

St Modwen Properties PLC

Sully Sports Ground & Social Club, South Road, Sully,
Vale of Glamorgan.

Arboricultural Impact Assessment

September 2014

ATKINS



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Document history

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1. Introduction

1.1. Terms of Reference

Atkins Limited (Atkins) has been commissioned by St Mowden Properties PLC to undertake a tree survey in accordance with BS5837:2012 Trees in relation to design, demolition and construction – Recommendations in support of a planning application for the proposed development of the Sully Sports Ground & Social Club.

The survey extents included all the trees within the redline planning application boundary and those trees on the boundary of the site where deemed appropriate by the Arboriculturist.

1.2. The Application Site

The application site currently supports the Sully Sports & Leisure Club with club house facilities and a large expanse of open green space located at Ordnance Survey national grid reference (NGR) ST 16199 67829. The site is bound by South Road to the north and Beach Road to the east. To the south is Sully Bay and the Island View Caravan Park, whilst to the east are residential properties located on Clevedon Avenue.

1.3. Proposed Works

The proposed works are currently at the conceptual phase with the current proposals incorporating residential housing development and further sports facilities as per the Concept Masterplan drawing number 13162/3007 A.

1.4. Scope of Works

This report presents Arboricultural information captured on 23rd July 2014 by Atkins Arboriculturist Hugh Coggles M.Arbor.A.

2. Methodology

2.1. General

This Arboricultural Impact Assessment has been undertaken in accordance with BS5837:2012 Trees in relation to design, demolition and construction – Recommendations. The standard gives recommendations and guidance on the relationship between trees and design, demolition and construction process, setting out the principles and procedures to be applied to achieve a harmonious and sustainable relationship between trees and structures.

2.2. Spatial Scope

The survey works spanned one day and concentrated on all trees within the redline planning application boundary as illustrated on Proposed Site Plan drawing produced by Arturus Architects, drawing number (03)SK014 drawn on the 21.02.14.

2.3. Data Gathering

Data was collected in accordance with BS 5837:2012, as outlined in Appendix A of this report. The purpose of the tree categorisation method applied by the Arboriculturist, being to identify the quality and value (in a non-fiscal sense) of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained if development is to occur.

For a tree to qualify under any given category, it should fall within the scope of that category's definition as defined in figure A2 in Appendix A (category's U, A, B, C) and, for trees in categories A to C, it should qualify under one or more of the three subcategories (1, 2, 3). Subcategories 1, 2 and 3 are intended to reflect arboricultural and landscape qualities, and cultural values, respectively.

Trees were recorded as individual specimens and as groups. Where trees were recorded as groups measurements were in some instances taken from the largest tree within the group for the purposes of establishing data for the tree survey drawings. This level of survey meets the requirements of BS 5837:2012, which states that *'trees growing as groups or woodland should be identified and assessed as such'*. The BS defines the term group as *'trees that form cohesive arboricultural features either aerodynamically (e.g. trees that provide companion shelter), visually (e.g. avenues or screens) or culturally including for biodiversity (e.g. parkland or wood pasture)'*.

Crown spreads of the surveyed trees were given as an average measurement or to the relevant cardinal points with regards to the proposals. The average measurement was taken from the cardinal point relevant to the direction of the proposed works. This level of survey is deemed sufficient by the Arboriculturist in order to establish the extent of the crown spread in the direction of the proposals. All crown spread measurements should be taken from the tree survey schedules

The trees were assessed in line with the Visual Tree Assessment (VTA) method as developed by Mattheck and Breloer (1994). This method is based on the axiom of uniform stress, whereby a tree will grow in response to environmental stimuli to produce a structure that bears forces evenly across its surface. As such an internal defect, such as decay, would initiate a noticeable change in the stem's shape to accommodate the physical change.

2.4. Survey

The locations of all the surveyed trees and the outlines of groups were plotted on completion of the site work. This is due to the topographical drawings not being made available until after the site works were completed. On receipt of the topographical information it was noted that trees contained within G003, G005 and G007 were not included on the topographical drawings and were therefore plotted using aerial imagery, as such the accuracy of the location of these groups may require checking on site using accurate survey techniques

2.5. Limitations to Survey

Trees were identified and inspected from ground level only and were not climbed. No invasive examination techniques (such as increment boring, or internal decay detection) were carried out and as such no assessment of the internal condition of the wood of these trees can be given. The tree survey undertaken is not intended to be a tree risk management survey targeting safety related issues. However, where specific hazards have been identified these have been recorded and management recommendations provided.

Where access permitted a Forest Ace Laser Hypsometer was used to measure tree heights and crown spreads of the tree stock.

BS 5837: 2012 does not include arguments for or against development, or for the removal or retention of trees. Where development is to occur the standard provides guidance on how to decide which trees are appropriate for retention.

Validity, accuracy and findings of the tree locations will directly relate to the accuracy of the supplied topographical drawings and the aerial imagery used. As the tree locations were plotted by the Arboriculturist after the topographical data was received the locations of the numbered trees may require checking to ensure accurate placement.

