

BS. 5837/2012. Tree Report

Ipsen Biopharm, Wrexham Industrial Estate



Report Prepared By: L. O'Connor BSc (Hons), MSc

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TREE REPORT

Site: Wrexham Industrial Estate.

Grid Ref: SJ 37535 50126

Date: 19/04/2017

1. Introduction:

I have been instructed by Cambrian Ecology Ltd to conduct a Tree Impact Assessment, to accompany a planning application for the development of a multi-storey car park. The Tree Impact Assessment (TIA) is to be carried out in relation to Trees in Construction BS.5837/2012. The trees have been inspected from a ground level only (ground based Visual Tree Assessment, VTA), Trees in relation to Construction – Recommendations. Having met the local tree officer on site there are no Tree Preservation Orders, (TPOs) and the site is not covered by a conservation area (CA), designation. As no plans have been formally drawn up this report sets out to determine the proximities of the footprint of any development in relation to existing trees on site. Further planting and enhancement are also set out in this report. See section 4, FIG, TPM.

Proposal

To assess the quality of trees on site that may be affected by the development. To identify which stock will need to be removed to facilitate the development and those tree/trees to be retained that will benefit the development in terms of screening, aesthetics, bio-diversity and amenity.

1.2 Location.

The site is located at: **SJ 37535 50126.**

Location map of the site. Fig 1.



Approximate survey area.

Tree Site Location Map, FIG. TLM. (Workable PDF attached to report, FIG.TLM, APP 8).



2. The Trees:

T1: To be removed as per the schedule. Main stem included in fence line.

T2-T5: Are good quality semi-mature trees to be retained as per the schedule and protective fenced during construction. These trees will provide useful screening of the development from the west. Carry out any identified tree work recommendations as per the schedule.

G1: Young planted trees to be retained as per the schedule and protective fenced during construction. These trees will provide useful screening of the development from the west. This group will aid in enhancing bio-diversity of the site. Carry out any identified tree work recommendations as per the schedule.

T6 -T9: Are good quality semi-mature trees to be retained as per the schedule and protective fenced during construction. These trees will provide useful screening of the development from the west. Carry out any identified tree work recommendations as per the schedule.

T10 – T16: Are good quality semi-mature and young trees (G2 regen, bio -diversity enhancement), to be retained as per the schedule and protective fenced during construction. These trees will provide useful screening of the development from the west. Carry out any identified tree work recommendations as per the schedule.

T17-T20: Are good quality semi-mature and young trees to be retained as per the schedule and protective fenced during construction. These trees will provide useful screening of the development from the west. Carry out any identified tree work recommendations as per the schedule.

T21-T22: Are good quality mature aspen, to be retained as per the schedule and protective fenced during construction. These trees will provide useful screening of the development from the south west. Carry out any identified tree work recommendations as per the schedule. These trees maybe outside the development boundary but the root protection areas run adjacent to the site and therefore should be protected. Carry out any identified tree work recommendations as per the schedule.

W1- Is a mixed broadleaved woodland bordering ancient woodland. This woodland is to be retained and protected during construction. This woodland is an important buffer for the ancient woodland that lies to the east. This area of woodland is to be left to regenerate naturally. Tarmac and curbing denotes clearly the protective fencing line. Trees adjacent to the existing tarmacked and developed area have historically had the Rooting Zones impacted upon, this is to remain as is.

Luckily for the majority of the site the existing curbing sits outside the RPAs of the trees and makes a good identifiable protection area. The RPAs have been given an additional buffer to allow for future root of the younger and semi-mature trees as they develop, (see FIG.TCM, APP 9).

Further planting options have been identified in section 4 to improve the current screening of the site from the north, improve amenity and bio-diversity, see section 4, for more details.

Photographic plates of identified trees.

T1



G2



T2,3,4 and 5.



T6, 7, 8 and 9



T13, 14 and G2



T15,16,17 and 18



T19, 20 and 21



G3



G4



2.1 Trees: - Please see the attached Tree schedule below. NWR = No Works Required.

Client: IB

Tagged: Yes

Site: Wrex Ind

Weather: Good

Date of survey: 13/04/2016

Surveyor: Luke O'Connor

Tree No	Tag No	Species	Height (M)	DBH (CM)	Crown Spread	Age Class	Condition	Recommendations	Work Priority	SULE yrs	BS:5837 m2, R (Radius)	BS 5837 Retention category.
T1	0500	Ash	8	17	N: 1.5 E: 1.5 S:1.5 W:1.5	SM	Good Bud and twigs: Good Scaffold: Good Stem: Fair Roots: Good	Fell due to occlusion of cambium in fence. No future in position.	LOW	N/A	N/A	N/A
G1	0499	5x birch 2xMaple	av 7	av 8	N:1 E:1 S:1 W:1 x7	y	Good Buds and twigs: Good Scaffold: Good Stem: Good Roots: Good	Retain , recently planted group, all small trees. Protect with fencing	NWR	60-80	N/A	A2

2.1 Trees: - Please see the attached Tree schedule below. NWR = No Works Required.

Client: IB

Tagged: Yes

Site: Wrex Ind

Weather: Good

Date of survey: 13/04/2016

Surveyor: Luke O'Connor

Tree No	Tag No	Species	Height (M)	DBH (CM)	Crown Spread	Age Class	Condition	Recommendations	Work Priority	SULE yrs	BS:5837 m2, R (Radius),	BS 5837 Retention category.
T2	0498	Sycamore	37	9	N:4 E:4 S:4 W:4	SM	Good Bud and twigs: Good Scaffold: Good Stem: Fair Roots: Good	Retain. Protect with fencing	NWR	60-80	61.93 4.44	A2
T3	0497	London plain	27	9	N4: E:4 S:4 W:4	SM	Good Buds and twigs: Good Scaffold: Good Stem: Good Roots: Good	Retain. Protect with fencing	NWR	60-80	32.98 3.24	A2

