

ICF/RTPI Seminar– 13<sup>th</sup> April 2018

# BS5837 – An Overview

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# Sustainable Development

- Progress that meets the needs of the present without compromising the ability of future generations to meet their own needs (UN Commission on Environment & Development, 1983)
- UN Sustainable Development Goals - Goal 11: Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning
- Goal 15: Integrate ecosystem and biodiversity values into national and local planning, development processes
- UK 25-year environment plan: Cleaner air and water; plants and animals which are thriving; and a cleaner, greener country for us all
- NPPF has 3 goals:
  - Economic Objective
  - Social Objective
  - Environmental Objective



# Benefits of trees

## 10 REASONS TO BE THANKFUL FOR TREES

*When you're counting your blessings and listing those things you're grateful for, don't forget to look up.*



TREES CLEAN THE AIR



TREES SHADE AND COOL



TREES REDUCE STRESS

TREES IMPROVE THE SOIL



TREES REDUCE VIOLENCE

TREES ENHANCE THE VIEW



TREES INCREASE PROPERTY VALUE



TREES BRING PEOPLE TOGETHER

TREES REDUCE NOISE POLLUTION



TREES SUPPORT WILDLIFE



*Trees never stop giving. Don't underestimate the value of trees and plants in your yard. Provide proper tree care and landscape maintenance this season and beyond, and you'll reap the benefits for several seasons to come.*

## BS5837 (2012) Trees in relation to design, demolition & construction

- How does it work
- What is good about it
- What is not so good about it
- What might those involved in drafting future revisions consider in order to improve the document?



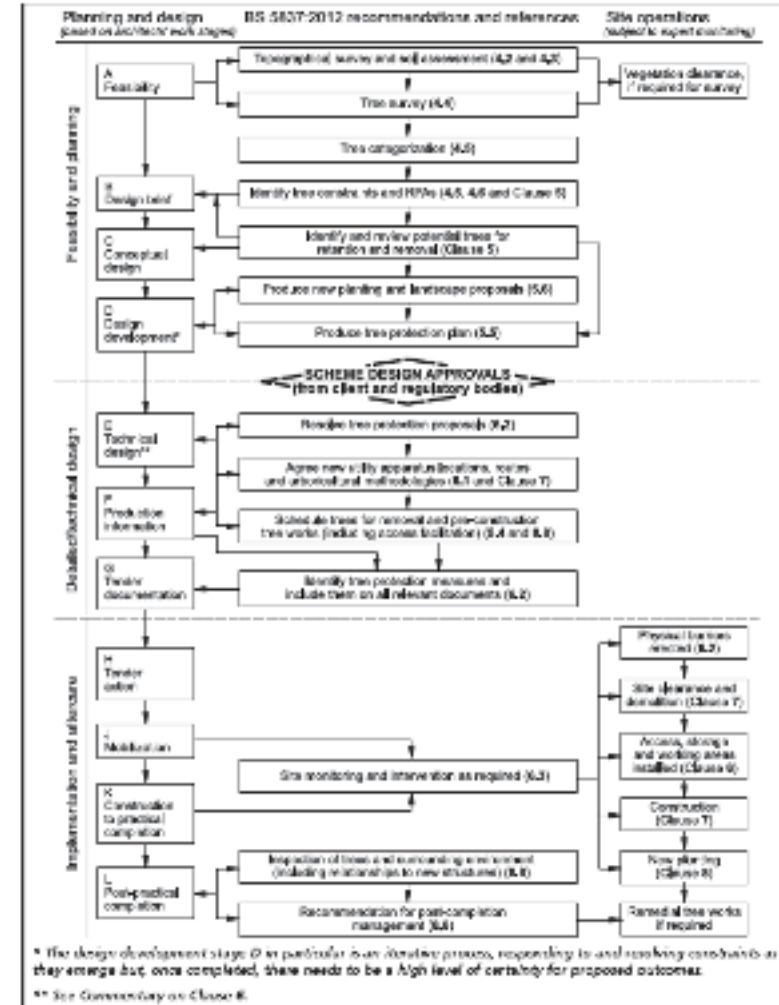
# BS5837 - Overview

- Guidance document with no legal force
- Linked to RIBA workstages
- Topographical plan
- Site Visit
- Categorisation of trees on site
- Tree Constraints Plan
- Advice through planning process
- Arboricultural Impact Assessment
- Arboricultural Method Statement

