

17 Conisboro Avenue, Reading RG4 7JB

Arboricultural impact assessment and tree protection measures

**Site inspected on 5th & 9th September 2023
by David White,
LANTRA-approved Professional Tree Inspector
White Knight Tree Care & Consultancy**

Table of Contents

1. Instruction
2. Survey & site conditions
3. Tree Preservation Orders
4. Ecological considerations
5. Insurance
6. Tree survey
7. Photographs
8. Impact Assessment
9. Method Statement
10. Conclusion and recommendations
11. Maps

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 £15,000,000.00

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)	
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	
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	

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)	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

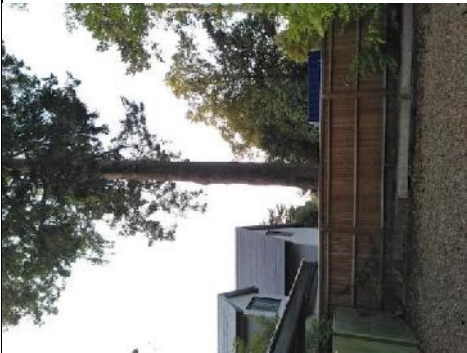
Ref.	Species	Location	Structure	Num. Stems	DBH (cm)	General Observations	RPA	Recommendations	Retention category
T011	Lawson Cypress (<i>Chamaecyparis lawsoniana</i>)	Back garden	Tree	4	150	- Close proximity to main house (5m) - Main unions are compression forks - East of stem has a large ear protruding 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>)			
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>)			

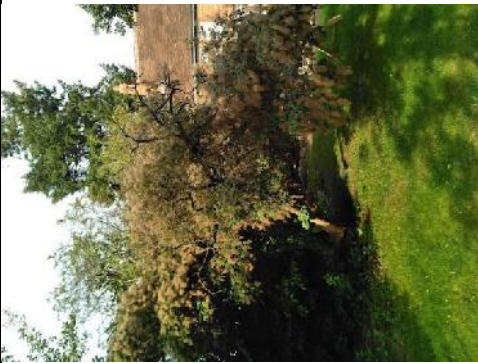
Ref.	Species	Photo	Photo	Photo
T005	Lawson Cypress (<i>Chamaecyparis lawsoniana</i>)			
T006	Douglas Fir (<i>Pseudotsuga menziesii</i>)			

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</i> <i>Coggygia</i>)			
T017	Hawthorn (<i>Crataegus</i> sp.)	No Photo		
T018	Goat Willow (<i>Salix caprea</i>)			

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

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, is also to be removed due to the presence of *Meripilus giganteum*.

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 beyond the maximum depth of the proposed concrete ring beam 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 2279.22J) 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 or careful

documentation will be required for this stage to ensure that as large an area as possible remains protected, and any questions should be directed to Mr David White (07434 644 434).

