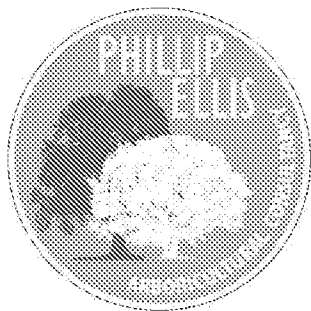




Tree Care Consultant

Phillip J. Ellis MI Hort, Tech Arbor A

ARBORICULTURAL REPORT AND STATEMENT IN RELATION TO DEVELOPMENT PROPOSALS TO BS5837: 2012

REF: RH/130/2018

CLIENT: Caldotec Ltd, Willowhayne Crescent, East Preston, West Sussex, BN16 1NS.

Location: Rustington Hall, Station Road, Rustington, West Sussex, BN16 3AY.

INSPECTION DATE: 14th February 2018

Report by: Phillip J. Ellis MI Hort, Tech Arbor A

INSTRUCTIONS RECEIVED:

From Caldotec Ltd to carry out tree survey and prepare a tree protection plan and report to support planning application R/267/17/PL to construct a block of flats on a grass plot. Report to conform to British Standard 5837: 2012 "Trees in relation to design demolition and construction - recommendations" to protect and ensure protection of retained trees during construction works.

Documents Supplied:

Plans of proposed layout in paper format drawing number 15072/03 & 15072/03a.

Summary:

The proposal is to construct a 2-storey block of flats on the site. There are 4 trees on the site or within influence of the site that will need to be considered for protection or removal during the construction works. The local planning authority is Arun District Council who will consider the planning application for the proposal.

The statements in this Report do not take account of the effects of extremes of climate, vandalism or accident, whether physical, chemical or fire. Phillip Ellis cannot therefore accept any liability in connection with these factors, nor where prescribed work is not carried out in a correct and professional manner in accordance with current good practice. The authority of this Report ceases at any stated time limit within it, or if none stated after two years from the date of the survey or when any site conditions change or pruning or other works unspecified in the Report are carried out to, or affecting, the subject tree(s), whichever is the sooner.

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Please note that any abbreviations introduced in (brackets) are used throughout this report



"Elstead", 61 Alinora Avenue, Goring by Sea, Worthing, West Sussex, BN12 1LR.



CONTENTS OF THE REPORT

1.0	Purpose and Scope of the Report.	Page 3
2.0	Site Description and soil assessment	Page 3
3.0	Existing trees	Page 3
4.0	Existing hedges	Page 4
6.0	Arboricultural Implications Assessment	Page 4
7.0	New planting and landscaping	Page 5
8.0	Tree Protection Plan	Page 5
9.0	Ground Protection	Page 5
10.0	Arboricultural Method Statement.	Page 6
11.0	Arboricultural Supervision	Page 7
10.0	Recommendations and Conclusions.	Page 7
Photographs		Page 4
Appendices		
Appendix A – Arboricultural Method Statement (AMS)		Page 11
Appendix B - Tree Survey Data,		Page 12
Appendix C - Root Protection Areas of retained trees		Page 14
Appendix D - Tree Protection Fence		Page 15
Information posters		Page 17
Tree Constraints Plan: TCP/RH/130/18		Attached
Tree Protection Plan: TPP/RH/130/18		Attached



Google aerial view of site within red line

1.0 Purpose and Scope of the Report.

- 1.1 Phillip Ellis Tree Care Consultancy has been instructed by to undertake a tree survey at West Sussex. The survey is to BS5837:2012 standard and concerns 4 trees found on or close to the site that could be affected by the proposal without adequate protection.
- 1.2 The Report is concerned only with Arboricultural aspects of the site only.
- 1.3 The proposal is to build demolish the existing house and replace with two detached houses.

2.0 Site and Soil assessment

- 2.1 The site is a small plot of land between Rustington Hall Nursing Home and Paddock Wood a residential area Road accessed from Station Road.
- 2.3 The Planning Authority is Arun District Council who will deal with the planning application.
- 2.4 The Geology of the site is described by the British Geological Survey, superficial layer as sand silt and clay and the bedrock is chalk. This soil type will not present problems of heave and subsidence found with clay soils.
- 2.5 The soil is considered alkaline and will have a ph (acidity) of about 7.5 and would support chalk loving plants such as already found in the garden.

