

Ascerta

Landscape, Arboricultural & Ecological Solutions
for the Built Environment

Arboricultural Impact Assessment

Hollins Paper Mill
Hollins Grove Street
Darwen
BB3 0RP

January 2016

Revision	Date	Reason
A	31 st July 2017	New Layout Recieved

Ascerta

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EXECUTIVE SUMMARY

A survey of the existing trees on and adjacent Hollins Paper Mill, Hollins Grove Street, Darwen, BB3 0RP 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 151 residential dwellings, which will require the removal of a number of existing trees and which, in the absence of suitable controls, has the potential 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.

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 Gleeson Homes to carry out a survey of the trees within and immediately adjacent Hollins Paper Mill, Hollins Grove Street, Darwen, BB3 0RP 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 visited on 21st December, 2016 by Robert Armitage (BSc Hons), a competent and qualified arboriculturist with 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, provides 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 151 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 which 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 and compensation in terms of new planting or enhancement of existing features of arboricultural, landscape or ecological interest or importance; and
 - 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*. This 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 site lies within the Blackburn with Darwen Council administrative area and is subject to the Blackburn with Darwen Local Plan. Policies HD8 & HD9 apply to the subject site in relation to trees; these have been taken into account when writing this report.
- 3.4 Checks made with Blackburn with Darwen Council on 4th January, 2017 indicate that none of the trees within the site are subject to statutory controls either in the form of a Tree Preservation Order, nor by virtue of their location within a Conservation Area. In advance of the commencement of any works to trees within or adjacent the site, those instructing and proposing to carry out such works should satisfy themselves that all appropriate consents are in place to prevent potential breach of legislation.
- 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 Survey & Survey Methodology

- 4.1 We have been supplied with a digital copy of the topographical survey for the site, which satisfies the relevant part of section 4.2 of BS5837: 2012. Features of arboricultural or landscape interest that have been excluded from the original plan (for example trees on or 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 contain a clay element, and that this will have a plasticity index in the low/medium range. Any further details or confirmation of the exact nature of soil conditions on site will require further, more rigorous sampling and analysis. It is not however anticipated that the clay content will cause specific issues relating to retention of trees given the impact of the development proposals, providing that consideration is given to this aspect in advance of and during the construction phase of the development. Provision will need to be made for the protection of soil structure in key areas during the construction phase and the repair of any damage post construction. Further details are provided throughout this report and final details can be secured via planning condition.
- 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 21st December, 2016 during cold and rainy 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 within 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 **Existing Tree Cover:** Eight individual trees, ten groups of trees and one woodland were recorded during our survey, the details of which can be found within Appendix 1 to this report and cross referenced with drawing P.804.16.01 *Tree Survey*.
- 5.2 **Direct Impact on Trees:** The development of the site as proposed will directly require the removal of W1 (in part), G1, G2, G3, G4, G5, G6, T3, T4, G6 (in part), G7 (in part), G8 (in part), T7 and G10. We also propose the removal of G9 on the basis of relatively poor condition, low suitability and limited long term retention value within the developed site. The trees would be better replaced elsewhere on site with trees more suitable to the development.
- 5.3 **Indirect Impact on Trees:** In the absence of suitable controls, the development may well have an indirect impact on a number of trees on and adjacent the site. Measures are therefore required during the construction phase, as described throughout this report, in order to safeguard retained trees for the long-term benefit of the landscape.
- 5.4 **Context in the Wider Landscape:** The wider landscape comprises a mixture of residential and commercial development with a moderate/relatively low level of tree cover located along streets and within areas of open space. As the development proposals only require the removal of a small number of low value trees, which can be replaced at the landscaping stage of the project with better quality planting, the direct impact of the development is considered likely to have a low/negligible impact on the extent of canopy cover within the wider landscape.
- 5.5 **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 and therefore there are no associated implications.
- 5.6 **Potential Mitigation for Development Impacts:** Mitigation of the impacts from the development of the site can be provided by the erection of tree protective fencing to an agreed specification in suitable locations in advance of the commencement of the development, to be retained intact throughout the entire course of the construction works with all construction procedures carried out carefully adjacent root protection areas of retained trees. Further details of the precautionary measures required to safeguard retained trees are outlined within this report and annotated on drawing P.804.16.02 *Tree Constraints & Draft Protection Drawing* appended to this report.

