



# Tree Condition Assessment

St James's Square  
Bath  
BA1 2TR

For St James's Square Bath Ltd

April 2020



## Record sheet

<b>Report Title</b>	Tree Condition Assessment
<b>Site Address</b>	St James's Square Bath BA1 2TR
<b>Client</b>	St James's Square Bath Ltd
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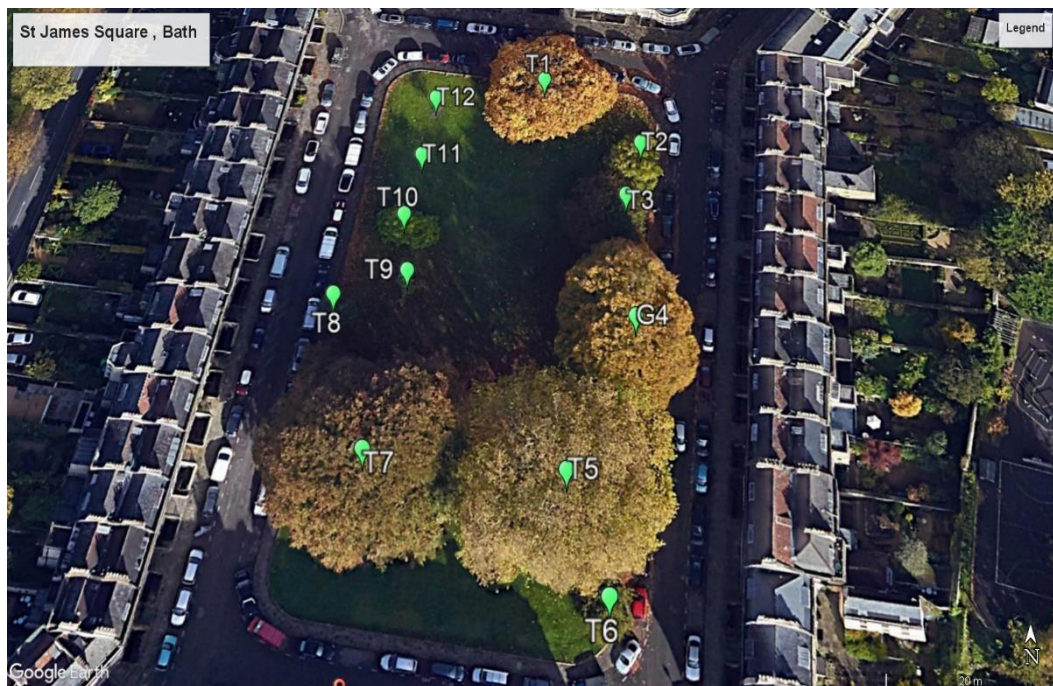
Contents		Page
1.0	Introduction	3
2.0	Scope of survey	3
3.0	Inspection notes	4
4.0	Risk management	6
5.0	Summary	6
	Bibliography	8
Appendix 1	Survey schedule	

## 1.0 Introduction

- 1.1 I was instructed by Keith Partington to undertake an assessment of the trees in St James's Square in Bath.

## 2.0 Scope of survey

- 2.1 Undertake a visual assessment of the health and condition of the trees within St James's Square and record the findings.
- 2.2 Make recommendations, where appropriate, to reduce risk of harm to a level as low as reasonably practicable.
- 2.3 Where appropriate, provide recommendations for long term management to improve the condition and longevity of the trees.



Pl. 1 - Aerial view of St James's Square showing tree locations

## 3.0 Inspection notes and limitations

- 3.1 The trees were inspected by Jim Walker on 8<sup>th</sup> April 2020.
- 3.2 The survey was carried out in a clockwise direction starting with the tulip tree (T1) and finishing with the purple leaf plum (T12). The survey data is presented in the attached tree schedule (Appendix 1).
- 3.3 Internal decay assessments with use of a PiCUS sonic tomograph were previously carried out in January 2020 on the Tulip tree (T1), London plane (T5) and Copper beech (T7).
- 3.4 The trees were inspected from ground level using the visual tree assessment method (Mattheck and Breloer 1994). Only binoculars, nylon mallet and metal probe have been used to aid tree assessment.
- 3.5 Age of trees has been classified as young, semi mature, early mature, mature, over mature and veteran. Stem diameters have been measured at 1.5m from ground level and rounded to the nearest 10mm. Tree heights have been measured with a clinometer. All other measurements are estimated and approximate.
- 3.6 No assessment has been made with regard to any impact the trees may have on buildings or structures, with the exception of direct contact from aerial parts. Comments are restricted to arboricultural considerations associated with tree condition and safety.
- 3.7 Recommendations for tree work have been divided into three categories based on location, tree condition and potential risk of harm to people or damage to property.
- 1 High Priority - Work to be undertaken within six months
  - 2 Moderate Priority - Work to be undertaken within two years
  - 3 Low Priority - Work to be undertaken as part of routine estate management

