



Landscape

Chartered Landscape Architects

TREE SURVEY REPORT
PROPOSED RESIDENTIAL DEVELOPMENT
IVY MILL PHASE 2
CLEATOR MOOR ROAD WHITEHAVEN
GLEESON HOMES

23.07.21

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CONTENTS

1 INTRODUCTION

1.1 SCOPE OF REPORT

1.2 METHODOLOGY

2.0 SURVEY RESULTS

2.1. LEGISLATIVE PROTECTION

2.2. SPECIES COMPOSITION AND CONDITION

2.3. DIRECT IMPACT

3.0 LANDSCAPE AND AMENITY IMPACT

4.0 PROTECTION OF EXISTING TREES

5.0 TREE MANAGEMENT WORK

6.0 PROPOSED PLANTING

7.0 ARBORICULTURAL IMPLICATION ASSESSMENT AND MITIGATION DESIGN

8.0 SUMMARY COMMENTS

APPENDICES- LIST OF FIGURES

1 Tree Schedule

2 Tree Survey and Mitigation Plan

3 Photographs

4 Tree Protection Fence Detail

1 INTRODUCTION

1.1 SCOPE OF REPORT

1.1.1 This report was commissioned to assess the arboricultural constraints of a potential residential development of 38 two storey detached (20) and semi-detached (18) units on land adjacent to Cleator Moor Road, Whitehaven, Cumbria and will form part of an application for detailed planning consent to Copeland Borough Council. A previous application has been submitted by Gleeson Homes for the adjacent site to the west (Ref. 4/20/2334/0R1) which is Phase 1.

1.1.2 Westwood Landscape, Chartered Landscape Architects (with LANTRA Professional Tree Inspector Certification) were appointed by Gleeson Homes Ltd to carry out a survey and amenity value analysis of the trees on and adjacent to the proposed development site and appraise the potential impact of the development on retained trees.

1.1.3. The surveyors were Bruce Walker BSc(Hons) MPhil CMLI and James England NDF BSc(Hons) For Mic For and the survey work was carried out in July 2021.

1.1.4. The proposed development layout is shown on Twenty 10 Plan number PL112 June 2021.

1.1.5. The proposed development will have two access roads from Cleator Moor Road: one main cul-de-sac and a secondary access for Plots 1-7.

1.2 METHODOLOGY

1.2.1. The survey data and tree constraints assessment were recorded in the standard schedule format required by the Local Planning Authority. Survey work is in accordance with BS5837 2012 Trees in Relation to Design, Demolition and Construction. Direct and indirect constraints on trees and hedges within and adjacent to the site will be assessed and both above and below ground impact considered.

1.2.2. Tree height was recorded with a Leica Disto D810 digital laser measure to record distance to the tree base and to automatically calculate height.

1.2.3. Crown height and spread was recorded with a Leica Disto D810 digital laser measure. Trunk circumference is measured by tape at 1.5m above ground level.

1.2.4. Below ground constraints are influenced by the RPA and are determined in line with the recommendations set out in section 4.6 of BS 5837:2012. The Root Protection Area (RPA) radius is calculated as stem diameter (d.b.h.) x 12. The RPA for multi-stemmed trees is calculated from the diameter of the individual stems rather than the circumference above the root flare (recent change in the April 2012 update to the BS). The combined stem diameter for trees with 2-5 stems is calculated using the formula '*square root of the sum of individual diameters squared*'. For more than 5 stems a mean

value is used. Trunk lean was measured with a clinometer and spirit level. Note that the RPA is recorded as a circle on the tree constraints plan in accordance with the BS but the actual spread of roots on site may vary significantly due to level changes, barriers and site conditions.

1.2.5. The walkover survey involved inspection and measurement of above ground parts of the trees only as required by the brief. No trial excavations, soil samples or tree testing was carried out. More detailed investigations may be required to appraise the potential arboricultural impact prior to the construction phase of the project.

1.2.4. The Tree Schedule records all the data required in British Standard BS5837: 2012 Trees in Relation to Construction. The criteria used is as follows:

Classification Criteria

Information on the trees is provided in the Tree Tabular Data as follows:

- Species Age Class:-

RP: Recently planted trees – up to approximately 5 years old.

Y: Young – established tree up to one third the expected ultimate height

EM: Early Mature (Semi-mature) – between one third and two-thirds the expected ultimate height. Growth rate still increasing.

YM: Young Mature (Semi-mature) – Growth rate stabilises, although tree has not obtained full potential stature.