5.0 Survey Results & Impact Assessment (Continued)

- 5.7 **Potential for Shading & Nuisance:** Mature trees in urban and suburban areas add significant value and environmental benefits to properties; however, it is acknowledged that some land / property owners are averse to retaining trees close to buildings and areas of public use because of shading and other potential nuisances (leaf / fruit drop for example). Whilst efforts can be made to minimise the impact from shading by trees, it is almost inevitable that in some situations, whether in the short term from existing trees or in the long term from new trees, trees will cast shade on parts of properties, whether that be buildings, garden / open space or other areas of general use 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. The acceptability or otherwise of shade is a somewhat subjective issue driven largely by land or property owner / occupier perceptions and in the majority of cases is not necessarily something that should be determined by a local planning authority. We do not consider in this case that shade will be excessive, or that any other ordinary circumstance arising from the presence of trees, for example from leaf or fruit drop, will constitute an unacceptable nuisance.
- 5.8 **Boundary Screening:** The absence of trees along the boundaries of the site creates an opportunity for new planting where, if required from a landscape perspective, can be addressed by a suitable mixture of trees, shrubs and where appropriate hedging to soften the hard edges of the built environment, filter views in and out of the site and generally integrate the development into the surrounding landscape.
- 5.9 **Long Term Spatial Constraints:** The proposed layout has been designed to meet the standards set by the local planning authority and is such that, where applicable, there should generally be 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 occupiers will seek to take in respect of trees within or adjacent properties, the existing layout is considered acceptable from a design perspective and contributes to a balanced landscape.
- 5.10 **Existing Areas of Hard Standing:** There are a small number of existing areas of hard standing across the site, remnants from the site's previous use. Where there is a risk of damage to retained trees from the proposed removal of these surfaces, appropriate controls and safeguards will need to be implemented, for example the erection of suitable protective fencing in advance of the commencement of works and the careful breaking up and removal of surfaces using tools and equipment suitable for the task without causing unnecessary damage either to above or below ground parts of trees. Drawing P.804.16.02 *Tree Constraints & Draft Protection Drawing* appended to this report indicates areas where particular care will need to be exercised in order to suitably protect retained trees.
- 5.11 **Existing buildings/structures to be removed:** There are a small number of existing buildings/structures associated with the previous use of the site that will need to be demolished for the development proposals; however, such works should not have any adverse implications for retained trees as they are located suitably far away from the working area.

5.0 Survey Results & Impact Assessment (Continued)

- 5.12 **Proposed Areas of Hard Standing:** Areas where proposed hard surfaces encroach within or are immediately adjacent root protection areas of retained trees are marked on drawing P.804.16.02 *Tree Constraints & Draft Protection Drawing* appended to this report and our preliminary recommendations for protecting the tree are also provided on the drawing. The construction of the road within the root protection areas of T1 will require particular care in order to sufficiently safeguard the tree, making sure exposed roots are pruned cleanly back to the soil surface as promptly as possible in order to avoid prolonged exposure.
- 5.13 **Proposed Buildings Located Adjacent / Within Root Protection Areas:** There are no areas within the proposed development where proposed buildings encroach within, or are located immediately adjacent the Root Protection Areas of retained trees. There is therefore no need in this instance for special construction methodologies over and above the proposed arrangements for tree protection as outlined elsewhere in this report in order to safeguard trees from the impacts of building construction works.
- 5.14 **Proposed Drainage & Domestic Services:** At the planning application stage of the project, details of proposed drainage arrangements and provision of utility services are generally not known. During the installation process however, 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* such as to minimise the impact of works on retained trees.
- 5.15 **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. However, it is essential 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.
- 5.16 **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 between the construction interface and W1, G7 and G8; however, providing that these works are 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.
- 5.17 **Protection of Planting Areas:** It is often desirable to fence off areas that are to be newly planted to protect the soil structure; 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.