The report does not comment on possible effects of trees on neighbouring properties, including in relation to subsidence or heave, or with regard to possible hazards presented by trees surveyed. Neighbouring owners of trees that are identified as posing a possible risk to the property/site in question should seek their own advice as to possible effects of the recommendations given within this report.

Damage to, or possibility of damage to, any other structure that is not referred to within the report is not considered unless otherwise specified. This includes both neighbouring structures and any other structure on the property.

Trees are living organisms subject to changes outside man's control. Trees and their environment alter with the seasons and it is as well to inspect trees whilst in full leaf and when out of leaf. Following harsh or unexpected weather conditions, or heavy storms it is also prudent to inspect trees. Changes to ground water conditions will affect the root growth of a tree. Such changes are not always the result of man's influence and other factors may be involved.

3. Existing Site Conditions

3.1. Existing Land Use

The application site currently supports the Sully Sports & Leisure Club with associated infrastructure including club house facilities, an indoor bowling area and hard surface sports pitch being located towards the northern aspect of the site. To the south of the hard infrastructure is a large expanse of green space used primarily as sports pitch facilities. Access is gained from South Road on the northern boundary which leads to a hard surface road and parking area serving the Sports & Leisure Club and the indoor bowling area. Further access can be gained from the eastern boundary via Beach Road. A small pedestrian access is also located towards the southern end of Beach Road adjacent to the Island View Caravan Park. The site is accessible to the public.

3.2. Existing Tree Stock

There are a range of tree species on site with planted and self sown specimens present.

The age of the trees stock varies between young specimens to mature trees. The most prominent and important trees in terms of arboricultural and landscape value are those within G009 located on the western boundary, which given their size, scale and positioning are clearly visible from surrounding views.

G001, G002 and G003 provide softening qualities to the existing built infrastructure, however, their landscape and amenity value are limited given the small scale and their positioning.

The boundary trees along the north and east and boundaries, G005 and G007 respectively, provide screening to views both in and out of the site, as do those within G009. Although, their screening value is somewhat reduced by the tree crowns forming at height and their upright growth habit as a result.

The bases of trees are currently within publicly accessible areas, as such the target areas surrounding all trees are highly sensitive, meaning any works will have to ensure adequate protection of retained trees.

3.3. Site Topography

The majority of the site is level. Changes in level occur in the form of earth bunds in the north east corner of the site. Changes of levels also occur to the west and south of the existing indoor bowling arena.

3.4. Soil Assessment

No soil assessment was carried out on site by the Arboriculturist although base line data from the British Geological Survey webpage (<http://www.bgs.ac.uk>) states the site supports an area of Mercia Mudstone sedimentary bedrock with no superficial deposits recorded.

3.5. Statutory Protection

Atkins have contacted the Vale of Glamorgan who confirmed via email on the 31st July 2014 that there are group Tree Preservation Orders running along the east and west boundary's of the site, it is assumed that this covers tree groups G005, G006, G007 &

G009. Confirmation from the Vale of Glamorgan was requested, however, no response has been received to date.

4. Summary of Tree Condition

4.1. Number of Trees Recorded

The survey captured 3no. individual trees and 9no. groups as part of formal and informal groups and growing as standards intermittently throughout the site.

4.2. General Condition Details

The survey sheets in Appendix B provide more detail on all the trees surveyed on site. In general the trees on site were showing signs of good vitality with good leaf coverage recorded for the tree species and locality. These are illustrated on drawing 5133321/DG/ARB/001 Rev A.

No trees have been recorded as BS Category A trees.

Trees G005, G007, 003 and G009 have been recorded as BS Category B trees. As such the trees are of moderate quality with an estimated 20+ year's useful remaining life expectancy.

Trees G001, G002, G003, 001, 002, G004 and G008 have been recorded as BS Category C trees. As such the trees are of low quality due to their young age, poor condition or through their internal locations with an estimated 10+ year's useful remaining life expectancy. Whilst by definition these trees are of low quality as defined by their BS Category ratings the majority still offer landscape amenity value as part of larger groups.

Trees G006 have been recorded as BS Category U trees meaning their useful life expectancy are below 10years. If development is to occur then mitigation measures or new boundary planting should be undertaken on this tree group.

Preliminary management recommendations have been made for trees within G008. This is to prevent branches rubbing against the fabric of the adjacent building.

5. Arboricultural Impacts

5.1. General

This survey takes into account the tree stock deemed likely to be affected by the proposed scheme and identifies their condition and suitability for retention. The tree protection plan drawing number 5133321/DG/ARB/001 Rev A illustrates the extents of the survey area and the root protection area (RPA) for each tree or trees.

The British Standard relies heavily on the creation of a protected zone referred to as the RPA around each tree. This is the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority. This area should be protected from disturbance "in order to avoid unacceptable damage to the tree as a result of severance or asphyxiation of the root system." The recommended minimum area (m²) for each tree to avoid potentially harmful disturbance has been calculated for all of the trees on site and entered into the tree schedule and is illustrated on the tree survey drawings.

