated as a priority. To avoid damage to the roots or rooting environment of retained trees, the RPA has been calculated in accordance with section 4.6 of BS5837:2012. They have been displayed on the Tree Plans with a magenta circle and may be modified in shape where deemed necessary by obvious root barriers observed on site (although the total area remains the same).
- 3.11 This methodology is recommended as the minimum area around a tree that contains sufficient roots and rooting volume to maintain viable tree vigour and structure. Where groups of trees, woodlands and hedgerows have been assessed, the RPA has been shown based on the average sized tree stem in each arboricultural feature and so may fall short/exceed the RPA required for some of the individual specimens within the feature.

Limitations

- 3.12 The findings of this survey are not valid following adverse or unpredictable weather conditions or for any failure due to 'force majeure' or unpredictable events.
- 3.13 Trees are dynamic structures which are constantly growing and changing. Whilst reasonable effort has been made to identify defects which may compromise the trees longevity, no guarantee can be given as to the safety or otherwise of any individual tree or arboricultural feature. Due to the unpredictable laws and forces of nature, no tree can ever be deemed as safe. Natural failure of intact trees does occur, and changing climatic conditions can cause damage to even apparently healthy trees.
- 3.14 Trees were not climbed or inspected below ground level and inaccessible trees will have best estimates made about the location, physical dimensions and characteristics. If trees have been recorded beyond the extent of the site, all dimensions have been estimated (unless stated otherwise) and the assessment of these trees has occurred from land within the Client's ownership and publicly accessible land only (unless formal access has been arranged to these additional areas).
- 3.15 Trees under 75mm diameter and woody vegetation were not assessed for their potential impact upon future construction issues such as foundation designs (re: NHBC chapter 4.2)⁷. Whilst this report may assist in assessing likely future impacts, it should not be classed as a comprehensive vegetation survey in relation to impact upon future designs.
- 3.16 The desktop study confirming statutory and non-statutory constraints uses publicly accessible third-party information, meaning the results of this exercise are only as accurate as the information available at the time of the assessment.
- 3.17 Provisional Tree Preservation Orders (TPOs) may be made whenever a LPA deems it appropriate, with only those persons interested in the land served with a copy of the Order. A further search for the presence of TPOs should be carried out prior to commencement of any tree works or removals specified within this report.
- 3.18 Where possible, the location of the arboricultural features identified at the site have been plotted using a topographical survey, which has been supplied by the client. If no topographical survey data has been provided, arboricultural feature locations have been plotted using GPS, aerial photography and/or OS maps, which have a reduced accuracy.

⁷ NHBC. 'Chapter 4.2- Building Near Trees'. NHBC Standards 2016. 2016.

ARBORICULTURAL IMPACT ASSESSMENT

- 3.19 The basic survey was conducted using a combination of aerial imagery and topographic surveys. Although careful efforts were made to geo-reference the aerial imagery accurately, there may be up to a 5-meter discrepancy in the recorded tree locations.
- 3.20 There are no interactive maps available on the local council's website to identify Tree Preservation Order (TPO) protected trees, so it is not possible to determine whether protected trees are present on the site.

4 APPRAISAL AND RECOMMENDATIONS

Summary of Tree Survey

- 4.1 During the survey of the wider site area, 19 trees were surveyed as individuals. The survey also recorded 23 Groups, and 3 Hedges. However, this application relates only to works around the existing substation on the site.
- 4.2 For details on all the information on trees relevant to this application, please refer to the Tree Schedule in Appendix B.
- 4.3 The distribution of species recorded across the site has been shown in Table 1 below.

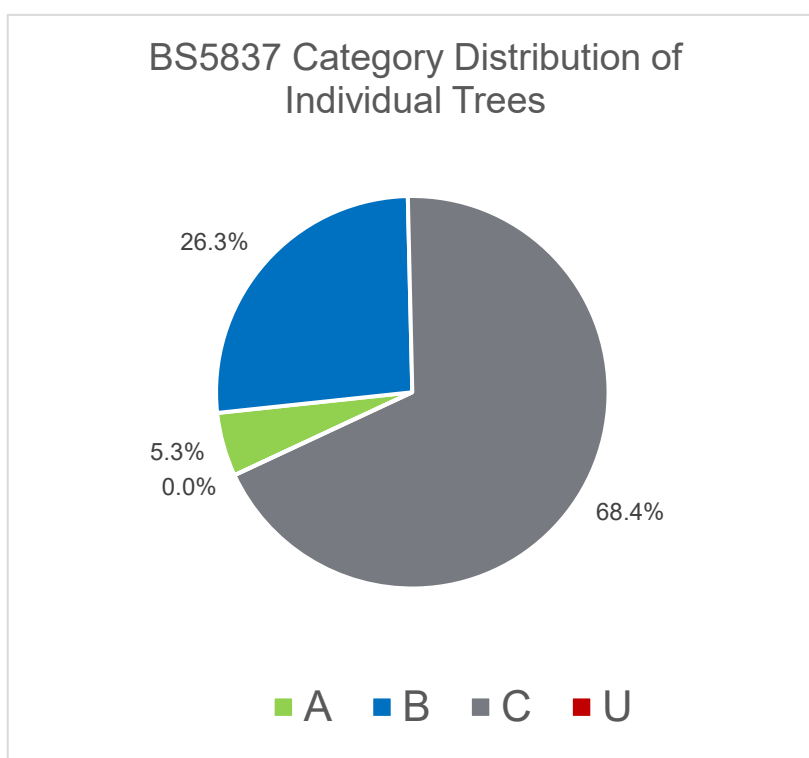
Table 1: Species distribution across the site

