

17 Conisboro Avenue, Reading RG4 7JB

Arboricultural impact assessment and tree protection measures v5 (October 2025)

Site inspected on 5th & 9th September 2023

by David White,

LANTRA-approved Professional Tree Inspector

White Knight Tree Care & Consultancy

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1. Instruction

This impact assessment has been commissioned by Mrs Hales. The site in question is located at 17 Conisboro Avenue, Reading RG4 7JB and consists of a residential dwelling with attached garden.

The aim of this survey following BS5837:2012 guidance was to assess the general condition of trees, hedges and major shrubs growing on site, to evaluate the possible impact of the proposed development and to advise on ways to mitigate any possible effects of the planned development and associated construction work on trees.

The inspection was carried out on 5th & 9th September 2023 by David White, ABC Level 4 Diploma in Arboriculture, LANTRA approved professional tree inspector, of White Knight Services Ltd (company number 12694619, registered address 5 Cressingham Road, Reading RG2 7RS, trading as White Knight Tree Care & Consultancy).

The trees were inspected using VTA (visual tree assessment), the industry standard, non-invasive technique for assessing the health and condition of trees.

2. Site and survey conditions

The property is bordered by a pavement and Conisboro Avenue to the East, residential properties to the North and West, and a shared drive (Lawson Drive) to the South.

19 trees, shrubs and groups of smaller trees were surveyed. The weather conditions were still and sunny, with good visibility.

3. Tree Preservation Orders (TPOs)

A check for protected trees has revealed that some of the trees at the property are subject to a Tree Preservation Order (TPO 23/07). BS5837 does not draw any distinction between trees subject to statutory protection, such as a Tree Preservation Order, and other trees. This is due to the fact that a detailed planning consent overrides Tree Preservation Orders. Should any tree work be carried out outside of the proposed development, a check for TPOs and Conservation Areas will need to be conducted prior to any work being undertaken, and permission sought if relevant.

4. Ecological considerations

Trees, both living and dead, are extremely important keystone species in the environment/ecosystem. They provide innumerable benefits such as carbon sequestration, reducing urban heat island effect, reducing stress and improving people's mental health, reducing soil erosion, adding aesthetic interest and amenity in the landscape, reducing flooding through transpiration and precipitation

interception, providing food and shelter for many species of birds, mammals, insects and invertebrates.

5. Insurance

Works covered by White Knight Services Ltd Public Liability Insurance to the value of £10,000,000.00

Professional indemnity insurance to the value of £2,000,000.00.

6. Tree survey

Categories are based on the tree's health, condition and life expectancy should the site conditions remain unchanged.

BS5837:2012 Table 1 – Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see [BS5837:2012] 4.5.7.</i>			
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	

Ref.	Species	Location	Structure	Num. Stems	DBH (cm)	General Observations	RPA	Recommendations	Retention category
T001	Common Beech (<i>Fagus sylvatica</i>)	Pavement, driveway and road	Tree	1	90	• Canopy thin • <i>Meripilus giganteum</i> around majority of base • Water main under base • Poor vitality	10.8m radius 366.5m ²	• Dismantle Timescale: 05-Dec-2023 (3 months) Completed January 2024	U
T002	Horse Chestnut (<i>Aesculus hippocastanum</i>)	Road, pavement and driveway	Tree	1	69	• Good condition • Mature • Lapsed Pollard • Normal vitality	8.3m radius 215.4m ²	• Mulch Timescale: 05-Sep-2024 (1 Year)	B2
T003	Douglas Fir (<i>Pseudotsuga menziesii</i>)	In driveway	Tree	1	81	• Good condition • Mature • 7.8m from current wall	9.72m radius 296.9m ²	• Mulch Timescale: 05-Sep-2024 (1 Year)	A2

Ref.	Species	Location	Structure	Num. Stems	DBH (cm)	General Observations	RPA	Recommendations	Retention category
T004	Lime (<i>Tilia sp.</i>)	South East corner of building	Tree	2	60cm below union 40cm and 37.5cm above union	• Good condition • Mature	6.9m radius 149.6m ²	• Mulch • Some very minor pruning may be necessary to ensure clearance during construction (approx. 1m off select limbs on house side) Timescale: 05-Sep-2024 (1 Year)	B1
T005	Lawson Cypress (<i>Chamaecyparis lawsoniana</i>)	Driveway	Tree	3	35cm, 35cm, 15cm 0.52m combined stem diameter	• Fair condition • Compression fork • Lowest limb over driveway quite low • Normal vitality	6.2m radius 120.8m ²	• Crown raise to 5m above ground level over driveway Before works commence	B
T006	Douglas Fir (<i>Pseudotsuga menziesii</i>)	Neighbours	Tree	1	75	• Good condition • Mature • Surface roots visible in drive • Normal vitality	9.0m radius 254.5m ²	N/A	A12

