Arboricultural and Landscape Report

Residential Development
12 Grosvenor Place,Beverley
East Riding of Yorkshire
HU178LY

July 2023

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1.0 INTRODUCTION

1.1 This report provides information in accordance with British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction for proposed residential development on land at 12 Grosvenor Place, Beverley, East Riding of Yorkshire. The development proposals are for the erection of two residential properties and demolition of one dwelling and associated outbuildings, swimming pool and garages.

1.2 The arboricultural survey was commissioned by Sangwin Architects who are architects for the site. The aims of the survey are to undertake an assessment of all the existing trees within the proximity of the proposed development including trees on and adjacent to the site.

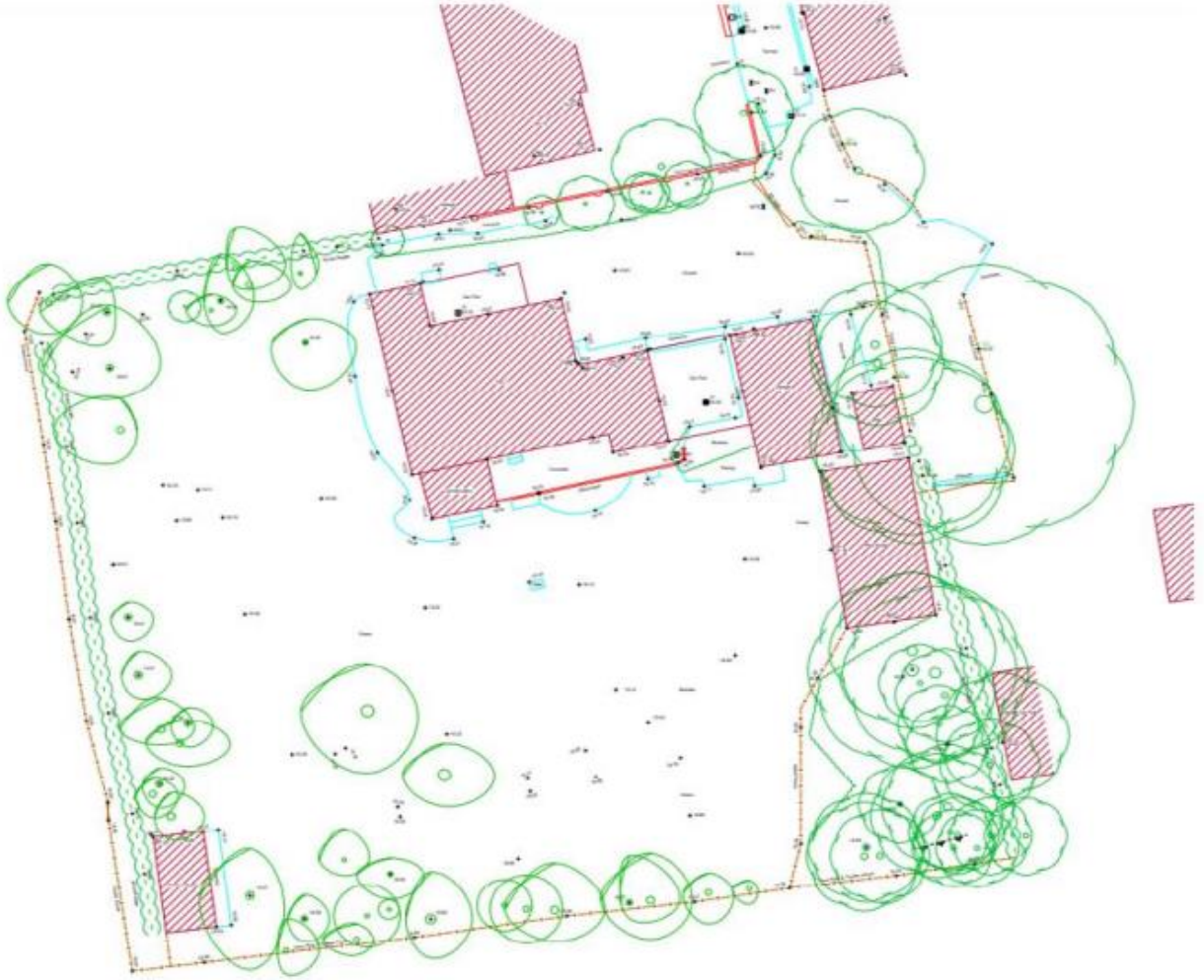
1.3 The following information has been recorded in accordance with BS 5837 2012.

- Designated tree number
- Tree Species – the common name has been given followed by the Latin or scientific name
- Height
- Stem or base (multi stemmed trees) diameter and root protection area
- Crown clearance (height of the periphery of the crown spread above ground level)
- Branch spread (to N, S, E, and W)
- Age class. This is given as young (Y), mature (M), and over mature (OM)
- Physiological condition -general comments given only, poor, fair, good
- Tree structural condition - general comments given only, poor, fair, good
- Useful life expectancy
- Preliminary management recommendations
- Tree category (A, B, C or U)
- The Tree Survey to be undertaken according to BS5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations. The information collected to be presented in a schedule.

