Arboricultural Report and Arboricultural Implications Assessment

Site – **8 Stanmore Way, Loughton, Essex, IG10 2SA**

Client – **Clear Architects, The Studio, 38 Church Hill, Loughton, Essex IG10 1LA**

Contact – **Clear Architects, The Studio, 38 Church Hill, Loughton, Essex IG10 1LA**

Date - **12-02-2020**
Revised - **25-02-2021**
To be read in conjunction with – Tree Survey Plan Drawing No. CA/STAN/01A

Moore Partners Ltd

Contents

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1.0 Instruction and client brief

1.1 Clear Architects have requested a survey of the trees around the site at 8 Stanmore Way. The survey is to support the planning application for the redevelopment of the site. The report should be read in conjunction with the tree constraints and protection plan, drawing number CA/STAN/01A

1.2 The report was to:

- assess the trees in line with BS5837:2012
- advise of the arboricultural implications that the proposed building works will have on the existing trees, in line with BS5837:2012 based on the site layout provided.

1.3 The report was revised on 25-02-2021 to reflect the new proposed site layout.

2.0 Scope of works and survey method.

2.1 The trees were surveyed in line with the process laid out in BS5837:2012. The trees were assessed inline with the criteria laid out in the British Standard. Data was collated on species, age, height, crown spread, stem diameter at 1.5m high. A base line assessment of physiological and structural condition was made. All trees were categorised in line with BS5837:2012 guidance. Trees of the highest quality were rated 'A', good quality 'B'. Trees rated 'C; are worthy of retention but of lower quality. Those given an 'R' rating are poor quality with either less than 10 useful life years remaining, small and of limited significance in the wider landscape, or could easily be replaced in a new landscape scheme with a tree of similar size and impact. Greater detail on the rating is given in the key in section 5.
Trees under 75mm in diameter were not recorded in line with BS5837 guidance. The details of the trees as required under BS5837:012 were recorded in section 5 of this report.
Implications resulting from the proposed development are given in section 6 of the report and the tree constraints and protection plan.

2.2 The report is based on a ground level visual tree assessment, using recognised non-invasive techniques, (Mattheck). It is an external inspection only. Condition of the tree was assessed only on date of inspection. Physiological and structural assessments are valid for a period of no more 12 months. It remains valid only if no environmental changes occur around the tree. If any changes should occur, re-inspection should be carried out. Environmental changes around the tree will render the report invalid.
There has been no assessment of potential for indirect damage because of soil heave or subsidence that trees may have on existing properties, this is outside the remit of this report.
No internal diagnostic equipment was used, and no pest and disease samples were taken or sent away for analysis. No soil samples were taken for testing. If Soil analysis is required, a soil engineer should be employed. There has been no examination of existing drains or service runs for the presence of roots. No trial pits were dug to examine roots at the time of the tree survey.

2.4 There has been a check with the local authority of the tree protection status of the site. However, it remains the responsibility of the tree owner to check TPO status, prior to carrying out any works on the tree.

2.5 Any works to the trees should comply with BS3998:2010 Tree Work and be carried out by a suitably qualified and competent operative.

2.6 A topographical survey was available for the tree positions within the site. The tree protection plan is based on this and the current proposed site lay out available at the time of writing the report.

Site

2.1 The site is to the south side of Stanmore way It is a large, detached bungalow and garage set in mature grounds. Along the front of the property with Stanmore way is a mature holly hedge. Within the site there is a large conifer in the rear harden and several small conifers in the front. Non are of a high quality. To the west of the site are 2 small trees on the boundary with the neighbouring house, which belong to the adjacent property.

Fig 1 – The site outlined in red

4.0 Proposed Development

4.1 The proposal is for the demolition of the existing bungalow and construction of two new dwellings. Reconfiguration of the drive in to an in-out access, parking to the front of the site and associated landscaping. See drawings 378-XPP-100-2 by Clear Architects.

