

PROJECT: 2630 CHIPPING HOUSING
REPORT: 501 ARBORICULTURAL SURVEY

PREPARED BY TPM LANDSCAPE LTD

FOR

Chipping Homes Ltd

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TPM Drawings:

2630-101 Tree Survey

2630-102 Tree Retention, Removals and Protection

1.0 INTRODUCTION

1.1 Background

The trees were assessed by a qualified arboricultural consultant in October 2016. The trees were surveyed in accordance with BS 5837:2012 Trees in Relation to Design, Demolition and Construction - Recommendations, to provide a detailed understanding of the condition of the existing trees.

1.2 Site Description

- The site is located on and the former cricket pitch to the north of the village.
- Existing housing lies to the south and south east of the site while the Conservation area surrounding Chipping Mill lies to the north.
- A block of young plantation woodland forms the eastern boundary of the site.
- Existing vegetation includes mature trees, hedgerow, woodland and scrub.
- The site is located on elevated land that sits above the lane to the north and is bounded by a mature hedgerow.

1.3 Tree Preservation Orders

There are currently No Tree Preservation Orders that affect any trees on site, confirmed during the Public Inquiry that resulted in planning permission being granted.

1.4 Development Proposals

The proposals are for residential housing across the site with access being off Church Sake to the north.

2.0 SITE LOCATION PLAN

AERIAL VIEW



3.0 METHODOLOGY

3.1 Site Visit

The site visit was carried out in October 2017. Trees were assessed by a qualified Arboriculturalist in accordance with BS 5837:2012

3.2 Survey

A topographical survey was available at the time of the survey and this was used as the base for the tree survey drawing which accurately locates the trees in relation to existing features on site.

3.3 Survey Details

The following information was gathered for each tree: species, age class, estimated height, stem diameter at 1.5m above ground and individual crown spread. Vigour was assessed using leaf density and recent shoot extension.

3.4 Tree Condition

An assessment was made of the trees condition visually from ground level. No climbed inspection or detailed investigation of decay was made, however this was not considered necessary as enough information was gained about the trees from a ground level inspection. If any faults or potential failings were identified on the trees these have been picked up in the tree survey notes. It should be noted that trees can change significantly over a relatively short period of time, and therefore trees should be monitored on a regular basis for sign of deterioration.

3.5 Recommendations for Tree Works

Any tree works that are proposed in the tree survey notes are to either reduce hazards or promote good future growth of the tree, and do not relate to specific works to accommodate the proposed development. All works should be carried out to BS 3998: 2010 British Standard The proposals for development have outline permission (ref 3/2014/0183(APP/ T2350/W/15/3119224)) and works will be in line with this approval and any conditions or reserved matters attached.

3.6 Tree Retention Codes

The trees desirability for retention was assessed in accordance with BS 5837: 2012, and was assessed taking into account the trees age, vigour, amenity value (as a function of size, prominence, and attractiveness), life expectancy, replaceability and appropriateness in relation to the development proposals

3.7 Tree Protection

A Tree Removals, Protection and Retention Drawing was produced to take into account the trees root protection area RPA, canopy spread, site levels and condition and if the trees are protected by Tree Preservation Orders TPO. It will help to inform the design development and will look to guide the design and siting of the building and car park so that it has the least impact on the important trees (and protected trees) identified in this report.

4.0 REFERENCES

- BS 5837 2012: Trees in relation to Design, Demolition and Construction - Recommendations
- BS 3998 2010: British Standard Recommendations for Tree Work
- Arboricultural Association Guidance Notes No 7 -- Tree Surveys: A Guide to Good Practice
- ETR 2000: Tree Preservation Orders: A Guide to the Law and Good Practice
- Arboricultural Advisory and Information Service Practice Note APN 1 Driveways Close to Trees

For assessment criteria please refer to the tables after section 5.0 (in front of the survey schedule)

5.0 ANALYSIS AND RECOMMENDATIONS

5.1 Tree Survey Schedule Analysis

Below is a summary of the tree survey schedule, for more detailed information on individual trees please refer to the schedule in section 7.0 and the TPM Tree Survey drawing

Refer to TPM drawing 2630-101 Tree Survey for tree locations;