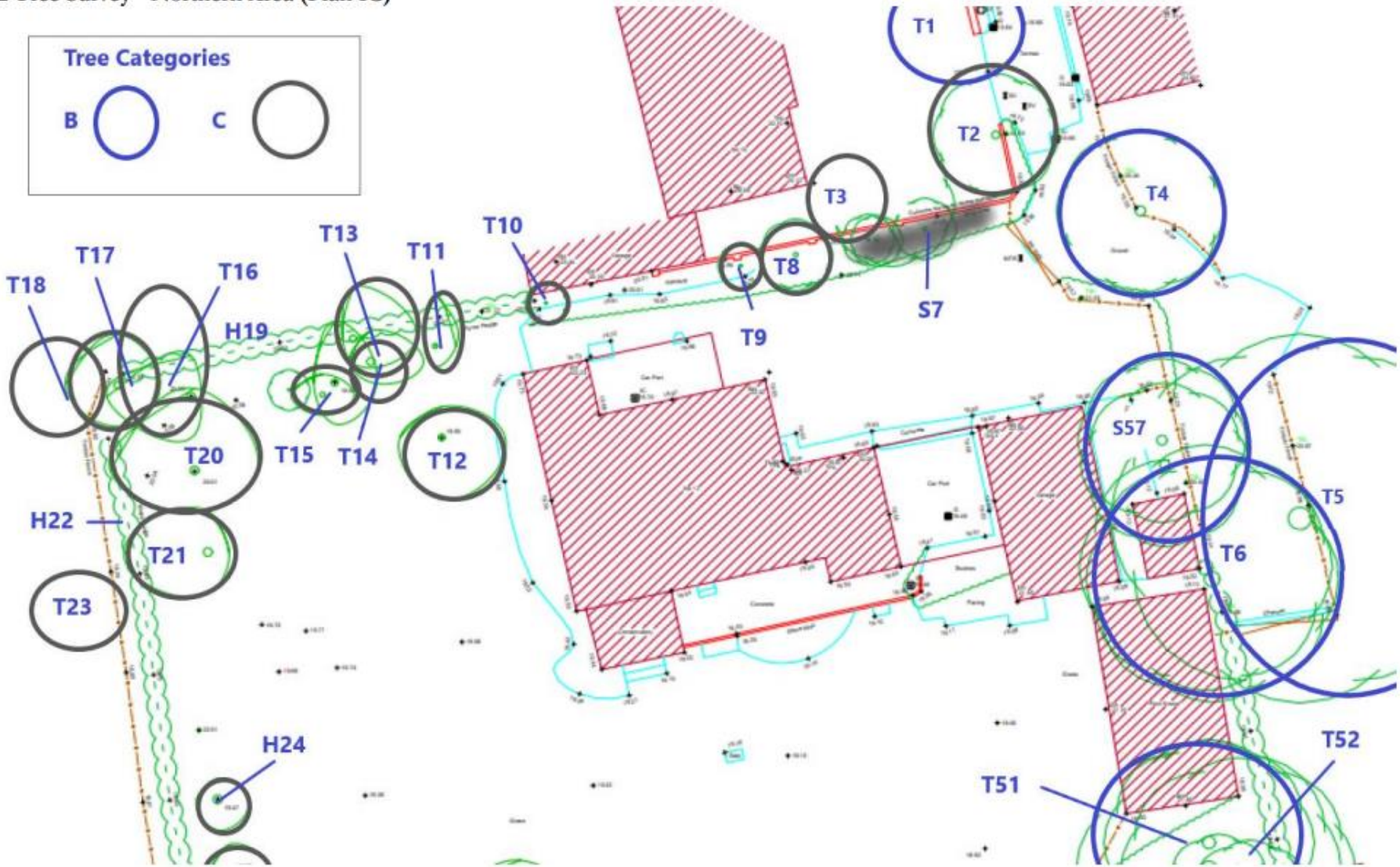
2.0 SITE PLANS

2.1 Location Plan (1A)

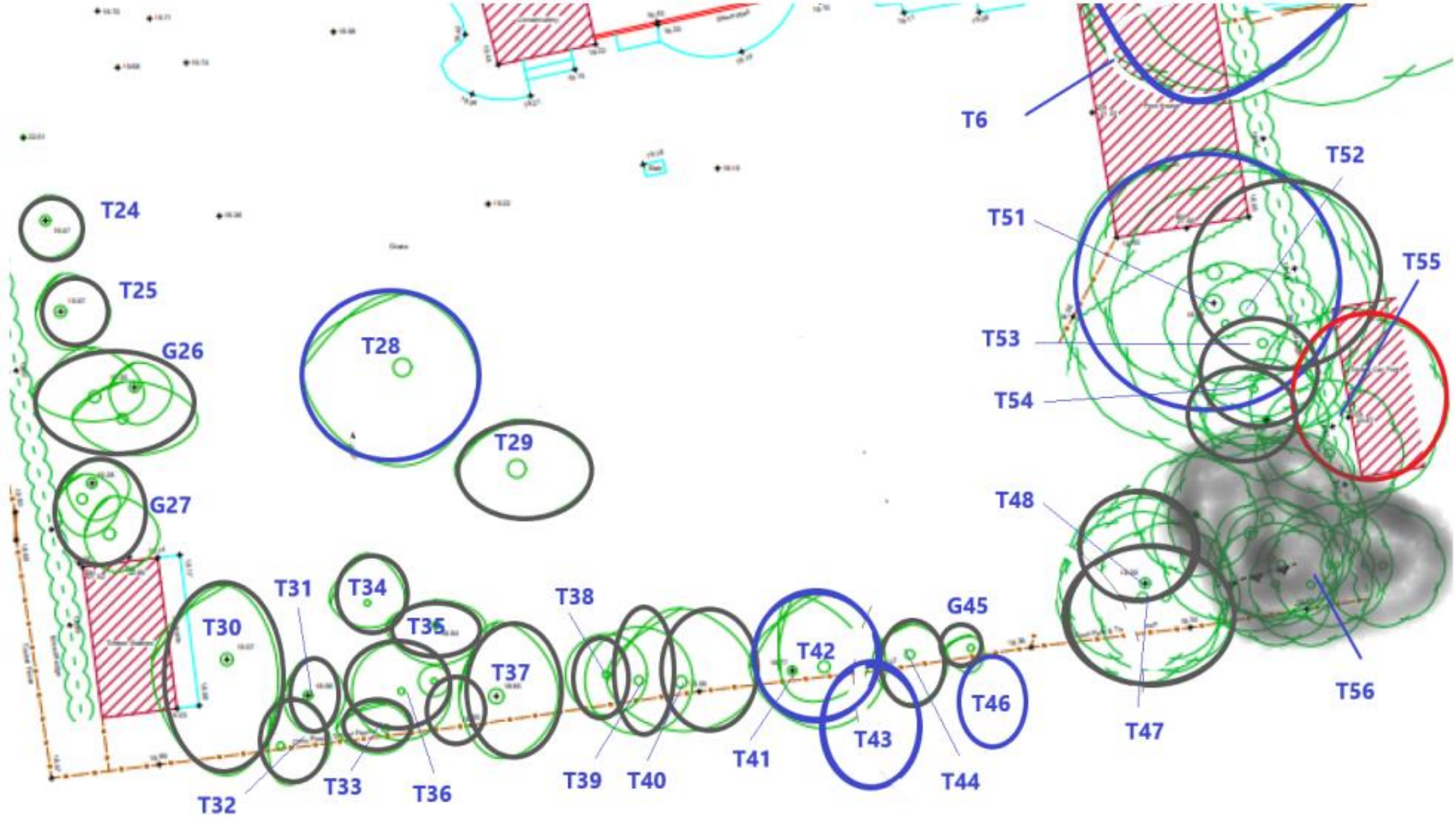
2.2 Tree Survey (Plan 1B)