### Category 1 High Priority

This is non urgent essential work to resolve safety issues arising from our inspection. This includes work to trees that, in our opinion if not addressed, pose a high short term risk of harm to people or damage to property. This may include dead, dying or diseased trees; trees with major defects in areas of high use; trees with low canopies over roads or paths, tree canopies that may damage a building or are obscuring streetlights / CCTV / road signs. It also includes recommendations for further inspection where necessary. Budget allowance should be made for this work as soon as practicable with the objective of completion within six months.

### Category 2 Moderate Priority

This work is considered essential to reduce longer term safety issues, but is of a lower priority than Category 1 works. This may be due to a tree's location in a less well-used area or that the identified defect is not so advanced to be considered a major safety risk at present. Where practicable, resources should be made for this work with the objective of completion within two years. However, provided that these trees are re-

inspected within this time frame and the degree of risk remains tolerable, works may be deferred or re-prioritised.

#### Category 3 Low Priority

This work is not essential and may be undertaken as resources allow. This includes routine estate management; remedial work to important landscape trees of low risk; works to trees in areas of low use; remedial pruning or felling work to prevent hazards in the long term; long term landscape management proposals.

- 3.8 The removal of major dead wood (over 5cm diameter) has been recommended only where it is of potential risk to the safety of site users. In general, dead wood is beneficial to wildlife and should be retained where practical. In most cases the dead wood may be reduced as far as necessary to ensure stability.
- 3.9 Ivy provides valuable wildlife habitat and does not directly impact on tree health. However, when extensive it can lead to increased wind loading/leverage on the tree or individual limbs. Ivy may also obscure defects such as cavities, cracks or decay fungi. In certain cases it is therefore appropriate to remove or sever it.
- 3.10 Tree owners have a statutory obligation (section 154 of the Highways Act 1980) to maintain sufficient clearance over a public highway. This is generally accepted as 2.4m over footpaths and 5.2m over roads and is exempt from the requirement to obtain local planning authority consent. All trees and shrubs overhanging the garden boundary should be inspected regularly to ensure that adequate clearance is maintained.
- 3.11 All tree work should be undertaken to BS 3998:2010 'Tree Work - Recommendations' and carried out by a suitably qualified and experienced contractor.
- 3.12 Attention is drawn to the Wildlife and Countryside Act 1981 (as amended), Countryside and Rights of Way Act 2000, and The Conservation of Habitats and Species Regulations 2017. These acts and regulations provide statutory protection for listed species of flora and fauna. Of particular relevance to tree work is the comprehensive protection afforded to birds, bats and badgers. This has implications for timing of works as well as the requirement for surveys and licences in certain cases.
- 3.13 St James's Square lies within Bath conservation area; therefore a six week (section 211) notice must be submitted to the Local Planning Authority (LPA) prior to any works commencing.
- 3.14 It is recommended that the five large mature trees (T1, G4, T5, T7) plus T10 are inspected annually and after periods of extreme weather. The remaining trees on site should be reinspected within three years.
- 3.15 This report and the recommendations within it are valid for a period of twelve months from the date of survey.