Ref.	Species	Location	Structure	Num. Stems	DBH (cm)	General Observations	RPA	Recommendations	Retention category
T007	Mixed species	Roadside boundary	Group	50	15	- Mixed bed including Irish yew, cherry laurel and elm. - Largest diameter stem is an elm at 15cm	1.8m beyond vegetation 10.2m ²	N/A	C
T008	Laurel Cherry (<i>Prunus laurocerasus</i>)	Next to house	Tree	1	12cm at 1m	- Fair condition - Small and easily replaced	1.4m radius 6.5m ²	N/A	C
T009	Common Holly (<i>Ilex aquifolium</i>)	Southern boundary	Tree	3	Largest stem approximately 12 cm	- Small and easily replaced - In RPA of chestnut	1.4m radius 6.5m ²	N/A	C
T010	Common Pear (<i>Pyrus communis</i>)	Against wall	Tree	1	9	- Semi-mature - Small, easily replaced	1.1m radius 3.7m ²	Remove due to proximity to wall Timescale: 05-Sep-2024 (1 Year)	U

Ref.	Species	Location	Structure	Num. Stems	DBH (cm)	General Observations	RPA	Recommendations	Retention category
T011	Lawson Cypress (<i>Chamaecyparis lawsoniana</i>)	Back garden	Tree	4	150	• Close proximity to main house (5m) • Main unions are compression forks • East of stem has a large ear protruding from union of 2 main stems • Multiple compression forks throughout crown • Canopy overrun with climbing roses and clematis	18m radius 1,017.9m ²	• Dismantle to just above ground level Timescale: 05-Sep-2024 (1 Year)	C
T012	Lawson Cypress (<i>Chamaecyparis lawsoniana</i>)	Side boundary	Tree	1	80	• Mature • Historically topped	9.6m radius 289.5m ²	N/A	B2
T013	Turkey Oak (<i>Quercus cerris</i>)	Central lawn	Tree	1	35	• Semi-mature • Canopy starts at approximately 2m above ground level	4.2m radius 55.4m ²	N/A	A1
T014	Douglas Fir (<i>Pseudotsuga menziesii</i>)	Back corner of garden	Tree	1	85	• Good condition	10.2m radius 326.9m ²	• Mulch Timescale: 05-Sep-2024 (1 Year)	A2

Ref.	Species	Location	Structure	Num. Stems	DBH (cm)	General Observations	RPA	Recommendations	Retention category
T015	Mixed species	Near West boundary	Group	1	15	Group of relatively small young trees	1.8m radius 10.2m ²	N/A	B2
T016	Smoke bush (<i>Cotinus Coggygria</i>)	North boundary	Tree	1	16	Historically fallen and self-corrected	1.9m radius 11.6m ²	N/A	C2
T017	Hawthorn (<i>Crataegus sp.</i>)	North boundary	Tree	1	25	Fair condition	3.0m radius 28.3m ²	N/A	B
T018	Goat Willow (<i>Salix caprea</i>)	North boundary	Tree	1	20	Fair condition	2.4m radius 18.1m ²	N/A	C
T019	Ash (<i>Fraxinus sp.</i>)	North boundary	Tree	1	20	- Next to fence - Fair condition	2.4m radius 18.1m ²	N/A	C

7. Photographs

Ref.	Species	Photo	Photo	Photo
T001	Common Beech (<i>Fagus sylvatica</i>) REMOVED January 2024 for H&S reasons			
T002	Horse Chestnut (<i>Aesculus hippocastanum</i>)			

Ref.	Species	Photo	Photo	Photo
T003	Douglas Fir (<i>Pseudotsuga menziesii</i>)			
T004	Lime (<i>Tilia sp.</i>)			

Ref.	Species	Photo	Photo	Photo
T005	Lawson Cypress (<i>Chamaecyparis lawsoniana</i>)			
T006	Douglas Fir (<i>Pseudotsuga menziesii</i>)			

Ref.	Species	Photo	Photo	Photo
T007	Mixed species			
T008	Laurel Cherry (<i>Prunus laurocerasus</i>)			

Ref.	Species	Photo	Photo	Photo
T009	Common Holly (<i>Ilex aquifolium</i>)			
T010	Common Pear (<i>Pyrus communis</i>)			