BS 5837:2012

BRITISH STANDARD

Figure 1 The design and construction process and tree care



# What is BS5837?



**Trees in relation to design,  
demolition and construction  
– Recommendations**



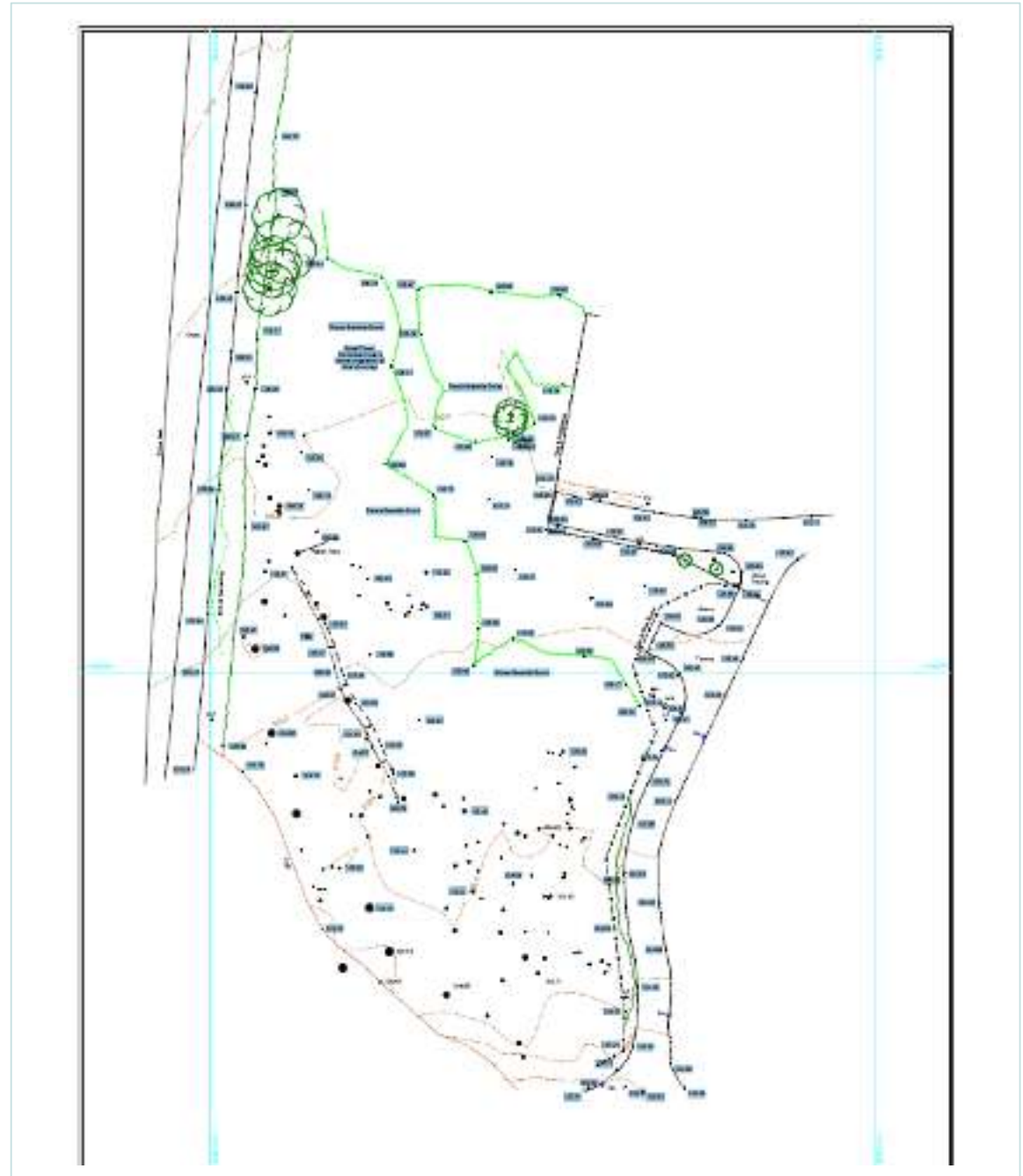
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**BSI**