The RPA(s) for each tree or group of trees is illustrated as a circle centred on the base of the stem. This circular area does not take into account pre-existing site conditions or other factors that can influence or modify the shape and disposition of tree roots. Accordingly, the Arboriculturist can make modifications or judgements on the likely extents of RPAs, where through professional judgement it is deemed likely that the root zones have been restricted in a certain direction because of limiting factors such as; topography, drainage or the presence of existing built infrastructure.

5.2. Scheme details

The proposals have not been overlaid onto the tree survey drawing as they are currently in sketch format meaning they cannot be incorporated accurately onto the TPP. On review of the current concept master plan produced by PAD Architects LLP, drawing number 13162/3007A an assessment of the impacts of the scheme on the tree stock on site has been carried out. It must be noted that no construction methodologies are readily known at this stage and given that the scheme is at conceptual phase the potential to retain trees through sympathetic designs should be considered.

5.3. Arboricultural Impacts

The table below outlines the current impacts of the proposals on the tree stock on site and likely mitigation measures or design solutions that will be required to facilitate the works.

Table 5.1 – Tree Stock and Works

Group/Tree No.	Species	Cat	Removal due to		Mitigation required for		Details of how proposed build layout affects trees and mitigation.
			Cons	Cond	Canopy	RPA	
G001	Holm Oak x1. Holm Oak x1. Lilac	C2	X	N/A	N/A	N/A	Tree group located within proposed development area. Trees shown for removal at present. Once the design develops the potential to retain the Holm oaks could be explored, or the trees could be

Group/Tree No.	Species	Cat	Removal due to		Mitigation required for		Details of how proposed build layout affects trees and mitigation.
			Cons	Cond	Canopy	RPA	
							re-located on site given their young age. Trees of low quality as defined by their BS Category rating.
G002	Holm Oak x3. Whitebeam x1 Scots Pine x 2. Lilac	C2	X	N/A	N/A	N/A	Tree group located within proposed development area. Trees shown for removal at present. Once the design develops the potential to retain these could be explored, or the trees could be re-located on site given their young age. Trees of low quality as defined by their BS Category rating.
G003	Holm Oak x4 Scots Pine x 4. Whitebeam x1 Lilac,	C2	X	N/A	N/A	N/A	Tree group located within proposed development area. Trees shown for removal at present. Once the design develops the potential to retain these could be explored, or the trees could be re-located on site given their young age. Trees of low quality as defined by their BS Category rating.
001	Hawthorn	C1	X	N/A	N/A	N/A	Tree located within a proposed all weather sports pitch. Tree of low quality as defined by its BS Category rating. Tree shown for removal.
002	Sycamore	C1	X	N/A	N/A	N/A	Tree located within a proposed all weather sports pitch. Tree of low quality as defined by its BS Category rating. Tree shown for removal.
G004	Elder x3 Hawthorn x8	C2	X	N/A	N/A	N/A	Tree group located within the footprint of the proposed all weather sports pitches. Trees of low quality as defined by their BS Category rating.

Group/Tree No.	Species	Cat	Removal due to		Mitigation required for		Details of how proposed build layout affects trees and mitigation.
			Cons	Cond	Canopy	RPA	
							Trees shown for removal.
G005	Elm, Sycamore Hawthorn, Common Ash,	B2	N/A	N/A	N/A	N/A	<p>Tree group located on the boundary of the site, outside of the proposed works footprint.</p> <p>Trees to be retained. The requirements for any tree protection barriers will have to be determined once the designs and construction methods are finalised.</p>
G006	Leyland Cypress	U	N/A	N/A	N/A	N/A	<p>Tree group located on the boundary of the site.</p> <p>Tree group with limited long term potential meaning replanting works are recommended in this area.</p>
G007	Sycamore x5 Elm x2	B2	N/A	N/A	N/A	N/A	<p>Tree group located on the boundary of the site, outside of the proposed works footprint.</p> <p>Trees to be retained. The requirements for any tree protection barriers will have to be determined once the designs and construction methods are finalised.</p>
003	Silver Maple	B1	N/A	N/A	N/A	N/A	<p>Tree to be retained.</p> <p>The requirements for any tree protection barriers will have to be determined once the designs and construction methods are finalised.</p>
G008	Rowan x1 Whitebeam x2	C2	X	N/A	N/A	N/A	<p>Tree group located within proposed development area.</p> <p>Trees shown for removal at present. Once the design develops the potential to retain these could be explored, or the trees could be re-located on site given their young age.</p> <p>Trees of low quality as defined by their BS Category rating.</p>
G009	Pine spp	B2	N/A	N/A	N/A	N/A	Tree group located on the boundary of the site, outside

