Arboricultural Survey Impact Assessment & Method Statement

Euro Garages:
181 Havant Road Services
Hayling Island

23 August 2017

PJC ref: 4425/17-02

This report has been prepared by

PJC Consultancy Ltd

on behalf of

Euro Garages

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1 EXECUTIVE SUMMARY

1.1 **Proposal:** A proposal has been outlined to redevelop the derelict car wash to the west of the site, creating a new Greg's bakery within the existing forecourt.

1.2 **Site location:** The site is situated along Havant Rad, Hayling island. The surrounding land use is comprised predominantly of residential housing with some fallow land to the west of the site. The location of the site within its environs is shown in figure 1.

Figure 1: Location of Site and Environs

1.3 **Tree removals:** One tree and a portion of a tree group are required to be removed to facilitate the proposed development. G1 is a mature Leylandii group, closely planted with some individuals recently removed. The group is estimated to be at least 15m in height and closely planted. T2 is a mature oak with signs of significantly reduced vitality sparse canopy and deadwood formation. A detailed inspection of the primary stem junction was not possible due to dense ivy grown throughout the tree. An active Ganoderma bracket was present to the northern side of the stem at ground level. The removal of T2 is necessary both to facilitate the proposal but also on the grounds that its condition warrant removal given the high frequency static targets that likely occur at the forecourt regardless of weather conditions.

1.4 **Access facilitation pruning:** Based on the information available at the time of this report no access facilitation pruning is necessary to complete the proposed development however foliage form G1 is noted to be in close proximity to existing forecourt vents.

1.5 **Works within root protection areas:** The proposed development will be carried out in close proximity to the root protection area of G1. Existing surfaces will be retained throughout the development phase providing ground protection within the RPA of G1. Where surfaces are to be replaced within RPAs methodologies for doing so are outlined within the arboricultural method segment as part of this report.

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2 INTRODUCTION

2.1 **Instruction:** PJC Consultancy has been instructed by Euro Garages to provide an arboricultural impact assessment for proposed construction works at 188 Havant Road. The proposal is to re develop the derelict car washing facility, creating a new Gregs bakery.

2.2 **Brief:** PJC Consultancy has been commissioned to carry out a tree survey and to compile an arboricultural impact assessment in accordance with guidelines set out in BS5837: 2012 '*Trees in relation to design, demolition and construction – Recommendations*'.

2.3 **Scope of this report:** This report is concerned with all significant trees located within the site boundary and those located around the curtilage of the site with the potential to impact or be impacted by the proposed construction works (in relation to root or crown protection or foundation design).

2.4 **Contents of report:** This report has been produced to provide a schedule trees to be removed or pruned for the proposed development, as well as to evaluate the implications of the development on retained trees. The report includes the following:

- A schedule of existing trees at the site including an assessment of their condition and value based on the existing land use.
- A schedule of trees to be retained/removed.
- A schedule of access facilitation pruning required for development.
- An assessment of the impact construction works will have on retained trees and mitigation measures to be implemented.
- An assessment of post development pressures on trees.
- Recommendations for post development arboricultural management.
- Tree Constraints Plan and Tree Protection Plan.

2.5 **Documents and information provided:** The following documents were provided by the client to produce this report:

- Existing and proposed site layouts ref pln056.01.A3.AL

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3 INITIAL TREE SURVEY SUMMARY

3.1 **Site visit:** A site visit was carried out on 21st April 2017. The weather conditions at the time were dry and bright. The visibility was suitable to carryout a comprehensive tree survey. The initial survey assessed the trees in the context of the existing land use, not in consideration of development proposals.

3.2 **Tree information:** The following measurements and information were recorded in the Tree Survey Schedule for each tree or tree group:

- Tree reference number. (T=tree, G=group, H=hedgerow, W=woodland block).
- Species (common and scientific name).
- Overall tree height (m).
- Stem diameter (mm) per stem or average diameter for trees with 6 or more stems.
- Branch spread (m) measured to the four cardinal points.
- Existing height (m) above ground level of lowest significant branch and direction of growth.
- Existing height (m) above ground level of canopy.
- Age class (young, semi mature, early mature, mature, over mature or veteran).
- Physiological condition (good, fair, poor).
- Structural condition (good, fair, poor).
- Comments (general description of tree including any notable features).
- Preliminary management recommendations.
- Tree categorisation (see below).
- Root protection area (m^2).
- Root protection radius (m).

