Arboricultural Impact Assessment

Land at
Former Air Products Site
Llangollen Road
Acrefair
Wrexham

Ref:
AIA/APA/06/22
Revision B

Date:
19th September 2023

Commissioned by:
Mr D. Brettell
on behalf of
Clwyd Alyn Housing

Prepared by
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This Arboricultural Impact Assessment has been prepared in accordance with the protocols, standards and procedures set out in BS 5837: 2012 'Trees in relation to design, demolition and construction'.

Planning permission is being sought to develop site to provide residential dwellings, amenity space, internal site roads, site access, public open space and associated infrastructure on the site.

All trees on and immediately adjacent to the site have been surveyed and assessed in accordance with the recommendations of BS5837: 2012. The survey assessed four areas of woodland and one group of trees, ranging in quality and amenity value from high (4) to medium (1).

There would be some minor encroachment onto the woodland areas around the site, but this would not be significant and is very unlikely to negatively impact on the woodlands as a whole. There is also the opportunity for new planting on the site that would significantly improve the level of tree cover in the area and also to address the issues of Chalara ash dieback management and recovery on the site. Overall, the impact of the proposed development on the arboricultural resource in the area would be low in the short term and would provide betterment in the medium to long term.

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Date	Revision	
8th February 2022		Issued for site design
24th June 2022		Issued for pre application discussion.
30th November 2022	A	Issued for planning
19th September 2023	B	Issued for planning

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Instruction

1.1 Shields Arboricultural Consultancy received instructions from Mr D. Brettell of Clwyd Alyn Housing to undertake an arboricultural impact assessment at the above property. The client or their agents may copy and distribute this report as required for the purpose of applying for planning permission for or preparing any documents or plans for this or future applications at this site.

1.2 Planning permission is being sought to develop site to provide residential dwellings, amenity space, internal site roads, site access, public open space and associated infrastructure on the site. A site layout plan ref: 21-231- 10 Rev H has been provided and is considered in this report. The site layout plan has been prepared based on a preliminary arboricultural assessment of the site and arboricultural resource.

Scope & Limitations

2.1 The purpose of the report is to assess the environmental and amenity values of all trees on or adjacent to the area affected by the proposed development and is based on a site assessment undertaken 17th January 2022 updated 14th September 2023 by S. Shields, principal consultant Shields Arboricultural Consultancy. The report will assess the long-term contribution that the trees can make to the area and the arboricultural implications of retaining them and seek to find a satisfactory juxtaposition between the trees and the new development. The report will assess the potential impact that may arise as a result of the proposed construction works and make recommendations for protecting trees, hedges and shrubs where appropriate.

2.2 The report is prepared in accordance with the recommendations of the British Standard Document BS 5837: 2012 'Trees in Relation to Construction'.

2.3 This report is not an ecological assessment and does not identify habitats or constitute a protected species survey.

Statutory Controls & Obligations

3.1 Forestry Act; the felling of trees is controlled by the Forestry Act, which requires that a felling licence is obtained prior to cutting down any trees. The Forestry Act does not apply to the felling of trees growing within an orchard, private garden, churchyard or public open space. The Forestry Commission has the responsibility for enforcing the Forestry Act.

3.2 Tree Preservation Orders & Conservation Areas; Local Authorities have specific powers under the Town & Country Planning Act 1990 as amended, to protect trees through the use of Tree Preservation Orders. Where trees are protected under such orders it is a criminal offence (subject to any exemptions for which provision may be made by the act or order) to undertake, cause or permit the cutting down, topping, lopping, uprooting, wilful damage or wilful destruction of trees except

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with the consent of the local planning authority. Similar controls apply to all trees growing within a designated Conservation Area.

3.3 Bats, wild birds and other protected species; The Wildlife & Countryside Act & the Conservation (Natural Habitats & C.) Regulations make it an offence to disturb or destroy bats and bat roosts and wild birds and their nests. Other species of plant and animal are also protected. These creatures often inhabit trees and sufficient care must be taken to ensure they are not affected during forestry and arboricultural works.

Site description

4.1 The site is located at the Former Air Products site in the village of Acrefair on the north side of the Dee valley, 10km southwest of the town of Wrexham. The site, which was previously used for industrial purposes has recently been cleared and levelled.

4.2 The site extends to 7ha, is level and at an elevation of 130m AOD and is reasonably sheltered. There are a no trees within the main site but there are areas of established woodland around the boundaries. The site is within a residential area and has boundaries with existing housing to the north and south, Llangollen Road to the west and open and wooded land to the east.