Species Breakdown of Individually Surveyed Trees						
Species	A	B	C	U	Total	Species Distribution
Quercus (Common Oak) robur	1	4	1	0	6	31.6%
Fraxinus (Ash) excelsior	0	1	4	0	5	26.3%
Alnus (Common Alder) glutinosa	0	0	4	0	4	21.1%
Betula (Silver Birch) pendula	0	0	1	0	1	5.3%
Populus (Aspen) tremula	0	0	1	0	1	5.3%
Prunus (Wild Cherry) avium	0	0	1	0	1	5.3%
Salix (Goat Willow) caprea	0	0	1	0	1	5.3%
Total	1	5	13	0	19	100.0%
Category Distribution Percentage	0.05263	0.26316	0.68421	0	1	

ARBORICULTURAL IMPACT ASSESSMENT

4.4 The BS5837:2012 quality of the individually surveyed trees is broken down in Figure 1 below.

Figure 1: BS5837:2012 quality of individual trees across the site



4.5 The BS5837:2012 quality of the Trees, Groups, Woodlands & Hedges recorded during the survey is broken down in Table 2 below.

Table 2: BS5837:2012 quality of Trees, Groups, Woodlands, Hedges and Scrub across the site

BS5837:2012 Category Breakdown of Surveyed Items					
Type	A	B	C	U	Total
Trees	1	5	13	0	19
Groups	0	5	17	1	23
Woodlands	0	0	0	0	0
Hedges	0	0	3	0	3
Grand Total	1	10	33	1	45
Distribution Percentage	2.2%	22.2%	73.3%	2.2%	100%

Planning considerations

- 4.6 Trees can offer many benefits, including the provision of visual amenity, softening or complementing the effect of the built environment, adding maturity to new developments and by making places more comfortable in tangible ways e.g. contributing screening and shade, reducing wind speed and turbulence, intercepting snow and rainfall, and reducing glare.
- 4.7 New tree planting opportunities should be considered as part of any potential redevelopment; this will help to broaden the age diversity of the tree cover within the area. Sufficient space should be provided for species with significant stature to grow out into maturity.
- 4.8 Under the UK planning system, local authorities have a statutory duty to consider the protection and planting of trees when granting planning permission for proposed development. The potential effect of development on trees, whether statutorily protected (e.g. by a tree preservation order or by their inclusion within a conservation area) or not, is still a material consideration that is considered when dealing with planning applications.

Design and Site Layout Considerations

- 4.9 During any future site planning exercises, the current and future growth potential of the trees should be considered.
- 4.10 The Root Protection Area (RPA) should become an exclusion zone during construction works and for any development. It should be fenced off and protected in accordance with BS5837:2012. The canopy is likewise susceptible to damage during construction work and requires similar protection.
- 4.11 No activities that result in excavations, changes in level or soil compaction should take place within the RPA of any retained trees, especially older mature trees. This would include the storage of materials, any construction work, trafficking by vehicles or even excessive trafficking by pedestrians.
- 4.12 If some form of construction must take place within the RPA, then certain measures need to be adopted to avoid disturbance or damage to the roots and to maintain moisture infiltration and gaseous diffusion into the soil. It is recommended that these are detailed by a separate document called an Arboricultural Method Statement (AMS).

Services

- 4.13 The location and siting of new facilities near trees should consider the potential impact on and conflict with both tree roots and canopy. This should consider the ultimate size of existing young and middle-aged trees at maturity. Conversely the impact of the tree on the activities should also be considered regarding obstruction, shading, leaf fall and root action. These are problems that can be managed provided sufficient space is allowed for.
- 4.14 Services should be routed outside the existing or potential RPAs of trees. Where it is unavoidable, then the route of the services must be designed by an Engineer in consultation with an Arboriculturist. Further advice can be found in NJUG Volume 4- "Guidance for the planning, installation and maintenance of utility services in proximity of trees, 2007".