3.3 **Tree categorisation:** Each tree or tree group has been awarded either category A, B, C or U and a sub category of either 1,2 or 3 or a combination of the sub categories.

3.4 Tree categorisation summary:

- A – Trees of good condition or high value, with a predicted life span in excess of forty years.
- B – Trees of moderate condition or value, with a predicted life span in excess of twenty years.
- C – Trees of poor condition or low value, with a predicted life span in excess of ten years.
- U – Trees of such impaired condition that they cannot realistically be retained as living trees in the context of the current land use for more than ten years.

3.5 Tree sub categorisation summary:

- 1 – Trees have mainly arboricultural value, e.g. trees of good condition, form and vitality or rare tree species.
- 2 – Trees have mainly landscape value, e.g. trees of landscape prominence, that serve to screen unsightly views or that are required for privacy.
- 3 – Trees with mainly cultural value including conservation, e.g. commemorative trees, trees of historical significance, trees of ecological significance or veteran trees.

3.6 Each tree can only be categorised as A, B or C but may comply with more than one sub category. A cascade chart further explaining how tree categorisation is decided is included in Appendix 3.

3.7 **Root protection areas:** Each tree's stem diameter was recorded, and applied to the formula found in Appendix 4 to establish its root protection area. A root protection area represents a calculation of the minimum area of root growth required to support the tree, not the total rooting area.

3.8 The root protection areas are plotted onto the Tree Constraints Plan in Appendix 1, and recorded in the Tree Survey Schedule in Appendix 2. These are represented as a circle on the plan (unless significant rooting constraints are present), and are colour coded depending on the category the tree has been awarded. Where existing site conditions/features are present that are deemed likely to have affected the root morphology, the root protection areas have represented as a polygon of equivalent size.

3.9 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 the 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.

3.10 The root protection areas must be left free from excavation and disturbance, and protected from compaction or contamination during any proposed works. The majority of root growth is usually found within the top meter of soil. As such, even shallow disturbance within root protection areas can potentially have a significant impact on the trees.

3.11 **Limitations of site visit:** The survey methodology was restricted to a visual tree assessment from ground level. No tree climbing or ground investigation was carried out for this report. Where existing site constraints are present such as ivy covered trees, a very dense under-storey, or where trees are located on third party land to which access was not granted, tree dimensions were estimated by eye as accurately as possible. No detailed topographical survey was supplied prior to this assessment as a result all tree positions are approximate.

3.12 **Statutory tree protection:** No information regarding TPOs was sought as part of this report however it is understood that a group TPO effects the site, the reference of which is not known. 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.

3.13 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.

4 ARBORICULTURAL IMPACT ASSESSMENT

4.1 **Tree removals:** Trees to be removed for the proposed development are shown with dashed outlines on the Tree Protection Plan in Appendix 1. These include G1 and a mature oak in decline (T2), which is recommended, for removal both based on its condition and in order to facilitate the creation of new parking at the site.

4.2 The loss of trees should be mitigated by a suitable landscape planting proposal conceived by a trained and competent landscape designer or architect.

4.3 **Access facilitation pruning:** Based on the information currently available, no access facilitation pruning beyond the initial tree clearance works will be required to facilitate the proposed development. Any requirements for access facilitation pruning that cannot be predicted at this stage in the design process (e.g. for contractor compound or movement of large plant) should be discussed at the pre-commencement meeting with the project arboriculturalist and agreed with the local authority arboricultural officer. No works may be carried out on protected trees without prior permission from the local authority.

4.4 All proposed buildings and areas of new surfacing will be located outside the root protection areas of retained trees. Provided the exclusion zones and methodologies described in the arboricultural method statement and Tree Protection Plan are followed, trees proposed for retention should not be adversely affected by the construction works.

