

Landscape, Arboricultural & Ecological Solutions for the Built Environment

> Arboricultural Impact Assessment

Gateacre Garden Centre Acrefield Road Liverpool

January 2015

Revision	Date	Reason
А	27 January 2015	Minor amendments
В	20 May 2015	Revised layout

Ascerta

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EXECUTIVE SUMMARY

A survey of the existing trees on the site of Gateacre Garden Centre, Acrefield Road, Liverpool has been carried out by a suitably qualified and competent Arboriculturist in accordance with British Standard 5837: 2012 *Trees in relation to design, demolition and construction – Recommendations*.

The purpose of the survey and of this report is to identify the impact of the proposed development of the site on trees, both within and immediately adjacent the site, in accordance with the provisions of BS5837: 2012.

The development of the site will involve the construction of 10 detached residential dwellings, which will require the removal of a small number of existing trees and which has the potential, in the absence of any suitable controls, to have an indirect impact on a number of the trees proposed for retention.

Mitigation for the impact of the development can be provided in the form of the following:

- The erection of protective fencing in advance of the commencement of the development to safeguard the root systems of retained trees;
- The agreement, in advance of the commencement of the development, together with the implementation during the construction phase of a methodology for the protection of retained trees;
- The use of modern methods of construction where proposed buildings overlap with root protection areas.

Compensation for the impact of the development, together with landscape and biodiversity enhancements can be achieved by way of the following:

- The planting of trees and shrubs as part of a comprehensive landscape scheme to replace any trees lost and to integrate the development into the wider landscape;
- The planting of native hedges where possible to provide linear habitats that link to habitats located off site;
- The use of a mixture of native and ornamental species within planting schemes, where those species are suited to the site and local landscape.

1.0 Introduction

- 1.1 Ascerta has been instructed by Macbryde Homes to carry out a survey of the trees within and immediately adjacent Gateacre Garden Centre, Acrefield Road, Liverpool, and to assess the potential impact of the development as proposed on trees within / adjacent the site in accordance with British Standard 5837: 2012 *Trees in relation to design, demolition and construction Recommendations.*
- 1.2 The site was originally visited on 18 March 2014 by Colin Ness, a competent and qualified arboriculturist with 13 years experience of the UK and European arboricultural and landscape industries within the context of the planning system. During the site visit, a survey was carried out of the trees growing both on and immediately adjacent the site to the standards contained within BS5837: 2012. This report presents the results of the survey, as well as an assessment of the impact of the development and includes recommendations for further actions where applicable in order to mitigate any potentially negative effects of the development on tree cover within the local landscape.

2.0 Objectives

- 2.1 Our client's objective is to develop the site by the construction of 10 detached residential dwellings.
- 2.2 Our objectives are as follows:
 - Identify what arboricultural features exist presently within and adjacent the site and to record and categorise them in a manner consistent with BS5837: 2012;
 - Identify what trees will need to be removed directly as a result of the proposed development of the site;
 - Identify any indirect impact from the proposed development on trees proposed for retention;
 - Provide an indication of what protection measures can be implemented as part of the development of the site to ensure the physical protection of retained trees;
 - Provide recommendations for mitigation in terms of new planting or enhancement of existing features of arboricultural, landscape or ecological interest or importance;
 - Provide any other recommendations to assist our clients in achieving their objectives whilst satisfying current legislation or policy guidance in relation to the woody vegetation on site.

3.0 Planning Policy & Relevant Legislation

- 3.1 The National Planning Policy Framework (March 2012) sets out the Government's planning policies for England and how these are expected to be applied. The Framework contains a presumption in favour of sustainable development, with sustainable development in the UK being defined under the UK Sustainable Development Strategy *Securing the Future*, which sets out five 'guiding principles' of sustainable development: living within the planet's environmental limits; ensuring a strong, healthy and just society; achieving a sustainable economy; promoting good governance; and using sound science responsibly.
- 3.2 The Framework seeks to facilitate the approval without delay of developments that meet the objectives of up to date Local Plans. Where proposed developments involve net gains for nature and biodiversity, this is to be seen as a positive improvement in the quality of the natural environment and thus in compliance with the objectives of the Framework.
- 3.3 The relevant Policies that apply to the subject site in relation to trees, and against which the development will be judged, are contained within The City of Liverpool Unitary Development Plan and are listed as follows:

EXISTING TREES AND LANDSCAPING

HD22

1. In order to protect and integrate existing trees and landscape features within new developments, the City Council will:

i. require the retention of key ecological and natural site features, such as trees, hedges, walls and ponds;

ii. require the submission of a full independent tree survey to enable the effect of the proposal on the trees to be fully assessed;

iii. refuse planning permission for proposals which cause unacceptable tree loss, or which do not allow for the successful integration of existing trees identified for retention following consideration of the tree survey;

iv. require layouts to provide adequate spacing between existing trees and buildings, taking into account the existing and potential size of trees and their impact both above and below ground level; and

v. require retained trees and woodland to be protected and managed during construction, preventing all site works within the branch spread of any retained tree.

2. The City Council will protect existing trees and woodland areas by:

i. making tree preservation orders on trees or groups of trees, where appropriate; ii. only allowing the removal of any protected tree in exceptional circumstances, such as where the tree is a danger to public safety or is diseased, and on condition that appropriate replacement planting takes place; iii. ensuring the proper and beneficial management of trees and woodland areas in its ownership; and iv. carrying out a review of existing Tree Preservation Orders.

3.0 Planning Policy & Relevant Legislation (Continued)

NEW TREES AND LANDSCAPING

HD23

All new development proposals should make proper provision for the planting and successful growth of new trees and landscaping, including any replacement planting provided as compensation for the loss of any trees due to development and in particular should:

i. provide high quality landscaping and boundary treatment including the submission ofsuch details as part of any full planning application; and

ii. promote nature conservation through the use of native species and the creation of wildlife habitats where appropriate.

- 3.4 Whilst trees at the front of the site are not protected, there is a Tree Preservation Order (Area designation) that extends across a large part of the rear of the site (TPO 107, Sandfield Brow / Gateacre Brow, 1972). The effect of this Order is that any tree that was growing at the time the Order was made, will have the benefit of statutory control.
- 3.5 British Standard 5837: 2012 *Trees in relation to design, demolition and construction Recommendations* provides current recommendations and guidance on the relationship between trees and design, demolition and the construction processes. It sets out the principles and procedures to be applied to achieve a harmonious and sustainable relationship between trees and structures.
- 3.6 Notwithstanding the aforementioned policies and legislation, consideration should also be given to any impacts from the proposed development in respect of the Hedgerow Regulations 1997 and the Forestry Act 1967 (and specifically the potential need for a felling licence), as well as existing UK and European legislation relating to wildlife and nature conservation.

4.0 Surveys & Survey Methodology

- 4.1 We have been supplied with a digital copy of the topographical survey for the site, which largely satisfies section 4.2 of BS5837: 2012. Any features of arboricultural or landscape interest that have been excluded from the original version of the topographical survey (for example trees located off site but within a distance from the boundary of the site equal to or less than 12 times the stem diameter of that tree) have been added to the plan manually.
- 4.2 Our assessment of the soils within the site, based on local site conditions, geography, available soil maps and our own experience of soils across the United Kingdom, indicates that the soils on site are likely to have a plasticity index in the low / moderate range. Any further details or confirmation of the exact nature of soil conditions on site will require further, more rigorous sampling and analysis.
- 4.3 Our survey of the trees within and adjacent the site was carried out by a qualified and competent arboriculturist in accordance with sections 4.4 and 4.5 of BS5837: 2012 on 18 March 2014 during showery weather conditions. Those trees surveyed have been numbered sequentially, although for the purposes of this project they have not been tagged. The trees have also been categorised in accordance with section 4.5 and Table 1 of the Standard.
- 4.4 Where relevant and where the quality of shrub masses and hedges justifies recording, details have been recorded to the tree survey plan and tree data tables.
- 4.5 Where trees are surveyed that require immediate attention, for example to abate a nuisance, prevent a serious hazard to life or property, or are affected by a pathogen or pest that could cause widespread damage unless it is controlled, notification will be issued to the relevant person or organisation such that appropriate action can be taken.
- 4.6 Root Protection Areas for those trees surveyed have been calculated in accordance with the formulas at section 4.6 and Annex C of the Standard and can be found within the tree data tables that accompany this report. The tree data tables also contain a key to abbreviations used and the rationale for determining Root Protection Areas for groups of trees and woodlands (where applicable).