5.0 Survey Results & Impact Assessment (Continued)

- 5.18 **Requirement for an Arboricultural Method Statement:** Provided that protective fencing is erected in advance of the commencement of the development and retained intact throughout the construction phase, there should be no specific requirement for an arboricultural method statement in this case. The erection of protective fencing in accordance with a suitable tree protection plan should however be subject to a suitably worded condition attached to the planning consent notice.
- 5.19 **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 the built environment. 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 compete 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.804.16.02 *Tree Constraints & Draft 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. Provided that these measures are implemented in advance of, and retained intact throughout the course of the construction phase, there should be no specific requirement for a Tree Protection or Arboricultural Method Statement.

7.0 Summary of Impacts & Potential Mitigation Factors

7.1 Table 1 below 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.

Table 1: Summary of the impacts of the development on trees within / adjacent the site.

Issue	Affecting	Mitigation / Compensation / Special Procedures
Trees / hedges to be removed	W1 (in part), G1, G2, G3, G4, G5, G6, T3, T4, G6, G7 (in part), G8 (in part), T7 and G10	Appropriate compensation can be provided by way of new / replacement planting at the landscape stage of the project with better quality trees more suitable to the nature of the development.
Indirect physical impact on retained trees	Retained trees	Tree protection fencing should be erected to an agreed specification in advance of the commencement of the development.
Removal of existing hard standing	T2	Existing hard standing should be removed with care and no excavations permitted deeper than existing sub-base without adequate precautionary measures to prevent unnecessary damage to retained trees.
Construction of new buildings/structures	T2	Sections of foundations within and immediately adjacent root protection areas to be excavated sensitively, with machinery located outside of RPAs and roots pruned cleanly back to the soil surface when necessary. Works in these areas of the site to be subject to a tree protection method statement.
Provision of new hard surfaces	T1	Careful excavations will be required with an element of root pruning when necessary. Works in this area to be overseen by project arboriculturist.
Provision of drainage / services	UNKNOWN	Where existing services cannot be utilised, NJUG principles must be adopted to and adhered to.
Access Facilitation Pruning	W1, G7 and G8	All pruning works should be carried out to a minimum of the standards contained within BS3998: 2010 <i>Tree work – Recommendations</i> .
Protective Fencing	To be erected to an agreed specification in advance of the commencement of the development and retained in-situ throughout the course of the construction phase.	

7.2 On the basis of the above and the contents of this report, we do not consider a Method Statement for Tree Protection is necessary at this stage. The erection of tree protective fencing in advance of the commencement of the development, ensuring that it is retained in-situ throughout the construction phase, together with careful site works that are sympathetic to retained trees, there should be no particular adverse impact on trees from the proposed development.

8.0 Conclusions & Recommendations

- 8.1 The direct and indirect impacts on tree cover as a result of the development proposals are outlined within this report and mitigation proposed accordingly that seeks where possible to satisfy local and national planning guidance and policy. Where trees are proposed for removal, replacement planting should be undertaken as part of a landscape strategy for the site in line with local plan requirements and to integrate the development into the surrounding landscape. Arrangements for the safeguarding and physical protection of retained trees should be agreed and implemented in a manner consistent with current arboricultural management practices to minimise any potentially negative effects on long term tree cover.
- 8.2 We recommend that a landscape proposal be prepared for the site, to include where feasible 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 a finalised version of drawing P.804.16.02 *Tree Constraints & Draft Protection Drawing*.

