



PROPOSED RESIDENTIAL DEVELOPMENT

**LAND NORTH OF FLOSH MEADOWS, CLEATOR
CA233DS**

**TREE AND HEDGE SURVEY REPORT
AND ARBORICULTURE METHOD STATEMENT**

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1 INTRODUCTION

1.1 SCOPE OF REPORT

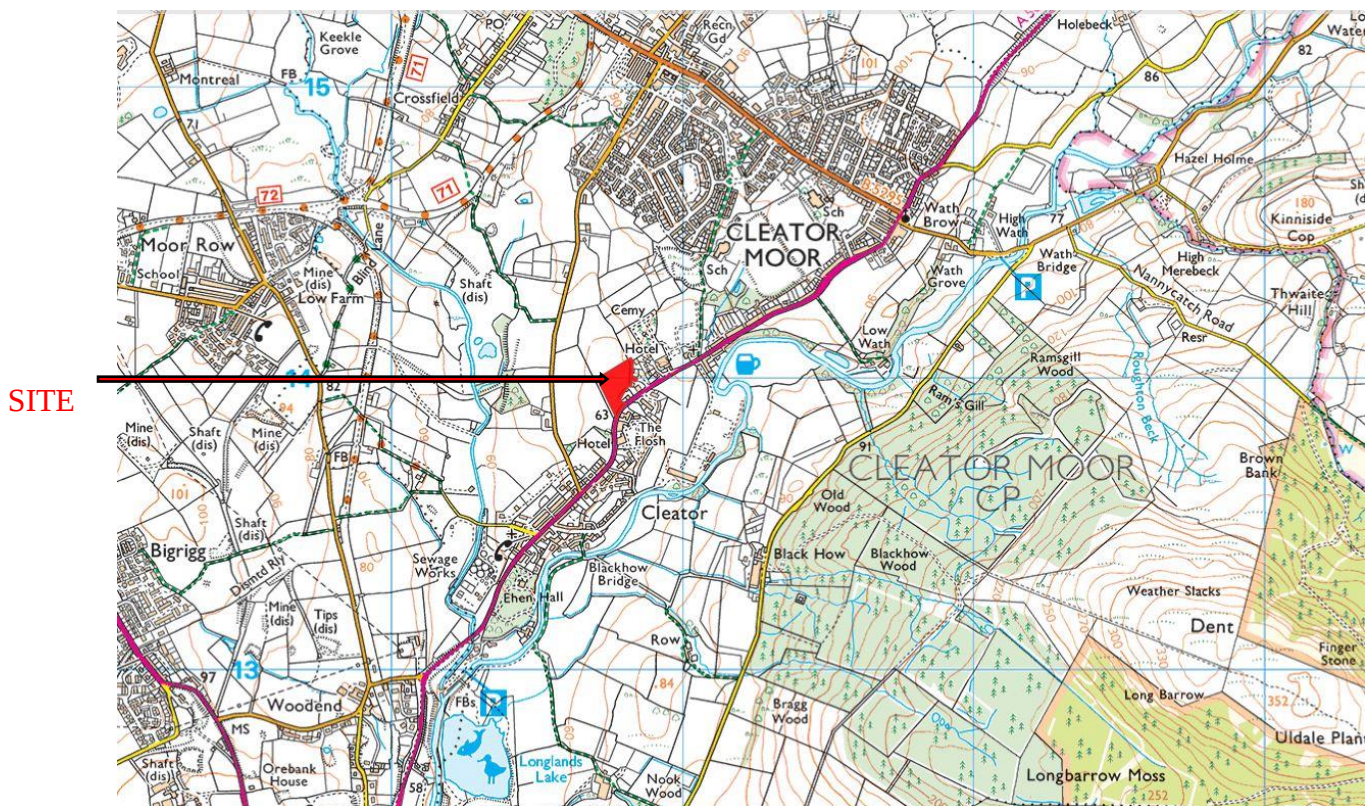
1.1.1 This report was commissioned to assess the arboricultural constraints of a potential residential development on agricultural land to the north of Flosch Meadows, Cleator.

