

Tree Condition Report

Reference: GRS/TCS/91/23

Site: Castle Park View, Castle Street, Bristol, BS2 0ND.

Local Planning Authority: Bristol City Council



Arboricultural
ASSOCIATION

Professional Member

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1. INTRODUCTION

- 1.1. At the instruction of Savills, a condition survey was carried out on the 14 no. trees on the north side of Castle Park View, Castle Street, Bristol, BS2 0ND.
- 1.2. The tree survey data which includes recommended works form **appendix B**.
- 1.3. The purpose of the survey is to ensure all trees are kept in a safe condition by implementing sound arboricultural practices and therefore ensuring their contribution to amenity and the local landscape for both current and future generations.

2. REPORT LIMITATIONS

- 2.1. No soil samples or wood samples were taken during the investigation for analysis.
- 2.2. The location of the trees shown on the tree location plan surveyed are not exact.
- 2.3. A nylon hammer was used to carry out percussion testing to assess the extent of a cavity or where a feature may indicate that decay might be present. A metal probe was used to try and determine the extent of any decay or cavities found. No in-depth investigation using invasive drilling was undertaken.
- 2.4. Trees are dynamic organisms which undergo structural and physiological change as they continue to grow, age, and in response to changes in their local environment; therefore the findings of the tree survey cannot be fully relied upon after 12 months from the date of survey or after any significant changes to the tree's environment, which includes (but not limited to); construction pressures (e.g. soil compaction, damage to tree parts, root severance), significant weather events and changes to soil levels or water drainage patterns. Future inspections should be carried out between September to October.
- 2.5. Severe weather. During periods of extremely windy weather the risk from falling branches will be increased. At gale forces, the risk may be increased to an unacceptable level. There must be consideration given to physically restricting access to parks or land with high-risk trees, backed by appropriate temporary signing. There may be instances where conditions are severe enough to consider closing whole parks.
- 2.6. The following weather warnings have been taken from The Department for transport 'Well-maintained Highways Code of Practice for Highway Maintenance Management' gives an indication of likely damage, which will allow an informed decision of action depending on risk zones / other information:
 - 60 mph gusts. Some damage to trees and falling branches.
 - 70 mph gusts. Damage to trees, falling branches with some being uprooted.
 - 80 mph gusts. Considerable damage to trees with significant tree uprooting.
 - 90 mph gusts. Widespread uprooting of trees. The public advised not to venture out of doors unless really necessary.
- 2.7. Detailed ecological considerations are beyond the scope of this report. UK and European wildlife legislation may affect the timing and even prohibit the enhancement of works and operations described in this report. Most of the information regarding wildlife can be found in the Wildlife and Countryside Act 1981 (as amended). It is recommended that consideration is given to the requirement for ecological surveys. Bats in particular are afforded particular protection and a specialist may be required to determine if bats are present or can be affected when carrying out tree works.

2.8. All rights in this report are reserved. No part of it may be reproduced or transmitted, in any form or by any means, or stored in any retrieval system of any nature, without our written permission. Its content and format are for the exclusive use of the addressee in dealing with this tree. It may not be sold, lent, hired out or divulged to any third party not directly involved with this site without the written consent of GRS Arboricultural Consultant.

3. SURVEY PROCEDURE

- 3.1. A formal inspection¹ in the form of a ground based visual check of the trees within the grounds of Castle Park View managed by Savills.
- 3.2. All the trees were tagged with an aluminium tag² which has a sequential number starting from 271 and ending 284. The approximate location of the trees is shown on the tree location plan.
- 3.3. This type of inspection also known as a walk-over inspections may not identify hidden features, such as fungal fruiting bodies tucked in the tree's roots. Simple formal inspection, through ground level visual checks during walk-over surveys, provides a useful, cost-effective means of identifying clear and present signs of immediate instability (uprooting or other structural failure). This is an important means of identifying when pressing action is needed, including further specialist inspection.
- 3.4. This survey will be carried out in accordance with the Visual Tree Assessment (VTA) methodology. It is important to note that VTA is an established and accepted methodology used for inspecting trees. It has three distinct stages:
- Stage 1. Visual inspection of the tree for defect symptoms and overall vitality. If there are no signs of any problems, the assessment is concluded.
 - Stage 2. If a defect is suspected on the basis of the symptoms, the presence or absence of that defect must be confirmed by thorough examination.
 - Stage 3. If the defect is confirmed, it must be quantified and the strength of the remaining part of the tree evaluated.

