
Plas Coch Road Highway Improvements, Wrexham



Landscape Appraisal & Tree Survey in compliance with BS 5837:2005

ALD Project Ref:	421/10
Document reference:	421ALD /RP911
Document revision:	P02
Current issue:	21st May 2010
Surveyor:	Emma Paling
Date of survey:	5 th May 2010
Weather conditions:	Sunny

Prepared by:	Applied Landscape Design Ltd Landscape Architect
---------------------	---



Prepared on behalf of:	Sainsbury's Supermarkets Ltd
-------------------------------	------------------------------

Contents

- Amendment Revision Document Revisial Summary
- 1. Introduction
- 2. Brief Description of the Site and Future Potential
- 3. Site Designations
- 4. Survey Records
- 5. Protecting Trees to be Retained
- Tree Survey Sheets
-
- Appendix Information

Appendix 1 Reference BS5837:2005

Appendix 2 Reference BS5837:2005

Table 2- Cascade chart for tree quality assessment

Appendix 3 Reference BS5837:2005

Table 3- Supplementary Information

Appendix 4
Photographic record

Rev	Date	Amendment	Creator	Checked
P01	20 th May 2010	Preliminary Issue to team for comment	EP	KmJ
P02	21 st May 2010	Planning Issue	EP	KmJ

Rev	Date	Reviewers comments or page references	Initials / Organisation

1. Introduction

Applied Landscape Design have been commissioned by Sainsbury's Supermarkets Limited to carry out a landscape appraisal and tree survey of the landscape areas of the Plas Coch Road, (between roundabouts Plas Coch / Retail Park roundabout and Plas Coch Road / Mold Road / Berse Road roundabout) Wrexham. This appraisal accompanies the planning application which proposes to make improvements to Plas Coch Road in proximity to the Plas Coch Road/Mold Road/Berse Road roundabout (ref. P/2010/0327).

The assessment of the site took place during a site visit on the 5th May 2010. A full photographic record was made of the site concentrating predominantly on the existing trees and soft landscape on the northern side of the road and the Plas Coch Road / Mold Road / Berse Road roundabout. A detailed inventory of the trees and strategic shrub planting was undertaken. The following survey report is based upon the findings of that visit and conditions found that day.

The landscape appraisal and tree survey seeks to provide a comprehensive guide to the existing site scenario and ensures that the proposals put forward will respect and enhance, where possible, the existing landscape.

The survey and report provides data on tree species, height, diameter, crown, spread, age class and a brief qualitative assessment on tree condition and future potential. Note: Tree climbing, existing 'invisible' disease and root damage inspections were excluded from the survey.

Tree Survey Drawing (reference 421/10-SL251) have been prepared to record the existing trees and their context within the urban setting, relative to the boundaries and internal layouts. An existing trees to be retained or removed drawing including extent of the Root Protection Area (RPA) (reference 421/10-SL252) has been prepared in accordance with the Plas Coch Road Widening General Arrangement drawing (reference WSP 0994/GA/01. Revision B)

In accordance with BS5837:2005 Trees in Relation to Construction – The objective of the survey is to collect data and to categorise trees or tree groups based on their condition, quality and future potential. The purpose of the categories in BS5837:2005 *'is to identify the quality and value of the existing tree stock, allowing informed decisions to be made concerning which trees should be retained or removed should development occur.'* (BS5837:2005)

2. Brief Description of the Landscape and Future Potential

The dominant collection of trees to the south of Plas Coch Road are a mix of shrubs, semi-mature and mature trees which have distinguished form and function. These are outside of the development boundary, but are an important part of the green infrastructure within this location.

The London Plane trees along the northern edge of Plas Coch Road form a formal avenue into the Plas Coch Retail Park. Several of these trees are shown to be potentially lost along with the widening of the road, but the proposed landscape scheme aims to replace 4 of the 5 lost trees through the

identification of areas within the new landscape that will be able to support and therefore re-link the avenue.

The level of maintenance of the trees and shrubs between Homebase store and Plas Coch Road is generally very good, although there are a few bare patches where shrubs have died back and have not been replaced.

A proposed landscape scheme will complement the existing robust landscape. Refer to drawing Soft Landscape Detailed Design Proposal 421/10-PL451 for details.

3. Site Designations

There are no known landscape designations associated with the site. In the Wrexham Borough Council Unitary Development Plan, the policy EC4 Hedgerows, Trees and Woodlands applies in particular, the paragraph "Development proposals should provide for the conservation and

management of hedgerows, trees, orchards, woodlands, wildlife and other natural landscape...new planting...to enhance the character of the landscape and townscape."

4. Survey Records

TREES: The existing highway sits within a mix treed context that works well within the surrounding environment. The trees vary considerably in health, quality and amenity value.