1.1.2 Westwood Landscape, Chartered Landscape Architects (with LANTRA Professional Tree Inspector Certification) were appointed in October 2024 by the client Mr Richard Mulholland to carry out a survey and amenity value analysis of the trees and hedges on and adjacent to the proposed development site and appraise the potential impact of the development on retained trees and hedges.

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 November 2024.

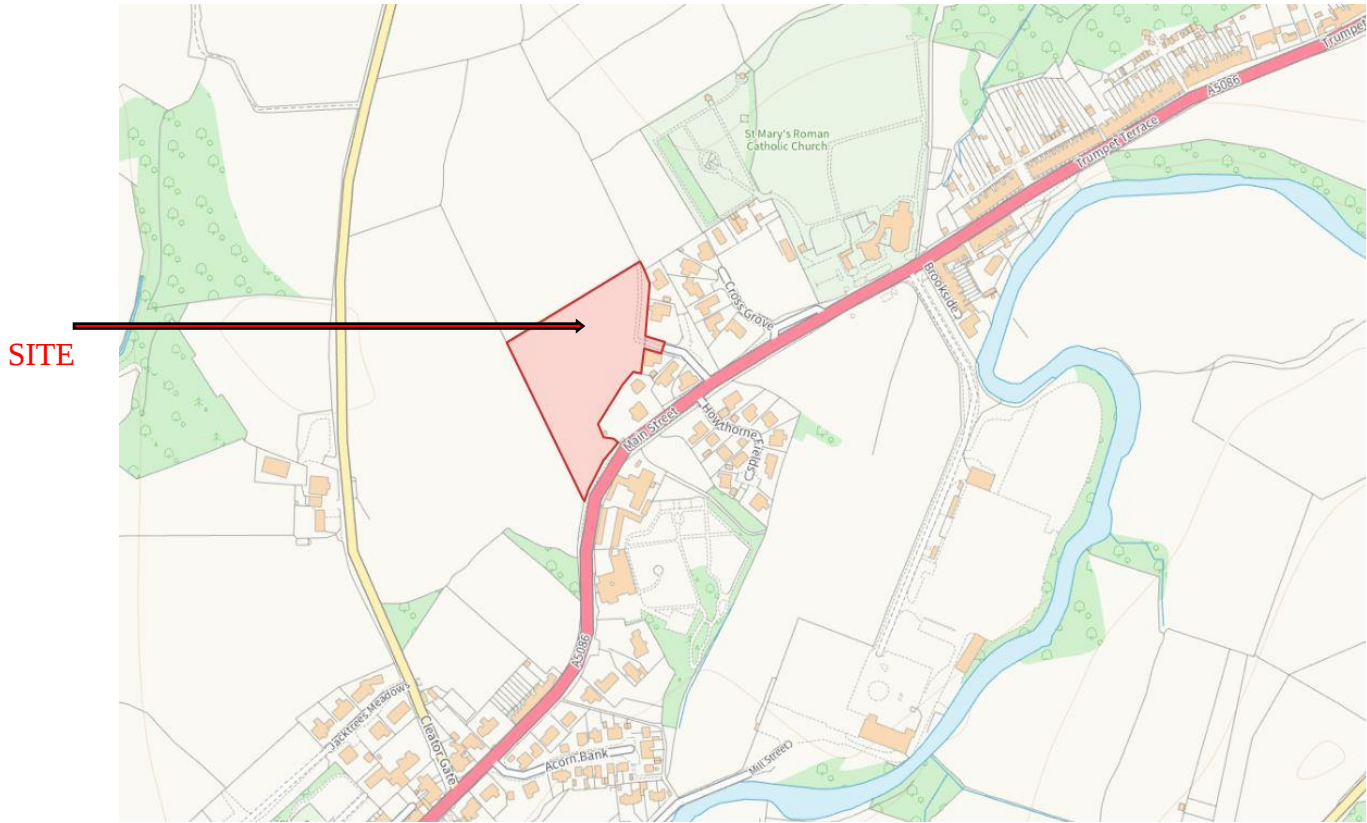
1.1.4. The proposed layout is shown on Coast Consulting Engineers drawing numbers 1842/01-02. The proposed development will be accessed from the adjacent residential area of Flosch Meadows. Refer also to the BNG Mitigation Landscape Plan WW/L01 by Westwood Landscape Ltd.

