

Arboricultural Survey

Hollyacre

Toddington Lane

Littlehampton

West Sussex

BN17 7PP

Report compiled by:
Peter Davies
FdSc Arboriculture TechArborA

PJC CONSULTANCY LTD

PJC Ref No: PJC/3117/12

Summary

This report was commissioned to satisfy the requirements of arboricultural issues defined by planning policy, at the request of Wilmington Homes.

The proposed project should not affect existing and/or retained trees on the site as long as protection measures set out in BS5837: 2012 '*Trees in relation to design, demolition and construction – Recommendations*' and outlined in this report are followed.

Objectives of this report

My involvement in this project can be defined by the following objectives:

To provide a schedule of the existing trees that are situated in areas that are likely to be potentially affected by the proposed construction project.

To classify the existing trees using the process defined by BS5837: 2012 '*Trees in relation to design, demolition and construction – Recommendations*'.

To provide arboricultural guidance on protection measures to be implemented during the construction process, and prevent future conflict between trees and structures.

To promote the retention of trees wherever feasible and appropriate.

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- 2 Site visit and observations
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1 INTRODUCTION

1.1 **Brief:** I have been commissioned by Charles Wiggins of Wilmington Homes to provide an arboricultural survey for the site named Hollyacre, in Littlehampton, West Sussex.

1.2 **Documents and information provided:** I was provided with the following documents relating to the site:

- Drawing ref. 12044-02-T-E – Topographical Site Survey

1.3 **Scope of this report:** This report is only concerned with the trees within the property boundaries of the site, or in areas that have the potential to be affected by construction works.

1.4 **Background information:** A proposal has been outlined for a residential development at the site named Hollyacre in Littlehampton. PJC Consultancy has been commissioned to undertake an arboricultural survey following the guidelines set out in BS5837: 2012 '*Trees in relation to design, demolition and construction – Recommendations*'.

1.5 **Qualifications:** I have received a Higher National Diploma in Forestry and am a professional member of the Arboricultural Association. I have over ten years experience in the arboricultural industry, working in both the commercial and private industries. I began as a feller and became a tree surgeon before progressing into consultancy.

2 SITE VISIT AND OBSERVATIONS

2.1 **Site visit:** I carried out a site visit on 14th December 2012. The weather conditions at the time were overcast with heavy rain showers. The visibility was fair.

2.2 **Brief site description:** The site is situated south of Toddington Lane in Littlehampton. The surrounding land use is comprised of large commercial greenhouses to the north, and residential properties on all remaining aspects. A rail line runs parallel with the southern site boundary. The site itself consists of disused nursery buildings and workshops. Trees are located along the site boundaries and adjacent to the buildings.

2.3 **Identification and location of trees:** The trees are not number tagged but their locations are marked on the Tree Constraints Plan in Appendix 1.

2.4 **Tree observations:** I visually inspected the trees from within the boundaries of the property. The survey methodology was restricted to a visual assessment. The height, crown spread and crown clearance for each tree was estimated to the nearest metre. The DBH (stem diameter at breast height) was measured to the nearest millimetre.

3 APPRAISAL

3.1 The trees were assessed and categorised using the cascade chart in BS5837: 2012 *Trees in relation to design, demolition and construction – Recommendations*. Their dimensions were recorded, and their positions plotted on the Tree Constraints Plan in Appendix 1. The Tree Survey Schedule in Appendix 2 contains more detailed information for each tree.

3.2 The categorisation of trees is based on a number of factors. The initial category is U for trees that are in such a condition that they cannot realistically be retained as living trees in the context of the current land use for more than ten years. Category U trees do not necessarily need to be removed if they do not conflict with the proposed development or are not dangerous. The remaining trees are then assessed for their arboricultural, landscape and historical, (or cultural) contribution. This assessment takes into account defects and previous pruning to put the trees into A, B and C categories. The highest categorisation is category A, with the lowest being category C. Category C trees are not normally retained if they pose a constraint to development. The cascade chart further explaining the above is included in Appendix 3.