2.2 Tree Survey - Northern Area (Plan 1C)



2.3 Tree Survey - Southern Area (Plan 1D)



3.0 SURVEY METHODOLOGY

3.1 The survey was carried out to British Standard 5837:2012, using the categories explained below:

3.1.1 The trees were assessed visually from ground level. Where potential problems were identified, further inspection by tree climbing is recommended. No digging or drilling methods were employed during this survey.

3.1.2 The trees were not given number tags.

3.1.3 The approximate height of each tree is measured from ground level to top of canopy using a clinometer.

3.1.4 The approximate diameter of each tree is measured at 1.5m above ground level using a diameter tape measure.

3.1.5 The age of each tree is based upon experience. (Y = young, MA = middle aged, M = mature, OM = over mature).

3.1.6 The physiological condition of the trees is based upon experience. (Good, Fair, Poor, Dead).

3.1.7 The structural condition and description is also based on experience. (Good, Fair, Poor).

3.1.8 Both the approximate expected lifespan remaining and category/rating of each tree is based on the surveyor's experience.

3.1.9 The retention category of each tree or group of trees is based upon the information detailed above using the following categories:

A Trees of high quality and value
B Trees of moderate quality and value
C Trees of low quality and value
U Trees to be removed for arboricultural reasons

3.1.10 The following subcategories have been used in rating tree value:
1 Mainly arboricultural value
2 Mainly landscape value
3 Mainly cultural values, including conservation.

3.1.11 Schedule of Trees - Note the root protection area is listed as a radius in metres below the stem diameter.

Tree no	Species	Height	Stem Dia RPA	Branch Spread	Crown Height	Age Glass	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Useful life Expectancy	Category Grading
T1	**Kanzan Cherry**	8m	300e 3.6m	3m	2m	M	Good	Good	**No action** Tree on adjacent land	20+	B2
T2	**Pear**	6m	200e 2.4m	3m	2m	MA	Good	Good	**No action** Tree on adjacent land	40+	C2
T3	**Himalayan birch**	8m	300e 3.6m	3m	2m	MA	Good	Good	**No action** Tree on adjacent land	40+	C2
T4	**Kanzan Cherry**	7m	290 3.5m	4m	3m	M	Good	Good	**No action** Tree on adjacent land	20+	B2
T5	**Walnut**	17m	770 9.2m	7m	3m	M	Good	Good	**No action** Tree on adjacent land	40+	B2
T6	**Beech (Twin stems)**	22m	390 4.7m	N 4 S 8 E 3 W	3m	M	Good	Good	**No action**	40+	B2
S7	**Shrubs**	5m	-	2m	-	MA	Fair	Fair	**No action** Shrubs, buddleia, willow, ivy	20+	C2

Tree no	Species	Height	Stem Dia RPA	Branch Spread	Crown Height	Age Glass	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Useful life Expectancy	Category Grading
T8	**Cypress**	7m	210 2.5m	2m	1m	MA	Good	Good	**Remove for development**	40+	C2
T9	**Cypress**	5m	130 1.5m	2m	1m	MA	Good	Good	**Remove for development**	40+	C2
T10	**Hawthorn**	4m	100 1.2m	1m	1m	Y	Good	Good	**No action**	40+	C2
T11	**Plum**	11m	260 3.1m	3m	4m	M	Fair	Fair	**No action**	20+	C2
T12	**Apple**	7m	280 3.3m	N 2 S 4 E 2 W 2	2m	M	Good	Good	**Remove for development**	20+	C2
T13	**Apple** **Twin stems**	6m	260 3.1m	4m	2m	M	Fair	Fair	**No action**	20+	C2
T14	**Yew**	4m	100 1.2m	1m	1m	MA	Fair	Fair	**No action**	40+	C2

Tree no	Species	Height	Stem Dia RPA	Branch Spread	Crown Height	Age Glass	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Useful life Expectancy	Category Grading
T15	**Holly** **Twin stems**	4m	100 1.2m	1m	2m	MA	Good	Fair	**No action**	40+	C2
T16	**Apple**	9m	510 6.1m	N 6 S 3 E 2 W 3	2m	M	Fair	Fair	**No action**	20+	C2
T17	**Hawthorn**	7m	250 3.0m	3m	2m	M	Good	Good	**No action**	40+	C2
T18	**Hawthorn**	7m	350 4.2m	4m	2m	M	Good	Good	**No action** **Tree on adjacent land**	20+	C2
H19	**Privet hedge**	2m	100e 1.2m	1m	-	M	Good	Good	**No action**	20+	C2
T20	**Apple**	7m	310 3.7m	N 2 S 3 E 4 W 4	2m	M	Fair	Fair	**No action**	20+	C2
T21	**Apple**	9m	290 3.5m	N 3 S 3 E 3 W 3	2m	M	Fair	Fair	**No action**	20+	C2

