

Garden Cottage,
Rhiwderin
Tree Survey & Arboricultural Impact Assessment



For:

David Williams Homes Ltd

Based on an inspection carried out
8th August 2024

By

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Mackley Davies Associates Ltd

Landscape Architecture . Environmental Planning . Tree Surveying

Pensaerniaeth Tirwedd . Cynllunio Amgylcheddol . Arolygu Coed



Garden Cottage,
Rhiwderin

Tree Survey & Arboricultural Impact Assessment

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Tree constraints plan – (drwg. no. 24/1053/01)
Tree protection plan – (drwg. no. 24/1053/02)

1 Summary:

- 1.1 The following report was prepared on the instruction of David Williams Homes Ltd and concerns the residential property and grounds at Garden Cottage, Pentrepoeth Road, Rhiwderin NP10 8RT.
- 1.2 The report is based upon the findings of a survey carried out on 8th August 2024 to assess the existing trees in terms of health, condition, form and overall significance within the local environment, the main objective being to assess the degree of constraint they represent with regard to the proposed development of the site. The methodology used is outlined in Appendix 1, while Appendix 2 sets out definitions of the terms used and codes used in the Tree Schedule.
- 1.3 Weather conditions were warm and wet with adequate visibility for the purposes of this investigation. All inspections were made from ground level only: only those features apparent at the time of the inspection could be considered and no liability can be accepted regarding trees or their parts that were inaccessible or obscured in part or in whole.
- 1.4 It should be noted that, although the health and safety of the trees is part of the assessment methodology used, this report is intended for planning purposes only; it should not be construed as a tree risk assessment. Faults may be identified and recorded as part of this study but unless the trees in question represent a significant hazard under the existing site conditions, management recommendations will not normally be made. It remains the tree owner's responsibility to ensure the trees are managed appropriately: the assessor can accept no liability for damage or injury sustained as a result of the failure of any tree or its parts.
- 1.5 This report remains valid for a period of 3 years from the date the survey was carried out.

2 Inspection and General Observations:

- 2.1 The survey area is as indicated on the accompanying tree constraints plan, which is based on a topographical plan provided by the Architect. Please note the tree locations are approximate only as they were not included on the topographical survey.
- 2.2 It is unknown at the time of writing if there are any tree preservation orders which apply to these trees; however it is recommended that no tree felling or other works affecting trees be carried out until the proposed works have been agreed with the local planning authority.
- 2.3 The site consists of an existing residential property and a relatively flat area of surrounding ground. The area is enclosed from the road by an existing stone wall and from the adjacent property to the north-west by estate style steel railings.
- 2.4 The southern boundary contains two mature pollarded limes at the entrance on the northern corner of the site together with a group of self-seeded early mature wych elm, sycamore and goat willow.
- 2.5 There is an existing gravel driveway serving the property leading from the main access road which extends under the canopies of these trees.

- 2.6 In addition to this group of trees there is another self-seeded goat willow (7) at the southern corner of the existing dwelling.
- 2.7 All these trees are considered to be retention category 'C' trees of low arboricultural value, however it is recognised that they provide a degree of screening and habitat value.

3 Arboricultural Impact Assessment:

- 3.1 The proposed development of the site is for the demolition of the existing dwelling and construction of a new house set further back from the road, utilising and extending the existing access drive and parking areas together with associated services and drainage infrastructure.
- 3.2 The proposed works will result in the removal of one category 'C' goat willow (7) to accommodate the proposed new retaining wall.
- 3.3 The proposed driveway will impact on the root protection areas of the category 'C' limes (1 & 2) together with the category 'C' early-mature sycamore (3) and wych elm (4) however the impact could be minimised by building with 'no-dig' construction techniques as outlined on the tree protection plan.
- 3.4 The impact of the driveway on the existing trees will be further minimised as part of the area already exists as hard surfacing.
- 3.5 The trees to be retained will need to be protected by the provision of suitable temporary barriers as outlined in the tree protection plan and Appendix 2A (type 2), together with appropriate ground protection measures where required.
- 3.6 Service runs and drainage infrastructure are to be located where possible to avoid the root protection areas (RPA's) of the retained tree and any proposed earthworks for the development should not extend into the construction exclusion zones defined by the root protection area of the retained tree.