2.1 Trees: - Please see the attached Tree schedule below. NWR = No Works Required.

Client: IB

Tagged: Yes

Site: Wrex Ind

Weather: Good

Date of survey: 13/04/2016

Surveyor: Luke O'Connor

Tree No	Tag No	Species	Height (M)	DBH (CM)	Crown Spread	Age Class	Condition	Recommendations	Work Priority	SULE yrs	BS:5837 m2, R (Radius)	BS 5837 Retention category.
T4	0496	London plain	9	24	N:4 E:4 S:4 W:4	SM	Good Buds and twigs: Good Scaffold: Good Stem: Good Roots: Good	Retain. Protect with fencing	NWR	60-80	26.06 2.88	A2
T5	0495	Sycamore	8	30	N:3 E:3 S:3 W:3	SM	Good Buds and twigs: Good Scaffold: Good Stem: Fair, pruning wound N E and W from .5 to 1m. Occluded tree tie E @ .3m. Roots: Good.	Retain. Cut off tree tie. Protect with fencing	LOW	60-80	40.72 3.6	A2

2.1 Trees: - Please see the attached Tree schedule below. NWR = No Works Required.

Client: IB

Tagged: Yes

Site: Wrex Ind

Weather: Good

Date of survey: 13/04/2016

Surveyor: Luke O'Connor

Tree No	Tag No	Species	Height (M)	DBH (CM)	Crown Spread	Age Class	Condition	Recommendations	Work Priority	SULE yrs	BS:5837 m2 R (Radius)	BS 5837 Retention category.
T6	0494	Sycamore	9	25	N:3 E:3 S:3 W:3	SM	Good: Buds and twigs: Good Scaffold: Good Stem: Good Roots: Fair, mowing damage to girdling roots.	Retain. Protect with fencing	NWR	60-80	28.27 3	A2
T7	0493	London plain	8	27	N:4 E:4 S:4 W:4	SM	Fair: Buds and twigs: Fair Scaffold: Good Stem: Good Roots: Good	Retain. Protect with fencing	NWR	60-80	32.97 3.24	A2

2.1 Trees: - Please see the attached Tree schedule below. NWR = No Works Required.

Client: IB

Tagged: Yes

Site: Wrex Ind

Weather: Good

Date of survey: 13/04/2016

Surveyor: Luke O'Connor

Tree No	Tag No	Species	Height (M)	DBH (CM)	Crown Spread	Age Class	Condition	Recommendations	Work Priority	SULE yrs	BS:5837 m2 R (Radius)	BS 5837 Retention category.
T8	0492	London plain	11	30	N:4 E:7 S:5 W:3	SM	Good Buds and twigs: Good Scaffold: Good Stem: Good Roots: Good	Retain. Protect with fencing	NWR	60-80	40.76 3.6	A2
T9	0491	London plain	11	30	N:5 E:5 S:5 W:5	SM	Good Buds and twigs: Good Scaffold: Good Stem: Good Roots: Good	Retain. Protect with fencing	NWR	60-80	40.76 3.6	A2

2.1 Trees: - Please see the attached Tree schedule below. NWR = No Works Required.

Client: IB

Tagged: Yes

Site: Wrex Ind

Weather: Good

Date of survey: 13/04/2016

Surveyor: Luke O'Connor

Tree No	Tag No	Species	Height (M)	DBH (CM)	Crown Spread	Age Class	Condition	Recommendations	Work Priority	SULE yrs	BS:5837 m2 R (Radius)	BS 5837 Retention category.
T10	0490	Lime	7	12	N:1 E:1 S:1 W:1	Y	Good Buds and twigs: Good Scaffold: Good Stem: Good Roots: Good	Retain. Protect with fencing	NWR	60-80	6.51 1.44	A2
T11	0489	Lime	11	34	N:5 E:5 S:5 W:5	SM	Good Buds and twigs: Good Scaffold: Good Stem: Good Roots: Good	Retain. Remove suckers and formative prune. Protect with fencing	LOW	60-80	52.23 4.08	A2

2.1 Trees: - Please see the attached Tree schedule below. NWR = No Works Required.

Client: IB

Tagged: Yes

Site: Wrex Ind

Weather: Good

Date of survey: 13/04/2016

Surveyor: Luke O'Connor

Tree No	Tag No	Species	Height (M)	DBH (CM)	Crown Spread	Age Class	Condition	Recommendations	Work Priority	SULE yrs	BS:5837 m2 R (Radius)	BS 5837 Retention category.
T12	0488	Lime	12	49	N:4 E:4 S:6 W:7	M	Good Buds and twigs: Good Scaffold: Good Stem: Good Roots: Good	Retain. Remove suckers and formative prune. Protect with fencing	LOW	60-80	108.62 5.88	A2
T13	0487	Lime	6	12	N:2 E:2 S:2 W:2	Y	Good Buds and twigs: Good Scaffold: Good Stem: Good Roots: Good	Retain. Fell 2 x ash, regen. Retain Hornbeam x 4 and Birch x 1. Protect with fencing		60-80	6.51 1.44	A2

2.1 Trees: - Please see the attached Tree schedule below. NWR = No Works Required.

Client: IB

Tagged: Yes

Site: Wrex Ind

Weather: Good

Date of survey: 13/04/2016

Surveyor: Luke O'Connor

Tree No	Tag No	Species	Height (M)	DBH (CM)	Crown Spread	Age Class	Condition	Recommendations	Work Priority	SULE yrs	BS:5837 m2 R (Radius)	BS 5837 Retention category.
T14	0486	Hornbeam	11	60 30	N:6 E:6 S:6 W:6	M	Good Buds and twigs: Good Scaffold: Good Stem: Good Roots: Good	Retain. Protect with fencing	NWR	80-100	91.61 5.4	A2
G2 regen		3xLime 1xAsh	2.5	6 av	N:1 E:1 S:1 W:1	Y	Good Buds and twigs: Good Scaffold: Good Stem: Good Roots: Good	Retain. Protect with fencing	NWR	80-100	N/A	A2