Ref.	Species	Photo	Photo	Photo
T011	Lawson Cypress (<i>Chamaecyparis lawsoniana</i>)			
T012	Lawson Cypress (<i>Chamaecyparis lawsoniana</i>)			
T013	Turkey Oak (<i>Quercus cerris</i>)	No Photo		

Ref.	Species	Photo		Photo	Photo
T014	Douglas Fir (<i>Pseudotsuga menziesii</i>)				
T015	Mixed species				

Ref.	Species	Photo	Photo	Photo
T016	Smoke bush (<i>Cotinus Coggygria</i>)			
T017	Hawthorn (<i>Crataegus sp.</i>)	No Photo		
T018	Goat Willow (<i>Salix caprea</i>)			

Ref.	Species	Photo		Photo	Photo
T019	Ash (<i>Fraxinus sp.</i>)				

8. Arboricultural Impact Assessment

8.1. Tree removal/retention

The majority of the trees on site are unlikely to be largely affected by the proposed work as they are located in the rear garden, away from the works. Simple barriers and signage are deemed sufficient protection from construction activities.

T8, T10 and T11 are to be removed prior to work commencing, subject to approval from the Local Planning Authority. T8 is small and easily replaced; its location makes its retention untenable as it will be in the way of the proposed development. T10 is growing directly adjacent to a main wall of the property and is in the way of the proposed extension. It is small and easily replaced. T11, if retained, would be largely overhanging the new glazed extension, it has low visual amenity, low ecological value and has multiple structural defects as noted above, which would pose a risk to the new development. The removal of T11 would be advised regardless of whether or not permission is granted for the extension.

T1, although it would not be directly impacted by the proposed development, has been removed due to the presence of *Meripilus giganteus*.

8.2. Tree pruning

T4 may require a 1m reduction to selected limbs on the North-West side, depending on height of scaffolding.

8.3. Impact on Root Protection Areas (RPAs)

The proposed development at the front of the property would require construction within the RPA of multiple trees, particularly T4 and T5. Recommendations have been made to mitigate this impact in the Method Statement.

A trial trench was hand dug on 18/4/2024 and 30/4/2024 (see findings in appendix) beyond the maximum depth of the proposed concrete slab of the new foundations to determine if there were significant roots (larger than 25mm diameter) present within the proposed footprint of the new structure and none were found.

The increase in vehicular activity from tradespeople and material deliveries poses a risk of soil compaction to multiple large trees on the driveway. Recommendations have been made to mitigate this impact in the Method Statement.

8.4. Proposed access to the new development

The driveway gate to the South is to be locked to limit vehicle activity on Lawson Drive. Access to the site will therefore be via Conisboro Avenue.

8.5. Installation of Services

It is assumed that the drainage, electric and gas cabling are satisfactory and there is no reason to assume that any new service installations will be required within the RPAs of any trees.

9. Method Statement

The trees most at risk from the development are the large TPO'd trees lining the driveway at the front of the property.

The 3 main risks in order of importance are

- 1: root damage through compaction or direct mechanical damage through excavation
- 2: mechanical damage to the bark/cambium of retained trees e.g. impact with excavator bucket/wheel barrow etc.
- 3: chemical damage from building materials e.g. concrete leaching into groundwater increasing pH, emptying water from cement mixer into flowerbed etc

- 1) The RPA of multiple large trees covered by Tree Preservation Orders (including neighbour's trees) fall within the high traffic area of the front driveway. Ground protection is to include:
 - i. Laying a permeable geotextile membrane down (such as "Terram") by hand over the accessible areas of the drive.
 - ii. Adding a 150mm thick layer of compressible material (such as woodchip) and level out using hand tools only
 - iii. A temporary road surface (Load spreading plates such as trakmats) to be put down and remain in place until construction works are complete.

The front driveway is the area of main concern regarding compaction as this will see greatly increased vehicular activity from tradespersons parking, material deliveries and storage of materials, all within the RPA's of multiple protected trees. As such ground protection measures will be needed as described above. Neighbouring driveways and Lawson Drive running along the Southern property boundary are also an area of concern.

Both of these areas are gravelled over and it is not known if there is any geotextiles underneath or if it is simply laid on the soil. Lawson Drive could be protected sufficiently simply by closing and locking the gate thereby inhibiting access to the driveway from this direction. This should stop any construction related traffic. However, if it is likely that material deliveries are going to need to be craned in directly to the rear garden (i.e. off of a hi-ab lorry) then ground protection measures like the ones described above will be needed here as well.

