

Arboricultural Method Statement & Tree Protection Plan

Land at
Chirk Court Nursing Home
Chirk
Wrexham

Ref:
AMS/CCC/06/14
Rev A

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Commissioned by:
S. McCormick

Prepared by
S. Shields

Arboricultural Method Statement

&

Tree Protection Plan

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Chirk Court Nursing Home
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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' & BS 3998: 2010 'Tree Work – Recommendations'

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Contents

1.0	Instruction
2.0	Scope & Limitations
3.0	Statutory Controls & Obligations
4.0	Site Description and Proposed Development
5.0	Arboricultural Method Statement
6.0	Arboricultural Operations and Specification
7.0	Conclusions

Instruction

- 1.1 Shields Arboricultural Consultancy received instructions from Mr S. McCormick on behalf of Anwyl Homes LTD to provide an Arboricultural Method Statement and Tree Protection Plan for trees at Chirk Court Nursing Home. All tree constraints are taken from the original Arboricultural Impact Assessment and Tree Protection Plan provided by Lingard Styles ref: 2696 11 09 2.

Scope & Limitations

- 2.1 The purpose of the report is to provide methods for the protection of trees retained on site during the demolition and construction of part of the existing nursing home.
- 2.2 The report is prepared with reference to the recommendations of the British Standard Document BS 5837: 2012 'Trees in relation to design, demolition and construction' and BS 3998: 2010 'Tree Work – Recommendations'.
- 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 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.

Description of Site & Proposed Development

4.1 The site is a residential nursing home set in its own grounds within the village of Chirk. The site is to the east of and immediately adjacent to the main road running through the village. There are a number of trees on and adjacent to the site which provide amenity to the area. These trees have been identified and assessed in an Arboricultural Impact Assessment provided with the original planning application.

4.2 The site is level and at an elevation of 100m AOD and is not exposed.

Soils

4.3 Soils at the appeared to be free draining, cultivated brown earths. Soils appeared to be of reasonable depth and there is no indication of any significant impediments to rooting.

*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.*

4.4 Planning permission has been granted at appeal to part demolish and reconstruct the existing building in accordance with the conditions set out in appeal decision notice APP/H6955/A/11/2159246, including conditions requiring that retained trees on the site are adequately protected during the development as permitted.

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

- a. Avoid physical damage to the aerial parts of the existing trees (i.e. impact and other damage to trunk and branches)
- b. Avoid damage to existing trees as a result of the severance or other physical damage to their roots
- c. Preserve the characteristics of the soil within the Root Areas of existing trees and any sites proposed for new planting, through the avoidance of any activity that would cause the soil 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 Root Protection Area (RPA), around each tree. An RPA is the minimum area that must be maintained undisturbed to ensure that it is not damaged by construction activity. The size of the RPA is

calculated for each tree and is based on its stem diameter and the shape should take account of ground conditions and any impediment to rooting and should represent the most probable position of the tree's root system.

From the RPA a construction exclusion zone CEZ should be derived, this must be considered sacrosanct and must be suitably protected during the construction phase, using robust fencing or alternative ground protection methods, to prevent disturbance and damage occurring.

Arboricultural Method Statement

Preamble

- 5.1 This arboricultural method statement (AMS) sets out the details of tree protection measures afforded to the retained trees on and adjacent to the site and has been prepared to meet the requirements of planning conditions 16 & 17 as detailed in appeal decision notice APP/H6955/A/11/2159246.
- 5.2 All Construction Exclusion Zones and Root Protection Areas identified in the original Arboricultural Impact Assessment and Tree Protection Plan provided by Lingard Styles ref: 2696 11 09 2 have been checked and verified as accurate, with the exception of T13, which is a multi-stem tree. Due to a revision in the method for assessing the RPAs of multi-stem trees, the RPA for T13 has been reduced.
- 5.4 A review of the approved plans indicates that there will be no construction within the RPA of any retained tree. Therefore condition 20, requiring the use of specialised foundations would appear to be redundant.
- 5.5 On site operations subject to this AMS consist of the following:
 - Demolition of the north wing of the building
 - Construction of the new wings of the building, car parking areas and access roads
 - Installation of 'no-dig' access roads within the CEZ of retained trees
 - Installation of underground services within the CEZ of existing trees
 - Arboricultural operations to existing trees
- 5.6 This document should be read in conjunction with the Tree Protection Plan (TPP). 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.