9.0 References

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

Blackburn with Darwen Local 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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Landscape, Arboricultural & Ecological Solutions
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Appendix 1

Site:	P.804.16 Hollins Paper Mill, Darwen BB3 0RP	Surveyor:	Robert Armitage	 Landscape Trees Ecology
Client:	Gleeson Homes	Survey Date:	21st December, 2016	
Brief:	Tree Survey to BS5837:2012	Survey Conditions:	Cold and Wet	

T. No	Species	Ht (m)	Stem DBH (mm)	RPA Radius (m)	Branch Spread				Ht Crown Clearance (m)	Age Class	P Condition	Structural Condition & General Comments	Preliminary Recommendations (not to be actioned without a valid planning consent)	Est. (yrs)	Cat
					N	S	E	W							Grade
W1	Sycamore, Goat Willow and Hawthorn	14.5	700	8.40	4	4	4	4	0	Y/EM/M	F	Predominantly self-seeded, multi stemmed Sycamore trees of relatively low value. Some trees near adjacent stream with evident signs of <i>Phytophthora</i> . Some trees damaged by adjacent past building demolition. Scrappy sparse understorey of Goat Willow and Hawthorn, becomes self-seeded Goat Willow to the south. Low value.	Remove specified section to accommodate development proposals. Plant replacement trees elsewhere on site at the landscaping stage of the project.	30+	C2
G1	Hybrid Poplar	20	480 average	5.76	3.5	3.5	3.5	3.5	3	EM/M	F/P	Relatively poor elongated form typical of species. Limited long term retention value. Long, extensive, end heavy branches on several trees.	Remove and plant replacement trees elsewhere on site at the landscaping stage of the project.	20+	C2
G2	Monterey Cypress and Cypress	10	530#	6.36	3	3	3	3	1.5	Y/EM/M	F	Relatively low value trees previously maintained in hedge like feature.	Remove and plant replacement trees elsewhere on site at the landscaping stage of the project.	30+	C2
T1	Hornbeam	11	400#	4.80	3.5	3.5	3.5	3.5	3	M	F/G	Relatively balanced, open canopy. Appears in good vigour.	No works required at this stage.	30+	B2
T2	White Willow	19	480+ 400+ 430#	9.10	8	7	4	8	0	M	F	Three elongated stems from the base. Dense epicormic shoots at base. Some large elongated branches over hanging adjacent road.	No works required at this stage.	20	C2


NOTE: The Category Grade applied to trees surveyed is consistent with the recommendations within Table 1 of BS5837: 2012, however this does not necessarily correlate with the visual importance of a tree within the wider landscape, nor does it dictate which trees should be retained at the cost of quality development. Where trees are to be lost to accommodate a development, recommendations will be made such as to provide suitable mitigation and compensation, and to integrate the development into the wider landscape.

Key to Abbreviations & Headings

T. No.: Tree number (T = Tree, G – Group, W = Woodland, H = Hedge, Cpt. = Compartment)
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

Species: Common name used
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
Denotes estimated DBH where access was not possible

Ht: Approximate height of tree from ground level 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

Site:	P.804.16 Hollins Paper Mill, Darwen BB3 ORP	Surveyor:	Robert Armitage	 Landscape Trees Ecology
Client:	Gleeson Homes	Survey Date:	21st December, 2016	
Brief:	Tree Survey to BS5837:2012	Survey Conditions:	Cold and Wet	