3.0 Existing trees

- 3.1 4 trees are in close proximity to the proposal that will require specific protection where detail can be found in appendix D tree survey data.
- 3.2 Trees have been assessed in terms of its Arboricultural, landscape, cultural and conservation values in accordance with BS 5837:2012 'Trees in relation to construction' and placed within one of the following categories found within table 1. Assessed as category B (1).

Category A: Trees that are particularly good examples of their species.

Category B: Trees of moderate quality with an estimated remaining life of at least 20 years.

Category C: Trees of low quality with an estimated life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

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.

Categories A, B and C can be placed into sub categories according to reflect arboricultural, landscape and cultural values:

1. Mainly arboricultural Qualities, good examples of species

2. Mainly landscape qualities with visual importance

3. Mainly cultural values including conservation and historical

3.3 Whilst the assessment of a trees condition is a subjective process. Table 1 of British Standard 5837: 2012 gives clear guidance on the appropriate criteria for categorizing trees and factors that would assist the Arboriculturalist in determining the suitability of a tree for retention.

3.4 A total of 4 trees have been included in the survey and are mainly in good condition with two in the "U" category recommended for removal.

3.5 The trees grades from the survey are summarised in the table below out of the total of 14 recorded.

B35837 Category	No. of trees	Removed
A	2	0
B	0	0
C	0	1
U	2	2
Totals	4	2

3.6 As far as any pruning works to the trees I have only recommend some minor works that should be carried out to BS 3998 Tree Work – Recommendations prior to commencement of construction.

3.7 The categorisation of trees may be a contentious issue, but by using the guidelines of BS5837:2012 a uniform approach may be adopted.

4.0 Existing Hedges

4.1 There are no existing hedges on the site.

5.0 Arboricultural Implications Assessment

5.1 The primary criterion in arboricultural terms is the retention of as many trees as is practicable. Quite apart from the requirement to retain some of the existing character, the presence of trees is generally accepted as being beneficial to the environment. The following is an assessment of the effects of the proposed development on existing trees and the future landscape. Full details of recommended tree works are provided within the tree details in appendix B.

5.2 Root Protection Area (**RPA**) of The RPA of T1 a mature Silver Birch in the garden of 7a Paddock Green will be partly over the new footpath at rear of proposal and can be adequately protected with fencing and ground protection specified at paragraph 8.0. T2 a Yew in the south west corner of site close to parking bays can be adequately protected by fencing off one parking bay. T3 & T4 both in poor condition and of low amenity value will be removed.

6.0 New planting and landscape design

- 6.1 A landscape plan has been prepared and the front north side and rear will be mainly lawn with planting in front of each unit with a hedge along north side of units.

7.0 Tree Protection Plan. (TPP).

- 7.1 The default protective fencing recommended in BS is of the “Heras” type set out as shown in **appendix D** fixed to ground so that it cannot be moved. As an alternative to Heras, 2 m high Chestnut paling fixed to driven stakes could be used across the rear garden. Warning notices are to be attached to the fencing as shown on page 19 of this report. Once fencing is in place the fencing should be regarded as “sacrosanct” and may only be moved with appropriate supervision and authority.
- 7.2 The storage of materials, chemicals or use of fires or machinery shall not take place within the protected areas shown on the tree Protection Plan **TPP/RH/111/18P**.
- 7.3 All personnel on site shall be made aware of the **TPP** and understand its importance prior to any on site activities.
- 7.4 Arboricultural supervision may be required should working within the **RPA's** of any trees should it be necessary. Any small roots encountered up to 25mm may be cut cleanly using a suitable hand saw. Larger roots may need to be covered with damp hessian and their treatment authorised by the Arboriculturalist. If hessian covered, it is to be kept damp until the area is backfilled.



Heras fencing

8.0 Ground Protection

- 8.1 Root Protection Area (**RPA**) of T1 will put a small constraint on the new tarmac foot path to service the rear of units. It is recommended to use a geotextile with a 50mm deep cellular confinement system over the existing surface to prevent damage to tree roots. Any excavations over this area must be carried out by hand and any exposed roots protected by covering with damp hessian. It may be necessary to raise level of path to avoid damage to roots to allow for depth of materials used. For further information and advice, we recommend contacting companies supplying materials for this purpose info@geosyn.co.uk. or <https://www.wrekinproducts.com/>



Cellular confinement system filled with angular stone

9.0 Arboricultural Method Statement (AMS)

9.1 To take account of all operations including access that are proposed that may come within the RPA and canopy of any retained trees taking a precautionary approach appropriate to the proposals on this site. **AMS** may require to be updated after the final design stage to take account of design changes and materials used for construction of drive. The following will need to be considered in forming the **AMS**. I do not consider heavy activity will take place on the site and minimum protection described here should be sufficient.