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Soils

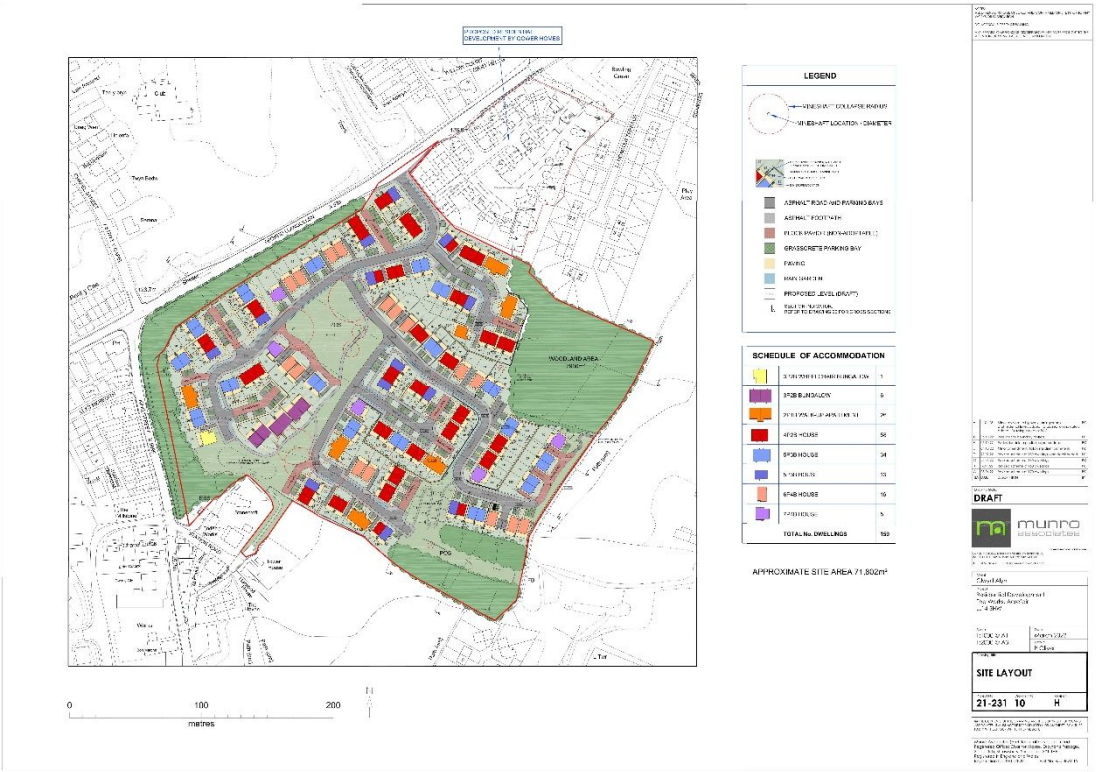
4.3 The site soils are substantially disturbed as a result of the demolition and clearance work. Geological maps indicate deposits of till over coal measure, with undifferentiated sandstone, silt stone and mudstone lithology. Site soils may impact root development.

*NB. This soil assessment is undertaken in situ using visual and manual techniques and is **only** for the purpose of establishing the influence of site soils on tree growth. The assessment **must not** be relied upon to inform any engineering decisions.*

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Development Proposal

5.1 Planning permission is being sought to develop site to provide residential dwellings, amenity space, internal site roads, site access, public open space and associated infrastructure.



Tree Survey Methodology

6.1 All trees within and adjacent to the site have been assessed where they are within 15 m of any area that may be disturbed as a result of the proposed development and have a stem diameter over 75mm at 1.5 metres. Measurements have been taken in accordance with the procedures and protocols set out in BS 5837: 2012 and the Forest Mensuration Handbook. Height measurements are approximate unless otherwise stated. Trees have been assessed as individuals, groups or woodlands as appropriate. Where access to trees has been restricted, either as a result of their situation on private land or where vegetation or ground conditions are unfavourable, an estimation of trunk diameter has been made. This entails using a set of callipers to approximate the measurement. Estimates are rounded up to provide a margin. This technique has only been used where there is a sufficient buffer between the RPAs and any area disturbed by development. Where trees are in woodlands or groups only the outside edge trees are assessed unless there are larger trees with RPAs or crowns that would overlap the edge trees.

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6.2 BS 5837: 2012 provides the framework through which tree can be categorised in terms of their health, amenity value and long-term viability for retention on a development site. There are four categories, A,B,C & U.

Category A: Trees of high quality with an estimated life expectancy of at least 40 years.

1 Trees that are particularly good examples of their species, or essential components of groups or formal arboricultural features.

2 Trees, groups or woodlands that provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance.

3 Trees, groups or woodlands of significant conservation, historical, commemorative or other value.

Category B: Trees of moderate quality with an estimated lifespan of at least 20 years.

1 Trees that might be included in a higher category but are downgraded because of impaired condition.

2 Trees present in numbers, usually as groups of woodlands that form distinctive landscape features.

3 Trees with clearly identifiable conservation or other cultural benefits.

Category C: Trees of low quality with an estimated lifespan of at least 10 years or young trees with a stem diameter below 150mm.

1 Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.

2 Trees present in groups of woodlands, but without this conferring on them significantly greater collective landscape value; and/or tree offering low or only temporary/transient landscape benefits.

3 Trees with no material conservation or other cultural value.

Category U: Trees in such a condition that their existing value would be lost within 10 years and which should, in the current context be removed for arboricultural reasons.

