



Pre-Development Site Survey

Arboricultural Report

BS5837:2012 Trees in Relation to Design,
Demolition and Construction

Regarding: Nant Silyn,
Pont Wen, Whitegate,
Wrexham
LL13 8SQ

Ref: NEB 19004 AIA Ver 1

Executive Summary

- S1** TGM Arboricultural Consultancy have been instructed by Mr. Gareth Evans, Principal Architectural Assistant of the Housing and Economy Department at Wrexham County Borough Council, to undertake a tree survey in relation to construction of residential dwellings at Nant Silyn, Pont Wen, Whitegate, Wrexham LL13 8SQ. The listed address, formerly a residential care home, is now a clear site following demolition of all previous structures. Mature and semi mature trees are established around the site periphery.
- S2** A site visit was undertaken on 4th February 2019. In total 16 individual trees and 8 tree groups were recorded, predominantly Birch and Cypress species. The trees are generally of a good condition, capable of making a lasting contribution to the landscape however, under current design proposals it would be necessary to remove 7 individual trees and 2 tree groups where above and below ground conflicts exist. 1 tree has been recommended for removal due to its poor form and limitations to its estimated remaining contribution in years.
- S3** Specialist construction methods such as hand digging under supervision and the use of ground protection mats would be necessary where development of a structure, footpath and soft landscaping impact on root protection areas for G2, G3 and T10. Such recommendations will be fully specified in the arboricultural method statement (AMS) following planning consent. In addition, the AMS will include a mitigation and enhancement planting specification.
- S4** No trees on site are subject to a Tree Preservation Order, nor does the site fall within a Conservation Area. This information was provided by Wrexham County Borough Council.
- S5** It must be noted that trees provide essential habitat for birds and bats and as such any proposed works must be carried out in full consideration of the law. Birds, bats and their habitats are afforded protection within the Wildlife and Countryside Act 1981 and The Conservation of Habitats and Species Regulations 2010 (as amended).

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1.0 Introduction

- 1.0.1 This report details the findings of a tree survey at the listed address (the site) and has been prepared in compliance with BS5837: 2012 'Trees in Relation to Design, Demolition and Construction – Recommendations'.

1.1 *Brief/Instruction*

- 1.1.1 TGM Arboricultural Consultancy has been instructed by Mr. Gareth Evans, Principal Architectural Assistant of the Housing and Economy Department at Wrexham County Borough Council, to undertake a survey of all trees on the site in order to facilitate development.
- 1.1.2 The site, formerly a residential care home, is currently a vacant plot with trees established around the border. The care home buildings have been demolished, with guidance regarding the necessary tree protection provided by the Wrexham County Borough Council (WCBC) Arboricultural Officer. It is understood that this guidance was adhered to throughout the demolition process.
- 1.1.3 As such this report is concerned solely with the proposed development, ensuring appropriate consideration and protection of retained trees. The arboricultural method statement will include suitable mitigation and enhancement planting for any suggested tree removals to ensure a continuation and improvement of the tree stock, both in terms of number and diversity.
- 1.1.4 The report will be issued in two parts; part 1, the Arboricultural Impact Assessment, will accompany the planning application, and on approval of a design plan and once planning consent has been granted part 2, the Arboricultural Method Statement, will be issued.

1.2 *Qualifications and experience of surveyor*

- 1.2.1 The author holds the Higher National Certificate in Arboriculture, and LANTRA Professional Tree Inspector qualifications, and has worked in the arboricultural industry for 17 years as a Local Authority Tree Officer, Arboricultural Consultant and Lecturer in Arboriculture.

1.3 Documents Provided in Advance

1.3.1 The following documents were provided prior to the tree survey:

- Topographical survey, Nant Silyn OPH Wrexham
- Proposed design, 1044 Site Plan Nant Silyn Rev. F

1.4 Relevant background information & scope of this report

1.4.1 This report has been commissioned to support a planning application for development of residential dwellings on site including a block of flats, 6 houses and 1 bungalow.

1.4.2 The survey is intended to appraise the quality of the tree stock and identify which trees, if any, should be removed and how retained trees should be protected in order to make a positive landscape contribution to the site in future years.

1.4.3 The survey was undertaken independently of any specific proposals for development on the site in order to provide an objective assessment of their quality. This report then considers the trees within the context of the proposed development and, following consultation with WCBC, makes recommendations for the successful retention of trees where ever possible in harmony with the new development.

1.5 Caveats and Limitations

1.5.1 This report relates specifically to the condition of the trees upon the day that the inspection was carried out.

1.5.2 Inspection was carried out from ground level, with use of binoculars where necessary. No climbing inspection was conducted. Where access to parts of the site or trees on adjacent land was not possible, estimates have been made regarding tree dimensions. This will be made clear in the tree and group schedules where relevant.

1.5.3 No detailed analysis of soil samples was undertaken. Root areas and possible underground conflict interaction were only investigated insofar as a surface visual inspection.