- The trees are surveyed as a mixture of individual trees and groups reflecting the nature of some of the areas of vegetation that appear as woodland or dense boundary trees and hedgerows. The majority of trees are either C or B grade with no A grade categories recorded. Probably the best individual species of tree are found along the eastern and northern boundaries of the site with G4 and T5 being notable B category trees worthy of retention within the proposed scheme.
- G2 and G3 groups are areas of a block of woodland to the east likely to be affected by development. They are categorised as C2, young woodland planting that is easily replaced. H6 is a run of hedgerow within this group and will also be affected by the development.
- Along the eastern boundary of the site are a line of black poplar assessed as C1 and noted as having limited value within a residential setting.
- A hedgerow follows the Church Raika boundary to the north containing principally hawthorn and elder but with some other native species. A section of this hedgerow will be lost to enable access into the site.
- Elsewhere intermittent individual trees lie along the southern boundary of generally good quality being assessed as B2.

Tree Summary	Number	Tree Category			
		A	B	C	U
Total Number of Trees (as surveyed)	22	0	12	10	0

5.2

Conclusions and Recommendations

- The vegetation across the site is concentrated to the boundaries of the site other than an area of young woodland that would be lost to development within Groups 2 and 3. The hedgerow H8 will be retained along the northern boundary other than over a section to allow access into the site from Church Raika. Notable B category trees (G4 and T5) should be considered for retention if possible within the development scheme.
- There are no TPO's on the site.
- A Conservation Area covers parts of the village and historic mill areas but the boundary is to the north and south of the site and there will be no affect on trees considered within these areas.
- Trees should be removed outside of the bird nesting season. No work will be carried out during the nesting season unless under the express supervision of a qualified ecologist.

CASCADE CHART FOR TREE QUALITY ASSESSMENT

Category and definition

Criteria (including sub categories where appropriate)

Trees unsuitable for retention (see Note)

Category U

Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

- Trees that have serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where for whatever reason, the loss of companion shelter cannot be mitigated by pruning.
- Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline.
- Trees infected with pathogens of significance to the health and/ or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality.

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 of formal or semi-formal arboricultural features (e.g. the dominant and/ or principal trees within an avenue.

Trees, groups or woodlands of particular visual importance as arboricultural and/ or landscape features.

Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture.

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 remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation.

Trees present in numbers, usually 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.

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 150mm

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.

TREE QUALITY ASSESSMENT: ASSESSMENT CRITERIA IN LINE WITH BS5837:2012

Tree	Number refers to tree number on survey drawing	Health Condition	General Health of the tree
T	Trees	VG	Very Good
G	Group of Trees	G	Good
H	Hedges	F	Fair
		P	Poor
		D	Dead/ Dangerous
Species	Common Name	Retention Value	Recommendation of tree retention with regard to both amenity and health. A general overview of the tree's retention value.
Height	Height of tree given in metres	A Category	Trees of high quality with an estimated remaining life expectancy of at least 40 years; trees that are particularly good examples of their species, of particular visual importance and/or of significant conservation or other value.
	Total Total height of tree above ground level	B Category	Trees of moderate quality with an estimated remaining life expectancy of at least 20 years; trees might have been category A but down graded because of impaired condition; trees within a group as such attracting a high collective rating and/or trees with material conservation or other value.
	First branch Height of first significant branch and direction	C Category	Trees of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem dia <150mm; unremarkable trees of limited merit or impaired condition; trees offering low or only temporary landscape benefits or poorer trees within a group; trees of no material consideration.
	Canopy to inform ground clearance	U Category	Trees in such a condition they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years; trees which have serious defects and expected to collapse; trees that are dead or showing signs of overall decline; trees infected with pathogens of significant health or safety concern other trees nearby.
Girth	Diameter (mm) of trunk @1.5m above ground. MS refers to multi-skinned trees.		
Spread	Measurements (m) taken from the centre point of the trunk in a North, South, East and West direction		
Age	OM Over-Mature M Mature EM Early Mature SIM Semi-Mature Y Young (0-20 years)		
Amenity Value	General appearance of the tree		
	H High M Moderate L Low		