Tree no	Species	Height	Stem Dia RPA	Branch Spread	Crown Height	Age Glass	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Useful life Expectancy	Category Grading
H22	**Hedge**	2m	100e 2.2m	2m	-	M	Poor	Poor	**No action** Mix of hawthorn, privet, elderberry, blackthorn	20+	C2
T23	**Hawthorn**	7m	350 4.2m	4m	2m	M	Good	Good	**No action** Tree on adjacent land	20+	C2
T24	**Laburnum**	6m	310 3.7m	2m	2m	M	Fair	Good	**No action**	20+	C2
T25	**Sycamore**	4m	140 1.7m	2m	2m	MA	Fair	Fair	**No action**	40+	C2
G26	**Plum** **8stems**	8m	400e 4.8m	4m	2m	M	Fair	Fair	**No action**	20	C2
G27	**Plum/ apple** **10 stems**	8m	400e 4.8m	4m	2m	M	Fair	Fair	**No action** Mainly wild plum with 1apple and 1 elderberry	20+	C2
T28	**Apple**	9m	410 4.9m	N 4 S 4 E 4 W 4	2m	M	Good	Good	**Remove for development**	20+	B2

Tree no	Species	Height	Stem Dia RPA	Branch Spread	Crown Height	Age Glass	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Useful life Expectancy	Category Grading
T29	**Apple**	9m	420 5.0m	N 3 S 3 E 3 W 3	2m	M	Fair	Fair	**Remove for development**	20+	C2
T30	**Apple**	9m	380 4.5m	N 3 S 3 E 3 W 3	2m	M	Fair	Fair	**No action**	20+	C2
T31	**Norway maple**	6m	150 1.8m	2m	2m	M	Fair	Fair	**No action**	40+	C2
T32	**Plum**	8m	210 2.5m	2m	2m	M	Good	Good	**No action**	20+	C2
T33	**Portuguese Laurel**	5m	110 1.3m	2m	1m	MA	Good	Good	**No action**	20+	C2
T34	**Plum**	5m	100 1.2m	2m	2m	Y	Good	Good	**No action**	20+	C2
T35	**Plum**	5m	90 1.0m	1m	2m	Y	Good	Good	**No action**	20+	C2

Tree no	Species	Height	Stem Dia RPA	Branch Spread	Crown Height	Age Glass	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Useful life Expectancy	Category Grading
T36	**Plum**	8m	240 2.9m	2m	2m	M	Good	Good	**No action**	20+	C2
T37	**Hazel Multi stemmed**	6m	300e 3.6m	2m	-	M	Good	Good	**No action**	40+	C2
T38	**Common Laurel**	6m	300e 3.6m	3m	-	M	Fair	Fair	**No action**	20+	C2
T39	**Leyland Cypress**	5m	180 2.1m	2m	3m	MA	Poor	Poor	**No action**	40+	C2
T40	**Leyland Cypress**	5m	240 2.9m	2m	3m	MA	Poor	Poor	**No action**	40+	C2
T41	**Plum**	6m	230 2.7m	N 3 S 1 E 4 W 1	2m	MA	Fair	Fair	**No action**	20+	C2
T42	**Leyland Cypress**	18m	500 6.0m	3m	3m	M	Good	Good	**No action**	40+	B2

Tree no	Species	Height	Stem Dia RPA	Branch Spread	Crown Height	Age Glass	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Useful life Expectancy	Category Grading
T43	**Cypress** **Twin stem**	15m	500e 6.0m	4m	2m	M	Good	Fair	**No action** Tree on adjacent land Topped in the past at 15m	40+	B2
T44	**Plum**	9m	110 1.3m	3m N	2m	MA	Fair	Poor	**No action**	20+	C2
G45	**Plum** **2 trees**	8m	120 1.4m	N 3 S 1 E 1 W 5	2m	MA	Fair	Poor	**No action**	20+	C2
T46	**Cypress**	20m	500e 6.0m	3m	2m	M	Good	Good	**No action** Tree on adjacent land	40+	B2
T47	**Ash**	14m	290 3.5m	3m	4m	M	Fair	Fair	**No action** Heavy with ivy	-	C2
T48	**Plum**	11m	350 4.2m	N 3 S1 E1 W 2	4m	M	Fair	Fair	**No action** Heavy with ivy	20+	C2
T49	**Cypress**	5m	100 1.2m	1m	2m	Y	Fair	Fair	**No action**	40+	C2

Tree no	Species	Height	Stem Dia RPA	Branch Spread	Crown Height	Age Glass	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Useful life Expectancy	Category Grading
H50	**Beech**	3m	200e 2.4m	1m	-	M	Good	Good	**No action**	40+	C2
T51	**Norway Maple**	20m	540 6.5m	N 5 S 5 E 2 W 4	4m	M	Good	Good	**No action**	40+	B2
T52	**Ash leaved maple** *Acer negundo*	18m	320 3.7m	N 4 S 1 E 7 W 1	3m	M	Good	Good	**No action**	40+	C2
T53	**Elderberry**	6m	120 1.4m	2m	2m	MA	Fair	Fair	**No action**	20+	C2
T54	**Norway Maple**	11m	100e 1.2m	2m	2m	Y	Fair	Fair	**No action**	40+	C2
T55	**Apple**	7m	400e 4.8m	N 4 S 2 E 4 W 2	2m	M	Poor	Poor	**No action** Virtually dead Tree on adjacent land	-	U