1.5.4 All legal documentation and information given to and used for the purposes of this report by TGM Arboricultural Consultancy is presumed accurate.

- 1.5.5 The report is valid only for typical weather conditions. Healthy trees, or parts of healthy trees, may fail in unusually high or unpredictable winds or violent storms and as such the consequences of such weather phenomena are unforeseeable. It follows that TGM Arboricultural Consultancy cannot be held liable for any such failures.
- 1.5.6 Where trees fall under the protection of the Local Council, permission may be required before works begin. It should be noted that the Local Council may not share the views presented in this report.
- 1.5.7 All rights in this report are reserved. No part of it may be reproduced or transmitted, in any form or by any means; electronic, mechanical, photocopying, recording or otherwise, or stored in any retrieval system of any nature, without the written permission of TGM Arboricultural Consultancy. Its content and format are for the exclusive use of the addressee in dealing with this claim / site / situation. It may not be sold, lent, hired out or divulged to any third party not directly involved in this claim / site / situation without written consent from TGM Arboricultural Consultancy.

2.0 Data collection

2.0.1 Tree survey data included:

- Tree reference number
- Species listed by common name
- Height in metres to the nearest 0.5m
- Stem diameter in mm, measured in accordance with Annex C of BS5837:2012
- Branch spread in metres at 4 cardinal points
- Height above in metres ground level of:
 - First significant branch and direction of growth
 - Lowest part of the canopy
- Life stage (newly planted / young / semi-mature / mature / over-mature / veteran)
- General observations
- Preliminary management recommendations
- Estimated remaining contribution in years (<10 / 10+ / 20+ / 40+)
- Category grading (U, A, B or C)

2.0.2 The trees were surveyed using current visual tree assessment (VTA) methods and where necessary sounded with a rubber-ended mallet to ascertain the need to investigate further defects or issues regarding structural stability/longevity.

2.0.3 The Visual Tree Assessment methodology (VTA) as devised by Prof. Dr. Claus Mattheck is an internationally recognised industry standard for tree inspection.

2.0.4 These suggestions are the author's professional recommendations and in no way hold any legal or official capacity.

N	A new or recently planted tree established for no more than 5 years in its present location.
Y	A young tree planted/established for no more than 10 years in its present location.
SM	A semi-mature tree which is well established but with some growth to make before reaching its full potential size.
M	A mature tree at or near its potential maximum size which is still growing vigorously.
OM	An over mature tree in decline.
V	A veteran tree; in the advanced stage of its life and displaying numerous characteristics such as unusually large girth, cavities, water pockets, large quantities of dead wood etc.

Table 1. The classification system used to describe each trees age class. The age class legend can be used in conjunction with individual tree data found in the sectional appendix of this paper. Please note this is a general age class classification and users should be aware that this information is species specific.

2.1 Site Visit

- 2.1.1 A site visit was undertaken by the author on Monday 4th February 2019. The weather conditions during the site visit were bright and sunny posing no constraint to assessment.
- 2.1.2 Restrictions to assessment do exist in the form of dense ivy growth and competing vegetation, and restricted access from fencing. Where possible fence panels were moved to facilitate access and as such full inspection. No further action to address this constraint to survey is thought necessary at this time.

2.2 Site description

- 2.2.1 The listed address consists of a vacant plot formerly the site of a residential care home. The care home has recently been demolished and the site now comprises trees around the site periphery and a hardcore base throughout the site interior.
- 2.2.2 The site is currently fenced with Heras fencing to prevent access however the historic boundary fence is also still in place.
- 2.2.3 The site borders the River Gwenfro to the north, traversing the landscape from the south west to north east, open space and residential dwellings to the east and south, and open space to the west. A public footpath runs along the entirety of the south east boundary.
- 2.2.4 The site is accessed via the public highway, and cul-de-sac, Pont Wen to the south east.
- 2.2.5 An area of Japanese Knotweed was noted along the river bank between groups 4 and 5 on the tree constraints plan. The client is aware of its presence and significance. Additionally, a BT wire and pole are situated at the north west corner of the site at the border with the river bank and terminating at T10.
- 2.2.6 The topography of the site is flat however land to the north, an area of open space, gradually slopes upwards to the north west and residential dwellings are situated on top of the slope, effectively looking down over the site.
- 2.2.7 The site does not appear overly exposed or subject to any prevailing wind.
- 2.2.8 The trees exist as formal tree planting, screening boundary hedges and riverside specimens, and form an effective screen to the site from the north, east and west. The formal tree planting

and boundary hedges/ screens are predominantly situated in undulating grassed beds at the east and west of the site. The majority of tree groups are situated along the river bank.

2.2.9 There are no Tree Preservation Orders in effect on site, nor does it fall within a Conservation Area.

2.2.10 All trees surveyed were classified in accordance with Table 2; the tree classification system set out in BS 5837: 2012 Trees in Relation to Design, Demolition and Construction.