9.2 Preliminary Works

- a) Installation of tree protection as shown on the Tree Protection Plan **TPP/RH/111/18**. Heras type fencing is usually recommended near construction area. I would suggest either Chestnut palling may be sufficient across rear of garden due to low level of activity and agreed with the planning case officer. Set out fence using the **RPA** radius dimensions found in Appendix **A**.
- b) Details of a system of arboricultural site monitoring and supervision for the duration of the works. BS 5837 now makes a clear requirement for arboricultural supervision during all stages of development. Provided the fencing is erected in the positions shown, supervision in my opinion supervision would not be required.
- d) The only likely heavy machinery required would be a tractor digger and dumper truck.
- e) Any cranes used would work off the road to lower in any specific items of construction.

9.3 On completion of all the work ensure all building debris is removed and ground repaired where any damage has occurred to grass areas. Inspect all trees and note any damage requiring attention.

9.4 List of contacts and detail of relevant parties that shall include:

- Client
- Arboricultural Consultant
- Architect
- Structural engineer
- Planning consultant
- Arun District Council Tree Officer
- Arun District Council Planning Case Officer
- Contractor for project

9.5 Factors that need to be further considered are likely to be.

- a) Access to site will only be possible from Station Road.
- b) Demolition materials how they will be stored prior to removal.

- c) Intensity of construction activity whether it may cause damage to trees considered not to be heavy on this site as it is a small construction area.
- d) Vehicle parking, likely to be in front of site on parking bays.
- e) Phasing of works, could compromise trees at some point i.e. heavy plant.
- f) Installation of temporary and permanent apparatus including service runs that whenever possible be installed outside of the tree (**RPA**) likely to use existing services.
- g) Space for storage of materials, cannot be stored within (**RPA**) of trees. Mixing cement and concrete how it will be prevented from contaminating the soil.
- h) **Underground services** i.e. water and drains located so as not to come within **RPA** of any tree.

10.0 Arboricultural Supervision

- 10.1 The installation of tree protection measures should be supervised by an appropriately experienced Arboriculturist who should be appointed to monitor the observance of those measures for the duration of the development. The requirement for such supervision or not should be agreed before work commences.
- 10.2 The Arboriculturist should directly supervise any works that have to be undertaken within **RPAs**. These include the removal of any hard surfacing, the installation of any underground services and the construction of any new footpaths or hard surfaces.
- 10.3 The Arboriculturist should be informed immediately of any accidental damage to the trees and will make written recommendations to rectify damage.

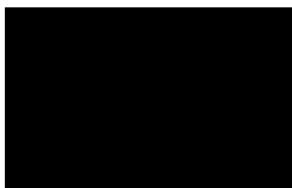
11.0 Recommendations and Conclusions

The proposed development and the trees have been assessed as per BS 5837 2012 and the 2 remaining trees can adequately be protected provided the arboricultural advice is taken. There are only two small trees/shrubs to be removed of poor quality.

It will be necessary prior to the construction stage to provide an Arboricultural Method Statement (**AMS**) and is provided in appendix C of this report. A copy should be available on site together with the Tree Protection Plan. The BS now suggests that an arboriculturist be appointed to supervise any work near trees and assure the retained trees are protected during the construction phase.

I recommend reading the posters in appendix D for guidance in protecting the trees and used on site prior to commencing the works. These can be used on site to give site operatives an understanding of tree protection.

Signed:



Phillip J. Ellis MI Hort. Cert Tech (Arb A)
Dated: 15th February 2018

Photographs



Fig 1 View of site



Fig 2 T1 Silver Birch in adjoining property



Fig 3 T2 Yew



T3 Laurel



T3 showing stem bleeding



Fig 4 T4 Laurel regrown stump

Appendix A – Arboricultural Method Statement (AMS)

(NB. amendments may be required prior to commencement of works.)

