



Preliminary Tree Survey-
Former Goldthorpe Colliery
Barnsley

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Report Title:	Preliminary Tree Survey- Former Goldthorpe Colliery Barnsley
Report Reference:	BE-R-1705-02
Written by:	Mike Shackleton (M.Arbor.A)
Technical review:	Peter Brooks BSc (Hons) MA MIEEM CEnv Managing Director
QA review:	Sam Kitching BSc (Hons) Grad CIEEM Assistant Ecologist
Approved for issue:	Peter Brooks BSc (Hons) MA MIEEM CEnv Managing Director
Date:	13.12.13



Unit A, 1 Station Road, Guiseley, Leeds, LS20 8BX
Phone: 01943 884451
01943 879129
Email: admin@brooks-ecological.co.uk
www.brooks-ecological.co.uk
Registered in England Number 5351418



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Introduction

1. Brooks Ecological Ltd was commissioned to prepare an Arboricultural Survey to accompany a planning application for a proposed development at the site of the former Goldthorpe colliery.
2. The report produced includes the following information:
 - A tree survey, undertaken in accordance with British Standard 5837:2012 'Trees in relation to design, demolition and construction' - Recommendations
 - An Arboricultural Constraints Plan which defines the required Root Protection Areas
 - An appraisal of the trees included in the survey and their possible constraint to development
3. This report is based on site observations and the provided information. Conclusions have been made in light of the surveyors experience and qualifications. A list of experience and qualifications in arboriculture are detailed below. The client may choose to accept or disregard the recommendations made in this report, or seek additional advice.
4. This report is only concerned with trees in relation to construction. This report makes no attempt to provide a full safety inspection of the trees surveyed. It should not be seen as an alternative for a Tree Hazard Assessment which is specific to minimising the risk and liability associated with trees. Potentially hazardous trees have been highlighted and appropriate recommendations made only where urgent action is required in the interests of public safety.
5. Climatic conditions including storms, drought and temperature-related factors can cause damage and failure in apparently healthy trees. It should be remembered that all trees do pose a risk, whilst every effort has been made to detect any major defects in inspected trees, no guarantee can be given as to their safety. Although the risk should be managed to an acceptable level, no tree can be guaranteed as safe at all times.
6. This report is based on Visual Tree Assessment (VTA) methodology, as devised by Mattheck (1991). V.T.A is a ground level visual assessment of a tree, which is carried out to identify obvious mechanical defects, signs of ill health, potential mechanical failure and the suitability of a tree to a site. The survey is compiled in accordance with British Standard 5837:2012 'Trees in relation to design, demolition and

construction' - Recommendations with all Root Protection Areas (RPA's) are based upon section 4.6 of the document.

Site Visit

7. A visual inspection of the trees and their surroundings was completed 29th November 2013. The survey was undertaken by Mike Shackleton (M.Arbor.A) who has over 12 years experience within the Arboricultural Industry. He has a Higher National Diploma in Arboriculture and a City and Guilds Level 2 awarded in Arboriculture. He has been involved in dealing with proposed/active development sites, advice on trees in relation to structures, health and safety appraisals, tree inventories and planning appeals. As part of his continuing professional development he regularly attends seminars and training events on issues relating to Arboriculture, particularly with trees in relation to construction.
8. The visit was unaccompanied. The weather conditions were sunny with no visibility constraints.
9. The location of these trees was not included on the topographical survey. Their approximate position has been plotted on the attached tree constraints plan. This plan should not be used for scaling and only as a reference for the contents of this report.
10. The site is littered with self-set saplings of a juvenile age. These trees have been identified as groups for ease of interpretation. Vegetation of this nature would not commonly be considered a constraint to development.
11. All measurements were calculated using the necessary instruments or estimated where access could not be gained. No climbing inspections or decay detection were undertaken.
12. The relevant information was recorded and the trees were graded using table 1 of BS5837. This information has been included within the tree schedule in Appendix 1. An explanation of the tree schedule format is also included within the Appendix.
13. This survey should be read in conjunction with the Tree Constraint Plans (TCP) (located in appendix 5) which has been prepared by overlaying the necessary tree information onto a provided topographical survey. The surveyor has relied on the accuracy of the plan in the completion of the survey.