T. No	Species	Ht (m)	Stem DBH (mm)	RPA Radius	Branch Spread				Ht Crown Clearance (m)	Age Class	P Condition	Structural Condition & General Comments	Preliminary Recommendations (not to be actioned without a valid planning consent)	Est. (yrs)	Cat
				(m)	N	S	E	W							Grade
G3	Birch, Sycamore, Hawthorn and Goat Willow	13	320# average	3.84	4	4	4	4	0	Y/EM	F	Self-seeded, dense trees growing on steep embankment located around tanks. Dense Ivy colonisation on most stems. Some Birch trees with complete colonisation of Ivy. Generally elongated stems. Relatively low retention value.	Remove specified sections in order to implement development proposals. Plant replacement trees elsewhere on site at the landscaping stage of the project.	30+	C2
G4	Birch and Goat Willow	10	180	2.16	3	3	3	3	0	Y	F	Separated group, similar species to G3 but younger trees. Generally elongated forms. Low retention value.	Remove and plant replacement trees elsewhere on site at the landscaping stage of the project.	30+	C2
G5	Goat Willow, Birch, Cherry and Sycamore	9	200	2.40	3	3	3	3	0	Y/EM	F	Predominantly multi-stemmed, self-seeded Goat Willow scrub of low importance and value. Occasional taller emerging Birch tree that appear in poor condition.	Remove and plant replacement trees elsewhere on site at the landscaping stage of the project.	30+	C2
G6	Goat Willow and Sycamore	11	250# average	3.00	2.5	2.5	2.5	2.5	4	Y/EM	P	Evident area of clearing now with dense Bramble growth. Elongated Goat Willows and Sycamore trees. Particularly low value. Regular deadwood and damaged stems.	Remove and plant replacement trees elsewhere on site at the landscaping stage of the project.	30+	C2
G7	Sycamore, Cherry, Elder, Rowan, Cypress and Hawthorn	16	550#	6.60	4.5	4.5	4.5	4.5	2	Y/EM/M	F	Edge of woodland group with clearing for allotments. Larger trees retained. Several larger Sycamore trees retained along roadside with smaller Elder, Rowan and occasional Hawthorn in understorey.	Remove as necessary to accommodate development proposals. Retain larger trees where possible. Trees removed to be replaced at the landscaping stage of the project elsewhere on site.	30+	B2/C2


NOTE: The Category Grade applied to trees surveyed is consistent with the recommendations within Table 1 of BS5837: 2012, however this does not necessarily correlate with the visual importance of a tree within the wider landscape, nor does it dictate which trees should be retained at the cost of quality development. Where trees are to be lost to accommodate a development, recommendations will be made such as to provide suitable mitigation and compensation, and to integrate the development into the wider landscape.

Key to Abbreviations & Headings

T. No.: Tree number (T = Tree, G – Group, W = Woodland, H = Hedge, Cpt. = Compartment)
Stem DBH (Diameter at Breast Height): Measured at 1.5m above ground level*
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Structural Condition: Description of any observed defects
Cat. Grade: Tree quality assessment in accordance with BS5837: 2012

Species: Common name used
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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
Denotes estimated DBH where access was not possible

Ht: Approximate height of tree from ground level in metres
Branch Spread: Extent of canopy spread in metres to each of the four cardinal points
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Est. (yrs): Estimated remaining contribution in years

Site:	P.804.16 Hollins Paper Mill, Darwen BB3 ORP	Surveyor:	Robert Armitage	 Landscape Trees Ecology
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					N	S	E	W							Grade
T3	Oak	14.5	740	8.88	5	5	5	5	0	M	F	Main leader on western side of canopy has snapped out and torn down the main stem; probable failure at bark included union. Remaining canopy appears in good vigour and health. Some small diameter deadwood. Some retention value as an individual; however, large wound probable point of vulnerability in the future.	Inspect bi-annually for deteriorations in structural integrity and/or health.	20+	B2/C2
T4	Sycamore	13.5	400+ 360+ 280	7.28	5	4.5	4	2	4	EM/M	F/P	Large acutely angled bark inclusions from base. Small diameter deadwood. Will likely be impacted by demolition of adjacent building. Hard standing immediately adjacent stem. Low retention value as an individual.	Remove and plant replacement tree elsewhere on site at the landscaping stage of the project.	20+	C2
G8	Hawthorn, Elder and Goat Willow	6	320#	3.84	3	3	3	3	0	Y/EM	F	Self-seeded, low value scrub group. Predominantly multi stemmed Goat Willow.	Remove as necessary for the development.	30+	C2
G9	Sycamore and Goat Willow	8	500#	6.00	4	4	4	4	1	EM/M	F/P	Self-seeded Goat Willow and Sycamore scrub developing particularly poor form. Sycamore with multiple acutely angled bark inclusions from the base and some indications of reduced vigour in canopy.	Remove and plant replacement trees elsewhere on site at the landscaping stage of the project.	20	C2