Tree no	Species	Height	Stem Dia RPA	Branch Spread	Crown Height	Age Glass	Physiological Condition	Structural Condition	Preliminary Management Recommendations	Useful life Expectancy	Category Grading
G56	**Plum Scrub**	6m	300e 3.6m	-	-	M	Poor	Poor	**No action** Approximately 7 stems, all heavy with ivy, 3 stems appear to be leaning and resting on adjacent trees.	10+	C2
S57	**Hazel**	12m	500e 6.0m	N 7 S 7 E 7 W 4	2m	M	Good	Good	**No action**	40+	B2

4.0 ARBORICULTURAL IMPLICATIONS ASSESSMENT

4.1 Tree Removal

The development proposals seek to remove three mature apple trees (T12, T28 and T29) which were no doubt part of the original orchard on the site. Two small cypress trees are proposed to be removed along the northern boundary. The trees along the southern boundary of the site are generally of poor form but they do form a treed boundary, separating the site from the adjacent property.

4.2 Tree Pruning

The Council's Tree and Landscape Section made comments on the application that the crowns of two trees outside the site would restrict access for high sided construction vehicles. Tree T1 is over the highway and owner should ensure that this tree conforms to highway clearance, only minor pruning would be required. T4 is over a private drive so the same highway requirements do not apply. The ownership of the driveway at this point is not known, but in any event, it would seem unreasonable not to allow the undertaking of very minor pruning work to provide clearance for high sided vehicles.

4.3 Services and Soakaways

Services and soakaways have been located so as not to affect the existing trees with services running down the access drive, see architect's drawings for further details. The soakaways have been located away from existing trees and the old swimming pool used for the soakaway on the eastern boundary to avoid damage to the tree roots in this area.

4.4 Proximity of Trees to Dwellings

With the trees removed as proposed in the tree schedule the properties would generally have good relationship with the existing trees to be retained. It is likely that some of the occupier of plot 3 might seek to remove the poorer quality trees along this boundary, given the proximity to the property and their poor form. However, it is also likely that if the property owner did remove these, they would replace them with hedging or shrubs to maintain the screening to the adjacent property. The proposal is to retain all the trees along the southern boundary.

4.5 Construction Space and Access

Adequate space exists for construction work without impacting on trees to be retained. Tree protection fencing is proposed during demolition and construction work. The rear gardens of each plot are relatively large and would be suitable for the storage of equipment and materials. However, careful planning would be required for the completion of the final dwelling given access between the properties is tight.

4.6 Driveway Construction

The driveway could be constructed utilising a low invasive method of construction however it is considered unnecessary given the locations of the existing garage and swimming pool. The root protection area for the mature hazel (S57) is difficult to estimate given its multi stemmed form. The existing garage with its concrete base would no doubt have restricted roots in this direction. Likewise with the beech tree T6, the pool and garage would restrict root extension in this direction. The Norway Maple (T51) is the only tree where a very small percentage of the overall root protection area extends beneath the proposed driveway which has been widened to provide space for turning. A low invasive method of construction is therefore proposed for this area as illustrated on the adjacent plan

4.7 Tree Protection Fencing and Scaffold Board Ground Protection

It is recommended that tree protection fencing and scaffold board ground protection are undertaken during demolition and construction works. Details are shown on the Tree Protection plans 3A and 3B and within appendix A.

5.0 ARBORICULTURAL METHOD STATEMENT (AMS) – DEMOLITION WORKS

5.1 Local Planning Authority Meeting

- The Local Planning Authority to be notified not less than 72 hours prior to commencement of works on site. The opportunity would be for the Site Management Staff to meet on site to identify trees to be removed and discuss the demolition work.

5.2 Tree Removal

- Prior to the demolition of the buildings the trees to be removed T8 T9, T12, T28 & T29, as listed in schedule 3.1.11

5.3 Tree Protection Measures - Erection of Tree Protection Fencing and Scaffold Board Ground Protection Tree Protection Fencing and Scaffold Board Ground protection to be erected as indicated on the Tree Protection Plan 3A.

5.4 Demolition Work

- Pre-commencement Meeting - Once the tree protection measures as indicated on plans 3A are in place then the pre-commencement meeting to be held with the demolition contractors. The meeting to include, avoidance of damage to all existing vegetation, including root systems and the retention of protection fencing and ground protection scaffold boarding at all times.
- Lightweight timber structure - These are located closest to the trees which is fortunate in that they can be removed by hand and light weight machinery working from the large open garden area in the centre of the site. The large garden area provides extensive work space.
- Concrete Foundations - The concrete foundations for the timber buildings to be removed with use of hand machinery. It is unlikely that the two wooden sheds would have foundation depths exceeding 300mm.
- Swimming Pool - The swimming pool is the closest structure to tree T6. The pool would have the bottom broken to allow for drainage and the sies reduced by 0.5m. The pool would then be filled for use as a soakaway. The remaining depth (0.5mm) would be filled with topsoil. The pool wall on the eastern sire, adjacent to the trees could be carefully reduced using hand tool so as to reduce any potential for damage to the trees.
- Site Machinery - No site machinery to be stored within the fenced tree protection areas.

5.5 Completion of work.

- On completion of the demolition work the tree protection measure to be amended for construction work.
- Ground preparation may be required and could include light cultivation of the surface of the soil to enable seeding or turfing. Such light cultivation would not exceed 5cm and therefore have no impact on the existing trees.

6.0 ARBORICULTURAL METHOD STATEMENT (AMS) – CONSTRUCTION WORK

6.1 General Site Management Constraints

- No soil stripping, compaction, excavation or removal is to take place other than for the foundations, services and drainage as proposed.

6.2 Local Planning Authority Meeting – Pre – construction work

- The Local Planning Authority to be notified not less than 72 hours prior to commencement of works on site.