4 Existing tree schedule:

The table following overleaf provides details of the tree surveyed; notes on the terms and abbreviations used can be found at Appendix 2 following the tree schedule.

TREE SCHEDULE

ID	Species	Stem No.	Trunk Diam (mm)	Height (m.)	Crown Spread (metres)				Clearance (metres)		Life stage	Health & Vigour	Structural Condition	Remaining useful life	Observations
					N	E	S	W	Mean	Lowest over site + Direction					
1	Lime	1	600	10	4	4	4	4	2	-	M	Good	Fair	20-40	Previously pollarded at 2.5m
2	Lime	1	600	12	4	4	4	4	2	-	M	Good	Fair	20-40	Previously pollarded at 2.5m
3	Sycamore	1	300	12	2	2	2	2	2.5	-	EM	Good	Good	10-20	Twisted stem, suppressed by
4	Wych elm	1	200	10	2	2	2	2	2	-	EM	Fair	Fair	10-20	
5	Goat willow	1	180	8	3	3	3	3	2	-	EM	Fair	Fair	10-20	Located in adjacent garden
6	Goat willow	1	180	8	2.5	2.5	2.5	2.5	2	-	EM	Fair	Fair	10-20	Located in adjacent garden
7	Goat willow	m/s	270	8	5	5	5	5	1.5	-	M	Fair	Fair	10-20	

Estimated tree diameter

Details of the Terms & Abbrev

APPENDIX 1: Methodology

- The report has been framed as an 'Arboricultural Constraints Report', as defined in BS5837:2012 - *Trees in relation to design, demolition & construction-Recommendations*. Its purpose is to set out and to quantify the degree of constraint offered by existing tree cover with regard to any development or alteration in land-use that may be proposed and is intended to be used to inform feasibility studies and design options. As such it reflects the conditions *as they existed at the time of our inspections*: no account has been taken of any specific development proposals, although it has been assumed that certain unspecified alterations in site usage patterns are likely to occur, which are likely to result in an increase in site occupancy levels. Additional arboricultural input may be required at subsequent stages of design, planning and implementation in relation to the assessment & management of possible arboricultural impacts.
- The survey parameters are as set out in BS5837:2012 and based on the findings each tree or group is allocated to one of four 'Retention Categories' (see Appendix 2, p2). The factors taken into account in categorising the trees include their overall arboricultural quality, their general health and structural stability, their likely useful life-expectancy, their significance to the local landscape and general public amenity value, the degree to which they provide wildlife habitat and enhance local biodiversity and any other social or cultural values that they may embody.
- Also integral to the methodology of BS5837 is the calculation of **Root Protection Areas (RPAs)** for each of the trees in question. The RPA is defined as a "*layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.*"
- It should be noted that in most cases the plan accompanying this report will show the *nominal* RPAs of the trees, indicated as circles centred upon the tree of a radius such that they enclose an area equal to the relevant RPA. In practice the distribution of roots around a tree will frequently prove to be uneven due to the presence of a variety of constraining influences. These may be physical barriers such as existing foundations etc, or the existence of localised soil conditions inhospitable to root growth, such as waterlogging or soil compaction. Conversely, soil conditions may be particularly *conducive* to root development in one quarter and this might also lead to an asymmetric distribution of roots around the tree. However in most cases the nominal circular areas as indicated will provide a reasonable guide as to where special measures will be required to protect tree roots and preserve good soil condition.
- The RPAs of the trees will provide the basis for defining **Construction Exclusion Zones (CEZs)**, these being areas around all of those trees intended to be retained where access should be prevented throughout the entire process of site preparation and construction. In certain cases the CEZ will exceed the size of the RPA in order to accommodate the aerial parts of wide-spreading trees.
- Access within the CEZ should be prevented through the erection of barriers, constructed in accordance with BS5837:2012. Where access within an RPA is unavoidable, appropriate ground protection should be installed. Outline details of the design of suitable barriers and ground protection are given in Appendices A & B. These protection measures should be put in place prior to any site clearance or construction work commencing on the site and they should remain *in situ* until all works have been completed. Some activities within the CEZs may be acceptable but should not be put in hand until appropriate arboricultural advice has been sought.

