



arboriculture

ARBORICULTURAL IMPACT ASSESSMENT SURVEY & REPORT

York Holiday Park, New Road, Escrick

Report Reference: BG22.148.8

REV1 – February, 2023





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www.brindlegreen.co.uk



Sheffield Office

Brindle & Green Limited
Horizon House
Whiting Street
Sheffield S8 9QR

Barnsley Office

Brindle & Green Limited
Sergeants House
36 Edderthorpe Lane
Barnsley S73 9AT

Head Office

Brindle & Green Limited
Unit 3 Silverhill Court
Radbourne
Derby DE6 4LY
Tel: 0800 222 9105

London Office

Brindle & Green Limited
Nutter Lane
Wanstead
London E11 2HZ

Kent Office

Brindle & Green Limited
Sandy Lane
Sevenoaks
Kent TN13 3TP





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Report	Name	Signature	Date
Prepared by	Henry Richardson Assistant Arboriculturist		07/10/2022
1st Check by	Laura Emmerson Arboricultural Consultant		10/10/2022
2nd Check by	Joe Gilmour Associate Director		21/11/2022
Issued by (PDF)	Henry Richardson Assistant Arboriculturist		07/12/2022
Rev1	Henry Richardson Assistant Arboriculturist		09/12/2022
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Project Details

Project carried out by:

Brindle and Green

Unit 3, Silverhill Court

Radbourne

Derby

DE6 4LY

Head Office: 0800 222 9105

Email: info@brindlegreen.co.uk

Website: www.brindlegreen.co.uk

Project carried out for:

Flannigan Estates Ltd

43 Chapel Lane

Wilmslow

Cheshire

SK9 5HW

Project site:

York Holiday Park

New Road

Escrick

York

YO19 6EZ

Grid reference: SE 64931 44229

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1 Summary

- 1.1 Brindle & Green were commissioned by Flannigan Estates Ltd to undertake an arboricultural survey at York Holiday Park, New Road, in Escrick, York. This report summarises any potential arboricultural impacts and outlines a Tree Protection Plan in relation to Condition 9 of planning permission ref: 20/01546/FUL for the redevelopment of the former North Selby Mine site to a leisure development comprising of a range of touring caravans and static caravans with associated facilities. Design plans are provided within Appendix 4 of this report. The survey was carried out on the 5th, 9th, and 11th of August 2022.
- 1.2 This report is concerned with trees that have the possibility to be impacted as a result of development proposals at York Holiday Park, New Road, Escrick. This includes trees within the site boundary as well as any outside the boundary that may be impacted by the development and any subsequent post development activity.
- 1.3 Use of the City of York Council's online mapping software confirmed that the site was not located within a Conservation Area (CA), nor were there any Tree Preservation Orders (TPOs) relevant to the site.
- 1.4 The report and accompanying tree survey schedule are produced in accordance with the guiding principles of British Standard BS 5837:2012 *'Trees in Relation to Design Demolition and Construction - Recommendations'*.
- 1.5 A considerable number of Category C and Category B trees (T6, T8 – T12, T14, T18 – T27, T35 - T39) and groups are recommended for complete (G11, G12, G15 – G18, G20, G21, G26, G27, G31, G32, G34, G35, G38, G39, G41, G42, G46, G47, G49, G51, G53, G54) and partial (G8, G10, G22, G37, G50, G52, G55) removal to facilitate the proposed development. T13, T22, and T28 are recommended for removal irrespective of development due to their critically poor condition as Category U individuals. A Tree Protection Plan, complete with removal recommendations and mitigation measures, has been proposed for the development. The proposed mitigation will be the use of Construction Exclusion Zones. The Tree Protection Plan can be seen in Appendix 2 of this report.
- 1.6 A BS5837 tree survey aims to inform tree mitigation and/or removal for potential development at the site; it is not a health and safety survey. Observations on tree form and condition, from which management recommendations are made, are based upon

ground-level visual assessments only. It is important to note that trees are dynamic and often unpredictable; even apparently healthy trees may occasionally fail.

Arboricultural Considerations	Recommendations	Timing
Arboricultural	Exclusion fencing should be placed to protect trees to be retained where applicable.	Pre-construction secured as condition of planning.
Replanting/ Planting	Replanting with a mix of native and ornamental species.	Post Construction.
Felling/Clearance	Any felling/shrub removal should be completed outside of the breeding bird season or under ecological supervision.	Between October - February (or March – September under supervision).
CEZ's & Root protection	Construction Exclusion Zones should be implemented before the commencement of works to ensure that no damage is sustained to trees aimed at retention. Ground protection is not recommended in this instance.	Pre-Construction

2 Introduction

- 2.1 The purpose of this survey was to provide an assessment of trees which may be impacted by development proposals at York Holiday Park, New Road, Escrick. A tree survey schedule compliant with the guiding principles of British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations' is contained within this report and all survey data is recorded in this schedule.
- 2.2 The approved site is 36.4 hectares in extent, 23.8 hectares of which falls within the City of York boundary. The surveyed area of the site is approximately 13 hectares in extent, sitting within the larger approved site, and comprises a previously occupied commercial property and the disused North Selby Mine. Existing hardstanding access roads lead to car parking areas and warehouses across the site, with the large majority of trees growing along the roadside boundaries within planting verges. Spring Wood, a Category A woodland (W1), is present at the southern extent of the site, bordering the main access road from the site entrance. The majority of the arboricultural value is located within the western half of the site, comprising Category C and Category B individuals and groups scattered across roadside verges, larger areas of grassland, and car park planting pits. The eastern extent of the site is dominated by hardstanding and warehousing, from the disused North Selby Mine. The outer edge of the hardstanding is bordered by sloped grassland, with scattered groups and hedgerows to the north-east. The large majority of trees and shrubs growing along this sloped grassland were unsuitable for survey due to having a stem diameter under 75mm, as per the BS 5837:2012. The general species composition of the site was dominated by red oak, common oak, Corsican pine, silver birch, and common hawthorn. The site is surrounded by further arable land, with New Road immediately north of the site. The site is located near the village of Escrick, approximately 6.5 miles south of the city of York. The site is the subject of full planning application (planning permission ref: 20/01546/FUL) for the redevelopment of the former North Selby Mine site to a leisure development comprising of a range of touring caravans and static caravans with associated facilities. Design plans are provided within Appendix 4 of this report.
- 2.3 Results and recommendations contained within this report have been prepared by an experienced arboriculturist and are therefore the view of Brindle & Green Limited. The survey is based on information provided by our client, the development proposals, and

the results of the desk study and our survey of the site. This report pertains to this information only.

3 Methodology

- 3.1 The survey was undertaken in accordance with the guiding principles of British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations.' Information recorded during the survey. Information recorded in the survey includes:
- 3.1.1 **Species** – the species identification is based on visual observations and the common English name of what the trees appeared to be is listed. In the case of groups only the principal species are recorded, other minor species may be omitted.
 - 3.1.2 **Tree Height** – are estimated in metres. Estimated mature heights are given in brackets. In the case of groups, the mean current height is recorded.
 - 3.1.3 **Crown Height** – the height to the lowest branch is estimated in metres. In the case of groups of trees minimum crown height was recorded.
 - 3.1.4 **Trunk Diameters** – measured at 1.5 metres above ground and recorded in millimetres to the nearest 10mm. However, in accordance with British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations.' where the trunk of any tree divides below 1.5 metres it is considered a multi-stemmed tree and an average is recorded. In the case of groups of trees, the maximum diameter was recorded.
 - 3.1.5 **Crown Spread** – was recorded in metres along each of the cardinal points. In the case of groups of trees the maximum peripheral spread was recorded.
 - 3.1.6 **Life Stage** – recorded as follows:
 - NP: Newly planted** – a tree within 3 years after planting
 - Y: Young** – a tree within its first one third of life expectancy
 - SM: Semi-mature** – a tree within its second third of life expectancy
 - M: Mature** – a tree in its final one third of life expectancy
 - V: Veteran** - a tree with habitat features such as wounds or decay. A veteran may be a young tree with a relatively small girth in contrast to an ancient tree, but

bearing the 'scars' of age such as decay in the trunk, branches or roots, fungal fruiting bodies, or dead wood.

A: Ancient – a tree that has passed beyond maturity and is old, or aged, in comparison with other trees of the same species and is of interest biologically, aesthetically or culturally because of its age, size and condition.

3.1.7 **The Condition of Trees** - is based upon a preliminary assessment categorised thus:

- Good
- Fair
- Poor
- Very Poor/Dead

In the case of groups, the category awarded is that typical of the group.

3.1.8 **Preliminary Recommendations** – works required regardless of development proposals.

3.1.9 **Life Expectancy** – estimated; i.e. given as follows which corresponds with Table 1 of British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations.' - <10, 10+, 20+, 40+.

3.1.10 **BS 5837:2012 Tree Category:**

Cascade Chart for Tree Quality Assessment (see BS5837:2012 for full reference)			
Trees Unsuitable For Retention			
<p><u>Category U</u></p> <p>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</p>	<p>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).</p> <p>Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline.</p> <p>Trees infected with pathogens of significance to the health and/or safety for the trees nearby, or very low-quality trees suppressing adjacent trees of better quality</p> <p>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve</p>		
Subcategory	1. Mainly Arboriculture Qualities	2. Mainly Landscape Qualities	3. Mainly Cultural Values, Including Conservation

Trees to be considered for retention			
<p><u>Category A</u> Trees of high quality with an estimated remaining life expectancy of at least 40 years</p>	<p>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)</p>	<p>Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features</p>	<p>Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)</p>
<p><u>Category B</u> Trees of moderate quality with an estimated remaining life expectancy of at least 20 years</p>	<p>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 40years; or trees lacking the special quality necessary to merit the category A designation</p>	<p>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</p>	<p>Trees with material conservation or other cultural value</p>
<p><u>Category C</u> Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm</p>	<p>Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories</p>	<p>Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits</p>	<p>Trees with no material conservation or other cultural value</p>

3.1.11 **Root Protection Area** - The root protection areas (RPA's) are calculated and recorded in the Tree Survey Schedule where it is expressed both in linear and square metres; it is at this distance/around this area that the tree protective barriers should be erected around any trees to be retained. Where construction is proposed within these areas, special techniques should be employed, and general guidance is therefore provided herein.

3.1.12 **Limitations** - Significant trees included within the plan provided were plotted using a Trimble TDC100 handheld device. Normal error of 1-2m can be experienced using this device however, care was taken to make sure the most accurate reading possible at the time of survey was taken.

4 Arboricultural Impact Assessment

4.1 Presence of Tree Preservation Orders (TPOs), Conservation Areas (CAs) or Other Regulatory Protection

4.1.1 Use of the City of York Council's online mapping software confirmed that the site was not located within a CA, nor were there any TPOs relevant to the site.

4.2 Potential Incompatibilities Between the Layout and the Trees Proposed for Retention

4.2.1 Severing just one of a tree's major roots during careless excavation for construction or services can cause the loss of up to 20 per cent of the root system; this undermines the tree's ability to absorb water and leaves it unstable in high winds. In general, 80-90 per cent of all tree roots are found in the top 600mm of soil and almost 99 per cent of the tree's total root length occurs within the topmost 1m of soil, with some variations depending on soil porosity. The undoubted nuisance that fine root systems create for the development of specific sites must be weighed against the importance that they play in soil stabilisation on sloping ground (acting in a similar way to geotextile matting).

4.2.2 The impact of the development on tree roots without mitigation, is likely to cause compaction of the soil and reduction in soil aeration, thus preventing the uptake of nutrients. This can ultimately cause root death and may result in the premature loss of the tree.