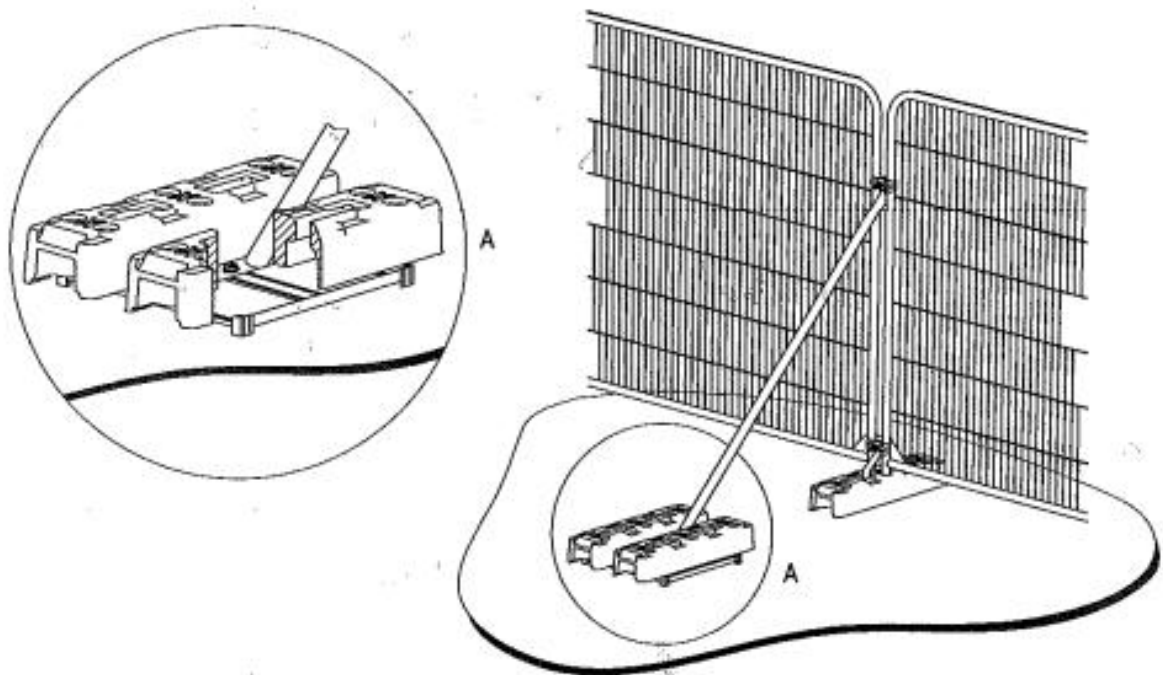
The most significantly affected tree to be retained is Lime T4 which will require foundations well within its RPA. In order to minimise the impact of the foundations to T4, pile foundations will be used rather than traditional concrete filled trenches. This will allow the majority of the roots to remain 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 below ground level meaning the concrete ring beam of the foundations (as seen in drawing 2279.21B) will not sever or disturb major roots.

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)).

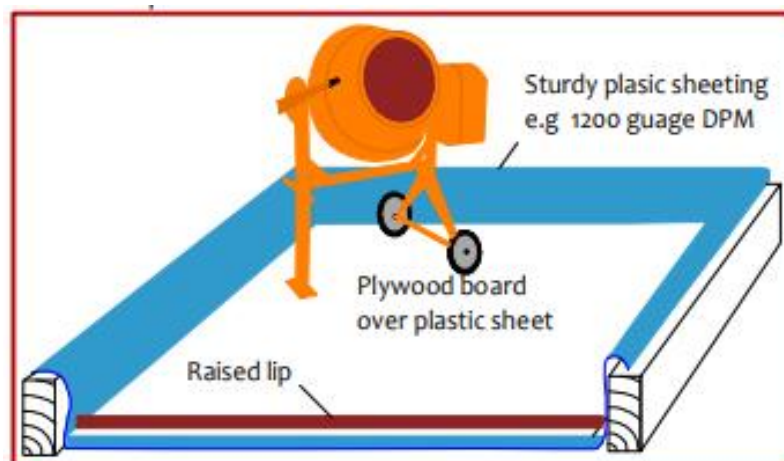


b) Stabilizer strut mounted on block tray

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

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.