6.0 PHOTOGRAPHS



G11 Black Poplar group on western boundary



Northern boundary and H8 with T7 in the foreground



Southern Boundary groups

7.0 Survey Schedule

No	Species	Height (m)	DBH (m)	Root zone radius (m)	Root Protection Area (sq.m)	N	S	E	W	Age Class	Crown Clearance	Condition (Phy)	LE Years	Category Grading	1st Significant Branch Height	Amenity Value
T1	Silver Birch	10	0.24	2.88	26	3.0	3.0	2.0	2.5	EM	0.5	G	40+	C1	3	L
Notes: Single-stem. Slight lean to the north. Good shape and form. No major visible defects. Probably off site with potential for root protection Area encroachment.																
No action																
G2	Hazel	<5	0.15	1.8	10	See Plan				SM	0	F	40+	C2	1+	L
Notes: Predominantly Hazel coppice in staggered rows. Reasonable shape and form. Not pruned to any extent. No major visible defects.																
No action at present																
G3	Oak, Ash, Birch	Average 6, <12	0.15	1.8	10	See Plan				SM	0+	F	40+	C2	1.5+	L
			0.09	1.08	4											
Notes: Field maple, Cherry and Rowan. Dense staggered planting of mixed trees, although some sections purely Oak. Limited individual Value. Easily replaced.																
No action at present																
G4	Ash, Sycamore	18	1	12	452	7	9	9	9	M	1+	G	20+	B2	3.5	M/H
Notes: Ash with a huge bole forked at 4m. Twin-stemmed Sycamore growing at base with stem passing through crown to ash. Significant Deadwood and stubs towards south west in Ash and minor hanging branch stubs.																
Remedial prune																
T5	Ash	18	0.94	11.28	400	10.0	9.5	85.0	9.5	M	3+	G	40+	B1	4+	M
Notes: Thick bole with some epicormic shoots at the base. forked at 3.5m. Snapped stubbed limbs to east. Deadwood and stubs in crown. Good even canopy																
remedial prune to make safe only.																
H6	Hawthorn, Elder, Alder	1.2		0	0	1m wide				EM	0	G	20+	C2	0	L
Notes: Good shape and form. Regularly Pruned in the past. No major visible defects.																
Continue maintaining																

No	Species	Height (m)	DBH (m)	Root zone radius (m)	Root Protection Area (sq.m)	N	S	E	W	Age Class	Crown Clearance	Condition (Phy)	LE Years	Category Grading	1st Significant Branch Height	Amenity Value
T7	Ash	16	0.86	10.32	335	6.5	8.5	10.0	6.5	OM	2	G	40+	B1	4	M
Notes	Thick bole. Forked at 3m. Ivy on stem. Deadwood and stubs. Deadwood over road.															
H8	Hawthorn, Elder	1.4	0	0	0	See Plan			EM	0	F	20+	C2	0	L	
Notes	remove deadwood															
Notes	Hazel, Rose, Blackthorn Sycamore. Typical field boundary hedge. Reasonable shape and form. No major visible defects. Not recently Pruned.															
<i>Continue maintaining</i>																
T9	Ash	6	0.9	10.8	129.6	3 Average			OM	3	P	10+	C1	3	L	
Notes	Thick bole forked at 3.5m producing 4 main limbs all of which have been stubbed back. Epicormic shoots around the stub. Limited long term value.															
Notes	No action of present															
G10	Sycamore, Hawthorn	<16	See Plan			See Plan			EM	0+	F	40+	B2	1+	H	
Notes	Holy, Ash Field maple, Cherry, Hazel, Elder and Alder. A group just beyond the boundary on other side of dry ditch. Mostly of good shape and form with no major visible defects. Good screening to property beyond.															
Notes	No action of present															
G11	Hybrid black Poplars	<26	0.3	3.6	See Plan			EM	1+	C	20+	C1	4+	M/H		
Notes	10															
Notes	No action of present															
G12	Ash x4	<9	0.3	3.6	43.2	See Plan			SM	1+	F	20+	C2	1+	M	
Notes	2 clusters of stems approximately 4 trees. Quite poorly formed. Of limited long term value and easily replaced. No major visible damage.															