1.1.5. The report will respond to the requirements of Conditions 3 and 16 from SR12 Application 4/22/2092/001.



Site location Plan

Westwood Landscape Ltd Ordnance Survey Licence Number 100062836



OS Context Plan

Westwood Landscape Ltd Ordnance Survey Licence Number 100062836



Aerial view showing the site in the context of the field boundary hedgerows and trees and the adjacent residential areas.

Westwood Landscape Ltd Ordnance Survey Licence Number 100062836

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 (Tree Preservation England) Regulations 2012 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 is a Tree Preservation Order for trees T2 and T3 (TPO number 25 Copeland Borough Council, now Cumberland Council). The Application Site is not located in a Conservation Area.
- 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 fields within the site or outside the site boundary. The species surveyed included Beech, Oak, Ash, Sycamore and Willow. The hedges comprised mainly Hawthorn with some Elder and Ash (Hedge H3 with Ash dominant). Hedge H5 comprised non-native Berberis and Broom with some Dog Rose.

Hedge H6 comprises non-native Leyland Cypress and invasive Dog Rose. These are very common species and well represented in the area.

2.2.2. The hedges were not categorised as Important Hedgerows as identified in the Hedgerows Regulations 1997.

2.2.3. 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. Direct impact of the proposal on the retained trees and hedges can be summarised as:

- Proposed 150mm diameter drainage pipe requiring a linear trench excavation within the RPA's of hedge H1 and tree T1 including silt traps and the outlet/ chamber connection to the proposed swale which discharges to this pipe and also the outlet to the watercourse.
- Proposed cul-de-sac at the south-west corner of the site including concrete road kerbs, and drainage gully connections requiring linear excavations within the RPA of hedge H1.
- Proposed dwelling to Plot 18 and its associated parking bay and paving potentially requiring linear excavations for wall and kerb foundations within the RPA of hedge H1.
- Potential conflict with the canopy of tree T2 at the entrance to Floss Meadows from high-sided construction vehicles.

3. LANDSCAPE AND AMENITY VALUE

3.1 The trees and hedges surveyed are collectively of moderate/ high landscape and amenity value as they are landscape elements contributing to the rural character of the urban fringe and provide valuable natural screening. Individually the trees range from low to high landscape and amenity value.

3.2. There is one individual Category 'A' quality over-mature Oak tree 16m high T2 which has a prominent position at the roadside and is of high landscape and amenity value. Trees T1 and T3 are Category 'B' trees also with high landscape and amenity value: T1 is an 18m high mature Beech with a visually prominent position in the verge of Main Street and T3 is a middle aged Oak in the garden of the property at Floss Meadows. Trees T2 and T3 are protected by the TPO. All the other trees and hedges surveyed are Category 'C' and are of low to moderate landscape and amenity value. All the trees surveyed should be retained and protected.

3.3. The hedges provide a good linear habitat and moderate ecological value which could be increased by infilling gaps and lost sections with improved maintenance.

3.4. Refer to the Tree and Hedge 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 and hedges 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 and hedges 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 Appendix 4.

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 or hedge root zone as this could cause compaction and damage roots. No excavations or ground level changes to take place within the root zone area of protected trees. No materials should be stored within the RPA. 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 may be unavoidable for the proposed works but this will not necessarily lead to tree and hedge damage if the methodology in Section 4 is carefully followed. Intrusive work within the RPA should be restricted to one side of the tree or hedge 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 if requested. Timing and implementation of the agreed Tree Works and installation of Tree protection measures.

4.6.2. Pruning back canopies of retained trees and hedges which may be impacted by the development to crown raise to clear vehicular traffic. The bird breeding season should be avoided (mid- March to end of August).