- 1.0 Workmen on the site should be made aware of how to prevent any damage to the tree structure and roots before commencing operations.
- 2.0 Site huts will be positioned in such positions so as not to cause harm to existing trees.
- 3.0 No construction plant, materials or excavations to be stored over **RPA** of any trees.
- 4.0 Installation of tree protection measures shall be put in place before demolition and construction work commences, fence and ground protection. Tree protection measures shall remain in place until completion of the development and may only otherwise be removed to facilitate any post development landscaping. Refer to Tree Protection plan **TPP/RH/130/18**.

5.0 Preliminary Works

- a) Install tree protection barriers as shown on the Tree Protection Plan as a red line Refer to dimensions shown in Appendix A when setting out protection fencing. Hedges are also to be protected from damage
- c) Demolition of house and clear site of all unwanted materials, structures and hard surfacing.
- d) Carry out any recommended tree works to BS 3998 tree work recommendations.

6.0 Construction works

- a) In the event of any work required over Root Protection Area of trees, to be carried out by hand not by machinery. Any exposed roots shall be wrapped or covered to prevent desiccation, removed prior to backfilling. Roots smaller than 25mm diameter, may be cut back using secateurs or hand saw.
- b) Any damage to the trees during construction to be reported and assessed by an arboriculturalist immediately.
- c) Arboricultural site monitoring and supervision for the duration of the works should be agreed at the commencement of the works whether a requirement or not.

7.0 Completion of works

- 7.1 On completion of all the work ensure all building debris is removed and ground repaired where any damage has occurred. Inspect all trees and note any damage requiring attention.
- 7.2 The Arboriculturist should be informed immediately of any accidental damage made to trees and make written recommendations to rectify damage.

Appendix B - Tree Survey Data

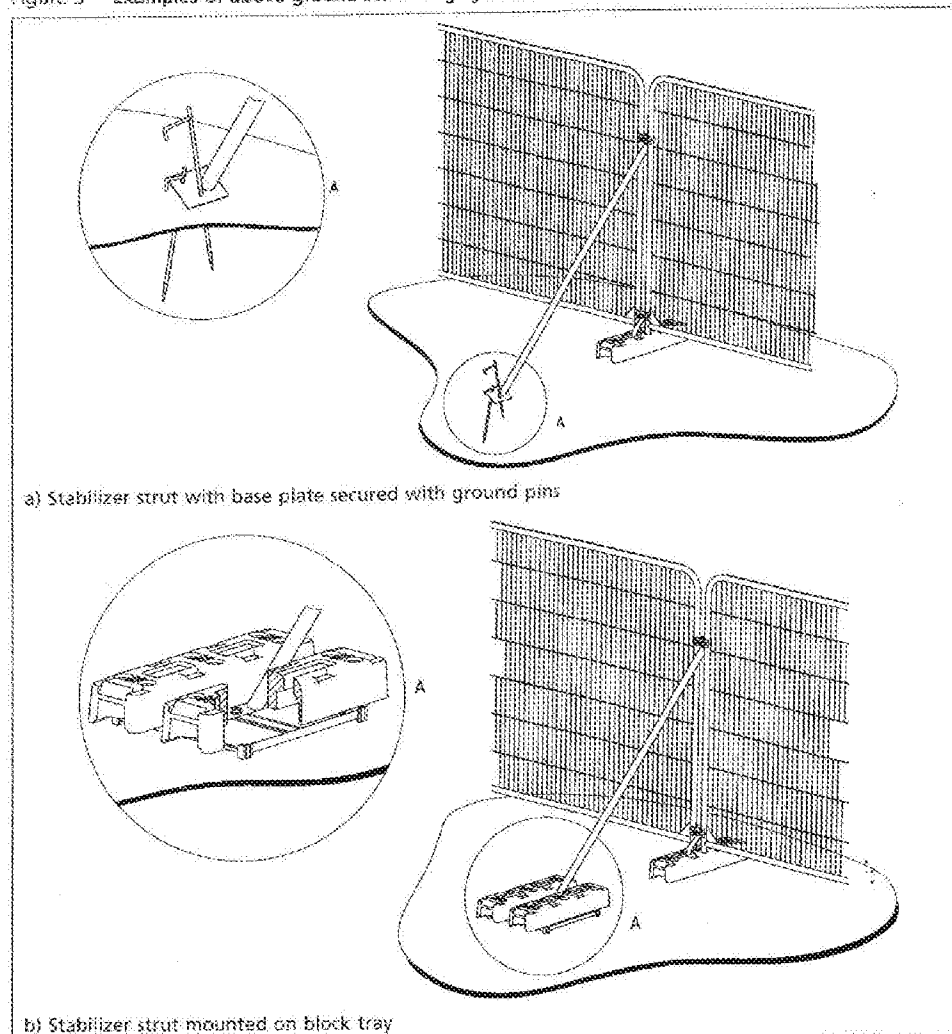
Tree ID	Common Name	Maturity	Height (m)	Stem Diameter	Crown Spread (m)				BS Cat	Life Expectancy	Physical Condition	Condition comments	Recommended work
					N	E	S	W					
T1	Birch	Mature	13	400 (est)	3	3	3	3	A (2)	10 to 20 yrs	Good	Good form forms two stems at 2m. In neighbouring property.	RPA will require protection on site only.
T2	Yew	Mature	5	150	1	2	1	1	A (2)	>40 yrs	Good	No action	RPA will require protection
T3	Portuguese Laurel	Mature	4.6	290	3	2	2	2	U	<10 yrs	Poor	In decline, thinning crown density & stem has bleeding canker	Fell tree and remove stump
T4	Portuguese Laurel	Over Mature	4	690	3	2	2	2	U	<10 yrs	Poor	Poor form, stump with regrowth	Fell tree and remove stump.