No action at present																
G22	Ash, Sycamore, Hawthorn and Elm	<18	0.65	7.8	191	see Plan			M	1+	F	40+	B2	2+	M	
Notes Willow, Norway maple and Alder. A woodland group mainly on the other side to a stream so limited impact on site. Reasonable shape and form some overhanging road. No major visual defects although not fully surveyed.																
No action																
T23	Ash	0.9	10.8	366	See Plan			M	2+	F	20+	B1	5	M		
Notes Thick bole covered in dense mature ivy up into crown. High crown deadwood and stubs.																
Remedial prune																
No	Species	Height (m)	DBH (m)	Root zone radius (m)	Root Protection Area (sq.m)	N	S	E	W	Age Class	Crown Clearance	Condition (Phy)	LE Years	Category Grading	1st Significant Branch Height	Amenity Value
T29	Ash	12	0.37	4.44	62	4.0	5.5	5.5	5.5	EM	1+	G	10+	B1	3	L/M
Notes Single stemmed on slope. Good shape and form. Minor stubs and deadwood. No major visual defects potential.																
No action																
G22a	Sycamore	10	0.5	6	113	5.0	6.0	3.0	6.0	EM	2	G	40+	b1	2.5	M
Notes Single-stemmed. Good shape and form. Some ivy in crown. No major visual defects.																
No action																
G22b	Ash	10	0.37	4.44	62	5.0	6.0	2.0	7.0	EM	1.5	F	20+	C1	3	L/M
Notes Single stemmed on site side of stream. Dense ivy into crown. Minor deadwood and stubs.																
Remove deadwood																
G22c	Ash	11	0.38	4.56	65	6.0	1.0	6.0	6.0	EM	1	F	20+	C1	4+	L
Notes Very one sided crown to the north. Low over sloped ground on site ivy into crown. No major visual defects.																
No action																
T45	Sycamore	18	0.74	9.98	313	7.0	7.0	7.0	7.0	M	3	G	40+	B1	3+	M
Notes Twin-stemmed from ground level possibly 2 trees but forming one crown. Good shape and form, no major visual defects.																
T46	Lime	18	0.95	11.4	408	8.0	8.0	8.0	8.0	M	1	G	40+	B1	4+	M
Notes Single-stemmed. Good shape and form. Dense epicormics in centre of crown at 4m preventing inspection.																
No action at present																
T47	Sycamore	17	0.86	10.32	335	7.0	7.0	7.0	7.0	M	2	G	40+	B1	4+	M
Notes Twin-stemmed from 2m with a tight union. Even crown. Not pruned to any extent. No major visual defects																
No action																
T48	Ash	17	0.5	6	113	7.0	7.0	7.0	7.0	M	3	F	40+	B1	3W	M
Notes One main leader with a significant secondary stem. On a steep slope. Reasonable shape and form with no major defects.																

No action

8.0 ARBORICULTURAL IMPACT ASSESSMENT

Trees Requiring Removal due to Poor Health:

No trees have been assessed as requiring immediate removal due to poor health or health and safety concerns. The Black Poplars at the western boundary of the site were noted as not being well suited to a residential environment in the longer term.

Trees Requiring Removal to facilitate development:

The trees required for removal to facilitate the development are listed below:

Tree No / Group	Potential for Indirect Impact
H8	A section of H8 will be removed to create the access into the site
H6	will be removed to facilitate the development
Sections of G2 and G3	Sections of this young woodland will be removed to facilitate the project
G12	Removed to facilitate the development and poor quality

Potential for Shading:

Properties along the southern boundary of the site will experience some shading from retained mature trees and hedgerow along this boundary. This will extend over back garden areas with only T9 likely to cause some shading of the properties themselves.

Boundary Screening:

Boundary vegetation is retained around the whole of the site other than for a small section of the northern boundary hedgerow H8. Although not replaced the design proposals include for the introduction of a stone retaining wall around this entrance providing an appropriate boundary treatment in place of the hedge.

Long Term Spatial Constraints:

The layout has been planned around the retention of the all of the trees of value within the site and at its boundaries. The retention of these trees within the layout has been developed alongside the production of this report and a tree retention renewal plan.

Future Nuisance from trees:

The G11 groups of black poplar at the western boundary of the site have been highlighted as potentially causing problems through limb loss in the future.

Existing areas of Hard Standing:

Hard landscaping areas have largely been designed to avoid areas of root zone and any other clash with retained trees and hedges. The access area might require some special measures due to level changes around this access point. This will be designed to reduce the amount of disturbance to the root zone areas to a minimum.