3.3 A total of five individual trees and three groups were surveyed and included in the Tree Survey Schedule. One tree is categorised as B and one group categorised as U. All remaining trees are categorised as C.

3.4 Tree T4 is a cedar of Lebanon (*Cedrus libani*) situated adjacent to the entrance to the disused workshops. This tree is of fair condition and vigour. It is the largest tree situated at the site and has the potential to mature into a specimen tree. It has therefore been categorised as B1. Due to its location, adjacent to the northern boundary, T4 provides visual amenity to the surrounding area.

3.5 Group G1 is a tree line situated on the road frontage along the northern site boundary. Species include Silver birch (*Betula pendula*), cherry (*Prunus avium*) and maple (*Acer spp.*). The trees are of poor condition, form and vigour. Poor pruning practice has been employed in the past and the trees possess abundant deadwood. Despite their prominent location on Toddington Lane, the poor condition of the trees affords them limited landscape value.

3.4 Group G2 is a Lawson cypress (*Chamaecyparis lawsoniana*) screen situated on the western site boundary. The trees in this group do not possess significant arboricultural value. They provide a visual screen between the site and the adjacent property. Group G2 has been categorised as C2.

3.5 Group G3 comprises a line of densely planted sycamore (*Acer pseudoplatanus*) located along the southern site boundary. This tree line, which was likely planted as a shelterbelt, has previously been pollarded. As a result of the previous pruning, the trees have weak branch unions. The pollard points have become decayed and have a high chance of failure. These trees provide limited screening benefits from the adjacent railway, and due to their poor condition, form and vigour have been categorised as U.

3.6 The remaining trees at the site comprise early mature specimens of fair condition. Due to their size and locations, the trees do not form prominent landscape features. All remaining trees at the site have been categorised as C1.

4 RECOMMENDATIONS

4.1 Each tree's DBH was recorded, and applied to the formula found in Appendix 4. The resulting dimensions equal each tree's Root Protection Areas that are plotted on to the Tree Constraints Plan in Appendix 1, and added to the Tree Survey Schedule in Appendix 2. These are represented as a circle on the plan, and are colour coded depending on the category they were classed in using the cascade chart in Appendix 3.

4.2 The disturbance of a tree's root system can result in crown dieback and even death of the tree. Roots are used to support the tree structurally and act as transport for water and nutrients. Direct damage such as root severance can lead to ill health, as can compaction of the soil by construction traffic, heavy plant and storage of materials. Changing the nature of the surface above growing medium, i.e. from porous to non-porous can alter the resources available to the tree, which in turn can lead to its decline.

4.3 The root protection areas must be left free from excavation and disturbance, and protected during any proposed works. Protection should be in the form of fencing as defined in Appendix 5, and signs affixed as shown in Appendix 6.

4.4 It is suggested that group G3 be removed and replaced with better quality trees or hedging to screen the proposed development from the railway. Group G3 consists of poor quality specimens with limited potential for future growth. It is suggested that native species be used (refer to Extended Phase 1 Habitat Survey provided by PJC Ecology) to provide a visual and sound barrier from the railway.

4.5 There are no trees or shrubs located on the eastern site boundary. This area has good potential for further native planting.

4.6 It is recommended that the Lawson cypress screen on the western site boundary is retained as a screen from the adjacent third party property. As a species, Lawson cypress can become tall and overbearing. This species can however be heavily pruned without have a significant detrimental effect on the trees.

4.7 Shade cast by existing trees should be considered when finalising the proposed site layout. Existing shadows are shown on the Tree Shadow Plan in Appendix 1. Shade should also be considered when selecting species for further planting, as should factors such as autumnal leaf litter and tree sap on cars.

4.8 Any final design must show service locations and their routing. These must be located outside of the trees RPA's where they are underground and outside of the anticipated area of mature crown spread where above ground.