Tree Risk Management

- 4.15 It is recommended that a programme of periodic arboricultural assessments be undertaken to regularly assess the full health and safety of all trees both in full leaf and bare stemmed. The assessments should prioritise areas with high footfall and/or presence of a constant target and accord with arboricultural advice, taking account of relevant factors (where known) that affect safety such as the age class, condition, size and species of the trees.

5 ARBORICULTURAL IMPACT ASSESSMENT

Introduction

- 5.1 Trees have finite energy reserves, developed each year throughout the growing season, which are utilised for biological processes such as growth and defence against pests or diseases throughout the following year.
- 5.2 Any development in proximity to trees has the potential to cause harm to those trees unless control measures are identified and acted upon; as such it is essential to consider the relationship between the proposed development and the retained trees to identify what precautions are necessary, proportionate and appropriate.
- 5.3 Development has the potential to impact upon the above ground and below ground parts of trees. Whilst some damage that can occur, such as physical damage to the trees stems and branches from machinery movements, is clearly visible, the impact from other aspects of work common on development sites, which can have a significant effect upon the continued health of trees, are not always immediately evident.
- 5.4 Damage that is not immediately evident, but which can cause long term harm to retained trees, includes things such as damage to the soil structure by compaction causing root damage and levels changes altering the water table and affecting moisture availability.
- 5.5 In general, by adopting appropriate methods of working, precautionary and protective measures, significant harm to retained trees can be avoided. The establishment of a CEZ by erection of Tree Protection Fencing will minimise the potential for harm to occur to retained trees.
- 5.6 The retention and protection of significant trees and vegetation will assist in assimilating the proposed development into the wider landscape and offer long term tree cover.
- 5.7 Furthermore, redevelopment of the site may offer an excellent opportunity to actively manage any retained vegetation and accordingly we recommend restorative tree works be undertaken as appropriate. This will further improve the amenity value and landscape setting of the site and increase the useful life of any retained trees.

Brief Description of Proposed Development

- 5.8 SSE is seeking to construct a new 132kv substation building within the existing Imperial Park substation complex, hereafter referred to as the 'Proposed Development'. The existing substation site currently supports a 400kv substation operated by National Grid. A planning application for construction and operation of the Proposed Development is to be submitted to Newport City Council for planning consent.

Reference Documents

- 5.9 To assess the impacts of the proposed development on the arboricultural features at the site, the proposed site plan was overlaid onto the TCP to create a Tree Protection Plan (TPP). As well as identifying trees required to be retained and removed to facilitate the proposed development, the TPP assessed potential conflicts between the arboricultural constraints (such as the RPA and tree crowns) and the proposed site plan.
- 5.10 The following documents have been referenced to create these plans:
 - Topographical survey – Drawing No 6621, Geo-Info LTD, June 2023.

ARBORICULTURAL IMPACT ASSESSMENT

- Proposed site plan – General Arrangement Plan, Drawing No B2494900-JAC-ZZ-XX-DR-C-003, Jacobs, May 2025.

Proposed Tree Removal

- 5.11 To facilitate the proposed development, there are no tree removals required.

Tree Pruning Works

- 5.12 No tree pruning works are required to facilitate the proposed development.

Proposed Works Within Root Protection Areas

- 5.13 As the protection of soil and roots within the RPA must be treated as a priority, the primary position for any construction activities should be situated outside of these protected areas.
- 5.14 However, in instances where justification can be given to work within an RPA, technical solutions may be available to minimise the potential damage to tree roots and soil volume. If work is proposed within any RPAs of trees to be retained, a compensatory RPA offset must be demonstrated which borders the existing RPA and mitigation measure can be implemented to prevent damage to roots and improve the soil environment available to the tree.
- 5.15 No work within the RPAs of retained trees is required to facilitate the proposed development.

Tree Planting and Green Infrastructure

- 5.16 An appropriate tree planting strategy will provide an opportunity to incorporate feature trees, and through careful consideration for tree species can help diversify the tree population. This diversification will help to increase resilience to pests & diseases and in the long term, improve the arboricultural resource at the site.

ARBORICULTURAL IMPACT ASSESSMENT

6 SUMMARY

- 6.1 This Arboricultural Impact Assessment (AIA) has been prepared by RPS on behalf of SSE Energy in respect of the proposed development at Imperial Park, Celtic Way, Coedkernew, Marshfield, Newport NP10 8BE (hereafter referred to as 'the site').
- 6.2 During the survey of the wider site area, 19 trees were surveyed as individuals. The survey also recorded 23 Groups, and 3 Hedges. However, this application relates only to works around the existing substation on the site. For details on all the information on trees relevant to this application, please refer to the Tree Schedule in Appendix B.
- 6.3 To facilitate the proposed development, there are no tree removals required.
- 6.4 No tree pruning works are required to facilitate the proposed development.
- 6.5 No work within the RPAs of retained trees is required to facilitate the proposed development.