5.0 Survey Results & Impact Assessment

5.1 Some 2 individual, 5 groups of trees and 1 hedge were recorded during our survey, the details of which can be found within Appendix 1 to this report and cross referenced with drawing P.481.14.01 *Tree Survey*. The following table summarises those trees to be removed, together with the reason for removal:

Tree(s) to be removed	Reason for removal											
G3 & G5	Low	quality	/	overgrown	and	to	facilitate	the	proposed			
	devel	opment.										

In addition to the trees proposed for removal, the development may in some instances have the potential to have an indirect impact on those trees proposed for retention. The following table lists such instances:

Tree No. / Area	Potential (or indirect) impact								
T1, T2, G1, G2 & G4	In the absence of any appropriate controls, these trees could suffer root damage from excavation works or compaction of soils. It is important therefore that suitable measures are implemented to								
	safeguard those trees proposed for retention.								

- 5.2 **Hedgerows:** In accordance with the Hedgerow Regulations 1997 'important' hedgerows (in the context of the Regulations) should not be removed without a Hedgerow Removal Notice issued by the relevant Local Authority, unless that removal is subject to an appropriate consent under the Town and Country Planning Act 1990. In this instance however, there are no hedgerows within or immediately adjacent the site that could be considered important in the context of the regulations.
- 5.3 **Potential for Shading:** Mature trees in urban and suburban areas add significant value and environmental benefits to properties, however it is acknowledged that some residents are averse to living in close proximity to trees. Whilst efforts can be made to minimise the impact from shading by trees it is almost inevitable that in some situations trees will shade parts of gardens or properties during part of the day. Generally, any shade cast from trees will be for relatively short periods and entirely acceptable given the accepted co-existence of large trees in an urban context. In this instance we do not consider that shade will be a particular issue across the site given the proposed layout and its relationship to retained trees. There is certainly no indication that the relationship between trees and existing properties is a particular cause for concern.
- 5.4 **Boundary Screening:** Trees located adjacent to the boundaries of the site make a welcome contribution to the screening of views and can be complemented by the planting of new trees and shrubs such as to filter views and integrate the development into the surrounding landscape.

5.0 Survey Results & Impact Assessment (Continued)

- 5.5 **Long Term Spatial Constraints:** The proposed layout is such that there is generally adequate space between new buildings and trees to limit the potential for future pressure to remove trees. Whilst it is not possible to predict what actions future residents will seek to take in respect of trees within or adjacent their properties, the existing layout is considered acceptable from a design perspective and contributes to a balanced landscape.
- 5.6 **Future Nuisance from Trees:** Although there can often be a nuisance value attached to trees in close proximity to residential dwellings (leaf / fruit drop for example), the layout as proposed does not suggest that this will be of significant concern for the future.
- 5.7 **Existing Areas of Hard Standing:** There are a number of existing areas of hard standing across the site, remnants from the site's previous use. Provided however that care is taken during the groundworks phase of the development, the impact of the removal of hard surfaces can be minimised.
- 5.8 **Proposed Areas of Hard Standing & Buildings Located Adjacent / Within Root Protection Areas:** The following table lists areas across the proposed development where proposed hard standing (for new driveways, roads, footpaths or buildings) encroaches within the Root Protection Areas of retained trees. Also listed are preliminary comments in respect of potential construction methodologies available to overcome any risk to the health or structural integrity of those trees.

