Arboricultural Report

Tree Condition Assessment

Kington Lane Cemetery

Kington Lane

Thornbury

16th December 2022

Compiled for:

Jon Brain

On behalf of

Thornbury Town Council

By

Phil Dye

BSc (hons) Arb, Cert Arb L4 (ABC), BA (Hons), MArborA

Ref: WTC_1041.01

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Contents

NOTE

1:0 INTRODUCTION

I am a consulting arboriculturist with Wotton Tree Consultancy Ltd. I have a BSc (hons) Arboriculture and the AA Technicians Certificate in Arboriculture (Cert Arb L4 (ABC)). I am a LANTRA qualified Professional Tree Inspector. I am a licensed user of Quantified Tree Risk Assessment (QTRA) - license no. 2278, a professional member of the Arboricultural Association and a professional member of the Consulting Arborists Society. I am trained in valuing amenity trees using the Capital Asset Value for Amenity Trees (CAVAT) system. I have been a consulting arboriculturist since 2006.

2:0 SCOPE

I have been instructed by Jon Brain of Thornbury Town Council to undertake a health and safety survey of the trees within the curtilage of Kington Lane Cemetery. The risk of harm has been calculated using Quantified Tree Risk Assessment (QTRA). Remedial tree works have been recommended only where appropriate to reduce risk of harm to an acceptable level in line with HSE's *Tolerability of Risk Framework* (HSE 2001).

3:0 REPORT LIMITATIONS

i. This report is an evaluation of the condition of the trees at the time of inspection. Due to the changing nature of trees and other site circumstances, predictions of their future condition can only be made using the visible signs present at the time of inspection.

ii. Under certain conditions, roots can affect foundations, drains and other underground services. These issues have not been addressed in this report.

iii. Trees are dynamic structures that can never be guaranteed 100% safe. Even those in good condition can suffer occasional damage under only average weather conditions. For this reason the contents of this report is valid for 12 months from the date of inspection.

iv. The inspection was carried out from ground level only. There was no aerial inspection.

v. No samples were taken away from site for analysis elsewhere.

vi. Any alterations of or deletions from this report will invalidate it.

vii. No responsibility is assumed by Wotton Tree Consultancy for legal matters that may arise from this report, and the consultant will not be required to give testimony or attend court unless subsequent contractual arrangements are made.

viii. Any subsequent works undertaken to the surveyed tree as a result of this report is the responsibility of the land managers.

ix. I have not contacted the Local Planning Authority to determine whether any Tree Preservation Order (TPO) covers any of the trees, nor to determine if the site is in a Conservation Area. Before undertaking any work to any of the trees, it would be advisable to check whether either of these planning controls are in operation; if they are, it would be necessary to obtain consent (or in the case of a Conservation area give six weeks notice of intent) before undertaking any such work.

4:0 SITE VISIT AND OBSERVATIONS

4.1 Site visit

The survey was carried out on 12th December 2022. All observations were from ground level. A nylon headed mallet was used to sound out decay in the trunks of the trees. A Tru-Pulse 360 laser rangefinder was used to accurately measure the height of the trees.

5:0 EXPLANATORY NOTES

5.1 Method

All trees have been systematically inspected using Visual Tree Assessment (VTA). Where necessary, a nylon headed mallet has been utilised to sound out decay.
Any tree works highlighted in the table and on the accompanied plans require works to abate any health and safety issues in the following 18 months.

5.2 Table fields

5.2.1 Tree number

Each of these trees has been allotted a number so that the location on the plan and works recommendations on the table can be cross-referenced.

5.2.2 Species

The common name is recorded. Where the species is uncertain, only the genus is stated followed by the letters spp (species).

5.2.3 Age class

This has been recorded as:

y = Young
sm = Semi mature
em = Early mature
m = Mature
om = Over mature
v = Veteran

These are all relative to the life span of the species.