With regards to determining the risk assessment the following principle will be applied³

- Step 1 - Identify the hazards.
- Step 2 - Decide who might be harmed and how.
- Step 3 - Evaluate the risks and decide on precautions.
- Step 4 - Record your findings and implement them.
- Step 5 - Review your assessment and update if necessary.

The risk assessment for the purposes of this survey is the overall process of risk identification, risk analysis, and risk evaluation. Therefore, a risk from tree failure exists only if:

1. There is potential for tree failure and
2. There is potential for harm as a result.

¹ See Appendix A

² <https://www.treemarker.co.uk/product/aluminium-tree-tags>

³ Health and Safety Executive (HSE) (2011) '*Five steps to risk assessment*'

3.5. A reasonable and balanced approach forms the underlying approach of this tree safety strategy the basic aspects of which are:

- **Zoning:** The assessment and prioritisation of tree inspections based on who or what is at most risk from potential tree failure.
- **Tree inspection:** A quantified assessment of any obvious tree defects.
- **Managing risk at an acceptable level:** Identifying, prioritising and undertaking safety work according to level of risk.

3.6. Zoning: During the course of the contract, the following principles will be applied to ensure each site is allocated the correct zone. This practice prioritises the areas in terms of frequency of use and value of material targets, and by doing so contributes to a cost-effective approach to tree inspection, focusing resources where most needed. It contributes to sensible risk management and a defensible position in the event of an accident. It may be a reasonable outcome of the zoning process to decide that no areas require inspection.

Table 1 – Zoning areas

Table.1. Zoning	
Risk zone	Frequency of use / value of potential damage or risk of harm / damage
Red	• Very High
Amber	• High
Yellow	• Moderate
Green	• Low
Blue	• Very low

Table.2. Zone inspections & zone examples	
Inspection cycle & Level of inspection	Zones & Examples
All zones	
Informal observations	<ul style="list-style-type: none"> • At all times there will be opportunity to respond to reports from other service users or providers.
'Drive by' or 'Walk over' Formal inspection ⁴	<ul style="list-style-type: none"> • After significant weather events (e.g. storms)
Red (very high)	
Annual Detailed inspection	<ul style="list-style-type: none"> • Retained 'High Risk' trees requiring more regular attention.
Every 2 years ⁵ Detailed inspection	<ul style="list-style-type: none"> • Principal footpaths with a consistently high number of visitors • Car parks – trees that overhang or are in falling distance of recognized car parking areas. • Emergency access routes. • Overhead electricity lines (LV & HV). • Trees requiring more regular attention.
Amber (high)	
Every 3 years ⁶ 'Walkover' Formal inspection	<ul style="list-style-type: none"> • All roads not included in the red zone. • High value assets. • Areas where people are likely to working in. • Car parks adjacent to high-risk areas. • Business areas: entrances and primary uses. • Overhead and underground services. • Residential dwelling. • Parks: principal entrances, children play areas, and permanent structure with constant use. Park facilities: seating areas, formal paths. • Woods and open spaces, formal paths, and gathering areas. • Trees near to buildings and that are growing in soils with high volume change potential.*
Every 5 years ⁷ Detailed inspection	
Yellow (moderate)	
Every 5 years Detailed inspection	<ul style="list-style-type: none"> • Moderate to high value targets. • Primarily recreation use. • Residential gardens, garages and outbuildings. • Parks and woods: informal play areas, recreation grass and gardens, minor paths. • Golf courses: fairways and adjacent rough. • Car parks adjacent to moderate/low use areas. • Trees near to buildings and that are growing in soils with medium volume change potential.*
Green (low)	
Every 5 years 'Walkover' Formal inspection	<ul style="list-style-type: none"> • Infrequent use. • Away from valuable targets.

A significant weather events may cause structural failure.

⁵ In accordance with example given in NTSG guidance.

⁶ A reasonable frequency set between 2 and 5 years.

⁷ Five years is the default interval recommended by DoT 'Well-maintained Highways Code of Practice for Highway Maintenance Management'.

* For risk of subsidence purposes only and in accordance to the National House Building Council (NHBC) system of soil classification.