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## 4.0 Risk management

- 4.1 The overall risk to human safety from tree failure is extremely low. Each year between five and six people in the UK are killed by trees, which equates to a risk of about one in ten million.
- 4.2 The HSE's tolerability of risk framework recommends that risks above 1/10,000 per annum are generally considered unacceptable when placed on the public. Risks between 1/10,000 and 1/1,000,000 per annum are tolerable, but consideration should be given to managing them 'as low as reasonably practicable' (ALARP), where it is cost effective to do so. Risks below 1/1,000,000 are considered broadly acceptable and are comparable to those that people regard as insignificant within their daily lives (HSE 2001).
- 4.3 In 2011, following extensive industry and government consultation, The National Tree Safety Group (NTSG) produced its guide to tree risk management - Common Sense Risk Management of Trees. Its overall approach is that the evaluation of what is considered reasonable tree management should be based on a balance between the benefits and risks from trees. This position is underpinned by a set of five key principles:
- Trees provide a wide variety of benefits to society
  - Trees are living organisms that naturally lose branches or fall
  - The overall risk to human safety is extremely low
  - Tree owners have a legal duty of care
  - Tree owners should take a balanced and proportionate approach to tree safety Management
- 4.4 Landowners, together with any party who has control over a tree's management, have a legal duty to take reasonable care for the safety of those who may come within the vicinity of a tree. Trees are dynamic, living organisms that may shed branches or fail as part of their natural processes. Although the risk of harm from failure is clearly very low, no tree can be considered entirely risk free. It would be unacceptable to attempt to remove all risk from trees, both in terms of loss of the many benefits that they provide, as well as the huge cost implications. A tree owner is not, therefore, expected to guarantee that their trees are safe. They should take only reasonable care such as could be expected from a reasonable and prudent landowner, to consider the risks posed by their trees (NTSG 2011).
- 4.5 In line with current guidance this survey aims to provide a reasonable assessment of risk, which balances the benefits that these trees provide with the duty of care owed by St James's Square Bath Ltd.

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## 5.0 Summary

- 5.1 The tulip tree T1 appears to be in good physiological condition and has responded well to the last pruning works with up to 2m regrowth. There is little evidence of dieback and only minor dead growth present in the crown. Furthermore, there is no obvious evidence of wind damage from the winter gales.

The PiCUS survey undertaken in January 2020 revealed no significant change in decay levels. However, a recent climbing inspection by Neil Gretton identified defects in the lower crown and recommended remedial pruning. These defects were present when we last pruned the tree in 2016 and measures were taken to address reduction in structural integrity at that time. Prior to any further pruning I suggest a more detailed assessment is carried out with use of a resistograph, which will help confirm the extent of decay and ratio of sound wood remaining. The tree will require re-pruning within the next two years and therefore any additional recommendations resulting from this assessment can be included in the specification.

In the meantime I suggest that the bench seat is removed from beneath the tree canopy.

- 5.2 The two fern leaf beech trees (G4) remain in good condition and no work is recommended at present.
- 5.3 The London plane (T5) appears to be in good condition and the PiCUS survey revealed no significant basal defects. During the inspection I discovered a desiccated *Inonotus hispidus* fruit body at the base of the tree which I suspect has fallen from a point of decay at approximately 8m. I recommend an aerial inspection is undertaken to confirm the location of the decay fungi and, if necessary, carry out an internal decay assessment with use of a resistograph. This work could be carried out at the same time as removal of a few large dead branches from the low-mid crown.
- 5.4 The copper beech (T7) remains in good physiological condition and the PiCUS survey revealed no significant change in decay levels associated with the *Ganoderma sp.* fruit body. Minor work is recommended to lightly reduce overextended limbs that overhang the road on the west and northwest aspects. There are three old steel cables in the crown attached by screw eyes which have now been grown over by the tree's incremental growth. It is not known when these cables were installed and I therefore suggest they are supplemented with 8t Cobra bracing to provide support should they fail in the future. This work could be carried out at the same time as removal of a few large dead branches from the low-mid crown.
- 5.5 The Catalpa (T10) is in very poor structural condition and will continue to shed branches. Although the risk of harm is low I suggest the bench is removed from beneath the tree canopy. If the tree is to be retained, I recommend removal of all the decaying branches back to the old topping point with retention of young growth as feasible.
- 5.6 The remaining trees on site are in good condition and require no work at present.