4.2.3 A considerable number of Construction Exclusion Zones (CEZs) are to be established prior to the commencement of any works onsite, ensuring the protection of retained trees. A large majority of the CEZ fencing is to be installed along the perimeter of the existing hardstanding access roads throughout the site, protecting the retained trees growing in the roadside verges whilst leaving sufficient room for use of the roads by construction vehicles. Crown lifting and reduction works may be required to facilitate the installation of proposed CEZ fencing, and prevent conflict with the retained roads, as is discussed in Section 4.9.

Five areas of exclusion fencing are to be installed around the retained trees at the existing site entrance, including G1 – G6, and T1 – T5. The fencing will surround all of the retained trees and groups, being installed as not to encroach onto the existing road.

The exclusion fencing will join to the existing fencing south of G1 – G4 and T1 – T5. Crown lifting works may be required to raise the northern crown of T1 by approximately 0.5m to accommodate the exclusion fencing. The installed fencing will protect the entire notional RPAs of all the retained trees and groups, and as much of the RPA as T1 as possible.

A long section of CEZ fencing is to be installed to protect the retained hedgerow H1, and the retained group G7, along the perimeter of an existing access road within the site. The exclusion fencing will be installed along the edge of the hardstanding roads, extending from the southern extent of G7 to the eastern extent of H1. It is assumed that H1 continues to extend along the northern boundary of the site, but this section was not surveyed and is deemed at a sufficient distance from potential development to not require protection. Crown reduction works to G7, up to approximately 2.5m, are deemed suitable where required to facilitate the exclusion fencing and prevent future conflict with the access road.

CEZ fencing is to be installed along the perimeter of W1, at the edge of the existing hardstanding access road, protecting retained trees in close proximity to the road. The exclusion fencing will extend from the western extent of W1, to the edge of W1 at the existing water-filled basin to the south, opposite G55.

Similarly, CEZ fencing is to be installed around the northern and eastern perimeter of G55, at the edge of the existing hardstanding access road and disused mine. A gap will be left for the proposed access and show centre within G55. Crown reduction works may be required at the edge of G55 to facilitate the exclusion fencing, but this should not exceed approximately 2.5m. The fencing will be installed at the edge of the existing hardstanding to allow for the continuous use of the access road during construction works.

Multiple CEZs are to be established to surround the retained groups and trees around the perimeter of the existing hardstanding car park and access roads within the central area of the site. The exclusion fencing will surround the retained groups and trees, tracing the existing verges surrounded by hardstanding, allowing the existing roads to be used during construction works. This will encompass areas of exclusion fencing protecting G8 - G10, G13, G14, G19, G22 - G24, G29, G30, T7, T15 – T17, T29, and T31. Crown lifting and crown reduction works are required to multiple retained groups and trees to facilitate the fencing, as is to be discussed in Section 4.9 The fencing will

be installed at the edge of existing hardstanding, leaving sufficient room for the use of existing roads and footpaths within the site. The fencing will protect as much of the notional RPAs of retained trees as possible.

Three areas of CEZ fencing are to be installed to the north-east of the existing car park, to protect retained trees and groups G25, G28, G43 – G45, T30 and T38. The exclusion fencing will be installed in a manner that traces most of the existing roadside verges that the retained trees are growing within, leaving sufficient room for the continued use of the existing hardstanding. Minor crown lifting and reduction works may be carried out to the retained groups and trees to facilitate the installation of the exclusion fencing.

Three areas of CEZ fencing are to be installed to the south-east of the existing car park, to protect retained trees and groups G33, G36, G37, G40, and T32 – T34. The fencing will be implemented in a manner to trace the perimeter of existing hardstanding areas where applicable, whilst leaving sufficient room for the use of the roads during construction. Crown lifting works are recommended to raise the northern crown of T33 by approximately 2m, and the eastern crown of T34 by approximately 0.5m, to facilitate the exclusion fencing. Crown reduction works may be carried out to the perimeters of G33 and G36, to facilitate installation of the exclusion fencing.

Three areas of CEZ fencing are to be installed around the perimeter of the disused North Selby mine, protecting retained groups G48, G50, H2 and G52. The exclusion fencing will surround the entirety of G48, requiring crown reduction works to the south-east extent of the group to avoid overlap with the nearby proposed pitch and to facilitate the fencing. If the existing chain link fencing around the perimeter of G48 is to be retained, this may be used in place of CEZ fencing where applicable. G50, H2 and the retained section of G52 are to be protected by CEZ fencing near the edge of the disused mine, where the retained groups are in close proximity to proposed development.

CEZs are always to be afforded protection and will be protected by fencing. No equipment or machinery will be stored within CEZs, nor will vehicles or personnel enter these areas. Ground levels will not be changed within CEZs and existing vegetation will be left undisturbed. The indicative locations of the CEZs can be seen on the Tree Protection Plan in Appendix 2; the precise fencing location may require minor adjustment onsite, due to local site conditions, but is not expected to differ from that shown on the Tree Protection Plan.

4.2.4 Due to the absence of conflict with retained trees, there is no recommendation for temporary or permanent ground protection. It is understood that the extensive hardstanding currently in place throughout the site is to be retained in areas where touring caravans are proposed. However, in areas where static caravans are proposed, it is understood that the existing hardstanding is to be removed between the caravans (and not replaced). Any existing hardstanding that is to be removed in close proximity to retained trees, such as around the perimeter of retained group G48, is to be removed using hand tools only (such as pneumatic breakers). Although it is understood there is no new hardstanding to be installed within the notional rooting area of retained trees, if this were to change, any new hardstanding applied will require the use of permanent ground protection (3D cellular confinement systems, e.g. Terram Geocells) and must have a permeable finish to allow water to percolate to the roots.

4.2.5 Due to the absence of conflict between retained trees and proposed buildings, there is no requirement for specialist foundations.

4.3 The Working and Access Space Needed for Construction

4.3.1 Construction vehicles will use the existing site access located at the western extent of the site, and adhere to the existing access roads throughout the site.

4.3.2 Access into exclusion zones is strictly prohibited without prior amendments to the mitigation proposed. Similarly, building materials must also be stored outside of the CEZs to avoid soil compaction or physical damage.

4.4 Trees proposed for removal and justification to facilitate the development

4.4.1 A considerable number of trees and groups are recommended for complete or partial removal to facilitate the proposed development.

4.4.2 The individual trees proposed for removal to facilitate the development are predominantly Category C individuals in fair to poor condition (T6, T8 – T10, T12 - T14, T18 – T27, T35, T37, T39), with a few Category B individuals also recommended for removal (T11, T36, T38). T13, T22, and T28 are recommended for removal irrespective of development to their poor condition as Category U individuals.

- 4.4.3 T6, a Category C mature Corsican pine in fair condition, is recommended for removal to facilitate the construction of a proposed pitch in close proximity to the tree. T6 is growing within a raised mound on the roadside verge, heavily obscured by dense scrub. Heavy pruning of lower branches towards the access road is evident, with considerable resultant deadwood. T6 provides minor landscape value to the site along the roadside.
- 4.4.4 T8 – T12, T14, T18 – T21, and T23 – T27, are recommended for removal within the existing car park onsite to facilitate the construction of multiple static pitches. All of the trees recommended for removal are young to semi-mature Category C individuals in fair condition, with the exception of T11, a Category B mature Norway maple in good condition. The Category C trees recommended for removal consistently show features of fair to poor physiological condition, including unoccluded or partially occluded pruning wounds to the stem and limbs, considerable deadwood throughout the crown, bark loss, and decay. A considerable number of the trees provide minor landscape value to the site, but are all considered suitable for removal. T11 grows on a sloped bank at the car park edge, exhibiting an even crown in good condition. Signs of included bark are present at branch junctions, as well as minor bark loss to one branch. T11 provides minor landscape value to the site.
- 4.4.5 T35 – T39, a mixture of young to mature Category C and Category B individuals of varying species, are recommended for removal to facilitate the development. T36 is in good condition, whilst the remaining four trees are in fair condition and of lower-quality than T36. T36 and T38, the two Category B individuals, provide minor landscape value to the site, whilst the Category C individuals provide no significant values. Each of the five trees are recommended for removal due to conflict with the proposed development, and are unsuitable for retainment in the current development plans.
- 4.4.6 T13, T22, and T28 are recommended for removal irrespective of development due to their critically poor condition as Category U individuals. T13, a semi-mature Norway maple growing at the western edge of the car park, exhibits significant wounding, decay, and deadwood to the stem and crown. T22, a semi-mature Norway maple growing within the central extent of the car park, also exhibits wounding, decay, and deadwood to the stem and crown. T22 is growing within a gravel planting pit surrounded by hardstanding, showing visible signs of branch dieback in the crown. T22 has limited future potential making it unsuitable for retainment. T28, a semi-mature Norway maple growing to the north of the existing car park, within G23, exhibits considerable deadwood to one stem, resulting in significantly reduced foliage in the

crown and signs of branch dieback. A significant basal wound is present to the east with visible decay, as well as multiple unoccluded wounds to the stem.

- 4.4.7 Multiple groups are recommended for complete removal to facilitate the proposed pitches throughout the holiday park. All of the groups recommended for removal are Category C and generally low-quality, with the exception of Category B groups G35 and G42.
- 4.4.8 G11 and G12, two low-quality Category C groups located towards the central extent of the site, are recommended for removal to facilitate a number of proposed pitches west of the proposed welfare facilities. G11 is an unremarkable, mixed species group dominated by scrub with young silver birch towards the centre. G12 consists of young silver birch, most of which exhibit a stem diameter of below 75mm, with dense scrub growing around the basal area. Both G11 and G12 provide no significant value.
- 4.4.9 G15 – G18, G20, and G21, six Category C groups of varying quality are recommended for removal to facilitate the proposed development. G15 and G16 consist of semi-mature silver birch growing in fair condition on the sloped bank at the edge of the car park, providing minor landscape value to the site. G17 and G18 are two Category C mixed species groups growing along the edge of the access roads and car park, containing trees of varying quality (predominantly semi-mature silver birch). G20 grows within a planting bed in the car park, comprised of firethorn, cotoneaster, and young Norway maple, and offers no significant values. G21 is a low quality group growing within a planting bed at the edge of the car park, providing minor landscape value along the roadside.
- 4.4.10 G26 and G27, growing towards the northern extent of the site, are recommended for removal to facilitate the construction of proposed pitches. G26 is a Category C group consisting of blackthorn, common ash, and common hawthorn. G26 is unmanaged and low-quality, providing no significant values to the site. G27 is a Category C group of two mature and two semi-mature silver birch growing in an area of dense scrub at the roadside. G27 is in fair condition, providing no significant values.
- 4.4.11 G31, G32, G34, G35, G38, G39, G41, and G42, growing within a dense, overgrown area towards the centre of the site, are recommended for complete removal to facilitate the construction of proposed pitches and an access road. G31, G32, G34, G38, and G39, are five Category C groups generally growing in fair condition. G31 consists of two silver birch, surrounded by dense scrub, providing minor landscape value. G32

consists of three silver birch growing within a planting bed, providing minor landscape value near the roadside. G34 is a low-quality group of cotoneaster growing at the edge of hardstanding, providing no significant values to the site. G38 is a mixed-species roadside group dominated by silver birch, goat willow, and common alder. G38 provides landscape value at the roadside, and is largely inaccessible with dense scrub and vegetation throughout. G39 consists of sapling to young silver birch and *Salix* sp. surrounding a mature Corsican pine (T36), that is also highlighted for removal. G39 provides no significant values to the site. G41 is a low-quality Category C group of three silver birch growing within dense scrub, providing no significant values. G35 and G42 are two Category B groups highlighted for removal. G35 is comprised of semi-mature Corsican pine and goat willow growing behind wire fencing at the edge of existing hardstanding. G35 provides landscape value to the site. G42 is a group of one mature and one semi-mature common oak, both growing in good-to-fair physiological condition. G42 provides arboricultural value. The oak trees exhibit a small amount of deadwood in the crown, alongside crown skew due to their close proximity. Minor wounding is present to the lower limbs of the mature individual.