	<ul style="list-style-type: none"> • Public areas with dispersed recreation e.g., Fishing pegs. • Woods with limited use or access. • Low use paths and access ways. • Trees near to buildings and that are growing in soils with low volume change potential. *
Blue (negligible)	
Every 5 years 'Walkover' Formal inspections (depending on available resources).	<ul style="list-style-type: none"> • Use of area irregular and very low. • Presence of no or very low risk trees. • Riparian and peripheral areas with limited use or access. • Urban commercial and highly built-up sites with no space for trees. • Trees not near to buildings and that are growing in soils with low to high volume change potential. *

3.7. Identification of Hazards

- 3.8. For a tree-failure hazard to exist, two criteria must be fulfilled. There must be potential for failure of the tree, and potential for injury or damage to result. The issue that the tree surveyor must address is the likelihood, or risk, of a combination of factor resulting in harm, and the likely severity of the harm. 8 9 10 11
- 3.9. Managing risk at an acceptable level: Identifying, prioritising, and undertaking safety work according to level of risk.

4. STATUTORY TREE PROTECTION.

4.1. At the time of preparing¹² this report it has not been established whether any of the trees are subject to a Tree Preservation Order (TPO), or is the site located in a conservation area.

5. LEGAL LIABILITY.

- 5.1. In England and Wales, the owners or occupiers of land have a duty of care to take reasonable steps to minimise or prevent the risk of injury or damage to people or property arising from the presence, breakage or uprooting of any tree. This duty is defined in law by the Occupiers' Liability Acts of 1957 and 1984.
- 5.2. In instructing an Arboricultural Consultant to carry out this investigation, the owner of this tree is going some way to meet his duty of care. However, the owner of this tree has a legal obligation to act on any

⁸ Principles of Tree Hazard Assessment and Management: Research for Amenity Trees 7 Lonsdale, D. 1999.
⁹ Hazards from Trees: FC Practise Guide 13 Lonsdale, D 2000
¹⁰ The Body Language of Trees: Research for Amenity Trees 4 Mattheck, C & Breloer, 1994.
¹¹ Updated Filed Guide for VTA. Mattheck 2007.
¹² Email sent to BCC 28th October 2023

recommendations made within this report. Failure to do this may lead to a claim of negligence should any part of the tree break and cause damage or injury.

6. CONCLUSIONS AND RECOMMENDATIONS

- 6.1. All works identified in the schedule of works section must comply with the relevant sections of BS3998:2010 Tree works – Recommendations.
- 6.2. Continue with an annual inspection of the trees and any works recommended as a result should be carried out within the time frame.

7. SCHEDULE OF WORKS

7.1. Prior to carrying out any tree work.

7.1.1. Birds: Please note that it is an offence under the Wildlife and Countryside Act of 1981, amended by the Countryside and Rights of Way Act 2000, to kill, injure or take any wild birds, damage or destroy nests that are in use or are being built and take or destroy eggs.

7.1.2. Bats: Prior to the commencement of any tree works, a visual inspection carried out by a qualified ecologist must be carried out to see whether there are any signs of bat. In the event of bats being found the tree should only be felled if deemed unsafe. Such features have the potential to provide roosting spaces for bats but are not in themselves indicators of presence.

- Woodpecker holes.
- Rot holes.
- Loose bark.
- Cankers.
- Tension cracks and splits.
- Shattered 'snag' ends.
- Signs of internal decay (e.g. fungal fruits, hyphae, exudation).
- Inclusions.
- Elongated tight forks,
- 'Unusual' growth forms
- Bat boxes on or near the tree.
- Evidence of past pruning/coppicing/pollarding/storm damage.

7.1.3. In the event of bats being found the tree should only be felled if deemed unsafe. If a potential bat roosting site is found during tree works every effort must be taken to preserve the area, for example cuts must be made above the crack or hole.

<u>Tree no.</u>	<u>Recommended works</u>	<u>Time frame for works to be completed</u>
T274	Remove deadwood and hanging branches	3 months
T278	Remove deadwood	3 months
T281	Remove deadwood	3 months
T282	Remove deadwood	3 months
T283	Remove deadwood	3 months

<u>Tree no.</u>	<u>Recommended works</u>	<u>Time frame for works to be completed</u>
T273	Remove deadwood	6 months
T275	Remove deadwood	6 months
T277	Remove deadwood and bag	6 months

<u>Tree no.</u>	<u>Recommended works</u>	<u>Time frame for works to be completed</u>
T271	Crown lift to 5 above ground level above pavement	1 year
T273	Crown lift to 5m above ground level above pavement. Reduce lateral limbs towards the building to leave 3 m clearance.	1 year
T275	Crown lift to 5 above ground level above pavement	1 year
T277	Crown lift to 5 above ground level above pavement	1 year
T282	Crown lift to 5 above ground level above pavement	1 year

Table 3 - Results of the tree survey

8. REFERENCES

Andrew D. Hiron and Peter A. Thomas, 2018 Applied Tree Biology, Wiley Blackwell.