Group/Tree No.	Species	Cat	Removal due to		Mitigation required for		Details of how proposed build layout affects trees and mitigation.
			Cons	Cond	Canopy	RPA	
							<p>of the proposed works footprint.</p> <p>Trees to be retained. The requirements for any tree protection barriers will have to be determined once the designs and construction methods are finalised.</p>
<p>Key:</p> <p>Group/ Tree number – Tree referenced in the tree survey.</p> <p>Species – Common name for species.</p> <p>Cat – BS5837:2012 Category rating.</p> <p>Removal due to - Cons – Construction, Cond – Condition. An X or n/a (not applicable) dependant on appropriate action or impact</p> <p>Mitigation required for - Canopy or for RPA (Root Protection Area). An X or n/a indicates appropriate actions as a result of the impacts on the tree(s).</p>							

The impacts of the proposals have been quantified as accurately as possible given the supplied information. The proposed scheme will require the removal of trees through direct impact by being located within the proposed footprint of the works.

- 2no. individual trees and 5no. groups of BS Category C trees (G001, G002, G003, 001, 002, G004 & G008) will require removal to facilitate the proposals.

The trees to be removed are all BS Category C trees meaning they are currently of low quality given their young age or structural forms limiting their longevity. The small scale of the young trees reduces their landscape and arboricultural values, meaning their removal should not hinder any development. Their removal should be offset through mitigation planting or consideration given to re-locating the young trees on site using a tree spade rig. Similarly, as the design is still at conceptual phase then the potential to retain some of these trees could be explored.

5.4. Preliminary Management Recommendations

The preliminary management recommendations are covered within the tree survey schedules.

5.5. Preliminary Mitigation Measures

Reference has been made to the potential installation of protective barriers and these will be required to create construction exclusion zones (CEZ's) in order to protect the RPA's of retained trees deemed at risk from damage during the proposed works.

The CEZ's will be defined as all the areas behind the fencing or all soft surfaces around retained trees. Site operations not permitted in the CEZ without consultation with an Arboriculturist include storage of plant, equipment or materials, vehicular or plant access, washing down of vehicles or machinery, handling, discharge or spillage of any substances,

including cement washings, actions likely to cause localised water-logging, no mechanical digging, scraping or excavation shall be permitted in the CEZ and no earthworks or changes in the finished ground levels other than those agreed by an Arboriculturist.

The locations of protective barriers will have to be confirmed once the designs and construction methodologies have been finalised. The requirements for such barriers will be have to be captured within an Arboricultural Method Statement. The barriers will be specified to exclude construction activity in the RPAs of retained trees and are to conform to figure 3b of BS5837:2012 (page 21), heras type fencing.

6. Arboricultural Method Statement

6.1. Heads of Terms

A site specific Arboricultural Method Statement (AMS) would be supported by the production of detailed Tree Protection Plan illustrating the further tree protection measures. The AMS will be appropriate to the proposals and would address some or all of the following:

- Removal of existing structures and hard surfacing;
- Installation of temporary ground protection;
- Excavations;
- Installation of new hard surfacing – materials, design constraints and implications for levels;
- Tree works schedule;
- A schedule of specific events requiring input or arboricultural supervision

Appendix A. Key & BS5837:2012 Survey Table

Tree No: Sequential reference number given to the tree or group of trees as shown on the tree survey drawings.

Species: This is the common name given to the tree. The botanical name is sometimes given.

Height (Ht): tree height from the base of the tree to its highest stem, measured in metres (m). Measurements are taken to the nearest half metre.

Stem diameter (mm): measured in accordance with figure A1 below. Measurements rounded to the nearest 10mm.

Branch spread (m): measurement of crown spread to the four cardinal points, if the crown is balanced a single measurement is given. Crown spread plotted on the tree survey drawings. Measurements are taken to the nearest half metre.

1st significant branch and direction of growth (m): measurement of the height of the first significant branch above ground level, given in metres and direction of growth e.g. 2.4-N

Canopy height (m): height of the canopy above ground level. Measurements are taken to the nearest half metre.

Life stage: The following abbreviations are used:

Y = Young trees <1/5 life expectancy.

SM = Semi-Mature trees 1/5 – 2/5 life expectancy.

EM = Early Mature trees 2/5 – 3/5 life expectancy.

M = Mature trees 3/5 – 4/5 life expectancy

OM= Over-Mature trees >4/5 life expectancy

General observations, particularly of structural and/or physiological condition: e.g. observations of the any decay and physical defect.

Preliminary management recommendations: any identified preliminary management to rectify defects recorded in general observations. These may include the need for further detailed inspection, or works to address immediate hazard to life or property.

Estimated remaining contribution, in years:

<10

10+

20+

40+

Category grading: As per BS5837:2012 chart in accordance with figure A2 below.

A – Illustrated as light green (RGB code 000-255-000)

B – Illustrated as Mid blue (RGB code 000-000-255)

C – Illustrated as Grey (RGB code 091-091-091)

U – Illustrated as Dark red (RGB code 127-000-000)

Root Protection Area (m²): plotted around each of the category A, B and C trees on relevant drawings, and illustrates the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as paramount.