This protective area (as seen in drawing 2279.22L) will also need to surround lime tree T4 as work will be required within the RPA. When the piles are being installed (see below for specific protective measures to be implemented during the installation of pile foundations), as little of the load spreading material as possible is to be removed (some boards may need to be cut) in order to facilitate the work whilst continuing to protect as large an area as possible. Site supervision will be required

for this stage to ensure that as large an area as possible remains protected, and any questions should be directed to the appointed responsible person on site and/or a suitably qualified arboriculturist.

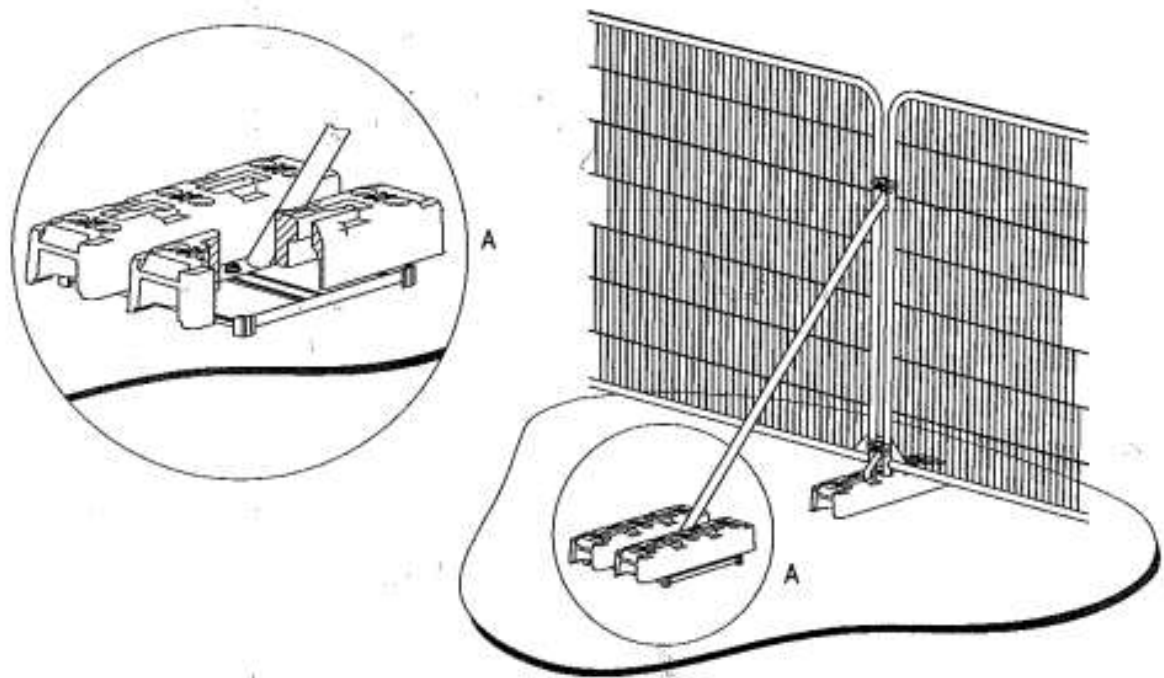
The most significantly affected tree to be retained is Lime T4 which will require foundations well within its RPA. In order to minimise the impact of the foundations to T4, pile foundations in conjunction with a shallow concrete slab will be used rather than traditional concrete filled trenches. This will allow the majority of the roots to remain undisturbed and still allow for the free flow of water and oxygen beneath the newly built structure thereby retaining the soil's viability.

A trial trench was dug along the full width of the RPA and no significant roots were found down to a depth of 220mm (see appendix at end of document) below ground level meaning the excavation for the concrete slab at 160mm below ground level will not sever or disturb major roots within the RPA (see drawings 2279.GA06F and 2279.34C).

Under supervision from the appointed responsible person, pilot holes for the piles will be hand dug/drilled to a depth of 750-1000mm below ground level to ensure there are not significant roots (greater than 25mm diameter) within the intended path of the piles. If a significant root is discovered during this process the precise pile location will be slightly adjusted to avoid the root. Once a suitable pilot hole has been dug (the position of the hole may have to change slightly depending on roots present), only then will a piling rig be used. The concrete piles will be sheathed/poured in plastic or steel pipes to minimise the risk of cement leaching into the ground water and altering pH in the vicinity of the newly cast piles.