4.2 Reference documents supplied

Drawing references	Author	Title	Date
378-PL-18	Clear	Proposed ground floor	March 21
378-PL-19	Clear	Proposed first floor and roof	March 21
378-PL-20	Clear	Proposed North and south elevations	March 21
378 – PL-21	Clear	Proposed east and west elevations	March 21

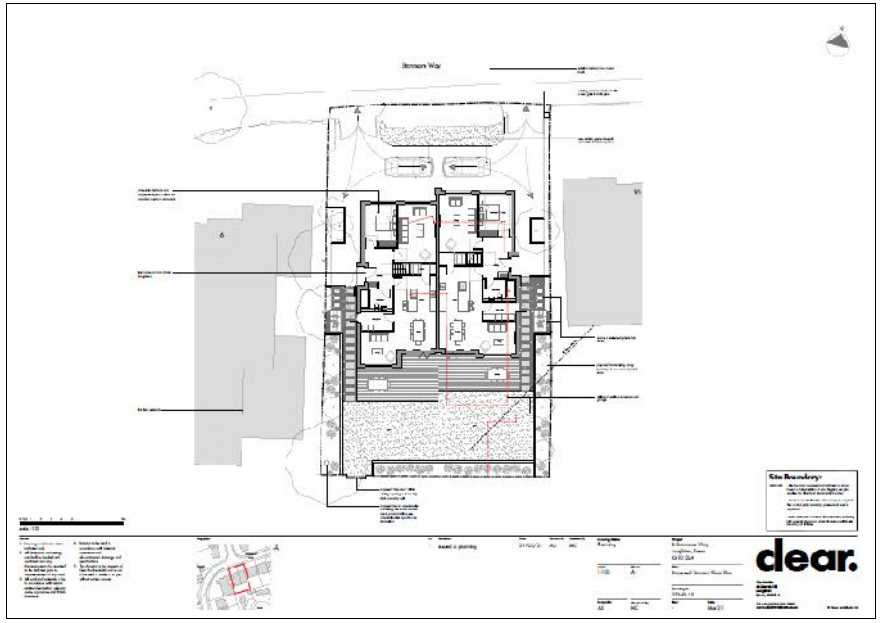


Fig 2 – Site layout

4.2 The conifers within the site are either poor quality or small and not of importance in the wider landscape. These would be removed. The eastern section of the holly hedge along the frontage would be retained. A section to the west of the frontage would be removed to facilitate the new access. The cherry tree which over hangs the garden would be pruned back to the site boundary. This tree has been pruned in this way in the past. The root area within the site would be protected for the duration of the build. Details on the detailed impacts for each tree and any mitigation required is given in section 6 of this report.

5.0 Tree assessment (For further detail see appendix 1)

No.	Species English & Latin	Approx Height (M)	Dia. @1.5 (CM)	Spread (M)	Height Crown Clearance (m)	Age Class	Physiological condition	Structural condition	Preliminary management recommendation	Years remaining	Category grading
T1	*Lawson cypress* *Chaemacyparis lawsoiana*	6	48	N 4.5 S 4.5 E 4.5 W 4.5	2.5 First main at 2.4m high on all sides.	ma	fair	poor the main leader has been removed in the past. There is a large wound running from ground level to 2m high. The heartwood is exposed and liable to decay in the future	remove	<10	U
	A high water demand species under NHBC guidance.										
T2	*Elder* *Sambucus nigra*	4	est 4 x 10cm	N 2.5 S 2.5 E 1.5 W 1.5	3	ma	fair	fair	na	10	C/U
	A small tee or large shrub with limited landscape value in the wider landscape. Short lived species given a retention category as in third party ownership										
T3	*Ornamental Cherry* *Prunus cvr*	4.5	est 30	N 4.25 S 5 E 2.7 W 1.5	3.7	Ma	fair	fair/poor The tree is growing on the boundary very close to the adjacent house. It has been crown reduced in the past and pruned back over the site	prune back to the boundary	10-20	C2
	Given a retention category as in third party owner ship. The survey was from the site only and a full structural assessment not possible due visual obstruction from the boundary fencing.										