Area of Overlap	Potential Methodology to Limit Impact on Trees
Plot 10 / T2 (off site)	Measurement of the extent of encroachment from the
	building into the root protection area of the Poplar confirms
	that it occupies some 10% of the overall root protection area,
	and is already laid to impermeable hard-standing, therefore it
	falls well within the accepted tolerances as indicated by
	BS5837: 2012. The presence of existing hard standing as
	well as roots from the established group of overgrown
	Cypresses (G5) is likely to have had a 'barrier' effect on the
	roots of T2 where the driveway to plot 13 is proposed. The
	extent of hard surfacing within the garden centre will also
	have created a hostile rooting environment within the upper
	horizon. Provided that excavations are kept to a minimum in
	this area and appropriate precautions taken during the
	groundworks / construction phase, then there should be no
	adverse impact from the construction of the proposed plot
	slightly within the root protection area

5.0 Survey Results & Impact Assessment (Continued)

5.9 **Proposed Drainage & Domestic Services:** At the planning application stage of the project, details of proposed drainage arrangements and provision of domestic services (gas, electricity, telephone, cable etc) are generally not known. Based on our knowledge of the site at this stage however the following table lists areas where the provision of infrastructure and services may impact on retained trees, together with potential measures available to minimise that impact. During the installation process, general guidance can be obtained from the National Joint Utilities Group publication *Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees – Volume 4.*

Potential Area of Impact	Potential Mitigation
Plot 10	If possible, drainage & services should be routed
	to the east side of the property away from T2. If
	this is not possible however, insertion of the
	services in accordance with NJUG principles will
	limit the impact on the tree.

- 5.10 **Working Space During the Construction Phase:** The site is of a size such that there will be adequate working space throughout the construction phase, with little if any potential impact on retained trees. It is however important that construction exclusion zones created to safeguard retained trees are not breached without prior consideration and implementation of control measures to limit any potentially negative impacts on trees.
- 5.11 Access Facilitation Pruning: There may be a limited number of areas within the site where an element of access facilitation pruning may be required, for example when erecting scaffolding during the construction phase close to T1. Provided that this work is controlled and carried out to a minimum of the standards as contained within BS3998: 2010 *Tree work Recommendations*, then the visual impact of the work will be minimal and will not detract from the overall landscape value of the site.
- 5.12 **Protection of Planting Areas:** It is often desirable to fence off areas to protect the soil structure for new planted areas, however works will be required across the majority of the site, therefore there is little scope to set aside areas for such treatment. Provided that adequate provisions are made for ground preparations in advance of the landscape stage, there is unlikely to be a negative impact on the viability of newly planted stock.
- 5.13 **Requirement for an Arboricultural Method Statement:** It would be beneficial to agree and implement a Method Statement for Tree Protection (an Arboricultural Method Statement) to ensure that retained trees are adequately protected from the outset and that no unnecessary harm occurs during the construction phase. Section 6 of this report contains further details of the aspects of the development that could successfully be controlled, which can in turn be subject to a suitably worded planning condition.

5.0 Survey Results & Impact Assessment (Continued)

5.14 **Planning for New Landscaping:** If not considered carefully at the design stage, new planting and landscaping can have an adverse impact on existing trees and cause long term problems for future residents. Care should be taken in the design of new landscapes to prevent physical damage to retained trees during the planting process, and to ensure that schemes are designed to survive and thrive rather than competing for resources. Similarly new trees and shrubs should not be planted where they will cause damage to structures, either directly or indirectly in the future. Table A1 at Annex A of the Standard gives advice on minimum distances for new trees from structures to avoid direct damage from future tree growth. Further advice should be sought from the project arboriculturist and a suitably qualified and experienced engineer as to the potential indirect impact of trees on structures in the long term (from clay shrinkage subsidence).