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## Appendix 1

### Survey Schedule

Tree/Group No.	Common & Scientific Name	Height (m)	Stem Dia. (mm)	Crown spread (m)	Age Class	Physiological Condition	Structural Condition	Condition and Site Notes	Recommendations	Work Priority	Reinspection Frequency (mths)
T1	Tulip tree <i>Liriodendron tulipifera</i>	22	1850	16	OM	G	F	<ul style="list-style-type: none"> <li>• <i>Rigidoporus ulmarius</i> fruit bodies at base on north, south and west aspects. Small fruit body on north aspect has new incremental growth. PiCUS tomograph survey carried out by Alltree 2020</li> <li>• Patch of dead bark at 1m on west aspect</li> <li>• Stem forks at 3m to two scaffold stems (south and north). Iron rod brace at 4m</li> <li>• South stem – Secondary stem at 5.5m on west aspect. Open cavity on upper aspect approx. 1.5m in length. Wound wood and adaptive growth with no obvious signs of fibre buckling on underside or defect at fork union. Supported by two 8t Cobra braces installed 2016 (at 10m) and one 4t brace at 7m (pre 2016)</li> <li>• North stem – Secondary stem at 5m on east aspect. Supported by one steel and one 4t Cobra brace pre 2016 (at 12m). Bark death at union on north aspect possibly historically related to installation of iron rod. Strong adaptive incremental growth on underside. Minor bark wound on upper surface at 6m</li> <li>• 8t Cobra Brace at 16m between the two main scaffold stems (installed 2016) plus one 2t Cobra brace (pre 2016) supporting primary branch overhanging road</li> <li>• South limb at 6m overhanging bench to south with bark wound and decay at approx. 1.5m from union</li> <li>• Previous crown reduction in January 2016 with 1.5-2m extension growth and no significant dieback</li> <li>• Three 8t Cobra braces installed 2016 as detailed above. Remaining braces not installed by Alltree</li> <li>• Minor deadwood</li> </ul>	<ul style="list-style-type: none"> <li>• Carry out aerial inspection and decay assessment of dead bark at union with eastern secondary stem, plus wounds on western secondary stem and south limb with use of resistograph</li> <li>• Undertake light crown reduction of 1.5m to 2m height and lateral extent to approximate level of previous reduction. (Additional pruning may be required dependent on results of aerial inspection)</li> <li>• Replace two old Cobra braces on east stem and primary north limb with 8t Cobra brace at minimum 2/3 length</li> <li>• Remove bench from beneath tree</li> </ul>	1  2  2  1	12

Tree/Group No.	Common & Scientific Name	Height (m)	Stem Dia. (mm)	Crown spread (m)	Age Class	Physiological Condition	Structural Condition	Condition and Site Notes	Recommendations	Work Priority	Reinspection Frequency (mths)
T2	Magnolia <i>Magnolia sp.</i>	5	200	8	M	G	G	• -	• No action	-	36
T3	Kanzan cherry <i>Prunus 'Kanzan'</i>	8	380	14	M	G	G	• Forks at 1.8m. Minor bacterial canker	• No action	-	36
G4	Fern-leaved beech <i>Fagus sylvatica 'Asplenifolia'</i>	20	950	16	M	G	G	<ul style="list-style-type: none"> <li>• No significant defects evident at base</li> <li>• Numerous occluded pruning wounds on main stem</li> <li>• Lapsed pollard at 4.5m to multi-stem crown</li> <li>• Crossing and rubbing limbs</li> <li>• Previous remedial work 2016</li> <li>• Minor dead wood</li> </ul>	• No action	-	12
T5	London plane <i>Platanus x hispanica</i>	29.5	210	25	M	??	??	<ul style="list-style-type: none"> <li>• PiCUS tomograph survey carried out by Alltree 2020</li> <li>• Basal epicormics on southeast and west aspects</li> <li>• Bark dysfunction on northeast and east aspects from 1.2-5m possibly associated with past pruning</li> <li>• Fallen <i>Inonotus hispidus</i> fruit body found at base of tree, possibly originating from 8m agl east aspect below fork union</li> <li>• Main fork union at 9m. North stem forks again at 11m to two scaffold stems and one secondary stem</li> <li>• Large dead wood in upper mid crown at 15m on northwest aspect and at 17m on west aspect</li> <li>• Past remedial work June 2014 to remove dead wood, crossing and rubbing limbs</li> </ul>	<ul style="list-style-type: none"> <li>• Remove major dead wood</li> <li>• Carry out aerial inspection to confirm location of <i>Inonotus hispidus</i>. If necessary carry out internal decay assessment with use of resistograph</li> </ul>	1 1	12