5.2.4 Diameter at 1.5m

Measured in mm, this is the diameter of the main stem taken at a height of 1.5m from ground level. These have been banded into the following groups:

<75, 75-150, 150-250, 250-350, 350-500, 500-750, 750-1m, 1m+

5.2.5 Ht range (m)

Height of tree measured in metres from the base to the highest part of vegetative growth. These are banded into 5 groups:

0-5, 6-10, 11-15, 16-20 and 20+

5.2.6 Crown clearance

The distance from the ground to the lowest bough or canopy part.

5.2.7 Physiological condition

The condition of the trees' health, looking in particular at vitality and the presence of disease. These are categorised as follows:

Poor = in decline/dying and/or significant faults
Fair = some minor faults but good vitality.
Good = No apparent faults, high vitality, significant life expectancy

5.2.8 Structural condition

The condition of the trees stem and branch structure, looking in particular at branch unions, crossing branches and crown formation. These are categorised as follows:

Poor = structurally compromised showing significant defects beyond remedy
Fair = some minor defects which can be remedied through tree works.
Good = No significant defects.

5.2.9 Works recommendations

See section 5.3 below.

5.2.10 Comments

Observations about the tree or its environment where they are deemed noteworthy.

5.2.11 Safe useful life expectancy

An estimation in years of the remaining contribution the tree can offer, depending on its condition, age, location and size.

5.2.15 Priority

To facilitate the management of tree works a priority is given to each recommendation depending upon its urgency.

Priority 1 = Urgent – mitigate the identified problem as soon as possible

Priority 2 = High risk - mitigate the identified problem as soon as the work schedule allows

Priority 3 = Moderate risk - Retain and monitor the tree and / or mitigate the identified problem as necessary

Priority 4 = Low priority - retain and monitor the tree. Mitigate the identified problem if desired.

5.3 Recommended works

The tree works recommended in this report are solely to abate any health and safety issues in the following 18 months. In some cases, advice has been given on general future tree management in the comments section. These have not been assigned a priority as they are not considered health and safety issues at the time of this survey

5.3.1 Crown reduction

Crown reduction is the reduction of the complete outline dimension of the canopy, from the tips of the limbs and branches towards the main trunk, by pruning growth to an appropriately sized lateral branch, twig or bud to leave a flowing silhouette. In addition all soft growth from the tree's trunk shall be removed from those trees being subject to crown reduction unless otherwise stated. The size of the reduction is given as a final height and spread. This height is a guide and the actual final size should be dictated by the trees' structure and growth points.

5.3.2 Re-inspect in *(n)* months

Where a tree's condition requires monitoring to enable an informed management plan to be produced, a re-inspection is recommended to assess any changes in the tree's condition.

5.3.3 Remove limb/tidy stubs

Limb removal entails the pruning of the limb back to its parent stem with the final cut being natural target pruning to ensure the branch collar and branch bark ridge remain intact. This provides the tree with the best chance to defend itself against future decay.

5.3.4 Remove

Where it is considered that a tree is in such a poor condition that it either poses a danger to people or property, or that is unsuitable for its location or that it significantly reduces the amenity of the area by staying *in situ,* its removal is recommended.

5.3.5 Cable brace

Where a weak union is noted it is possible to reduce the risk of failure without the need for pruning works - which can be detrimental to the long-term health of the tree and the amenity it offers. Where defective unions are more severe, a cable brace along with a reduction might be prescribed as an alternative to whole tree removal.

Cable bracing entails the connecting of 2 or more upright stems together with a fabric strap or metal rod which will lessen the stresses on the weak union reducing the likelihood of failure in the future.

6:0 TREE SURVEY DATA

The following trees were inspected for structural integrity and health and saftey. Management recommendations were prescribed only where health and safety concerns arose. It is recommended that the tree works are carried out within the following 18 months. A priority has been assigned where works are recommended to help gauge the urgency of the works (see 5.2.15).

Trees highlighted in **red** have been recommended for removal/monolithing.