The most significant or valuable trees are placed in the categories, A & B. Site design should make provision to retain trees in these categories and most Local Planning Authorities will insist upon this (or in exceptional circumstances will require that significant compensation planting is incorporated into the design), whilst trees that should not be a constraint to development are recorded with a C category. Trees categorised as U are in a poor condition and should be removed prior to the commencement of work.

NB. Category U trees can have an existing of potential conservation value which it might be desirable to preserve.

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6.3 Where trees are to be retained, it is necessary to ensure that they are suitably protected to avoid damage during the construction phase of the development. It is also important to consider any long term implications, such as issues with shading or leaf litter that may arise as a result of tree retention.

6.4 To ensure that trees are not adversely affected by the construction works it is necessary to:

a. The avoidance of physical damage to the aerial parts of the trees (i.e. Impact and other damage to trunk and branches)

b. The avoidance of damage to retained trees as a result of the severance or other physical damage to their roots

c. Preserve of the character of the soil, through the avoidance of any activity that would cause it to become compacted or otherwise disturbed or disrupted, and to avoid contamination by potentially harmful substances

d. To ensure free gaseous exchange is permitted between the upper layers of soil and the atmosphere

e. To ensure adequate (but not excessive) water supply to the soil and hence to tree roots

This would normally be achieved by establishing an area, known as a construction exclusion zone (CEZ) around each tree. The CEZ is derived from the root protection area (RPA) and the crown spread of the tree. The RPA represents the area occupied by the tree's root system and is calculated for each tree based on its stem diameter and the ground conditions present taking account of and any impediment to rooting. The RPA should represent the most probable position of the tree's root system.

The CEZ must be considered sacrosanct and be maintained completely undisturbed. No construction should take place within this area and it should not be used for storage of materials or fuels. Access for vehicles machinery or personnel is prohibited and to ensure that it is not damaged by construction activity it must be suitably protected during the construction phase, using robust fencing or alternative ground protection methods, to prevent disturbance and damage occurring.

6.5 A rise or reduction in soil level can have major implications on the longevity and health of the trees. Minor changes (up to 100mm) can be tolerated in some cases, but is heavily dependent on tree species, condition and growing environment. Existing ground levels within RPAs should be respected as far as is reasonably practicable. The advice of the project arboriculturalist should be sought if level changes are required.

6.6 In addition to the implications that a new development may have for existing trees it is also important to assess any long-term issues or concerns that may arise as a result of retaining trees close to a new

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dwelling or structure. This can include problems associated with leaf litter and other debris that may fall from trees, the potential that a tree has to cause damage to a structure in the future, any on-going maintenance requirements that may arise and the level of shade that the tree may cast, it is particularly important to consider the effects of shading where trees are to the south of houses and gardens. Trees can also cause feelings of apprehension to the occupiers of nearby buildings and can have an over-bearing impact on a property if adequate space is not provided.

6.7 Buffer zones and structural stand-offs are advised for continuous canopy tree groups and woodlands along with trees and woodlands of high value. These zones are influenced by numerous factors beyond the provision of sufficient space for future growth. Depending on the development objectives these can include the provision of a safe falling distance for edge trees, prevention of overshadowing, provision of an ecological buffer zone, prevention of fragmentation of group/woodland compartments, and prevention of direct tree root or habitat damage. Buffer Zones should also be used around veteran trees and ancient woodland sites. Natural Resources Wales Standing Advice for ancient woodland sites states:

'*A stand-off or protection zone's purpose is to protect ancient woodland. The size and type of stand-off or protection zone should vary depending on the scale, type and impact of the development.*

The BS 5837 Tree Survey, PEA and/or EcIA assessments should be used to inform the stand-off or protection zone for each individual woodland and veteran and ancient trees. Some zones may only require a root protection area to prevent negative impacts on individual trees or groups of trees, and others are likely to extend further'

And the following text is taken from the Standing Advice produced by the Forestry Commission and Natural England as included in the National Planning Policy Guidance:

'*A buffer zone's purpose is to protect ancient woodland and individual ancient or veteran trees. The size and type of buffer zone should vary depending on the scale, type and impact of the development'.*

Ancient woodland buffer

'For ancient woodlands, you should have a buffer zone of at least 15 metres to avoid root damage. Where assessment shows other impacts are likely to extend beyond this distance, you're likely to need a larger buffer zone. For example, the effect of air pollution from development that results in a significant increase in traffic'.

Ancient and veteran tree buffer

'A buffer zone around an ancient or veteran tree should be at least 15 times larger than the diameter of the tree. The buffer zone should be 5m from the edge of the tree's canopy if that area is larger than 15 times the tree's diameter'.

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6.8 The report assesses all trees with regard to their size, position and natural characteristics, and taking into account of their future growth makes provides recommendations as to their long-term suitability for retention.

Arboricultural Assessment

7.1 Full details of the tree surveyed are provided in appendix A. and their relative positions, crown spreads, root protection areas are indicated on the attached plans.