2.1 Trees: - Please see the attached Tree schedule below. NWR = No Works Required.

Client: IB

Tagged: Yes

Site: Wrex Ind

Weather: Good

Date of survey: 13/04/2016

Surveyor: Luke O'Connor

Tree No	Tag No	Species	Height (M)	DBH (CM)	Crown Spread	Age Class	Condition	Recommendations	Work Priority	SULE yrs	BS:5837 m2 R (Radius)	BS 5837 Retention category.
T15	0485	Lime	12	45	N:5 E:5 S:5 W:5	M	Good Buds and twigs: Good Scaffold: Good Stem: Good Roots: Good	Retain. Remove suckers and formative prune. Protect with fencing	LOW	60-80	91.61 5.4	A2
T16	0484	Lime	9	38	N:5 E:5 S:5 W:5	M	Good Buds and twigs: Good Scaffold: Good Stem: Good Roots: Good	Retain. Remove suckers and formative prune. Protect with fencing	LOW	80-100	65.32 4.56	A2

2.1 Trees: - Please see the attached Tree schedule below. NWR = No Works Required.

Client: IB

Tagged: Yes

Site: Wrex Ind

Weather: Good

Date of survey: 13/04/2016

Surveyor: Luke O'Connor

Tree No	Tag No	Species	Height (M)	DBH (CM)	Crown Spread	Age Class	Condition	Recommendations	Work Priority	SULE yrs	BS:5837 m2 R (Radius)	BS 5837 Retention category.
T17	0483	Lime	5	10.5	N:1 E:1 S:1 W:1	Y	Good: Bud: Good Scaffold: Good Stem: Good Roots: Good	Retain. Protect with fencing	NWR	80-100	4.99 1.26	A2

2.1 Trees: - Please see the attached Tree schedule below. NWR = No Works Required.

Client: IB

Tagged: Yes

Site: Wrex Ind

Weather: Good

Date of survey: 13/04/2016

Surveyor: Luke O'Connor

Tree No	Tag No	Species	Height (M)	DBH (CM)	Crown Spread	Age Class	Condition	Recommendations	Work Priority	SULE yrs	BS:5837 m2 R (Radius)	BS 5837 Retention category.
T18	0482	Ash	15	45	N:6 E:6 S:6 W:6	M	Good Buds and twigs: Good Scaffold: Good Stem: Good Roots: Good	Retain. Protect with fencing	NWR	60-80	91.61 5.44	A2
T19	0481	Ash	12.7	33	N:1 E:2 S:3 W:3.5	SM	Good Buds and twigs: Good Scaffold: Good Stem: Good Roots: Good	Retain. Group of regen [see map, of 6 x16 av] retain for screening. Protect with fencing	NWR	80-100	49.27 3.96	A2

2.1 Trees: - Please see the attached Tree schedule below. NWR = No Works Required.

Client: IB

Tagged: Yes

Site: Wrex Ind

Weather: Good

Date of survey: 13/04/2016

Surveyor: Luke O'Connor

Tree No	Tag No	Species	Height (M)	DBH (CM)	Crown Spread	Age Class	Condition	Recommendations	Work Priority	SULE yrs	BS:5837 m2 R (Radius)	BS 5837 Retention category.
T20	0480	Aspen	16.5	38	N:5 E:5 S:5 W:5	M	Good Buds and twigs: Good Scaffold: Good Stem: Good, Cambium scarring W @ 0- 30cm Roots: Good	Retain. Protect with fencing	NWR	60- 80	65.32 4.56	A2
T21	0479	Aspen	17	35 38	N:2 E:8 S:8 W:9	M	Good Buds and twigs: Good Scaffold: Good, minor deadwood Stem: Poor union from 1 to 1.5m E to W. Roots: Good.	Option 1: Fell [high target over entrance]. Option 2: Reduce by 4m. Remove deadwood. Monitor union Protect with fencing	HIGH	20- 30	63.62 4.5	A2

2.1 Trees: - Please see the attached Tree schedule below. NWR = No Works Required.

Client: IB

Tagged: Yes

Site: Wrex Ind

Weather: Good

Date of survey: 13/04/2016

Surveyor: Luke O'Connor

Tree No	Tag No	Species	Height (M)	DBH (CM)	Crown Spread	Age Class	Condition	Recommendations	Work Priority	SULE yrs	BS:5837 m2 R (Radius)	BS 5837 Retention category.
T22	0478	Poplar/Aspen	18	44 x2	N:12 E:13 S:12 W:10	M	Good Buds and twigs: Good Scaffold: Good, minor deadwood, long lateral N @2m. Stem: Good, union @ .6m with good reactive bracing. Roots: Good.	Remove, long lateral N @2m. Remove minor deadwood. Protect with fencing	MED	40-60	87.58 5.28	A2
G3		5xSycamore 5xAsh 2xWillow 3xHowthorn 1xOak	7 av	10 av	N/A	Y	Fair Buds and twigs: Fair Scaffold: Fair Stem: Fair Roots: Fair	Retain. RPA confined to tarmac either side. Formative prune and mulch. Add 4 x extra planting Protect with fencing	LOW	40-60	n/a	B2

2.1 Trees: - Please see the attached Tree schedule below. NWR = No Works Required.

Client: IB

Tagged: Yes

Site: Wrex Ind

Weather: Good

Date of survey: 13/04/2016

Surveyor: Luke O'Connor

Tree No	Tag No	Species	Height (M)	DBH (CM)	Crown Spread	Age Class	Condition	Recommendations	Work Priority	SULE yrs	BS:5837 m2 R (Radius)	BS 5837 Retention category.
G4		Cypress x4	13	50 ms	N:5 E:5 S:5 W:5	M	Fair Buds and twigs: Fair Scaffold: Fair Stem: Fair Roots: Fair, roots lifting pavement	Fell to facilitate. 2 x pine (not within development road side)	MED	N/A	113.10 6	U
W1	n/a	Mixed broadleaves x 500 approx	14av	30av	n/a	Y-M	Overall Good condition. RPA sited to the west of the stand already developed. Tarmac.	Retain. NWR. Protect with fencing	NWR	100+	N/A Woodland RPA.	A2

2.2 Arboricultural Impact Assessment.

Most tree roots occur in the top 60cm of the soil. Most damage to the future stability and vigour of a tree can therefore occur during the construction phase. Mature trees can survive serious damage for up to five years before they may suddenly decline resulting in usually wind-throw or death. Simple wounding to the bark or branches by insensitive construction operators can result in sources of infection and later decline. Dead or dying trees may also reduce the amenity of the site.