6.3 Tree Protection Measures - Erection of Tree Protection Fencing and Scaffold Board Ground Protection Tree Protection Fencing and to be erected as indicated on the Tree Protection Plans (3B) and as detailed in Appendix A. Notices to be erected on the fencing at 5m intervals stating 'Tree Protection Fencing - Do not remove'.

6.4 Construction Work

- Once the tree protection measures as indicated on plans 3B. are in place then construction work can commence.
- The turning area for plot 3 to be constructed utilising a low invasive method of construction as illustrated in appendix D.
- Services for the development are to be located as indicated on the plans with the service runs agreed with the architect and service providers before any excavation work commences. No services to be located within the root protection areas of the trees.
- No site materials to be stored within the fenced tree protection areas.
- Adequate space exists for the construction of the dwellings with all 3 plots having a reasonable sized garden area to the rear outside the tree protection fencing. However, planning would be required to utilise this space for materials and machinery, given the narrow space between the buildings to access this space.

6.5 Completion of work.

- On completion of the construction work the tree protective can be removed.
- Ground preparation may be required and could include light cultivation of the surface of the soil to enable seeding or turfing. Such light cultivation would not exceed 5cm and therefore have no impact on the existing trees.

7.0 PLANTING SCHEDULE

7.1 Tree planting is proposed with apple, pear, cherry to replace the orchard trees removed. At the time of writing, it was found difficult to locate fruit trees at heavy standard. The species listed below have therefore been selected but alternative species may be selected for planting if they can be located at the appropriate size. The two field maple trees have been include to link into the native hedgerow along the Westwood boundary.

Tree Planting	**Species**	**Size**	**Support;**
T1, T2, T3, T9, T13	Malus hupehensis (Crab Apple)	14- 16cm	Stakes and ties
T4, T5, T6, T10, T11	Pyrus calleryana 'Chanticleer' (Pear)	14- 16cm	Stakes and ties
T7, T8, T12	Field Maple (Acer campestre)	14- 16cm	Stakes and ties

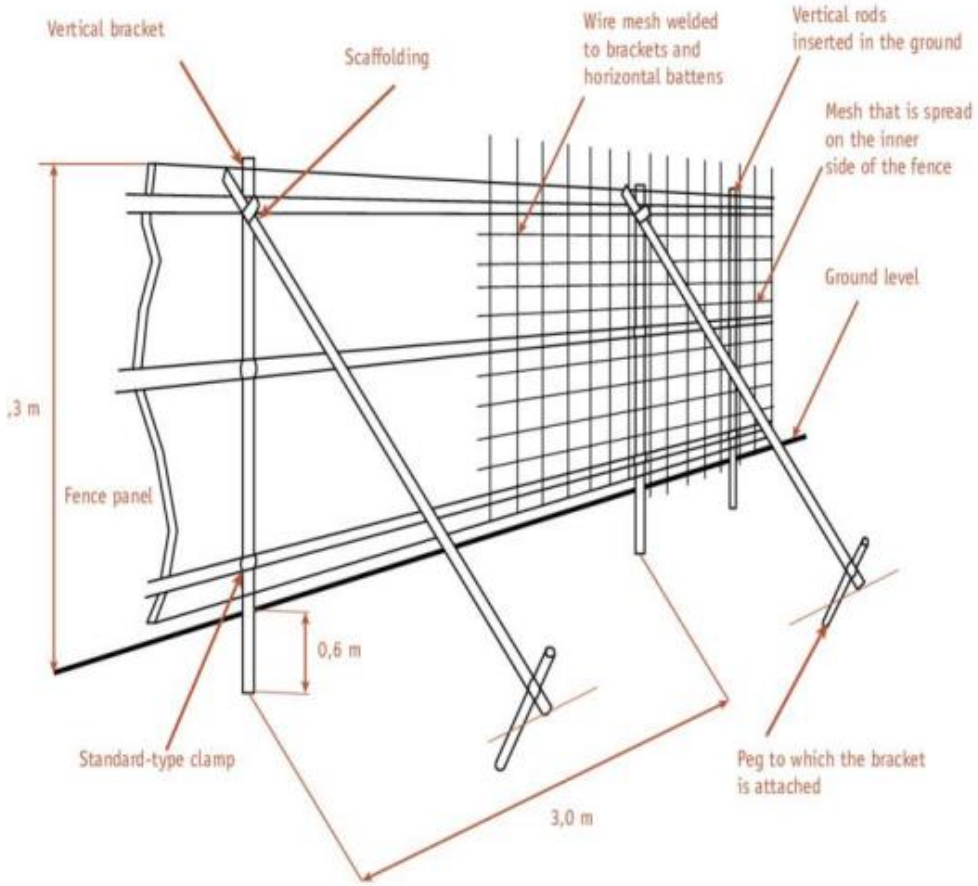
7.2 Hedge planting is proposed along the western boundary to produce a wide hedge (2m) which is rich with native species. The existing hedge is poor quality and will require heavy pruning in place and then allowing it to regenerate, with new planting in any gaps. A full line of new hedging can be planted on the eastern side of the existing hedge which over time would intermix with the existing plants. A new post and rail fence is also required along the boundary which will require some extensive pruning work in order to erect it on the correct boundary line.