4.4.12 G46 and G47, two Category C groups growing west of the open space associated with the disused mine, are recommended for removal to facilitate proposed pitches. Both groups are low-quality and growing in good-to-fair condition. G46 is comprised of young common elder, goat willow, and silver birch, and provides no significant values to the site. G47 is comprised of five semi-mature silver birch and provides minor landscape value.

4.4.13 G49, a Category C group of young silver birch, goat willow, and Corsican pine, is recommended for removal to facilitate the construction of pitches north of the proposed leisure centre. G49 grows behind a derelict fence and is surrounded by hardstanding, with most values exhibiting a stem diameter of below 75mm. G49 provides no significant values.

4.4.14 G51, G53 and G54, three low-quality Category C groups, are recommended for removal to facilitate the construction of proposed plots in conflict with the groups. G51 is a mixed species group, predominantly semi-mature in age, providing landscape value. G53 is composed of sapling and young goat willow and silver birch, providing no significant values. G54 is a mixed species group growing behind the boundary fencing of the hardstanding area, providing no significant values.

4.4.15 A number of groups (G8, G10, G22, G37, G50, G52, G55) throughout the site are recommended for partial removal to facilitate proposed pitches and the proposed show centre. The majority of the groups requiring removal are Category C and generally in fair condition. G22 is a Category B treeline of seven mature Norway maple, growing in good to fair condition providing landscape value. The westernmost tree is recommended for removal to facilitate the proposed pitch in conflict with the group. The main area of G55 recommended for partial removal surrounds an existing clearing that has become overgrown due to lack of management as the site has been abandoned.

4.5 **Mitigatory Replanting/planting**

4.5.1 To increase the amenity and arboricultural value of the site, the development should incorporate new planting within the scheme to offset proposed removals. Replanting should use high quality stock of mix of native and ornamental species to provide ecological, landscape and aesthetic value to the scheme. Stock selection should be discussed with a qualified arboricultural consultant to ensure appropriate trees are selected for the space available. To ensure the site is replanted appropriately a robust landscape management plan and a hard and soft landscape plan have been produced by Brindle & Green Ltd.

4.6 **Proximity of Trees to Structures – the Default Position – Development Outside of the RPA or Technical Solutions Where There is an Overriding Justification**

4.6.1 Stout fencing and CEZs must be put in place before the commencement of works to protect retained trees. Where applicable, the ecotone/shrubbery between the tree and the proposed fencing location may need to be cut back and reduced to incorporate the fencing (Appendix 2). All fencing should be implemented before the commencement of building works and stay intact for the duration. Regular checks of the stout fencing should be carried out to ensure it remains intact. See Appendix 2 for the proposed location of exclusion fencing.

4.6.2 Overall, the processes of construction are highly unlikely to have a detrimental effect upon the health of the retained trees, assuming recommendations made in this report are always adhered to by the contractors e.g., the positioning of a stout fence between the retained trees and construction activities prior to the commencement of works.

4.7 Shading – Buildings and Open space, Privacy and Screening, Direct Damage, Future Pressure for Removal and Seasonal Nuisance

4.7.1 A number of the proposed static pitches will likely experience some shading effects due to the proximity to mature trees. A shading plan for all trees surveyed can be seen in Appendix 2.

4.7.2 The impact of trees on buildings and vice versa and allowance for future growth have all been considered in the siting of the proposed plans. Tree size, future growth and light/shading have received due attention and are not considered to be an issue.

4.8 Installation of services

4.8.1 A plan of service routes is not yet currently available, however, it is understood that the existing drainage system throughout the site is to be utilised to avoid further disturbance to the RPAs of retained trees. If new underground services are to be installed, they are to follow the existing access into the site (following the roads). If underground services are to be installed this way, then the likelihood of negatively impacting trees is kept to a minimum. Service trenches should be laid at the greatest distance from the trees as possible. Section 7.7 of BS5837:2012's guidance on services suggests re-routing into an RPA should be avoided when at all possible. If plans were to change and services were to infringe on root protection areas, effort should be taken to lay them using trenchless 'no dig' methods in order to avoid cutting major roots. Modifications to the alignment should also be made to avoid adverse effects on tree growth and soil stability. Services near existing trees and potential new planting should be ducted when possible for future maintenance. Grouping services will also minimise future disturbance where applicable.

4.9 Facilitative pruning works

4.9.1 Facilitative pruning works are likely to be required to a number of retained trees and groups growing within roadside verges due to the lapse in management whilst the site has been vacant. Crown lifting and reduction works are deemed acceptable, where appropriate, to facilitate the installation of CEZ fencing and proposed pitches and buildings, and the re-establishment of the existing access roads. Pruning works should be kept to a minimum and be carried out only where deemed necessary to facilitate development.

4.9.2 Any appointed contractor must carry out tree works according to BS 3998(2010) 'Recommendations for Tree Work'.

5 Conclusion

- 5.1 A considerable number of trees and groups are recommended for complete and partial removal to facilitate the proposed development. T13, T22, and T28 are recommended for removal irrespective of development due to their critically poor condition as Category U individuals. All other trees identified within this report should be retained and protected as outlined via CEZs.
- 5.2 Felling will take place outside of the breeding bird season (March-September) to prevent disturbance. Alternatively, this may be completed under ecological supervision/ reasonable avoidance measures.
- 5.3 Due to the nature of the development, it is unlikely there will be any major impacts on trees with higher landscape and amenity values if CEZs are established and adhered to. Fencing should be placed prior to any construction works and can be removed after the works are completed. Appendix 3 provides details of the fencing requirements for construction exclusion zones.

Appendix 1: Tree Survey Schedule

Tree ID	Common Name	Maturity	Height and direction of first significant branch (m)	Height (m)	No. of Stems	Calculated Stem Diameter (mm)	Radius of Nominal Circle (m)	RPA ^{**} (m ²)	Crown Spread (m)				Crown Height (m)				Crown	Stem	Basal Area	BS5837 Category	Subcategories	Life Expectancy	Phys Condition	Comment
									N	E	S	W	N	E	S	W								
T1	Silver Birch	Mature	W 2.5	10.5	1	360.0	4.3	58.6	5	4.5	3	3.5	2	2	2.5	2	Fair	Fair	Fair	C	2 Landscape Values	10 to 20 yrs	Fair	Generally fair condition, growing in roadside verge. Hardstanding in RPA. Minor failed limb north at 4-4.5m. Minor pruning in lower canopy.
T2	Common Oak	Semi-mature	NW 2.5	10	1	365.0	4.4	60.3	5	6	5.5	5	2	3.5	2.5	2	Fair	Good	Good	C	2 Landscape Values	20 to 40 yrs	Fair	Fair to good overall condition. Growing in roadside verge. Crown intertwines with T5. Significant epicormic growth to limbs throughout the canopy. Minor deadwood east. Minor pruning to lower canopy. Included bark at branch junctions to lower stem.
T3	Silver Birch	Semi-mature	SW 2	11.5	1	162.0	1.9	11.9	1	1.5	3	2	8	8	2	3	Poor	Fair	Fair	C	N/A	10 to 20 yrs	Fair	Canopy heavily skewed due to proximity of T2. Minor pruning to lower stem. Generally unremarkable.
T4#	Silver Birch	Semi-mature	S 2.5	8.5	1	182.0	2.2	15.0	1	2.5	2	2	3	2	2	3.5	Fair	Fair	Fair	C	N/A	10 to 20 yrs	Fair	Generally unremarkable. Young stem pruned at base. Minor pruning to lower canopy. Slight crown skew due to T5.
T5	Red Oak	Semi-mature	SE 3	10.5	1	360.0	4.3	58.6	6	5	6	5	2.5	4	2.5	3	Fair	Good	Good	C	2 Landscape Values	20 to 40 yrs	Fair	Considerable minor deadwood throughout the canopy with minor to moderate pruning of lower branches. No obvious major defects. Some epicormic growth to pruned limbs.
T6#	Corsican Pine	Mature	SE 3.5	11	1	458.0	5.5	94.9	4.5	4	4.5	4	4	5	4	4	Fair	Fair	Fair	C	2 Landscape Values	10 to 20 yrs	Fair	Basal area heavily obscured by dense scrub. Stem bifurcates at 3m, heavy pruning of lower branches towards access road resulting in considerable deadwood. Growing on raised

Tree ID	Common Name	Maturity	Height and direction of first significant branch (m)	Height (m)	No. of Stems	Calculated Stem Diameter (mm)	Radius of Nominal Circle (m)	RPA ^{**} (m ²)	Crown Spread (m)				Crown Height (m)				Crown	Stem	Basal Area	BS5837 Category	Subcategories	Life Expectancy	Phys Condition	Comment
									N	E	S	W	N	E	S	W								
																							mound on roadside verge.	
T7#	Crack Willow	Mature	NW 2.5	12	1	475.0	5.7	102.1	5	4	6	8	6	1.5	8	6	Fair	Poor	Poor	C	N/A	10 to 20 yrs	Poor	Dense scrub around basal area, heavy lean of the lower stem north corrected at 1.5m. Moderate limb failures with decay and resultant deadwood. Cladotopsis. Epicormic growth. Catastrophic wound to the main stem SE extending from approximately 0.2-2m not occluded with bark loss and decay. Considerable deadwood in the upper canopy.
T8	Norway Maple	Semi-mature	NW 2	10	1	345.0	4.1	53.8	3	5	5	4.5	3	1.5	1.5	1.5	Fair	Fair	Fair	C	2 Landscape Values	10 to 20 yrs	Fair	Growing at edge of hardstanding carpark. Stem divides into multiple limbs at 2m, significant wounding with bark loss and decay to two stems after division. Minor deadwood, past pruning of lower branches.
T9	Norway Maple	Semi-mature	S 2	8	1	330.0	4.0	49.3	4	4	4	3.5	3	1.5	2.5	3	Good	Fair	Fair	C	2 Landscape Values	10 to 20 yrs	Fair	Minor deadwood in the canopy, significant bark loss to two minor stem from approximately 3m S. Pruning of four moderate to major limbs at 2m not fully occluded with regrowth. Hardstanding in the RPA. Fully occluded wounds to stem included bark at junctions.
T10	Norway Maple	Semi-mature	S 2	8	1	347.0	4.2	54.5	3.5	4	4	3.5	2.5	1.5	1	1.5	Fair	Fair	Fair	C	2 Landscape Values	10 to 20 yrs	Fair	Minor to moderate pruning in canopy with regrowth. Included bark at branch junctions.