Careful construction techniques must be adhered to in order to lessen future impacts that may result in higher maintenance costs at a later date.

2.3 GENERAL CONSTRAINTS DATA

The constraints arising from retention of trees is classified as the Construction Exclusion Zone (CEZ) and (Root Protection Area - RPA) as illustrated on the Tree Constraints Map

Construction Exclusion Zone (CEZ) & Root Protection Area (RPA).

The Root Protection Area is calculated in m² and must be protected during and preserved intact after construction, in order to facilitate the healthy retention of the tree(s) concerned by retaining adequately functioning tree roots. This area is based on a radial measure from the centre of the stem of the tree, which is found by multiplying the stem diameter of the tree concerned, by a factor of twelve (or by a factor of ten when measuring basal diameter immediately above the root flare for multi-stemmed trees).

The CEZ includes all area up to and including the RPA (Root Protection Area) from the protective fencing.

During this Arboricultural Impact Assessment, the derived radial measure has been converted into the actual area to be protected, having due regard to prevailing site conditions and how these may have affected the trees, particularly in relation to factors affecting their likely rooting disposition. The means of protecting the RPA will include the installation of tree protection fencing prior to the start of work on site, including all demolition. Various activities within the RPA are prohibited (e.g. mechanical excavation, soil stripping, fire lighting, materials storage, lowering levels and creating excessive sealed surfacing), and may include the use of temporary ground protection and/or special engineering solutions where construction is proposed near to retention trees or within the RPA. This is the area above ground occupied by the crown of the tree, along with allowances for working space and if appropriate, for future growth.

Protective fencing and designation of Construction Exclusion Zones will be used to protect during the development phase.

2.4 Tree Constraints Map.

Any tree work that is non-emergency will require the consent of the Local Planning Authority. Any discrepancy in features or scale should be referred to the original maps supplied.

The Tree Root Protection Area (RPA) for each tree is shown behind the tree protective fencing, (red dashed line). The construction Exclusion Zones lies anywhere behind the protective fencing. The crown spread is shown as either red, green blue or grey according to their quality categorization.

For clarity, the grading system is summarised as follows: Table 2.

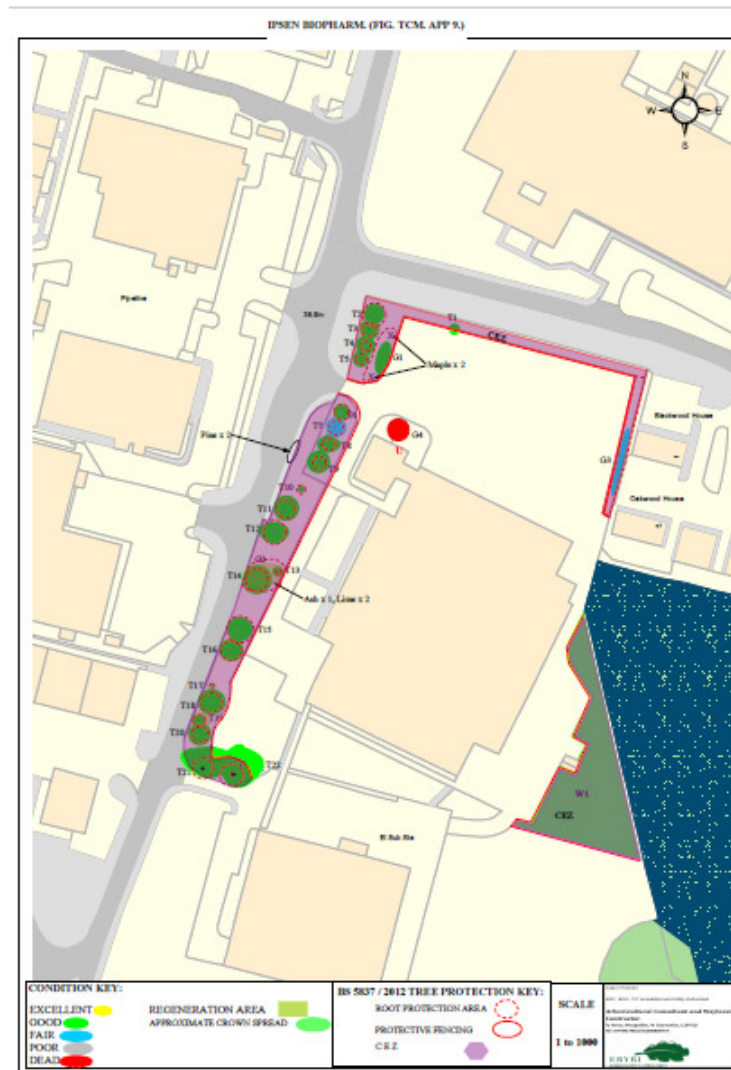
U grade – trees for removal, effective for less than 10 years

A grade – trees of high quality and value, effective for more than 40years

B grade – trees of moderate quality and value, effective for more than 20 years

C grade – trees of low quality and value, effective for 10 years

Tree Constraints Map, FIG.TCM. (Workable PDF attached to report, FIG.TCM, APP 9).



3. Arboricultural Method Statement.

After a site consultation between the developer, the architects, the planning department and the arborist (after approval), the following may be carried out:-

- a)** Carry out any necessary tree surgery and felling, pre-construction works, removal of hard surfaces and demolition of existing structures.
- b)** Erect protective fencing, root barriers and ground protection as per BS: 5837/2012.
- c)** Carry out any development in accordance with the Tree Impact Assessment. Any amendments must be agreed in accordance supervising arboricultural officer and local planning tree officer.
- d)** Removal fencing and ground protection.
- e)** Final landscaping and any remedial tree surgery that may be required.