2.2.11 The trees were plotted utilising the topographical survey provided however, some trees included in the survey are not present on site and several other trees have been incorporated into groups as appropriate for survey.

Category & definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention				
Category U Trees in such a condition that they cannot realistically be retained as living trees in the context of current land use for >10 yrs	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees - Trees that are dead or showing signs of significant, immediate and irreversible decline - Trees infected with significant pathogens affecting health or safety, or very low quality trees suppressing trees of better quality <i>NOTE: these trees can have existing or potential conservation value making retention desirable</i>			DARK RED
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values inc conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of >40 yrs	Particularly good examples of their species, esp if rare or unusual. Those that are essential components of groups or formal or semi-formal arboricultural features	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features.	Trees, groups or woodlands of significant conservation, historical, commemorative or other value	LIGHT GREEN
Category B Trees of moderate quality with an estimated remaining life expectancy of >20 yrs	Trees that might be included in category A but are downgraded because of impaired condition such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit category A designation.	Trees present in numbers, usually growing as groups or woodlands such that they attract a higher collective rating than they might as individuals. Trees occurring as collectives but situated so as to make little visual contribution to the area.	Trees with material conservation or other cultural value	MID BLUE
Category C Trees of low quality with an estimated remaining life expectancy of >10 years, or young trees with a stem diameter <150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary landscape benefits.	Trees with no material conservation or other cultural value.	GREY

Table 2 - Tree classification, adapted from table 1 of BS 5837:2012

3.0 Arboricultural Impact Assessment

3.1 General Statement

- 3.1.1 In total 16 individual trees and 8 tree groups were surveyed. All trees and tree groups are situated within the site boundary and have been identified on the accompanying Tree Constraints Plan.
- 3.1.2 The individual trees consist of formal planting. The tree groups consist of screening trees/ hedges, coppice trees and a lapsed management riverside hedgerow.
- 3.1.3 G6 has been recorded for information purposes only, consisting of trees and shrubs, and is an area under exclusion due to the presence of badgers as identified by the WCBC Ecological Officer.
- 3.1.4 A full schedule for individual trees and tree groups can be found in Appendix 1 however, relevant details and significant factors are discussed below.

3.2 Species and Age Distribution

- 3.2.1 The dominant tree species on site are Birch (*Betula pubescens* & *Betula pendula*), Lawson cypress (*Chamaecyparis lawsoniana*) and Ash (*Fraxinus excelsior*).
- 3.2.2 Sycamore (*Acer pseudoplatanus*) Cherry species (*Prunus spp.*) and Elder (*Sambucus nigra*) are also present on site as individuals and groups.
- 3.2.3 The majority of trees have been classified as semi mature and as such are capable of making a significant contribution to the landscape for many years to come. It should be noted that an age category relates to a period of years and as such even mature specimens can make a lasting contribution that may span decades, dependant on the individual species.

3.3 Tree Descriptions

- 3.3.1 T1 and T2 are Ash trees planted at the site boundary. T1 has an excellent form however T2 has twin stems and multiple upswept primary limbs with tight unions and included bark. This tree is discussed further in section 3.4.
- 3.3.2 T3– T8 are Birch species planted in close proximity to each other and have developed something of a group dynamic with some possessing asymmetrical crowns. They have however been deemed appropriate for survey as individuals and for the most could be retained as such in the future. This particularly relates to T6 and T8 which are the dominant trees in this part of the site.
- 3.3.3 T9 is an individual cypress situated at the end of Group 2 that has developed a fairly symmetrical crown and is a dominant site feature.
- 3.3.4 T1 – T9 are all situated within an undulating grassed area above the level of the site interior.
- 3.3.5 T10 is a Cherry tree situated in a mature and dense ivy feature that extends along the site boundary. Assessment of the tree was severely restricted by the ivy however there are no visible signs of notable defects. Given the significant ecological benefit of a mature ivy feature such as this its retention is strongly recommended.
- 3.3.6 T11-T16 are all Birch species similar in nature to T1 – T8 with T12 being the dominant tree in this case.
- 3.3.7 Groups 1 and 7 are cypress screen/ hedge features. They were planted as linear features at approximately 1m spacings and have been subject to some management to create a screening at the site boundary. Some of the trees in G1 have previously been reduced in height. G7 appears to have been reduced in height for its entirety. Assessment of Groups 1 and 7 was severely restricted due to access as they are for the most situated between the existing boundary fence and internal Heras fencing.
- 3.3.8 G2 is a small group of lapsed coppice ash trees situated on the river bank. G3 is a small group of cherry trees also situated on the river bank. Both groups have dense ivy growth on their main stems and throughout their crowns. This along, with their bank side

location and the adjacent scrub, posed a restriction to assessment. The parts of the tree that are visible give no indication of defects or disease.