# Pre-site visit requirements

- Scaled topographical survey (ideally 1:500)
- Provides spot levels of trees
- Identifies locations of all trees over 75mm stem diameter at 1.5m
- Crown Spreads
- Shrubs, hedges, stumps and any other landscape features eg walls, boundary features, utilities, buildings etc
- Details of a soil assessment (although rarely provided)



# Tree Survey

Table 1 Criteria chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)	Identification or plan		
<p>Not available for retention (see Note)</p> <p>Category U Trees in such a condition that they cannot naturally be retained by their trees in the context of the current land use for longer than 10 years</p> <p>NOTE: Category U trees are trees starting or potential to start with a value which might be suitable to retain or reuse.</p>				
	1. Fairly poor or fair quality	2. Fairly landscape quality	3. Fairly cultural value, including conservation	
<p>To be considered for retention</p> <p>Category A Trees of high quality or those which are among the best specimens of all trees in the area</p> <p>Category B Trees of moderate quality which are below the best specimens in the area</p> <p>Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter less than 100mm</p>				
Category A	Trees that are trees of high quality or those which are among the best specimens of all trees in the area	Trees, groups or woodlands of particular interest or value to the landscape	Trees, groups or woodlands of significant conservation, historical, recreational or other value (e.g. those of interest to the community)	See Table 2
Category B	Trees that require inclusion in Category A, but are less positive because of retained condition (e.g. presence of stem defects) or other reasonable defects, including any possible future management and stem damage, such that they are unlikely to be able to be retained beyond 40 years or more (using the special quality measure to match the category A set point)	Trees present in a number of trees growing in groups or woodlands which they attract higher collection interest than they might otherwise attract, or trees of interest to collectors but required to be available for a woodlands in the future	Trees with national or local interest for cultural value	See Table 2
Category C	Trees that are trees of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter less than 100mm	Trees present in groups or woodlands, but without this conforming to their woodlands quality or other landscape value, and/or not offering any other landscape benefits	Trees of low national or local interest for conservation or other cultural value	See Table 2

BRITISH STANDARD

BS 9697:2012

- Tree Reference number
- Species
- Height
- Stem diameter
- Crown Spread
- Height of canopy above ground
- Life stage
- Observations
- Estimate useful remaining contribution
- Category



# Post Survey Plans and Information



# Advice through the design process



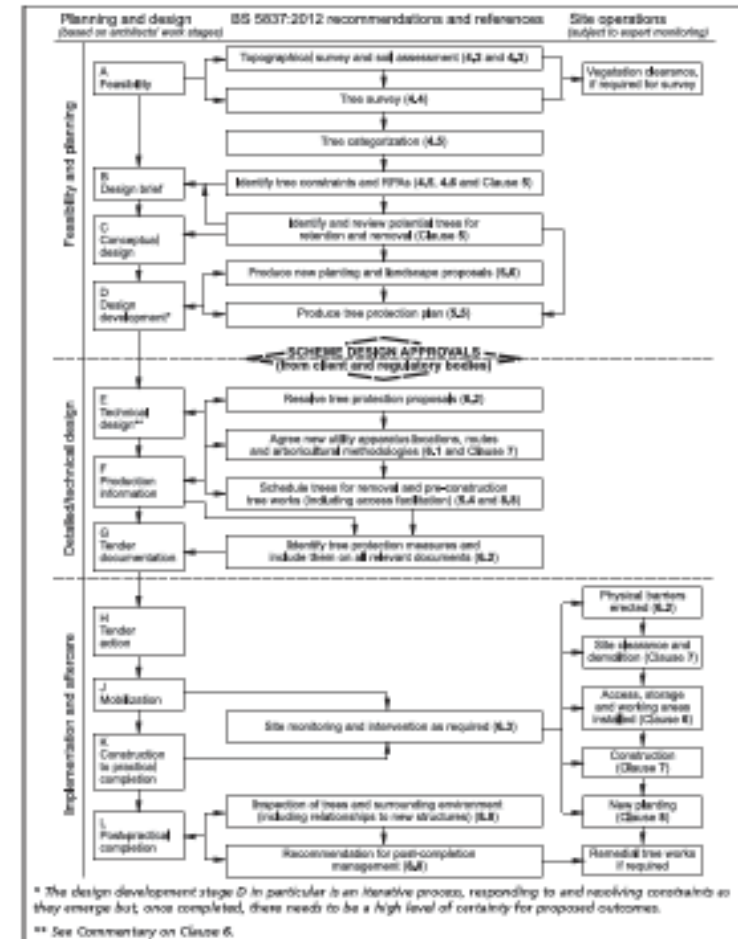
# What Works?