- 2) Again, the front driveway is the area of main concern for mechanical damage. and particularly Lime T4 given its proximity to the works

The proposed restricted access areas (approximately the edges of the gravel drive) are still within the RPA of multiple trees, as such, the standard "in ground" system of tree protection fencing where posts and back stays are driven into the ground may not be appropriate as root damage is likely. For this reason the area of ground protection is to be widened slightly to accommodate the width of the protective fencing consisting of simple Heras fencing with above ground back stays, such as 2m X 3.5m weldmesh (or sheet metal) panels linked with anti- tamper couplings. Each panel is to be attached to a back stay which is founded in an additional foot or mesh tray as illustrated below (Minimum 32kg ballast to retain rear foot or tray (including the weight of the foot/tray)).

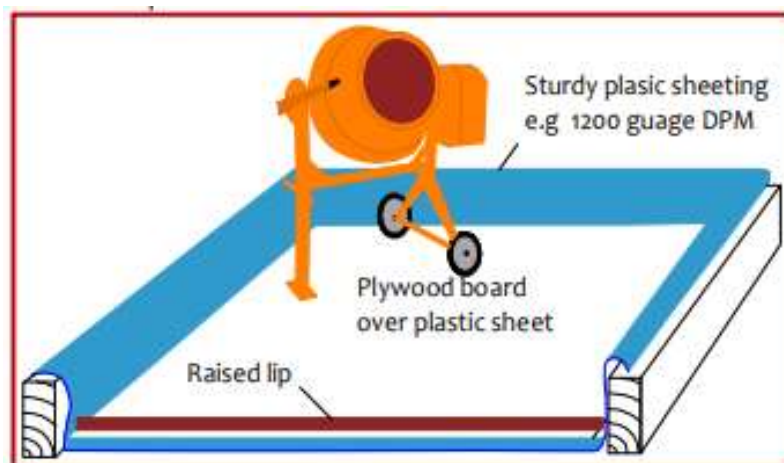


b) Stabilizer strut mounted on block tray

Figure 1: BS5837:2012 Example of above-ground stabilising system

For Lime T4 additional protective measures will be required due to the proximity of the construction activity and will be installed by a qualified arboriculturist. This will consist of a soft impact-resistant material, such as rubber or high-density foam, in contact with the stem of the tree, fixed in place with ratchet straps or similar to prevent it from sliding down/off of the stem. Around this, a hard protective barrier made from timber and plywood and gently braced against the cushioned stem to prevent any movement (e.g. rotation) of the outer barrier. This will prevent accidental mechanical damage to the tree's stem.

- 3) To mitigate the risk of damage through contamination with hazardous materials, as the majority of the accessible site is within the RPAs of multiple trees, measures must be taken to ensure that the run-off from cement mixing and other construction activities cannot flow into the RPA. For example, see illustration below. Fuels and other chemicals are to be stored and used according to COSHH regulations and kept away from RPAs.



For the majority of the trees in the rear garden, with the exception of T11, they are situated far enough away from both the access and the proposed development, and as such simple pedestrian barriers and signage are deemed sufficient protection from construction activities.

- Timing of operations
 1. Tree removals and pruning
 2. Erection of protection barriers and ground protection
 3. Excavation for groundwork
 4. Construction
 5. Removal of barriers and ground protection after all external work has been completed
 6. Replanting
- Supervision schedule
 - Prior to the start of the building work: to carry out tree works/agree tree works
 - Once agreed tree works have been completed and prior to the start of building works: to check tree protection
 - During works: to supervise pile hole excavation