NB. Stem diameter of T1 Silver Birch has been estimated due to access not possible to garden.

Appendix C - Root protection areas of retained trees
(To be used when setting out site)

Tree ID	Common Name	Stem Diameter	Radius (M)	RPA (M ²)
T1	Birch	400 (est)	4.8	72
T2	Yew	150	1.8	10

Figure 3 Examples of above-ground stabilizing systems

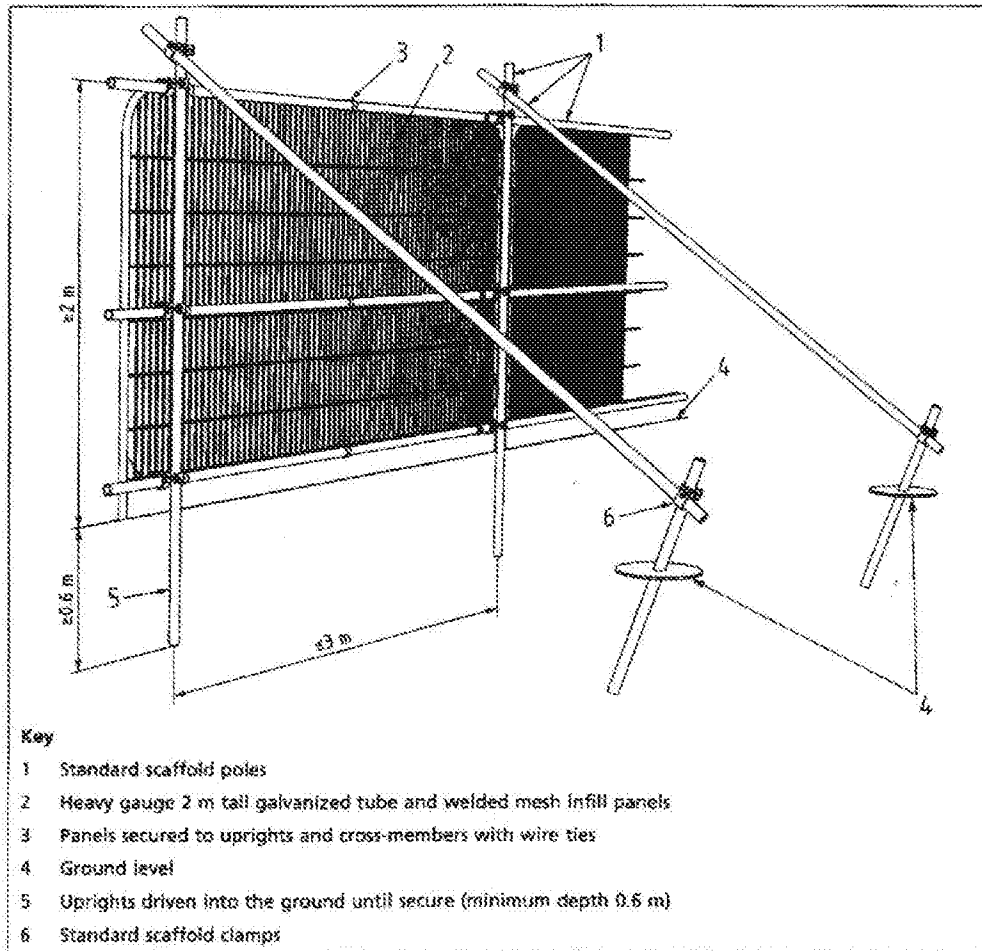


Extract from British Standard 5837: 2012
Trees in relation to design, demolition and construction
- Recommendations