- Ensures that consideration is given to trees
- Consistent approach adopted by all involved
- Adds, retains and enhances Value to a development scheme

BS 5837:2012

BRITISH STANDARD

Figure 1 The design and construction process and tree care











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# BS5837 – What does not work?

- Lack of direct link to the planning process
- Cascade Chart
- Impact Assessment
- Root Protection Area calculation

Does anyone else feel like we could do better?



[freshspectrum.com](http://freshspectrum.com)

# BS5837 & Planning Policy

- Trees get 4 mentions in the NPPF consultation document – 3 of those in reference to ancient and veteran trees

Local Authority	Number of mentions of BS5837 in planning documents
Cherwell	0
Oxford City	0
South Oxfordshire	0
Vale of the White Horse	0
West Oxfordshire	1 (and 0 in emerging plan)



Source: [UK Gov't](#)

# What Category?

- 40+ years life expectancy
- No notable defects
- Cat A or Cat B?
- Arboricultural, landscape or cultural qualities? What weighting do the numeric values carry?



Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)	Identification on plan
<b>Trees unsuitable for retention (see Note)</b>		
<b>Category U</b> These trees are 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"> <li>• Trees that have a serious, irreparable, structural defect, such that their early loss is expected due to collapse, including those that will become unstable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)</li> <li>• Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline</li> <li>• Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality</li> </ul> <p><b>NOTE</b> Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</p>	See Table 2
	1 Mainly arboricultural qualities	2 Mainly landscape qualities
<b>Trees to be considered for retention</b>		
<b>Category A</b> 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
<b>Category B</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
<b>Category C</b> Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees with material conservation or other cultural value
		Trees with no material conservation or other cultural value

# Cascade Chart

- 40+ years life
- Windthrown but with phoenix growth
- Only supported by limbs on the ground
- Cat B or Cat C? Or Cat U?
- Arboricultural, landscape or cultural qualities?



Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)	Identification on plan
<b>Trees unsuitable for retention (see Note)</b>		
<b>Category U</b> These trees are 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"> <li>• Trees that have a serious, irreparable, structural defect, such that their early loss is expected due to collapse, including those that will become unstable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)</li> <li>• Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline</li> <li>• Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality</li> </ul> <p><b>NOTE</b> Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</p>	See Table 2
	<p>1 Mainly arboricultural qualities</p> <p>2 Mainly landscape qualities</p> <p>3 Mainly cultural values, including conservation</p>	
<b>Trees to be considered for retention</b>		
<b>Category A</b> 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
<b>Category B</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
<b>Category C</b> 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, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)
		Trees with material conservation or other cultural value
		Trees with no material conservation or other cultural value
		See Table 2

