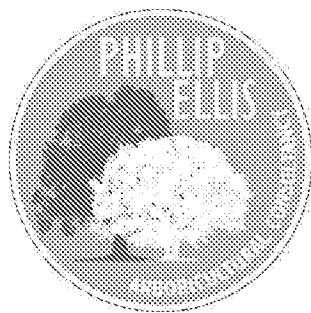




Tree Care Consultant

Phillip J . Ellis MI Hort, Tech Arbor A

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

Reference: NB/173/20

Client: Mrs L. Parker

Location: Liseve Lodge, 84 North Bersted Street, Bognor Regis, West Sussex, PO22 9AQ.

Inspection date: 6th May 2020

Surveyed by Phillip J . Ellis MI Hort, Tech Arbor A

Pages: 23

Instructions received:

Issued by Mr & Mrs to prepare a tree report to support construction of extension to side and rear of existing house to assess condition and prepare a report to conform to BS5837: 2012 Trees in relation to construction. Also provide an Arboricultural Method Statement for tree protection during the construction phase.

Documents Supplied: Plan of proposal in Cad format.

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, or affecting, the subject tree(s), whichever is the sooner.

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The content and format of this Report are for the exclusive use of the Client. It may not be sold, lent, hired out or divulged to any third party not directly involved in the subject matter without our written consent.

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.



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NB. Plans attached: As separate document to be included with planning application

Tree Protection Plan: TPP/NB/173/20

1.0 Purpose and Scope of the Report.

1.2 The Report is concerned only with Arboricultural aspects of the site only and deals with construction of a house involving removal of rear existing mobile home. Consideration to trees within proximity of proposal that may be impacted, have only been considered in this report.

2.0 Site Description and Notes.



Google view of site within red line

2.1 The site is on level site, accessed from North Bersted Street.

2.2 Soil type taken from the British Geological Survey comprises of clay, silt, sand and gravel in the superficial layer and the bedrock is chalk. Soil type will have a Ph (level of acidity) of around 7 - 7.5 supporting a wide range of garden plants.

3.0 Results of the Tree Survey and constraints.

3.1 8 trees were found on or near the proposal that will require specific protection to prevent damage 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.

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 subcategories 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 The trees grades from the survey are summarised in the table below out of the total of 12 recorded.

B35837 Category	No. of trees	Removed	Retained
A	0		0
B	6		6
C	1		1
U	5	5	
Totals	12	5	7

NB. Category colours identify grades on attached plan

3.6 As far as any pruning works to the trees only recommend some works mainly to Lift crown height and remove ivy on stems should be carried out to BS 3998 Tree Work - Recommendations, prior to commencement of construction.

3.7 The full tree data sheet for the tree survey is found in Appendix A. The categorisation of trees may be a contentious issue but by using the guidelines in BS5837:2012 a uniform approach has been adopted.

3.8 There are 5 trees recommended for removal due to condition.

4.0 Existing Hedges and shrubs

There are no existing hedges and the site is bounded by a fence.

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 Only one tree will put a small constraint on the proposal, T3 Bay Tree, close to proposed house. A requirement to put in place an area of ground protection measures for the construction phase to protect roots. I would also recommend that the rainwater drains go into a soakaway so as the ground under the proposal is not allowed to dry out.

5.3 To protect the roots of T3 Bay tree from damage I would recommend laying 25mm sheets of plywood over a 50mm layer of wood chip to reduce risk of damage and compaction of soil from

construction work as shown on the Tree Protection Plan. Heavy duty plastic or metal sheets can also be used.

6.0 Tree Protection Plan (TPP)

- 6.1 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. Warning notices are to be attached to the fencing as shown on page 15 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.
- 6.2 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/
- 6.3 All personnel on site shall be made aware of the TPP and understand its importance and how damage can be avoided prior to any on site activities.
- 6.4 Arboricultural supervision may be required should working close to 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.



Example of Heras fencing

7.0 Ground protection

- 7.1 A small area of the Root Protection Area of T3 will require ground protection and recommended to use Heavy Ply sheets minimum 25mm thick over a 50 mm layer of woodchip to take weight of construction operations so as not to compact ground. To be used on areas hatched orange on the Tree Protection Plan TPP/NB/173/20 and remain in place during the construction phase.