- 3.3.9 G4 is a small group of lapsed coppice elder situated on the river bank. Assessment was somewhat restricted by access and dense ivy.
- 3.3.10 G5 is a small section of sycamore and ash that has been managed as a hedgerow historically.
- 3.3.11 Groups 2-5 have value as waterside trees, in terms of ecological value and aiding bank stability, and also provide an effective screen to the site.
- 3.3.12 G6 as already stated has been recorded for information purposes only and access to the group was restricted. It consists of elder and cotoneaster shrubs and is an area under exclusion due to the presence of badgers as identified by the WCBC Ecological Officer.
- 3.3.13 G8 consists of 2 lapsed coppice elder at the site boundary.

3.4 *Structural Condition*

- 3.4.1 Structural condition relates to the form of the trees, in particular specimens that have developed as multi stemmed from the base or may have developed poor branch structure that renders them susceptible to failure in the future.
- 3.4.2 Most of the tree groups have been subject to coppice management (G2, G3, G4, G5, G8). Coppicing is the removal of all growth to ground level to stimulate multi stemmed re-growth. The re-growth is then typically removed on a cyclical basis.
- 3.4.3 It must be noted that this management practice must be maintained to prevent re-growth from exceeding its optimum size and as such becoming susceptible to failure. This is particularly relevant for G2 given the size of its re-growth.
- 3.4.4 T2 has a twin stem, with a tight union and included bark, and both stems further divide and are of poor form with tight unions. Included bark is a defect that can result in failure as the structural strength of such a union is compromised. (LONSDALE 1999)

3.5 *Physiological Condition*

- 3.5.1 Physiological condition relates to the health of the trees surveyed.

- 3.5.2 No significant defects were noted for individual trees and most of the tree groups however stem wounds and associated decay were noted on the 2 Birch trees and 1 cypress situated in G1.
- 3.5.3 In addition, assessment of the Birch trees in G1 was restricted by the adjacent trees however it was noted that the Birch are being outcompeted by the Cypress.

3.6 Development Proposal Summary

- 3.6.1 The proposal is to develop a number of residential dwellings, serviced by an access driveway leading to parking bays, with communal and individual garden areas on site. It must be noted that plot numbers have not been provided on the design plan however have been employed here to describe the impact of the 8 individual structures proposed.
- 3.6.2 The dwellings have been set out in a linear fashion, across the site interior from south west to north east, with garden areas being created to the north of the site and along the boundary with the adjacent river. Plot 1 is a block of flats, plots 2-7 are 3 sets of twin terraced houses and plot 8 is a bungalow.
- 3.6.3 The proposed main access driveway will utilise the former vehicular access point via Pont Wen. Parking bays and soft landscaping will as such dominate the south of the site.

3.7 Tree Categorisation & Constraints

- 3.7.1 The tree constraints plan that accompanies this report shows the above ground constraints (branch spread) and the below ground constraints, i.e. the anticipated extent of tree roots based on a calculation using the stem diameter and consideration of any site conditions which may affect root growth.
- 3.7.2 Shading from trees has not been indicated as it is not deemed significant to the site development given the site orientation and location of trees proposed for retention.
- 3.7.3 Root protection areas are usually shown as a circle centred on the base of the stem unless site conditions such as nearby structures indicate that the shape of the rooting area deviates from this format.

3.7.4 Root protection areas have been modified for Groups 2-5 inclusive given their location and proximity to the river.

3.7.5 The trees surveyed for this report have been categorised as follows:

BS Category	Tree Reference	Number of Features
A (1,2,3)	T1	1
B (1,2,3)	T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T14, T15, T16, G1, G2, G3, G7	17
C (1,2,3)	T13*, G4, G5, G6, G8	5
U	T2	1

3.8 Below ground constraints

3.8.1 Although every effort has been made to retain onsite trees and avoid conflict with root systems there are some below ground constraints that are discussed here.

3.8.2 The existing grassed area containing T1 – T8 and G1 is for the most out of influence of the development however, some of the existing grassed section is to be removed and a retaining wall is proposed to address the drop in levels.

3.8.3 The majority of trees and tree groups situated along the river are either outside of the area proposed for development or only suffer a minor incursion into the RPA permitting development to take place with specialist construction methods, specifically hand digging under arboricultural supervision and the use of ground protection mats. This relates specifically to G2, G3 and T10.

3.8.4 The maximum incursion into the RPA of G2 for the building is 0.6m and for the footpath 1.2m (Total incursion 1.8m). The incursion into the RPA for G3 and T10 relates to soft landscaping only.

3.8.5 T9 is also impacted upon by the proposed block of flats and is deemed unsuitable for retention due to above and below ground conflicts. Under the current design plan the building would impact on the RPA by 0.8m and for the footpath by 1.2m (total incursion 2.0m). As a constraint on its own this would merit consideration for retention with the

specialist construction methods suggested for G2 however, the crown spread for T9 is in close proximity to the structure, at a distance of 1.5m. Given its species (Cypress) and proximity to rooms proposed as living space in the block of flats it is likely to present a constant nuisance.