4.6.3. Tree and hedge protection fence to be installed in accordance with the approved details.

4.7. Development Stage

4.7.1. Contractors RAMS to be assessed by Architect or Landscape Architect/ Arboricultural Consultant.

4.7.2. Minimal dig construction method to be followed where work is unavoidable within the RPA of retained hedge H1 and tree T1 for the installation of the 150mm diameter water pipe to discharge from the proposed swale. This will require the excavation of a

linear trench within the RPA. If the proposed layout can be adjusted to relocate the proposed pipe further from the line of hedge H1 and further from the stem of tree T1 this will be beneficial for their protection and will reduce the likelihood of encountering significant roots to protect. Should the alignment of the pipe be moved outside the CEZ this methodology need not be adhered to as there will be no impact on the RPA. Use low impact pneumatic tools and a lightweight tracked excavator of up to 3 tonnes if load suitably spread could be used to carefully remove material from the area but not for the excavation to avoid direct root damage. The excavator should be positioned outside of the CEZ or on areas where the existing road surface is in tact (or at least 150mm of type 1 sub-base) or where a protection layer in accordance with section 6.2.3.3.b of BS5837 is installed to spread the load to avoid root compaction and canopy damage. If a lightweight excavator is used the banksman must direct the work carefully to ensure the roots are not damaged.

- Excavation of the topsoil should be carried out carefully by hand or with an air spade within the hedge and tree RPA's. Any exposed tree and hedge roots should be re-covered with excavated topsoil as soon as possible 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 or careful hand excavation prior to detailed design will inform the position of any large roots which require protection. The proposed drainage pipe should pass beneath any significant retained roots and backfilled with the excavated topsoil separated from the gravel surround to the pipe with a Terram 1000 membrane.
- Where construction traffic within the RPA of tree T1 and at 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. 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.
- For exploratory trial excavations: excavate trenches 200mm wide by hand (or with a lightweight tracked excavator in accordance with section 6.2.3.3.b of BS5837) within the affected RPA of trees and hedges in bands 2m apart to the depth of the proposed construction to identify the position of any significant roots.

Protection for heavy good vehicle delivering materials

Protect tree roots within the RPA while exposed after clearance work prior to final surfacing.

- Protection layer in accordance with section 6.2.3.3.b of BS5837
- Preferred option is to Lay Terram 1000 over the traffic route area and cover with 75mm bark mulch as a regulating layer.

- Lay temporary road sections over bark: I-trac heavy duty PPCP 54mm thick in 1.2 x 0.92 mm units or similar temporary road system. Lay in accordance with suppliers recommendations. Supplier: Cap Track or similar.
- Lift and remove I-trac, bark and terram on completion.

Services

Work within the tree RPA should be avoided wherever possible because trenching for the installation of underground services may sever tree roots and alter the soil hydrology locally which could adversely affected tree health and vitality. M&E design and methodology must accommodate the tree RPA and detailed plans should be passed by the Chartered Landscape Architect/ Arboriculture Consultant. Construction Phase drawings must show the levels and access space needed for installing the services. The preferable method for trenching within RPA's to avoid damage is via excavation using 'airspade' or similar. Air spade techniques utilise a two-tool air compressor and hand-held lance to dislodge soil, using highly pressurised jets of air. This technique can also be used for soil decompaction in proposed planting areas within the RPA by dislodging the surface topsoil and any contaminated material without causing significant root damage. The topsoil can be topped up as required to restore the required level with nutrient rich imported material as required. Top up the area with site topsoil mixed with 10% tree compost to restore levels to original ground level as required to compensate for material removed in the decompaction process. Spread in layers of 50mm by hand and gently work around roots to fill voids without root damage. Apply water with a rose applicator to wet surface topsoil to aid settlement. The area identified for air spade work must be protected by temporary barriers erected to ensure that the working area is kept clear of personnel other than designated operatives. The air spade will be operated in accordance with the manufacturers and hirers recommendations and the correct PPE adopted: goggles, ear defenders, helmet, gloves, safety boots and high visibility clothing.

4.7.3. The detailed programme will be confirmed once a Principal Contractor is appointed. Site inspections by the Landscape Architect/ Arboricultural Consultant are advisable as required during the works, especially if significant tree and hedge roots are encountered. If large tree roots are encountered the methodology will be adapted to ensure protection.