There are several tree species found throughout the site, these are the following species:

Platanus hispanica - London Plane (Main avenue trees)
Pinus sylvestris – Scots Pine
Acer pseudoplatanus - Sycamore

Betula pendula – Silver Birch
Prunus sp. - Cherry

For further information on the trees, groups of trees and their numbers, refer to the tree survey table.

The existing tree locations are based on the topographical survey drawing 12182 by Malcolm Hughes Land Surveyors.

SHRUBS: In general the area is an established semi-mature collection of robust and evergreen shrubs offering all-year-round-interest, texture and colour. These form a solid backbone structure along the northern boundary adjacent to Homebase car park and within the Plas Coch Road / Mold Road / Berse Road roundabout.

There are several shrub species found throughout the site, these are the following species:

Euonymus 'Variegatus'
Spiraea japonica 'Goldflame'
Weigelia florida 'Foliis Purpureis'
Elaeagnus x ebbingei
Hebe sp.
Mahonia japonica
Olearia macrodonta
Cotoneaster sp.
Fagus sylvatica

Spiraea x 'Arguta'
Ceanothus sp.
Berberis thunbergii 'Atropurpurea'
Pyracantha sp.
Alnus glutinosa,
Photinia 'Red Robin'
Prunus laurocerasus 'Otto luyken'
Euonymus japonicus 'Aureus'

5. Protecting Trees to be Retained

- 4.1 Retention of those trees considered to be of good quality (aesthetically and environmentally) requires integration into the new road alignment. Consideration of the physical requirements of the trees (space, scale, root spread, height, shading, ground levels and conditions) will ensure that existing trees to be retained are an asset.
- 4.3 In addition to long term spatial planning, the process of construction requires programme and logistics planning – alongside the implementation of appropriate protection measures - to ensure that trees identified for retention are (a) still there at the end of a construction period, and (b) are there many years later because latent damage to the canopy or root systems have been avoided.
- 4.4 The appropriate means for ensuring this to establish a protective fencing barrier – either as a linear arrangement inside a boundary or as a ring around an individual or group of trees. The recommended type, size and material is as Figure 2 of BS5837:2005 and as detailed on drawing ALD421- SL253.
- 4.5 The location of the protective barrier reflects an area on the ground which is deemed sufficient to protect the root plate. The fundamental changes to the British Standard in 2005 brought in to consideration a calculation based on the height, form and diameter (girth) of the tree being retained [i.e. no longer considered to be 'just' the canopy spread]. This root zone area is termed the RPA – root protection area and it is the equivalent of;
- i) a circle with a radius twelve times the stem diameter (for single trunk trees)
 - ii) a circle with a radius ten times the basal diameter (for multi-stemmed trees).
- 4.6 A RPA can be capped at;
- i) an area equivalent to 707sqm
 - ii) which is effectively a circular zone at 15m radius, or a square with sides at approximately 26m.
- 4.7 Further details on the extent and calculation of the RPA are set out in **Appendix 3: Table 3: – Supplementary Information.**
- 4.8 The root protection areas and recommended protective barrier alignments for trees to be retained at Plas Coch Road are indicated on drawing ALD421- SL252.
- 4.9 As illustrated on plan, the extent of RPA is based on the BS calculations, generating areas for the multi-stemmed trees that are far greater than similarly sized (height and canopy spread) single stemmed trees. Therefore we recommend the final location of the fenceline, to be based on RPA of similar sized (height and spread) single-stemmed trees.

- 4.10 Any works recommended within this survey should be undertaken by a suitably qualified and insured arboricultural contractor, preferably an approved Tree surgery contractor registered with the Arboricultural Association.
- 4.11 Once the trees to be retained have been established and the protective barrier positions have been clearly identified, it is essential to consider if a development proposal can be implemented without disturbance to the protected areas. A Method Statement must be prepared and submitted by the contractor prior to commencement of any works on site.
- 4.12 In the event that certain operations will be acceptable within the RPA, these should also be accompanied by a Method Statement which details the careful implementation of the works with appropriate mitigation to ensure unnecessary damage is not inflicted.
- 4.13 Subject to receipt of any planning approvals, it is anticipated that, the Method Statement will likely need to be approved by the Local Planning Authority before works start on site.

- 4.14 A Method Statement shall include some intrinsic considerations as set out below:
- 1) Site construction access,
 - 2) The phasing of the construction works,
 - 3) Space for the site huts, temporary latrines (including drainage) and any other temporary structures,
 - 4) Storage space (temporary or long term) for materials, spoil, fuel and the mixing of cement and concrete
 - 5) The location/space needed for all service runs, including foul and surface water drains, soakaways, gas, oil, water, electricity, telephone, television or other communication cables (including temporary services)
 - 6) The space needed for all foundation excavations and construction works (including head space)
 - 7) The availability of appropriateness of special construction techniques,
 - 8) The intensity and nature of the construction activity,
 - 9) All changes to the ground level including the location of retaining walls, steps, and making adequate allowance for foundations for walls and backfilling.
 - 10) Space for cranes, plants, scaffolding and access during works,
 - 11) Contractors car parking,
 - 12) The type and extent of landscape works which will be needed within the protected areas and the effects this will have upon the root system,
 - 13) The effects of slope on the movement of potentially harmful liquid spillage towards or into protected areas.