7.2 No checks have been undertaken to establish the status of the trees with regards to Tree Preservation Orders or Conservation Areas, however all the trees may be subject to the Forestry Act (see section 3.1) and some hedges subject to the Hedgerow regulations (see section 3.3). No trees or hedges should be felled, lopped, topped or in otherwise removed or damaged without prior permission from the relevant authority.

7.3 The survey recorded Four areas of woodland and one group of trees, which are categorised as follows:

Category	Quantity
Category A: Trees of high quality with an estimated life expectancy of at least 40 years.	**4**
Category B: Trees of moderate quality with an estimated lifespan of at least 20 years.	**1**
Category C: Trees of low quality with an estimated lifespan of at least 10 years or young trees with a stem diameter below 150mm..	**0**
Category U: Trees in such a condition that their existing value would be lost within 10 years and which should, in the current context be removed for arboricultural reasons. *NB. Category U trees can have an existing of potential conservation value which it might be desirable to preserve.*	**0**

Arboricultural merits and the significance of the trees in the landscape

7.4 The site and surrounding area are within a residential village and the surrounding area is characteries by mixed residential properties and areas of open space and woodland. There are no trees on the main site but there are areas of woodland and groups of trees around the boundaries, all of which are significant landscape and amenity features.

Veteran Trees, Ancient Woodlands Protected Trees

7.5 A search of the ancient tree inventory https://ati.woodlandtrust.org.uk/ and the Lle database Lle - Ancient Woodland Inventory 2021 (gov.wales) indicate that there are no veteran trees or areas of ancient woodland recorded on or adjacent to the site.

7.6 The TPO status of the trees on and adjacent to the site is not know but the Wrexham Council Conservation Area Map for Cefn Mawr Cefn

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Mawr Conservation Area Map (wrexham.gov.uk) indicates that the site is outside the Conservation Area.

Canopy Cover and Arboricultural resource Characteristics

7.7 There are no trees on the site itself, so tree cover is limited to the surrounding woodland areas. Canopy cover is below the 20% - 25% that Wrexham Council are aiming for within the urban areas of the borough.

Pests and Diseases

7.8 Tree pests and diseases are part of a balanced ecosystem and dead, dying and diseased wood is a natural process providing an important contribution to habitat biodiversity. However, in recent years there have been an increasing number of new and serious pests and diseases affecting tree populations across the UK and regular monitoring is essential to check for their presence. Chalara dieback of Ash, Acute/Chronic Oak Decline, Horse Chestnut Bleeding Canker and Phytophthora, are now widely established. These diseases can kill or weaken trees quite rapidly and it will be important to carefully monitor them in order to inform management decisions over the coming years. It will also be important in relation to public safety where dead or dying trees are in proximity to road, footpaths and property. Ash dieback has been identified on a number of trees within and adjacent to the site.

Policy Considerations

7.9 Section 6.4.24 – 6.4.26 of Planning Policy Wales states that:

'Trees, woodlands, copses and hedgerows are of great importance for biodiversity. They are important connecting habitats for resilient ecological networks and make a valuable wider contribution to landscape character, sense of place, air quality, recreation and local climate moderation. They also play a vital role in tackling the climate emergency by locking up carbon, and can provide shade and shelter, a sustainable energy source and building materials. The particular role, siting and design requirements of urban trees in providing health and well-being benefits to communities, now and in the future should be promoted as part of plan making and decision taking.'

'Planning authorities should protect trees, hedgerows, groups of trees and areas of woodland where they have ecological value, contribute to the character or amenity of a particular locality, or perform a beneficial and identified green infrastructure function. Planning authorities should consider the importance of native woodland and valued trees, and should have regard, where appropriate, to local authority tree strategies or SPG. Permanent removal of woodland should only be permitted where it would achieve significant and clearly defined public benefits. Where woodland or trees are removed as part of a proposed scheme, developers will be expected to provide compensatory planting.'

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'Ancient woodland and semi-natural woodlands and individual ancient, veteran and heritage trees are irreplaceable natural resources, and have significant landscape, biodiversity and cultural value. Such trees and woodlands should be afforded protection from development which would result in their loss or deterioration unless there are significant and clearly defined public benefits; this protection should prevent potentially damaging operations and their unnecessary loss. In the case of a site recorded on the Ancient Woodland Inventory, authorities should consider the advice of NRW. Planning authorities should also have regard to the Ancient Tree Inventory.'

'The protection and planting of trees and hedgerows should be delivered, where appropriate, through locally specific strategies and policies, through imposing conditions when granting planning permission, and/or by making Tree Preservation Orders (TPOs). They should also be incorporated into Green Infrastructure Assessments and plans.'

7.10 The Wrexham Unitary Development Plan Policy EC4 – Hedgerows, Trees and Woodland advises that

'Development proposals should provide for the conservation and management of hedgerows, trees, orchards, woodland, wildlife and other natural landscape and water features, and include new planting in order to enhance the character of the landscape and townscape. Development which results in the loss or significant damage to valuable trees, important hedgerows or ancient woodland sites will not be permitted.'