APPENDIX 2: Terms & Definitions (including codes & abbreviations used in Tree Schedule)

The **DIMENSIONS** Taken are:

- **STEM-No.** indicates the number of main stems (i.e. whether the trunk divides at or below 1.5m; (Used in the calculation of RPA.) “m-s” = Multi-stemmed.
- **DIAMETER** (in centimetres), obtained from the girth measured at approx.1.5m. For trees with 2 to 5 sub-stems, a notional figure is derived from the sum of their cross-sectional areas. For multi-stemmed trees the notional diameter may be estimated on the basis of the average stem size x the number of stems. (A notional diameter may be estimated where measurement is not possible.)
- **HEIGHT**, estimated and expressed in metres.
- The **CROWN SPREAD** is expressed in terms of the crown radii estimated at the four cardinal points (or as otherwise specified) and given in metres.
- **CLEARANCES** are indicated as an estimate of the *mean, overall* height of the canopy above ground level with an additional figure for the height above ground of the *lowest significant branch* within the site, together with the direction of its growth.

LIFE STAGE is defined as follows:

- P** recently Planted; sapling: A tree that is still establishing and which would be relatively easy to replace or even transplant. Likely to be vulnerable to damage from (e.g.) strimmers, mowing equipment, drought, vandals, etc. (Easily replaced thus a negligible constraint).
- Y** Young, establishing trees. Should be growing fast, usually primarily increasing in height more than spread, but as yet making limited impact upon the landscape.
- EM** Early-mature. Established young trees, normally of good vigour and still increasing in height, but beginning to spread laterally. Beginning to make an impact upon the local landscape & environment.
- M** Mature: Well-established trees, still growing with some vigour, but tending to fill out and increase spread. Bark may be beginning to crack & fissure. In the middle half of their safe, useful life-expectancies.
- LM** Late-Mature: In full maturity. Still retaining some vigour but growth slowing.
- O** Old: Fully mature with vigour declining. Likely to possess features that could be regarded as potential faults, such as large, ponderous branches, old wounds etc. etc., but also likely to be of high amenity value.
- A** Ancient: Old trees can survive for very many years with healthy growth continuing although the tree may be of low vigour. Crown size usually becomes reduced, either through natural branch-loss or through management (e.g. pollarding). Decay is usually present. Such trees may embody certain hazards but they are also likely to be of considerable conservation value (i.e. “Veteran” trees).

HEALTH & VIGOUR: Essentially a snapshot of the general health of the tree based upon its general appearance, its apparent vigour and the presence or absence of symptoms associated with poor health, physiological stress etc. (Fungal infections may be recorded here but *decay giving rise to structural weakness* would be recorded under ‘Structural Condition’ – see next parameter):

- Good** no significant health issues.
- Fair** indications of slight stress or minor disease (e.g. the presence of minor dieback/deadwood or of epicormic shoot growth)
- Poor** Significant stress or disease noted; larger areas of dieback than above
- Bad** Severe decline; widespread dieback and/or severe stress; life-threatening disease.
- Dead** (or Moribund)

STRUCTURAL CONDITION: Defects affecting the structural stability of the tree, including decay, significant dead wood, root-plate instability or significant damage to structural roots, weak forks (e.g. those where bark is included between the members) etc. etc. Classified as:

- Good** No obvious structural defects: basically sound
- Fair** Minor, potential or incipient defects
- Poor** Significant defect(s) likely to lead to actual failure in the medium to long-term
- Bad** Defects liable to cause significant failure in the short term, or to lead to a major or total collapse in the foreseeable future
- Severe** Tree that has already suffered or is at imminent risk of a major collapse.