3.1 Schedule of works, Arboricultural monitoring and supervision.

The schedule below may be subject to change and determined by operational constraints, any amendments must be agreed the LPA tree officer and the supervisory arborist.

3.2 Pre-Development Stage

1. Carry out an on-site meeting including the Arboricultural consultant, LPA Tree Officer, client and Project manager.
2. Agree on all access to the site.
3. Discuss and agree on site compound burning and mixing areas.
4. Carry out any pruning works needed for access and agree.
5. Carry out and demolition work on site
6. Carry out any works to trees that are directly affected by the development.
7. Carry out any trees works on trees that are indirectly affected by the development.
8. Install all identified tree protection measures.
9. Carry out a site inspection by the Arboricultural project consultant.

3.3 The Development Stage

1. Ensure that the site is accessible for all construction traffic
2. All construction staff to be briefed (tool box talk) by the Arboricultural consultant, as per method statement.
3. Any ground works within the RPA to be supervised by the Arboricultural consultant.
4. To carry out site monitoring every week during this stage. Timing to be discussed in with contractor and LPA Tree Officer.

3.4 Completion.

Arboricultural consultant to carry out a site inspection.

3.5 Post Development Stage

1. To remove all protective fencing
2. All landscaping staff to be briefed by the Arboricultural consultant and appointed landscaping officer.
3. To carry out all Landscaping

Site monitoring is in place to make sure that tree protection measures stipulated within the report are adhered to, and any amendments or issues are carried out with the correct process and ensuring notification to the LPA and the client.

Supervision within the RPA and CEZ is to ensure there is no undue damage caused to affected trees.

The LPA Tree Officer must have free access to the site to make any further recommendations and to help/advise in relation to the planning conditions.

All tree works and clearance of scrub must be carried out in advance of the erection of the protective fencing.

All tree protection fencing must remain in situ throughout the duration of the construction work up until completion. The fencing can only be removed after agreement with LPA and after a final site inspection.

3.6 Arboriculturist.

All tree contractors working near to trees must have access on site at all times to all relevant sections referred to in this report.

4: Tree Planting Mitigation and maintenance plan. FIG. TPM, APP.10.

The north of the site is, between the carpark curbing and the fence line is devoid of trees. Extra planting here as discussed with the LPA tree officer are an enhancement gain. Two options are provided below.

Option 1: As per FIG.TPM.

A native double staggered hedgerow of an approximate length of 120m, 8 plants per meter, 303 provenance, 20-40cm, with rowan, bird cherry, wild service tree and crab apple (standards) every 6m to be grown on as mature trees, as per table 1 below. This will help to soften any views from the north and act as biodiversity enhancement.

Hedgerow

Tree species	%	Numbers for project	Provenance	Stakes	Shelters	Size (bear root stock)
Hawthorn	25	240	303	Yes	Yes	20-40cm, (1-U-1)
Hazel	20	192	303	Yes	Yes	20-40cm, (1-U-1)
Blackthorn	15	144	303	Yes	Yes	20-40cm, (1-U-1)
Crab Apple	15	144	303	Yes	Yes	20-40cm, (1-U-1)
Honey Suckle	10	96	303	Yes		20-40cm, (1-U-1)
Guelder-rose	5	48	303	Yes	Yes	20-40cm, (1-U-1)
Dog Rose	10	96	303	Yes	Yes	20-40cm, (1-U-1)

Standards in hedgerow. (6m apart aloud to grow on).

Tree species	%	Numbers for project	Provenance	Stakes	Shelters	Size (containerized)
Bird Cherry	25	5	303	Yes	Yes	Standard, (1.6m)
Rowan	5	5	303	Yes	Yes	Standard, (1.6m)
Wild Service Tree	25	5	303	Yes	Yes	Standard, (1.6m)
Crab apple	25	5	303	Yes	Yes	Standard, (1.6m)

Option 2: As per FIG.TPM.

To grow simply standards with no hedgerow.

Tree species	%	Numbers for project	Provenance	Stakes	Shelters	Size (containerized)
Bird Cherry	25	5	303	Yes	Yes	Standard, (1.6m)
Rowan	5	5	303	Yes	Yes	Standard, (1.6m)
Wild Service Tree	25	5	303	Yes	Yes	Standard, (1.6m)
Crab apple	25	5	303	Yes	Yes	Standard, (1.6m)

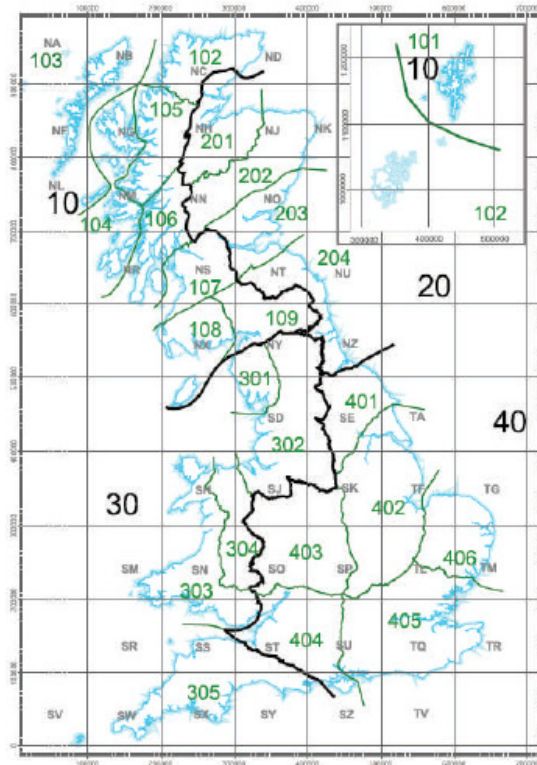
Maintenance plan (3yr) – All trees to be manured.