REMOVED	= Tree has been removed or monolithed since the last survey

Tree No	Species	Age class	Diameter range at 1.5m (mm)	Height range (m)	Crown Clearance (m)	Physiological condition	Structural condition	Comments	Works recommendations	Safe Useful Life Expectancy (SULE) years	Priority
T1	Lawsons cypress	Semi-mature	150-250	5-10m	2	Good	Good	Localised browning of foliage.	-	40+	-
G1	3 x Thuja, 1 x crataegus	Semi-mature	150-250	5-10m	1	Fair	Fair	Cypress trees have been historically topped	-	40	-
T2	Ginkgo	Young	75-150	0-5m	1	Fair	Fair	-	-	20-40	-
T3	Purple beech	Mature	500-750	10-15m	4	Good	Poor	Bark inclusion at 2m. Crack is propagating on the west side and has traveled 0.5m below base of union. The union has clearly opened up by 7mm. Some natural braces currently present but insufficient.	Crown reduce to a final height of 8m and install a static brace to manufacturers recommended installation methods.	10-20	2
T4	Robinia	Mature	350-500	10-15m	3	Fair	Fair	Cavity in trunk at 1m west side	-	20-40	-
T5	Cotoneaster	Early-mature	75-150	0-5m	1	Good	Fair	Multi-stemmed	-	20-40	-
T6	Snake bark maple	Early-mature	150-250	5-10m	3	Good	Good	-	-	40	-
T7	Silver maple	Mature	500-750	10-15m	2	Good	Fair	Power lines running through crown. Central stem reduced to accommodate.	-	20-40	-
T8	Oak	Mature	500-750	10-15m	2	Fair	Fair	Lower limbs poorly pruned in the past.	-	40+	-
T9	Norway maple	Mature	350-500	10-15m	2	Good	Good	-	-	40+	-
T10	Laburnum	Early-mature	150-250	0-5m	2	Dead	Dead	REMOVED	-	0	-
T11	Lawsons cypress - Ellwoodii	Early-mature	150-250	5-10m	0	Good	Fair	-	-	20-40	-
T12	Sycamore	Semi-mature	75-150	0-5m	0	Fair	Fair	REMOVED	-	0	-
T13	Viburnum tinus	Early-mature	75-150	0-5m	1	Good	Fair	1 of a pair.	-	40+	-
T14	Viburnum tinus	Early-mature	75-150	0-5m	1	Good	Fair	1 of a pair.	-	40+	-
T15	Lawsons cypress - Ellwoodii	Young	<75	0-5m	0	Good	Good	-	-	40+	-

Tree No	Species	Age class	Diameter range at 1.5m (mm)	Height range (m)	Crown Clearance (m)	Physiological condition	Structural condition	Comments	Works recommendations	Safe Useful Life Expectancy (SULE) years	Priority
G2	2 x hornbeam	Mature	500-750	10-15m	2	Good	Good	Forming an archway over the path.	-	40+	-
T16	Lawsons cypress - Ellwoodii	Young	<75	0-5m	0	Good	Good	-	-	40+	-
T17	Holly	Semi-mature	75-150	0-5m	0	Good	Fair	REMOVED.	-	40+	-
T18	Holly	Semi-mature	75-150	0-5m	0	Poor	Fair	REMOVED.	-	<10	-
T19	Lawsons cypress	Mature	1000+	5-10m	2	Fair	Fair	Multi-stemmed. Diameter measured at base.	-	40+	-
G3	Lawsons cypress	Mature	1000+	10-15m	0	Good	Good	Forming an archway over the path.	-	40+	-
T20	Cherry plum	Mature	350-500	5-10m	1	Good	Fair	Heavily pruned in past. Crown reformed. Phellinus pomaceus brackets on old pruning wounds.	-	20-40	-
T21	Crab apple	Mature	150-250	0-5m	2	Good	Fair	-	-	40+	-
T22	Mahonia	Mature	<75	0-5m	1	Fair	Good	-	-	10-20	-
T23	English oak	Mature	1000+	15-20m	3	Good	Fair	Large limb lost at 8m.	-	40+	-
T24	English oak	Veteran	1000+	20m+	3	Good	Good	Excellent specimen tree	-	40+	-
T25	English oak	Semi-mature	150-250	5-10m	2	Good	Good	Good future potential.	-	40+	-
T26	Robinia	Mature	750-1000	15-20m	2	Fair	Fair	Some minor to moderate deadwood. No targets.	-	20-40	-
T27	Bird cherry	Semi-mature	150-250	0-5m	1	Poor	Poor	Sprouting stump	-	<10	-
T28	Rowan	Early-mature	75-150	5-10m	1	Good	Good	-	-	40+	-
T29	Rowan	Semi-mature	75-150	5-10m	1	Dead	Dead	REMOVED	-	0	-
T30	Bird cherry	Mature	250-350	5-10m	2	Good	Fair	Bark inclusion at 1m. Good natural braces present.	-	40	-
T31	Cherry	Semi-mature	150-250	5-10m	2	Good	Fair	-	-	20-40	-
T32	Oak	Semi-mature	150-250	5-10m	3	Poor	Fair	Sparse crown with elongated limbs. In decline. Low risk of harm	Consider removal and replacement	<10	4
T33	Ash	Mature	500-750	10-15m	3	Poor	Fair	MONOLITHED	-	0	-