Proposed Areas of Hard Standing:

The proposed layout and areas of proposed hard standing have been designed to be outside of the RPA in the most part.

Location of Hard Surface / Tree Interface	Potential Methodology to limit impacts on trees
H8, T7, G4	Potential clash with level changes to facilitate access entrance

Proposed Buildings within the RPA:

All of the proposed buildings are currently outside of RPA's

Proposed Drainage and Services:

The run of drainage and services is not yet known

Working Space During the Construction Phase:

The tree protection proposals have allowed for working distances around protection fences allowing for construction to take place without the need to move protection measures. The exception to this may be around the entrance where some phasing of protection may be required.

Requirements for an Arboricultural Method Statement:

Drawing 2630-102A represents a plan based Tree Protection Plan and should be referred to during the construction phase for the purposes of controlling activity around the trees to be retained. Further text narrative is provided in Section 9.0 - Generic Arboricultural Method Statement.

Planning for New Landscaping:

The planting and landscape proposals were not available at the point of survey. It is intended that the development will include new tree and hedgerow planting.

Hedgerows:

In accordance with the Hedgerow Regulations 1997 'important' hedgerows should not be removed without Hedgerow Removal Notice issued by the relevant Local Planning Authority. In this instance however, there are no hedgerows within or immediately adjacent to the site that would be considered important in the context of the regulations.

9.0 ARBORICULTURAL METHOD STATEMENT

This method statement has been produced from current guidelines BS 5837:2012 Trees in relation to Design, Demolition and Construction - Recommendations. If in doubt on any issues relating to the retention and protection of the existing trees on site please contact TPM Landscape (project arboriculturalist) on 0161 235 0600 or the Tree Officer at Ribbles Valley Council.

The appointed contractor should consider and follow this recommendations whilst working on the project. The appointed contractor must consult the project arboriculturalist who will oversee any critical operations close to the existing trees and make checks to ensure that the tree protection fence and working methods as described below are adhered to.

Tree Works

All tree works should be carried out by a qualified arboriculturalist prior to any construction works starting on site. Only carry out tree works which are shown on the planning approved drawing, any further works that need to be carried out require written approval from the local authority and should be advised by the project arboriculturalist.

Areas of scrub, bracken and bramble should be strimmed to 0.1m in Sept-October and the arising removed to discourage hedgehogs and amphibians from settling in this area prior to heavy machinery entering the site and the full clearance works begin.

Tree works should be carried out outside of the bird nesting season (typically March-August) unless the trees and scrub has been surveyed by a qualified ecologist to look for active bird nests. If identified the area should be left undisturbed and fenced off (in line with ecologists recommendations) until the chicks have fledged.

Fence Installation

This method statement has been produced from current guidelines BS 5837:2012 Trees in relation to Design, Demolition and Construction - Recommendations. All trees as shown to be retained on the approved plan should be protected by a tree protection fence before any materials or machinery are brought onto the site, and before any demolition, development or stripping of topsoil commences. Please refer to drawing 2530-102 for location of fencing and Figures 1 + 2 in Section 9.0 for the specification of the Tree Protection Fence. All-weather notices should be attached to the barrier with words such as: "TREE PROTECTION AREA KEEP OUT", please refer to Figure 4 in Section 9.0 for an example of signage.

The protected area should be regarded as sacrosanct, and, once installed barriers (unless identified on the drawing) should not be removed or altered without prior approval by the project arboriculturalist and/or Ribbles Valley Council.

Fires on sites should be avoided if possible where there are existing trees. Where they are unavoidable, they should not be lit in a position where heat could affect foliage or branches. The potential size of a fire and the wind direction should be taken into account when determining its location, and it should be attended at all times until safe enough to leave.

Any materials whose accidental spillage would cause damage to a tree should be stored and handled well away from the outer edge of its RPA.

Excavations within RPA

Where excavations works for foundations fall on the edge of the RPA then these should be carried out by a competent contractor with an understanding of trees. Any excavations close to trees should be carried out from within the main body of the site working in (and away) from the tree. Machinery should not encroach into the RPA and protected by the fencing.