Tree/Group No.	Common & Scientific Name	Height (m)	Stem Dia. (mm)	Crown spread (m)	Age Class	Physiological Condition	Structural Condition	Condition and Site Notes	Recommendations	Work Priority	Reinspection Frequency (mths)
T6	Holly <i>Ilex x altaclerensis</i> 'Golden King'	9	350	7	M	G	G	<ul style="list-style-type: none"> <li>Codominant stems from 1.5m</li> </ul>	<ul style="list-style-type: none"> <li>No action</li> </ul>	-	36
T7	Copper beech <i>Fagus sylvatica</i> 'Purpurea'	28	154	28	M	G	G	<ul style="list-style-type: none"> <li><i>Ganoderma sp.</i> fruit bodies at ground level on west aspect. PICUS tomograph survey carried out by Alltree 2020</li> <li>Exposed buttress roots with minor mower damage</li> <li>Forks at old pollard point to seven stems</li> <li>Three steel cable braces at 10m</li> <li>Overextended limbs in lower crown on west and northwest aspects overhanging road</li> <li>Previous remedial work 2014</li> <li>Rubbing limb at 12m on east aspect</li> <li>Partially fused limb at 12m on west aspect</li> <li>Minor deadwood</li> </ul>	<ul style="list-style-type: none"> <li>Lightly reduce overextended limbs on west and northwest aspects at 4m and 5m overhanging road by maximum 2m</li> <li>Supplement existing steel cables with three 8t Cobra braces at approx. 2/3 stem height</li> </ul>	2  2	12
T8	Silver holly <i>Ilex aquifolium</i> 'Argenteo-marginata'	10	350	6	M	G	G	<ul style="list-style-type: none"> <li>Codominant stems from 0.75m, partially fused at 4m</li> </ul>	<ul style="list-style-type: none"> <li>No action</li> </ul>	-	36
T9	Maidenhair tree <i>Ginkgo biloba</i>	8	120	5	SM	G	G	<ul style="list-style-type: none"> <li>-</li> </ul>	<ul style="list-style-type: none"> <li>No action</li> </ul>	-	36

Tree/Group No.	Common & Scientific Name	Height (m)	Stem Dia. (mm)	Crown spread (m)	Age Class	Physiological Condition	Structural Condition	Condition and Site Notes	Recommendations	Work Priority	Reinspection Frequency (mths)
T10	Indian bean tree <i>Catalpa bignonioides</i>	6	520	10	OM	F	P	<ul style="list-style-type: none"> <li>• Extensive decay in stem and crown limbs</li> <li>• Failed limb at 2m on east aspect, supported in adjacent partially failed limb at 1.8m on northeast aspect</li> <li>• Truncated at 3.5m</li> <li>• Bench seat under canopy</li> </ul>	<ul style="list-style-type: none"> <li>• Remove bench seat from beneath tree</li> <li>• Fell to ground level and plant replacement</li> </ul> Or <ul style="list-style-type: none"> <li>• Remove decaying limbs back to old topping points, retaining young growth as feasible</li> </ul>	1 2 2	12
T11	Tulip tree <i>Liriodendron tulipifera</i>	4.5	<50	1.5	Y	F	F	<ul style="list-style-type: none"> <li>• Newly planted staked tree</li> </ul>	<ul style="list-style-type: none"> <li>• Check and adjust ties</li> </ul>	2	36
T12	Purple-leafed plum <i>Prunus cerasifera Nigra</i>	6	100	3	SM	G	G	<ul style="list-style-type: none"> <li>• -</li> </ul>	<ul style="list-style-type: none"> <li>• No action</li> </ul>	-	36

## Key to Schedule

<b>Estimated Height (m)</b>	Height estimated in metres
<b>Stem Diameter (mm)</b>	Stem diameter in mm measured at 1.5m or immediately above root flare for multi-stem trees
<b>Crown Spread (m)</b>	Average crown spread diameter in estimated in metres
<b>Age Class</b>	Y Young (newly planted tree 0-10yrs), SM Semi-mature (tree in first third of normal life expectancy for species) EM Early Mature (tree in second third of normal life expectancy for species) M Mature (tree in final third of normal life expectancy for species) OM Over mature (tree beyond normal life expectancy for species) V Veteran (tree that is of interest biologically, aesthetically or culturally because of its age, size or condition).
<b>Physiological Condition</b>	G Good Fully functioning biological system with normal extension growth, leaf/bud size, crown density, incremental growth for species F Fair Fully functioning biological system but displaying below average extension growth, leaf/bud size, crown density, incremental growth for species. P Poor Biological system with low functionality. Symptoms include: - poor extension growth, small and/or chlorotic leaves, small buds, limited incremental growth, sparse crown and/or die back. D Tree is dead
<b>Structural Condition</b>	G Good Tree without any significant structural defects F Fair Tree with minor defects that may be remedied with appropriate management. P Poor Tree with significant defects that cannot be remedied
<b>Work Priority</b>	Risk category determining timing of work 1 High Works to be completed within six months 2 Moderate Works to be completed within twenty four months 3 Low Works recommended as part of long term management (3-5 years)
<b>Reinspection Frequency (mths)</b>	12 Reinspect in twelve months    24 Reinspect in twenty four months    36 Reinspect in thirty six months