AL Shigo (1991) 'Modern Arboriculture', Shigo and Trees Associates.

BS 3998:2010 'Recommendations for Tree Work', British Standards Institution, London.

D. Lonsdale (1999) 'Principles of Tree Assessment and Management' HMSO.

F.W.M.R Schwarze, J. Engels, C Mattheck, second edition, 2004, Fungal Strategies of Wood Decay in Trees, Springer

Mattheck and Broeler (1994) 'The Body Language of Trees' HMSO.

Strouts and Winter (1994) 'Diagnosis of Ill Health in Trees' HMSO.

Appendix A – Definitions of levels of tree inspections

Informal observations: Tree officers and other related staff (e.g. grounds maintenance) will be instructed to be generally aware of trees' health and condition as part of their other daily tasks, identifying and reporting structural weakness or actual failure that pose an imminent threat to public safety and that would be patently apparent to a non-expert. Tree related problems arising from informal observations by staff or members of the public reporting should be acted upon. Initially, this may take the form of a formal inspection by a competent member of staff. This may then result in no further action being required, or in tree surgery, felling or implementing measures to manage the area within falling distance of the tree.

Formal inspections: In a formal inspection, the tree inspector visits the tree with the specific purpose of performing an inspection that is not incidental to other activities. The spectrum of formal inspection ranges from survey work for tree inventories, to health and condition assessments. These may be carried out through "drive-by" and "walk-over" inspections or ground-based visual checks. Drive-by and walk-over inspections are accepted types of reasonable risk assessment under certain circumstances. It should be noted that reliance on drive-by inspections is not appropriate in busy urban areas. Initial drive-by inspections can, when appropriate, assist in deciding where tree management, walk-over or detailed inspection might be necessary. Walk-over inspections may not identify hidden features, such as fungal fruiting bodies tucked in the tree's roots. Simple formal inspection, through ground level visual checks in the course of walk-over surveys, provides a useful, cost-effective means of identifying clear and present signs of immediate instability (uprooting or other structural failure). This is an important means of identifying when pressing action is needed, including further specialist inspection.

Detailed inspections: Given that most trees present an extremely low risk, it is unreasonable to expect that every tree in a given area should receive a detailed inspection; to do so would be grossly disproportionate to the benefit gained in risk reduction. The need for detailed inspection typically applies only to individual, high-value trees which have been identified from informal observation or formal inspection, as giving high-priority concern in well-used zones. The detailed inspection is normally prioritised according to the level of safety concern. It usually entails an initial ground-level, visual assessment by a competent specialist looking at the exterior of the tree for signs of structural failure. In a few special cases, further detailed investigations may be required, involving one or more of the following: soil and root condition assessments, aerial inspections of upper trunk and crown, or other procedures to evaluate the nature of suspected decay and defects, including using specialist diagnostic tools. Detailed inspections are therefore unusual, typically reserved for trees valued for their heritage amenity or habitat and which are suspected of posing a high level of risk, as already identified through owner interest or a previous formal or informal assessment.