NOTE: The Category Grade applied to trees surveyed is consistent with the recommendations within Table 1 of BS5837: 2012, however this does not necessarily correlate with the visual importance of a tree within the wider landscape, nor does it dictate which trees should be retained at the cost of quality development. Where trees are to be lost to accommodate a development, recommendations will be made such as to provide suitable mitigation and compensation, and to integrate the development into the wider landscape.

Key to Abbreviations & Headings

T. No.: Tree number (T = Tree, G – Group, W = Woodland, H = Hedge, Cpt. = Compartment)
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

Species: Common name used
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
Denotes estimated DBH where access was not possible

Ht: Approximate height of tree from ground level 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

Site:	P.804.16 Hollins Paper Mill, Darwen BB3 0RP	Surveyor:	Robert Armitage	 Landscape Trees Ecology
Client:	Gleeson Homes	Survey Date:	21st December, 2016	
Brief:	Tree Survey to BS5837:2012	Survey Conditions:	Cold and Wet	

T. No	Species	Ht (m)	Stem DBH (mm)	RPA Radius (m)	Branch Spread				Ht Crown Clearance (m)	Age Class	P Condition	Structural Condition & General Comments	Preliminary Recommendations (not to be actioned without a valid planning consent)	Est. (yrs)	Cat
					N	S	E	W							Grade
T5	Oak	12	510	6.12	4.5	4.5	4.5	4.5	4	EM	F	Canopy appears in normal vigour. Relatively good form. Located on steep embankment above hard standing. Should be located far enough away from hard standing to not be impacted by its removal. Low branches previously pruned beginning to have minor decay on.	No works required at this stage.	40+	B2/C2
T6	Oak	13	330+ 280#	5.19	4	4	4	4	5	Y/EM	F	Balanced canopy emerging from young self-seeded Willow scrub.	No works required at this stage.	40+	B2/C2
T7	Sycamore	14.5	600#	7.20	5	5	5	5	2	M	F/P	Bark wounding and some stem hollowing near base.	Remove and replace elsewhere on site to accommodate development proposals.	20	C2
T8	Sycamore	16	500 +450 +400#		6.5	6.5	6.5	6.5	2	M	F	Should be suitably remote from site to not be impacted by proposals. Three stems from base. Canopy appears in good vigour.	No works required at this stage.	20+	B2
G10	Cherry, Birch and Sycamore	11	240#	2.88	3.5	3.5	3.5	3.5	0	Y/EM	F	Predominantly relatively young Sycamore, occasional Birch and Cherry. Prominent feature from road.	Remove and replace elsewhere on site to accommodate development proposals.	30+	B2/C2

NOTE: The Category Grade applied to trees surveyed is consistent with the recommendations within Table 1 of BS5837: 2012, however this does not necessarily correlate with the visual importance of a tree within the wider landscape, nor does it dictate which trees should be retained at the cost of quality development. Where trees are to be lost to accommodate a development, recommendations will be made such as to provide suitable mitigation and compensation, and to integrate the development into the wider landscape.

Key to Abbreviations & Headings

T. No.: Tree number (T = Tree, G = Group, W = Woodland, H = Hedge, Cpt. = Compartment)
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Species: Common name used
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
Denotes estimated DBH where access was not possible

Ht: Approximate height of tree from ground level 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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Landscape, Arboricultural & Ecological Solutions
for the Built Environment

Appendix 2



ALL COORDINATES RELATED TO LOCAL GRID LOCATED TO OS NG BY BEST FIT TO DETAIL. EXTRACTED FROM OS DIGITAL DATA.