Site Description

14. The site was formerly a colliery, residential dwellings are located to the east and west, and allotment gardens are situated to the north and south.
15. The land included within the survey is generally flat. A number of manmade structures are present within some of the trees rooting environment. Such alterations in topography are not believed to have an effect on drainage but are likely to have altered root dispersion.

Soil Assessment

16. No soil testing was undertaken and no soil information was provided for the author. As recommended in BS5837 a comprehensive assessment should be undertaken by a competent person to determine whether the soil is shrinkable and gain an accurate understanding of the soil's structure. The assessment will help to inform tree protection considerations and new planting proposals.

Tree Quality Assessment

17. The tree survey included 1 individual tree and 5 groups of trees. No trees met the requirements of the prestigious category 'A' status. A group of trees were identified as retention category 'B'. 3 groups of trees and 1 individual tree were identified as retention category 'C'. The remaining group of trees were identified as category 'U'.
18. A number of shrub masses are present on site and have been identified on the attached TCP. These groups of vegetation have not been included within the assessment as they would not commonly be considered a material constraint to development.
19. Generally the Local Planning Authority is likely to accept the removal of trees in a poor condition or those with a minimal, safe, useful life expectancy. This usually includes category 'U' and 'C' trees.
20. The majority of vegetation on site was young saplings. The trees offer little contribution to the surrounding landscape as a result of their size and overall stature. Due to their species and poor form, it is unlikely they would ever develop into suitable specimens. These trees would not commonly be considered a constraint to development.
21. G3 is a line of Elder situated along the site's northern boundary. The trees are growing amongst the neighbouring allotment's fencing. These trees are reaching

the end of their useful life expectancy and many are in a state of decline. Collectively the trees offer limited contribution to their surroundings and usually would not be seen as a material consideration. For these reasons they were awarded the category 'U' status.

22. The most significant trees on site were G1 (mixed group). The trees were located along Kingsmark Way and collectively offer screening to a potential development within the site. The trees individually are not considered to be of great significance but as a group they should be considered for retention. They were awarded the category 'B2' status 'Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals'. It has been recommended that the trees are thinned by removing the poorer formed and suppressed specimens. The main objective would be to reduce the density of trees by retaining the better quality specimens. It would also be prudent to crown lift (remove lower branches) of the road side trees to achieve adequate clearance for pedestrians.

23.



Figure 1- A view of G1 from the north.

24. G5 (3 Birch) was located to the east of the site. The trees are of limited quality and unlikely to provide lasting contribution. For these reasons the trees were awarded the category 'C' and would not commonly be considered a constraint to development.

Root Protection Areas

25. Approximately eighty percent of a tree's roots are in the top 600mm of soil. Therefore any changes in this vital environment including ground level, soil compaction, physical damage to roots, moisture or levels of contaminants can have a dramatic effect on the health of a tree. At deeper strata, alterations in water table and routing of services can cause detrimental, long term effects.
26. The area of roots that need to be protected around a tree to try and ensure that it does not suffer damage during the construction process is called the Root Protection Area (RPA).
27. As recommended in BS5837 the RPA's have been plotted (in magenta) on the attached Tree Constraints Plan (TCP) taking full account of the surrounding topographical factors, tree condition and the overall likelihood of root disposition.
28. Any tree scheduled for retention will require protection in accordance with BS5837, regardless of its initial retention category. This protection will require the trees to be fenced-off in areas equal to RPA. This must be undertaken prior to any work beginning on site. An example of the required fencing has been attached to appendix 4.
29. BS5837 requires that these Construction Exclusion Zones are considered sacrosanct from any ground disturbance throughout the entire development process. Where access or construction is required within the RPA of any tree scheduled for retention, this should be completed in a sympathetic manner as not to cause detrimental effect on the tree's health. Such issues should be discussed in an Arboricultural Implications Assessment (AIA) and the required techniques included within an Arboricultural Method Statement (AMS) and Tree Protection Plan (TPP).

Shade Considerations

30. Examples of the possible shade that will be cast by the trees on site and off site are highlighted on the attached Tree Constraints Plan in grey triangles. This is not a precise measurement and should only be used as a rough guide when the positioning of new buildings is considered. Buildings that are located within these areas should include light enhancing methods, for example incorporating sky lights or patio windows.