Tree ID	Common Name	Maturity	Height and direction of first significant branch (m)	Height (m)	No. of Stems	Calculated Stem Diameter (mm)	Radius of Nominal Circle (m)	RPA ^{**} (m ²)	Crown Spread (m)				Crown Height (m)				Crown	Stem	Basal Area	BS5837 Category	Subcategories	Life Expectancy	Phys Condition	Comment
									N	E	S	W	N	E	S	W								
																							Considerable minor deadwood in NE canopy. Signs of bark loss and wounding to lower limbs S.	
T11#	Norway Maple	Mature	SW 2.5	10	1	380.0	4.6	65.3	4.5	4.5	6	4.5	1	1	1.5	1	Good	Fair	Good	B	2 Landscape Values	20 to 40 yrs	Good	Growing on sloped bank at edge of carpark. Good even canopy, some included bark at branch junctions at approximately 2.5m. No obvious major defects, bark loss to one minor branch to W. Minor landscape value near carpark. Early mature.
T12	Norway Maple	Semi-mature	NW 2	7	1	205.0	2.5	19.0	4	3.5	3	3.5	4	2.5	3.5	3.5	Poor	Fair	Fair	C	2 Landscape Values	10 to 20 yrs	Fair	Fair to poor overall condition, bark loss to one limb at 2.5 and 3.5m E. Considerable minor deadwood in the canopy causing areas of skew. Minor pruning of lower branches with signs of decay. Epicormic growth. Growing at edge of hardstanding.
T13	Norway Maple	Semi-mature	NE 2	6	1	173.0	2.1	13.5	3	1.5	1.5	2.5	2	1	1.5	1	Poor	Poor	Fair	U	N/A	<10 yrs	Poor	Stem forks at 2.5m with significant wounding decay and deadwood. Wounding to lower branches, significant unoccluded wound to lower stem at approximately 0.5m with signs of decay. Considerable deadwood in the upper canopy.
T14#	Common Oak	Semi-mature	S 1.5	10	1	380.0	4.6	65.3	3.5	5.5	6	5.5	1	0.5	0.5	1.5	Fair	Fair	Fair	C	2 Landscape Values	10 to 20 yrs	Fair	Failed limb still attached to the first significant branch with decay at point of failure. Wounding and minor deadwood to first

Tree ID	Common Name	Maturity	Height and direction of first significant branch (m)	Height (m)	No. of Stems	Calculated Stem Diameter (mm)	Radius of Nominal Circle (m)	RPA ^{**} (m ²)	Crown Spread (m)				Crown Height (m)				Crown	Stem	Basal Area	BS5837 Category	Subcategories	Life Expectancy	Phys Condition	Comment
									N	E	S	W	N	E	S	W								
																							significant branch. Fallen limb resting against lower canopy to N. Minor deadwood throughout the canopy. Basal area obscured by scrub in roadside verge.	
T15	Norway Maple	Semi-mature	W 2.5	8.5	1	333.0	4.0	50.2	4	4.5	4	4.5	3	3.5	3.5	3.5	Good	Fair	Fair	C	2 Landscape Values	10 to 20 yrs	Fair	Growing in narrow roadside verge. Pruning of minor-moderate lower branches. Considerable unoccluded wounding to lower canopy and stem facing S. Epicormic growth, major pruned limb N at 2m unoccluded.
T16#	Common Alder	Semi-mature	SW 2	10	3	368.5	4.4	61.4	4	4	4	2	4	4.5	2	6	Fair	Fair	Fair	C	2 Landscape Values	10 to 20 yrs	Fair	Minor failed branches N over roadside and minor pruning. Three stems from approximately 0.4m with included bark. No obvious major defects.
T17	Norway Maple	Semi-mature	SW 0.5	9	1	324.0	3.9	47.5	4	3.5	5	3.5	2	2	2	1	Fair	Fair	Fair	C	2 Landscape Values	10 to 20 yrs	Fair	Minor deadwood in lower W canopy. Unoccluded wound with decay to first significant branch. Minor failed limbs in lower E canopy with regrowth.
T18	Norway Maple	Semi-mature	SW 2	8	1	231.0	2.8	24.1	4	3	4	2.5	2.5	2	2	2	Fair	Fair	Fair	C	2 Landscape Values	10 to 20 yrs	Fair	Considerable minor deadwood throughout the canopy growing in planting bed, dense scrub around base. Pruning or failed limbs to W canopy.
T19	Corsican Pine	Young	N/A	7	1	202.0	2.4	18.5	2.5	1.5	1.5	2.5	2	2	2	2	Fair	Fair	Fair	C	N/A	10 to 20 yrs	Fair	Young pine growing at edge of planting bed, dense scrub around base. Suitable for removal if required.

Tree ID	Common Name	Maturity	Height and direction of first significant branch (m)	Height (m)	No. of Stems	Calculated Stem Diameter (mm)	Radius of Nominal Circle (m)	RPA ^{*(m2)}	Crown Spread (m)				Crown Height (m)				Crown	Stem	Basal Area	BS5837 Category	Subcategories	Life Expectancy	Phys Condition	Comment
									N	E	S	W	N	E	S	W								
T20	Norway Maple	Semi-mature	W 2	8	1	201.0	2.4	18.3	3.5	2	3	2	2.5	2	2	2.5	Fair	Fair	Fair	C	2 Landscape Values	10 to 20 yrs	Fair	Minor limb failure in lower canopy E and W causing skew. Growing in planting bed, scrub around basal area. Generally unremarkable.
T21	Norway Maple	Young	N 2.5	5.5	1	170.0	2.0	13.1	2	2	2	1.5	3	2	2	2	Fair	Fair	Fair	C	N/A	10 to 20 yrs	Fair	Moderate pruning of past co-dominant stem S at 1.5m. No obvious major defects. Epicormic growth at pruning point, fully occluded wounds to lower stem. Growing in gravel planting pit.
T22	Norway Maple	Semi-mature	W 0.5	7	1	190.0	2.3	16.3	2	2	2	2	2	2	1.5	2	Poor	Poor	Fair	U	N/A	<10 yrs	Poor	Stem lean NE, minor pruning of lower branches with decay. Vertical wound to lower stem not fully occluded to NE. Considerable deadwood to SE and throughout the canopy. Signs of branch dieback. Signs of wounding and decay in lower canopy. Growing in gravel planting pit.
T23#	Norway Maple	Semi-mature	N 2	7.5	1	210.0	2.5	20.0	3.5	3.5	4	2	2.5	2.5	2.5	3.5	Fair	Fair	Fair	C	2 Landscape Values	10 to 20 yrs	Fair	Crown skewed due to failed limbs in W lower canopy. Dense scrub around basal area. Growing in planting bed. Generally unremarkable.
T24	Norway Maple	Young	NW 2	5.5	1	161.0	1.9	11.7	2	1.5	2	2	2	2	2	2	Fair	Fair	Fair	C	N/A	10 to 20 yrs	Fair	Growing in gravel planting pit. Minor pruning of lower branches not fully occluded. Crown skewed due to deadwood and minor failures to E.
T25	Norway Maple	Semi-mature	SE 2	5.5	1	202.0	2.4	18.5	2.5	2.5	2.5	2.5	2	2	2	2.5	Fair	Fair	Fair	C	2 Landscape Values	10 to 20 yrs	Fair	Minor pruning of lower branches. Minor deadwood in the upper W canopy, signs of

Tree ID	Common Name	Maturity	Height and direction of first significant branch (m)	Height (m)	No. of Stems	Calculated Stem Diameter (mm)	Radius of Nominal Circle (m)	RPA ^{**} (m ²)	Crown Spread (m)				Crown Height (m)				Crown	Stem	Basal Area	BS5837 Category	Subcategories	Life Expectancy	Phys Condition	Comment
									N	E	S	W	N	E	S	W								
																							branch dieback. Growing in gravel planting pit.	
T26	Norway Maple	Semi-mature	NE 2.5	8.5	1	234.0	2.8	24.8	2.5	2.5	2.5	2	3	3	3	3	Fair	Fair	Fair	C	2 Landscape Values	10 to 20 yrs	Fair	Pruning of four moderate lower branches not occluded. Minor deadwood throughout the canopy. Growing in planting bed. Minor failed limbs to W with regrowth.
T27#	Norway Maple	Semi-mature	N/A	7.5	8	254.6	3.1	29.3	3	3.5	2.5	2	3	3	4	2.5	Fair	Fair	Fair	C	N/A	10 to 20 yrs	Fair	Multi stemmed at base with pruning of two historic stems. Pruning wounds to lower stems and basal area. Minor failed branches throughout with regrowth. Surrounded by dense group of sapling to young hawthorn, Norway maple and cotoneaster. Growing in planting bed.
T28#	Norway Maple	Semi-mature	NW 2	8.5	2	229.6	2.8	23.9	2	2.5	3.5	2.5	2	2	3	3	Poor	Poor	Poor	U	N/A	<10 yrs	Poor	Considerable deadwood of one stem, resulting in reduced canopy foliage and signs of branch dieback. Included bark at bifurcation. Significant basal wound from 0-0.5m east not occluded with decay - high potential of future failure. Unoccluded wounds to stem. Remove.
T29#	Corsican Pine	Mature	S 2	12	1	542.0	6.5	132.9	2	4	5	5	7	0	0.5	2	Fair	Good	Fair	C	2 Landscape Values	10 to 20 yrs	Fair	Heavy crown skewed due to close proximity of Norway maple to the north. Slight stem lean to S. Lamp post approximately 1.5m from stem, some limbs resting on lights. Lower

Tree ID	Common Name	Maturity	Height and direction of first significant branch (m)	Height (m)	No. of Stems	Calculated Stem Diameter (mm)	Radius of Nominal Circle (m)	RPA ^{**} (m ²)	Crown Spread (m)				Crown Height (m)				Crown	Stem	Basal Area	BS5837 Category	Subcategories	Life Expectancy	Phys Condition	Comment
									N	E	S	W	N	E	S	W								
																							branches resting on floor to SE. Crown intertwines with nearby Norway maple. Growing at edge of carpark.	
T30	Corsican Pine	Mature	SE 2	10	1	559.0	6.7	141.4	6.5	5.5	6.5	5.5	3	3	1	2.5	Fair	Fair	Good	C	2 Landscape Values	10 to 20 yrs	Fair	Stem forks at 2m, slight crown skew due to proximity of beech to NE. Scrub around basal area, hardstanding in the RPA. Minor failed limbs in the lower canopy. No obvious major defects.
T31#	Silver Birch	Semi-mature	NW 1.5	10	1	252.0	3.0	28.7	3.5	3	3	3.5	1	2	2	2.5	Fair	Fair	Fair	C	N/A	10 to 20 yrs	Fair	Growing at edge of paved footpath. Surrounded by scrub and saplings, minor wounding to lower stem SW. No significant values, no obvious major defects.
T32	Silver Birch	Semi-mature	N/A	12	4	364.0	4.4	59.9	2	3.5	4.5	4.5	2.5	3.5	1	1.5	Fair	Fair	Fair	C	2 Landscape Values	10 to 20 yrs	Fair	Four stems at base, crown skew due to proximity of birch. Minor snapped limbs overhanging carpark to E. Base heavily obscured by scrub. Suitable for removal if required.
T33	Silver Birch	Semi-mature	NW 3	12	2	301.5	3.6	41.1	3.5	3	2	2	0.5	3	2	2.5	Fair	Fair	Fair	C	2 Landscape Values	10 to 20 yrs	Fair	Two stemmed at base. Minor to moderate failed limbs toward access road W. Crown skewed due to proximity of birch. Suitable for removal if required.
T34	Silver Birch	Young	S 2.5	5.5	3	226.6	2.7	23.2	2	3.5	2.5	1.5	3	2	3	3	Poor	Fair	Fair	C	N/A	10 to 20 yrs	Fair	Moderate pruning and failed limbs in the lower canopy. Considerable dieback and deadwood to NW. Heavy lean of one stem to NE. Suitable for removal if required.