8.0 Nesting Birds & The Wildlife and Countryside Act 1981

As the site is close to trees the following must be taken into consideration to protect wildlife during and after construction

The 'Bird Nesting Season' is officially from February until August (Natural England) and it is recommended that vegetation works (tree or hedge cutting) or site clearance should be done

outside of the nesting season. However, the nesting period may start before this and extend beyond it, in some cases. The busiest time for nesting birds is from 1st March until 31st July and of course varies according to species, etc. By impacting on nesting birds is an infringement of the Wildlife and Countryside Act 1981 and breaching the European Habitats Directive 1992/Nesting Birds Directive.

When tree or vegetation clearance work must be undertaken during the nesting season, a pre-works survey needs to be carried out by a suitably competent person. Generally, it should be assumed that birds will be nesting in trees, and as contractors it is down to us to assess, record and confirm that any works carried out in the management of trees and other vegetation has not disturbed actively nesting birds.

Ground vegetation, and therefore ground nesting birds, can often be overlooked by tree workers so additional care and controls should be taken when access and egress to the work site may also cause disturbance or damage to a nesting site. This is also true for retained trees on site as the removal of adjacent trees or remedial works on a tree may lead to the established nest being abandoned, exposed to the elements or predation. This action is also a breach of the act and therefore could lead to prosecution.

9.0 Arboricultural Method Statement (AMS)

9.1 To take account of all operations including access that are proposed that may come within or close to the RPA and canopy of any retained trees taking a precautionary approach appropriate to the proposals on this site. AMS may need to be updated after the final design stage to take account of any changes.

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

- a) Access to site only possible from North Bersted Street.
- b) Intensity of construction activity whether it may cause damage to trees and root protection area and likely to be light.
- c) Car parking, likely to be either on the site or outside on North Bersted Street.
- d) Phasing of works, may compromise trees at some point
- e) Location of temporary and permanent apparatus including service runs that whenever possible be installed outside of the tree RPA's.
- f) Impact any landscape works may have on tree root systems and little disturbance is recommended i.e. no digging deeper than 150mm to avoid major roots.
- g) Space for storage of materials, cannot be stored within RPA of any tree. Mixing cement and concrete, how it will be prevented from contaminating the soil.
- h) Concrete bases and foundations, how to avoid concrete contaminating soil? An impervious membrane is recommended under concrete to prevent contamination of soil.

9.3 Preliminary Works

- a) Install tree protection barriers and ground protection as shown on the Tree Protection Plan TPP/. Heras type fencing is recommended to protect stems and RPA of each tree.

- b) Carry out any recommended tree removal or pruning carried out to an appropriate standard and minimum standard and is "Tree Work" BSI 3998: 2010 and contractor's staff should also have appropriate craft certificates of competency.
- c) 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. Suggest initial tree protection on site be inspected and agreed before construction work commences.

9.4 Construction works

- a) Consider machinery to be used that may have impact on the site, diggers, dumpers, and vehicles.
- b) Site huts must not be placed over RPA of trees but can be used as a barrier to protect RPA's.
- c) Work will need to be carried out over Root Protection Area of trees without ground protection 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.
- d) Any damage to the trees during construction must to be reported and assessed by an arboriculturalist immediately.
- e) 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 with the LPA Tree Officer.
- d) It is recommended that the rainwater gutters drain into soakaways near to the trees to maintain soil moisture.

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

9.6 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

9.7 The full Arboricultural Method Statement (AMS) may be found in Appendix C.

10.0 New planting and landscape design

11.1 consideration of landscaping area with possible lawns and planting shrubs. I would recommend planting a number of suitable trees of an ornamental nature.

11.0 Arboricultural Supervision

11.1 The requirement for such supervision or not should be agreed before work commences between client and the Planning Case Officer. Initial fencing and ground protection should be inspected prior to commencement of construction I do not believe for this project it will be necessary.

11.2 The Arboriculturalist should be informed immediately of any accidental damage to the trees and will make written recommendations to rectify damage.

12.0 Recommendations and Conclusions

The proposal has been assessed to BS5837:2012 standards and five trees have been recommended for removal due to poor condition. If the tree protection measures detailed in report are installed, I see no reason why the proposal cannot go ahead

A copy of the AMS and TPP provided with this Report and should be freely available on site and all site operatives made aware of their purpose and contents. The information and warning signs should also be available and erected on the Heras fence prior to any on site activities.