- 5.7 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.
- 5.8 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.
- 5.9 All measurements are given in metric using standard abbreviations.

Fencing and Ground Protection

- 5.10 The TPP indicates the position all protective fences.
- 5.11 Tree protection fencing will comprise a 2.4 m high scaffold frame work with vertical and horizontal poles, driven into the ground to a depth of 0.6 m and well braced to resist impact. Onto this framework 'weldmesh' or 'herres' fencing panels must be securely fixed using scaffolding clamps or as agreed with the Local Planning Authority.
- 5.12 Where ground protection is specified this will consist of a proprietary system such as Ground Guard protective plates or of 25mm thick plywood sheets placed on top of a geo-textile membrane with pollution control properties (e.g TRP 300 by Geosynthetics Limited, Fleming Road, Harrowbrook Ind Est, Hinckley, Leicestershire, LE10 3DU. Tel: 01455 617139). The plates / plywood sheets must be securely pegged into place to prevent lateral movement during construction. The ground protection must extend over the entire area indicated on the TPP. Scaffolding can be erected on the ground protection where required.
- 5.13 The protective fencing 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.
- 5.14 Other than works approved in writing by the LPA or identified in this AMS, no works including storage or dumping of materials shall take place within the exclusion zones defined by the protective fencing.

General Precautions

- 5.15 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.
- 5.16 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.
- 5.17 No fires will be lit within 20m of the trunk of any tree that is to be retained.

- 5.18 Storage and mixing areas must be outside the CEZ and must be identified prior to the commencement of the construction work. Contractor parking should be in areas outside the CEZ.
- 5.19 Access to the work area is via the main site entrance and must not traverse the CEZ.
- 5.20 To ensure that all tree protection measures are properly installed and procedure followed the site must 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.

Schedule of Inspection

1. On completion of erection of fencing and installation of ground protection prior to commencement of demolition works
 2. On completion of demolition prior to commencement of construction
 3. During installation of the no dig driveway
 4. During installation of underground services
 5. Monthly through out project
 6. On completion of project
- 5.21 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.

Demolition Phase

- 5.22 Prior to commencement all tree protection fencing and ground protection systems must be fully installed. All personnel are to be fully informed of the requirements of the TPP and AMS.
- 5.23 Access around the building is to be restricted to pedestrian access only for the purpose of allowing demolition by hand of certain part of the structure as required by condition 5. All mechanical demolition is to be undertaken using a 'pull in' method, i.e. the demolition machinery work from within the footprint of the existing building, pulling all materials inwards onto the existing floor slab. When all other work has been completed the floor slab is broken up and pulled inwards.
- 5.24 All access to the site by vehicles, plant and equipment is via the existing access road and through the building to be demolished.

Construction Phase

- 5.25 Prior to commencement all tree protection fencing and ground protection systems must be fully installed. All personnel are to be fully informed of the requirements of the TPP and AMS.
- 5.26 Construction must be undertaken in accordance with the general precautions set out above.

Formation of No-Dig Access Road

NB Where no dig construction is specified this must be installed prior to any machinery access in the area or an alternative temporary ground protection system must be used.