4.5 **Privacy and screening:** The existing Leylandii Group (G1) presents significant screening potential, however given that there are no dwellings to the west likely to be impacted this value is reduced somewhat.

4.6 **Services:** Details of the routing of services for the proposed development are not currently available. Once details of the routing of new services become available, prior to commencement, these shall be reviewed by the project arboriculturalist. The arboriculturalist shall then confirm to the local authority arboricultural officer either that no works will be carried out within root protection areas, or provide details of the methodology required to ensure the works are carried out in accordance with NJUG10 '*Guidelines for the planning, installation and maintenance of utilities in proximity to trees*' and BS5837: 2012.

4.7 **Post development tree management summary:** Leylandii trees in G1 may require pruning given the history of tree failure form this boundary tree group. Leylandii trees grown closely together and allowed to mature can present a wind throw risk especially in areas where significant constraint is placed upon available rooting medium and in scenarios where some individuals are removed resulting in a change in the exposure dynamic. Either removal and replanting or a reduction in height should be carried out to G1 in order that tree cover is maintained at this location.

4.8 **Conclusions:** Based on the above assessment, trees recommended for retention in this report can be protected during the proposed construction works and successfully integrated into the site post development.

4.9 Provided the approaches and methodologies and exclusion zones described in the arboricultural method statement are followed, trees proposed for retention in this report should not be adversely affected by the proposed construction works.

5 ARBORICULTURAL METHOD STATEMENT

5.1 **General requirements:** The arboricultural method statement and Tree Protection Plan shall remain on site for the duration of demolition, construction and landscaping works and be available to site operatives at all times. All operatives at the site shall be briefed about tree related factors as part of their site induction.

5.2 Any variation from the methodology described in this method statement shall be discussed with the supervising arboriculturalist and agreed with the local authority arboricultural officer.

5.3 **Initial tree works:** The tree works listed in the management column of the Tree Survey Schedule shall be carried out as the first stage of development. Tree stumps and vegetation located within the root protection areas of retained trees shall cleared with controlled hand tools (e.g. stump grinder/brush cutter). Plant machinery shall not be used to scrape vegetation within root protection areas or access the site until the tree protection barriers have been installed.

5.4 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.

5.5 The tree works contractors should carry out all tree works to BS3998: 2010 '*Tree works – recommendations*' as modified by research that is more recent. They should also carry relevant, adequate and up to date insurance.

5.6 It is recommended that an Arboricultural Association approved contractor carry out all tree works. Approved contractors are expected to work to industry best standards. The Arboricultural Association website contains contact details and information on engaging a suitable contractor.

5.7 **Tree protection barriers:** The root protection areas of retained trees must be left free from disturbance, and protected from contamination or compaction during the proposed works.

5.8 The tree protection fencing shall be installed in the locations shown on the Tree Protection Plan. The specification for fencing is included in Appendix 5. Signs shall be affixed to the fencing as shown in Appendix 6 to explain its purpose.

5.9 Tree protection barriers shall be installed following the initial tree works, prior to construction traffic entering the site. They shall remain in place for the duration of construction and hard landscaping works unless otherwise stated in this report.

5.10 The areas protected by fencing or ground protection shall be referred to as the construction exclusion zones. The following actions shall be prohibited within the construction exclusion zones:

- Vehicular access unless on suitable ground protection.
- Regular pedestrian access unless on suitable ground protection.
- Storage of construction materials.
- Storage or handling of harmful chemicals.
- Any change in ground level unless otherwise stated in this report or under supervision of project arboriculturalist.
- Construction activities including hard surfacing unless otherwise stated in this report.

5.11 **Storage and handling of harmful chemicals:** Provision needs to be made to avoid the storage and handling of harmful chemicals in proximity to trees. Harmful chemicals include fuels, oils, builder's sand (which has a high salt content) and cement. Cement mixing shall only occur where there is no potential for cement washings to leech into a root protection area. Provision shall also be made to prevent fuelling or the handling of cement from occurring in areas proposed for further planting.