M: Mature – full stature achieved, more or less full height, but still increasing in girth.

NOTE: The Young Mature and Mature period may account for approximately half the trees' life span.

LM: Late Mature (over mature) – Crown may begin to decline. Annual increment declines or slows down.

Intermediate classifications can be used where trees do not fall clearly within an age class.

- Diameter at Breast Height – (dbh. measured in centimetres at approx 1.5m)
- Height – (Approximate height measured in metres)
- Height of Main Fork – The height of top of main stem.
- Height of Crown – The height of the crown (to general lowest point above ground level) where appropriate.
- Condition - A general Classification of Condition: For example, Good; Fair; Poor; Dead; Dangerous, followed by information regarding condition or any other comments regarded as relevant.
- Recommendations - Action recommended in the interests of safety and in accordance with good arboricultural practice.
- Physiological Condition – Overall appraisal of the trees health / biological condition together with any relevant comments e.g. pests and diseases. Ratings: Good, Fair, Poor, Dead.
- Structural Condition – Overall appraisal of the trees structural condition together with any relevant comments e.g. dead, damaged branches. Ratings: Good, Fair, Poor, Dead. Action and Comments (in the context of proposed development).
- Recommendations – action required to facilitate the development, for safety or future health of the tree.

1.2.5. The tree quality assessment follows the following scale based on arboricultural qualities, landscape qualities and cultural values including conservation:

Trees unsuitable for retention

Category U

Trees in a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years and any existing value will be lost within that period. These trees should be removed for sound arboricultural reasons. Note Category U trees can have existing or potential conservation value which might be desirable to preserve if this does not impose an unacceptable risk. Habitat re-instatement or protection may be appropriate for species such as bats. E.g. installation of bat boxes, or leaving as a safe structure of no arboricultural value, but very good for invertebrates, owls, woodpeckers etc.

Examples of trees in this category include:

- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse. Includes those that will be exposed following removal of other category U trees, because their sudden exposure increases risk of failure.
- Trees that are dead or are showing signs of irreversible, immediate decline.
- Trees infected with pathogens that threaten the health or safety of other trees nearby.
- Very low value trees restricting the growth of specimens of better quality.

Trees to be considered for retention

Category A

Trees of high quality and value with an estimated remaining life expectancy and substantial contribution of at least 40 years. They be good examples of the species (rare or unusual) or essential components of groups, or of formal or semi-formal arboricultural features. Trees, groups or woodlands which provide a definite screening or softening effect to the locality (views into or out of the site), or those of particular visual importance and high amenity value. These may include trees, groups or woodlands of significant conservation, historical or cultural value.

Category B

Trees of moderate quality and value with an estimated remaining life expectancy and substantial contribution of at least 20 years. They may not achieve Category A rating due to impaired condition from which they may recover. The tree condition, arboricultural, ecological habitat, landscape and amenity value will be lower than Category A trees but higher than Category C trees.

Category C

Trees of low quality and value with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm. Trees in a suitable condition to be retained until they mature or improve (if damaged, diseased, misshapen, etc) or until other trees are established. The tree condition, arboricultural, ecological habitat, landscape and amenity value will be lower than Category A and B trees. Removal of Category C trees to accommodate a development is often considered acceptable as

replacements trees can achieve the same level of landscape and amenity value quite quickly. Small trees below 150cm girth could be re-located.

2.0 SURVEY RESULTS

2.1. LEGISLATIVE PROTECTION

- 2.1.1. The Town and Country Planning (Trees) Regulations 1999 set out the scope of tree preservation orders and also the scope of the protection afforded to trees in Conservation Areas.
- 2.1.2. There are no known Tree Preservation Orders affecting the study area and it is not within a Conservation Area. The council's Tree Officer was not contacted to verify if any recent TPO's had been issued which may not have been updated.
- 2.1.3. Statutory wildlife obligations must be considered including: The Wildlife and Countryside Act 1981 as amended, the Countryside and rights of Way Act 2000 and the Conservation of Habitats and Species Regulations 2017. These regulations protect all wild birds and make it an offence to intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird. Bats are protected under Schedule 2 of the Conservation of Habitats and Species Regulations 2017 making it an offence to damage or destroy a roost site even if unoccupied.