(Note: Red hash tag '#' will denote that a measurement is estimated)

Figure A1 – Measurement of tree stems dependant on tree form:

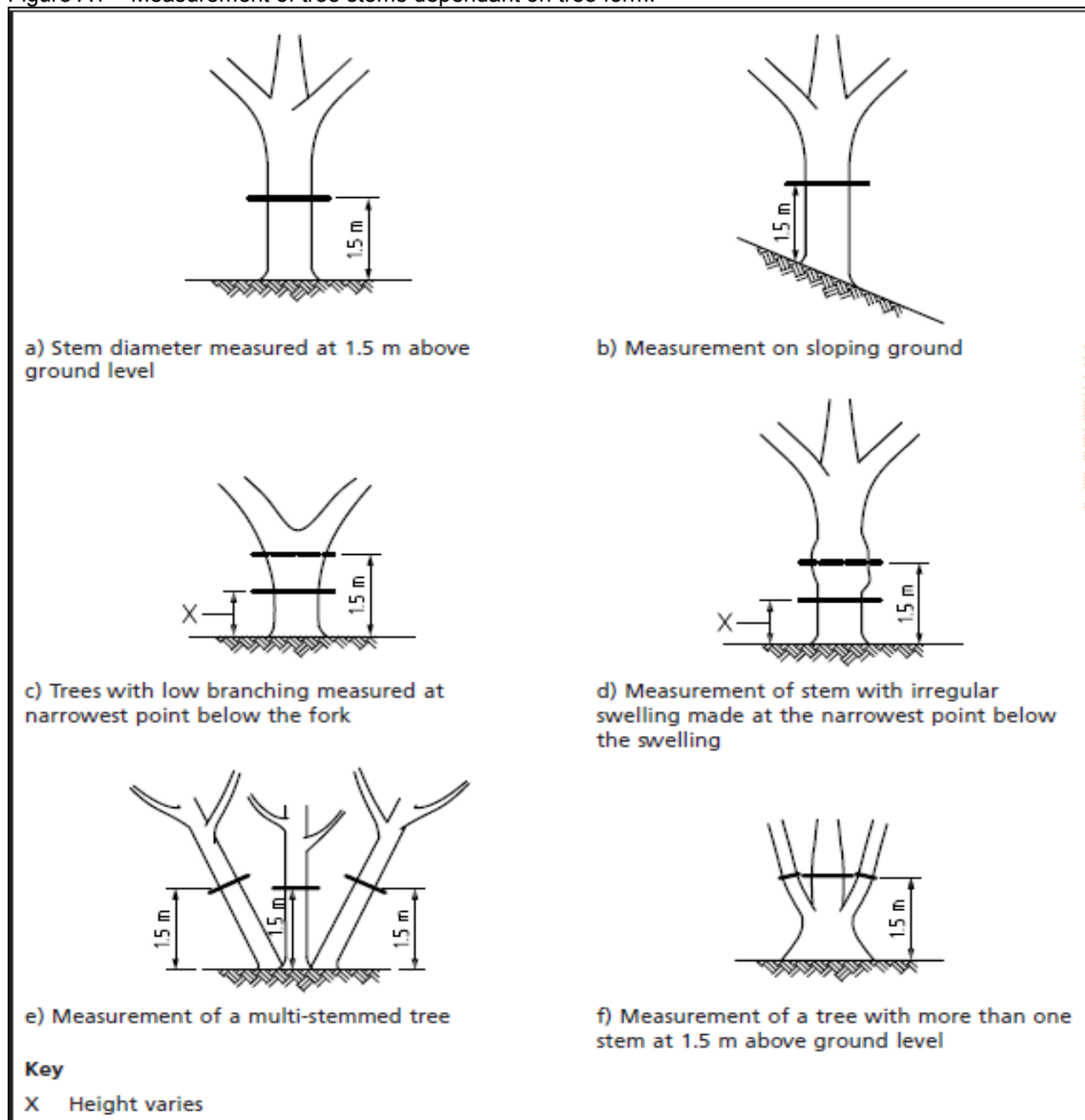


Figure A2 – Cascade chart for tree quality assessment from BS5837:2012

Category and definition	Criteria (Including subcategories where appropriate)		
Trees unsuitable for retention (see Note)			
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	<ul style="list-style-type: none">Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)Trees that are dead or are showing signs of significant, immediate, and irreversible overall declineTrees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <p><i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i></p>		
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation
Trees to be considered for retention			
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value

Appendix B. Tree Survey Schedules

Tree No	Species in Group	Ht (m)	Stem diameter (mm)	Branch spread (m) N E S W	1st major branch height (m) & Direction N/E/S/W	Canopy height (m)	Life stage Y SM EM M OM	General observations Structural and/or physiological condition	Preliminary management recommendations	Est'd Remaining contribution (years) <10/10+/20+/40+	Category grading A B C U 1/2/3	Root Protection Area Radius (m)
G001	Holm Oak x2. Lilac	up to 5	up to 220	2.5	n/a	gl	Y	2no. trees and area of shrubs. Mechanical damage on stems of both trees. Good vitality throughout	None at present	20+	C2	2.6
G002	Holm Oak x3. Whitebeam x1 Scots Pine x 2. Lilac	up to 5	up to 220	2.5	n/a	gl	Y	Dense vegetation. Good vitality throughout with no apparent significant structural defects recorded	None at present	20+	C2	2.6