APPENDIX 2: Terms & Definitions (including codes & abbreviations used in Tree Schedule)

REMAINING USEFUL LIFE EXPECTANCY: An estimate of the length of time in years that a tree might be expected to continue to make a useful contribution to the locality at an acceptable level of risk (based on an assumption of continued routine maintenance)

V - less than 10 years	S - 10+ years
M - 20+ years	L - 40+ years

RETENTION CATEGORY: Trees are classed as category **U, A, B** or **C**, based on criteria given in BS5837:2012; summary definitions as follow (see BS5837 for further details). Categories A, B and C are further characterised by the use of sub-categories, which attempt to identify what aspect of the tree is the main source of its perceived value:

(i) **arboricultural** qualities (ii) **landscape** qualities and (iii) **cultural, historic or ecological/conservation** qualities. Examples of these qualities for each of the three categories are given below, although these are indicative only.

Note: *This is NOT a health and safety classification; the classification does not take into account any requirement for remedial tree care or ongoing maintenance apart from that which may affect the trees' general suitability for retention.*

U **UNSUITABLE (red)** Trees likely to prove to be unsuitable for retention for longer than 10 years should any significant increase in site usage arise as a result of development.

Dead or moribund trees; those at risk of collapse or in terminal decline;; trees that will be left unstable by other essential works such as the removal of nearby category U trees; trees infected by pathogens that could materially affect other trees; low quality trees that are suppressing better specimens

(Category U trees may have conservation values which it might be desirable to preserve. It may also include trees that should be removed irrespective of *any* development proposals.)

A **HIGH QUALITY (green)** Trees or groups whose retention should be given a particularly high priority within the design process. Normally with an expected useful life-expectancy of at least 40 years.

- (i) *Notably fine specimens; rare or unusual specimens; essential component trees within groups, semi-formal or formal plantings (e.g. dominant trees within an avenue etc.)*
- (ii) *Trees, groups or woodlands of particular visual importance as landscape features.*
- (iii) *Trees, groups or woodlands of particular significance by virtue of their conservation, historical, commemorative or other value (e.g. veteran trees or wood pasture.)*

B **MODERATE QUALITY (blue)**: Trees or groups of some importance with a likely useful life-expectancy in excess of 20 years. Their retention would be highly desirable; selective removal of certain individuals may be acceptable, but only after full consideration of all alternative courses of action.

- (i) *Fair quality but not exceptional; good specimens showing some impairment (e.g. remediable defects, minor storm damage or poor past management.)*
- (ii) *Acceptable trees situated such as to have little visual impact within the wider locality. Also numbers of trees, perhaps in groups or woodlands, whose value as landscape features is greater collectively than would warrant as individuals (such that the selective removal of an individual would not impact greatly upon the trees' overall, collective value).*
- (iii) *Trees, groups or woodlands with clearly identifiable conservation or other cultural benefits.*

C **MINOR VALUE (grey)**: Trees or groups of rather low quality, although potentially capable of retention for at least approx. 10 years. *Also small trees below 15cm diam.* Potentially retainable, but not of sufficient value to be regarded as a significant planning constraint.