REV	DESCRIPTION	DATE
A	General updates	31/07/17

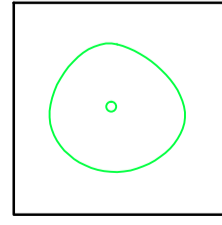
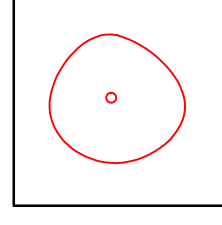
CLIENT:
Gleeson Homes

PROJECT:
Hollins Paper Mill, Darwen

DRAWING TITLE:
Tree Survey

SCALE: 1:500 @A0	DRAWN BY: CP	DRAWING No.:	REV:
DATE: 12/12/2016	CHECKED BY: RA	P.804.16.01	A

KEY

-  Existing tree to be retained
-  Existing tree to be removed

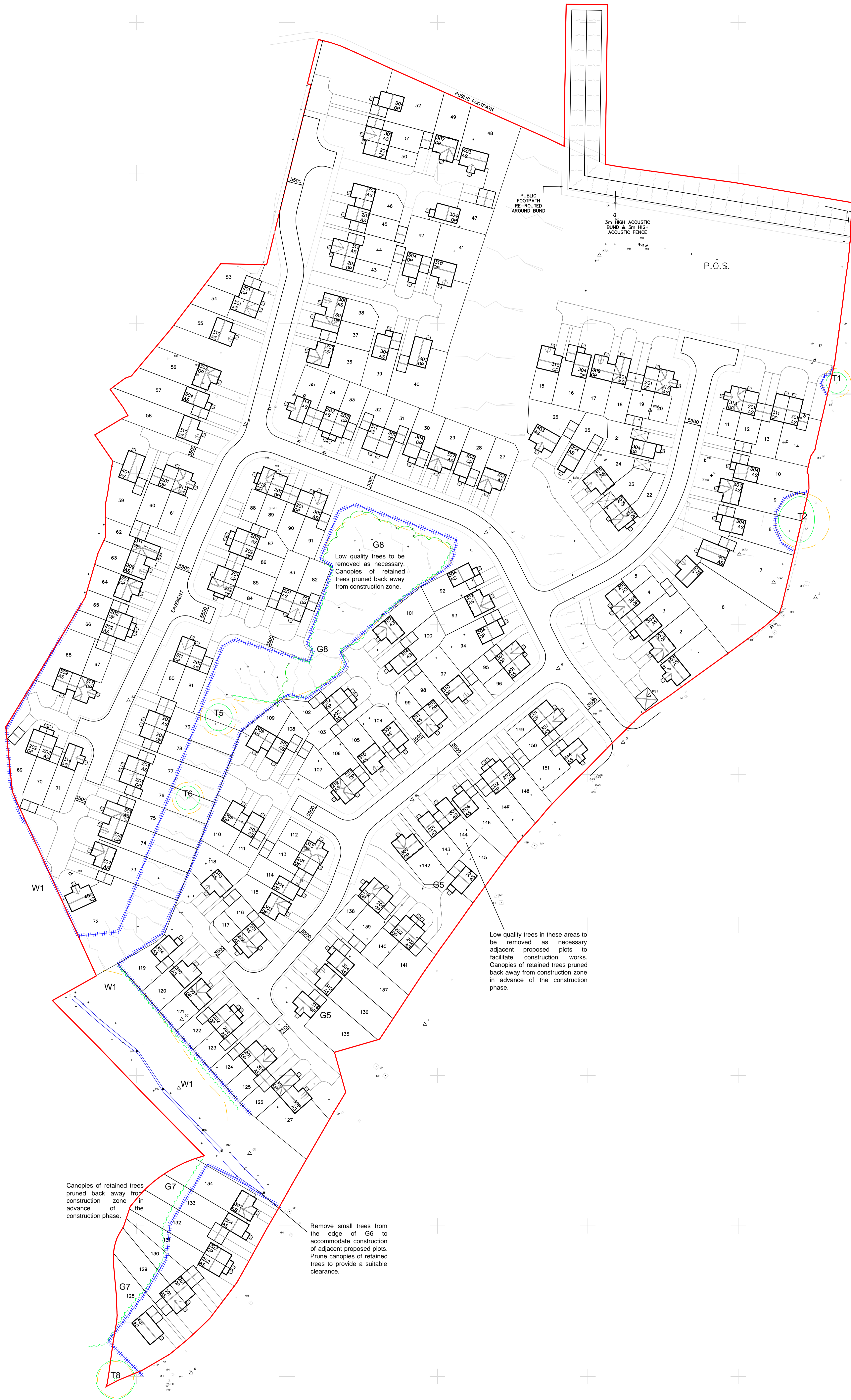
DO NOT SCALE

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ALL COORDINATES RELATED TO LOCAL GRID LOCATED TO OS NG BY BEST FIT TO DETAIL. EXTRACTED FROM OS DIGITAL DATA.

REV	DESCRIPTION	DATE
A	General updates	31/07/17

CLIENT:
Gleeson Homes

PROJECT:
Hollins Paper Mill, Darwen