No.	Species English & Latin	Approx Height (M)	Dia. @1.5 (CM)	Spread (M)	Height Crown Clearance (m)	Age Class	Physiological condition	Structural condition	Preliminary management recommendation	Years remaining	Category grading
G1	*Lawson cypress x 3*	3	10	N 2 S 2 E 2 W 2	1.6	em	fair	fair	na	10-20	C/U
	The group have limited value in the wider landscape										
T4	*Golden Lawson cypress*	4	26	N 2.5 S 2.5 E 2.5 W 1	1.8	ma	fair	fair	na	10-20	C/U
	The tree has limited value in the wider landscape										
T5	*Golden Lawson cypress*	3	10	N 2.5 S 2.5 E 2.5 W 1	1.8	ma	fair	fair	na	10-20	C/U
	The tree has limited value in the wider landscape										
H1	*Holly* *Ilex aquifolium*	3.5	max 3 x 5cm	as plan	0	ma	fair	fair	na	10-20	C123
H2	*Pyracantha*	3	max 8	as plan	0	ma	fair	fair	na	10-20	C23

Key to survey schedule

Tree number on plan - T1 individual tree on the site

BS 5837:2012 Age class

Y – Young first third of life expectancy, EM – Early mature second third of life expectancy, Ma – Mature final third of life expectancy, OM – Over mature showing signs of senescence, V – Veteran over mature and of special conservation value

Remaining years in age bands - <10, 10-20, 20-40, >40

Physiological or structural condition - Good no significant health problems, or no significant structural problems, **Fair** some symptoms of ill health, or currently insignificant or remediable structural problems, **Poor** significant symptoms of ill health, or significant structural problems
Moribund (physiological only in serious and irreversible decline, **Dead** (physiological only) not alive

Other Abbreviations.

Esti estimated
M/S multi stem the number of stems and diameter are given in line with BS5837:2012 requirements.
N north, E east, S south, W west

BS 5837:2012 Category of quality/retention

Category	Description		
A Green	Trees of high quality A1 – Mainly arboricultural value A2 - Mainly landscape value A3 – Mainly cultural value, including conservation	C Grey	Trees of low quality C1 – Mainly arboricultural value C2 - Mainly landscape value C3 – Mainly cultural value, including conservation
B Blue	Trees of moderate quality B1 – Mainly arboricultural value B2 - Mainly landscape value B3 – Mainly cultural value, including conservation	U red	Trees that are in a poor condition, so that any existing value will be lost in the next 10 years, and should, for reasons of sound arboricultural management, be removed.

6.0 Arboricultural Impact Assessment

6.1 The arboricultural impact is based on the following parameters

- All trees that are to be retained will be protected by tree protection fencing in line with BS5837:2012 section 6.2
- Should be read in conjunction with Tree Constraints and Protection Plan drawing number CA/FPR/01.

6.2 The root protection area (RPA) is an area of ground around the tree that should be retained, undisturbed, for the benefit of the tree roots. The RPA is calculated, as set out in BS5837:2012. This determines the square metres of ground area that should be retained. This is often shown as a circle, with a radius as determined by the calculation. However, it is not always essential that this is a circle and, in some situations, the geography of the site can make an alternative shape more appropriate. It must still equate to the same area as the circle calculated under the approved calculation.

Tree no.		RPA m/sq	Radi of RPA (M)	Tree implications assessment	Mitigation
T1	Lawson cypress			fell due to damage to the trunk	
T2	Elder	18	2.4	Low quality shrub/ tree	The building will be on the edge of the root area
T3	Cherry	34	3.3	**Crown** The new building is peripheral to the crown spread **Roots** The new footings are on the edge of the root zone f the tree	**Crown** The crown will require pruning back to the boundary. Under currently law as long as the tree has no statutory protection, such as TPO or conservation area order, the site owner can prune back to the site boundary but not beyond. The tree has been given the lowest retention category of 'C' It is a small tree with limited value in the wider landscape, however, has been given a retention category as it is in third part ownership. **Roots** The trench for footings within the root area will be hand dug.