APPENDICES

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Appendix A

Tree Characteristics Recorded During Survey

Tree Ref No:	Sequential reference number of trees or groups of trees. Avenues, woodlands and hedgerows were also recorded on the tree constraints plan. # - denotes inaccessible trees (best estimates are made about the location, physical dimensions and characteristics.)				
Species	Species listed by common name, with scientific names (<i>italic lettering</i>).				
Height (m)	Estimated height of canopy to nearest metre.				
Branch Spread	branch spread, taken as a minimum at the four cardinal points, to derive an accurate representation of the crown				
Stem diameter @ 1.5 m (m)	Estimated diameter of trunk at 1.5 m above ground level in metres unless otherwise indicated, multi-stemmed trees being measured in accordance with Annex C: BS5837:2012				
Existing height above ground level	To inform on ground clearance, crown/stem ratio and shading the estimated height of the first significant branch and direction of growth and canopy above ground level.				
Stem No.	Number of stems (if necessary) of individual tree.				
Life Stage	Expressed as:-	Y SM EM M	(Young) (Semi-mature) (Early mature) (Mature)	OM V D	(Over-mature) (Veteran) (Dead)
Physical Condition	Apparent condition expressed as the following categories, based upon a brief visual inspection from the ground only:-				Good Fair Poor Dead
Comments / Management Recommendations	General observations, particularly of structural and/or physiological condition (e.g. the presence of any decay and physical defect), and/or preliminary management recommendations and potential for wildlife habitats (not exhaustive).				
Estimated remaining contribution (years)	Estimated remaining contribution, in years (<10, 10+,20+,40+)				
Tree Quality Assessment Value: <u>Category</u>	Criteria grading with regards to Table 1: BS 5837:2012, expressed as:-	A (Trees/Vegetation of high quality and value) B (Vegetation of moderate quality and value) C (Trees/Vegetation of low quality and value) 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)			
	* Category U trees can have existing or potential conservation value which might be desirable to preserve.				
Tree Quality Assessment Value: <u>Sub - Category</u>	Criteria grading with regards to Table 1: BS 5837:2012, expressed as:-	1 (Trees with mainly <i>arboricultural</i> value) 2 (Trees with mainly <i>landscape</i> value) 3 (Trees with mainly <i>cultural / conservation</i> value)			

APPENDICES

Appendix B

Tree Survey Schedule

TREE SURVEY SCHEDULE

Site:	Imperial Park Substation, Dryffin Way, Newport, Wales, CF	Surveyor:	C. Moore
Project Schedule Ref:	5457-RPS-XX-XX-SH-AR-91001	Status:	For Information
Drawing Reference:	5457-RPS-XX-XX-DR-AR-91001	Revision:	P01
Survey date:	18/06/2025 & 19/06/2025	Notes:	-

Ref. no	Species	Height (m)	Canopy Spread (m)				Crown Area (m²)	Stem dia. (mm)	Stem no. at 1.5m	Height of crown clearance (m)	FSB Height (Direction)	Age class	Condition	General Observations Management Recommendations	Estimated remaining contribution (yrs)	Tree Quality Category (BS5837)	RPA Radius (m)
			N	E	S	W											
#G16	Acer pseudoplatanus (Sycamore);Salix caprea (Goat Willow);Quercus robur (Common Oak)	12	See	plans	for	extents	-	300 (avg.)	-	0	-	M	Good	Estimated values due to access, not plotted on original survey, linear group, recorded dimensions denote maximum of the group.	20+	B2	3.6
#G17	Salix caprea (Goat Willow);Acer pseudoplatanus (Sycamore);Crataegus monogyna (Hawthorn)	9	See	plans	for	extents	-	100 (avg.)	-	0	-	EM	Good	Estimated values due to access, not plotted on original survey, group located in grassland adjacent to waterbody.	10+	C2	1.2
#G18	Salix caprea (Goat Willow);Salix fragilis (Crack Willow);Salix alba (White Willow)	12	See	plans	for	extents	-	300 (avg.)	-	0	-	EM	Good	Estimated values due to access, not plotted on original survey, large group, recorded dimensions denote maximum of the group.	10+	C2	3.6
#G19	Salix caprea (Goat Willow);Acer pseudoplatanus (Sycamore);Crataegus monogyna (Hawthorn)	9	See	plans	for	extents	-	100 (avg.)	-	0	-	EM	Good	Estimated values due to access, not plotted on original survey, group located in grassland.	10+	C2	1.2
#G20	Salix fragilis (Crack Willow);Salix caprea (Goat Willow);Alnus glutinosa (Common Alder)	17	See	plans	for	extents	-	250 (avg.)	-	0	-	M	Good	Estimated values due to access, not plotted on original survey, dense group, recorded dimensions denote maximum of the group.	10+	C2	3.0
#G21	Salix fragilis (Crack Willow);Salix caprea (Goat Willow);Alnus glutinosa (Common Alder)	8	See	plans	for	extents	-	300 (avg.)	-	0	-	M	Good	Estimated values due to access, not plotted on original survey, dense group, recorded dimensions denote maximum of the group.	10+	C2	3.6
#G22	Salix fragilis (Crack Willow);Salix caprea (Goat Willow);Alnus glutinosa (Common Alder)	14	See	plans	for	extents	-	300 (avg.)	-	0	-	M	Good	Estimated values due to access, not plotted on original survey, dense group, recorded dimensions denote maximum of the group.	10+	C2	3.6