Cascade chart for tree quality assessment

# Cascade Chart

Category and definition	Criteria (including subcategories where appropriate)
Category U Unsuitable for retention Trees in such a condition they cannot realistically be retained as living trees in the context of the current use for longer than 5 years	<ul style="list-style-type: none"> <li>Trees that have a serious, irreparable, structural defect, such as those that will become unviable after removal of other trees, the loss of companion shelter cannot be mitigated by other means</li> <li>Trees that are dead or are showing signs of significant, immediate decline</li> <li>Trees infected with pathogens of significance to the health and safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality</li> </ul> <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>
Category A Trees of high quality with an estimated remaining life expectancy of at least 20-40 years	<ul style="list-style-type: none"> <li>Trees, groups or woodlands of exceptional quality, especially if rare or those that are essential components of groups or formal or semi-formal arboricultural features</li> </ul>
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 15 years	<ul style="list-style-type: none"> <li>Trees of category A, but are downgraded because of impaired condition (e.g. remediable defects, including unsympathetic past management and storage) or because they are unlikely to be suitable for retention for beyond their useful life span</li> </ul>
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with diameter below 100mm	<ul style="list-style-type: none"> <li>Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories</li> </ul>

- 20-40 years life expectancy
- No notable defects but very poorly maintained
- Cat B or Cat C?
- Arboricultural, landscape or cultural qualities?

Category	Criteria	Identification on plan
Category U	Trees that their early loss is expected due to collapse, or category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by other means), and irreversible overall decline	See Table 2
Category A	Trees, groups or woodlands of particular arboricultural and/or landscape importance	See Table 2
Category B	Trees present in numbers such that they attract a higher collective rating than they might as individuals; or collectives but situated as to make little contribution to the wider locality	See Table 2
Category C	Trees present in groups or woodlands without this conferring significantly greater collective value; and/or trees offering low or only temporary/transient landscape benefits	See Table 2



17 18 19 20 21 22 23

# Cascade Chart

- Current condition less than 10 years life expectancy
- Suitable for pollarding but main stem collapsing
- Cat U or Cat B?
- Arboricultural, landscape or cultural qualities?



Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)	Identification on plan
<b>Trees unsuitable for retention (see Note)</b>		
<b>Category U</b> These trees are 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"> <li>• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unstable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)</li> <li>• Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline</li> <li>• Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality</li> </ul> <p><b>NOTE</b> Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</p>	See Table 2
	1 Mainly arboricultural qualities	2 Mainly landscape qualities
<b>Trees to be considered for retention</b>		
<b>Category A</b> 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
<b>Category B</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
<b>Category C</b> 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
		3 Mainly cultural values, including conservation
		See Table 2
		See Table 2
		See Table 2

# The Cascade Chart

- 40+ years life
- Remedial defects
- Cat A or Cat B?
- Arboricultural, landscape or cultural qualities?



Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)	Identification on plan
<b>Trees unsuitable for retention (see Note)</b>		
<b>Category U</b> These trees are 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"> <li>• Trees that have a serious, irreparable, structural defect, such that their early loss is expected due to collapse, including those that will become unstable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)</li> <li>• Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline</li> <li>• Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality</li> </ul> <p><b>NOTE</b> Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</p>	See Table 2
<p>1 Mainly arboricultural qualities      2 Mainly landscape qualities      3 Mainly cultural values, including conservation</p>		
<b>Trees to be considered for retention</b>		
<b>Category A</b> 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
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<b>Category C</b> 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, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)
		Trees with material conservation or other cultural value
		Trees with no material conservation or other cultural value
		See Table 2

# The Impact Assessment

## BS5837

“The assessment should take account of the effects of any tree loss required to implement the design”

## Landscape Institute

“It specifically aims to ensure that all possible effects of change and development both on the landscape itself and on views and visual amenity, are taken into account in decision-making”

## Chartered Institute of Ecology and Environmental Management

“The impact assessment process involves:

- identifying and characterising impacts;
- incorporating measures to avoid and mitigate (reduce) these impacts;
- assessing the significance of any residual effects after mitigation;
- identifying appropriate compensation measures to offset significant residual effects; and
- identifying opportunities for ecological enhancement”





## Positive Outcomes

- Can we look to assess societal benefits (i-tree)?
- Can we calculate loss so as to provide guidance on mitigation/compensation through replacements?
- How can we educate associated sectors as to benefits?

# Root Protection Areas

- 12 x stem diameter or using a formula to give a single stem equivalent
- Where has this come from?
- It provides an area calculation for a volume of soil
- It take no account of soil depth
- It only provides a minimum area which developers see as the full extent of protection required. Even with veteran trees the guidance only suggests “adequate space”



▸ Thank you for your time