This policy should be considered with reference to Local Planning Guidance Note 17 'Trees & Development' Local Planning Guidance Note No 17 - Trees and Development (wrexham.gov.uk).

Design Considerations

7.11 The site design should seek to incorporate all boundary trees and woodlands into the layout in a way that is harmonious with the proposed new land use. This requires that the physical protection of the trees is addressed using the advice provided in section 6.4 above.

7.12 In addition to ensuring that the trees are not damaged by the construction process, consideration should also be given to the future implications associated with the retention of the trees in the terms of their influence on the new properties. To ensure a harmonious relationship between the trees and the proposed dwellings it is necessary to allow adequate separation so that the trees do not exert an overbearing influence, are so close as to promote worries about tree safety and avoid problems associated with leaf litter and shading.

7.13 Guidance provided in the British Standard BS 5837: 2012, advises that shading of buildings can be a problem, particularly where trees are to the south or the southwest of houses and gardens and site should be designed to take account of existing trees and any new planting, their ultimate size and density of the foliage and that garden areas should

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be designed to meet the normal requirement for direct sunlight for at least part of the day. Building Research Establishment guide to good practice (BR209) Site Layout Planning for Daylight and Sunlight advises that, in order to appear reasonably sunlit a dwelling should have at least one main window wall that faces within 90° of due south and that on this wall, all points on a line 2m above ground level are within 4m of a point which receives at least a quarter of the annual probable sunlight hours. The guide also advises that for gardens to appear adequately sunlit, at least half the area should receive no less than 2 hrs sunlight on 21st March, although this recommendation is for shade cast by buildings and not that cast by trees.

7.14 In this case the trees are around the boundary of the site and their impact will be limited, particularly if advice on creating buffers between the proposed dwellings and the areas of woodland are followed.

7.15 To ensure that trees do not become overbearing or exert a dominating effect on a property it is recommended that no occupied property is sited within a distance from the trunk equivalent to 50% of the mature height of a tree (see appendix A), which should be increased to 60% if the tree is directly to the south of a property. There should also be a distance of at least 1.5 metres from the edge of the crown to the building at the closest point, this must take account of the ultimate spread of the tree. No more than 40% of a garden area should be beneath the crown of a tree, and the remaining area should not be shaded by the tree. In this case all requirements for separation are met.

7.16 All services both under and over ground must be located outside the CEZ around retained trees. All services must be installed in compliance with NJUG chapter 4 recommendations.

Arboricultural Impact

Impact	Category A	Category B	Category C	Category U
Tree Removal		W1, W2, W3		
Facilitative Pruning Required				
RPA Encroachment		W1, W2, W3		
Potential Shading				
Proximity Issues		W1, W2, W3, G5		

7.17 In its current format the layout of the site has some minor impact on small sections of the wooded areas around the site boundaries. Plots 7, 18, 23 and 24 encroach into the RPA of W1 and the garden areas of plots 11 – 18, 23 and 28 are also partly within the RPA of W1. This would affect a few discrete areas and is unlikely to significantly impact the woodland belt overall but may requires the cutting back or removal of selected trees. There may also be issues with proximity, although the woodland slopes away from the site and this reduces the physical presence of the trees. Plots 29 encroaches into W2 and the garden

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areas of plots 29 – 37 also encroach into W2, although there are no structures other than fencing within the RPA. The total area affected is relatively small and W2 is quite scrubby at this point, and the encroachment is unlikely to impact any trees on significant stature or to impact on the wider woodland or the benefits it provides. Plots 140, 153 and 154 encroach into W3 and the garden areas of 139 – 154 are also within the RPA of W3. Again, the area affected is small and the trees of minor value at this point and the impact to the overall woodland would be negligible. There could also be proximity issues with W4 and G5, where trees are close to dwellings, however this can be managed through regular inspections and maintenance.

7.18 Ash trees within the woodland areas are becoming infected with Chalara ash dieback and removals will be required. It is recommended that a management and recovery plan be prepared for the site.

7.19 There is opportunity to improve access into woodland W4 through the creation of footpaths and provision of play equipment and recreational areas. This can be achieved through the use of existing open space or where ash trees are removed as a result of Chalara ash dieback management.

Tree Planting and Landscaping

7.20 Landscaping and the planting of trees is an essential element of any sustainable development and provision must be made within the site layout to provide space to plant long lived, large canopy trees for the long-term benefit of the site and surrounding area.

7.21 The development of the site creates opportunity to provide new tree planting as part of the landscaping of the site. Wrexham County Borough Council will normally seek new planting to provide around 20% canopy cover across the area of the site. Any landscaping scheme must take account of the soil conditions at the site and provide appropriate species. A mixture of formal planting, such as street and parkland trees should be provided along with informal woodland and group planting. Particularly opportunities should be taken to provide connections between and extend existing areas of woodland. Consideration must also be given to mitigating the potential loss of ash trees from the woodland areas.

7.22 Planting within private gardens should not be used to provide long-term arboricultural assets as there is very limited scope for significant planting unless gardens are particularly large.