5.12 **Contractor facilities:** A suitable location for site cabins, contractor parking and site facilities for operatives shall be agreed with the project arboriculturalist during a pre-commencement meeting. These facilities should be located outside the root protection areas of retained trees (unless on retained tarmac surfaces). Provision must also be taken to prevent exhaust fumes or hot air from generators or kitchen facilities from damaging the canopies of retained trees.

5.13 **Excavation within root protection areas of retained trees (for building footings etc.):** The ground works within the root protection areas of G1 (Northern end) shall be carried out under the supervision of the project arboriculturalist. As far as is reasonable, the excavations shall occur by hand (the arboriculturalist may provide guidance on use of plant machinery where necessary). Where needed, the project arboriculturalist shall carry out root pruning. They shall also assess the implications of the root pruning and prescribe remedial measures where appropriate.

5.14 **Replacing existing surfacing within root protection areas:** The existing tarmac surface within the root protection area of G1 shall provide ground protection for construction traffic. Vehicular access across the root protection area shall be prohibited between the time the existing surface is removed and the new surface is installed. Methodologies laid out below can be employed in areas where surfacing is to be replaced within RPAs.

5.15 The existing sub-base shall be reused (augmented as necessary) for the new surface. Where the existing surface is removed from within the root protection area and replaced with grass, as much of the sub-base shall be retained below ground level as is feasible with a layer of topsoil imported.

5.16 The existing top tarmac surface should be broken up by either using controlled hand tools (pneumatic drill) or with plant machinery operated under the supervision of the project arboriculturalist. If plant machinery is used to carefully pull debris out of the root protection area, it must be fitted with a grading bucket without teeth. Debris shall be stockpiled outside the root protection area.

5.17 Plant machinery must be operated from outside the root protection area. A banks man must be used to spot overhanging branches or shallow roots that may not be visible from within the cabin of the excavator.

5.18 **Services:** When details of the routing of services become available, prior to commencement of construction works, they shall be reviewed by the project arboriculturalist. The arboriculturalist shall then confirm to the local authority arboricultural officer either that no works will be carried out within root protection areas, or provide details of the methodology required to ensure the works are carried out in accordance with NJUG10 '*Guidelines for the planning, installation and maintenance of utilities in proximity to trees*' and BS5837: 2012.

5.19 Root pruning shall be assessed and carried out by the project arboriculturalist (in accordance with NJUG10 '*Guidelines for the planning, installation and maintenance of utilities in proximity to trees*'). The supervising arboriculturalist may prescribe improvements to the retained areas of rooting medium where it is deemed appropriate following the pruning works.

5.20 Roots that are revealed during the excavation works that are to be retained shall immediately be wrapped in hessian cloth. This will help protect the delicate root bark during remaining excavation operations and help prevent desiccation or frost damage if the excavation is left exposed for prolonged periods. The hessian cloth shall be removed when the trench is backfilled.

5.21 When the trench is backfilled, roots that are retained shall be surrounded by a small amount of inert granular material mixed with sharp sand or topsoil. This will help prevent damage to the roots if the soil is compacted during surfacing works.

5.22 **Arboricultural supervision:** Arboricultural supervision will be required for the following stages of development:

- A pre-commencement meeting with the contractors to clarify the tree protection methodology, to discuss the phasing of works, to mark out the locations for the tree protection barriers and to agree locations for contractor facilities. The local authority arboricultural officer shall be given reasonable notice of the pre-commencement meeting so they may attend if it is deemed necessary.
- To sign off that the tree protection barriers have been installed in the correct locations and to the agreed specification.
- To review the routing of new services and to provide guidance on best practice for installation where necessary.
- To supervise excavation into the root protection areas of trees G1.

5.23 If significant root growth is disturbed during construction activities that are not within the scope of this report, the work shall cease until the project arboriculturalist has been consulted. Roots greater than 25mm in diameter or dense/matted fibrous roots shall be considered significant root growth. It should be remembered that whilst root protection areas are part of industry best practice, tree root growth is influenced by a number of factors and may not conform to expected ideals.