Note: This survey is based on a brief visual inspection from the ground.
It is not intended as a full arboricultural inspection.
- indicates estimated values. * - indicates off site tree.

TREE SURVEY SCHEDULE

Site:	Imperial Park Substation, Dryffn Way, Newport, Wales, CF	Surveyor:	C. Moore
Project Schedule Ref:	5457-RPS-XX-XX-SH-AR-91001	Status:	For Information
Drawing Reference:	5457-RPS-XX-XX-DR-AR-91001	Revision:	P01
Survey date:	18/06/2025 & 19/06/2025	Notes:	-

Ref. no	Species	Height (m)	Canopy Spread (m)				Crown Area (m²)	Stem dia. (mm)	Stem no. at 1.5m	Height of crown clearance (m)	FSB Height (Direction)	Age class	Condition	General Observations Management Recommendations	Estimated remaining contribution (yrs)	Tree Quality Category (BS5837)	RPA Radius (m)
			N	E	S	W											
#G23	Salix fragilis (Crack Willow);Salix caprea (Goat Willow);Alnus glutinosa (Common Alder)	18	See	plans	for	extents	-	400 (avg.)	-	0	-	M	Good	Estimated values due to access, not plotted on original survey, dense group, recorded dimensions denote maximum of the group.	20+	B2	4.8
#S14	Rosa canina (Dog Rose);Rubus fruticosus (Bramble spp.);Salix fragilis (Crack Willow)	2	See	plans	for	extents	-	70 (avg.)	-	0	-	EM	Good	Estimated values due to access, not plotted on original survey, group of shrubs and small trees under 75mm diameter, recorded dimensions denote maximum of the group.	-	-	-
#S15	Rosa canina (Dog Rose);Rubus fruticosus (Bramble spp.);Salix fragilis (Crack Willow)	2	See	plans	for	extents	-	70 (avg.)	-	0	-	EM	Good	Estimated values due to access, not plotted on original survey, group of shrubs and small trees under 75mm diameter, recorded dimensions denote maximum of the group.	-	-	-

Note: This survey is based on a brief visual inspection from the ground.
It is not intended as a full arboricultural inspection.
- indicates estimated values. * - indicates off site tree.

APPENDICES

Appendix C

Tree Constraints Plan

C:\SAG\Bentley\5457 - Imperial Park Substation\p01\04\02\Drawings\5457-RPS-XX-XX-AR-91001-102.dwg User: rpsa001



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Drawing Scale Bar (unless drawing is printed to the correct sheet size)

1:250

0m 10m 20m 30m 40m 50m 60m 70m 80m 90m 100m

Key

- Development boundary.
- T1 Tree with numbered reference. Canopy spread and coloured BS5837:2012 tree quality category as shown below.
= Tree details estimate (inaccessible tree)
* = Tree in off site location
- G1 Tree group plotted with individual stem locations and numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below.
- G1 Tree or Vegetation group with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative stem line.
- H1 Hedge with numbered reference. Canopy extents and coloured BS5837:2012 tree quality category as shown below and dashed line to show hedge centerline.
- W1 Woodland with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative tree line.
- S1 Area of Scrub with numbered reference. Dashed line to show indicative stem line.