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Arboricultural Operations

Permission to remove any tree must be obtained from the Local Planning Authority and must not be undertaken until a Full Planning Permission has been granted and all pre-commencement conditions have been discharged. In cases where trees are protected by Tree Preservation Orders or Conservation Areas additional consent may be required.

8.1 If the proposal requires the removal of trees and subject to obtaining any required permissions it is recommended that the work should be undertaken by a suitably qualified person, holding public liability insurance for the sum of £5,000 000. All operators must hold relevant NPTC certificates. A site-specific risk assessment must be prepared and operators must work to a health and safety method statement. The use of Arboricultural Association Approved Contractors www.trees.org.uk/find-a-professional/Directory-of-Tree-Surgeons is recommended.

8.2 The contractor undertaking the work is responsible for any loss or damage arising as a result of the operations and agrees to indemnify the owner against such occurrences.

Interim Arboricultural Method Statement

9.1 This arboricultural method statement (AMS) sets out the details of tree protection measures afforded to the retained trees on and adjacent to the site.

9.2 This document should be read in conjunction with the Tree Protection Plan ref: APA-TPP-OL-06-22 Rev A. The TPP indicates the construction exclusion zone (CEZ) that must be maintained around each retained tree. These areas must remain undisturbed during the construction process and must be protected using suitable fencing or ground protection as specified.

9.3 Copies of the TPP & the AMS must be available on site and all tree protection requirements explained to all persons undertaking activities on the site during the site induction process.

9.4 All tree protection measures must be installed and inspected prior to bringing onto the site any plant, materials or equipment or undertaking any construction works or demolition or any arboricultural works. The LPA must be informed in writing once the tree protection measures are installed.

9.5 The site is to be inspected by the consulting arboriculturalist in accordance with the schedule of inspections (see 9.17).

9.6 All measurements are given in metric using standard abbreviations.

Fencing and Ground Protection

9.7 The TPP indicates the position of all protective fences.

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9.8 Protective fencing will comprise herras fencing or as agreed with the Local Planning Authority.

9.9 Ground protection is not required on this site.

9.10 The protective fencing and ground protection must be inspected on installation and will remain in place until completion of the construction phase and then only removed with the consent of the LPA.

9.11 Other than works approved in writing by the LPA, no works including storage or dumping of materials shall take place within the exclusion zones defined by the protective fencing.

General Precautions

9.12 No materials that are likely to have an adverse effect on tree health such as oil, bitumen or cement will be stored or discharged within 10m of the trunk of a tree that is to be retained or within any part of the CEZ. Spills kits, suitable for the type fluids, fuels and chemicals stored on site must be available on site and site operatives must have training in their use.

9.13 No fires will be lit within 20m of the trunk of any tree that is to be retained.

9.14 Storage and mixing areas, contactor parking and all site huts must be outside the CEZ.

9.15 Access to the work area is via the main site entrance and must not traverse the CEZ.

9.16 All service and drainage routes, below or above ground must avoid the CEZ. All services are to be installed in accordance with NJUG volume 4 Guidelines.

9.17 To ensure that all tree protection measures are properly installed and maintained the site shall be monitored by Shields Arboricultural Consultancy to the following schedule. Details of the findings and photographic evidence of the site inspection visits will be reported to the LPA by email within 24 hrs of the visit. All tree protection measures must remain in place until development work is completed and only removed after receiving written confirmation from the LPA.

Schedule of Inspection

1. Prior to work commencing to inspect tree protection fencing.

9.18 Prior to the commencement on site of any work, a competent person is to be appointed to monitor the day to day activities on site. In the case of a tree being damaged or where an unexpected event arises it will be for this person to contact Shields Arboricultural Consultancy to seek advice on contingency measures.

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Conclusion

10.1 It is possible to develop the site without having a significant impact on the wider arboricultural resource. The development provides the opportunity to address the issues of ash dieback and management and recovery and to improve access to the woodland areas.

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19th September 2023

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Arboricultural Assessment

Ref. No.	Species	Top Height	Stem Dia mm	N	E	S	W	CC	Age	Rem Cont.	Cat.	RPA m^2	Notes	AIA
W1	Acer pseudoplatanus (Sycamore), Fagus sylvatica (Beech), Fraxinus excelsior (Ash), Corylus avellana (Hazel)	17	500	4	4	4	4	2	M	40+	A2	113	**Condition:** Good **Notes:** Belt of established high woodland with some understory situated on steep bank between the site and the A529, Llangollen Road. RPA affected by retaining wall to the north. Ash element is beginning to show indications of Chalara ash dieback and consideration should be given to the removal and replacement of these trees. Low bat potential.	Prominent feature in the street scene and local landscape. Woodland is to the north of the site and unlikely to significantly shade the site. It is recommended that a buffer zone of minimum of 10 metres is established between the woodland and the nearest dwelling. The woodland is a significant asset, and every effort should be made to retain and incorporate it into the site layout in a way that is harmonious with the proposed land use. Under the current layout