4.9 A pre-commencement meeting with all parties and the Local Authority Arboricultural Officer is recommended to agree working methods before any works are undertaken. All contractors should be briefed about tree related site factors as part of the site safety briefing.

4.10 A system and programme of onsite monitoring by the appointed arboricultural consultant should be agreed with the Local Authority Arboricultural Officer, if it is deemed necessary. Record sheets of monitoring site visits should be available for inspection by all parties, and forwarded to a designated employee of the Local Authority.

5 CONCLUSIONS

5.1 Although a number of small trees and woody shrubs have been recommended for removal if they pose a constraint to development, their loss should not be detrimental to wider landscape or have an adverse impact on local visual amenity. Their loss could be mitigated by replanting with suitable species in an appropriate location during the soft landscaping phase of construction. If this is carried out consideration should be given to their location to avoid conflict with the proposed building and associated services.

6 OTHER CONSIDERATIONS

6.1 No Tree Preservation Order (TPO) protects the trees on the site on the date of this report. However, any persons proposing to undertake tree works must check the status of these trees with the local authority, and gain necessary consent before works are undertaken.

6.2 Financial penalties and/or criminal proceedings can result if tree works are carried out on a protected tree without consent. The entirety of the tree is protected, both above and below ground.

6.3 Trees should be checked for protected species before works are undertaken. It is against the law to disturb bats or their roosts under the Conservation of Habitat and Species Regulations. Nesting birds are protected by the Wildlife and Countryside Act. If protected species are discovered, Natural England should be contacted for advice.

6.4 The trees at this site were assessed for their condition and safety in relation to the average range of weather conditions that the region experiences. Any weather events that exceed the average norm cannot be predicted, and so their effects are not considered within this report.

6.5 The views and opinions contained within this report are entirely those of the author.

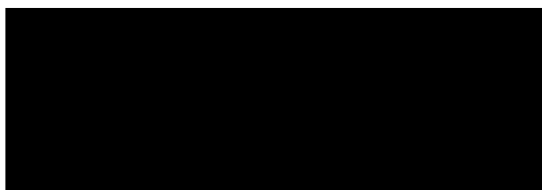
7 IMPLEMENTATION OF WORKS

7.1 The contractors should carry out all tree works to BS 3998 *Recommendations for Tree Works* (2010) as modified by research that is more recent. They should also carry relevant, adequate and up to date insurance.

7.2 It is also recommended that all tree works be carried out by an Arboricultural Association approved contractor. Approved contractors are expected to work to industry best standards, and the Arboricultural Association website contains contact details and information on engaging a suitable contractor.

Contact details

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Chapter House
Priesthawes Farm
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BN26 6QU



Author: Nick Betts

Date: 21st December 2012

APPENDIX 1 Tree Constraints Plan and Tree Shadow Plan



Key:

-  RPA for CAT B Tree*
-  RPA for CAT C Tree*
-  RPA for CAT U Tree*
-  Tree canopy

***Trees categorised in accordance with BS5837: 2012 'Trees in relation to design, demolition and construction - Recommendations'.**

Appendix 2, (Tree Survey Schedule) contained within the arboricultural report ref. no. PJC/3117/12 contains further information for each tree.

This drawing should be viewed in colour.