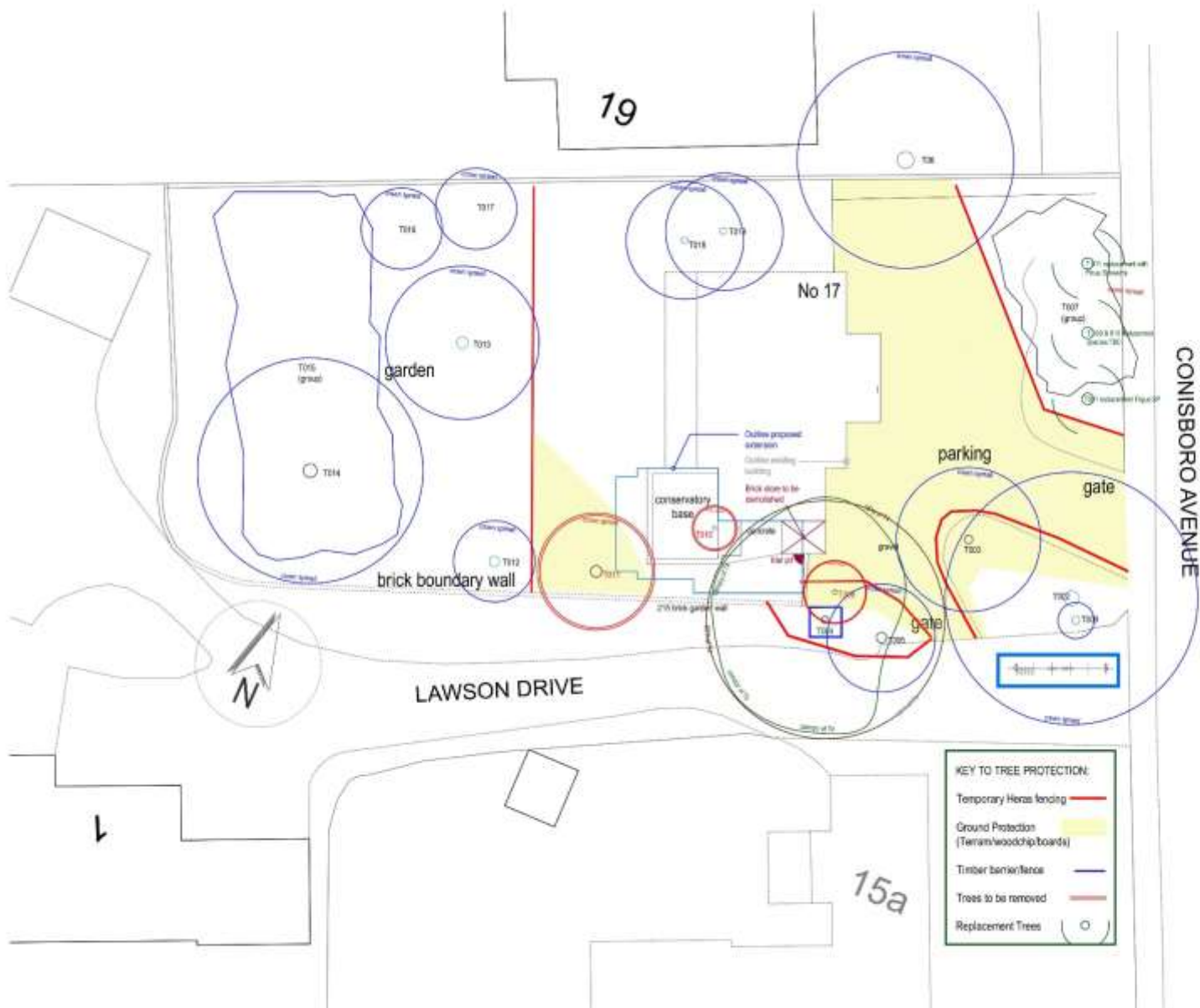
Reports of the supervision visits should be forwarded to the LPA within 5 working days.

10. Conclusion and recommendations

In conclusion, the principal arboricultural features within the site can be retained and adequately protected during development activities. Subject to precautionary measures as detailed above, the trees to be retained can be safeguarded.