DRAWING TITLE:
Tree Constraints & Draft Protection Drawing

SCALE: 1:500 @A0
DATE: 12/12/2016

DRAWN BY: CP
CHECKED BY: RA

DRAWING No: P.804.16.02

REV: A

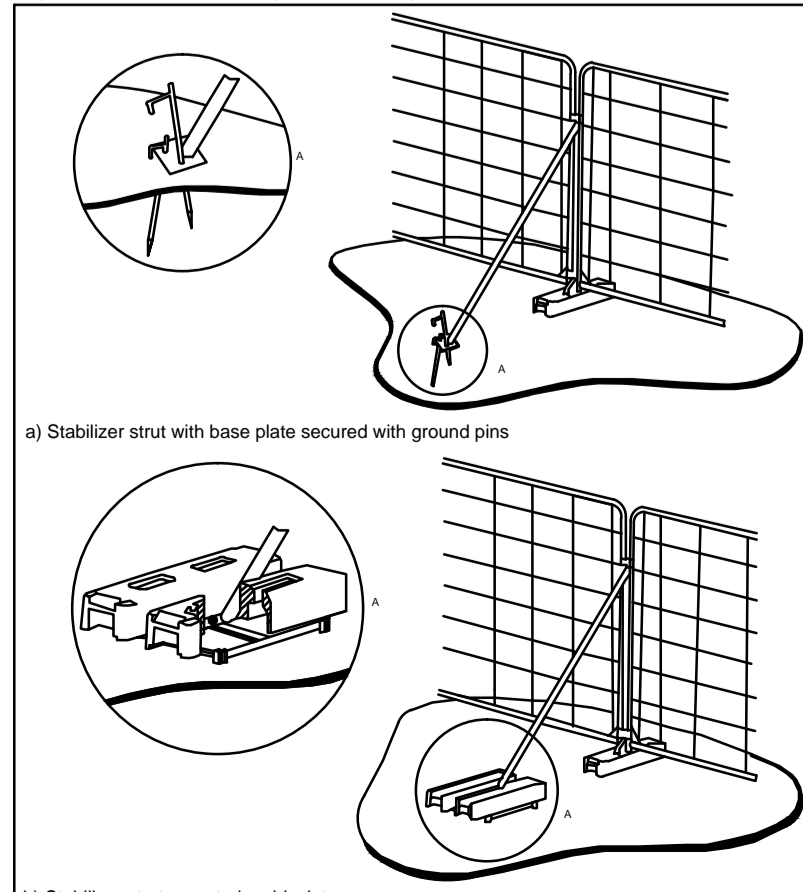
KEY

- Existing tree to be retained
- Proposed location of protective fencing - see inset for type / construction detail
- Extent of Root Protection Area for retained trees in accordance with BS5837: 2012 Trees in relation to design, demolition and construction - Recommendations
- Indicative pruning line of retained tree canopies.

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8/0037-2012
Figure 3 Examples of above-ground stabilizing systems



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