Site: Toddingham Lane, Littlehampton

Client: Wilmington Homes

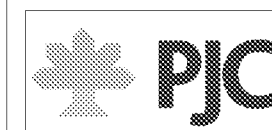
Surveyor: Nick Betts

Date Drawn: 21/12/12

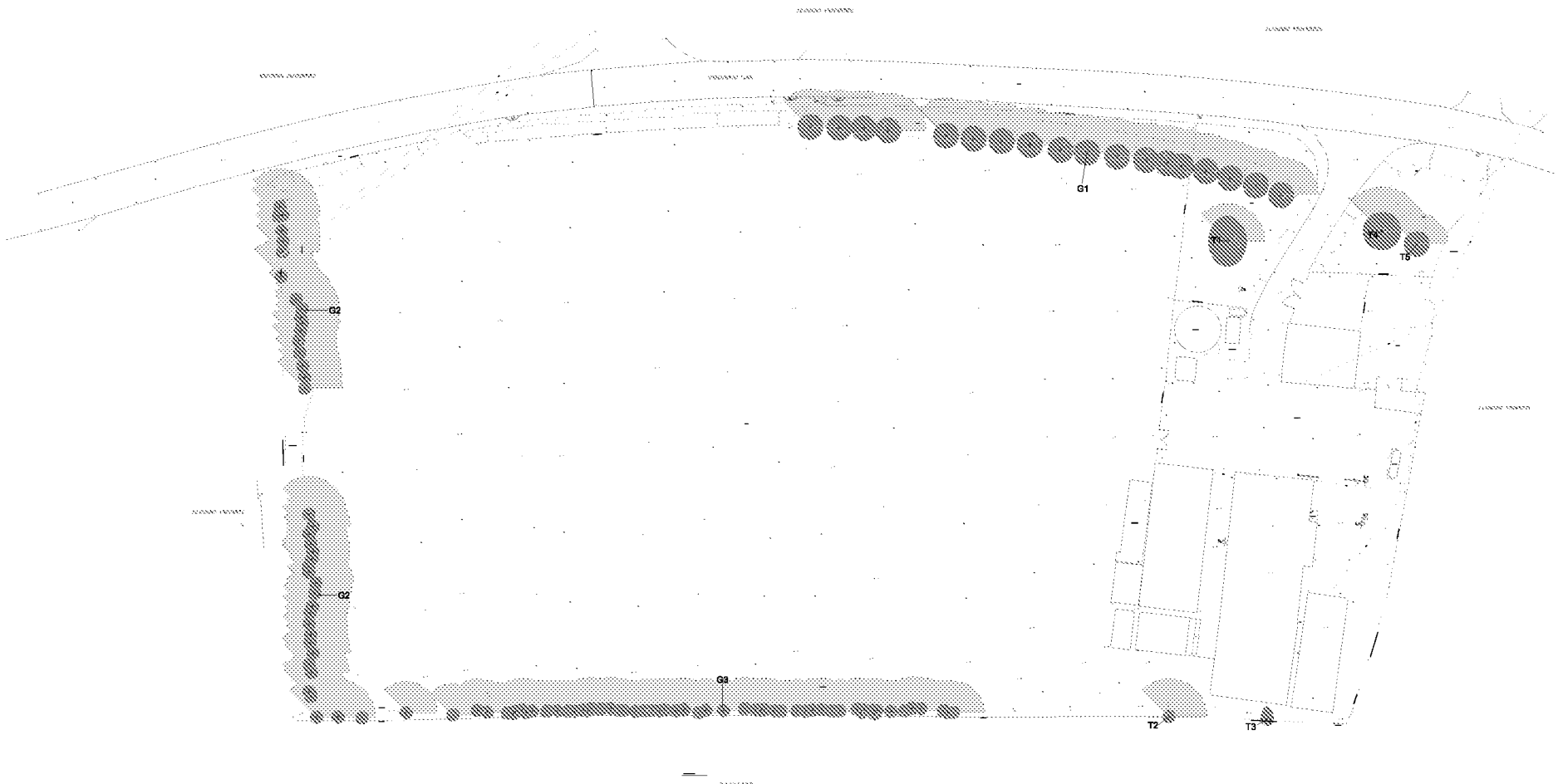
Scale: 1:1000 at A3

Drawing Number: PJC/3117/12/A

Drawing Title: Tree Constraints Plan



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Key:



Tree shadow



Tree canopy

Appendix 2, (Tree survey Schedule) contained within arboricultural report ref. PJC/3117/12 contains further information for each tree.

Tree shadows plotted using guidance set out in BS5837: 2012 - Trees in relation to design, demolition and construction - Recommendations. The trees existing height is used to calculate the radius of the shadow segment, plotted from north west to east as an arc.