2.2. SPECIES COMPOSITION AND CONDITION

- 2.2.1 The trees surveyed are all at the boundaries of the site and comprise mostly *Populus nigra 'Italica'* (Lombardy Poplar) with Hawthorn, Norway Maple and Leyland Cypress in Group G2. These are very common species.
- 2.2.2. There were no unique species or specimens recorded. No special characteristics or protected or rare species were noted in the shrub or ground flora although no detailed botanical survey was carried out.

2.3. DIRECT IMPACT

- 2.3.1. To facilitate the development the removal of all of the Lombardy Poplar trees is recommended as these are inherently brittle, short-lived trees and not appropriate adjacent to a public road or the proposed residential development. They are prone to dropping large branches as well as failing in high winds which will be a Health and Safety concern.

3. LANDSCAPE AND AMENITY VALUE

3.1 The trees surveyed are all low value category 'C' trees of mostly low landscape and amenity value. The four trees fronting Cleator Moor Road do contribute to the streetscape so could be categorised as low/ moderate value but they are poor quality trees and short-lived. The trees in group G1 along the southern boundary provide a partial screen between the development site and the existing houses at numbers 17-33

Muncaster Road which will be lost but can be compensated for by the proposed trees within Phases 1 and 2.

3.2. Removal of all the Lombardy Poplars as recommended will inevitable cause some limited loss of landscape and amenity value in the short term but once replacement trees of a more suitable species are established the landscape and amenity value will be improved.

3.3. The trees in group G2 provide a good visual screen to the rear of houses at numbers 30-34 Queens Close and should be retained.

3.5. Refer to the Tree Schedule in Appendix 1 for further detailed comments.

4.0 ARBORICULTURE METHOD STATEMENT FOR PROTECTION OF TREES

Refer to Appendices

4.1 Refer to Tree Mitigation Plan L03 for location of trees to be retained and extent of Root Protection Areas (RPA's) which form a Construction Exclusion Zone (CEZ).

4.2 Protective fencing to be erected prior to the commencement of any other work to ensure that the trees are protected in accordance with British Standard 5837:2012 Trees in Relation to Construction. Such measures shall be retained for the duration of any approved works. Refer to detailed fencing drawing below in the Appendix.

4.3. Protective fencing must remain intact and in place, and protection procedures must be adhered to throughout the construction period. Removal of protective fencing should be the last job carried out on completion of the project.

4.4. No mechanical traffic should be allowed above a tree's root zone, since this could cause compaction and damage roots. No excavations of any kind to take place within the root zone area of protected trees. No materials should be stored within the RPA or any ground level increase. No re-fuelling or any other activity which may lead to chemical spillage should be carried out within or close to the RPA. No fires to be lit within the RPA.

4.5. In certain circumstances it is possible to accommodate construction activities within the RPA distances recommended by the B.S. 5837:2012 calculation. This is unavoidable for the proposed work but this will not necessarily lead to tree damage if this methodology is carefully followed. Intrusive work within the RPA should be restricted to one side of the tree and the protection zone extended on the other sides to compensate.

4.6. Pre-construction Stage

4.6.1. Prestart site meeting involving Architect, Contractor and potentially client and LPA representative if requested. Timing and implementation of the agreed Tree Works and installation of Tree protection measures.

4.6.2. Clearance of the required tree groups and pruning back canopies of retained trees which may be impacted by the development to crown raise to clear vehicular traffic.