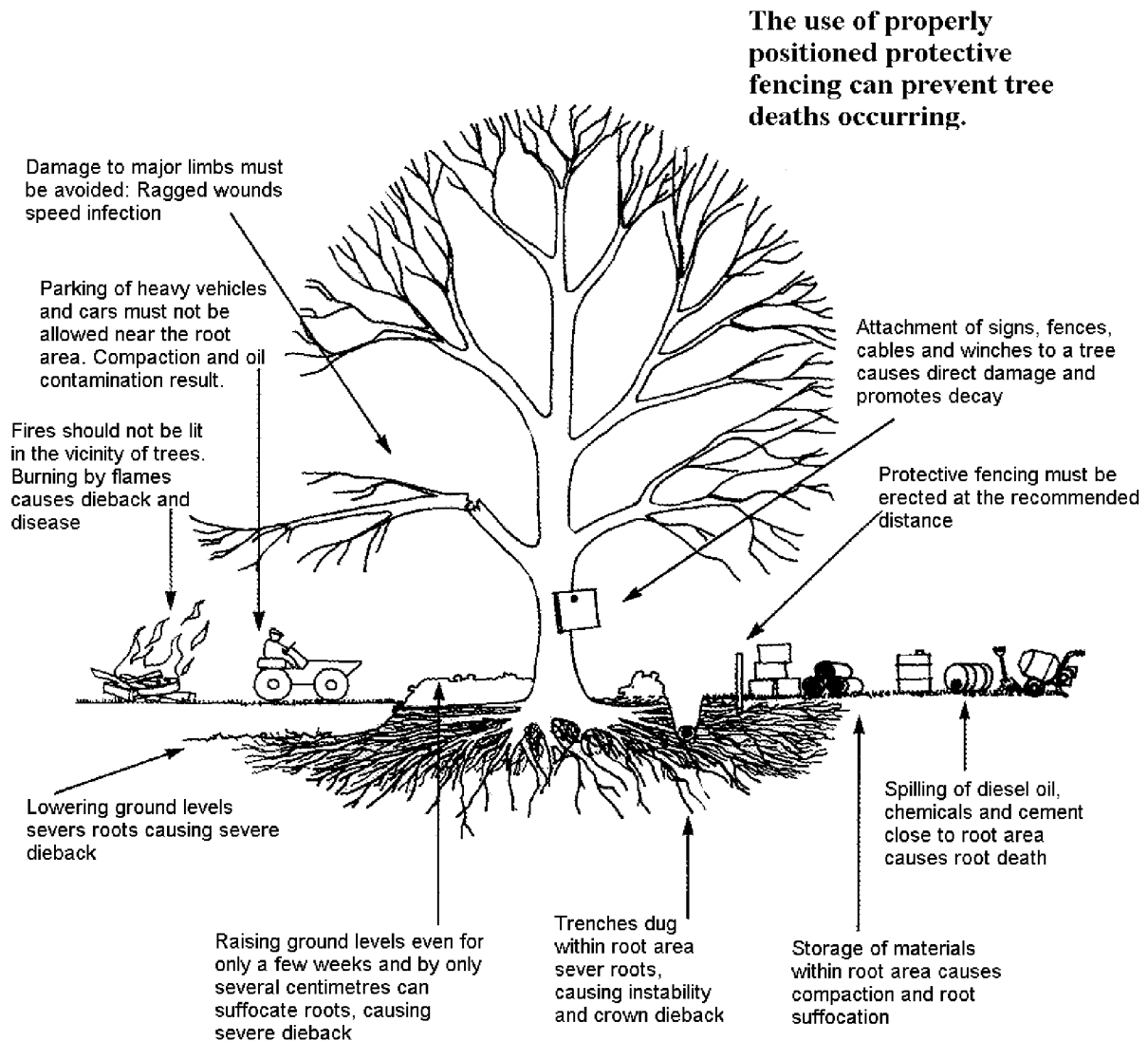
Figure 2.