BS 5837:2012 Tree Quality Categories - Table 1

- Category A - High quality
- Category B - Moderate quality
- Category C - Low quality
- Category U - Unsuitable for retention

- Direction of first significant branch
- Root protection area (RPA) Calculated in accordance with Section 4.6 - BS5837:2012

NOTES:

- Refer to RPS Tree Survey Report & Schedule for further details.
- Survey based on a visual inspection from the ground and is not intended as a full arboricultural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012 - 'Trees in Relation to design, demolition and construction'.
- Due to the legal protection afforded to breeding birds vegetation removal should not take place during the bird nesting period; generally, although not restricted to, March - August inclusive.
- Survey based upon topographic survey produced by Geo-Info LTD in June, 2023

P01	First Issue		CM	EP 28.06.25
Rev	Description	By	Ckd	Date

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Project **Imperial Park Substation, Dryffn Lane, Newport, Wales**

Title **Tree Constraints Plan Sub Station**

Status	Scale	Date Created
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Task Team Manager	Information Author	Task Information Manager
LR	CMJM	DC

Document Number
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Project Code - Originator - Zone - Level - Type - Risk - Drawing Number
RPS Project Number
794-PLN-LAN-5457

Subsidiary
503

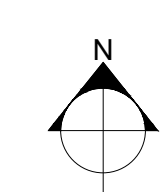
Revision
01

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APPENDICES

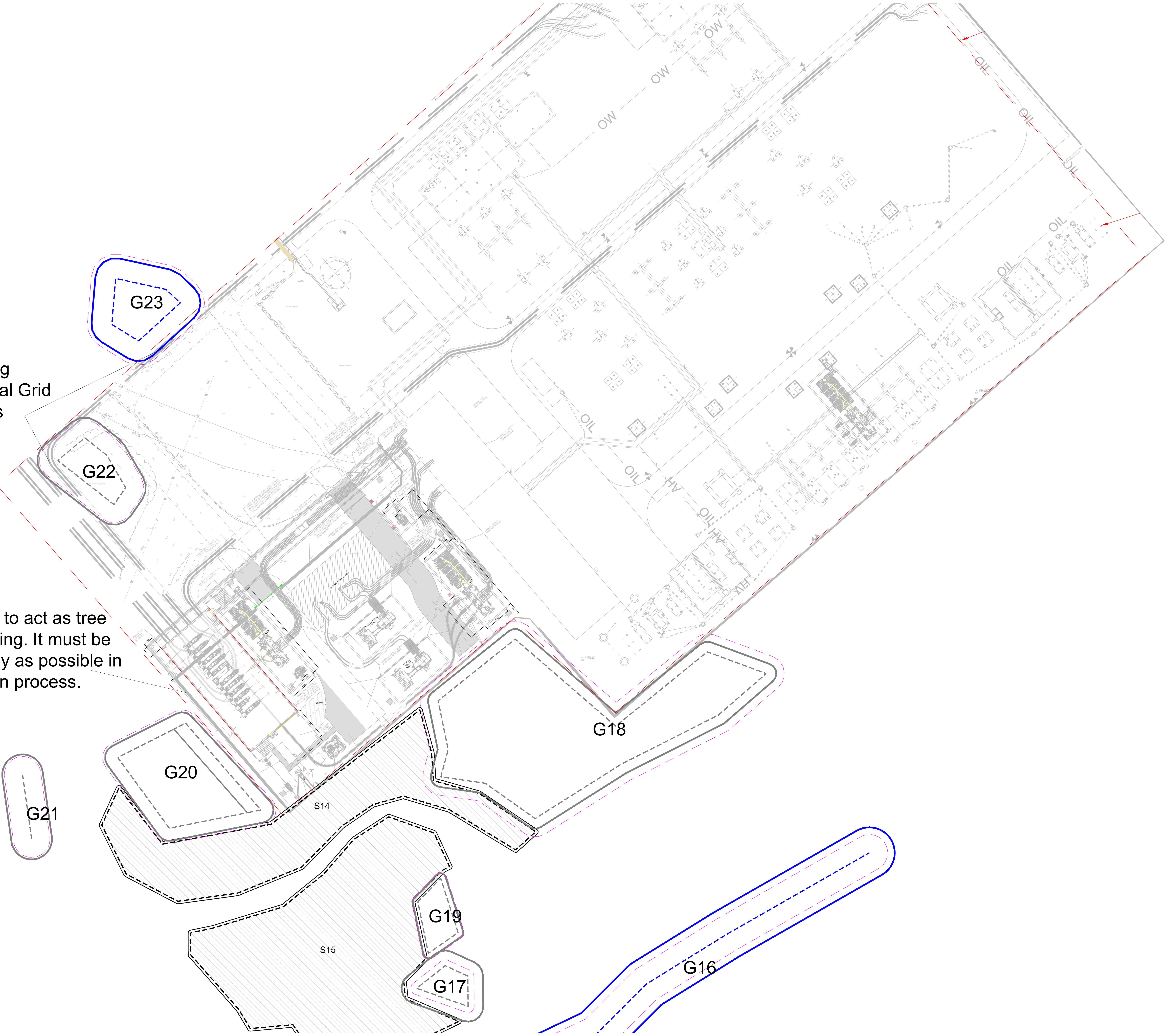
Appendix D

Tree Protection Plan



Existing
National Grid
Cables

New site fence to act as tree
protection fencing. It must be
erected as early as possible in
the construction process.