Tree No	Species	Age class	Diameter range at 1.5m (mm)	Height range (m)	Crown Clearance (m)	Physiological condition	Structural condition	Comments	Works recommendations	Safe Useful Life Expectancy (SULE) years	Priority
T34	Horse chestnut	Early-mature	350-500	5-10m	2	Fair	Fair	Suppressed by neighbouring ash. Rooting area overburdoned with spoil. This can be damaging to the tree causing compaction and inhibiting water and nutrient uptake.	Remove spoil from base of trees.	20-40	2
G4	Blackthorn, rowan, magnolia, unidentified shrub.	Young	<75	0-5m	0	Fair	Fair	-	-	20-40	-
T35	Peach	Semi-mature	150-250	5-10m	3	Poor	Fair	Very sparse canopy. Dedicated tree. Low risk of harm	-	<10	-
T36	Horse chestnut	Early-mature	350-500	5-10m	2	Fair	Fair	Signs of bleeding canker at 3m. Bacterial wetwood also visible at same point. Some recovery noted since last survey	-	20-40	-
G5	Oak x 1, horse chestnut x 4, silver maple x 1, lime x 1, sycamore x 3	Mature	350-500	15-20m	3	Fair	Fair	Stand of mature trees. Numerous dead and hung up branches. Low risk of harm so can be left in trees.	-	40+	-
G5a	Lime	Mature	350-500	15-20m	2	Fair	Poor	Lime at southern point of G5. 3 stems from base. Basal decay in southernmost stem with old dryad's saddle fungus within cavity.	Remove south stem and reduce remaining 2 stems to 6m	10-20	3
G6	Cherry x 3, rowan x 1, mountain ash x 1, alder x 1, elm x 1	Young	75-150	0-5m	1	Good	Fair	-	-	40+	-
T37	Hawthorn	Mature	350-500	5-10m	2	Good	Good	Next to stile. Twin-stemmed.	-	40+	-
T38	Blue atlas cedar	Semi-mature	250-350	10-15m	2	Good	Good	-	-	40+	-
T39	Field maple	Mature	350-500	10-15m	3	Good	Good	-	-	40+	-
T40	Horse chestnut	Early-mature	350-500	5-10m	2	Good	Good	-	-	40+	-
T41	Horse chestnut	Early-mature	350-500	5-10m	2	Fair	Fair	Large limb removed at 1m north side.	-	20-40	-