- 5.27 A pre-commencement meeting is to take place between the contractors and an arboriculturist from Shields Arboricultural Consultancy. This meeting will discuss the tree protection requirements.
- 5.28 It is recommended that a proprietary no-dig driveway system, such as the cell web TRP cellular confinement system (*Geosynthetics Limited, Fleming Road, Harrowbrook Ind Est, Hinckley, Leicestershire, LE10 3DU. Tel: 01455 617139*) be used to construct the access driveway within the RPA of the protected trees, as indicated on the Tree Protection Plan.
- 5.29 Essentially no-dig systems are installed over existing ground levels and without the need for compacting the sub-base. This ensures that the tree's root system is not damaged by excavation and the soil structure is not damaged. Using a porous top surface ensures that water can permeate through the driveway to the root system and the exchange of gases and oxygen between the soil and the air is unaffected. In this case the ground is reasonably level and any discrepancies between the finished surface of the road and the existing access track can be addressed by building up the top layer on the existing access track. See attached technical information.
- 5.30 The area where the no-dig system is to be used is identified on the TPP and should be marked out on the ground. There must be a minimum distance of 1 metre from the base of the tree to the nearest edge of the driveway. Prior to work commencing the tree protection fences are moved to allow pedestrian access. No plant or vehicles are permitted to enter the RPA. All work within the RPA **must be undertaken by hand.** Tree Protection Fencing to be moved to position 2 as identified on the TPP.
- 5.31 Initial preparations require ground vegetation to be carefully removed. This should be undertaken using hand tools under the supervision of the consultant arboriculturalist. The next step requires filling small undulations to provide even ground on to which the cell web system is laid. This should be achieved using a fill medium of clean sand spread to a maximum depth of 50mm. This should be loose tipped into the RPA and levelled using hand tools only. Where required, the sand is to be retained using treated timber edging.
- 5.32 Once an even surface has been achieved a 3 dimensional cellular confinement system is to be constructed to form a sub-base for the access road. This should be installed in accordance with the manufacture's instructions but usually requires that a layer of geo-textile is placed over all fill soil. On to this is laid the 3 dimensional grid, which is pegged into place using proprietary pegs. The cells are then filled using 40/20 mm clean angular stone, of neutral pH, with no

finer. This should occur from the outside edge working in and the charged cells used as a working platform. A second layer of geo-textile is then laid over the 3D grid and the topped with the finished surface material. In this case the material must be porous. The geo grid structure and surface layer are retained and edged using treated timber edging held in place by short wooden stakes. The edges can then be incorporated into the existing landscaped as required.

N.B This report does not provide engineering specifications for the parking area and the suitability for the use of a 3 dimensional grid system in this location must be confirmed by an appropriately qualified person. Geosynthetics Limited provides a design service for their products.

Installation of Services

- 5.33 A pre-commencement meeting is to take place between the contractors and an arboriculturist from Shields Arboricultural Consultancy. This meeting will discuss the tree protection requirements.
- 5.34 All services are to be installed in accordance with NJUG volume 4 Guidelines. This advises that where possible service and drainage routes, below or above ground must avoid the CEZ around any retained tree. Where this is not possible the next option would be to 'mole' the route through the CEZ, working from access points located outside the CEZ. If this option is not feasible then the next option is to use an open trench, constructed under the supervision of the consultant arboriculturalist. The trench should be located as close to the outer edge of the RPA as is possible and the operation must be undertaken in accordance with the details provided below.
- 5.35 Line of the service route to be excavated is to be marked on the ground and tree protection fences moved to provide pedestrian access. No plant or vehicles are permitted to enter the RPA. All work within the RPA must be undertaken by hand. Ground protection, as specified in 5.12, is to be installed either side of the service route to be excavated.
- 5.36 Service trench is to be excavated to the required depth using an 'airspade' or similar. Prior to undertaking the trenching operation a trial pit is to be dug to the required depth to allow the assessment of the prevalent soil profile to establish the depth of the topsoil. Once this is completed excavation should commence in layers allowing the topsoil to be removed and stored separately to the sub soil.
- 5.37 No roots over 25mm in diameter are to be severed and, if encountered, will be wrapped in damp Hessian sacking and preserved. Minor roots are to be cut back to the nearest appropriate branching point using sharp secateurs.
- 5.37 Service pipe or duct is to be installed, taking care to thread through any retained roots. Once in place Hessian wrapping is to be removed from exposed roots and the trench backfilled using excavated material, taking care not to bury topsoil beneath its previous depth. The backfill

can be lightly tamped down by hand or allowed to settle naturally prior to final landscape treatment such as re-seeding.