Tree ID	Common Name	Maturity	Height and direction of first significant branch (m)	Height (m)	No. of Stems	Calculated Stem Diameter (mm)	Radius of Nominal Circle (m)	RPA ^{**} (m ²)	Crown Spread (m)				Crown Height (m)				Crown	Stem	Basal Area	BS5837 Category	Subcategories	Life Expectancy	Phys Condition	Comment
									N	E	S	W	N	E	S	W								
T35	Silver Birch	Young	N/A	5	1	77.0	0.9	2.7	1.5	1.5	1.5	1.5	1	1	1	1	Good	Fair	Poor	C	N/A	10 to 20 yrs	Fair	Good even canopy, growing through hardstanding carpark. Metal pole immediately adjacent to stem. Limited future potential.
T36#	Corsican Pine	Mature	N/A	12	1	400.0	4.8	72.4	4.5	5	4.5	4	3	2.5	2.5	3	Good	Good	Fair	B	2 Landscape Values	20 to 40 yrs	Good	Stem estimated and largely obscured due to surrounding saplings. Good even crown, no obvious major defects. Hardstanding in RPA.
T37#	Common Beech	Semi-mature	N/A	9.5	1	350.0	4.2	55.4	4.5	4.5	4.5	4.5	1	1	1	1	Fair	Fair	Fair	C	N/A	10 to 20 yrs	Fair	Stem forks at approximately 1m, estimated as one dominant stem below fork. Even canopy spread. Location estimated. Surrounded by dense bramble. Should pose no constraints due to location. No obvious major defects but considerably obscured.
T38#	Goat Willow	Mature	N/A	11	6	685.9	8.2	212.8	6	6	6	6	1	1	1	1	Good	Fair	Fair	B	2 Landscape Values	20 to 40 yrs	Fair	Estimated due to dense surrounding bramble. Good even canopy spread. Appears to have six dominant stems at base. Base obscured. No obvious major defects.
T39#	Common Alder	Young	N/A	6	2	169.7	2.0	13.0	2	2	2	2	2.5	2.5	2.5	2.5	Fair	Fair	Fair	C	N/A	10 to 20 yrs	Fair	Unremarkable growing against fence, young willow at base. Limited future potential. Suitable for removal if required.

*RPA = The minimum distance, measured from the tree's trunk, at which tree protective barriers should be erected.

**RPA = The minimum area in M² around which tree protective barriers should be erected.

#Access restricted, inspection limited, dimensions limited.

Key: Life Stage – recorded as follows:

- NP:** Newly planted – a tree within 3 years after planting
Y: Young – a tree within its first one third of life expectancy
SM: Semi-mature – a tree within its second third of life expectancy
M: Mature – a tree in its final one third of life expectancy
V: Veteran - a tree with habitat features such as wounds or decay. A veteran may be a young tree with a relatively small girth in contrast to an ancient tree but bearing the 'scars' of age such as decay in the trunk, branches or roots, fungal fruiting bodies, or dead wood.
A: Ancient – a tree that has passed beyond maturity and is old, or aged, in comparison with other trees of the same species and is of interest biologically, aesthetically or culturally because of its age, size and condition

Group ID	Species	BS5837 Category	Description/Comments
G1	Common Oak	C	Three semi-mature common oak growing in the roadside verge. Each in fair condition with moderate pruning to the lower canopy. Stem measurements taken. Slight curvature to the lower stem of the central tree. No obvious major defects. Minor deadwood in the canopies. Category C with landscape value at roadside. Slight crown interference with G2. Minor epicormic growth. Average height 7m.
G2	Silver Birch	C	Four young to semi-mature silver birch growing in the roadside verge. Pruning evident to the lower canopy of each tree. Stem measurements taken. Unoccluded pruning wounds to stem of young tree. Some skew caused by close proximity to G1. Fair condition with minor landscape value along the roadside. Average height 9-10m.
G3	Silver Birch	C	Four young to semi-mature silver birch growing in the roadside verge. Each in fair condition with minor landscape value along the roadside. Slight curvature of the stem of the young tree. Minor pruning of limbs in the lower canopies. Stem measurements taken. Average height 8m. Minor deadwood, insignificant.
G4	Common Oak, Silver Birch	C	Clustered group of 4 silver birch (3 semi-mature, 1 mature) and two early semi-mature common oak. Considerable moderate pruning to the lower stems of each individual. Canopy skew to multiple individuals due to competition. Significant canopy skew to southernmost oak. Considerable minor deadwood to both oak trees. Group in generally fair to poor condition. Category C with landscape value at site entrance. Average height approximately 8m. Northernmost tree is mature, showing curvature to the lower stem and significant damage to the main stem at 3.5m. Large unoccluded wound and approximately three limb failures, possible tear out wound. Canopy remains in good vigour. Stem measurements taken.
G5	Corsican Pine, Silver Birch	C	Roadside cluster of two pine (1 young and 1 early mature) and three silver birch (1 semi-mature and two mature). Moderate pruning of lower branches. Landscape value at roadside entrance. Some stem leaning, curvature of lower stem to young pine. Unoccluded wound to lower stem of young pine. Fair overall condition, Category C with landscape. Mature pine has significant canopy skew away from group due to competition. Included bark at junction of two-stemmed mature birch. Average height approximately 11-12m.
G6	Corsican Pine, Silver Birch, European Larch	C	Roadside cluster of 3 mature pine, 2 mature silver birch, and 1 young larch. Stem measurements taken. Average height approximately 11m. Stem leaning throughout the group. Minor pruning of lower branches. Crowns skewed away from centre. Generally fair condition. Category C with landscape value. Minor deadwood. Stem curvature to smaller silver birch.
G7	Common Hawthorn, Common Hazel, Buddleia, Blackthorn, Corsican Pine, Prunus sp., Common Oak, Silver Birch, Dog Rose, Serviceberry, European Larch, Common Alder, Common Whitebeam	C	Mixed species group along the edge of the access road. Understory of scrubby individuals including hawthorn, hazel, buddleia, blackthorn. More established semi-mature individuals are interspersed along the group including pine, cherry, oak and silver birch. Existing access road in RPA, group is on raised kerbside. Landscape value. Average height of established individuals approximately 9-10m. Average stem of established individuals approximately 250mm. Canopies overhang access road due to being unmanaged.
G8	Cotoneaster, Common Oak, Corsican Pine, Serviceberry, Field Maple, Common Whitebeam, Rowan, Norway Maple, Red Oak, Silver Birch, European Larch, Common Hawthorn, Dogwood, Dog Rose	C	Dense roadside group largely comprised of cotoneaster. Most stems are under 75mm near the western extent. Growing along roadside verge with raised kerb behind wire fence. Moderate pruning over the roadside to the west. Average height 6-7m. Category C with landscape value along road. As the group extends east, the species composition changes to more young and semi mature individuals. Predominantly multi-stemmed, younger, lower quality at the immediate roadside. More established semi-mature individuals set back within the group. To the eastern extent, more low-quality cotoneaster lines the edge of the access road leading north into the site.
G9	Silver Birch	C	Four semi-mature silver birch growing between G8 and roadside scrub. Generally in fair condition. Height approximately 10-11m. Single stemmed, approximately 200-250mm. Category C with landscape value. Basal areas obscured by dense scrub. Stems approx. 2m apart between each.

Group ID	Species	BS5837 Category	Description/Comments
G10	Corsican Pine	C	Roadside group of approximately 11 young to semi-mature pine. Average height approximately 11m. Average stem diameter 250mm. Growing in raised kerbside verge, slight overlap with G8. Considerable pruning and failure of minor lower branches. Dense scrub around basal area and canopy overhangs access road.
G11	Silver Birch, Cotoneaster, Dogwood, Dog Rose, Common Hawthorn	C	Low quality mixed species roadside group dominated by scrub. Average height 5m. No significant values. Contains young silver birch in the more central areas. Generally unremarkable. Average stem max 130mm.
G12	Silver Birch	C	Low quality group of young silver birch at the corner. Mostly under 75mm. Height 5-6m. Basal area dominated by scrub. Category C. No values. Suitable for removal if required.
G13	Corsican Pine, Crack Willow, Sycamore	B	Mixed species group growing between areas of hardstanding contains established semi-mature to mature individuals. Stem measurements taken for RPA data. Hardstanding likely encroaches RPAs. Some canopy overhang over hardstanding. Appears to be dominated by pine, crack willow individually surveyed due to potential for limb failures. Category B with landscape value. Average height approximately 12m, also contains smaller sycamore.
G14	Norway Maple, Cotoneaster, Silver Birch	C	Small cluster of young to semi mature trees. 2 semi-mature Norway maple, 5 young multi-stem cotoneaster, 2 two-stem silver birch (1 young and 1 semi-mature). Stems measured. Height max 11m. Growing in small verge, hardstanding footpath separates groups. Low quality.
G15	Silver Birch	C	Crescent shaped group of semi-mature silver birch, all appear to be in fair condition with no obvious major defects. Growing along sloped mound at edge of car park. Stem lean to some individuals. Average stem 250-300mm. Average height 11m. Dense scrub around base. Category C with landscape value. Dense scrub around basal area. Stems largely inaccessible.
G16	Silver Birch	C	Five semi-mature silver birch growing on sloped bank at edge of car park. Average stem diameter 200-250mm. Average height 10-11m. Heavy lean to two individuals. Fair condition. Category C with landscape value.
G17	Silver Birch, European Larch, Red Oak, Goat Willow, Cotoneaster, Common Oak, Dogwood, Dog Rose	C	Mixed species group of varying quality growing along edge of access road and car park. Centre of the group dominated by a cluster of semi-mature silver birch. Average stem approximately 200mm. Average height 11-12m. Younger birch grows at edge of hardstanding along with dense shrub species. Landscape value. Roadside dominated by cotoneaster.
G18	Silver Birch, Common Oak, Corsican Pine, Norway Maple, Common Ash, Common Holly	C	Mixed species group along roadside verge between road and car park. Average height 11-12m. Mostly semi-mature. Landscape value along roadside. Two silver birch and one common oak at southern extent show significant occlusion of rubbing branch wounds. Average stem diameter 250-300mm. Common ash are in significant decline; suitable for removal.
G19	Norway Maple, Common Alder, Dog Rose, Common Hawthorn, Common Holly, Cotoneaster, Common Hazel	C	Mixed species group in narrow verge between road and car park. Two prominent Norway maple surveyed individually, one alder individually surveyed. Dense shrub understory. Average height 8-9m. Minor landscape value.
G20	Firethorn, Cotoneaster, Norway Maple	C	Low quality group growing in planting bed. Dense understory of firethorn and cotoneaster. Young Norway maple scattered across planting bed. Lamppost within group. Average height 5.5m. Average stem diameter <75mm. Suitable for removal if required.
G21	Silver Birch, Crack Willow, Common Hawthorn, Cotoneaster	C	Mixed species group growing within planting bed surrounded by hardstanding. Landscape value along roadside. Average height 10m. Dense scrub around basal area. Unable to retrieve stem measurements. Likely average under 250mm.
G22	Norway Maple, Silver Birch, Common Alder, Firethorn	B	Treeline of seven mature Norway maple. Average height 9m, trees are sufficiently spaced apart to allow future growth. Hardstanding and brick structure within the RPAs of some trees. Appear to be in good to fair condition with signs of minor deadwood to some individuals. Overall Category B with some of lower quality. Average stem diameter approximately 300mm. Canopies don't overhang car park. Landscape value. Young birch, alder, and firethorn line the car park edge.
G23	Common Oak, Corsican Pine, Norway Maple	B	Roadside group dominated by semi-mature to mature common oak and pine. Canopies overhang access road to the north-west. Hardstanding within multiple RPAs. Some stems in close proximity to road, measurements taken where possible. Scrubby understory throughout the verge. Average height 12m, overall fair condition. Average stem diameter approximately 300-350mm. Pruning of lower branches close to roadside. Category B with landscape value. Semi-mature Norway maple present within the group.