5.24 If at anytime during the construction process, damage is inadvertently caused to a tree, the project arboriculturalist shall be notified to assess the likely implications and to prescribe potential remedial measures to be implemented. Damage can be in the form of chemical or fuel spillage, mechanical damage to either the above ground parts of the tree or the roots, fire or any other unforeseen circumstance.

5.25 The supervising arboriculturalist shall be appointed by the contractor. It will be necessary for the arboriculturalist to report to the local planning authority on the outcome of the site visits as well as well as any unforeseen tree related issues.

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Author: Owen Allpress

Date: 10th May 2017

PJC Ref No: PJC/4435/17-02 r1
Date: 23/08/2017

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APPENDIX 1
Tree Constraints Plan and Tree Protection Plan

Key:

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

**** Tree categorised in accordance with BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'.***

Appendix 2, (Tree Survey Schedule) contained within the arboricultural report ref. no. PJC/4417/17-01 contains further information for each tree.

This drawing should be viewed in colour.

Drawing no: PJC/4425/17/A **Rev:** 00 **Sheet number:** 1 of 1

Client and site:
Euro Garages
181 Havant Road Services
Haylingisland
Hampshire

Drawing title: Tree Constraints Plan

Date drawn: 10/05/2017

Scale: 1:500 at A3

Drawn by: OA **Checked by:** PD

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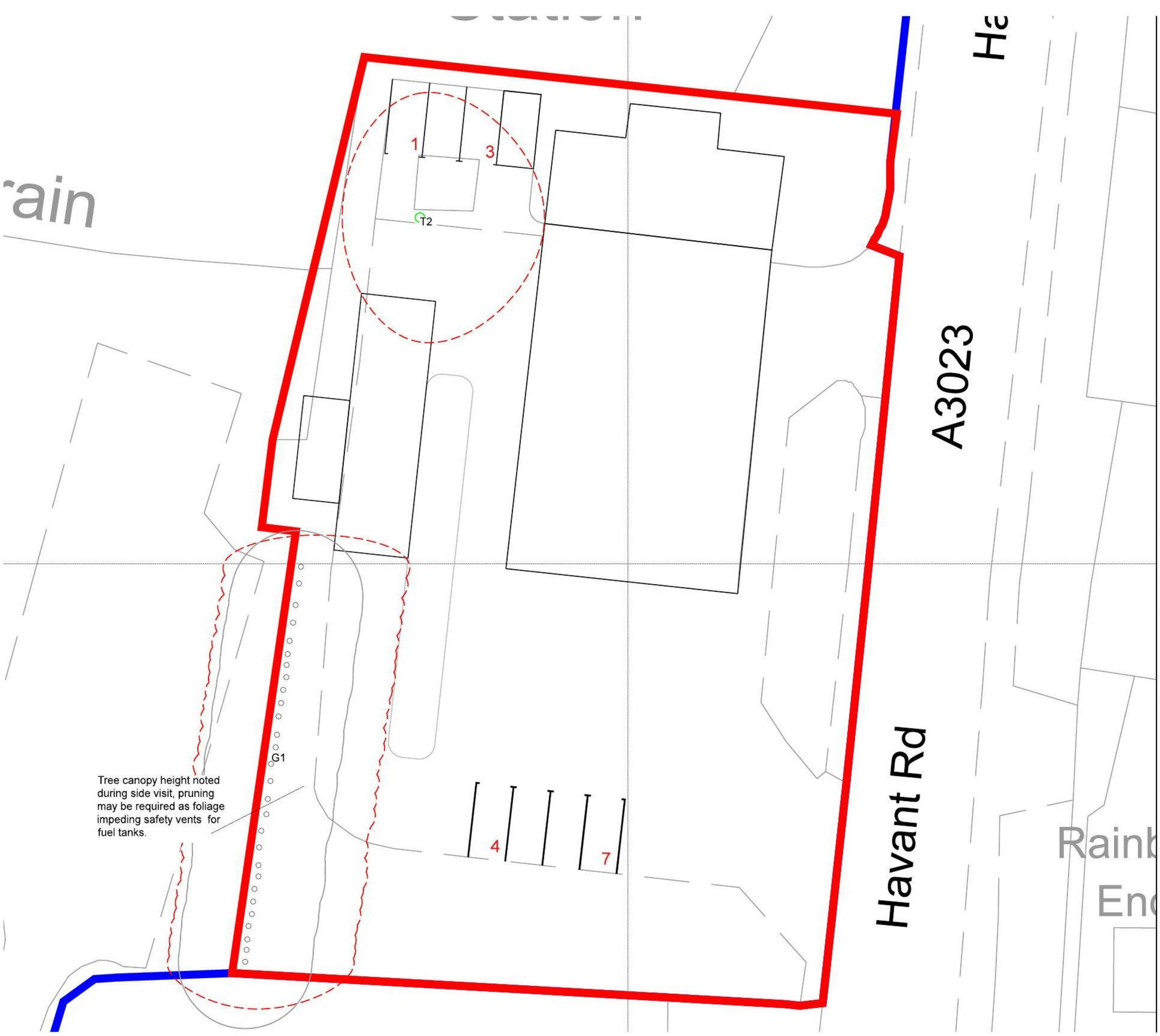