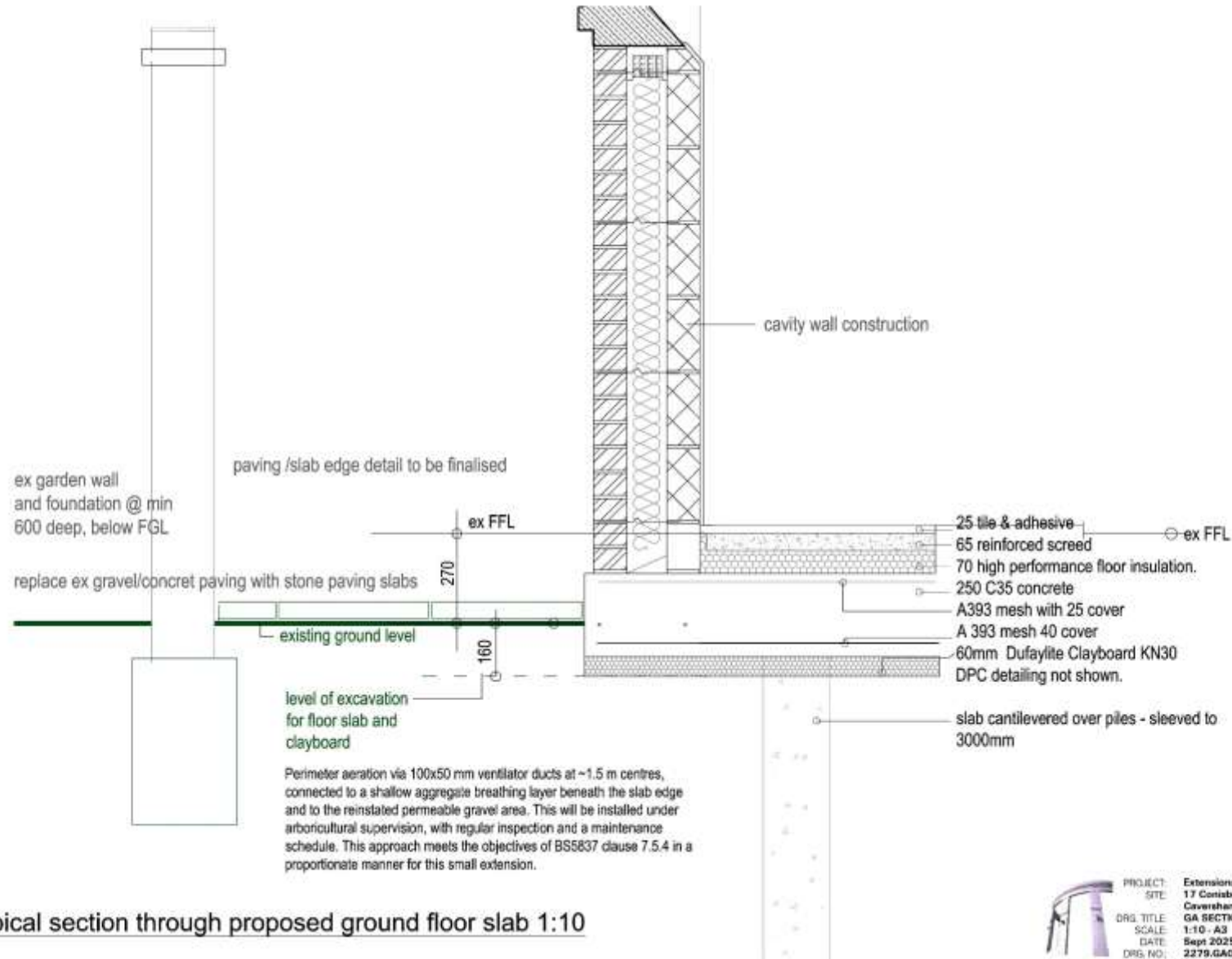
It is recommended that to ensure the retention and wellbeing of the trees to be retained, details are passed by the architect or agent to any contractors working on site, so that the practical aspects of the above precautions are included in their method statements, and financial provision made for these. An individual due to be present on site the majority of the time should be nominated to be responsible for arboricultural matters. They should be aware of the precautionary measures detailed above and have the authority to stop any work that has the potential to damage any tree as well as be able to contact the local authority and/or arboricultural consultant should any tree-related problem occur or be foreseen.

11. Maps/plans



Revision L has removed T1 from the plan as it has been removed from site

PROJECT: Extensions & Alterations
 SITE: 17, Conisboro Avenue
 Caversham, RG4 7JB
 ORG TITLE: Tree Protection Plan
 SCALE: 1:200 @ A3
 DATE: JUNE 2025
 DRG. NO.: 2279.22 L



typical section through proposed ground floor slab 1:10





PROJECT: Extensions & Alterations
SITE: 17, Conisbore Avenue
Caversham, RG4 7JB
DRG. TITLE: Pile Layout
SCALE: 1:50 @ A3
DATE: JUNE 2025
DRG. NO: 2279.34 C
\$1242 22/01/19 info@swduncan.co.uk

michael kinsley & associates - 12, College Bath Road, Chalfont, GL53 7QU. tel: 01242 325013

Appendix: Trial excavations findings

Thursday 18th April findings

T4 Lime crown spread	
Direction of spread (compass points)	Spread from trunk (m)
North	6.3
Northeast	4.8
East	3.6
Southeast	6.5
South	6.5
Southwest	7.5
West	6.4
Northwest	6.5
North northwest (parallel with building line)	7.1

Trial pit findings:

The RPA was rechecked by measuring the stem diameters of T4 at 1.5m above ground level which were 400mm and 375mm giving a 6.6m radius circle, which on the West side of the tree in the area behind the garden wall comes almost exactly to the corner of the wall pictured below.



It was anticipated that the garden wall was acting as an effective barrier to entry for roots from T4 as trial pit 1 (shown in green in the above photo) seemed to show that the wall's footings were approximately 60cm below ground level. The depth of the footings combined with a lack of evident root related damage i.e. lifting and cracking from expanding roots beneath the wall, seemed to suggest that there were no significant roots within this courtyard area.