Tree No	Species in Group	Ht (m)	Stem diameter (mm)	Branch spread (m) N E S W	1st major branch height (m) & Direction N/E/S/W	Canopy height (m)	Life stage Y SM EM M OM	General observations Structural and/or physiological condition	Preliminary management recommendations	Est'd Remaining contribution (years) <10/10+/20+/4 0+	Category grading A B C U 1/2/3	Root Protection Area Radius (m)
G003	Holm Oak x4 Scots Pine x 4. Whitebeam x1 Lilac	Up to 7	Up to 250	2.5	n/a	gl	Y	Dense vegetation. Good vitality throughout with no apparent significant structural defects recorded	None at present	20+	C2	3
001	Hawthorn	6	2x 350	3,5,1,2	n/a	2	M	Ivy encroachment. Suppressed by adjacent tree to south. Good vitality. No apparent significant structural defects recorded.	None at present	20+	C1	4.9
002	Sycamore	10	2x380	5	Gl	1.5	EM	2 main stems from ground level. Included bark at base, not significant at present. Good vitality.	None at present	20+	C1	5.4
G004	Elder x3 Hawthorn x8	up to 5	250	2.5	n/a	gl	EM	Linear strip of multi stem trees. Good vitality throughout with no apparent significant structural defects recorded	None at present	20+	C2	3

Tree No	Species in Group	Ht (m)	Stem diameter (mm)	Branch spread (m) N E S W	1st major branch height (m) & Direction N/E/S/W	Canopy height (m)	Life stage Y SM EM M OM	General observations Structural and/or physiological condition	Preliminary management recommendations	Est'd Remaining contribution (years) <10/10+/20+/40+	Category grading A B C U 1/2/3	Root Protection Area Radius (m)
G005	Elm, Sycamore Hawthorn, Common Ash,	Up to 13	up to 450	5	n/a	2	Y-Em	Multi and single stem trees. Trees growing on edge of boundary with dense blackthorn scrub encroaching into Site. Bases of trees not accessible. Good vitality throughout with no apparent significant structural defects recorded	None at present	20+	B2	5.4
G006	Leyland Cypress	up to 6	up to 450	1	n/a	gl	M	Topped out hedge, poor condition very little growth on west side	Fell/replace	10	U	5.4
G007	Sycamore x5 Elm x2	up to 14	up to 600	5	n/a	1.5	EM	Boundary trees. Earth bund between trees and site. Multi and single stem specimens. Good vitality throughout with no apparent significant structural defects recorded	None at present	20+	B2	7.2

Tree No	Species in Group	Ht (m)	Stem diameter (mm)	Branch spread (m) N E S W	1st major branch height (m) & Direction N/E/S/W	Canopy height (m)	Life stage Y SM EM M OM	General observations Structural and/or physiological condition	Preliminary management recommendations	Est'd Remaining contribution (years) <10/10+/20+/4 0+	Category grading A B C U 1/2/3	Root Protection Area Radius (m)
003	Silver Maple	14	620	7	n/a	2	M	Open grown tree footpath 2m north, access road to sports club 2m south. Epicormic growth obscuring base. Ivy encroachment. Power line through canopy. Minor small diameter deadwood at tips	None at present	20+	B1	7.4
G008	Rowan x1 Whitebeam x2	5	140	1.5	n/a	1.5	Y	Close to build. Hard surface up to base. branches rubbing on building	Prune to give 1m clearance	20+	C2	1.7
G009	Pine spp	upto 15	upto 600	7	n/a	1	M	Linear strip of boundary trees access restricted by vegetation. Deadwood throughout. Prominent landscape feature. Some ivy encroachment. Trees at northern end close to building. Fair to good vitality throughout	None at present	20+	B2	7.2