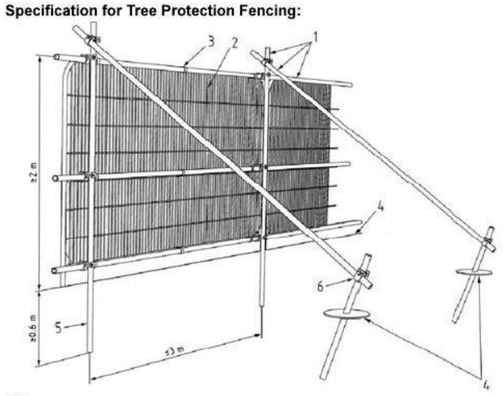
Key:

- RPA for tree to be retained
- Canopy of tree to be retained
- Canopy of tree to be removed
- Tree protection fencing
- Construction exclusion zone

Appendix 2, (Tree Survey Schedule) contained within the arboricultural report ref. no. PJC/XXXX/17-02 contains further information for each tree.

This drawing should be viewed in colour.

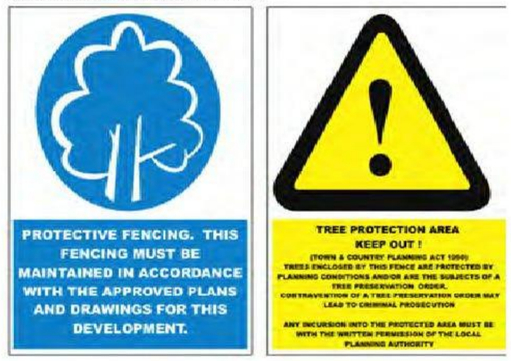
Specification for Tree Protection Fencing:



Key

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

Example protective fencing signage:



Drawing no: PJC/4425/17/B **Rev:** 01 **Sheet number:** 1 of 1

Client and site:
Euro Garages
181 Havant Road Services
Haylingisland
Hampshire

Drawing title: Tree Retention and Protection Plan

Date drawn: 21/08/2017

Scale: 1:500 at A3

Drawn by: OA **Checked by:** PD

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APPENDIX 2
Tree Survey Schedule