- 3.8.6 Groups 4-6 are not impacted upon at all under the current design plan and have been recommended for retention.
- 3.8.7 Groups 7 and 8, and T11 – T16, despite their categorisation predominantly as B category trees, are in conflict with current proposals for development. In addition to the establishment of a bungalow and gardens it is understood that there are requirements to establish a new drain through this part of the site and as such their removal will be required.
- 3.8.8 Mitigation and enhancement planting will be proposed in the arboricultural method statement in response to suggested and approved tree removals.

3.9 *Above ground constraints*

- 3.9.1 As discussed in section 3.8.5 the crown spread for T9 is in close proximity to the structure, at a distance of 1.5m. Given its species (Cypress) and proximity to rooms proposed as living space in the block of flats it is likely to present a constant nuisance.

3.10 *Trees to be retained/ removed*

- 3.10.1 Of the 16 trees and 8 tree groups surveyed 8 trees and 2 tree group are proposed for removal.
- 3.10.2 T2 (Ash) has been recommended for removal given its poor form and susceptibility to structural failure within 10 years. As such it has been classified as category U.
- 3.10.3 T11 - T16 inclusive (Birch), and Groups 7 and 8, have been recommended for removal given their conflict with the adjacent structure and proposed drain.
- 3.10.4 The remainder of the trees and groups are to be retained although it should be noted that there are future management implications for these trees as discussed in section 4 of this report.

3.10.5 All trees to be removed or retained are listed below:

BS Category	Trees to be Removed	Trees to be Retained
A (1,2,3)	n/a	T1
B (1,2,3)	T9, T11, T12, T13, T14, T15, T16, G7,	T3, T4, T5, T6, T7, T8, T10, G1, G2, G3, G4, G5, G6,
C (1,2,3)	G8	n/a
U	T2	n/a

4.0 Long Term Management

- 4.0.1 In keeping with the relevant British Standard any tree works proposed following survey are preliminary works only and as such usually relate solely to trees that require removal or remedial action prior to development due to poor condition, and works deemed necessary to enable development such as crown lifting to facilitate access, and as such do not incorporate long term management.
- 4.0.2 There are however several trees proposed for retention on site with long term management implications and as such guidance has been provided below.

4.1 *Hedge or Screen Features*

- 4.1.1 G1 (Cypress hedge) has been planted to create a boundary screen although its management has been sporadic. A few of the trees have been reduced in height and subject to some pruning of the lateral branches however, many of the trees have not. Cypress trees planted with this kind of feature in mind require cyclical pruning to ensure the development of an effective screen.
- 4.1.2 It is recommended that all trees within this group are reduced in height to an appropriate size and that their lateral branches are pruned back appropriately to encourage dense re-growth where deemed achievable.
- 4.1.3 It is understood that post development the trees will fall under the responsibility of WCBC and as such their exact management specification should be in keeping with the council's tree strategy.
- 4.1.4 It must be noted that there are 2 Birch trees within G1 that could not be fully assessed due to the visual constraints posed by the Cypress as they are being almost completely outcompeted. As such these trees should be subject to re-inspection later in the spring or early summer to assess the development of live growth after bud burst.

4.2 *Coppice and Lapsed Hedgerow*

- 4.2.1 G2 – G5 consist of lapsed coppice specimens, and a lapsed management hedgerow, and as mentioned in section 3.3.11 their retention is preferable. However, it must be noted that coppice or hedge management are practices that must be maintained to prevent re-growth from exceeding its optimum size and becoming susceptible to failure. As such there will be future, cyclical works required for these trees.

4.3 *Ivy Management*

- 4.3.1 Ivy is present throughout the site. Ivy is a valuable plant that provides habitat and food sources for a wide variety of fauna, and in its mature form should be retained wherever possible. As mentioned in section 3.3.5 there is a dense, mature ivy feature, apparently established along the boundary fence, terminating at T10 that should be retained in its current form at all costs.
- 4.3.2 Ivy is not a parasitic plant and for the most lives in harmony with trees, growing along their stems and branches, however, where ivy becomes established it poses a constraint to tree inspection and can mask defects.
- 4.3.3 In severe cases and if left unmanaged ivy can grow over the entire tree, preventing it from developing new shoots and buds, and as such disrupting its biological processes. This can ultimately result in tree death.
- 4.3.4 The multi stemmed Ash that form G2, and Cherry in G3, have ivy on their main stems restricting assessment. While its presence is not a threat to the trees at this time it is preventing full assessment of single and multi-stemmed specimens. As such it is recommended that at the end of the current nesting season (September 2019) the ivy is severed at the stem bases of the trees and allowed to die back. It can then be removed without damaging the trees to facilitate full assessment and ascertain if any further works are required.
- 4.3.5 Following re-inspection it is recommended that the ivy is allowed to re-generate, as its eradication would be unrealistic, and that it is managed in a similar way on a cyclical basis.