Please note the plotted shadows represent shadow cast throughout the typical day, and not the total shadow cast at a given moment.

This drawing should be viewed in colour.



Site: Toddingham Lane, Littlehampton

Client: Wilmington Homes

Surveyor: Nick Betts

Date Drawn: 21/12/12

Scale: 1:1000 at A3

Drawing Number: PJC/3117/12/B

Drawing Title: Tree Shadow Plan



APPENDIX 2 Tree Survey Schedule

Tree Survey Schedule

				Client: Wilmington Homes Site: Toddington Lane, Littlehampton Date: 14/12/2012 Surveyor: Nick Betts						Green - Category A Tree Blue - Category B Tree Grey - Category C Tree Red - Category U Tree		
Tree ref. no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Height of crown clearance (m)	Age class	Physiological condition	Structural condition	Preliminary management recommendation	Category grading	Root Protection Area (m2)	Root Protection Radius (m)
T1	Atlantic cedar (Cedrus atlantica)	6	410	N4 E3 S4 W3	1	Semi mature	Fair, average foliage cover within crown, no evidence of pest or disease	Fair, typical growth habit of species with no major visible defects	Fell if tree poses constraint to development	C1	76	4.9
T2	Silver birch (Betula pendula)	6	110	N1 E1 S1 W1	1	Early mature	Fair, average bud production to ensure future growth, no evidence of pest or disease	Fair, typical growth habit of species with no major visible defects	Fell if tree poses constraint to development	C1	6.6	1.3
T3	Eucalyptus (Eucalyptus gunnii)	6	130	N2 E1 S1 W1	3	Early mature	Fair, average foliage cover within crown, no evidence of pest or disease	Fair, typical growth habit of species with no major visible defects	Fell if tree poses constraint to development	C1	7.6	1.6
T4	Cedar of Lebanon (Cedrus libani)	7	330	N3 E3 S3 W3	0	Mature	Fair, average foliage cover within crown, no evidence of pest or disease	Fair, typical growth habit of species with no major visible defects	No action required	B1	49.3	4
T5	Common lime (Tilia x europaea)	5	120	N2 E2 S2 W2	2	Early mature	Fair, average bud production to ensure future growth, no evidence of pest or disease	Fair, multiple large wounds on stem	Fell if tree poses constraint to development	C1	6.5	1.4
G1	Birch (Betula pendula), Cherry (Prunus avium), Maple spp. (Acer spp.)	6 average	320 average	2 average	2 average	Early mature	Poor, all trees in poor health with limited bud production	Poor, numerous dead wood, wounds and poor pruning practice	Fell if trees pose constraint to development	C2	46.3 average	3.8 average

Tree Survey Schedule

				Client: Wilmington Homes Site: Toddington Lane, Littlehampton Date: 14/12/2012 Surveyor: Nick Betts						Green - Category A Tree Blue - Category B Tree Grey - Category C Tree Red - Category U Tree		
Tree ref. no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Height of crown clearance (m)	Age class	Physiological condition	Structural condition	Preliminary management recommendation	Category grading	Root Protection Area (m2)	Root Protection Radius (m)
G2	Lawson cypress (Chamaecyparis lawsoniana)	6 average	240 average	1 average	0 average	Early mature	Fair, average foliage cover within crown, no evidence of pest or disease	Fair, typical growth habit of species with no major visible defects	Fell if trees pose constraint to development	G2	26.1 average	2.9 average
G3	Sycamore (Acer pseudoplatanus)	5 average	140 average	1 average	0 average	Early mature	Poor, previously pollarded to form shelterbelt with resultant weak stem unions, deadwood and poor form		Fell if trees pose constraint to development	U	8.9 average	1.7 average

APPENDIX 3 Cascade Chart for Tree Quality Assessment



Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of their 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 the 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 the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <i>Note Category U trees can have existing or potential conservation value which it might be desirable to preserve</i>			Red
	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)	Green
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 remedial 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	Blue
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	Grey