Establishment	Year 1	Year 2	Year 3
Prepare area for planting. Prepare trench for hedgerow with good quality top soil in accordance with BS:3998/2010. Add compost and bone meal.	Strim/ weed (carefully) around planted trees, May and August.	Strim (carefully) around planted trees, May and August.	Strim (carefully) around planted trees, May and august. Mulch trees and more bone meal/manure
Prepare site holes for standards, add, compost and bone meal to holes.	Mulch trees and add more bone meal/manure.	Mulch trees and more bone meal/manure.	Formative prune standards where necessary.
Plant all trees with stakes and shelters. Coia planting matts to surround stock. Plant all trees as per BS:3998/2010.	Replace any tree losses	Replace any tree losses.	Remove any shelters where necessary.
Add granular herbicide around planted trees.	Add granular herbicide around planted trees.	Add granular herbicide around planted trees.	Replace any losses.



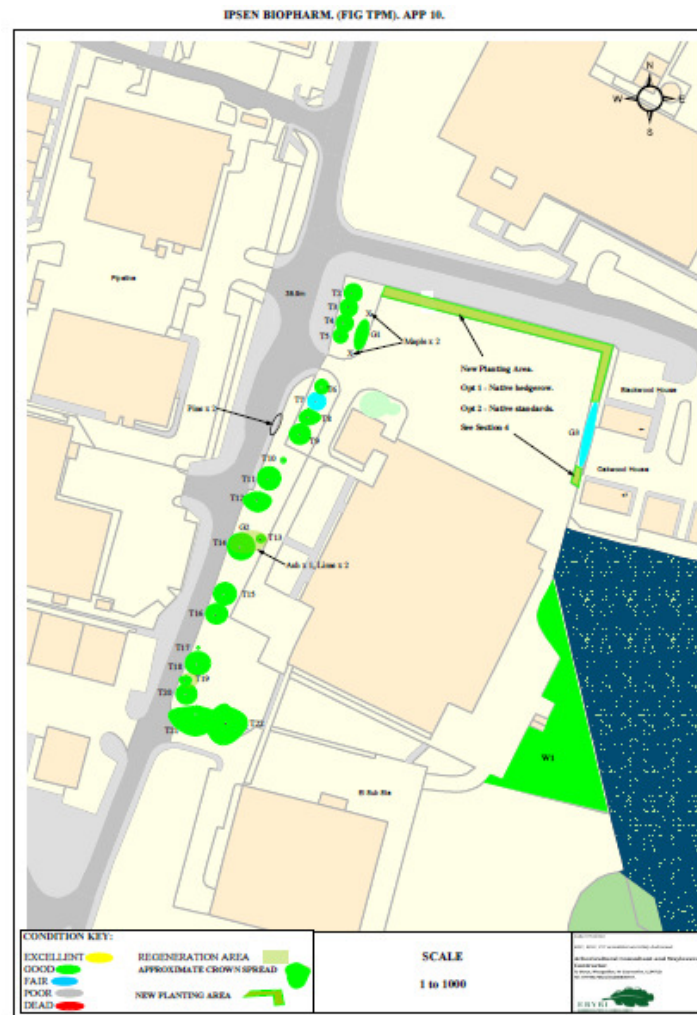
Coir tree weed suppressant matt example.

Figure 2 - UK Regions of Provenance Map
 Showing designated zones for tree seed collection



Please see attached BS:3998/2010 for tree planting specification. Please support local seed collectors and nurseries. **All trees must be planted in accordance with BS:3998/2010.**

Tree Planting Map, FIG TPM. (Workable PDF attached to report, (FIG.TPM, App. 10).

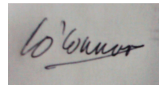


REFERENCES

- BS 5837/2012 'Trees in Relation to Construction - Recommendations' British Standards Institute, London.
- BS 3998/2010 'Recommendations for Tree Work' British Standards Institute, London.
- 'Visual Amenity Valuation of Trees & Woodlands' 2003. The Helliwell System (Arboricultural Association publication)
- 'Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees' 1995 National Joint Utilities Group (NJUG) Publication No. 10.
- 'Availability of Sunshine' BRE - CP 75/75
- Tree Roots in the Built Environment 2006 - Dept. for Communities & Local Government (DCLG)

Mr Luke O'Connor BSc (Hons), MSc.