No.	Species	Height	Radial crown spread	Trunk Dia.	Ownership	Life Stage	Physiology	Structure	Crown Missing	Crown dieback	Bat Roost	Comments	Failure	Impact	Consequence	Risk	Recommendation	Re-inspection date
T271	Norway maple	22m	N6m E4m S3.5m W4m	480mm	Policy holder	SM	Good	Fair	0-20%	0-10% (GOOD)	No	Part of a group of even aged trees screening the building. Crown lifting undertaken on the west side; surface roots with damage on upper sides; target: Public footpath.	Improbable	Medium	Significant	Moderate	Arboricultural: Crown lift to 5 above ground level above pavement. 1 year.	18/10/2024
T272	London plane	22m	N7m E5m S6m W4m	670mm	Policy holder	EM	Good	Good	0-20%	0-10% (GOOD)	No	Part of group of even aged trees along the verge screening the building.; lower branches on the building side have been removed, additional pruning on the remaining branches has increased the space; target: Public footpath.	Improbable	Medium	Significant	Moderate	Arboricultural: Crown lift to 5 above ground level above road. 1 year.	18/10/2024
T273	Norway maple	22m	N7m E4m S6.5m W4.5m	480mm	Policy holder	SM	Fair	Good	21-40%	10-30% (AVERAGE)	No	Part of group of trees along the verge screening the building. On the southern side has been removed, although not occluded. Above this cut are 2 dead branches.; target: Public carriageway.	Improbable	Medium	Significant	Moderate	Safety: Remove dead wood. required by 18/04/2024 6 Months. Arboricultural: Crown lift to 5m above ground level above pavement. 1 year. Arboricultural: Reduce lateral limbs towards the building to leave 3 m clearance. 1 year.	18/10/2024
T274	London plane	23m	N8m E6m S6m W6m	690mm	Policy holder	EM	Good	Good	21-40%	10-30% (AVERAGE)	No	Part of group of even aged trees; lower part reduced back; lower branch on the south side has reduced leaving two lateral branches.	Improbable	Medium	Significant	Moderate	Safety: Remove dead wood and hanging branches. required by 18/01/2024 3 Months.	18/10/2024
T275	Norway maple	22m	N6m E4m S7m W6m	390mm	Policy holder	SM	Good	Good	0-20%	0-10% (GOOD)	No	Part of group; bird box on trunk. Crown lifted on the building side. Small hanging branches in the crown.	Improbable	High	Significant	Moderate	Safety: Remove dead wood. required by 18/04/2024.	18/10/2024
T276	Norway maple	22m	N4m E4m S7m W3.5m	360mm	Policy holder	SM	Good	Good	0-20%	10-30% (AVERAGE)	No	Part of group; bird box on the trunk. Minor deadwood in the lower part of the crown; target: Public footpath.	Improbable	Medium	Significant	Moderate		18/10/2024

No.	Species	Height	Radial crown spread	Trunk Dia.	Ownership	Life Stage	Physiology	Structure	Crown Missing	Crown dieback	Bat Roost	Comments	Failure	Impact	Consequence	Risk	Recommendation	Re-inspection date
T277	Norway maple	22m	N5.5m E4m S7m W4m	540mm	Policy holder	SM	Good	Good	0-20%	10-30% (AVERAGE)	No	Part of group; lateral branches growing towards the building have been reduced back; bird box on stem; minor deadwood.	Improbable	Medium	Significant	Moderate	Safety: Remove dead wood. required by 18/04/2024 6 Months.	18/10/2024
T278	London plane	22m	N8m E6m S7m W5m	700mm	Policy holder	EM	Fair	Good	21-40%	10-30% (AVERAGE)	No	Medium and major deadwood; historic crown lifting over building.	Improbable	Medium	Significant	Moderate	Safety: Remove dead wood. required by 18/01/2024.	18/10/2024
T279	Norway maple	22m	N7m E3.5m S7m W4m	460mm	Policy holder	SM	Good	Good	0-20%	10-30% (AVERAGE)	No	One-sided crown as suppressed by adjacent tree.	Improbable	Medium	Significant	Moderate		18/10/2024
T280	Norway maple	22m	N7.5m E5m S6m W4m	600mm	Policy holder	EM	Good	Good	0-20%	0-10% (GOOD)	Very Low	Focal point; debris in the canopy; many surface roots.	Improbable	Medium	Significant	Moderate	Arboricultural: Remove bag. required by 18/01/2024.	18/10/2024
T281	London plane	22m	N9m E5m S4m W7m	730mm	Policy holder	EM	Fair	Good	0-20%	10-30% (AVERAGE)	No	Part of group; southern side reduced away from the building; medium and major deadwood; target: Public parking bays.	Improbable	Medium	Significant	Moderate	Safety: Remove dead wood. required by 18/01/2024.	18/10/2024
T282	London plane	25m	N8m E4m S4.5m W4.5m	820mm	Policy holder	EM	Good	Good	0-20%	0-10% (GOOD)	No	Part of group; medium deadwood present. Reduced away from the building side; at the time of inspection excavation works are being carried out.	Improbable	Medium	Significant	Moderate	Safety: Remove dead wood. required by 18/01/2024 3 Months. Arboricultural: Crown lift to 5m above ground level above pavement. required by 18/10/2024 1 year.	18/10/2024