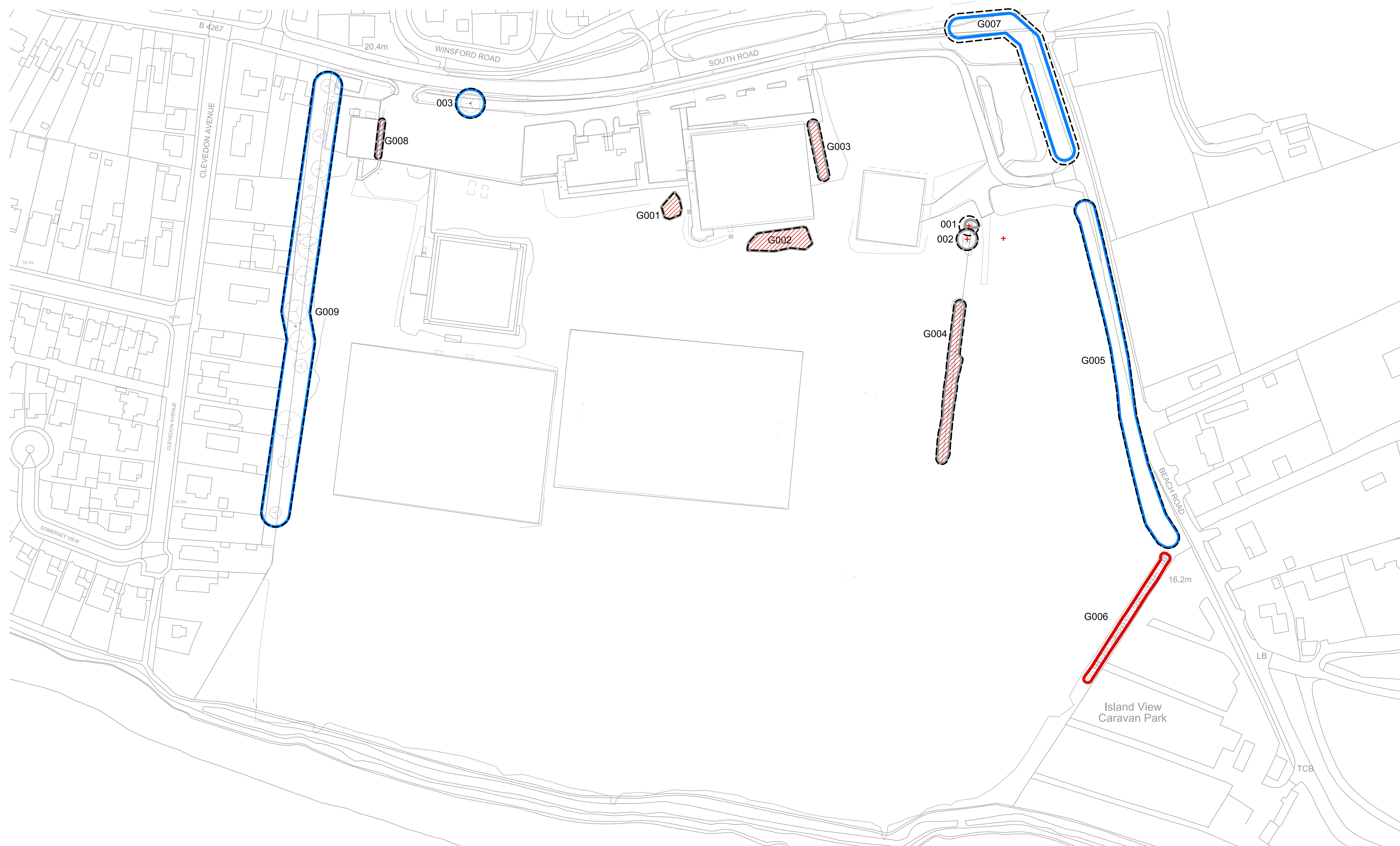
Appendix C. Glossary of Terms

Term	Description
Access Facilitation Pruning	One-off tree pruning operation, the nature and effects of which are without significant adverse impact on tree physiology or amenity value, which is directly necessary to provide access for operations on site.
Adaptive Growth	The process whereby wood formation is influenced both in quantity and in quality by the action of gravitational force and mechanical stresses on the cambial zone
Amenity Value	The environmental and landscape benefits of trees as opposed to their commercial value for timber
Ancient Woodland	Sites which have been wooded since at least 1600, as defined by English Nature and recognised as being of high nature conservation value, whether managed or not. They may be semi-natural or replanted.
Arboricultural Method Statement	Methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained.
Arboriculture	The study and care of trees and other woody vegetation
Arboriculturist	A person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction.
Cavity	An open wound, characterised by the presence of decay and resulting in a hollow
Co-dominant stems	Where a trees main stem splits into two leaders, can also be called twin-stemmed.
Competent person	A person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached.
Construction	Site-based operations with the potential to affect existing trees.
Construction Exclusion Zone	The area based on the root protection area from which access is prohibited for the duration of a project.
Coppice	A traditional method of woodland management in which young tree stems are repeatedly cut down to near ground level. In subsequent growth years, many new shoots will emerge, and, after a number of years the coppiced tree, or <i>stool</i> , is ready to be harvested, and the cycle begins again
Crown clearance	This is the removal of all dead, dying and diseased branches; in addition branches that are cleared away from a specific hazard e.g. live railway line.
Crown lifting	The removal of lower branches to provide a desired amount of clearance above ground level. This can be achieved either by the complete removal of a branch or only parts of which extend