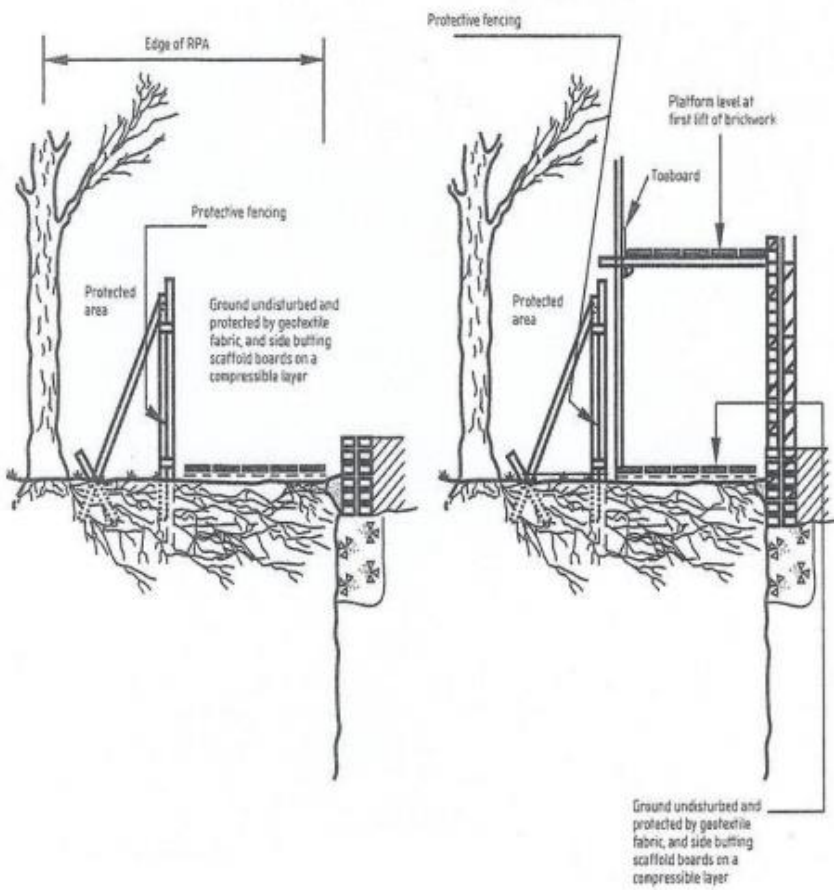
Hedge Planting - H10A	**Species**	**Size**	**Density;**
Hedge H10A	Hawthorn (Crateagus mongyna) to be planted in any open spaces within the existing hedgerow to achieve 4 stems per m.	40 – 60cm	4 stems per m.

Hedge Planting - H10B	**Species**	**Size**
Hazel (Corylus avellana) (20%) ,		40 – 60cm
Guelder Rose (Viburnum opulus) (10%)		40 – 60cm
Spindle (Euonymus europeaus) (20%)		40 – 60cm
Dogwood (Cornus sanguinea) (10%)		40 – 60cm
Holly (Ilex aquifolium) (20%)		40 – 60cm
Hawthorn (Crateagus monogyna) (20%)		40 – 60cm

Density - 3 per m in a double staggered row, 300mm between plants. Planted in species groups of 5 – 10 of the same species.

Appendix A – Tree Protection Details





Appendix B - LANDSCAPE SPECIFICATION

1.0 Site Preparation, Existing Trees and Soil

1.1 Existing Vegetation: No existing trees, shrubs or other plants shall be removed or cut without specific instructions from the client. Existing trees to be retained, protected and undisturbed throughout the contract in accordance with tree protection measures described and in accordance with BS 5837:2012. No branches are to be cut or damaged and no roots larger than 75mm in diameter are to be cut or damaged.
No fires are to be lit under or within 15m of the trees. No debris, fuel, or building material of any sort to be stacked against or piled around the trunks.

1.2 Weed Control: All weeds shall be cut down and removed off site to a facility found by the contractor. An approved, contact herbicide spray shall be applied to all areas of site to eliminate any remaining green weed vegetation.

1.3 Sub-Soil Preparation: All stone, brick, concrete, wood, wire, pipes debris, rubbish, weed roots and foreign matter of any kind above a maximum dimension of 150mm shall be removed from the sub-soil formation layer to a depth of 225mm.

1.4 Removal of surplus excavated material: Remove all surplus excavated material from the site. Topsoil may be required to bring the level back to existing ground level where debris have been removed and where drains have been installed. Unless otherwise approved, the minimum depths of topsoil shall be as follows: -

Grassed areas - 225mm Shrub beds – 600mm Tree pits – 900mm

1.5 Imported topsoil will be to BS3882 of high humus content and have a good crumb structure. The pH value should be neutral and the soil should be free from roots and other deleterious material.

1.6 Final levelling adjoining kerbs shall be completed by hand and for grassed areas shall be 25mm above the kerbs to allow for settlement and future ease of mowing operations. The soil level for shrub borders shall be left 75 mm below the kerb to allow a 50 - 75mm layer of bark mulch to be placed on the top soil surface to reduce weed competition. These should be agreed with the contractor but additional topsoil may be required to achieve an even surface free from deviations or delves that may encourage ponding. The final preparation of the soil shall be carried out by cultivators, harrows and rollers so that the ground is broken down to an approved degree of tilth and firmness. The finished surface for turfing shall be free from stones exceeding 50mm in any dimension and shall consist of a crumbly structure. Allow for removing any further weeds from all top-soiled areas, immediately prior to turfing and remove off site.

1.7 All boundaries will be clearly marked on site. Areas of planting will be delineated using clear and identifiable lines that are either straight or smooth curves

2.0 Grass seeding/turfing

2.1 Weed Control – Prior to cultivation, all areas to be grassed shall be given an application of an approved, glyphosate-based herbicide and left for a minimum of 4 weeks to destroy all weed growth.

2.2 Cultivation – The areas to be sown shall be cultivated to a depth of 150mm using a rotary cultivator or a power harrow, removing all stones greater than 15mmm in size. All debris collected shall be removed from site. Cultivation shall only be carried out when the surface material is reasonably dry. Before final grading, light firming of the area is required using a crumbler roller or treading. The whole area should be cultivated to provide a fine tilth before finally raking and grading to produce uniform and even finished levels.

2.3 Pre-seed Fertiliser – Shall be applied to the area 7-10 days prior to sowing. The fertiliser shall be a recognised compound, e.g. Trident, Pre□seed fertiliser, NPK or similar approved at an application rate of 35g per m sq, and lightly raked into the surface soil.