6.0 Tree Protection Measures

- 6.1 On the basis of the proposed layout and those trees proposed for retention, drawing P.481.14.02 *Tree Protection Drawing* shows our preliminary recommendations for the physical protection of retained trees throughout the construction phase. The plan indicates the location of protective barriers, as well as the specification for construction of the protective fencing in accordance with Figures 2 & 3 of the Standard. These barriers will form a construction exclusion zone around the retained trees.
- 6.2 In addition to the erection of protective fencing, drawing P.481.14.02 *Tree Protection Drawing* shows areas where it would be beneficial to agree a tree protection method statement between the project arboriculturist, design & construction teams and the local planning authority tree officer. The method statement will need to address and make allowance for the following:
 - All forms of access required to the site;
 - Site cabins and storage areas;
 - Proposed parking for site personnel;
 - Phasing of works;
 - Space required for excavations (including foundation excavations);
 - Any required special construction techniques (for example provision of porous surfaces);
 - The location and construction methodology for installation of services in close proximity to retained trees & hedges;
 - Any changes in ground levels and any resulting requirement for retaining structures;
 - Working space for cranes, plant and scaffolding; and
 - Management of waste products within the site.
- 6.3 Over and above the physical tree protection measures that should form the basis for the tree protection method statement, the following details should be provided within the method statement:
 - Protection of the soil structure within the proposed planted areas (where applicable);
 - Planting operations within the root protection areas of retained trees;
 - Any required / additional precautions outside of construction exclusion zones in relation to the treatment & landscaping of garden or open space areas;
 - System of arboricultural site monitoring / schedule of site visits and resulting actions.

7.0 Summary of Impacts & Potential Mitigation Factors

7.1 The following table summarises the impacts of the development as proposed on tree cover within and immediately adjacent the site. Comments are also provided on potential mitigation, compensation or special measures required in order to minimise the impact of the development and safeguard trees proposed for retention.

Issue	Affecting	Mitigation / Compensation / Special
		Procedures
Trees / hedges to be	G3 & G5	Removal of these groups will allow higher
removed		quality replacement using native species. It is
		recommended that a hedge with standard trees
		be planted along this boundary.
Indirect physical	T1, T2, G1, G2 & G4	Erect protective fencing in advance of the
impact on retained		commencement of the development and
trees		maintain it intact throughout the course of the
		construction phase.
Potential shading of	Not applicable	-
properties / gardens		
Removal of existing	Boundary trees & trees	Ensure that within the root protection areas of
hard standing	off site.	retained trees (including those located off site),
		that hard surfaces are removed carefully and
		excavations do not exceed the depth of sub-
		base.
Building works	Plot 10 / T2	Erect protective fencing in advance & ensure
within root		any exposed roots are pruned clean to the edge
protection areas		of the foundation excavations.
Provision of	T2	Adopt principles of NJUG guidance, but
drainage / services		preferably route the services to the east of the
_		property.
Working Space	Not applicable	-
Access Facilitation	T1	Prune branches back on the south side to
Pruning		reduce the overhang by approximately 2m,
_		using natural target pruning methodology.
		Ensure that pruning works do not adversely
		alter the form of the tree.
Protection of	Not applicable.	-
proposed planting		
areas		
Protective Fencing	All retained trees.	Ensure that fencing is erected to the agreed
		specification in advance of the commencement
		of the development and retained intact
		throughout the construction phase.

7.2 On the basis of the above and the contents of this report it is considered appropriate that a Method Statement for Tree Protection be prepared as a condition of planning consent to demonstrate how trees proposed for retention can be suitably safeguarded. The Method Statement should be adopted as a control document by site personnel.

8.0 Conclusions & Recommendations

- 8.1 The development as proposed will directly require the removal of a small number of existing trees. Whilst the removal of trees can sometimes be considered a negative impact on the local landscape, the wider benefits of the development as proposed, which includes the planting of a significant number of new trees and shrubs to create a more diverse landscape structure, together with the conversion of existing hard landscaped areas to soft areas, outweigh the relatively short term benefits of retaining those trees proposed for removal. There are therefore no arboricultural reasons of any significance why planning consent should not be granted for the development.
- 8.2 We would recommend that a landscape proposal be prepared for the site, to include provision for the planting of a mixture of native, as well as ornamental trees, shrubs and hedges, and implemented as a condition of planning consent. We also recommend that tree protection measures are implemented in accordance with drawing P.481.14.02 *Tree Protection Arrangements* and that a tree protection / arboricultural method statement be prepared and implemented as a condition of planning consent for the development.