I would advise that the tall hybrid Poplars found close to the site be reduced in height from 20 metres to 15 metres over the next two years as they do present a safety risk, given species and size.

A black rectangular box redacting the signature of Phillip J. Ellis.

Phillip J. Ellis MI Hort. Cert Tech (Arb A)
Dated: 9th June 2020

Photographs of site



Site viewed from entrance looking east



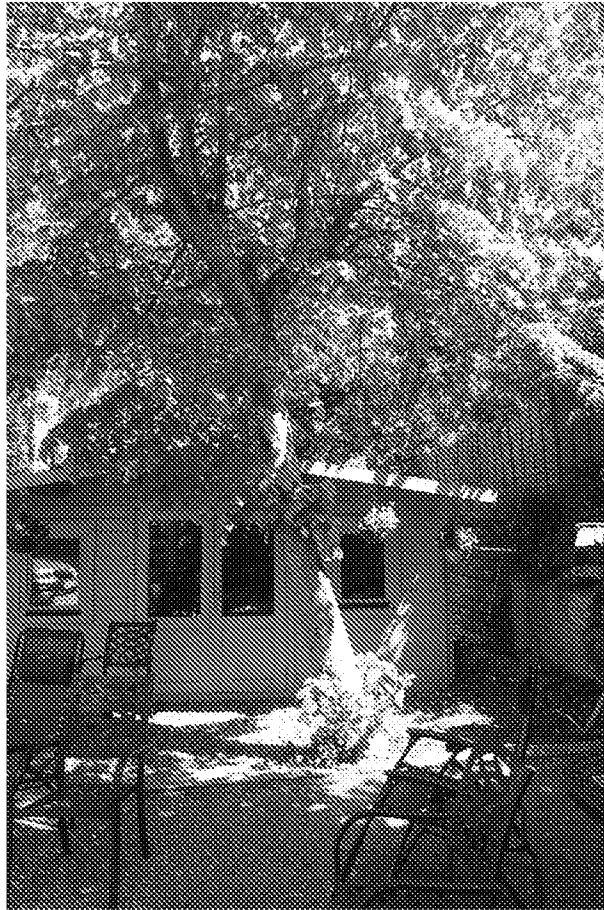
Site viewed from looking west



Area of proposed building



T1 Willow in middle of drive



T2 Lime



T4 Norway Maple showing damage at buttress
12

nb/173720



Storage area next to workshop



T6 Badly damaged bark occluding



Damaged bark on Willow T11

Appendix A - Tree Survey Data

Tree ID	Tree type	Maturity	Height (m)	Stem Diameter mm	Crown Spread N, E, W, S	Phys Condition	BS 5837 Category	Life Expectancy	Recommendations	Comment
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Tree ID	Tree type	Maturity	Height (m)	Stem Diameter mm	Crown Spread N, E, W, S	Phys Condition	BS 5837 Category	Life Expectancy	Recommendations	Comment
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Appendix B - Root protection areas of retained trees
(measurements to be used when setting out Heras fence)

Tree ID	Species	DBH (cm)	Radius (M)	RPA (M2)
T1	Lime	330	4	49.3
T3	Bay	120 (5)	2.9	26.1
T5	Plum	300	3.6	41
T7	Norway Maple	360	4.3	58.8
T9	Norway Maple	150	1.8	10
T10	Crack Willow	360	4.3	58.8
T12	Leyland Cypress	500	6.0	113

Appendix: C

Arboricultural Method Statement (AMS)

Proposal to construct house

Pre-Construction Measures:

- 1.0 All operatives working on site shall be made aware and comply with the recommendations of the Tree Protection Plan and how to avoid damage to the tree structure and the root system prior to any commencement of onsite operations. The leaflets at appendix E should be made freely available to site operatives.
- 2.0 Site huts and facilities will be positioned outside of the RPA of trees to cause no harm to the protected trees.
- 3.0 No construction vehicles, building materials, or other items deemed to be injurious to the trees may be stored within the RPA of the trees shown on the Tree Protection Plan TPP/.
- 4.0 No excavating machinery may be operated within the RPA without protective measures and the specific approval of the supervising Arboricultural representative.
- 5.0 Concrete base where required to be laid over impervious layer to prevent contamination of soil i.e. thick polythene sheet.
- 6.0 Tree protective measures shall be put in place prior to any other site activities. These protective measures remain in place during demolition and completion of construction phase

Preliminary Works:

- 1.0 Install tree protection measures as per the TPP plan TPP/ and to measurements shown in appendix B or as agreed on site with Arboriculturalist.
- 2.0 Undertake pruning works to trees.
- 3.0 Remove existing mobile home in a manner so as not to damage trees.
- 4.0 Construction phase as per contractor's Method Statement considering the protection measures for the trees within this report.