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

Contacts:

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Contact: Richard Hall, Tel. 0191 5977879

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. There is no requirement for removal of any trees or hedging to accommodate the development.

5.2. Management of tree T2 to include canopy reduction to prevent collision with high-sided construction vehicles as required. Refer to L03 Tree Mitigation Plan.

5.3. Management of the retained trees in accordance with the Tree Schedule.

6. PROPOSED PLANTING

6.1. The BNG Mitigation Landscape Plan includes a landscape strategy of restoring the native hedgerows by infilling gaps and adding missing sections. This will restore a continuous wildlife corridor. The local biodiversity will be further extended with native hedgerow trees and species rich wildflower grass area to both on and off site grassland areas and sections of the proposed swale.

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 broadly assessed based on the initial site appraisal but not a provisional design layout:

7.2.1. Levels: The proposed levels for houses, access roads and parking generally follow existing levels. Proposed foundations should be designed to minimise the grading required and ensure that there will be negligible ground level changes within the RPA of the retained trees and hedges. The ground level will be reduced locally at the outlet from the proposed swale to the 150mm diameter outlet pipe and at the point this pipe discharges to the watercourse. The methodology in the AMS at Section 4 must be carefully followed.

7.2.2. Services: There was no detailed service information available for assessment other than the drainage design and proposed sub-station from Coast but the routes should be sensitively design to avoid tree and hedge root damage and run within the designated service strips integrated with the proposed roads.

7.2.3. Water demand: Proposed housing on a site of this nature is not likely to significantly alter the supply to or requirement of the existing trees and hedges provided

that the earthworks are sensitively designed to minimise grading. The proposed trench excavation and gravel backfill to the proposed surface water pipe within the RPA of hedge H1 and tree T1 has the potential to increase the water percolation of the ground within the RPA's which could result in reduced water availability to the roots in dry periods. This is unlikely to lead to significant stress to the hedge H1 and Tree T1 as only one side of the hedge and tree are affected and a large proportion of the RPA's are unaffected. However annual inspection of hedge H1 and tree T1 following construction is advisable to ensure the health and vitality are maintained.

7.2.4. Light: The retained trees and hedges are unlikely to reduce the light to windows of the proposed properties except for plot 18 which is close to hedge H1.

7.2.5. Canopy obstruction: Pruning and coppicing of tree T2 at the entrance to Floss Meadows may be required and pruning to hedge H1 to create the space to install the proposed surface water drain.

7.2.6. Compaction of tree and hedge RPA: Provided the root protection fence is installed as recommended and temporary access route protection is installed (refer to the AMS in Section 4), root damage from compaction within the RPA's will be avoided.

7.2.7. Storage of materials/ Compound: Material storage within the fenced off Construction Exclusion Zones should be avoided to minimise the potential compression or spillage damage to tree roots.

APPENDIX 1

Tree and Hedge Schedule

APPENDIX 2

Tree and Hedge Survey and Constraints Plan L02

Tree and Hedge Mitigation Plan L03

APPENDIX 3

Photographs (1-5 are drone images which are just a selection from many photos and videos available)



1. Hedge H4 Hawthorn to the east boundary.



2. Hedge H1 on the right and Flosch Farm House.



3. Hedge H2 at the north boundary.



4. View of the southern boundary and proposed site access at Flosch Meadows.



5. Hedge H2 which has reduced to sparse remnants at the north end of the western boundary.



6. Tree group G1 at the east boundary.



7. Tree group G1 Sycamore and Ash.



8. Hedge H1 close to the south boundary.



9. Hedge H3



10. Hedge H4 to east boundary. Note trees are unaffected by the proposed development as they are set back in the cemetery.



11. Hedge H5



12. Tree T1 a mature Beech in the highway verge of Main Street.



13. Tree T2 Oak at the entrance to Flosch Meadows which is protected by a TPO.



14. Large burr to stem of tree T2.



15. Trees T3 (right) and T4 (left) in private gardens adjacent to the development site.



16. Tree T5 Willow off site.



17. Tree T6 Ash.



18. Tree T7 Ash leaning between hedges H3 (left) and H4 (right).

APPENDIX 4

Tree Protection Fence Detail