9.0 References

Department for Communities and Local Government (March 2012) National Planning Policy Framework;

The City of Liverpool Unitary Development Plan;

British Standard 5837: 2012 Trees in relation to design, demolition and construction – Recommendations;

National Joint Utilities Group publication *Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees – Volume 4.*



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Appendix 1

Trees Recorded at Gateacre Garden Centre, Woolton, Liverpool

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									Surveyor: C. Ness						18-Mar-14			
T. No	Species	Ht (m)	Stem DBH (mm)	RPA Radius (m)	E N	Branch S	Sprea E	nd W	Ht Crown Clearance	Age Class	P Condition	Structural Condition & Preliminary General Comments Recommendations		Est. (yrs)	Cat Grade			
T1	Horse Chestnut	10	750	9.00	8	7	6	6	(m)	М	G	Past pruning evident. Slight canker on main stem. Located off site with branches overhanging into the site.	Prune back branches on the south side to reduce the overhang by approximately 2m, using natural target pruning methodology. Ensure that pruning works do not adversely alter the form of the tree.	30	B2			
G1	Holly, Cherry, Crab Apple	7	300	3.60	4	4	4	4	0	М	F	Off site. Encroaching onto site.	Prune back overhang into the site by maximum 2m, adopting natural target pruning methodology.	30	C2			
G2	Sycamore, Cypress, Holly, Elder, Weeping Willow	10	250	3.00	3	3	3	3	0	М	F	Off site. Encroaching onto site.	Prune back overhang into the site by maximum 2m, adopting natural target pruning methodology.	30+	C2			
G3	Elder, Holly, Privet, Rhododendron	5	100	1.20	2	2	2	2	0	М	F	Linear scrub / shrub group with bottom clipped behind fence.	Remove.	30+	C2			
H1	Privet, Elder	3	100	1.20	0.5	0.5	0.5	0.5	0	М	F	Clipped hedge growing through fence.	Prune back as necessary for the proposed development.	30	C2			
G4	Cypress, Sycamore	12	400	4.80	4	4	4	4	0	М	F	Off site group. Scrubby in nature.	Lightly prune back overhanging branches by maximum 2m using natural target pruning methodology.	20	C2			
G5	Cypress	17	540	6.48	3	3	3	3	0	М	F	Overgrown hedge. Linear group adjacent the boundary.	Remove and replace with higher quality boundary treatment.	20	C2			
T2	Lombardy Poplar	22	1000	12.00	4	4	4	4	5	М	F	Twin stem. Included union at base. Located off site in adjacent garden.	No works required at this stage, however given the age class and condition of the tree, negotiated removal and replacement would be beneficial in the longer term.	15	C2			

Key to Abbreviations & Headings

T. No.: Tree number (T = Tree, G – Group, W = Woodland, H = Hedge, Cpt. = Compartment) Species: Common name used Stem DBH (Diameter at Breast Height): Measured at 1.5m above ground level* Ht Crown Clearance: Canopy ground clearance Structural Condition: Description of any observed defects Cat. Grade: Tree quality assessment in accordance with BS5837: 2012 Doc. No.: 054 / Issue No.: 005/ November '13

Root Protection Area Radius: Root Protection Area as per BS5837: 2012 Age Class: Y = Young, EM =Early Mature, M = Mature, OM = Over mature, D = Dead Preliminary Recommendations: Made in respect of known / intended use of the site * For groups of trees, the stem diameter of the largest tree in the group is generally used Ht: Height of tree from ground level measured in metres Branch Spread: Extent of canopy spread in metres to each of the four cardinal points P (Physiological) Condition: G = Good, F = Fair, P = Poor, D = Dead Est. (yrs): Estimated remaining contribution in years



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Appendix 2