Conclusion

31. From an Arboricultural prospective the site has excellent potential for development. The only specimens suitable for retention are located on the sites boundaries within G1, leaving the remainder of the site available for development. These trees should be retained and adequately protected throughout the development stage.
32. The remaining trees should not be seen as a constraint to development due to their poor quality and limited contribution to the surrounding landscape. Their loss will not have a detrimental effect. A strong landscape scheme would ensure new planting would be incorporated into the proposal with the potential to provide lasting contribution.
33. It is recommended that once a final layout has been agreed an Arboricultural Implications Assessment and Arboricultural Method Statement should be compiled to ensure the safe retention of surrounding trees.
34. Any tree surgery work recommended in this report should be in accordance with BS3998 2010 "Recommendations for tree work" by a competent, qualified Arboriculturalist. They must also hold sufficient public/employees liability insurance.
35. During the construction phase a suitably qualified Arboriculturalist should be employed to monitor and report on tree related development issues to ensure the continued protection of trees.

Appendix 1- Explanation of Survey Details

Tree Id- Each tree/group has been given a unique number, which coincides with the drawings located in appendix 3.

Species & botanical name- where identifiable the full botanical name has been given. Where a cultivar, variety or species cannot be accurately given the genus name only will be given.

Height (m)- measured approximately to the nearest 1m. If height issues are critical, measurements can be collected accurately using optical instruments.

No of stems- the number of separate stems each individual tree has.

Stem Dia @1.5m (mm)- the diameter of the given tree at 1.5m above soil level, (on sloping ground taken on the up-slope side of the tree base). Where the tree is multi-stemmed measurements will be record for each stem.

Spread- indicates the crown radius from the base of tree in four compass directions, recorded to the nearest metre.

Crown height + direction (m)- recorded as the first significant branch and direction of growth.

Life stage- described as young, semi-mature, early-mature, mature or over-mature.

Physiological condition (P)- an assessment of the trees health. Considers vitality, die back and the presence of disease. Described as Good = no significant health problems Fair = symptoms of ill health that can be remediated Poor = significant ill health.

Structural condition (S)- an assessment of the trees structural condition. Described as Good = no significant defects Fair = significant defects that can be remediated Poor = significant defects no remedy.

Observations – negative and positive- narrative comments on general condition, significant defects and overall appearance (e.g. the presence of any decay).

Preliminary management recommendations- e.g. requires pruning or further investigation of suspected defects is needed.

Life expectancy- preliminary management recommendations, e.g. requires pruning or further investigation of suspected defects is needed.

Retention Category- Each tree/group is identified with a retention category in accordance with BS5837 (an in depth explanation is provided on the following page)

RPA radius (m)- minimum area in metres which should be left undisturbed around each retained tree.

Appendix 2- Cascade chart for tree quality assessment (extract from BS5837 table 1)

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Category and definition	Criteria (including subcategories where appropriate)			Identification on Plan
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	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve			DARK RED
TREES TO BE CONSIDERED FOR RETENTION				
Category and definition	Criteria – Subcategories			Identification on Plan
	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values, including conservation	
Category A Trees of a 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 essential components of groups, or of 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)	LIGHT GREEN
Category B Those of moderate quality with and 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 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	MID BLUE
Category C Those of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of a 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 landscape value; and/or trees offering low or only temporary/transient screening benefits	Trees with no material conservation or other cultural values	GREY