Completion of the Works.

- 1.0 Upon completion of the project, the removal Heras fence and ground protection measure may only be undertaken with the approval of the supervising Arboriculturalist. Damage to the trees or incursions into the RPA will be noted and recorded to the relevant authorities.

Appendix D: Fencing

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

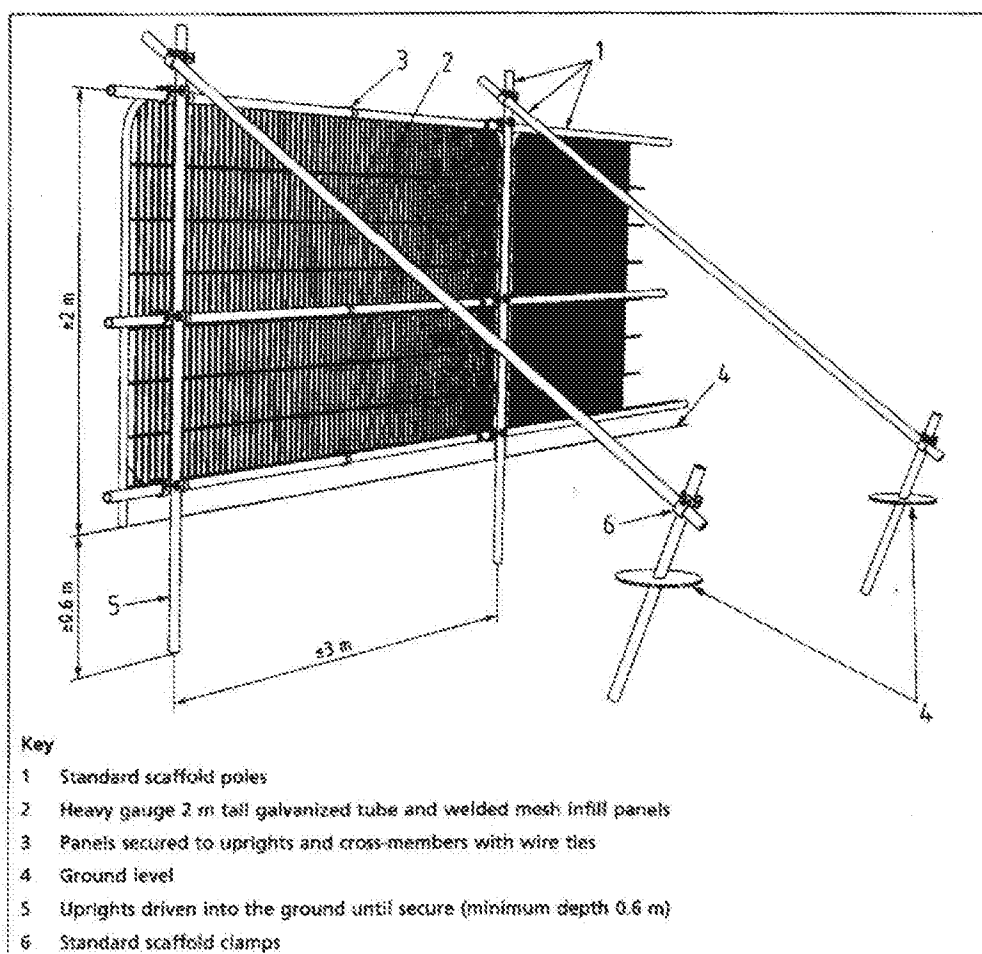
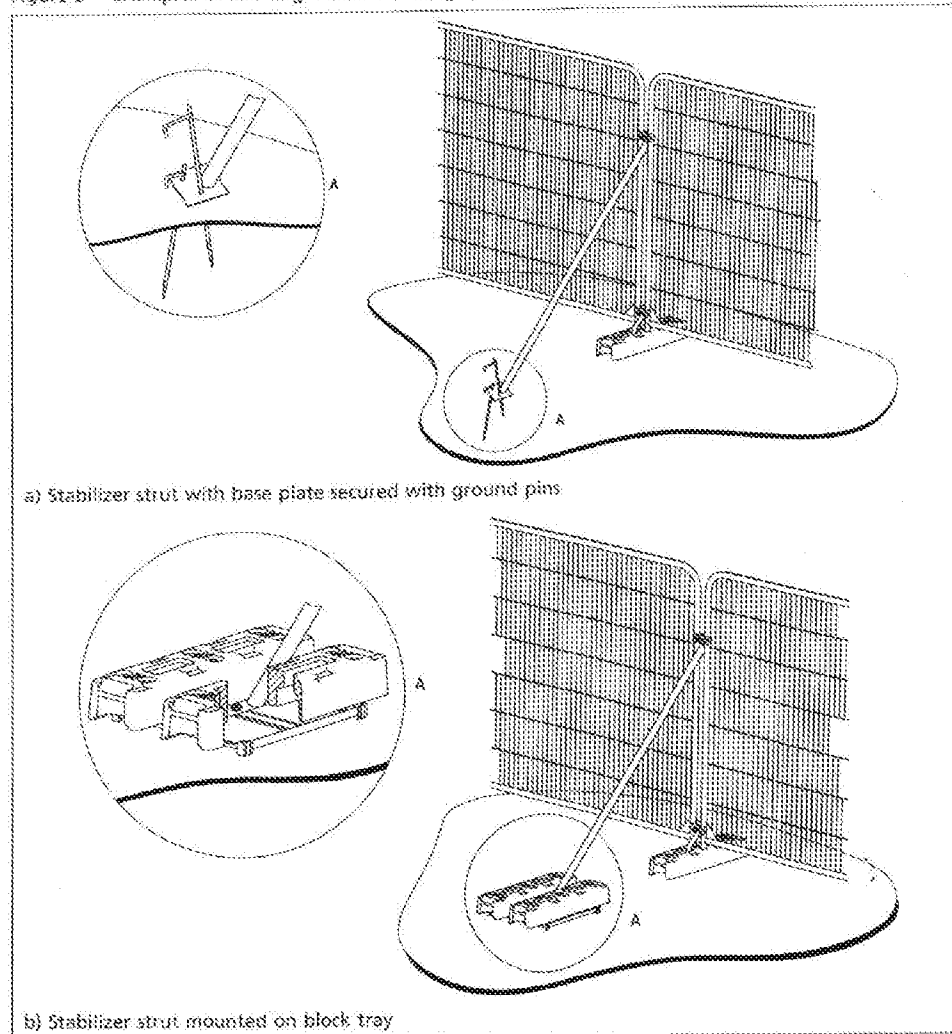
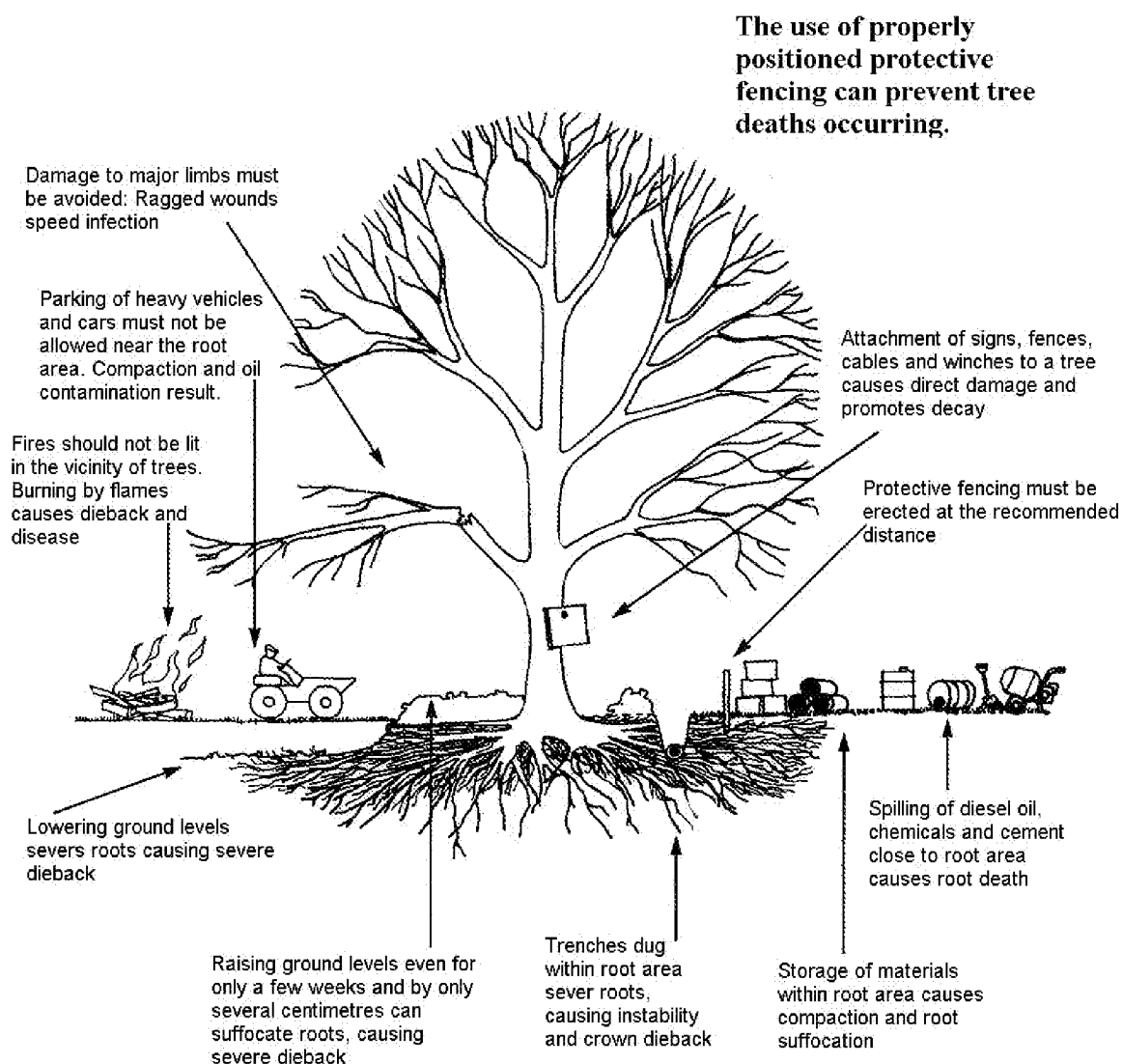