TREE SURVEY														Sheet No:	1		
Project: Plas Coch Road Improvements, Wrexham														Job No:	ALD_421		
Surveyor: Emma Paling							Weather: Sunny							Survey Date:	05/05/2010		

Ref. No.	Species	Size (metres)				Age category	Physical Characteristics									Condition categories	Amenity value	Contribution in years	Notes	
							M: minor			S: significant			E: extreme							
(Mark on TSP)	Scientific name (Common name)	Height	Clear trunk	Ave. crown radius	Circ. in cm @ 1.3m	Y – Young SM – Semi-mature M - Mature OM - Over-Mature V- Veteran	TPO / cons. area	Dead wood	Snags	Cavities	Weak fork	Bark damage	Ivy cover etc.	Root damage	Multiple forks	Disease / dieback	A - sound & healthy B - healthy, with defects C - limited useful life R - remove	A - good B - fair C - poor	< 10 10-20 20-40 > 40	Examples: Disease and pathogens Damage Situation Shade / aspect Proximity to structures

1	Platanus × hispanica (London Plane)	10	2.5	5	72	SM				M							B	A	> 40	Overall in good condition, as part of the avenue of trees with good form and shape
2	Platanus × hispanica (London Plane)	12	2.2	5	-	SM											B	A	> 40	Good form and spread, in good condition, as part of the avenue of trees along Plas Coch Rd.
3	Platanus × hispanica (London Plane)	12	2.5	4.5	69	SM						M					B	A	> 40	Ppart of the avenue of trees with good form and shape, overall in good condition
4	Platanus × hispanica (London Plane)	11	2.5	5	64	SM						S					B	A	> 40	Good overall shape. Some minor broken branches could be tidied up as part of on-going maintenance.
5	Platanus × hispanica (London Plane)	10	3	5	59	SM					M	S					B	A	> 40	Good overall shape and form. Some minor broken branches could be tidied up as part of on-going maintenance
6	Acer pseudoplatanus (Sycamore) ????	4	1.8	1.5	-	Y											C	C	< 10	Self-seeded, small insignificant tree, to be removed as part of on-going maintenance
7	Prunus spp. (Cherry)	6	1.5	2	-	Y											B	C	20-40	Good form and shape, appears lost within dense shrubs on roundabout
8	Prunus spp. (Cherry)	8	-	3	-	SM											B	B	20-40	Good, dense canopy, nice conical shape. Appears swamped by dense shrubs on roundabout
9	Prunus avium. (Wild Cherry)	6	1	3	-	SM											B	B	20-40	Good, dense canopy, nice conical shape.
10	Acer pseudoplatanus (Sycamore) ????	4.5	2	1.2	20	Y											C	C	< 10	Self-seeded, small insignificant tree, to be removed as part of on-going maintenance
11	Prunus avium. (Wild Cherry)	6	2	2.5	-	Y											C	C	20-40	Self-seeded, insignificant tree, to be removed as part of on-going maintenance
12	Platanus × hispanica (London Plane)	13	2.5	5	-	SM											B	A	> 40	Open form and spread, good as part of the avenue of trees within shrub border.
13	Betula pendula (Silver Birch)	9	2	3.5	-	SM											B	A	20-40	Multistem (x3) good open form and spread, attractive feature tree within shrub border
14	Platanus × hispanica (London Plane)	13	2.5	5.5	-	SM											B	A	> 40	Good form and spread, overall in good condition, part of the avenue of trees along Plas Coch Rd.
15	Platanus × hispanica (London Plane)	10	2.2	4.5	-	SM											B	A	> 40	Good form and spread, overall in good condition, part of the avenue of trees along Plas Coch Rd.
16	Platanus × hispanica (London Plane)	10	2	4.5	-	SM					M						B	A	> 40	Open, spreading form, good as part of the avenue of trees along Plas Coch Rd.
G1	Pinus sylvestris (x3)	1.5 / 2.5	-	1.5	-	Y											B	B	20-40	Attractive feature trees within shrub border
17	Platanus × hispanica (London Plane)	10	2	4.5	-	SM					M						B	A	> 40	Open, spreading form, good as part of the avenue of trees along Plas Coch Rd.