					Any roots less than 25mm in diameter, which cannot be preserved, will be pruned cleanly with a sharp saw or secateurs or hand saw, by a suitably qualified person. All roots over 25mm in diameter will be retained. Exposed roots will be covered with damp Hessian and sharp sand until the pits are filled. The trench will be lined with a non-porous root barrier to stop leaching of concrete compounds into the root area.
G1	Lawson cypress		1.2	remove to facilitate the development	a group of small trees with very limited value in the wider landscape.
T4	Lawson cypress	28	3.0	remove to facilitate the development	a small tree with very limited value in the wider landscape.
T5	Lawson cypress	5	1.2	remove to facilitate the development	a small tree with very limited value in the wider landscape.
H1	Holly		2.7	retain the hedge distant enough from the building not to be affected	tree protection fencing will be installed along the hedge line to protect it during the build.
H2	Pyracantha		1.2	retain the hedge distant enough from the building not to be affected	

6.3 Tree protection fencing

The root protection areas (RPA) of retained trees should be protected for the duration of the works with tree protection fencing, in line with BS5837:2012, prior to the developer commencing on site. The fencing is to be of 1.8m steel mesh, heras fencing, to be installed as detailed in BS5837:2012 section 6.3.2 figure 3. (See appendix 1). Once erected, the fencing will have all weather notices attached to the barrier worded “Construction Exclusion Zone –Keep out”. The fencing should not be taken down until all construction of cabins and any hard surfaces near to the trees is completed, see appendix 1

6.4 Additional ground protection

Where access is required over an RPA to facilitate the build, additional ground protection in line with BS5837:2012. This should be as follows: For pedestrian access only, a single thickness of scaffold board either, suspended on a driven scaffold frame to form a suspended walkway, or on a non-compressible layer (e.g. 100mm layer of bark mulch) laid over a geotextile.
For pedestrian operated plant, up to a gross weight of 2t, proprietary inter linked ground protection boards, placed on a non-compressible layer (e.g. 100mm layer of bark mulch) laid over a geotextile.
For wheeled or tracked plant over 2t in gross weight, an alternative system (e.g. proprietary system or pre-cast reinforced concrete slabs) to an engineering specification, designed to accommodate the likely load it will be subject to, is required.

6.5 Service runs

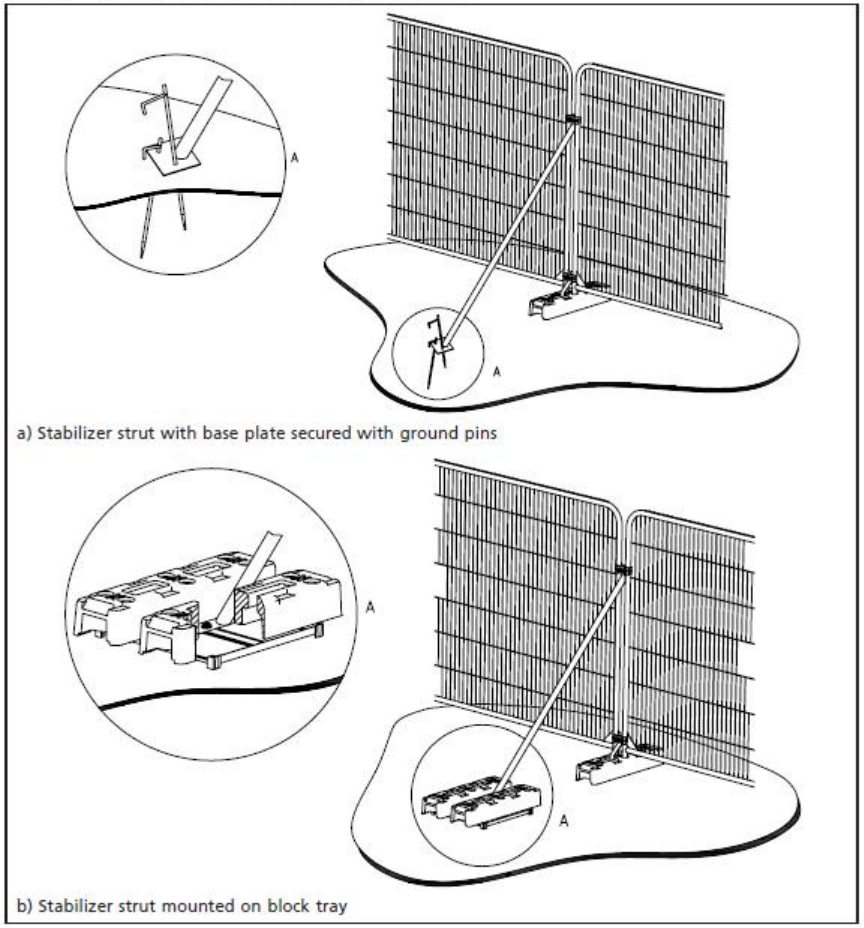
Any Utilities trenches should where possible avoid the RPA’s of retained trees. If a service route cannot avoid the RPA of a retained tree, it should be installed in one of the following two ways, to avoid excavation with machinery in the RPA or precautionary area:
For short runs, the service trench will be carefully excavated by hand. Any roots over 25mm will be retained and protected by wrapping in damp Hessian. Any roots less than 25mm in diameter, which cannot be preserved, will be pruned cleanly with a sharp saw or secateurs or hand saw, by a suitably qualified person. Exposed roots will be covered with damp Hessian and sharp sand. Back fill is to be of excavated soil or an inert granular fill. For long runs, a trenchless installation method, such as directional drilling or impact moling, is to be used. Retrieval and access chambers should be located outside the RPA of the trees.
The works should comply with current safety practices for excavating trenches.