Arboricultural Operations and Specification

- 6.1 To provide clearance beneath the crown of T18, which extends over the emergency access road, a crown lifting operation is required. All works are to be undertaken in accordance with BS 3998: 2010 'Tree Work – Recommendations'.
- 6.2 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. All work should be undertaken by suitably qualified persons, 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.
- 6.3 All tree protection measure specified in section 5 and shown on the accompanying TPP are to be fully installed prior to the commencement of the arboricultural works. Where access is required to the trees, then suitable ground protection must be used in lieu of the tree protection fences.
- 6.4 The contractor undertaking the work is responsible for any loss or damage arising as a result of the operations and agrees to indemnify Anwyl Homes LTD against such occurrences.

Work Specification

- 6.5 The following work specification has been prepared for the parts of the tree that encroach over the emergency access road only. The crown structure of the tree is such that adequate clearance can be obtained by the removal of the secondary and tertiary branches and there is no requirement to remove any primary limbs.

Tree I.D #	Operation / Specification
T18 (Beech)	The pruning works shall consist of the following: (a) the removal of any branch stubs, deadwood, hung up branches and climbers, the removal of sucker growth, the removal of epicormic growth to a height of 5 metres above ground level; (b) crown lifting to a maximum height above ground level of 3.5 metres; cut back to appropriate pruning points, above the emergency access road only. (c) lateral crown reduction by 1 – 1.5 metres, including reshaping and balancing; on east side of crown to provide clearance away from the proposed building and to allow

	scaffold access. (d) re-shaping and balancing. The works shall not include: (a) the removal of any branch of which any part is more than 100 millimetres in diameter when measured over bark; (b) any pollarding or topping;
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Conclusion

- 7.1 Providing all recommendations of this report are fully implemented, the risk of trees being significantly harmed as a result of this development is very low.

S.J.A. Shields

Uni. Cert. For. & F.P. (Bangor), Dip. Arb. (RFS),

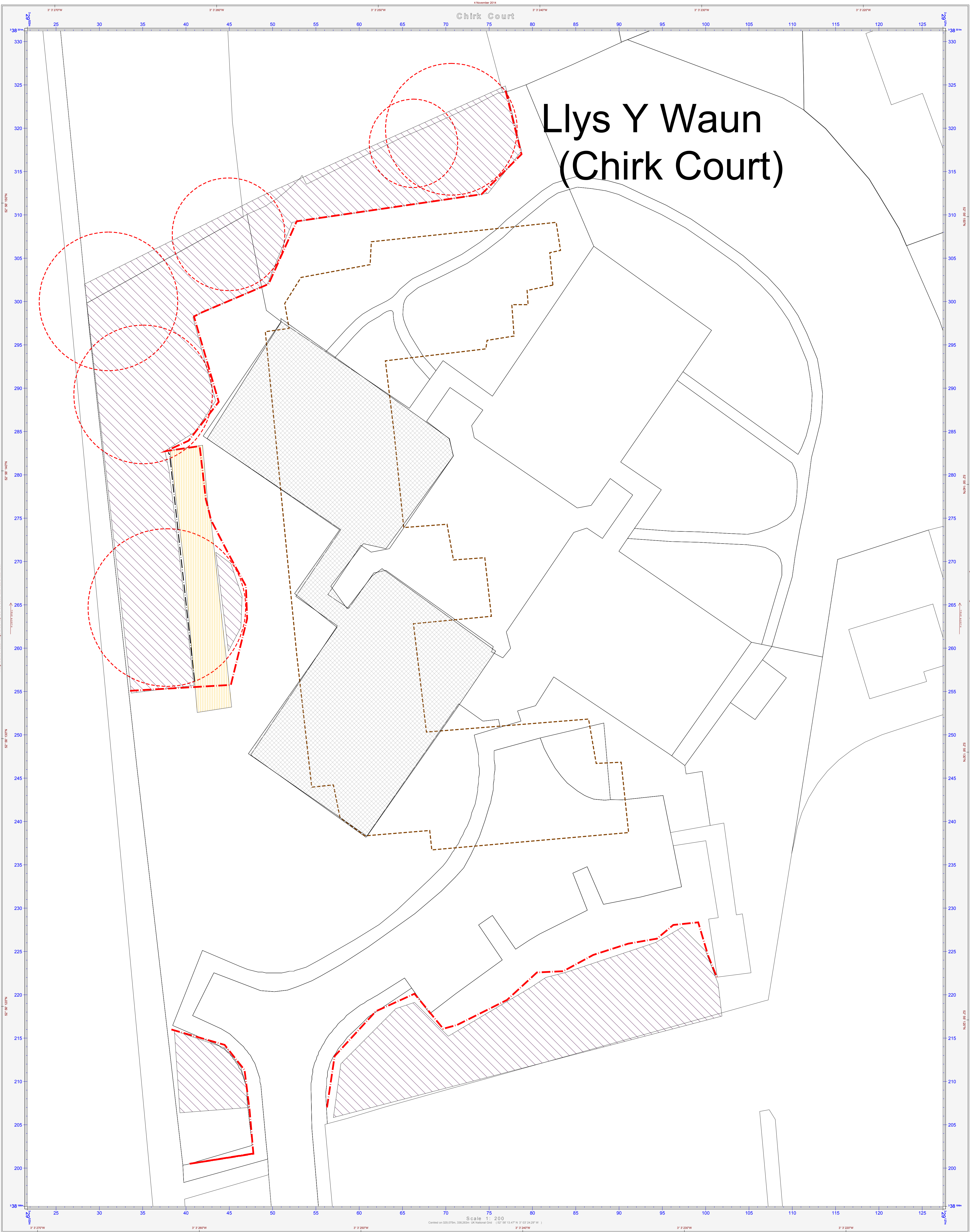
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Chartered Forester