Tree No	Species	Age class	Diameter range at 1.5m (mm)	Height range (m)	Crown Clearance (m)	Physiological condition	Structural condition	Comments	Works recommendations	Safe Useful Life Expectancy (SULE) years	Priority
T42	Horse chestnut	Early-mature	350-500	5-10m	2	Good	Fair	Bark included union at 1.5m. Natural braces absent.	Install Cobra brace at 2 thirds of the height of the included stems, using the cobra standard system	20-40	3
T43	Cherry	Early-mature	250-350	5-10m	2	Fair	Fair	Bacteria canker present at 1.5m. Wound wood forming to compensate.	Monitor for health of crown over late spring and early summer. If sparse seek advice with a view to removal.	10-20	3
T44	Cherry	Early-mature	250-350	5-10m	2	Dead	Dead	REMOVED	-	0	-
G7	Holly x 6	Young	75-150	0-5m	0	Fair	Fair	-	-	20-40	-
T45	Ash	Early-mature	350-500	5-10m	4	Fair	Fair	Pollarded to 1.5m	-	10-20	-
T46	English oak	Mature	350-500	15-20m	2	Good	Good	-	-	40+	-
T47	Snake bark maple	Early-mature	150-250	5-10m	3	Poor	Poor	REMOVED	-	0	-
T48	Snake bark maple	Mature	150-250	5-10m	3	Poor	Fair	REMOVED	-	0	-
T49	Willow	Mature	350-500	5-10m	2	Fair	Fair	Coppiced	-	10-20	-
T50	Whitebeam	Mature	350-500	10-15m	2	Fair	Fair	-	-	20-40	-
T51	Horse chestnut	Mature	750-1000	5-10m	2	Good	Good	-	-	40+	-
T52	Horse chestnut	Early-mature	350-500	5-10m	2	Good	Good	-	-	40+	-
T53	Atlas cedar	Early-mature	750-1000	15-20m	1	Good	Good	-	-	40+	-
G8	2 x Rowan	Early-mature	75-150	5-10m	2	Fair	Fair	-	-	20-40	-
G9	Lawson cypress x 3, cherry x 1	Semi-mature	250-350	10-15m	2	Fair	Fair	At entrance to cemetery	-	40+	-

7:0 IMMEDIATE CONCERNS

The survey identified no immediate (priority 1) health and safety works to the trees within the curtilage of Kington Lane Cemetery.

8:0 FUTURE MANAGEMENT

The recommendations given below are for future management and to give extra depth to the recommendations in section 6:0. The recommendations are based on arboricultural best practice.

9.1 **T3 – Purple beech –** A vertical crack has been slowly progressing from the main union down the trunk for the last 3 years. In order to arrest the progress of the crack it is recommended that a static metal rod brace is fitted and the canopy is reduced to lessen stress and strain on the brace.

Plate 1: T3 – Purple beech with progressive vertical crack below main union. Static rod bracing recommended.

9:0 CONSIDERATIONS

9.1 Timing of works

The optimum time to undertake tree works are when the tree is in full leaf. At this point the tree has produced enough energy to react positively to the pruning, and will be able to produce more energy before dormancy in winter for bud burst in the following spring.

A full inspection of the tree for birds and bats should be undertaken prior to works. The table below gives an indication of the best times to prune for the tree, the birds and the bats.

Table 1. Phenology of tree pruning

Months	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Trees	√	√	x	x	x	√	√	√	√	x	x	√
Bats	x	x	√	√	√	x	x	x	√	√	√	x
Birds	√	√	x	x	x	x	√	√	√	√	√	√

√ = Optimum time to prune

Note 1: The limitations on tree health are only relevant if the tree is being retained. Time of year is not important for felling. An Ecologist could provide further information about birds and bats.

Note 2: The optimum time to prune a tree is midsummer. If pruning is to be carried in the winter months, then it is important that it is during a period of mild temperatures.

9.2 Felling licence

Licences from the Forestry Commission are required when felling more than 5 m^3 of timber in one calendar quarter. Works to dead or dangerous trees are exempt from this licence as are any tree surgery works. This covers all the works that I have recommended. Permission might be required for any additional works.

9.3 Ivy control

Ivy is a native creeper that has many ecological benefits. It provides shelter for bats, birds and a variety of invertebrates, but can sometimes cause problems for trees and structures. Ivy growth on a tree can hide defects within the tree during tree inspections. Dense ivy within the crown can increase the sail area of the tree, making it more prone to failure in high winds. On the walls of buildings, the adventitious roots of ivy can find their way into existing defects such

as holes, cracks or gaps in the mortar, and through circumferential growth of woody tissue, exacerbate these defects. If left to grow to the roof they can dislodge tiles.