For any trees which require excavations within the RPA then water the tree a few days before works are carried out, making sure the ground is moist within the drip line of the tree (only required during the growing season).

Excavations can be carried out with a mechanical digger however these must be supervised by a grounds man to signal if tree roots >40mm are exposed. If roots are identified on site which encroach into the area to be excavated then these must be cut. Ensure cuts are done with hand tools that will make clean, quick cuts (i.e. chain saw or axe), at no points should roots be ripped or dragged out by a mechanical digger. Make sure cut roots are covered with loose soil or woodchips as soon as possible, DO NOT LEAVE CUT ROOTS EXPOSED. If roots are going to be exposed for more than an hour cover with a damp cloth. Water the tree again thoroughly when job is done (only required during the growing season).

Site Works - Pre Construction Of Development

Temporary roads, site storage and staff parking should be located outside of the RPA (within existing non compacted areas) and should only be implemented after the tree protection fencing has been erected.

Site Works - Post Construction

Tree protection fencing should only be pushed back or removed to allow for the installation of hard/ soft surfacing within the RPA once all major construction works have finished and heavy machinery has been removed off site. Refer to drawing 2630-102 for permanent and temporary fencing locations.

Areas of proposed surfacing over the RPA should be carried out to a 'No Dig' construction method in line with detailed construction details from an engineer. Geotextiles and porous surfaces to be used. Surfacing should be constructed over existing levels to avoid excavations within the main body of the RPA.

Ground Protection

All ground protection methods must be capable of supporting construction traffic entering or using the site without causing ground compaction. There are two different ground protection measures that may be required depending on the site constraints and requirements.

Construction Traffic

It may be necessary to provide ground protection measures to facilitate construction traffic movement (exceeding 2t gross weight) and access to the proposed development. If this is the case, a proprietary system or pre-cast reinforced concrete slab to engineers specification will need to be designed to accommodate the likely loading.

Light Machinery/ Site Operatives

The most common method of ground protection is the use of a compressible layer as illustrated in figure 4 on the previous page. This method will support pedestrian-operated machinery up to a gross weight of 2t. It consists of a base geo-textile membrane, a base ground guard layer, approximately 150mm depth of woodchip and a surface ground guard track way.

If the construction works can be carried out by site operatives without the use of machinery, a single thickness scaffold board, either suspended to a scaffold frame or on top of a compression resistant layer and geo-textile membrane may be used. Refer to TPM drawing 2630-102 for temporary ground protection measures and locations.

Other Notes

In addition to the protection fence the site operatives should have regard for the trees and make allowance for:

- All forms of access to the site
- Position of site compound
- Size of vehicles entering the site and any impacts to branches that overhang these routes
- Proposed parking for site personnel
- Phasing of works
- Space required to undertake the works
- Management of waste products within the site
- Any special construction techniques e.g. porous paving
- Time of year for any tree works (e.g. bird nesting season)
- Protection of soil structure within proposed planting beds
- Planting operations within the root protection area of retained trees
- Systems of arboricultural site monitoring/ scheduled site visits