Appendix 1.1 - Tree Survey Data

Table 1 - Tree Survey Data

Date: 4th February 2019

Site: Nant Silyn, Pont Wen, Whitegate, Wrexham LL13 8SQ

Surveyor: N Brewin

Key For Tree Survey Data

Tree ID	Numerical value assigned to the tree or tree group
Common & Botanical Name	Common and botanical name recorded
Height (m)	Height to the top of the central canopy
Stem Dia. (mm)	Depth of main stem measured at 1.5m
Crown Spread (m)	Measure of the spread of the canopy across the four cardinal compass points
Height & Orientation of First Significant Branch	Height and orientation on the main stem of the first significant branch
Avg. Canopy Height (m)	The average height of the canopy of the tree
Life Stage	Classified as young, semi mature, mature, over mature or veteran (See Table 1 section 2.0.4 for further classification)
General Observations	Significant structural and physiological defects noted
Preliminary Recommendations	Works recommendations to remedy or further investigate significant defects, or to facilitate development or site access.
Estimated Remaining Contribution (Years)	Taken from guidelines provided within BS 5837 (2012) Trees in Relation to Design, Demolition and Construction
BS5837: 2012 Category	Taken from guidelines provided within BS 5837 (2012) Trees in Relation to Design, Demolition and Construction
RPA Radius (m)	Root protection area - radius of RPA
RPA m²	Root protection area

Tree ID	Common Name	Botanical Name	Height (m)	STEM [HIDE]						Calc. / Actual Stem Dia. (mm)	Spread (m)				Height (m) & Orientation of First Significant Branch	Avg. Canopy Height (m)	Life Stage	General Observations	Preliminary Recommendations	Estimated Remaining Contribution (Years)	BS5837: 2005 Category	RPA Radius (m)	RPA m²
				No. of Stems	Stem 1 / Actual / Avg.	Stem 2	Stem 3	Stem 4	Stem 5		N	E	S	W									
1	Ash	Fraxinus excelsior	8	1	250					250	4	4	4	2	N3	3	SM	Historic crown lift, good wound wood formation.	No works required	40+	A1	3.0	28
2	Ash	Fraxinus excelsior	8	1	380					380	4	3	4	4	S2	3	SM	Twin stemmed at 2-3m with tight unions and included bark. Stems further dividing into 4 stems at 2m with tight unions. Upswept form.	Remove to ground level and treat stump to prevent re-growth. Remove all arisings from site.	<10	U	4.5	65
3	Birch species	Betula spp.	9	1	240					240	3	2	4	1	S3	3	SM	Slight asymmetrical form to crown. Part of a stand of 6 trees.	No works required	20+	B2	2.9	26
4	Birch species	Betula spp.	9	1	210					210	3	2	2	1	S3	3	SM	Slight asymmetrical form to crown. Part of a stand of 6 trees. Low percentage of deadwood.	No works required	20+	B2	2.5	20
5	Birch species	Betula spp.	8	1	240					240	2	3	4	3	W2	3	SM	Slight asymmetrical form to crown. Part of a stand of 6 trees. Ivy growth on main stem.	No works required	20+	B2	2.9	26
6	Birch species	Betula spp.	13	1	480					480	6	5	7	5	S3	3	M	Slight asymmetrical form of crown. Hazard beam at 8m on secondary growth. Small hanging branch.	No works required	20+	B1	5.8	104
7	Birch species	Betula spp.	8	1	190					190	2	1	3	3	N2	3	SM	Slight asymmetrical form to crown and upswept crown. Part of a stand of 6 trees. Ivy growth on main stem.	No works required	20+	B2	2.3	16
8	Birch species	Betula spp.	12	1	550					550	4	3	4	4	E1	2	M	Dense ivy restricting assessment of stem and crown. Stem epicormics. Witches broom in crown and small hanging branch.	No works required	20+	B1	6.6	137
9	Lawson cypress	Chamaecyparis lawsoniana	12	1	550					550	4	3	4	4	E1	2	SM	Slight asymmetrical form to main stem and crown due to adjacent growth.	No works required	20+	B1	6.6	137