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														there is minor encroachment into some discrete areas of the RPA around the woodland but these are limited in extent and would not affect the overall functioning of the woodland or the amenity it provides. The woodland can be retained and protected to the required standard.
W2	Salix caprea (Goat Willow), Betula pendula (Silver Birch)	14	300	4	4	4	4	2	EM	40+	B2	41	**Condition:** Good **Notes:** Emerging secondary woodland comprised predominantly of pioneer species with some understory. Links with W1. Very low bat potential.	Slightly less important in the landscape than W1 owing to its location and prominence but has the potential to become more significant in the future in both visual and habitat terms as it develops as a woodland. Situated on a sloping bank to the west of the site it provides a level of

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														screening from existing dwellings to the west. Some potential to cast evening shade onto the site. It is recommended that a buffer zone of minimum of 10 metres is established between the woodland and the nearest dwelling. The woodland is a significant asset and every effort should be made to retain and incorporate it into the site layout in a way that is harmonious with the proposed land use. Under the current layout there is minor encroachment into some discrete areas of the RPA around the woodland but these are limited in extent and would not affect the overall functioning

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														of the woodland or the amenity it provides. The woodland can be retained and protected to the required standard.
W3	Acer pseudoplatanus (Sycamore), Betula pendula (Silver Birch), Fraxinus excelsior (Ash), Quercus robur (Common Oak)	17	400	5	5	5	5	2	EM	40+	A2	72	**Condition:** Fair **Notes:** Established mixed broad leaf woodland to the south of the site. Links with offsite wooded areas to the south and east. Ash element is beginning to show indications of Chalara ash dieback and consideration should be given to the removal and replacement of these trees. Low to moderate bat potential.	Prominent feature in the local landscape that links with other woodlands and trees in the wider area. Woodland is to the south of the site and may cause some level of shading. It is recommended that a buffer zone of minimum of 15 metres is established between the woodland and the nearest dwelling. The woodland is a significant asset and every effort should be made to retain and incorporate it into the site layout in a way that is harmonious with

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														the proposed land use. Under the current layout there is minor encroachment into some discrete areas of the RPA around the woodland but these are limited in extent and would not affect the overall functioning of the woodland or the amenity it provides. The woodland can be retained and protected to the required standard.
W4	Betula pendula (Silver Birch), Fraxinus excelsior (Ash), Acer pseudoplatanus (Sycamore), Quercus robur (Common Oak), Salix caprea (Goat Willow)	16	600	4	4	4	4	3	M	40+	A2	163	**Condition:** Fair **Notes:** Area of established, mixed broad leaf woodland to the northeast of the site. Has links with trees and wooded areas off-site to the north and east. Ash element is beginning to show indications	Prominent feature in the local landscape that links with other woodlands and trees in the wider area. Woodland is to the north and east of the site and is unlikely to significantly shade the site. It is recommended that a buffer zone of minimum of 10

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													of Chalara ash dieback and consideration should be given to the removal and replacement of these trees. Low to moderate bat potential.	metres is established between the woodland and the nearest dwelling. The woodland is a significant asset, and every effort should be made to retain and incorporate it into the site layout. There is potential to improve public access within the is woodland and site recreation areas in clearings or locations currently supporting ash trees. The woodland can be retained and protected to the required standard.
G5	Acer pseudoplatanus (Sycamore), Pinus nigra 'maritima' (Corsican Pine)	18	800	6	6	6	6	3	M	20+	A2	290	**Condition:** Good **Notes:** Group of mixed trees on bank above and to the north of the site. Separated from the site by a high	Prominent feature in the landscape. Given the affect of the retaining wall this group is unlikely to be impacted by the construction activities, however

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													retaining wall. Wall will affect RPA. Low bat potential.	the size of the trees and the fact that they are elevated above the site may increase the influence that they would have over residential amenity. Where shading would be minimal, as they are to the north and east, there size and stature could dominate the area and causes concerns over safety. The group is a significant asset, and every effort needs to be made to retain it in the landscape. It is recommended that a 15-metre buffer zone is established between the tree group and the nearest dwelling.

Ultimate Heights of Main Species

Oak 20 Sycamore 20 Ash 18 Birch 18 Corsican Pine 25 Goat Willow 15

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Notes

BS 5837: 2012 provides the framework through which tree can be categorised in terms of their health, amenity value and long-term viability for retention on a development site. There are four categories, A,B,C & U.

Category A: Trees of high quality with an estimated life expectancy of at least 40 years.

1 Trees that are particularly good examples of their species, or essential components of groups or formal arboricultural features.
2 Trees, groups or woodlands that provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance.
3 Trees, groups or woodlands of significant conservation, historical, commemorative or other value.

Category B: Trees of moderate quality with an estimated lifespan of at least 20 years.

1 Trees that might be included in a higher category but are downgraded because of impaired condition.
2 Trees present in numbers, usually as groups of woodlands that form distinctive landscape features.
3 Trees with clearly identifiable conservation or other cultural benefits.

Category C: Trees of low quality with an estimated lifespan of at least 10 years or young trees with a stem diameter below 150mm.