Sign

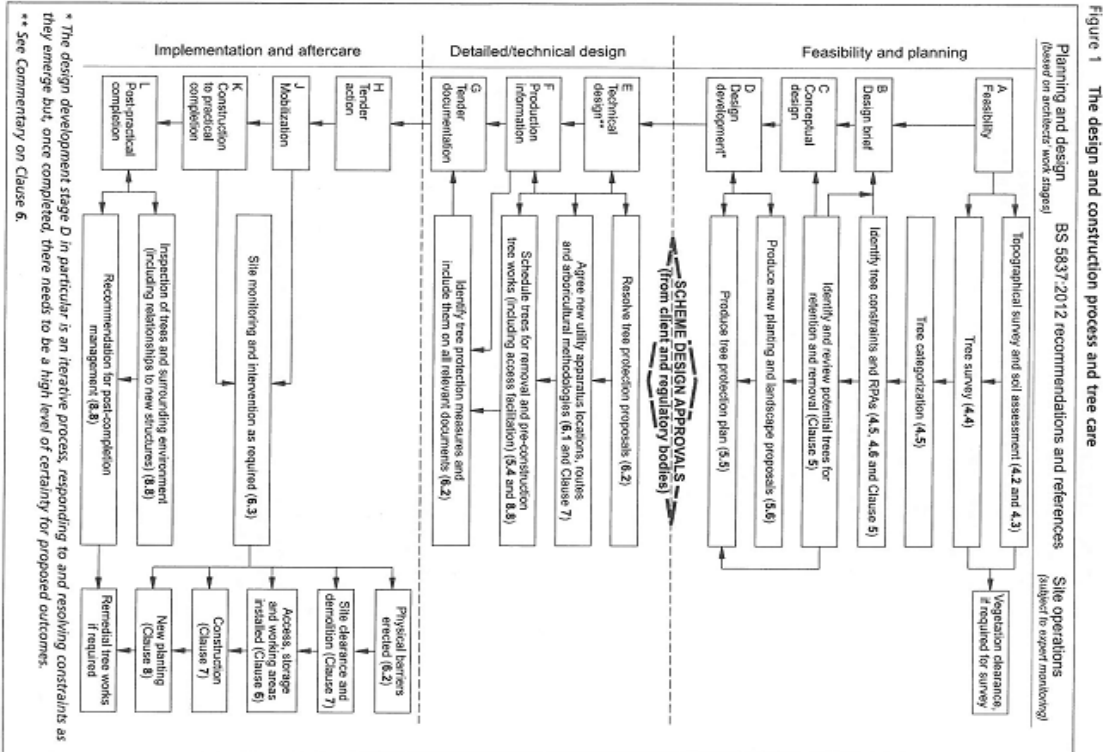


Disclaimer

The tree(s) referred to in this report are living entities and are therefore subject to natural processes. They will also be subject to changes to their environment caused by human's activities and to exceptional weather conditions. The inspection undertaken by our qualified staff relies on visual attributes of tree health and structure which can be assessed from a ground based inspection. Hidden defects which are not readily visible may not be detected. I therefore cannot wholly guarantee the condition and safety of the trees inspected beyond what can be reasonably assessed from the procedure used. I would recommend that the trees are regularly inspected and will advise on the suitable frequency of these inspections if requested.

Appendix.

1 – Planning Flow Chart

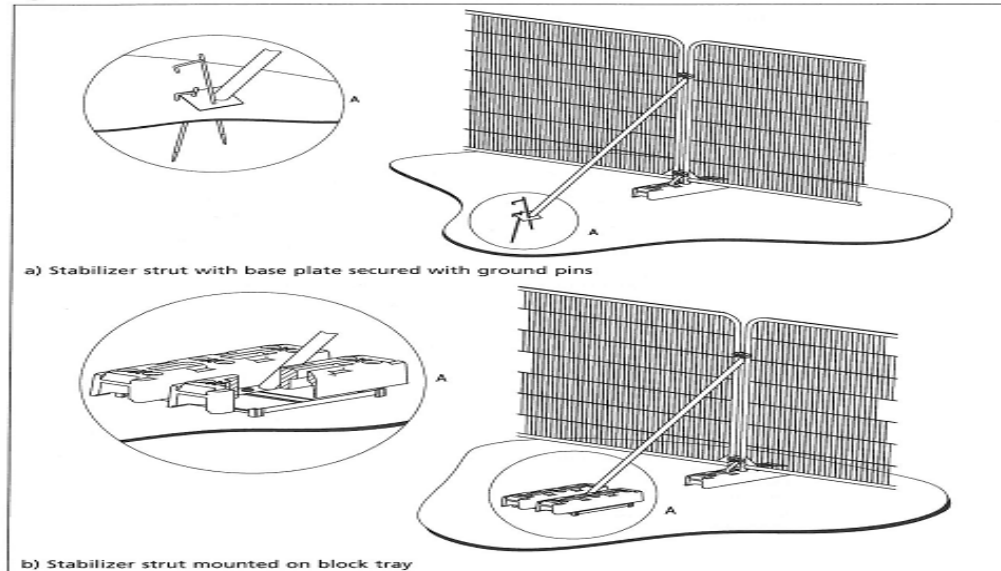


2. Protective fencing (BS.5837.2012)

BRITISH STANDARD

BS 5837:2012

Figure 3 Examples of above-ground stabilizing systems



6.2.3 Ground protection during demolition and construction

6.2.3.1 Where construction working space or temporary construction access is justified within the RPA, this should be facilitated by a set-back in the alignment of the tree protection barrier. In such areas, suitable existing hard surfacing that is not proposed for re-use as part of the finished design should be retained to act as temporary ground protection during construction, rather than being removed during demolition. The suitability of such surfacing for this purpose should be evaluated by the project arboriculturist and an engineer as appropriate.

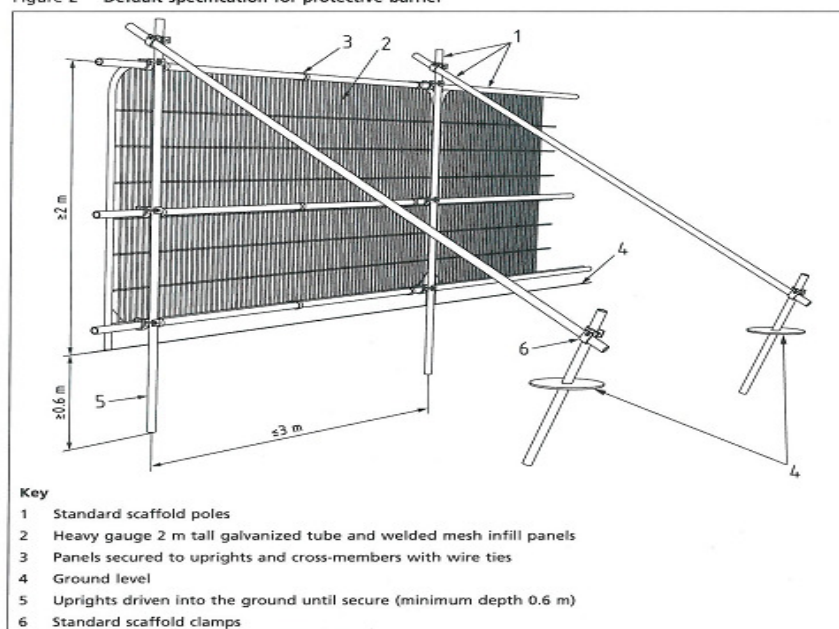
on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g. due to the presence of underground services, the stabilizer struts should be mounted on a block tray (Figure 3b).