Tree ID	Common Name	Botanical Name	Height (m)	STEM [HIDE]						Calc. / Actual Stem Dia. (mm)	Spread (m)				Height (m) & Orientation of First Significant Branch	Avg. Canopy Height (m)	Life Stage	General Observations	Preliminary Recommendations	Estimated Remaining Contribution (Years)	BS5837: 2005 Category	RPA Radius (m)	RPA m²
				No. of Stems	Stem 1 / Actual / Avg.	Stem 2	Stem 3	Stem 4	Stem 5		N	E	S	W									
10	Cherry species	<i>Prunus spp.</i>	4	1	250					250	3	3	3	3	0	0	SM	Dense Ivy restricting access and assessment, stem diameter assumed from height. Ivy forms a dense hedge feature. Significant wildlife value. BT wires to rear of tree.	No works required	20+	B1	3.0	28
11	Birch species	<i>Betula spp.</i>	10	1	280					280	4	3	0	2	N4	4	SM	Asymmetrical form to crown, part of a stand of 6 trees. Ivy growth on main stem.	No works required	20+	B2	3.3	35
12	Birch species	<i>Betula spp.</i>	12	1	420					420	5	3	4	5	W4	2	M	Deadwood stubs. Good wound wood growth.	No works required	20+	B1	5.0	80
13*	Birch species	<i>Betula spp.</i>	10	1	100					100	1	2	1	1	S2	3	SM	Restricted visual assessment, tree situated behind fence in cypress group. Asymmetrical form to crown, part of a stand of 6 trees.	No works required	20+	C2	1.3	5
14	Birch species	<i>Betula spp.</i>	10	1	260					260	1	2	4	4	S4	3	SM	Asymmetrical form to crown, part of a stand of 6 trees.	No works required	20+	B2	3.1	31
15	Birch species	<i>Betula spp.</i>	10	1	230					230	0	3	3	0	E4	3	SM	Asymmetrical form to crown, part of a stand of 6 trees. Twin stemmed at 2m.	No works required	20+	B2	2.8	24
16	Birch species	<i>Betula spp.</i>	10	1	270					270	2	3	4	4	S3	1	SM	Asymmetrical form to crown, part of a stand of 6 trees. Dead wood stubs.	No works required	20+	B2	3.2	33

* Trees with an asterix next to their number have had their BS category changed due to their stem diameter dimensions being under 15cm, in keeping with relevant guidance