4.6.3. Tree protection fence installed and LPA informed and given opportunity to inspect.

4.7. Development Stage

4.7.1. Contractors RAMS assessed by Architect and Landscape Architect/ Arboricultural Consultant.

4.7.2. Minimal dig construction method to be followed where work is unavoidable within the RPA of retained trees:

- Where construction traffic within the RPA at the site access routes is unavoidable a temporary protective track should be formed with interlocking panels (I-track system or similar) over a compressible layer of 200mm bark mulch or chipped wood. A more lightweight solution of timber boards will be suitable for pedestrian only routes. The boards must be suitable to spread the anticipated load such as heavy duty scaffold boards. For more permanent surface solutions within the RPA's a cellular confinement system of gravel-filled rigid cells of total construction depth of 150mm should be used to ensure unimpeded water and air penetration to the tree roots. These can be edge edged with treated timber (32 x 200mm), supported in place with 50mm x 50mm treated wooden pegs driven into firm ground rather than a concrete kerb requiring excavation for strip foundation which could sever roots. These requirements must be verified by the Engineer following appropriate CBR tests and design.
- Any existing vegetation over the area of the construction should be treated with a proprietary translocated Glyphosate based herbicide such as 'Roundup' and cut down to ground level. Remove vegetation to 25mm maximum depth.
- Any minor irregularities, lumps or hollows in the ground level will be evened out or filled in with topsoil using hand tools. A geotextile separation membrane such as Terram will be spread out over the no-dig access routes where these lie within the tree RPA's.
- Excavation of pits for foundations and services should be carried out carefully by hand or with an air spade if within the RPA's. Any exposed tree roots should be recovered with topsoil as soon as possible with the tree pit backfilling or wrapped in hessian if they remain exposed. This will prevent root damage from drying out or sudden changes in temperature. The wraps should be removed before backfilling. Roots smaller than 25mm in diameter which are obstructing the work can be pruned with bypass secateurs or a handsaw except where they occur in clumps when the Arboricultural consultant must be consulted. Trial excavations using an air spade prior to detailed foundation design will inform the positioning of the excavations to avoid large roots.

4.7.3. Site inspections by the Landscape Architect/ Arboricultural Consultant is advisable as required during the works, especially if tree roots are encountered.

4.7.4. Removal of Protective Fencing once the main construction work is completed to allow re-surfacing and planting work within the CEZ.

2.12. Contacts:

Architect:

Contact: Twenty 10 Architects

Landscape Architect/ Arboriculture Consultant:

Contact: Bruce Walker, Westwood Landscape Ltd, Carlisle Tel. 01228 712123 Mobile 07736 364337

5.0 TREE MANAGEMENT WORK

Refer to Tree Schedule in Appendix 1

5.1. Management of the retained trees is recommended but this will be minor pruning only.

6. PROPOSED PLANTING

6.1 A robust landscaping scheme is required to compensate for the trees to be felled and to enhance the diversity of species and enhance the biodiversity.

6.2. The proposed planting had not been detailed at the time this report was issued.

6.3. The planting strategy will include narrow fastigate canopy trees to the frontage of Cleator Moor Road and trees to the southern boundaries and within the proposed gardens and POS to enhance the landscape and amenity value of the development.

7.0 ARBORICULTURAL IMPLICATION ASSESSMENT AND MITIGATION DESIGN

7.1 The Arboricultural Implication Assessment considers how a proposed development and its associated trees and hedges will co-exist and interact in the present and future. An AIA is a document required by Planning Authorities to enable them to satisfy themselves that factors such as root protection, changes in levels, installation of services, material storage, etc have been duly considered during the development layout and that these items will not prove detrimental to the retained trees and hedges. It will address the combined effect of potential multiple site operations and will assess future issues such as the long- term effects of changing a surface level or the future requirement to prune or remove trees and hedges because they cast excessive shade or encroach upon property. The AIA considers constraints posed above and below ground and makes recommendations to mitigate impacts associated with development sites and retained trees.

7.2. The following factors were assessed:

7.2.1. Levels: Whilst no detailed levels plans were available we assume that the proposed levels for houses, access roads and parking area will generally follow existing levels with the foundations designed to minimise the grading required. Minor grading to achieve uniform gradients will be required for the building foundations and vehicle areas. The only area of potential conflict with retained trees is at the access drive to Plot 1 but as this will utilise the existing access road to the site the impact will be limited. Care should be taken when

excavating for the road construction and heavy duty timber edging secured with driven pegs and a permeable surface is recommended here rather than a concrete kerb and foundation.

7.2.2. Services: There was no service information available for assessment but the routes should be sensitively design to avoid tree root damage.

7.2.3. Water demand: The proposals are not likely to significantly alter the supply to or requirement of the existing trees provided that the earthworks are sensitively designed to minimise grading.

7.2.4. Light: There will very limited restricted light to the proposed house at plot 1 due to the close proximity to the retained trees. This is considered to be acceptable as this is the character of the area. The risk of future owners demanding further tree clearance of trees to improve light penetration can be controlled by the Planning Application process.

7.2.5. Canopy obstruction: No conflict is envisaged but minor crown raising may be beneficial to increase clearance and avoid damage at the construction access route and working areas close to the retained boundary trees. The tree protection fence alignment shown on L03 Tree Mitigation Plan has been designed to allow minimal width for the access route and working area and protect most of the RPA and canopy areas.

7.2.6. Compaction of tree RPA: Provided the root protection fence is installed as recommended and the temporary access route protection is installed root damage from compaction within the RPA's will be avoided.