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Key

- Survey boundary.
- Tree with numbered reference.
Canopy spread and coloured BS5837:2012 tree quality category as shown below.
= Tree details estimate (inaccessible tree)
* = Trees in off site location
- Tree group plotted with individual stem locations and numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below.
- Tree or Vegetation group with numbered reference. Canopy extents coloured to match BS5837:2012 tree quality category as shown below and dashed line to show indicative stem line.
- Area of Scrub with numbered reference. Dashed line to show indicative stem line.

BS 5837:2012 Tree Quality Categories - Table 1

- Category A - High quality
- Category B - Moderate quality
- Category C - Low quality
- Category U - Unsuitable for retention

Direction of first significant branch

Root protection area (RPA)
Calculated in accordance with Section 4.6 - BS5837:2012

NOTES:

- Refer to RPS Tree Survey Report & Schedule for further details.
- Survey based on a visual inspection from the ground and is not intended as a full arboricultural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012 - Trees in Relation to design, demolition and construction.
- Due to the legal protection afforded to breeding birds vegetation removal should not take place during the bird nesting period; generally, although not restricted to, March - August inclusive.
- Survey based upon topographic/aerial survey produced by Geo-Info LTD in June 2023.
- Pedestrian/vehicular emergency access routes to be maintained at all times.
- All protective fencing to be completed and approved by LPA / CA prior to commencement of any site works.
- All works to conform with requirements of:
 - BS 3968:2010 - Tree Works
 - BS 5837:2012 - Trees in relation to design, demolition and construction
 - NDUG 4 - Guidelines for Utility Services in Proximity to Trees
 - APN 12 - 'Through the Trees to Development'

Scale Bar

0m 10m 20m

P02	Updated removals	EP	LR	10.06.25
P01	First Issue	CM	EP	26.06.25
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Title: Tree Protection Plan

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P01	1:250 @A0	June 2025

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Subsidiary: S03

Revision: P02

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Appendix E

Arboricultural Glossary

Age-class - A general classification of the tree into either - young, semi-mature, early mature, mature, over-mature, or veteran.

Apical Bud/Shoot – The apical bud, also known as the leading shoot, is responsible for shoot extension and is dominant.

Apical Dominance – A singular, leading shoot remains dominant.

Arboreal - In connection with, or in relation to, trees.

Arboriculturist – Person who has, through relevant education, training and experience, gained recognised qualifications and expertise in the field of trees in relation to construction.

Arboricultural Implications Assessment (AIA) – Study, undertaken by an arboriculturist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.

Arboricultural Method Statement (AMS) – Methodology for the implementation of any aspect of development that has the potential to result in the loss of or damage to a tree. Note The AMS is likely to include details of an on-site tree protection monitoring regime.

Asymmetric crown- Crowns that have a morphological bias in a particular direction. This can give the tree an aesthetically unfavourable appearance but can also subject the tree to uneven wind- loading forces and potentially result in failure.

Basal – Referring to the bottom part of a tree's stem.

Basifugal mortality – A natural process seen in trees in an advanced life stage whereby the trees extremities die back, and the inner crown expresses new growth, in order to conserve energy reserves.

Bifurcated - A growth characteristic, where two stems of similar size grow from the same point. Can create an inherent weakness.

Branch union/junction - The point at which a branch joins a larger stem. Can be a point of weakness, especially in certain species.

Brown Rot- Decay caused by certain species of fungus which results in the affected wood becoming brittle and liable to suddenly 'break out', especially if in key structural areas.

Buttress flares – Extensions of the basal stem of a tree that provide additional structural support. See reaction wood.

APPENDICES

Bifurcated- A growth characteristic, where two or more stems of similar size grow from the same point.
Can create an inherent weakness.

Cable braces – Cable braces used to support the crown of a tree, reduce impacts caused by wind- throw oscillation.

Canker – A clearly defined area of dead and sunken or malformed bark, caused by bacteria or fungi. Can have a bearing on structural integrity of infected limb(s) depending on size and location.

Central leader- See apical dominance.

Chalara ash dieback- A disease affecting ash trees caused by the fungus *Hymenoscyphus fraxineus*. Usually fatal, the disease causes leaf loss and crown dieback in infected trees. It was first confirmed in Britain in 2012.

Chlorosis- yellowing of leaves which can be caused by a range of factors, often an indicator of nutrient deficiency.

Compaction - The compressing & hardening of soil around tree root systems, due to vehicular/pedestrian use etc. Loss of pore space between soil granules limits water movement and gaseous exchange and inhibits root growth.