- (i) *Unremarkable trees of very limited merit or of significantly impaired condition.*
- (ii) *Trees offering only low or short-term landscape benefits; also secondary specimens within groups or woodlands whose loss would not significantly diminish their landscape value.*
- (iii) *Trees with extremely limited conservation or other cultural benefit.*

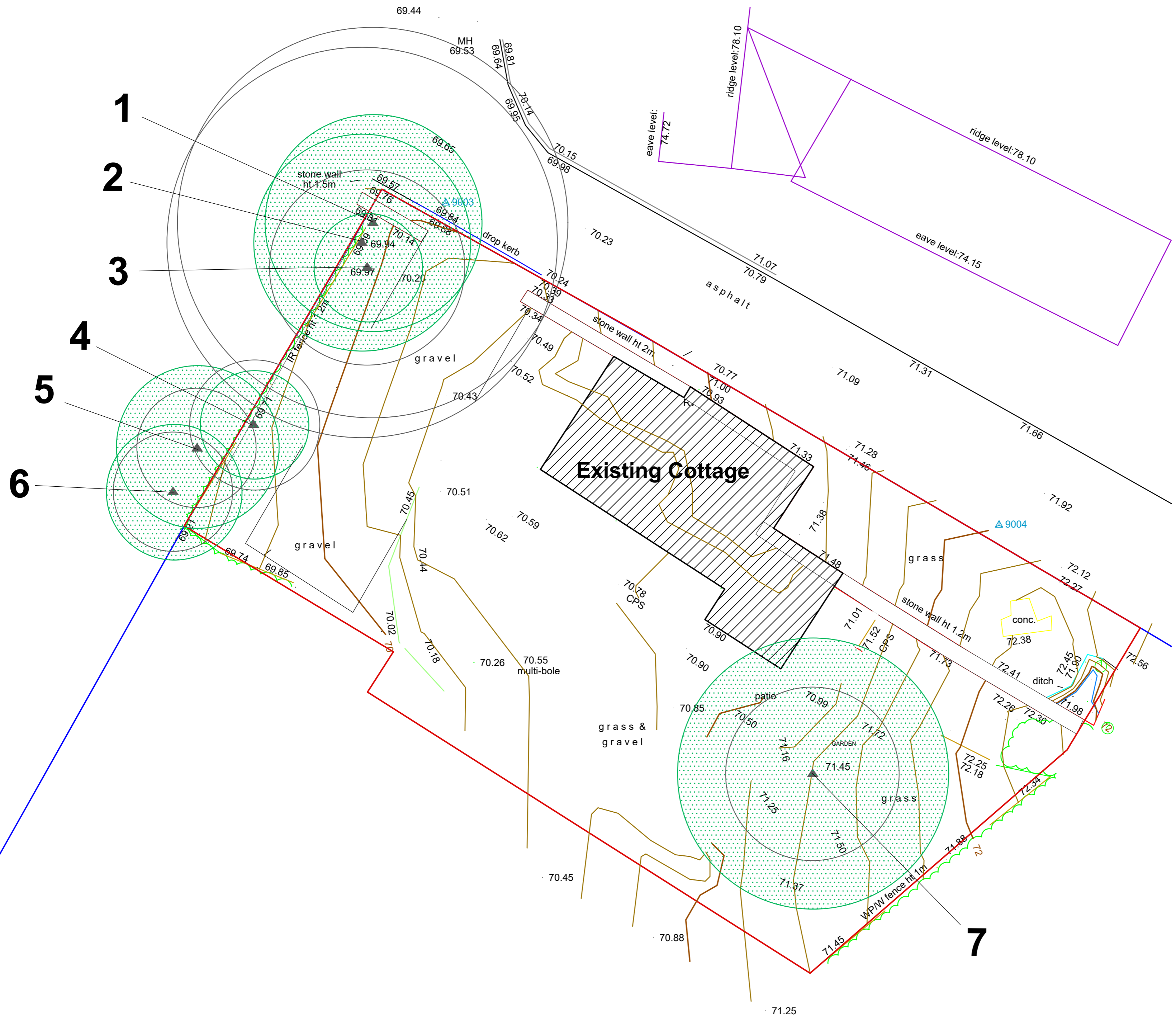
ROOT PROTECTION AREA (RPA): *This is the area in square metres formed by a circle of radius (the Protection Radius) twelve times the actual or notional stem diameter of the tree (see 'Diameter', above). The RPA represents the minimum area deemed to contain sufficient roots & soil to maintain the tree's viability. It is the basis whereby the layout of the Construction Exclusion Zone (CEZ) is determined, which should encompass an area equal to the RPA, although its form may be adapted in the light of arboricultural considerations and pre-existing physical constraints. The CEZ should be protected by sturdy temporary fencing (see BS5837:2012) throughout the entire process of site preparation and construction.*