7.2.7. Storage of materials/ Compound: No material or temporary compound activities will be within the fenced off Construction Exclusion Zones. This will avoid compression or spillage damage to tree roots.

8.0 SUMMARY COMMENTS

8.1. The proposal for 38 houses and associated infrastructure will require the removal of most of the trees surveyed as they comprise an unsuitable species for a residential area and if retained will be a potential Health and Safety risk.

8.2. Replacement trees of appropriate species is recommended will improve the landscape and amenity value in the longer term and compensate for some limited short-term loss. The development also provides an opportunity to improve the local biodiversity by introducing native species of trees and shrubs.

8.3. The retained trees in group G2 will not cause problems for the construction or operational phases of the development provided that the proposed Arboriculture Method Statement is adhered to.

APPENDIX 1
Tree Schedule

APPENDIX 2
Tree Survey and Constraints Plan L02
Aerial image
Tree Mitigation Plan L03

APPENDIX 3
Photographs



1. View from the access road at Cleator Moor Road of the Lombardy Poplars in group G1 at the southern boundary which should be removed and replaced.



2.View from the access road at Cleator Moor Road of the Hawthorn, Norway Maple and Cypress trees in group G2 at the eastern boundary which should be retained and protected.



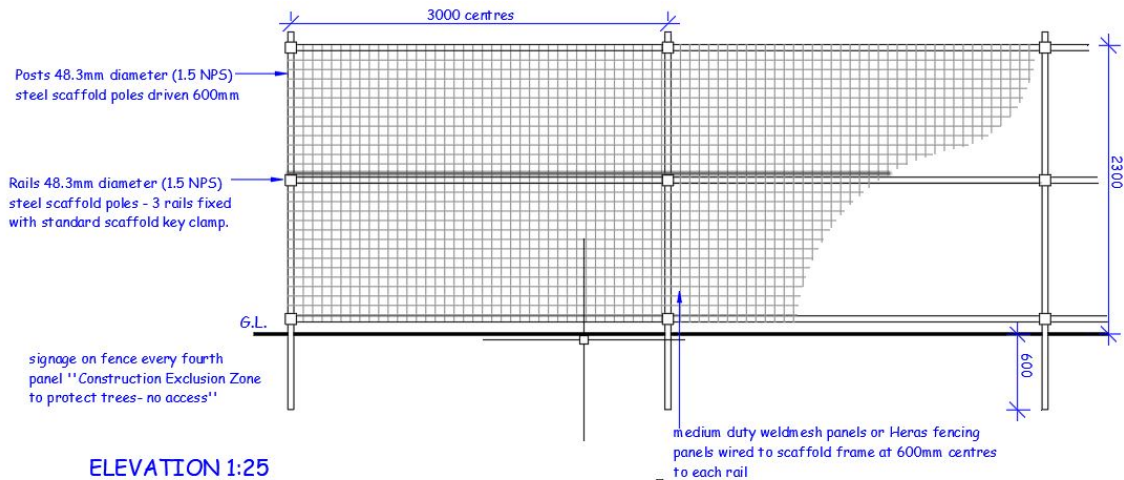
3. View from within the site of the Lombardy Poplars at Cleator Moor Road which should be removed and replaced.



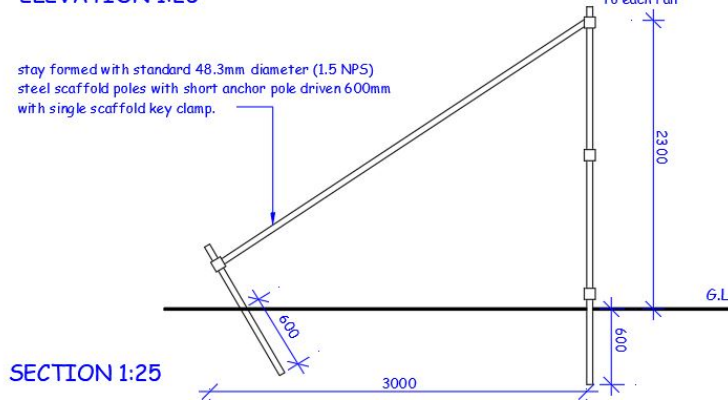
4.View from Cleator Moor Road of the Lombardy Poplars at which contribute some limited landscape and amenity value to the streetscape but should be removed and replaced with more appropriate species.

APPENDIX 4

Tree Protection Fence Detail



ELEVATION 1:25



SECTION 1:25



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TREE PROTECTION FENCE	
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