Tree Survey Schedule

PJC Consultancy				Client: Euro Garages Site: Esso, Havant Road, Hayling island. Survey date: 28th April 2017 Surveyor: Owen Allpress								T: Individual tree or shrub G: Group of 2 or more trees H: Hedgerow W: Woodland block			
Tree ref. no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)		Crown clearance (m)	Age class	Physiological condition	Structural condition	Comments	Management recommendations	Category grading	Root Protection Area (m2)	Root Protection Radius (m)	
G1	Leylandii, (X Cupressocyparis leylandii)	15	362	N	2	Crown	Mature	Fair	Good	Closely planted leylandii group, many stems poor unions branch loss and deadwood. suppression has cause some individuals to die.	Fell all trees in group and replace as part of a suitable landscaping scheme.	C2	59.4	4.3	
				E	7	4e									
			average	S	3	Branch									
				W	5	4e									
T2	Pedunculate oak, (Quercus robur)	9	620	N	8	Crown	Mature	Fair	Obscured	Sparse canopy. Dense ivy growth inhibits detailed visual inspection of stem, Ganoderma fruit body present to north at ground level. recent physical injury to lower branches to south.	Remove to facilitate proposal.	C1	174.1	7.4	
				E	8	2s									
				S	8	Branch									
				W	5	4s									

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APPENDIX 3
Cascade Chart for Tree Quality Assessment

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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 *Note Category U trees can have existing or potential conservation value which it might be desirable to preserve*			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

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

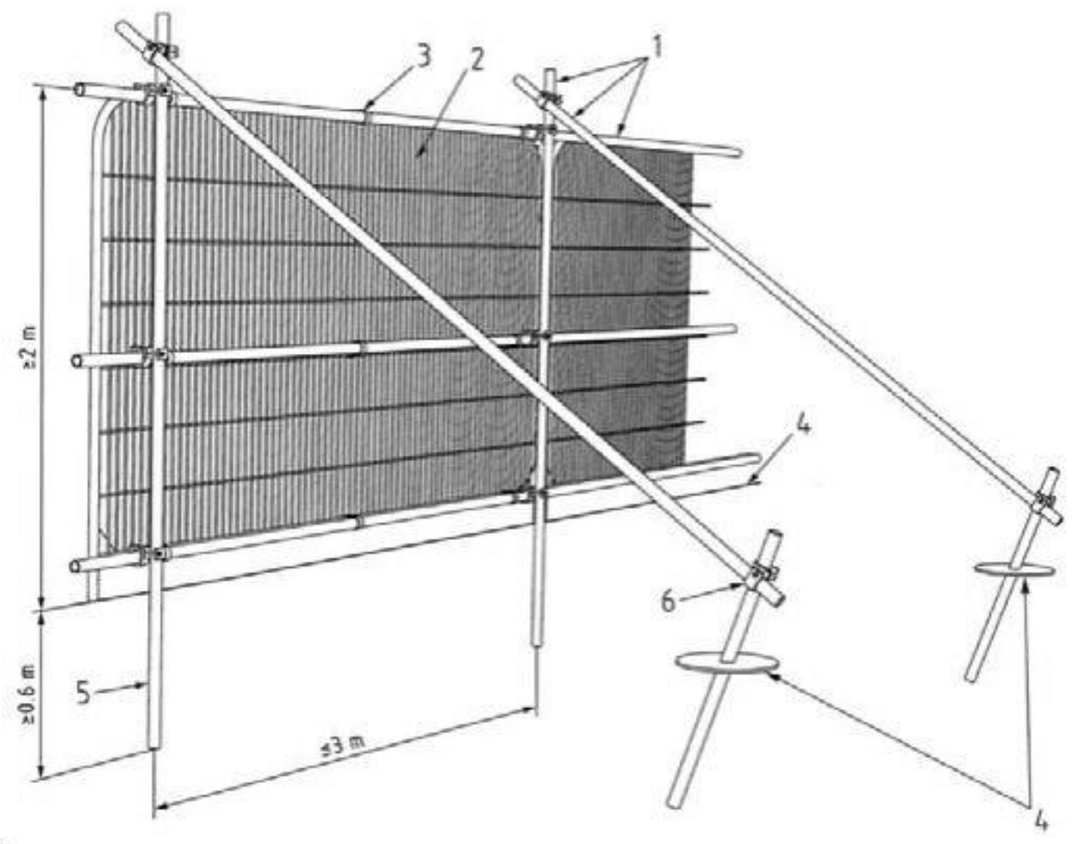
For trees with two to five stems, a combined stem diameter is calculated as follows:

$$\mathbf{\sqrt{(stem\ diameter\ 1)^2 + (stem\ diameter\ 2)^2 \ldots + (stem\ diameter\ 5)^2}}$$