Should it be necessary to remove ivy, it is recommended that the ivy is severed at the base of the tree or structure and left to die off before removing. This allows any nesting birds or roosting bats to alight the ivy (it is an offence to disturb nesting birds or roosting bats under the Countryside and Rights of Way Act 2000), and it allows the adventitious roots to release their grip of loose mortar on a structure or bark on a tree, thus reducing damage as the ivy is removed.

9.4 Legal obligations

Tree owners have a legal duty of care to maintain their trees to an acceptable level of safety to ensure that no harm is caused by them to third parties or their property.

The Occupiers Liability Act 1957 and 1984 places a legal duty on the occupier of the house to keep visitors, invited or not, from suffering injury on the premises from a 'concerned danger'. This duty of care is satisfied if the occupier takes reasonable steps to ensure that anyone they might reasonably expect to enter their land is kept reasonably safe from danger whilst on their premises. A tree survey, such as this document is considered a reasonable step, and as long as the tree works that have been prescribed as health and safety have been undertaken, the duty of care has been discharged. Please see section 8.6 for recommended re-inspections.

The Highways Act 1980 places a duty on tree owners to ensure their vegetation does not impede the public highway, which includes footpaths and streetlights. In order to comply with this, a clearance of 2.5m over a footpath, and 5.4m over a road is usually stipulated by the Highway Authority. Actual heights of clearance are not stated within the Act, and the Highway Authority reserve the right to set these clearances depending on use of the road. Under *section 154* of the Act the Highway Authority can serve a notice on the tree owner to undertake any necessary tree works.

The Wildlife and Countryside Act 1981 and its amendments in *The Countryside and Rights of Way Act 2000* makes it an offence to disturb a birds nest which is in use, which is normally taken to mean under construction, or with eggs, chicks or birds using it regularly - even if they are not actually in it at the time. For this reason, it is prudent to wait until the bird nesting season has finished before undertaking hedge works. A thorough inspection of the hedge for nesting birds should be undertaken prior to any works commencing. Similar checks should be carried out for tree works.

9.5 Common Law Right of Abatement

In English common law a right to abate a legal nuisance exists, enabling a property owner or tenant to prune any overhanging vegetation or trespassing roots entering their land from trees on neighbouring land up to but not beyond, their boundary line. This does not give rights to trespass onto the neighbouring land and so permissions from the land owner must be sought if access to their land is needed to carry out the pruning works. Any arisings from this work must be disposed of responsibly.

9.6 Tree Preservation Orders and Conservation Areas

It is necessary to contact South Gloucestershire Council's Planning Dept to ascertain the presence of any Tree Preservation Orders (TPOs) or Conservation Areas (CAs). Relevant permissions will be required. South Gloucestershire Council will advise further.

9.7 Tree Works

All tree works must be carried out to BS 3998:2010 *Tree work - Recommendations* standards by competent arborists who can show proof of relevant insurances and qualifications.

9.8 Future tree inspections

It is recommended that the trees are **reinspected every two years** for health and safety. These inspections should be carried out by a competent arboriculturist who can show proof of relevant insurances and qualifications.

Sources of Information

BSI Standards Publication (2010) BS3998 *Tree Works – Recommendations* BSI: London

BSI Standards Publication (2012) BS5837 *Trees in relation to design, demolition and construction – Recommendations* BSI: London