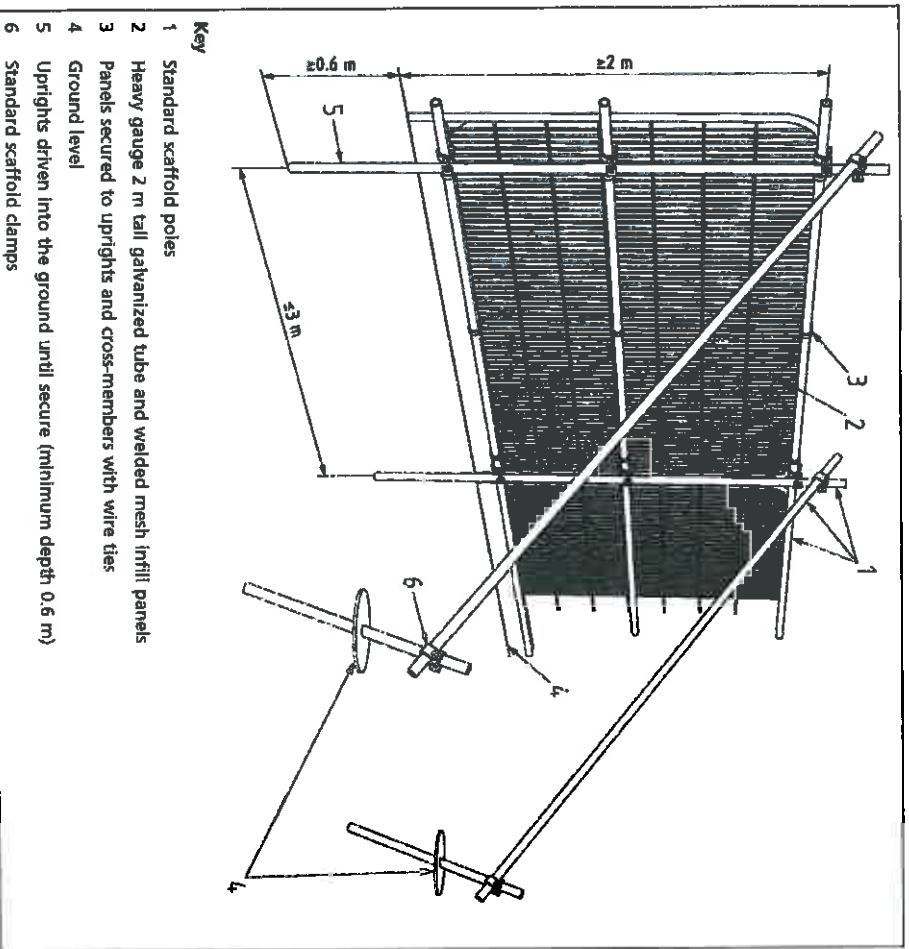


Figure 1

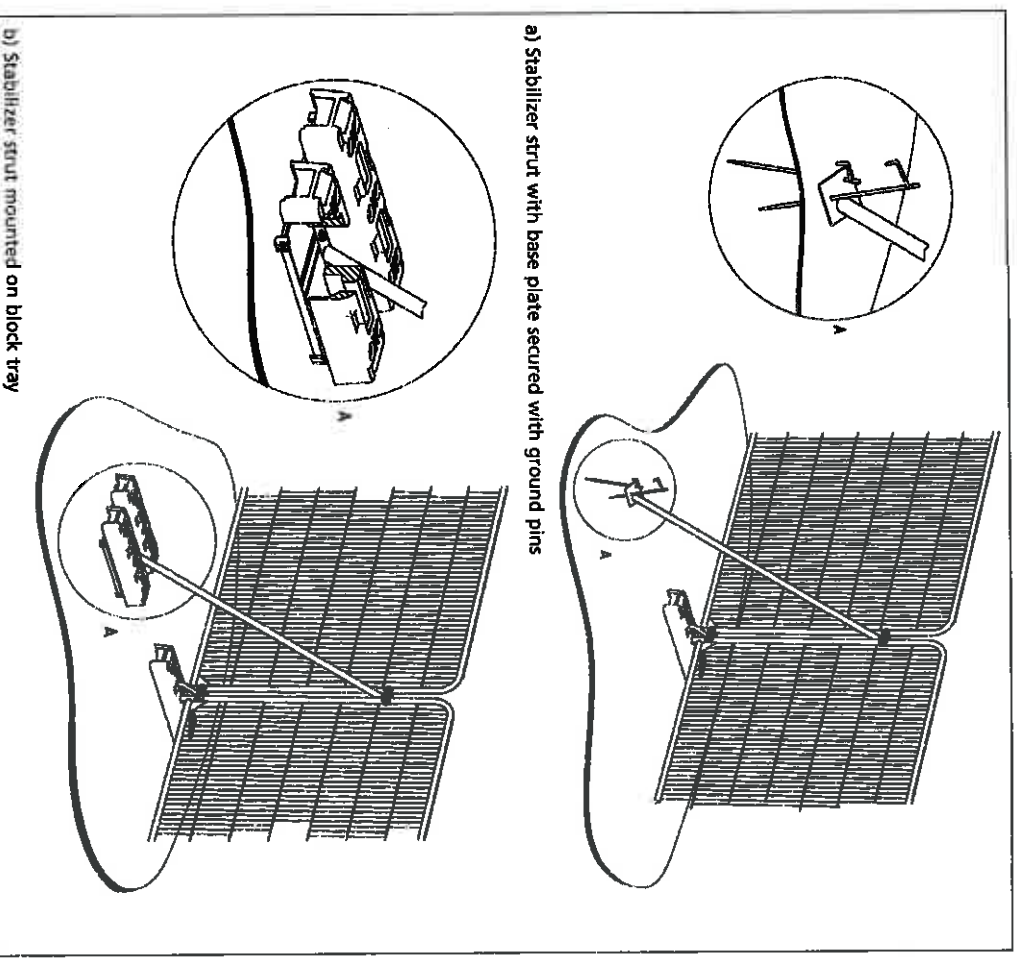


Figure 2



Figure 3 - example signage

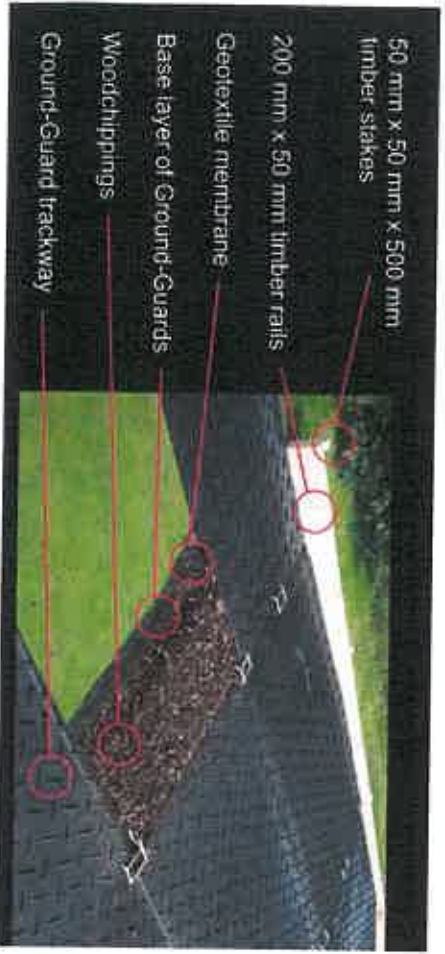
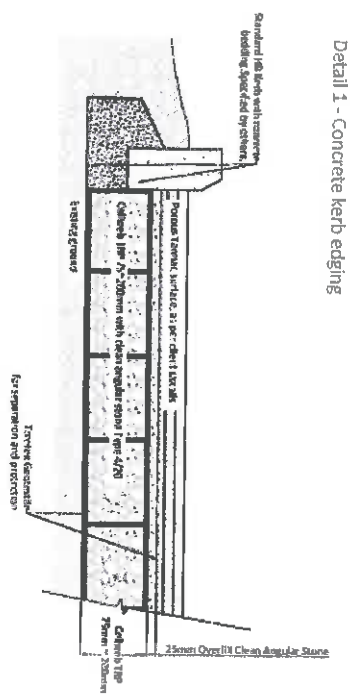
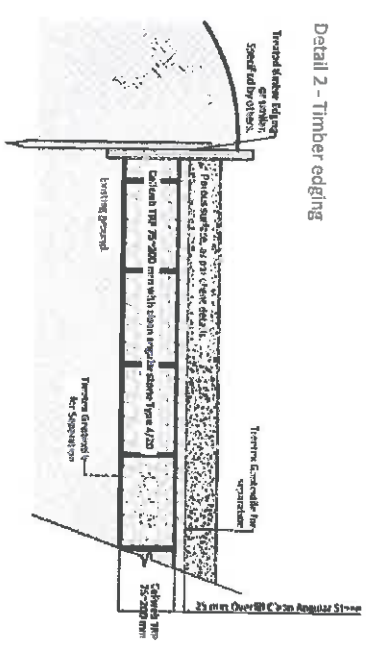


Figure 4 - example of ground guards



Detail 1 - Concrete kerb edging

Note: Subbase could be required depending on the existing ground conditions and the type of traffic on the surface.



Detail 2 - Timber edging

Figure 5 - No-Dig Construction Details over RPA

NOTE: No-dig construction details as detailed by Geosynthetics

APPENDIX

Appendix 1:

2630-101 Tree Survey

2630-102 Tree Retention, Removals and Protection