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

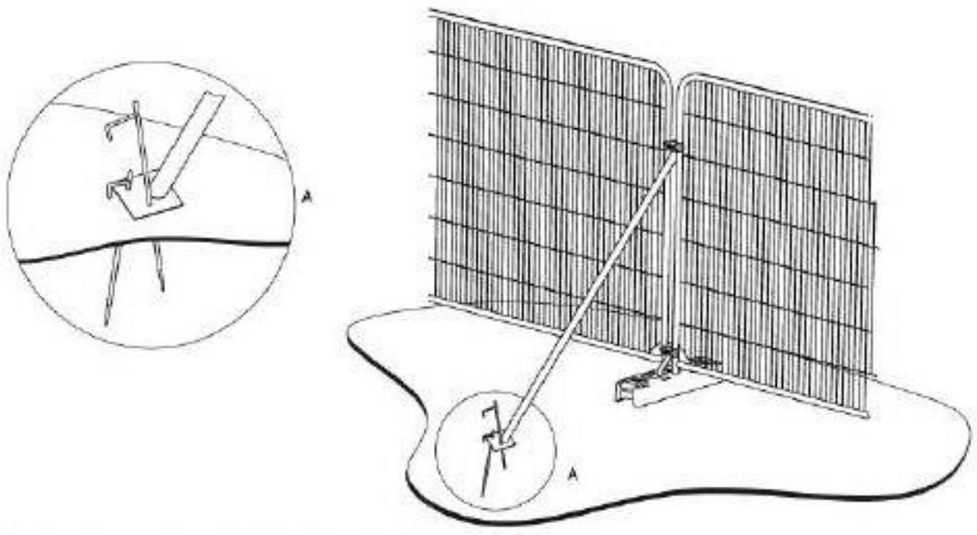
$$\mathbf{\sqrt{(mean\ stem\ diameter)^2 \times number\ of\ stems}}$$

APPENDIX 5
Tree Protection Fencing Specification

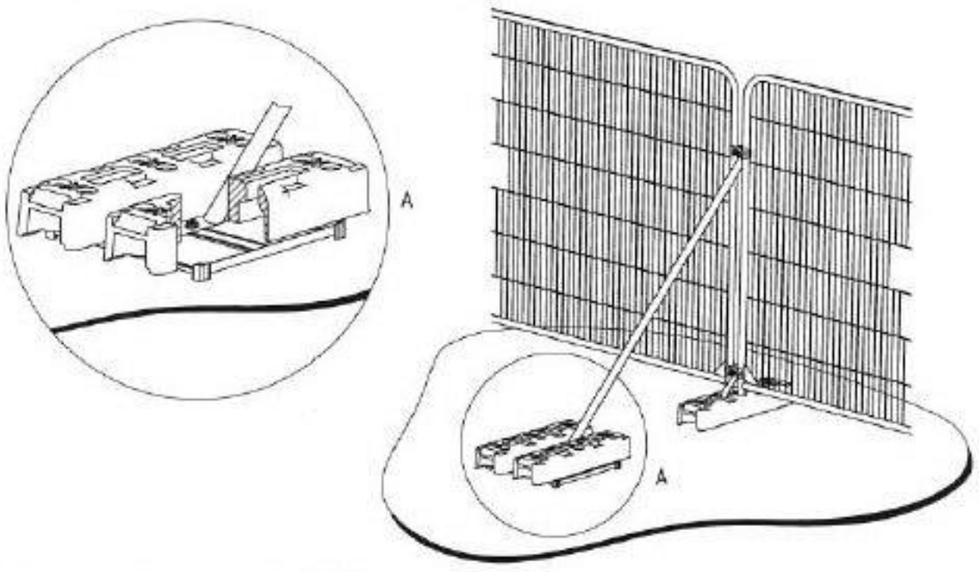


Key

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



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

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APPENDIX 6
Example Protective Fencing Signs

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