APPENDIX 4 Root Protection Area Formulas

CALCULATING THE RPA

For single stemmed trees

$$\text{RPA(m}^2\text{)} = \frac{(\text{stem diameter (mm) @ 1.5 m x 12})^2 \times 3.142}{1000}$$

For trees with two to five stems, a combined stem diameter is calculated as follows:

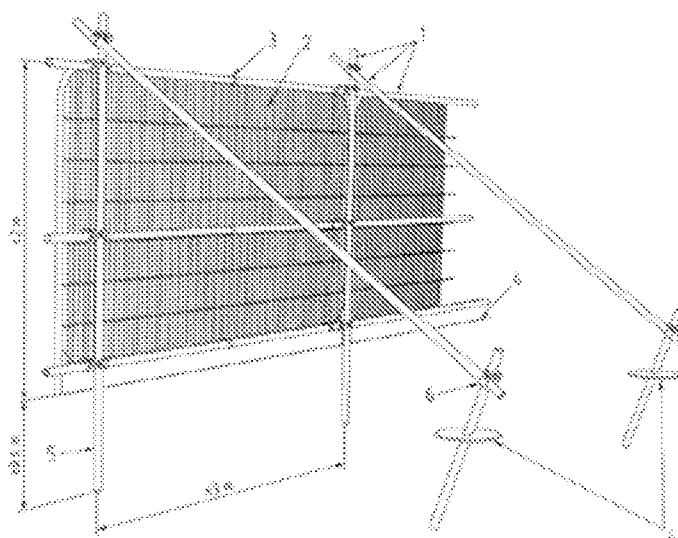
$$\sqrt{(\text{stem diameter 1})^2 + (\text{stem diameter 2})^2 \dots + (\text{stem diameter 5})^2}$$

For trees with more than five stems, the combine stem diameter is calculated as follows:

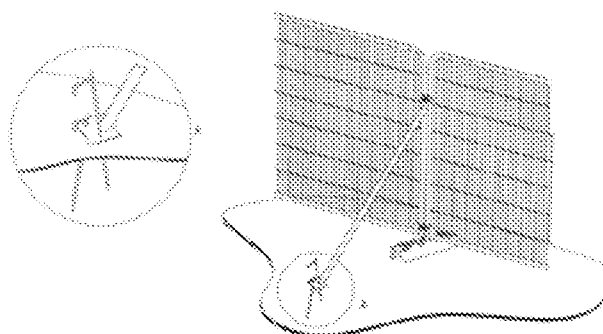
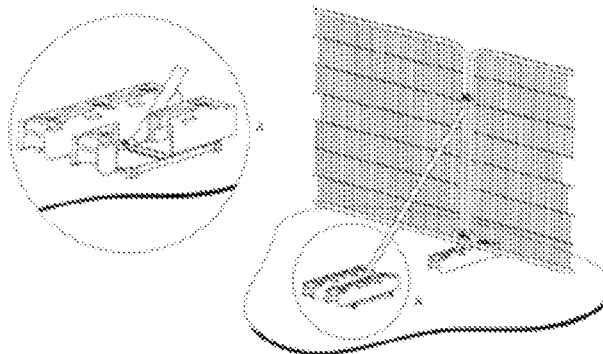
$$\sqrt{(\text{mean stem diameter})^2 \times \text{number of stems}}$$



APPENDIX 5 Tree Protection Fencing Specification

~~xxx~~

- [illegible]

[illegible]

10. **Notation:** $\mathbb{N}$ denotes the set of natural numbers, $\mathbb{Z}$ the set of integers, $\mathbb{R}$ the set of real numbers, and $\mathbb{C}$ the set of complex numbers.

APPENDIX 6 Example Protective Fencing Signs



APPENDIX 7 Photographs



Photograph 1 – Group G3



Photograph 2 – Group G1