NOTE 1 Examples of configurations for steel mesh perimeter fencing systems are given in BS 1722-18.

NOTE 2 It might be feasible on some sites to use temporary site office buildings as components of the tree protection barriers, provided these can be installed and removed without damaging the retained trees or their rooting environment.

6.2.2.4 All-weather notices should be attached to the barrier with words such as: "CONSTRUCTION EXCLUSION ZONE – NO ACCESS".

Figure 2 Default specification for protective barrier



3. Cascade chart for tree quality assessment.

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Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)	Identification on plan
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 a 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 <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>	See Table 2
	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
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
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 with no material conservation or other cultural value

Appendix 3: Arboricultural Site Inspection Form

Arboricultural Site Inspection			
Site: _____			
Application Ref: _____			
Developer: _____			
Site agent: _____			
Arboricultural consultant: _____			
Date of inspection: _____		LPA Tree Officer: _____, Shirehall, Shrewsbury	
Accompanied by: _____			
Fencing / Ground Protection			
In place / installed?	☐	Information signs present?	☐
Erected according to approved details?	☐	Any evidence of breach?	☐
Details, including action taken / required: _____			
Construction Exclusion Zone			
CEZ to approved dimensions?	☐	Any evidence of tree damage?	☐
Any evidence within the CEZ of:			
Excavations?	☐	Changed soil levels?	☐
Ground contamination?	☐	Vehicle movements?	☐
Storage of materials / equipment / waste?	☐	Fires?	☐
Details, including action taken / required: _____			
Any special works potentially damaging to trees proposed for coming building period?		☐	
Any amendments to proposed plans?		☐	
Details: _____			
Copied to:	Site Manager Site Agent	☐	LPA tree officer Site owner / Client
		☐	☐

5. Keys.

HEADINGS & ABBREVIATIONS

TREE NO. REFERENCE NUMBER. REFER TO PLAN OR NUMBERED TAGS WHERE APPLICABLE

AGE RANGE: Y = YOUNG, SM = SEMI MATURE, EM = EARLY MATURE, M = MATURE, FM = FULLY MATURE, PM = POST MATURE

DBH: STEM DIAMETER – MEASURED AT 1.5 METRES

CROWN SPREAD: MEASURED DIAMETER OF CROWN AT 4 CARDINAL COMPASS POINTS

VITALITY: A MEASURE OF PHYSIOLOGICAL CONDITION. D = DEAD, F = FAIR, P = POOR, M = MODERATE, G = GOOD

BS 5837 RETENTION CATEGORY: RETENTION VALUE BASED ON TABLE 1 BS 5837 (2012)

BS 5837 RPA RADIUS: RADIUS FROM STEM TO THE LINE OF THE TREE PROTECTION AS SET OUT IN TABLE 2 OF THE STANDARD

SULE: SUITABLE LIFE EXPECTANCY IN YEARS (a subjective assessment of how long the tree may live).

Keys in relation to condition.

Condition	
Excellent	Tree in excellent condition with good vitality and no defects present
Good	Tree in displaying good vigour, vitality, only very minor defects
Fair	Tree showing some signs of stress, minor defects present
Poor	Tree showing signs of major die back, major defects – intervention needed
Dead	Tree no longer alive

Work urgency (Priority)	
Very High	Urgent – Works required within 24 hours
High	Works required within 7 days
Moderate	Work required within 1 month
Low	Works required within 6 months
Very low	Low priority – within 1-3 years
Non Required	No target

Tree Species abbreviations for this report.

Common name	Abbreviation in report	Latin Name
Sessile Oak	<i>Qp</i>	<i>Quercus patrea</i>
Ash	<i>Fa</i>	<i>Fraxinus exelsior</i>
Hawthorn	Hawth, <i>Cm</i>	<i>Crataegus monogyna</i>
Blackthorn	Black t, <i>Ps</i>	<i>Prunus spinosa</i>
Alder	<i>Ag</i>	<i>Alnus glutinosa</i>
Willow	<i>S</i>	<i>Salix</i>
Elder	<i>Sm</i>	<i>Sambucus nigra</i>
Sycamore	Syc, <i>Ap</i>	<i>Acer pseudoplatanus</i>
Cherry	<i>Pa</i>	<i>Prunus avium</i>
Field maple	<i>Ac</i>	<i>Acer campestre</i>
Beech	<i>Ns</i>	<i>Northofagus sylvatica</i>
Dog rose		
Holly	<i>Ia</i>	<i>Ilex aquifolium</i>
Hazel	<i>Ca</i>	<i>Corylus avellana</i>

6. Glossary.

Tree Number

Refers to the tree as numerically tagged on site. Tags are to be place in visual position at eye level on surveyed trees.

Species

Common and vernacular name of the tree – Vernacular- Latin names displayed in small italics.

Age

The appearance of at what stage of life the tree may be in (mature, young, etc.)

DBH

Diameter at Breast Height in centimetres.

Height

Approximate height of the tree from base to the tips of the crown.

Deadwood to be Removed

This survey has been based on removing any deadwood of 50mm diameter and above from the trees surveyed to make them safe by the footpath, and property.

Vitality

The general vitality of the tree (poor, Fair, good, excellent), including disease and pests that may prove of detriment to the health, and longevity of the tree.

General Condition

Consider structural condition in relation to vitality, including pest and diseases.

Comments and Recommendations

Recommend tree work in order to reduce risks to an acceptable level during a pre-determined inspection period. Such recommendations will be made to procure a trees vitality and longevity as well as future safety.

Priority.

Trees given a priority should have the recommendations carried out within the time-scales assigned. Denoted by the attached key.

av

Average (Diameter in breast height in cm or height in meters).

RPA

Root Protection Area.

7. Terram Cellular Confinement Systems. (See attached electronic booklet). (N/A) in this report.

8. FIG. TLM. (Tree Location and Condition Map).

9. FIG. TCM. (Tree Location and Condition Map).

10. FIG. TPM. (Tree Planting Map).