Figure 3 Examples of above-ground stabilizing systems



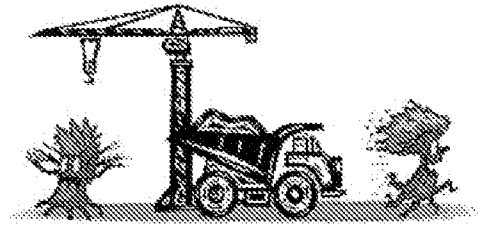
Common causes of Tree Death



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

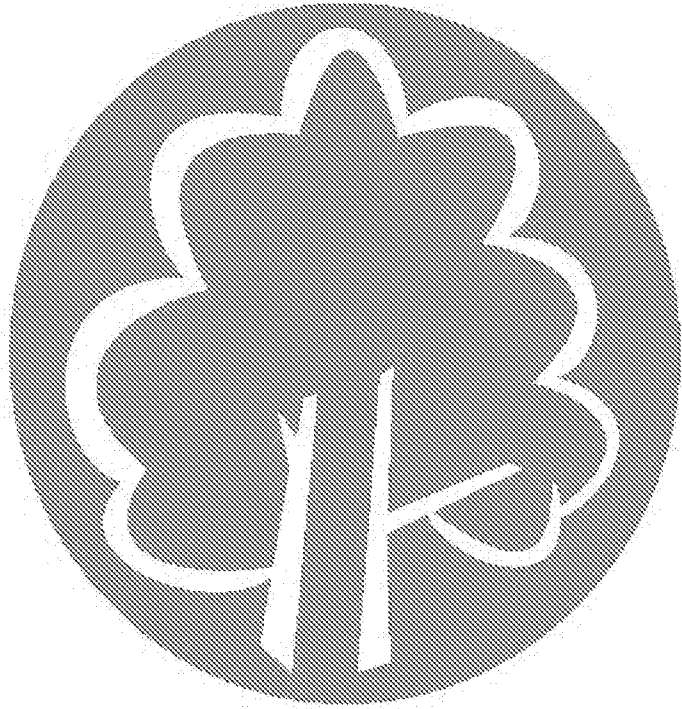


Construction and Trees



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**