APPENDIX 3: The Protection of Trees on Demolition & Construction Sites:

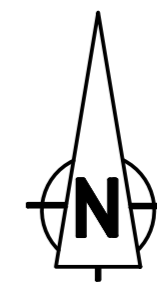
PRECAUTIONS OUTSIDE THE EXCLUSION ZONE:

The following should be addressed or avoided.

- Care should be taken when planning site operations to ensure that wide or tall loads, or plant with booms, jibs and counterweights (including drilling and piling rigs) can operate without coming into contact with retained trees. Such contact can result in serious damage to them and might make their safe retention impossible. Consequently, any transit or traverse of plant in close proximity to trees should be conducted under the supervision of a banksman to ensure that adequate clearance from trees is maintained at all times. In some circumstances it may be impossible to maintain adequate clearance thus necessitating access facilitation pruning. Local Planning Authority consent for such pruning may be required.
- Material which will contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings, should not be discharged within 10 m of the tree stem.
- Fires should be avoided on sites if at all possible. Where they are unavoidable they must not be lit in a position where heat could affect the trunk, branches or foliage of any tree. The size of the fire and the wind direction should be taken into account, and fires must be attended at all times.
- Notice boards, telephone cables or other services should not be attached to any part of the tree.
- It is essential that allowance should be made for the slope of the ground so that damaging materials such as concrete washings, mortar or diesel oil cannot run towards trees.



- KEY**
- Trees are indicated by symbols below, colour coded to indicate their 'Retention Categories'
- ★ Category U (defective, negligible or redundant trees)
 - Category A (high retention value)
 - Category B (moderate retention value)
 - ▲ Category C (low retention value)
 - APPROXIMATE crown spread of individual trees
- The nominal ROOT PROTECTION AREA (RPA) of each tree is indicated by a solid line using the colour coding above



All dimensions must be checked on site and not scaled from this drawing.

This drawing is for the purposes of PLANNING. Based on Ordnance Survey data as supplied. OS Licence 100043966