Key for survey sheet	Additional detail about the survey information necessary for a tree survey
Ref. No.	Reference number to be recorded on a tree survey plan
Species.	Species ; common and scientific (Latin) names where possible
Physical characteristics.	Height in metres
	Stem diameter in millimetres at 1.5m above adjacent ground level (on sloping ground to be taken on the upslope of the tree) or immediately above the root flare for multi-stemmed trees.
	Branch spread in metres taken at four cardinal points to derive an accurate representation of the crown (to be recorded on the tree survey plan).
	Height in metres of crown clearance above adjacent ground level (to inform on ground clearance, crown stem ratio and shading).
	Age class ;young, middle aged, mature, over mature and veteran (tree that by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond a typical age range for that species concerned).
Condition	Physiological condition (e.g. good, fair, poor and dead).
	Structural condition e.g. collapsing, the presence of any decay and physical defects
Contribution.	Estimated contribution in years (e.g. <10, 10-20, 20-40, >40).
Category.	Category R, A,B or C grading (see Appendix 2 Table 2) to be recorded on the tree survey plan Record as A1, A2... etc.
Management.	Preliminary management recommendations, including further investigation of suspected defects that require more detailed assessment and potential wildlife habitat. • Disease and pathogens • Pruning and felling • Damage • Retain/remove • Dominant • Shade/aspect • Proximity to structures Note: these headings are suggestions and are not exhaustive.

Appendix 2 (Reference BS5837:2005)		Table 2 - Cascade chart for tree quality assessment		
Trees for removal				
Category and definition	Criteria			Identification on plan
Category R Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboriculture management	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after the removal of other R category trees(i.e. where, for what ever reason, the loss of the companion shelter cannot be mitigated by pruning) - Trees 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(e.g. Dutch Elm Disease) or very low quality trees suppressing adjacent trees of better quality Note Habitat reinstatement may be appropriate(e.g. R category tree used as a bat roost: installation of bat box in a nearby tree)			Red
Trees to be considered for retention				
Category and definition	Criteria- Subcategories			Identification on plan
	1. Mainly arboriculture values	2. Mainly landscape values	3. Mainly cultural values, including conservation	
Category A Those of high quality and value: in such a condition as to be able to make a substantial contribution(a minimum of 40 years is suggested)	Trees that are particularly good examples of their species , especially if rare or unusual, or essential components of groups, or formal or semi-formal arboriculture features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to the views into or out of the site, or those of particular visual importance (e.g. avenues or other arboriculture features assessed)	Trees, groups or woodlands of significant conservation, historical commemorative or other value (e.g. veteran trees or wood pasture)	Green
Category B Those of moderate quality and value: those in such a condition as to make significant contribution (a minimum of 20 years is suggested)	Trees that might be included in the high category, but are downgraded because of their impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)	Trees present in number usually in groups or woodlands, such as they form distinct landscape features , thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboriculture features e.g. trees of moderate quality within an avenue that includes better, A category specimens , or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality.	Trees with clearly identifiable conservation or other cultural benefits.	Blue
Category C Those of low quality and value: currently in adequate condition to remain until new planting can be established(a minimum of 10 years is suggested) or young trees with a stem diameter below 150mm	Trees not qualifying in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit	Trees with very limited conservation or other cultural benefits	Orange
	NOTE: Whilst category C trees will usually not be retained where they would impose a significant restraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation.			

Supplementary information concerning the tree survey plan : **SL203 & SL204**

Record information about the trees on site independently of and prior to any specific design development. Refer to survey sheet and appendices 1-2

Additional information concerning the tree constraints plan : **SL203 & SL204**

Using the tree survey information this is a design tool to show below ground constraints, represented by the RPA, and the above ground constraints the trees pose by virtue of their size and position

Plan prepared for the purposes of design layout showing the root protection area (**RPA**) and representing the effect that the mature height and spread of retained trees will have on layouts through shade, dominance etc.

RPA, root protection area is the area surrounding a tree that will create sufficient volume to ensure the survival of the tree, shown on the plan in m²
RPA should be plotted around each of the categories
This is the minimum area of m² left undisturbed around each tree. However, it should be capped at 707m² or 15m radius of a circle.

Calculating the root protection Area

Single stem tree

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

Trees with more than one stem arising below 1.5m above ground level

$$RPA(m^2) = \frac{(\text{Basal diameter}(\text{measured immediately above root flare}(mm) @ 10)^2}{1000} \times 3.142$$

Additional information concerning the tree protection plan : **TPP**

A scale drawing with the final layout proposals, tree retention and tree and landscape protection measures detailed within the arboriculture method statement which can be shown graphically.

Appendix 4 Photographic Record – General Setting and Location Photos



A. Looking west along Plas Coch Rd with Homebase store to the right of the photo.



B. View towards the mature shrubs on the Plas Coch Road / Mold Road / Berse roundabout



C. View northeast towards the roundabout with the London Plane trees T2 and T3 within the shrub border



D. Mixed collection of trees and shrubs on either side of Plas Coch Road