Group ID	Species	BS5837 Category	Description/Comments
G24	Norway Maple, Corsican Pine, Common Ash, Silver Birch	C	L-shaped group with the foot of the group bending towards G22. Contains semi-mature to mature Norway maple, pine, common ash, and silver birch. The common ash appear to be in significantly declining condition with considerably reduced foliage and deadwood in the crown. Stem measurements taken where possible, others estimated. Considerable landscape value due to group height and maturity but remains Category C due to limited quality and condition of some individuals. Both Norway maple within the group show significant wounding to the stem, not occluded with signs of decay - one of which extends to the base of the tree. Average height 12-13m.
G25	Common Beech, Goat Willow, Common Ash, Corsican Pine, European Larch, Norway Maple, Common Hawthorn, Silver Birch	C	Mixed species group growing within raised kerb roundabout. Contains semi-mature to mature individuals as well as dense scrub and sapling understory. Basal area obscured and inaccessible. Mostly in fair condition with some signs of branch failure throughout the group. Stem lean to multiple individuals. Average height 12m. Average stem diameter 350mm with common ash considerably smaller. Landscape value.
G26	Blackthorn, Common Ash, Common Hawthorn	C	Low quality unmanaged group. Height 3.5m. No significant values. Located along kerb/boundary margin.
G27	Silver Birch	C	Two mature and two semi-mature silver birch growing in dense scrub on sloped mound at roadside. Average stem diameter 250mm. No significant values. Fair condition with no obvious major defects. Not shown on topographical map, so group extent estimated. Average height 11m approximately. Suitable for removal if required.
G28	Common Beech	C	Small group of six semi-mature common beech. Lamppost approximately 1m from the stem of the northernmost tree. Average stem diameter approximately 270mm, average height approximately 9-10m. Overall good to fair condition, no obvious major defects. Stump of felled tree in close proximity west of the group. Canopy of southernmost tree intertwines with nearby pine. Landscape value. Younger individuals within centre of group show signs of being outcompeted by those at edge, including reduced foliage and minor deadwood.
G29	Cotoneaster, Silver Birch, Norway Maple, Goat Willow, Common Hawthorn, Common Ash, Dog Rose	C	Low quality group dominated by saplings, one prominent tree within. Growing between two areas of hardstanding. Average height approximately 3.5-4m with prominent birch significantly taller. Average stem <50mm. No significant values. Suitable for removal if required.
G30	Aspen, Silver Birch	C	Dense group dominated by sapling and young aspen surrounded by hardstanding. Scrub through basal area of group. One mature individual in centre of group, inaccessible. Dominant individual has a height of approximately 14m surrounded by smaller individuals. Stem diameter of dominant individual approximately 400mm with others considerably smaller. Category C overall with Category B dominant individual. Two semi-mature silver birch in group. Most of the group considered suitable for removal but dominant individual should be retained.
G31	Silver Birch	C	Two silver birch, one semi-mature and one early mature. Dense scrub around base and lower stem largely inaccessible. Appear to both be two-stemmed. Northern tree approximately 220mm and 240mm, southern tree approximately 230mm and 285mm. Height approximately 10m and 12m. Good to fair condition with minor landscape value. Nearby alder to the north not surveyed, stem diameter <75mm. Southern tree is dominant over the northern tree.
G32	Silver Birch	C	Low quality group growing in planting bed near hardstanding. Category C with landscape value near roadside. Average height 9m. Three silver birch; one semi-mature and two young. Semi-mature individual is two-stemmed: 227mm and 205mm. Suitable for removal if required. Young individuals overhang road.
G33	Corsican Pine	C	Two pine growing in scrub verge between hardstanding. One young and one mature. Stem diameters approximately 200mm and 380mm. Mature individual appears to be in good to fair condition with slight crown skew due to young individual. Moderate snapped branch south-east at 2m still attached. Category C with landscape value. Average height approximately 10m.
G34	Cotoneaster	C	Low quality L shaped group of cotoneaster at edge of hardstanding. Average stem diameter <75mm. Height approximately 5m. Located on verge behind wire fencing. Category C with no significant values. Continues along boundary as understory of G35. Taller at south-west extent.
G35	Corsican Pine, Goat Willow	B	Group of interspersed semi-mature pine and goat willow. G34 provides understory of the group. Average height 10m, average stem varies from 250-300mm. Growing behind wire fencing at edge of hardstanding. Category B with landscape value. Dominated by pine. Slight overhang, mainly G34.

Group ID	Species	BS5837 Category	Description/Comments
G36	European Larch	C	Low quality group of young to early semi-mature larch. Five individuals, one standing dead in the group. Average stem diameter 150-175mm. Average height 8-9m. Category C with no significant values. Basal area and lower stem surrounded by dense scrub. Generally fair condition. Suitable for removal if required. Minor failed limbs overhanging road. Planting bed around hardstanding.
G37	Field Maple, Silver Birch, Laurel, Dog Rose, Prunus sp., Rowan, Goat Willow, Common Beech, Corsican Pine, European Larch	C	Dense boundary group separate from G34 and G35. Growing in roadside verge on raised kerbside behind wire fence. Dense scrub at roadside basal area. Semi-mature. Category C with landscape value. Appears to be predominantly semi-mature field maple and silver birch. Laurel lines front of group behind wire. Average stem approximately 150-200mm. Average height of dominant individuals 10m approximately. Some canopy overhang of access road. Areas of natural clearing within the group central area.
G38	Silver Birch, Goat Willow, Common Alder, Dog Rose, Field Maple, Red Oak, Serviceberry	C	Dense group dominated by silver birch, goat willow, and alder. Appears to be young to semi-mature. Grows along roadside with dog rose lining the edge. Difficult to determine depth of group but appears to extend through central area close to G35. Appears to have natural clearings within the centre of the group. Category C with landscape value. Average height approximately 9m with some taller individuals. Dense scrub and vegetation around basal area. Overhangs access road. Inaccessible. Disused services pole within group.
G39	Corsican Pine, Silver Birch, Salix sp.	C	Low quality group of sapling to young silver birch and willow surrounding mature pine. Young willow with moderate failed limb appears to be dead. Group is suitable for removal around the mature pine. Average height 4m. Stems under 50mm average (of sapling/young). Young willow slightly larger. No significant values.
G40	Silver Birch, Cotoneaster, Dog Rose	C	Group along edge of hardstanding. Extends south. Dense scrub around base, largely inaccessible, similar to others. Mixture of young and semi-mature individuals interspersed throughout group. Average stem of more prominent individuals approximately 250mm. Average height 9-10m. Younger areas are smaller and more dense. Appears to have natural clearings within the group but unable to access. Grows to edge of hardstanding.
G41	Silver Birch	C	Three silver birch; two semi-mature and one mature. Estimated. Dense scrub around base. Stems approximately 230, 200, and 300mm. Average height 10m. Significant wound to one stem, not occluded. Fair condition. No significant values. Should be retained if adhering to existing hardstanding.
G42	Common Oak	B	Two common oak; one semi-mature and one mature. Both in good to fair overall condition with some insignificant deadwood and crown skew due to proximity. Lower canopies mostly touching the floor. Dense scrub around basal area limits access. Semi-mature individual has two stems - 300mm each. Mature individual has one stem - approximately 475mm. Category B with arboricultural value. Some minor wounding to lower limbs. Crown approximately 5-6m evenly spread (away from each other). Retain and protect. No obvious major defects.
G43	Common Hawthorn, Silver Birch, Rowan, Oak, Cotoneaster, Common Whitebeam, Salix spp.	C	Low quality group of mixed species, young and dense. Inaccessible. Category C with no significant values. Height 6-7m average. Use Google earth. Suitable for removal if required. Location estimated. Wraps around individual goat willow. Behind wire fence around hardstanding. Sloped verge.
G44	Silver Birch	C	Low quality group of approximately 9+ silver birch. Semi-mature, Category C with minor landscape value. All appear to be in fair condition with no obvious major defects. Sloped verge at edge of hardstanding. Average stem diameter 250mm, average height 12m. Dense scrub around base, minimal hardstanding overhang. Location estimated.
G45	Corsican Pine	C	Four semi-mature pine. Category C with minor landscape value. Growing on verge at edge of hardstanding surrounded by scrub. Minor pruning and failure to lower crowns. Overhangs access road south and east. Average height 10-11m with one individual considerably smaller. Stems range from 220-380mm. Estimated.
G46	Common Elder, Goat Willow, Silver Birch	C	Low quality young group between hardstanding. Dense scrub and disjunct. No significant values. All multi stemmed, most under 75mm. Height 5m.
G47	Silver Birch	C	Small group of approximately 5 semi-mature silver birch. Average stem diameter 280mm. Category C with minor landscape value. All appear to be in good condition. Some debris within the group. Wooden stakes still at base of some trees. Large unoccluded wound to stem of south-west individual. Signs of branch dieback. Hardstanding in RPA with overhang of canopy. Stump of previously felled birch in group. Average height 9m.








Group ID	Species	BS5837 Category	Description/Comments
G48	Corsican Pine, Rowan, Silver Birch, Common Hawthorn, Dog Rose, Abies sp., Common Oak	B	Boundary group dominated by semi-mature pine. Younger mixed species around group periphery. Located behind chain link barbed wire fencing. Fence in poor condition leaning into group. Pine appears to be in good overall condition. Average stem approximately 250mm, average height approximately 13m. Overhangs hardstanding area to north. Category B with landscape value.
G49	Silver Birch, Goat Willow, Corsican Pine	C	Low quality group of young silver birch and goat willow. Growing behind derelict fence. Average stem <75mm with some greater. Category C with no significant values. Average height 6m. Some trees along the group edge leaning against broken fence. Young pine. Surrounded by hardstanding.
G50	Corsican Pine, European Larch, Silver Birch	C	Boundary group dominated by semi-mature pine. Located behind derelict wire fencing. Disjunct area of poor condition, Category U larch and birch with minimal foliage between groups of pine. Category C with landscape value. Average height 10m, average stem 250mm. Fair condition overall.
G51	Common Oak, Common Hawthorn, Corsican Pine, Common Ash, Field Maple, Rowan, European Larch, Blackthorn	C	Mixed species boundary group at top of sloped mound. Behind derelict wire fencing with minor encroachment into site. Mostly semi-mature Category C with landscape value. Average stem 200-250mm, average height 10m. Overall fair condition. Rowan appears to be in poor condition.
G52	Common Oak, Common Ash, Malus sp., Rowan, Silver Birch, Common Hawthorn, Salix sp., Common Alder, Dog Rose	C	Low quality group of scattered individuals growing along sloped mound. Group is largely disjunct but inaccessible behind dense scrub at hardstanding edge and vegetation on mound. Most individuals appear to be under 75mm with others approximately 75-125mm. All appear to be young in age, maximum height 6m. All considered suitable for removal where required but should be free from constraints away from hardstanding. Saplings encroaching onto site growing in hardstanding. Most dense along hardstanding edge. All appears to be too small after group end - none over 75mm, just shrub bushes.
G53	Goat Willow, Silver Birch	C	Low quality group of sapling and young goat willow and silver birch surrounded by hardstanding. Average stem under 100mm. Height 5m max. No significant values.
G54	Common Ash, Silver Birch, Field Maple, Dog Rose, Goat Willow, Common Hawthorn, Norway Maple, Common Alder	C	Low quality group behind boundary fence. Minor encroachment into site. Average height 6m, average stem diameter <150mm. Fair to poor condition. Category C with no significant values. Disjunct in areas.
G55	European Larch, Silver Birch, Corsican Pine, Common Hawthorn, Dog Rose, Abies sp., Common Elder, Goat Willow, Blackthorn, Field Maple, Red Oak, Cotoneaster, Common Alder	B	Mixed species group surrounded by hardstanding. Disjunct in areas, filled with dense scrub. Largely semi-mature with some mature individuals. Average stem diameter of prominent individuals approximately 250mm, average height 12m. Category B with landscape value. Largely inaccessible. Grows along main access road. Wire fence. Dense along roadside. Minor overhang due to lack of management. Shrubby species at roadside.
W1	Common Alder, Common Oak, Rowan, Salix sp., Common Hawthorn, Silver Birch, Dogwood, Aspen, Red Oak, European Larch, Corsican Pine, Common Elder, Wild Cherry, Field Maple	A	Mixed species woodland growing along access road curving down side road to drainage pond. Maturity ranges from young to mature. Fair to good quality throughout. Mostly behind chain link fence with encroachment and shrub beyond. Area around drainage reservoir is much lower quality with young self-set individuals with dense shrub. Main woodland should pose no constraints to development beyond existing hardstanding and fence line. Woodland provides significant landscape and arboricultural value to site. Broken willow limbs overhanging part of side road to reservoir. Individuals between fence line and main access road appear to be more mature than dense woodland area. Average stem approximately 300mm. Significant pruning of lower limbs over access road. Mostly fair condition and still areas of overhang over road. Average height 12m. Some individuals (appear to be only field maple) in poorer condition near roadside with signs of deadwood or dieback.
H1	Dog Rose, Common Hawthorn, Blackthorn	C	Unmanaged hedgerow dominated by hawthorn on raised kerbside. Growing along site boundary at edge of access road. Average height 3.5m. Category C with landscape value.
H2	Common Hawthorn	C	Low quality Category C hedgerow of common hawthorn. Height 2.5-3m, fair condition with landscape value on boundary. Growing along top of sloped mound.