Appendix 3- Tree Schedule

Tree ID	Species, Botanical Name	Height (m)	No of stems	Stem Dia @ 1.5m	Spread - N,E,S,W	Crown height+ direction (m)	Life stage	Physiological (P) and Structural (S) condition. Observations- negative and positive	Preliminary management recommendations	Life expectancy	Retention category	RPA Radius (m)
31	Group containing Birch, Ash. Oak, Thorn, Alder & Sorbus	>9	N/A	Ave 150	See plan.	E-1.5	B2	P= Good, S= Good. Group of heavily planted trees located along the boundary. Could provide lasting screening.	Crown lift over footpath to 2.5m. Selective thin to remove poorer formed and suppressed specimens.	20 to 40 yrs	B2	1.80
32	Group contain Willow, Thorn & Birch saplings.	2	N/A	Ave 80	See plan.	N/A	C2	P= Fair, S= Fair. Area of saplings of limited significance or stature.	No action at present.	10 to 20 yrs	C2	Use drip line if retained.
33	Elder, <i>Sambucas nigra</i>	4	N/A	Ave 220	See plan.	N/A	U	P= Poor, S= Fair. Boundary trees growing amongst fence line. Limited remaining life expectancy.	Fell for reasons of sound arboriculture.	>10 yrs	U	N/A
34	3 Silver Birch, <i>Betula pendula</i>	>10	5	Ave 180	See plan.	W-1.5	C1	P= Good, S= Fair. Three specimens of limited quality. Could provide temporary screening but not considered a material constraint.	No action at present.	10 to 20 yrs	C1	2.20
35	Group contain Willow, Thorn & Birch saplings.	2	N/A	Ave 90	See plan.	N/A	C2	P= Fair, S= Fair. Area of saplings of limited significance or stature.	No action at present.	10 to 20 yrs	C2	Use drip line if retained.
6	Off-site Sycamore, Acer	10	3	240	3.5 3.5 3.5 3.5	W-1.0	C1	P= Good, S= Fair. Off-site tree no accurate inspection made.	No action at present.	10 to 20 yrs	C1	Use drip line if retained.

Appendix 4- General Tree Protection Considerations

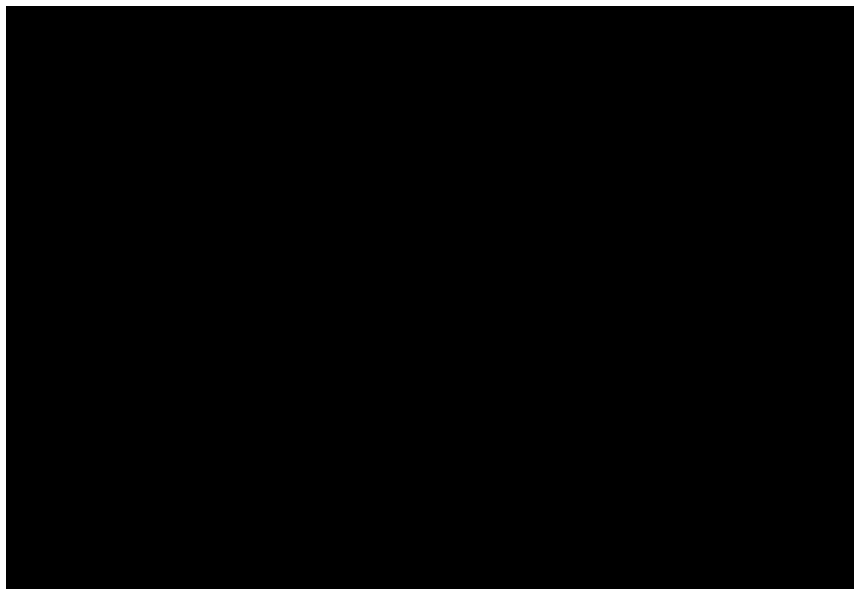
Any tree retained within the design will require protection in accordance with BS5837 regardless of its initial retention category. This protection will require trees to be fenced- off in areas equal to the RPA's plotted on the attached Tree Constraints Plan (TCP) (located in Appendix 5).

A protective fence will be erected prior to the commencement of any site works e.g. before any materials are brought on site, The fence will have signs attached to it stating that this is a Construction Exclusion Zone and that NO WORKS are Permitted within the fence. The protected fence may only be removed following completion of all construction works.

The fence is required to be sited in accordance with the Tree Protection Plan once a final layout has been decided. It must ideally be constructed as per figure 2 in BS5837 and be fit for the purpose of excluding any construction activity (see diagram below). Any other fence/barrier used must be fit for the purpose.

Once erected all protective fencing will be regarded as sacrosanct, and will not be removed or altered without prior recommendation by the project Arboriculturist and approval by the local planning authority.