2.4 Sowing of Grass Seed – Shall only be carried out in calm weather conditions when the season and soil conditions are suitable. This normally applies late summer and early spring when the soil temperature and moisture content is adequate for germination. The seed shall be broadcast in a recognised manner providing an even distribution of 35g per sq m.

2.5 Seed Mix – The seed mix for amenity grassland and gardens shall contain the following ratio of varieties for durability and future ease of maintenance.
50% Perennial Rye 20% Chewing fescue 20% Slender Creeping Red Fescue 10% Brown Bent

2.6 All grass seed must comply with British Standard BS4428 section 5.3 and be from the previous year's harvest with a seed certification label.

2.7 After sowing the seed shall be covered evenly with a dressing of screened loam and applied at a rate of 2kg per sq m, followed by a lightly rolling of the area.

2.8 Establishment - Following successful germination and when the grass has reached a height of 50mm in height the area shall be stone picked, to remove all arisings over 15mm and rolled using a smooth agricultural roller or similar. Over seeding of poorly germinated areas shall be carried out at this stage.

2.9 The full topsoil will be wetted without displacing seeds, seedlings or soils. The frequency of watering will be regular to ensure the continued thriving of all seeding/turfing.

2.10 The first cut will be undertaken in dry conditions and when the sward is at a height of 45mm – 75mm. The first cut will be to 40mm. All stones and clods greater than 25mm will be removed. All arisings will be collected and removed off site.

3.0 Planting Trees and Shrubs

3.1 Planting
Tree Pits for trees (12 – 14 cm) to be dug 1200 x 1200 x 750mm deep. Dig out holes large enough to receive the roots of the plant fully extended and well spread out. Carefully work top-soil among roots and backfill. Plants to be well firmed by heeling and the surface left neat and even. Planting must be to the same depth as in the nursery. Care must be taken not to disturb the root balls of pot grown plants and not let any roots dry out at any time.
Notch planting for tree and shrub bare root seedlings planting may be undertaken by notch planting. This is where the notch in the ground will provide a slit of sufficient size to accommodate the roots of the plants without any trimming or being forced into the slits.
Shrub Planting - All plants are to be planted so that the top of the nursery mark is level with the final soil level. Excavation for the shrubs to be in pits of adequate size to comfortably accommodate all the root system.

3.2 Planting Spacing - The shrub planting will be undertaken at the density described in the planting schedule with plants in groups of the same species. The trees will be planted as indicated.

3.3 Stakes and Supports - Trees to be staked and tied at low level using 75mm peeled larch stakes and durable rubber ties. Triple staked trees to have 3 peeled larch stakes 2.1m in length set 600mm into the ground. Trees held in place centrally using rubber ties. The base of the tree to have a 1m diameter circle of grass free area which can be mulched or maintained weed free.

3.4 Planting Stock - all shrubs and trees to conform to the current British Standards - BS 3936.

4.0 Planting Season

4.1 Unless otherwise specified all transplanting shall be carried out between the end of October and the end of March. Container grown trees may be transplanted at times other than these at the discretion of the clients Project Manager. The transplanting shall be carried out when the weather is dull and the ground is moist and workable. On no account must the planting take place when there is freezing wind. Where approval is given by the developer to transplant between March and September, the trees shall be given a transplanting spray before transplanting and again between 7 and 10 days after planting, at the Contractor's expense.

4.2 Transplanting in Frosty Conditions: Planting of trees in frosty conditions will only be permitted if adequate precautions are taken. The prepared root balls must have additional wrapping. The bottom and sides of the tree pits, and the piles of top-soil, must be protected from freezing by the use of boards, tarpaulins or other approved materials.

4.3 Watering: During dry conditions shrubs shall be well watered especially where container plants are used outside the winter planting season.

5.0 Programme of implementation

5.1 Planting to be undertaken during the first planting season October – March following completion of building work unless otherwise agreed.

6.0 Maintenance

5.1 Trees and Shrubs - A maintenance programme will be drawn up ensuring that all trees that fail to make active growth are replaced during the first available planting season for the first 3 years.

5.2 Weeding - During March, an application of Glyphosate will control competitive weeds and grass around trees and hedges for the first 3 years after planting. A weed free zone of 1 metre around each plant will be adequate. Glyphosate is a non-selective herbicide that is absorbed through leaves. The chemical should be applied by someone who has a relevant pesticide application certificate.

5.3 Grass - All grass seeded areas and areas of turf are established and maintained for the first 12 months. Grass cutting – following successful establishment of the grassed areas, cutting shall be carried out every 20 working days thereafter unless excessive growth or lack of growth due to weather conditions dictate otherwise, during the period of March to October, inclusive. The height of the grass shall be 50mm. All grass spillage on to the surrounding hard surfaces shall be thoroughly swept away on completion of the work. Rotary strimmers can be used to keep grass cut alongside obstacles such as walls, posts etc. It is the contractor's responsibility to make good any areas of damage to the grassed areas and areas of bare or thin grass cover during the first 12 months from the date of sowing or turfing.

5.4 Watering - during the first 12 months from the date of seeding the contractor will be responsible for adequate watering during periods of dry weather all new turf and grass seeded areas so as to ensure their survival. All failed areas of turf or seeded grass will be replaced at the contractor's expense.

Appendix C - Creation of Low - Invasive Vehicular Turing Area

The access drive (Turing Area) construction to comply with **British Standard 5837:2012 'Trees in relation to construction'.** Low-invasive vehicular access in proximity to trees. One such product that is suitable is the CellWeb, tree root protection system that allows for a variety of surface materials although block paving in this instance would seem a suitable finished material. Examples of the CellWeb construction system are shown below. A 200mm deep construction depth would be required to allow for construction vehicles.