1 Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.
2 Trees present in groups of woodlands, but without this conferring on them significantly greater collective landscape value; and/or tree offering low or only temporary/transient landscape benefits.
3 Trees with no material conservation or other cultural value.

Category U: Trees in such a condition that they cannot realistically be retained as living in the context of the current land use for longer than 10 years. *NB. Category U trees can have an existing of potential conservation value which it might be desirable to preserve.*

Bat potential has been assessed in accordance with the guidance provided in BS 8596:2015 and is at the level of a non-specialist scoping survey. This assessment is for preliminary advice and does not negate the requirement for a specialist ecological survey

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Key

Tag No	Identification number for tree	**Species**	Species of tree
Top Height	Estimated height of tree	**Stem Dia.**	Diameter of stem at 1.5 metres
Stems	Number of stems	**N, E, S, W**	Crown spread at compass points
CC	Crown Clearance	**FSB**	Direction of first significant branch
Rem. Cont	Remaining safe life expectancy in years	**RPA**	Root protection area in m^2
Cat.	BS Category (see above)	**AIA**	Arboricultural Implication Assessment

Age	**Y -**	Young Trees
	SM	Semi Mature
	EM	Early Mature
	M	Mature
	LM	Late Mature exceeds normal life expectancy for species
	VET	Veteran Tree
Condition	**Good**	Relatively free from defects and / or major pests and diseases
	Fair	Some defects, which could be addressed through tree surgery or minor pests or early symptoms of diseases
	Poor	Substantial defects or terminal decline
	Dead	Dead

Institute of Chartered Foresters
Registered Consultant

North

PROPOSED RESIDENTIAL DEVELOPMENT BY GOWER HOMES

Prospect
Tan-y-bryn
Club
Helenfa
Beckingham
Twyn Bedw
Serena
Shelter
123.7m
136.9m
Track
Swn Aderyn
HAWTHORN AVENUE / RHODFA'R DRAENEN WEN
WILLOW COURT / CWRT HELYG
Bowling Green
LANCASTER TERRACE
MAES DERWYDD
Play Area
A 539
FFORDD LLANGOLLEN
STRYT Y CAPEL
POS
PRIVATE DRIVE
PARKING COURT
WOODLAND AREA 7960m²
BADGER SETT WITH 30m BUFFER ZONE
DETENTION BASIN SIZE TO BE CONFIRMED BY ENGINEER
PEDESTRIAN LINK TO PUBLIC FOOTPATH
Path (um)
Path
PH
KING'S STREET B 5096
Ty Newydd
Dalehurst
Hazeldene
The Millstone
Stonecroft
Foden Works
STATION ROAD
Chapel Fields
Elder Cottage
Cwm y Glo
125.3m
St Paul's Villas
Tremfa
Tower House
Hanwood House
ESS
FB

LEGEND

- MINESHAFT COLLAPSE RADIUS
- MINESHAFT LOCATION / DIAMETER
- BRICK FACED RETAINING WALL WITH APPROXIMATE HEIGHT INDICATED
- TIMBER CRIBLOCK RETAINING WALL
- EXTERNAL STORE / SHED
- BIN STORE LOCATION
- ASPHALT ROAD AND PARKING BAYS
- ASPHALT FOOTPATH
- BLOCK PAVIOR (NON-ADOPTABLE)
- GRASSCRETE PARKING BAY
- PAVING
- RAIN GARDEN

Shields Arboricultural Consultancy
Tree & Woodland Management Solutions

Tree Constraints Plan
Overlay
Land at
Former Air Products Site
Acrefair
Wrexham

Key

- Cat A Tree
- Cat B Tree
- RPA
- RPA Cat C
- Canopy
- Canopy Spread Cat U Tree
- Woodland

Drawing No: APA/TCP/OL/06/22/01
Drawn By: S. Shields
Scale: 1:750 @ A1
Date: 19th September 2023
Revision: B

Do not scale from this drawing all dimensions to be checked on site
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North

PROPOSED RESIDENTIAL DEVELOPMENT BY GOWER HOMES

LEGEND

- MINESHAFT COLLAPSE RADIUS
- MINESHAFT LOCATION / DIAMETER
- BRICK FACED RETAINING WALL WITH APPROXIMATE HEIGHT INDICATED
- TIMBER CRIBLOCK RETAINING WALL
- EXTERNAL STORE / SHED
- BIN STORE LOCATION
- ASPHALT ROAD AND PARKING BAYS
- ASPHALT FOOTPATH
- BLOCK PAVIOR (NON-ADOPTABLE)
- GRASSCRETE PARKING BAY
- PAVING
- RAIN GARDEN

Shields Arboricultural Consultancy
Tree & Woodland Management Solutions

Tree Protection Plan
Overlay
Land at
Former Air Products Site
Acrefair
Wrexham

Key

- Cat A Tree
- Cat B Tree
- Cat C Tree
- Cat U Tree
- CEZ
- Fencing

Drawing No: APA/TPP/OL/06/22/01

Drawn By: S. Shields

Scale: 1:750 @ A1

Date: 19th September 2023

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