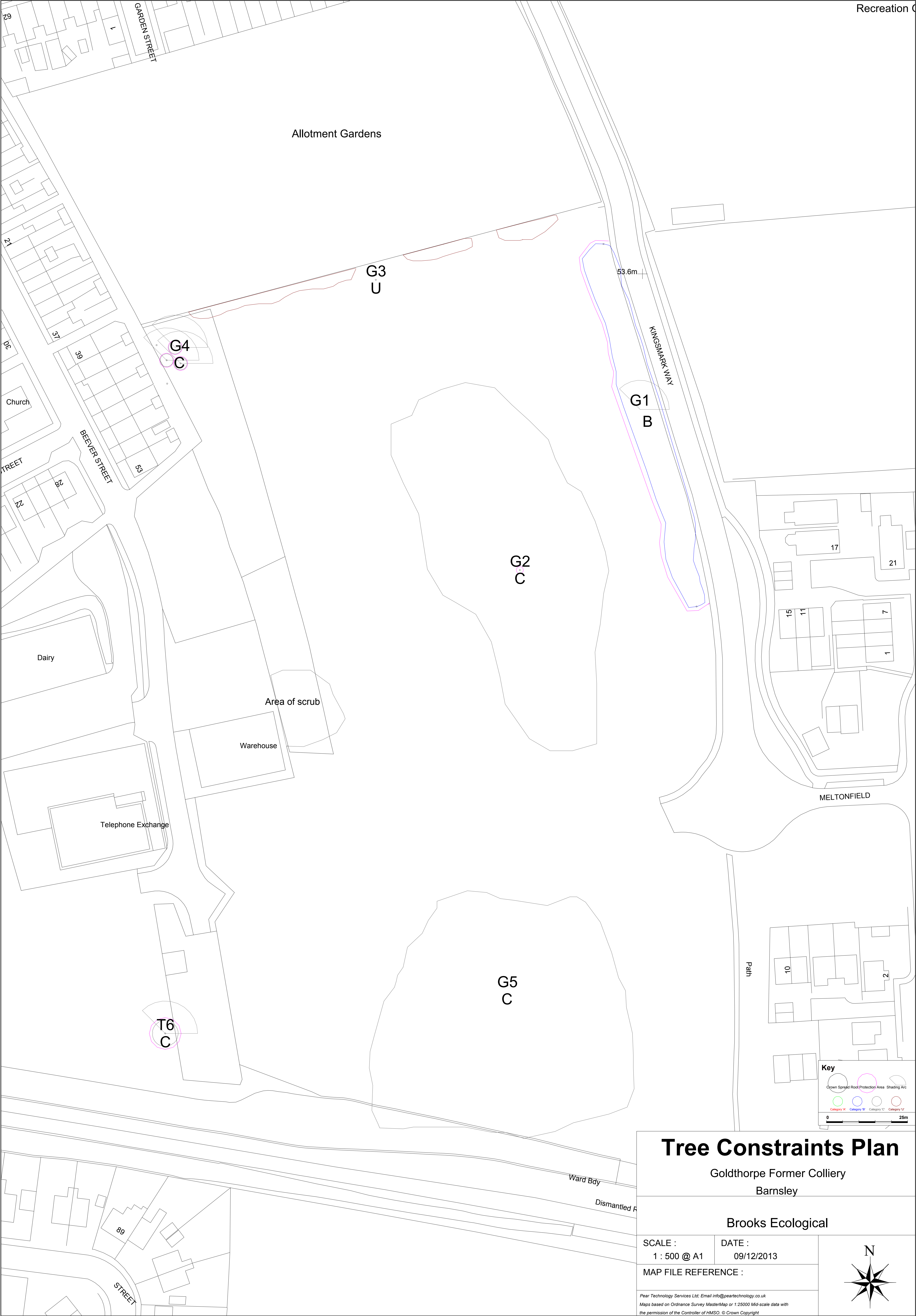
The diagram below demonstrates the required fence specifications of BS5837:2012 figure 2.



Key

1. Standard scaffold poles
2. Heavy gauge 2m tall galvanized tube welded mesh infill panels
3. Panels secured to uprights with wire ties
4. Ground level
5. Uprights driven into the ground until secure (minimum depth 0.6m)
6. Standard scaffold clamps

Appendix 5-Tree Constraints Plan



Recreation C

Allotment Gardens

G3
U

G4
C

G1
B

G2
C

Area of scrub

Warehouse

Telephone Exchange

Dairy

MELTONFIELD

G5
C

T6
C

Key

Crown Spread

Root Protection Area

Shading Arc

Category A

Category B

Category C

Category U

0

25m

Tree Constraints Plan

Goldthorpe Former Colliery
Barnsley

Brooks Ecological

SCALE :
1 : 500 @ A1

DATE :
09/12/2013

MAP FILE REFERENCE :

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