Appendix 1.2 - Group Survey Data

Date: 4th February 2019

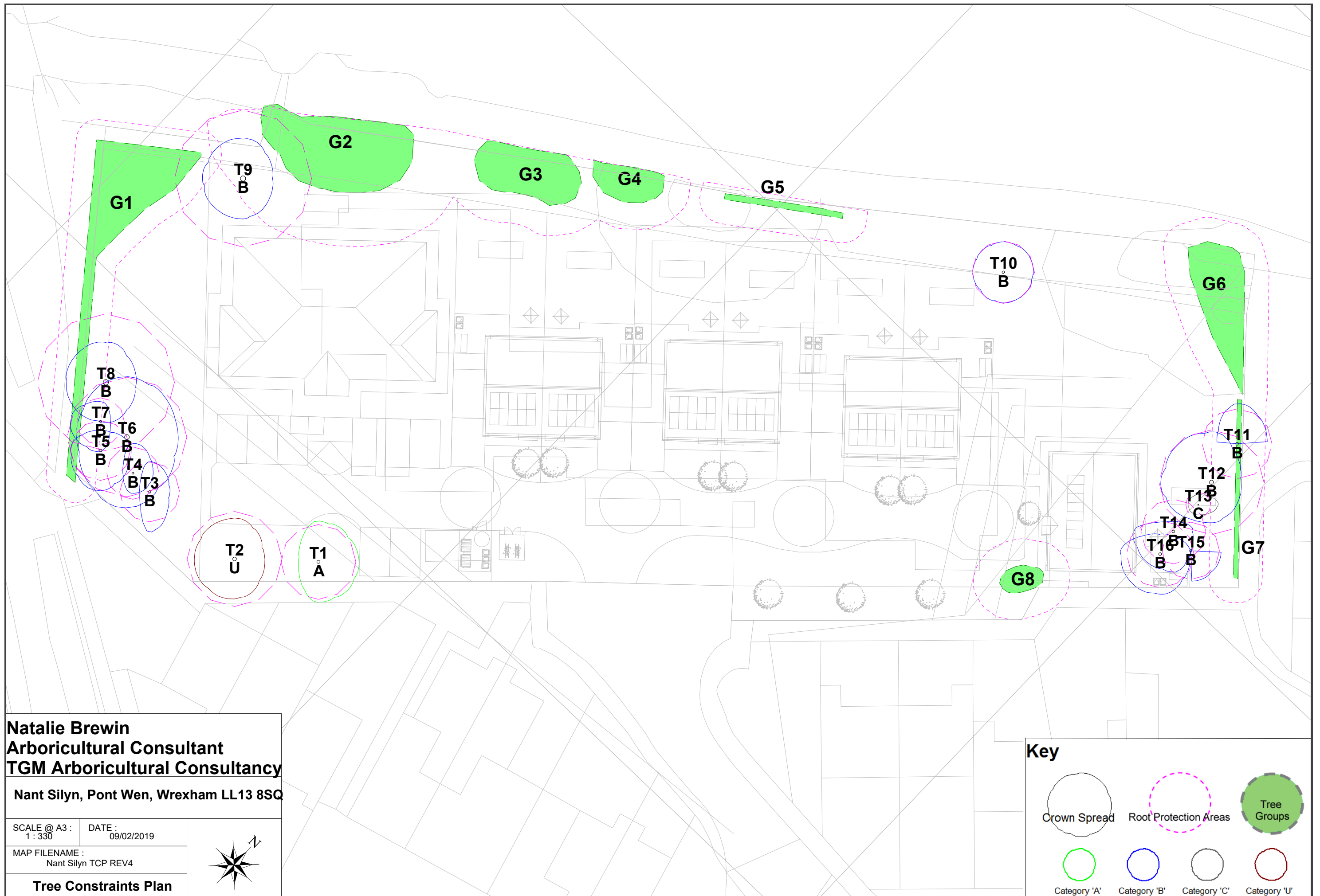
Key For Tree Survey Data

Tree ID	Numerical value assigned to the tree or tree group
Description & Dominant Species	Brief description of the group with dominant species noted
Height (m)	Average height to the top of the central canopy
Stem Dia. (mm)	Average depth of main stem measured at 1.5m
Crown Spread (m)	Average measure of the spread of the canopy across the four cardinal compass points
Life Stage	Classified as young, semi mature, mature, over mature or veteran (See appendix 1 for further classification)
General Observations	Significant structural and physiological defects noted
Preliminary Recommendations	Works recommendations to remedy or further investigate significant defects, or to facilitate development or site access.
Estimated Remaining Contribution (Years)	Taken from guidelines provided within BS 5837 (2012) Trees in Relation to Design, Demolition and Construction
BS5837: 2012 Category	Taken from guidelines provided within BS 5837 (2012) Trees in Relation to Design, Demolition and Construction
RPA Radius (m)	Root protection area - radius of RPA
RPA m ²	Root protection area

Site: Nant Silyn, Pont Wen, Whitegate, Wrexham LL13 8SQ

Surveyor: N Brewin

Group ID	Description	Dominant Species	Height (m)	STEM [HIDE]						Calc. / Actual Stem Dia. (mm)	Spread (m)				Life Stage	General Observations	Preliminary Recommendations	Estimated Remaining Contribution (Years)	BS5837: 2005 Category	RPA Radius (m)	RPA m ²
				No. of Stems	Stem 1 / Actual / Avg.	Stem 2	Stem 3	Stem 4	Stem 5		N	E	S	W							
1	Lawson cypress hedge - lapsed management	Lawson cypress, <i>Chamaecyparis lawsoniana</i>	7	1	300					300	3	3	3	3	SM	Densely planted row of cypress at site boundary under lapsed management. Some reduced in height some not. Ivy growth and access restricting assessment. Two Birch trees in group towards west corner with stem wounds and some decay, trees growing through cypress. Dead Elder in west corner. Historic stem wounds partially occluded on cypress.	No works required.	20+	B2	3.6	41
2	Small group of multi stemmed riverside ash trees	Ash, <i>Fraxinus excelsior</i>	10	3	350	350	350			610	5	5	4	3	SM	Lapsed coppice ash. Dense ivy growth on main stems and access restricting assessment. Ash suckers/ self sets prevalent at base of group.	No works required.	20+	B2	7.3	168
3	Small group of riverside cherry trees	Cherry species, <i>Prunus spinosa</i>	8	1	250					250	3	3	3	3	SM	Dense ivy and access restricting assessment.	No works required.	20+	B2	3.0	28
4	Lapsed coppice riverside elder	Elder, <i>Sambucus nigra</i>	4	5	100	100	100	100	100	220	3	3	3	3	SM	Dense ivy and access restricting assessment.	No works required.	10+	C2	2.6	22
5	Sycamore and ash trees under lapsed management as a hedge.	Sycamore, <i>Acer pseudoplatanus</i> , Ash, <i>Fraxinus</i>	3	4	100	100	100	100		200	2	2	2	2	SM	Lapsed hedge.	No works required.	10+	C2	2.4	18
6	Dense area of Elder and Cotoneaster behind fencing, restricted access due to badger presence.	Elder, <i>Sambucus nigra</i> , <i>Cotoneaster species</i> , <i>Cotoneaster</i> spp.	3	4	100	100	100	100		200	2	2	2	2	SM	Dense ivy and access restricting assessment.	No works required.	10+	C2	2.4	18
7	Lawson cypress hedge - lapsed management	Lawson cypress, <i>Chamaecyparis lawsoniana</i>	4	1	200					200	2	2	2	2	SM	Cypress hedge under lapsed management. Restricted assessment due to ackees. Elder in group.	No works required.	20+	B2	2.4	18
8	2 multi stemmed elder	Elder, <i>Sambucus nigra</i>	4	5	100	100	100	100	100	220	2	2	2	2	SM	Coppice elder. Street lamp adjacent to eastern tree.	No works required.	10+	C2	2.6	22



Appendix 3

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Appendix 4 Photographs – Nant Silyn

11 images, February 2019



P1 - Site Interior



P2 - T1 & T2 Ash



P3 - G1 (pruned) and T1 - T8



P4 - G1 with 2 Birch



P5 - T9 Cypress



P6 - Groups 2 - 4 riverside



P7 - Mature ivy feature



P8 - T10 in ivy feature



P9 - Group 6 exclusion area



P10 - T11 - T16 Birch and G7



P11 - Group 8 Elder