However, upon beginning to excavate trial pit 2 (red in the above picture), fine roots were quickly discovered, as was a concrete lintel spanning the northeast face of the wall (closest to T4) creating a 1500mm wide opening from 100mm below ground level (pictured below). This opening has allowed the roots to enter this area largely unhindered and also explains the lack of root-related damage to the wall.



The first significant root was found beneath this lintel at 240mm below ground level (photos below)



Due to the unexpected complication of uncovering the lintel, the trench was not dug out to the extent of the RPA to check if all significant roots are at least 220mm below ground level for the foundations.

Trial pit 1 was also expanded to assess the depth of the footings of the existing building. The pit was dug to 800mm below ground level without reaching the bottom of the footings, with no roots seen beyond 700mm below ground level, suggesting the footprint of this structure is an effective barrier to roots.



Tuesday 30th April findings

T4 Lime crown spread	
Direction of spread (compass points)	Spread from trunk (m)
North	6.3
Northeast	4.8
East	3.6
Southeast	6.5
South	6.5
Southwest	7.5
West	6.4
Northwest	6.5
North northwest (parallel with building line)	7.1

Trial pit findings:

The RPA was rechecked by measuring the stem diameters of T4 at 1.5m above ground level which were 400mm and 375mm giving a 6.6m radius circle, which on the West side of the tree in the area behind the garden wall comes almost exactly to the corner of the wall pictured below (figure 1).



Figure 2: Annotated photo showing extent of RPA and locations of trial pits

It was anticipated that the garden wall was acting as an effective barrier to entry for roots from T4 as trial pit 1 (shown in green in the above photo) seemed to show that the wall's footings were approximately 600mm below ground level. The depth of the footings combined with a lack of evident root related damage i.e. lifting and cracking from expanding roots beneath the wall, seemed to suggest that there were no significant roots within this courtyard area.

However, upon beginning to excavate trial pit 2 (red in the above picture), fine roots were quickly discovered, as was a concrete lintel spanning the northeast face of the wall (closest to T4) creating a 1500mm wide opening from 100mm below ground level (Figure 2). This opening has allowed the roots to enter this area largely unhindered and also explains the lack of root-related damage to the wall.



Figure 3: Concrete lintel

The first and largest noteworthy (but still less than 25mm diameter) root was found beneath this lintel at 240mm below ground level and measured 20mm in diameter (Figures 3 & 4).



Figure 4: showing depth of root 240mm below ground level (GL)



Figure 5: diameter of root 20mm

Trial pit 1 was also expanded to assess the depth of the footings of the existing building. The pit was dug to 800mm below ground level without reaching the bottom of the footings, with no roots seen beyond 700mm below ground level, suggesting the footprint of this structure is an effective barrier to roots (figure 5).



Figure 6: extent of trial pit 1

Trial pit 2 was then continued and the trench was dug up to approximately 0.5m from the edge of the RPA at which point an old drain was uncovered. (figures 6 & 7)



Figure 7: extent of trial pit/trench 2



Figure 8: old drain uncovered near edge of RPA

The trench was dug to approximately 300mm below ground level. (figure 8)



Figure 9: showing the depth of trial pit/trench 2

The largest diameter root uncovered (excluding the one directly by the wall) was 11mm diameter. (figure 9)



Figure 10: 2nd largest root uncovered 11mm diameter

There were a reasonable amount of fine roots near the surface along the length of the trench (figure 10) but these could well be from closer vegetation, such as the shrubs bordering Lawsons drive.



Figure 11: Fine roots near surface of trial pit/trench 2

Conclusions:

In summary, there were no significant (25mm diameter or larger) roots uncovered within the area of the trial trenches beneath the footprint of the proposed building to the depth of the proposed concrete ring **beam*** (220mm below ground level) for pile foundations. The trench was between 240-300mm below ground level.

A potential issue one could foresee is the change in the available soil moisture beneath the structure as it will no longer be exposed to the rain. Diffusion from the surrounding soil will slightly mitigate this. Assuming the major roots are undamaged, they should be able to develop beyond the footprint of the structure and draw water from outside the footprint and transport it to the tree, further mitigating the potential issue.

If proper precautions are taken and the piles carefully placed between major roots, it should be possible to build the structure without significant detriment to the Lime tree (T4).

*** 19th October 2025 update: the concrete ring beam has been changed for a shallow slab at a depth of 160mm below ground level**