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APPENDIX A – Map

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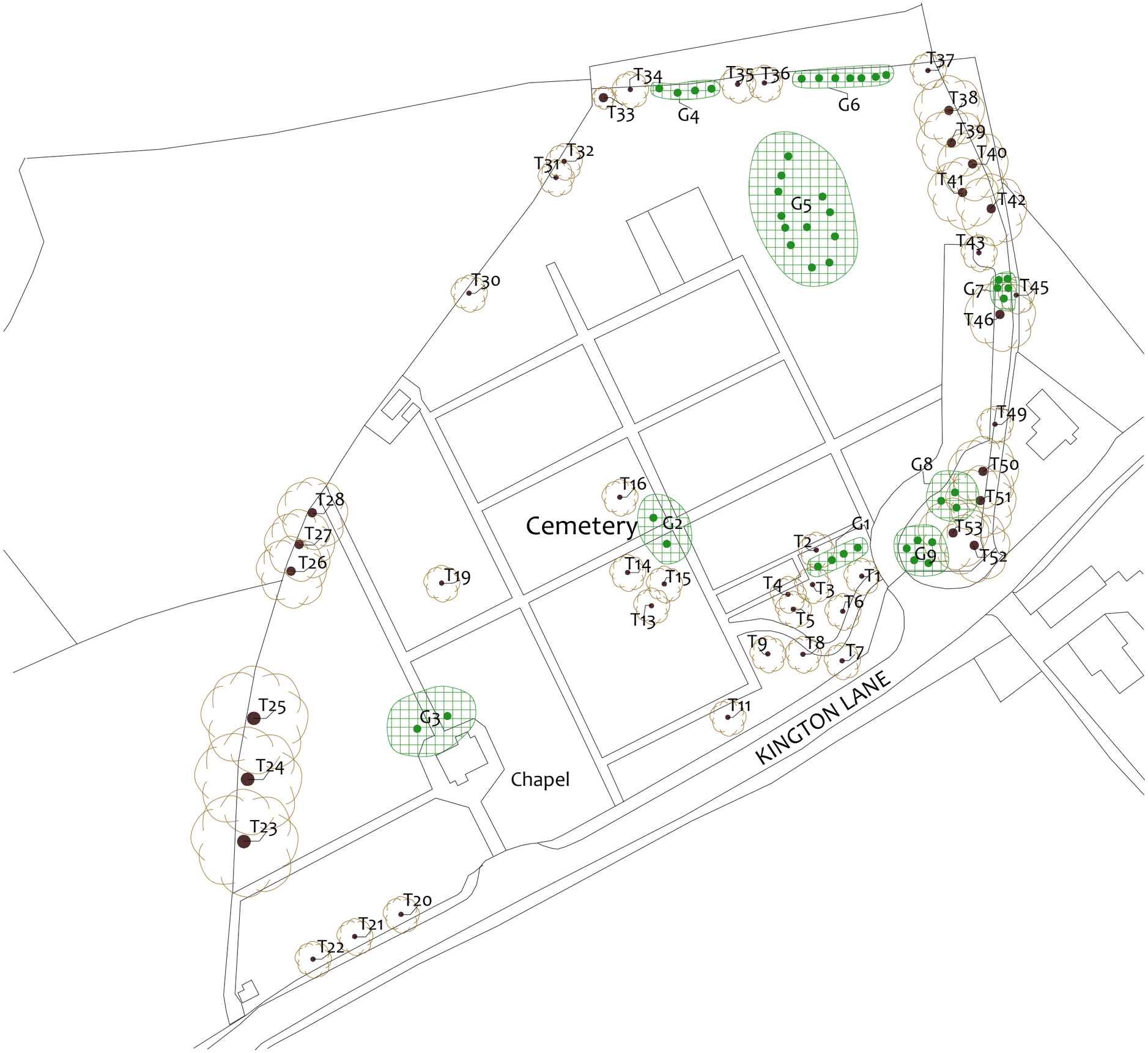

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WTC
WottonTreeConsultancy

Key

Tree

Group

Project

Kington Lane Cemetery
Kington Lane
Thornbury

Title

Tree Location Plan

		Rev	Rev date
Drg No	WTC_1041.02		
Scale @A3	Not to scale	Drn by	PD
Date	Dec 2022	App	

Phil Dye - BSc (hons) Arboriculture, Cert Arb L4 (ABC) , MArborA

Principal Arboriculturist
Wotton Tree Consultancy Ltd

Date: 16th December 2022

[End of report]