Indicated framework support as the usual method of support for steel mesh panels ('Heras'). Some variation can be employed if appropriate, such as support by wooden posts (75mm x 75mm x 2.75m) dug or concreted into the ground (dry mix concrete contained within a plastic bag), or if there is no pressure of access a lighter form of netting on driven stakes.

Default specification for Tree Protection Barrier



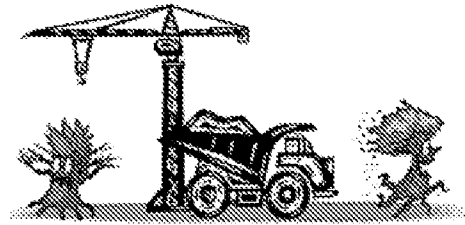
Common causes of Tree Death



Please use copies of this as an on-site poster for personnel

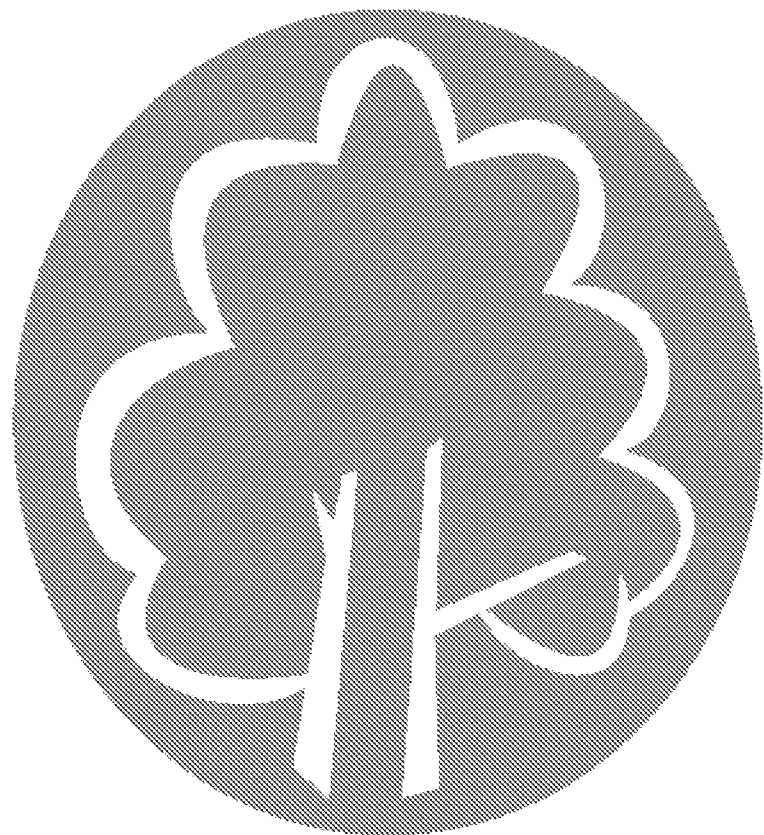


Construction and Trees



Why Is Fencing Erected Around Trees?

1. The major cause of damage to trees on construction sites is due to **soil compaction**.
 2. Roots use the spaces between soil particles to obtain Oxygen, Water and Nutrients.
 3. Heavy plant and machinery compresses (compacts) the soil, squashing out the air spaces and preventing root function.
 4. A compacted soil structure will stay compacted.
 5. Consequently the tree suffers and will show signs of branch die-back.
 6. Symptoms such as die-back may take several years to appear.
 7. Soil compaction over roots can be prevented by maintaining a fenced exclusion zone over the tree roots.
 8. The exclusion zone distance is calculated using British Standard 5837.
 9. Protective Fencing is installed at the calculated distance.
 10. Protective Fencing is a condition of planning approval, if it is removed or repositioned the construction firm is in breach of a condition and may be subjected to legal action.
-



**PROTECTIVE FENCING. THIS
FENCING MUST BE
MAINTAINED IN ACCORDANCE
WITH THE APPROVED PLANS
AND DRAWINGS FOR THIS
DEVELOPMENT.**



**TREE PROTECTION AREA
KEEP OUT !**

(TOWN & COUNTRY PLANNING ACT 1990)

**TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY
PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A
TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY
LEAD TO CRIMINAL PROSECUTION**

**ANY INCURSION INTO THE PROTECTED AREA MUST BE
WITH THE WRITTEN PERMISSION OF THE LOCAL
PLANNING AUTHORITY**