Companion shelter- Shelter provided by neighbouring trees in groups to one another, factors such as wind throw are reduced due to supporting branches and interlocking root systems. Removing individual trees on the peripheries of such groups can expose neighbouring trees to environmental factors they have not previously been subjected to and can lead to individual failure.

Competent person – Person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached

Note 1 A competent person understands the hazards and the methods to be implemented to eliminate or reduce the risks that can arise. For example, when on site, a competent person is able to recognise at all times whether it is safe to proceed.

Note 2 A competent person is able to advise on the best means by which the recommendations of this British Standard may be implemented.

Condition – Assessment based on a visual and professional view giving consideration to many factors such as tree health, structural integrity and suitability of its position.

Conservation dead- wooding- Removal of deadwood using 'coronet cuts' that mimic the way a branch would naturally break off, maximising deadwood habitat availability for invertebrates.

Coppice - The method of managing trees by cutting the stems at between 1.0 inch and 1.0 foot from the ground level on a regular cycle, the cut stumps of the trees or shrubs are allowed to re-grow many new stems.

APPENDICES

Crown spread - Gives distances between extreme limits of the crown and the stem, usually along the four compass points. Helps to show crown symmetry.

Crown Reduction – The removal of branch ends to reduce the extreme limits of a tree's branch spread and height.

Crown Thin – The removal of selected branches within the crown to thin the internal branch structure.

D.B.H. - 'Diameter at Breast Height', an industry standard to gauge tree stem size and development. Within arboriculture, breast height is taken to be 1.5m above ground level.

Dieback - The reduction in crown vigour and extension growth progressing to death of distal parts; often associated with decline.

Epicormic growth - New growth from dormant buds that can often form tenuous attachments. Although some species readily form such shoots, it can be an indication of stress.

Form - A general assessment of the shape and position of the tree within its environment.

Hanger – Term used to describe a branch that has become detached and is being supported by other branches. Can be a hazard to persons and property below.

Hazard Beam – After the loss of a distal part, a limb concentrates growth upwards creating adverse end weights that can render the limb susceptible to failure.

Included bark – Growth characteristic usually caused when two or more stems/branches growing in close proximity 'fuse' together entrapping the bark from when the parts were separate in the middle, creating a structural weakness.

Invertebrate tower – Pollarding of a (usually dead) tree to a safe height that leaves part of the main stem as a deadwood habitat for invertebrate species.

Occlusion/Occluded – Normally used to describe the overgrowth of a wound. Also, immovable foreign objects in contact with a tree part can become encased or 'occluded' by the tree as it grows incrementally.

Pathogen - An agent that causes disease, especially a living microorganism such as a bacterium or fungus.

Phototropic growth – Growth responding to a light stimulus i.e. the sun. This can influence the form of a tree, particularly where other factors e.g. buildings or other trees, affect the amount/ direction light is received.

Pollard – The removal and subsequent regular re-removal of the crown of a tree above animal browsing height. Can be an effective method of controlling the size of trees in urban areas. This is ideally begun in the trees early stages and maintained throughout its life.

APPENDICES

Reaction wood - Essentially additional wood laid down by the tree to compensate for structural defects such as cavities.

Rhizosphere - The rhizosphere is the narrow region of soil that is directly influenced by root secretions and associated soil microorganisms. In particular, mycorrhizal fungi form a symbiotic relationship with trees and assist in the assimilation of phosphates essential to the tree's health.

Ring barking/Girdling – the removal of bark around the entire circumference of a stem or branch, causing the death of all distal parts.

Root Protection Area (RPA) – Layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree, shown in plan form in m².

Scaffold limbs - The main structural branches within the crown.

Tree Protection Plan – scale drawing prepared by an arboriculturist showing the finalised layout proposals, tree retention and tree and landscape protection measures detailed within the AMS, which can be shown graphically.

U.L.E – 'Useful Life Expectancy' is an estimate based on currently known factors of the possible remaining life of the tree as an asset. AKA 'Estimated remaining contribution'.

Veteran tree – Tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.

Vigour - A general classification, as to the present and future potential growth and development of a tree. A comment regarding the health status of the tree specific to its species.

White Rot - A type of decay caused by certain species of fungi which results in the affected wood becoming flexible with little compressive strength.

APPENDICES

Appendix F

Site Photographs

1. Looking north at the boundary line of trees along the cable route	
2. Location of cable route to be placed under ground level, underneath the existing main road	
3. Public right of way adjacent to drainage ditch, making up cable route	

APPENDICES

- 4. Further picture evidence of the cable route through public right of way adjacent to mature trees**



- 5. Looking north into the existing substation with groups of trees and shrub groups present**