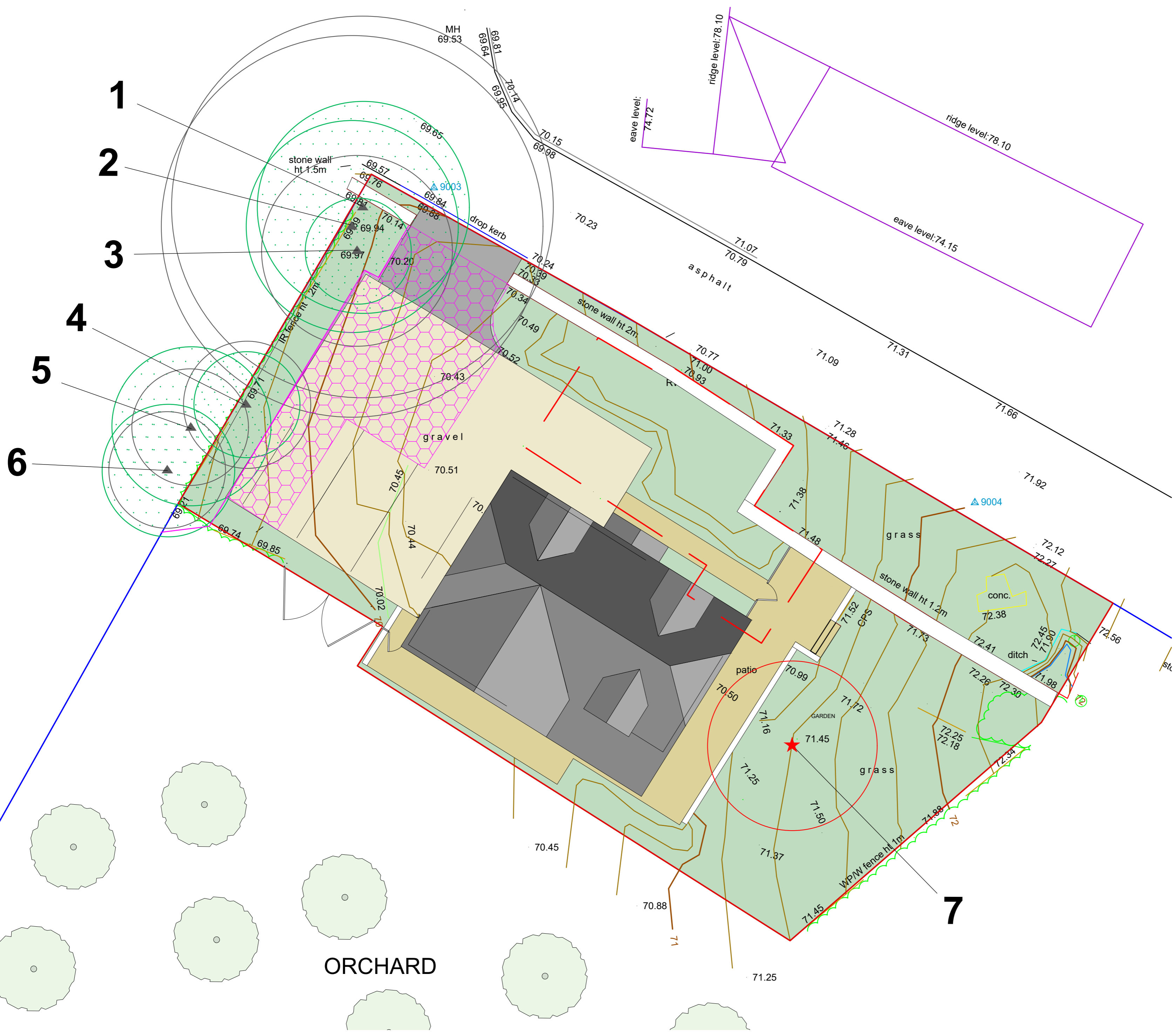
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 wyn@mackleydavies.co.uk

SITE
 Garden Cottage, Rhiwderin

CLIENT
 David Williams Homes Ltd

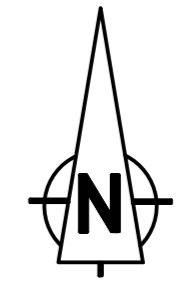
DRAWING TITLE
 Tree Constraints Plan

SCALE	1:100 @ A2	Job No.	24/1053/02
DATE	October 2024	REVISION No.	



- KEY**
- Trees are indicated by symbols below, colour coded to indicate their 'Retention Categories'.
- ★ Trees to be removed
 - Category A (to be retained)
 - Category B (to be retained)
 - Category C (to be retained)
 - Existing canopy
 - Line of protective fence (temporary barrier)
 - ▨ Area of 'No-dig' construction

The nominal ROOT PROTECTION AREA (RPA) of each tree is indicated by a solid line using the colour coding above



All dimensions must be checked on site and not scaled from this drawing.

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SITE

Garden Cottage, Rhiwderin

CLIENT
 David Williams Homes Ltd

DRAWING TITLE
 Tree Protection Plan

SCALE	1:100 @ A2	Job No.	24/1053/03
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