Term	Description
	below the desired height
Crown reduction	The overall reduction of both the height and spread of the crown.
Decay	Process of degradation of woody tissues by fungi and bacteria through decomposition of cellulose and lignin.
Deadwood	Deadwood is often present within the crown or on the stems of trees. In some instances it may be an indication of ill health, however, it may also indicate natural growth processes. If a target is present beneath the tree, deadwood may fall and cause injury or damage and should be removed, otherwise deadwood can remain intact for conservation purposes (insects, fungi, birds etc.).
Epicormic growth	A secondary growth from dormant adventitious buds on the stem or main branches.
Failure	In connection with tree hazards, partial or total fracture within woody tissue or loss of cohesion between roots and soil.
Hazard beam	An branch that has over extended in which strong internal stresses may occur without the compensatory formation of extra wood (longitudinal splitting may occur in some cases).
Hung-up limb	Dead or fallen branch from within the crown or from another tree's crown that has failed and been caught up by, and resting on, branches of a tree
Included Bark Junction	Pattern of development at branch junctions where bark is turned inward rather than pushed out. Potential weakness due to a lack of a woody union.
Ivy Growth	Ivy growth may ascend into the tree's crown, increasing wind resistance, concealing potential defects and reducing the tree's photosynthetic capacity. Ivy growth is often acceptable in woodland areas as a conservation benefit.
Monolith	A large bulk of standing dead wood. Usually the trunk of the tree or the trunk with the base of the branch frame work. These should be retained for wildlife habitat when the risk is appropriate for the location.
Pollarding	This involves the removal of whole branches to leave only the main trunk. In species such as willows and poplars such as significant pruning is acceptable with new branches developing from the pollard heads. Secondary pruning of the new wood can help form a new canopy to the tree several years after the initial pollard
Reaction Wood	Specialised secondary xylem, which develops in response to a lean or similar mechanical stress, attempting to restore the stem to the vertical.
Root Protection Area	The layout design tool indicating the minimum area around a

Term	Description
(RPA)	tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.
Service	Any above or below ground structure or apparatus required for utility provision.
Stem	The principal above-ground structural component(s) of a tree that supports its branches.
Structure	A manufactured object, such as a building, carriageway, path, wall, service run, and built or excavated earthwork.
Structural Defect	Internal or external points of weakness, which reduce the stability of the tree
Sub-dominant stem	A branch within the crown that is not the dominant leader
Suppressed	Trees which are dominated by surrounding vegetation and whose crown development is restricted from above.
TPO	A Tree Preservation Order is an order made by Local Planning Authority which in general makes it an offence to cut down, lop, top, uproot, wilfully damage or wilfully destroy a tree without first getting permission from us. Tree Preservation Orders are usually made to protect trees that make a significant contribution to the amenity of an area. They may particularly be made when it is felt that a tree may be under threat.
Tree Constraints Plan	Abbreviated to TCP. Plans showing specific tree constraints including Root Protection Areas and Crown spread.
Tree Protection Plan	Abbreviated to TPP. Scaled drawing, informed by descriptive text where necessary, based upon the finalised proposals, showing trees for retention and illustrating the tree and landscape protection measures.
Veteran Tree	A tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned. These characteristics might typically include a large girth, signs of crown retrenchment and hollowing of the stem.
Visual Tree Assessment	A non-invasive method of examining the health and structural condition of trees. Developed by Claus Mattheck and David Brelor 1994
Wound	Any injury, which induces a compartmentalisation response
Wound Wood	Wood with atypical anatomical features, formed in the vicinity of a wound and a term to describe the occluding tissues around a wound as opposed to the ambiguous term "callus."

Appendix D. Drawings



TREE CONSTRAINTS KEY

000		CATEGORY A TREE + TREE REF.		TREE GROUP REFERENCE		ROOT PROTECTION AREA		
000		CATEGORY B TREE + TREE REF.		WOODLAND GROUP + GROUP REFERENCE. HATCH EXTENTS INDICATE APPROX. EDGE OF CANOPIES OF PERMETER TREES (COLOUR OF BOUNDARY LINE RELATES TO TREE CATEGORIES AS FOR INDIVIDUAL TREES AS SHOWN ABOVE)		OR		TREE TO BE REMOVED OR TRANSLATED AS PART OF WORKS
000		CATEGORY C TREE + TREE REF.				PROTECTIVE FENCING (INDICATIVE LOCATION FOR REFERENCE ONLY)		
000		CATEGORY U TREE + TREE REF.				AREA REQUIRING ARBORICULTURAL SUPERVISION		

I	INFORMATION	-	TD	A	ORIGINAL		JK	03/09/14	TD	TD	
Stat	Purpose of Issue	Date	Auth	Rev	Description		By	Date	Chk'd	Aut	

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Client	St Modwen Properties PLC					Title					TREE PROTECTION PLAN				
Project	Sully Sports Ground & Social Club Scheme					Sheet	Size	Original	Scale	Designed/Drawn	Checked	Authorised			
						A1		1:1000	JK	TD	TD				
									Date	03.09.14	Date	03.09.14	Date	03.09.14	
Status		Drawing Number							Rev						
I		5133321/DG/ARB/001							A						

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