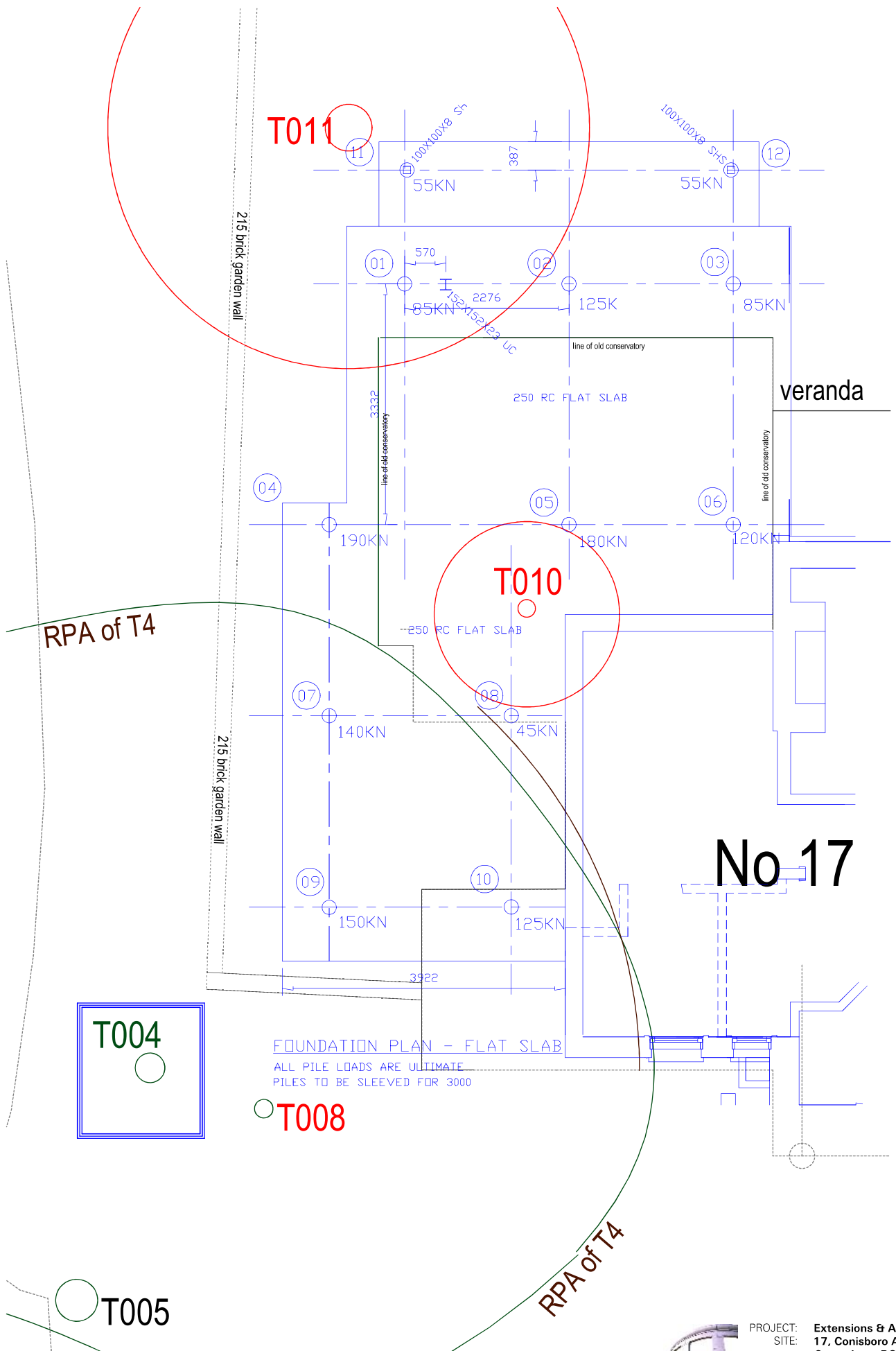
11. Maps/plans



Extensions & Alterations
17, Conisboro Avenue
Caversham, RG4 7JB
Tree Protection Plan
1:200 @ A3
January 2023
2279.22J
michael@lumley.com

PROJECT:
SITE:
DRG. TITLE:
SCALE:
DATE:
DRG. NO.:
1242 221013

Michael Lumley & Associates - 12, Collyer Baths Road, Cheltenham, GL53 7QU Tel: 01242 221013



SEE ALSO Tree Protection Plan 2279.22 J



PROJECT: Extensions & Alterations
SITE: 17, Conisboro Avenue
Caversham, RG4 7JB
DRG. TITLE: Pile Layout
SCALE: 1:50 @ A3
DATE: JUNE 2025
DRG. NO.: 2279.23

NTS for ref only
see application
drawing for scale