Appendix 2: Tree Plans & Tree Protection Plan

PROJECT TITLE:
BG22.148 YORK HOLIDAY PARK

SCALE: 1:2500 @ A4	DATE: 07/10/2022	DRAWN BY: HR	N 
PLAN TYPE: LOCATION & QUALITY			

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Crown Spread	Root Protection Area	Shading Arc	
			
Category 'A'	Category 'B'	Category 'C'	Category 'U'



PROJECT TITLE:
BG22.148 YORK HOLIDAY PARK

SCALE: 1:2500 @ A4	DATE: 24/02/2023	DRAWN BY: HR
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PLAN TYPE:
LOCATION & QUALITY (PLANS OVERLAID)

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0 150m



PROJECT TITLE:
BG22.148 YORK HOLIDAY PARK

SCALE: 1:2500 @ A4	DATE: 07/10/2022	DRAWN BY: HR	N 
PLAN TYPE: SHADING			

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PROJECT TITLE:
BG22.148 YORK HOLIDAY PARK

SCALE: 1:2500 @ A4 DATE: 24/02/2023 DRAWN BY: HR




PLAN TYPE:
SHADING (PLANS OVERLAID)

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PROJECT TITLE:
BG22.148 YORK HOLIDAY PARK

SCALE: 1:2500 @ A4	DATE: 07/10/2022	DRAWN BY: HR	N 
PLAN TYPE: ROOT PROTECTION AREAS			

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PROJECT TITLE:
BG22.148 YORK HOLIDAY PARK

SCALE: 1:2500 @ A4 DATE: 24/02/2023 DRAWN BY: HR



PLAN TYPE:
ROOT PROTECTION AREAS (PLANS OVERLAID)

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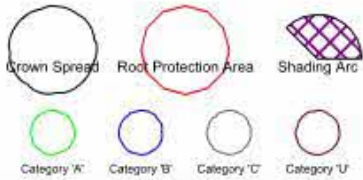
PROJECT TITLE:
BG22.148 YORK HOLIDAY PARK

SCALE: 1:2500 @ A4
DATE: 24/02/2023
DRAWN BY: HR





PLAN TYPE:
TREE PROTECTION PLAN (PLANS OVERLAID)

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Tree Protection Plan

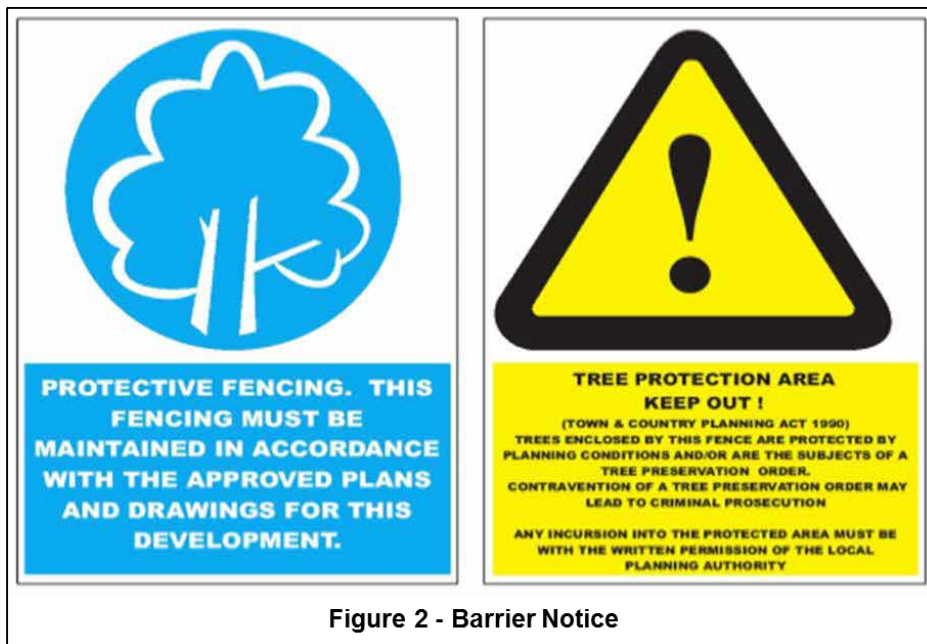
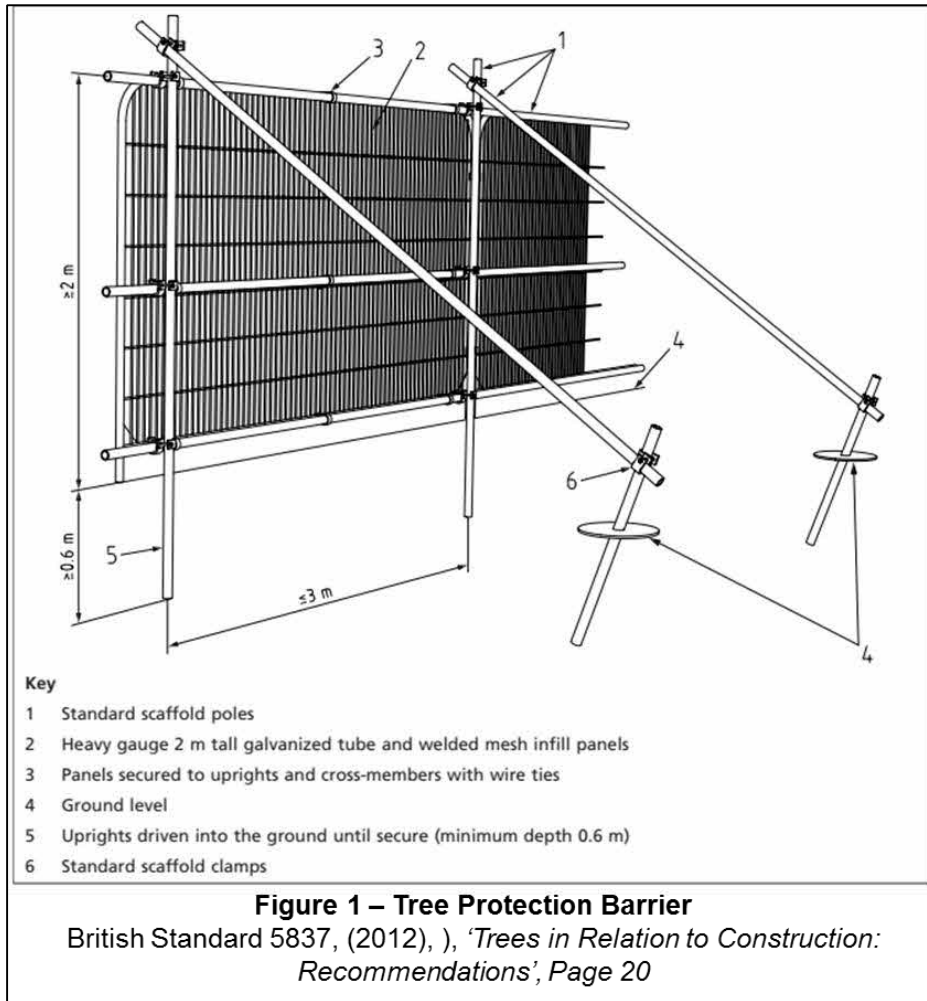
-  Construction Exclusion Zone Fencing
-  Tree Proposed for Removal



Appendix 3: Tree Retention General Guidance

This appendix provides general guidance in regards to protective and mitigation measures for above- and below-ground tree constraints, including: tree protection barriers, temporary ground protection, no-dig cellular confinement systems and specialist foundations. Appendix 3 does not provide site specific information; for this please see the Arboricultural Impact Assessment section of this report.

1. **Below Ground Constraints** to achieve any development, various construction activities are required and great care and consideration needs to be given as to how such activity can proceed whilst avoiding damage to retained trees.
 - 1.1. In order to avoid damage to their roots, retained trees should be protected using protective barriers as detailed in British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations' and as illustrated in Figures 1 and 3. Such barriers will be erected around the RPA or as shown in the Tree Protection Plan prior to the commencement of the demolition/construction activity; it must remain in situ and intact until completion. The area within these barriers will be considered sacrosanct throughout the works, with no work permitted within them; any exceptions to this will be detailed in the site specific Arboricultural Impact Assessment. All-weather notices should be attached to the tree protection barriers with words such as 'Construction Exclusion Zone – No Access' or 'Tree Protection Area – Keep Out'.
 - 1.2. Tree Protective Barriers should also be erected, prior to the commencement of construction, around those areas identified for soft landscaping/tree planting so as to protect the soil from compaction and denaturing. Correct setting out of the barriers and ground protection should be confirmed on site by the project arboriculturist prior to the commencement of any other operations on site.
 - 1.3. Where space is required within the RPA to facilitate the erection of scaffold this may be satisfactorily achieved incorporating ground protection within the scaffold structure as illustrated in Figure 3 below.