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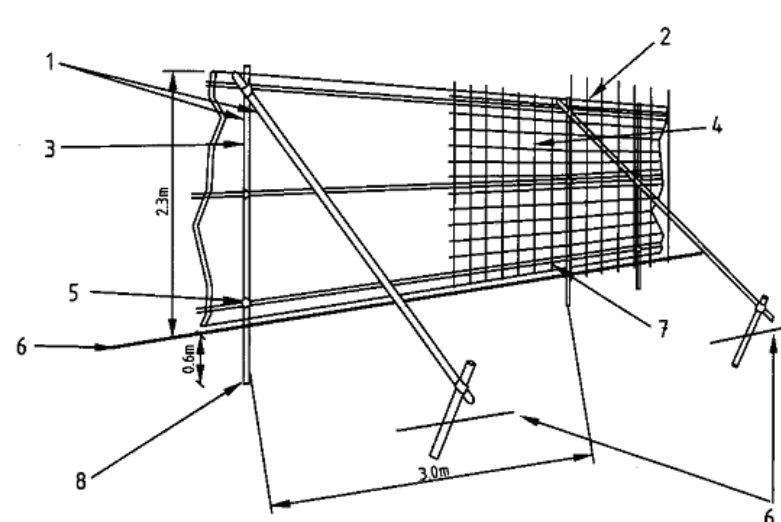
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Shields Arboricultural
Consultancy

Tree & Woodland Management Solutions

Tree Protection Plan
Chirk Court Nursing Home
Chirk

- Legend
- RPA
 - CEZ
 - No Dig Construction Area
 - New Structures
 - Structure to be Demolished
 - Tree Protection Fencing
 - Tree Protection Fencing 2



Tree Protection Barrier

1 Standard scaffold poles 2 Uprights to be driven into the ground 3 Panels secured to uprights with wire ties and/or standard scaffold clamps 4 Weldmesh wired to the uprights and horizontals 5 Standard clamps 6 Ground level 7 Wire twisted and secured on inside face of fencing to avoid easy dismantling 8 Approx. 0.6 m driven into the ground

Drawing No: CCC/TPP/11/14/01
Drawn By: S. Shields
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Do not scale from this drawing all dimensions to be checked on site
Drawing is colour coded and a monochrome copy should not be relied upon

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