6.6 Ground levels

Ground levels within the root zone should not be changed, except for section 6.8 above.

Appendix 1 – Protective fencing

Figure 3 **Examples of above-ground stabilizing systems**



Tree protection fencing should be installed in the position as shown in the tree constraints and protection plan for the site.


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

Appendix 2 – Temporary ground protection

If the drive is removed the root area within it, shown on drawing CA/STAN/01A, will be protected using additional ground protection, prior to commencing building and demolition works.
This will protect the roots, and the soil around them, from damage by compaction, spillage and excavation.

For pedestrian access, only, a single thickness of scaffold board either suspended on a driven scaffold frame to form a suspended walkway, or on a non compressible layer (eg 100mm layer of bark mulch) laid over a geotextile.

For pedestrian operated plant, up to a gross weight of 2 ton, proprietary inter linked ground protection boards, placed on a non compressible layer (e.g. 100mm layer of bark mulch) laid over a geotextile.

For wheeled or tracked plant over 2 ton is gross weight, an alternative system (e.g. proprietary system or pre-cast reinforced concrete slabs) to an engineering specification designed to accommodate the likely load it will be subject to.

Appendix 3 – Report Caveats

1. The report is based on a ground level visual tree assessment (Mattheck).
2. No soil samples were taken for testing. If Soil analysis is required a soil engineer should be employed.
3. No pest and disease samples were taken or sent away for analysis.
4. It remains the responsibility of the tree owner to check TPO status prior to carrying out any works on the tree.
5. Physiological and structural assessments are valid for a period of 12 months. It is an external inspection only.
6. VTA of the tree was assessed only on date of inspection; it remains valid only if no environmental changes around the tree. If any changes should occur re-inspection should be carried out.
7. Environmental changes around the tree will render the report invalid.
8. No internal diagnostic equipment was used.
9. Any works to the trees should comply with BS3998:2010 Tree Work

Appendix 4 – References

BS5837:2012 Trees in relation to design, demolition and construction – Recommendations.

NHBC Chapter 4.2 Building near trees

D Lonsdale 'Principles of Tree Hazard Assessment and Management'
Forestry Commission 2007

Strouts and Winter 'Diagnosis of ill health in trees'
Forestry Commission 2007

C Mattheck and H Breloer 'Body Language of Trees'