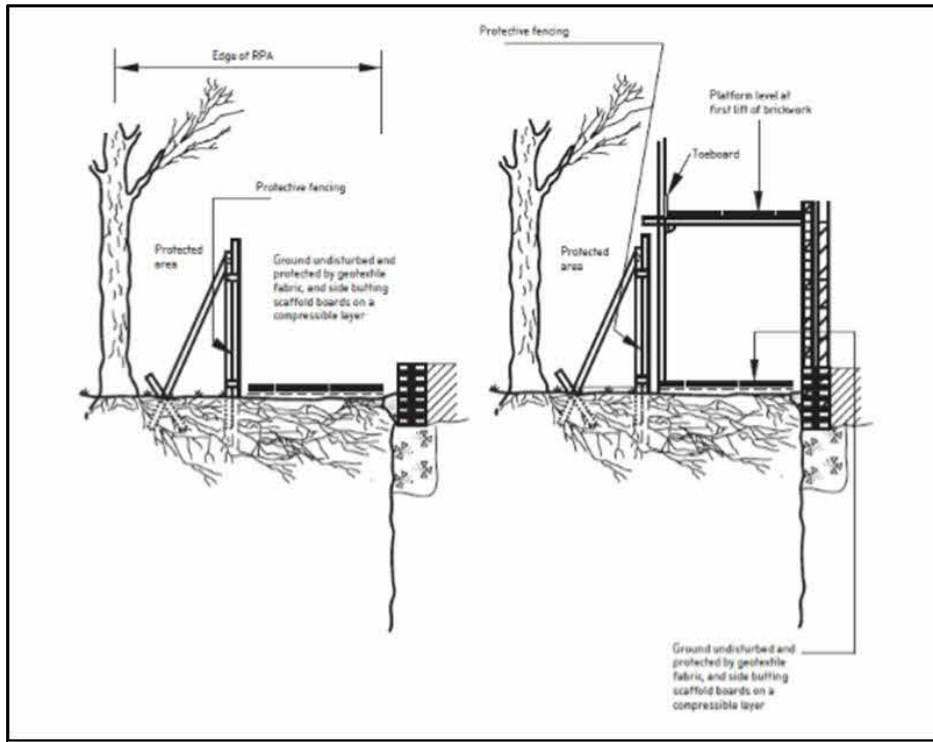
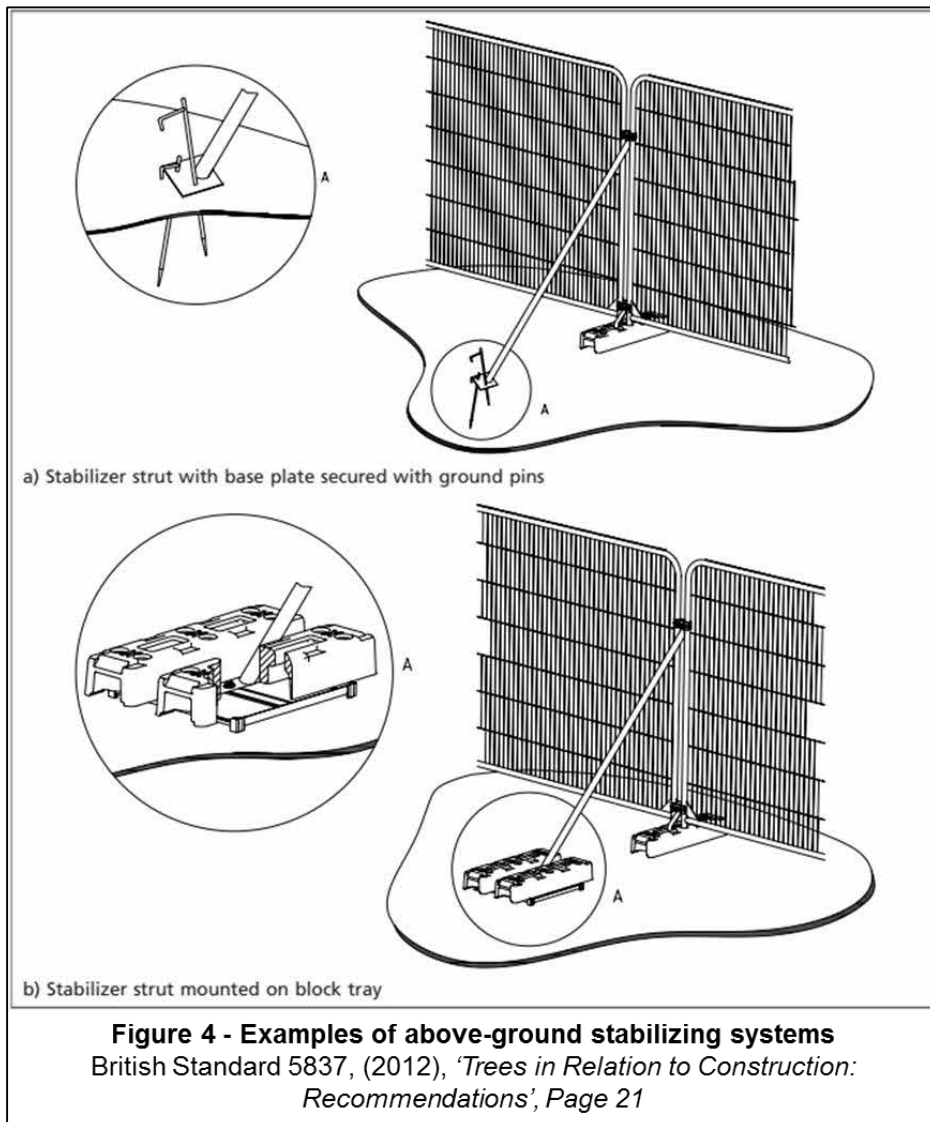


Figure 3 – Adapted Barrier Incorporating Temporary Ground Protection



2. **Above Ground Constraints:** Consideration must also be given to the aerial parts of the tree in relation to any construction; particularly residential buildings. Conflict frequently arises where dwellings are placed close to trees giving rise to concerns relating to shade, falling debris such as leaves and twigs and from apprehension arising from a perceived threat of tree failure. These concerns can often be overcome, at least in part, by carefully ensuring adequate useable garden space is provided and is not dominated by trees and that principal windows face away from trees; in some instances it may be appropriate to locate glazed panels into the roof structure. The LPA are likely to resist any proposal that results in built structures close to trees or that makes inadequate provision for their future growth. Usually, and particularly in the case of immature trees, the distances required to avoid conflict will be greater than

those expressed as the RPA. It is however, equally important to note that issues arising from shade are often overstated and that some shade is not only tolerable but may be beneficial. It is also important to bear in mind that different tree species cast different shade patterns depending upon juxtaposition, size, habit, canopy density, evergreen/deciduous. The following guidance is given by the Building Research Establishment (BRE): "Tree locations are ... important; deciduous species are best because they are leafless when solar gains are most valuable, while providing some shade in summer." (BR380 Page 69) Deciduous trees give shade in summer but allow access to sunlight in winter." (BR 209 page 22). "The question of whether trees aforementioned should be included in the (solar gain*) calculation depends upon the type of shade they produce. Normally, trees and shrubs need not be included, partly because their shapes are impossible to predict, and partly because the dappled shade of a tree is more pleasant than the deep shadow of a building. This applies especially to deciduous trees." (BR209 page 13).

3. **SPECIALIST CONSTRUCTION METHODS FOR WORKS WITHIN THE RPA**

3.1. **Specialist Foundations:** The use of specially engineered foundations, such as micro pile and suspended beam, within the RPAs of retained trees may be justifiable. These designs enable construction within the RPA as they limit excavation to a minimum. The location of any mini piles would need to be flexible so as to avoid damage to major roots and the necessary excavation for the piles may need to be carried out by hand; the piles should be sleeved so as to contain concrete which contains 'tree-toxic' chemicals. In these circumstances, a suspended floor slab will need to be incorporated and the void beneath should be externally vented so as not to inhibit gaseous exchange, in some instances i.e. where more than 20% of the RPA is to be covered, there will need to be provision for the redistribution of rainwater beneath the slab. Where pile foundations are to be employed, consideration needs to be given to the selection of the type of piling rig so as to avoid conflict with low, overhanging tree branches.

3.2. **Hard Surfacing - New:** It is permissible to construct hard surfacing for drives and paths within the RPA; however, it can have implications for tree roots. These implications can often be overcome and/or minimised by employing 'no-dig' construction methods, typically three-dimension cellular confinement systems. These techniques result in structures which are load bearing and

negate the need for deep excavation. Any final surface must be porous so as to permit gaseous exchange and moisture percolation. Further advice of a structural engineer must be sought to design the final specification in accordance with these parameters, with the final design being agreed with an arboricultural consultant.

3.3. **Hard Surfacing - Existing:** Where hard surfacing exists within the area defined as the RPA, it is acceptable to erect protective barriers at the extent of that hard surface since the surface itself will afford protection to any tree roots beneath. However, where it is proposed to remove/regrade existing hard surfacing, care must be taken to avoid collision between overhanging tree branches and passing construction traffic. It is advised that, to minimise root disturbance, the existing surface is broken and gathered for disposal using hand operated tools; any backfilling must utilise top quality top soil laid at approximately 50mm deep with a composted bark mulch laid over that to a maximum depth of 75mm. In the long term this approach brings a positive arboricultural impact.

3.4. **Temporary Site Accommodation** – Page 20 of BS5837 (2012) advises that in some circumstances it is appropriate to use site cabins as components of the tree protective barriers where they can serve as an effective means of protecting the soil from many of the construction related activities. Further advice of an arboricultural consultant should be sought should this matter be of relevance or advantageous.

3.5. **Temporary Ground Protection** - In some instances it may be advantageous to work within the RPA, e.g. to access a site, either for pedestrians or machinery. Temporary ground protection would be necessary in to dissipate the load applied, thus avoiding soil compaction and denaturing. As per BS5837 (2012), the ground protection might comprise one of the following:

A) For pedestrian movements only, a single thickness of scaffold boards should be placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile.

B) For pedestrian operated plant up to a gross weight of 2t, proprietary, inter-linked ground protection boards could be placed on top of a compression resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile.

C) For wheeled or tracked construction traffic exceeding 2t gross weight, an alternative system (e.g. pre-cast reinforced concrete slabs) could be employed.

D) An engineer should be consulted regarding the design of a temporary access with the final specification being agreed with an arboricultural consultant.

4. OTHER CONSIDERATIONS

4.1. **Trees Subject to Statutory Controls:** Trees and hedgerows can be subject to statutory control and severe penalties can result from unauthorised works or damage. It is recommended that prior to commencement of any tree works, the Local Planning Authority (LPA) are contacted. When proposing to do works to trees within a Conservation Area (with some exceptions) six weeks written notice must be given to the LPA; this notice need not take any form other than a written specification of what is proposed and a plan illustrating the position of the tree(s). This notice is often referred to as a Section 211 Notice. Many LPAs prefer that their standard pro-forma is submitted to ensure the necessary detail is included in the notice..

4.1.1. Having received the notice the LPA has essentially only one of two options at its disposal i.e.:

Impose a TPO in respect of those trees/some of those trees subject to the notice. This prevents any works being carried out without the express, written consent of the LPA,

Or

Do nothing. It is considered best practice for an LPA to acknowledge receipt of the notice but there is no obligation for it to do so. After six weeks of serving the notice the tree owner may proceed with the works detailed in the Section 211 Notice. The LPA cannot, in response to a Section 211 Notice, issue a conditional consent. TPOs are made in the interests of preserving amenity, usually taken to mean public visual amenity. Trees largely removed from public view which have little visual impact are not usually made the subject of a TPO. The written consent of the LPA must be

obtained prior to undertaking works to trees subject to TPO unless, as with trees in Conservation Areas, certain exemptions apply. With regard to trees subject to TPO's it is a requirement that a standardised application form is used; this form is available from the LPA. Where trees are protected Brindle & Green Limited are happy to act as the client's agent, liaising as necessary with the LPA and producing the written submissions/notices/applications as required.

4.2. Trees and Wildlife: Trees play host to nesting birds, many of which are protected by law. All British bat species are also protected and can be found in trees. Great care needs to be taken to avoid disturbance and consideration should be given to the timing of tree works in order to avoid disturbance. Where the presence of protected species is suspected, Natural England should be contacted for advice.

4.3. Implementation of Tree Works: Guidance on hiring an Arborist is available from Brindle & Green Ltd. Also, the Arboricultural Association's Register of Contractors is available free from Ullenwood Court, Ullenwood, Cheltenham, Gloucestershire, GL53 9QS (Telephone 01242 522152 , www.trees.org.uk). Any appointed contractor should carry out all tree works to BS 3998 (2010) 'Recommendations for Tree Work.'

4.4. New Planting: It is possible that any planning permission issued will carry a condition requiring new tree planting, particularly in instances where a proposal involves the removal of trees. Further advice is available upon request.

Appendix 4: Proposed Plans