No.	Species	Height	Radial crown spread	Trunk Dia.	Ownership	Life Stage	Physiology	Structure	Crown Missing	Crown dieback	Bat Roost	Comments	Failure	Impact	Consequence	Risk	Recommendation	Re-inspection date
T283	London plane	20m	N8m E7m S4m W4.5m	830mm	Policy holder	EM	Fair	Good	21-40%	0-10% (GOOD)	No	Part of group; minor remedial works have been carried out on the west side; medium and major deadwood.	Improbable	Medium	Significant	Moderate	Safety: Remove dead wood. required by 18/01/2024 3 Months. Arboricultural: Crown lift to 5m above ground level above pavement. required by 18/04/2024 6 Months.	18/10/2024
T284	London plane	23m	N7m E8m S6m W7m	860mm	Policy holder	EM	Good	Good	0-20%	0-10% (GOOD)	No	Part of a group of trees; historical crown lifting on the south and west side both wounds are partially occluded. At the time of the inspection excavation works on the highway were being carried which damage roots.	Improbable	Medium	Significant	Moderate	Arboricultural: Crown lift to 5m above ground level above pavement. 1 year.	18/10/2024

Appendix C – Glossary of terms

Tree no:	Sequential reference number of trees or groups of trees commencing at "1". Prefixed with a letter indicating type: T: Tree. G: Group. H: Hedge.
Tree Preservation Order/ (TPO) conservation area (CA)	Served on individual, groups, woodland or as an area when the local planning authorities (LPA) consider it necessary to protect the visual amenity of the local area. Consent from the LPA must be sought prior to undertaking any works, failure to do so may lead to unlimited fines. Conservation area is an area designated under 69 of the Planning (Listed Buildings and Conservation Areas) Act 1990. Works to trees located within a CA require six weeks notification (S211 notice) to be submitted to the LPA. If the works are considered excessive and will have an impact on the visual amenity of the CA a TPO can be served.
Name	Species listed by common name/ latin name
Height	Estimated height of tree shown in metres.
Trunk Dbh:	Diameter at breast height measured at approximately 1.5 m above ground level given in millimetres and to the nearest 100 mm. Where there are more than 1 stem the average diameter is provided.
Radial crown spread (M)	Given as a radial measurement in metres from the centre of the stem to the furthest point of the canopy at the four main compass points N, E, S, W
Physiology	Good: Typical for species and age Fair: Signs of physiological stress or dysfunction; but not significant enough that the tree may not recover. Poor: Signs of physiological stress or dysfunction; significant enough that the tree might not recover.
Structure	Structural condition of the tree based on the structure of its roots, trunk and major stems and branches in relation to the presence of any physiological, pathological or mechanical defects. Good: No significant structural defects. Fair: Significant structural defects; but these are either remediable or do not put the tree at immediate or early risk of collapse. Poor: Significant and irremediable structural defects, such that there may be a risk of early or premature collapse. Hazardous: Significant and irremediable structural defects, such that there is a risk of imminent collapse.
Bat roost potential high, medium low	Structural defects and physical damage. Such features have the potential to provide roosting spaces for bats but are not in themselves indicators of presence. <ul style="list-style-type: none"> • Woodpecker holes. • Rot holes. • Loose bark. • Cankers. • Tension cracks and splits. • Shattered 'snag' ends. • Signs of internal decay (e.g. fungal fruits, hyphae, exudation) • Inclusions • Elongated tight forks. • Unusual growth forms • Bat boxes on or near the tree. • Evidence of past pruning/coppicing/pollarding/storm damage.
Comments:	General comments relating to identified structural defects or hazards, vitality, pathogens or observational notes.

<p>Risk Potential - Likelihood of failure</p>	<p>The likelihood of failure before the next recommended inspection date.</p> <ul style="list-style-type: none"> ○ Improbable: the tree or branch is not likely to fail during normal weather conditions and may not fail in many severe weather conditions within the specified time frame. ○ Possible: failure could occur, but it is unlikely during normal weather conditions within the specified time frame. ○ Probable: failure may be expected under normal weather conditions within the specified time frame. ○ Imminent: failure has started or is most likely to occur in the near future, even if there is no significant wind or increased load.
<p>Risk Size - Likelihood of impacting people</p>	<p>The likelihood of impacting a target (for this risk assessment people are the target)</p> <ul style="list-style-type: none"> ○ Very low: the chance of the failed tree or branch impacting the specified target is remote. ○ Low: it is not likely that the failed tree or branch will impact the target. ○ Medium: the failed tree or branch may or may not impact the target, with nearly equal likelihood. ○ High: the failed tree or branch will most likely impact the target.
<p>Risk Target- Consequence of failure if impact occurs</p>	<ul style="list-style-type: none"> ○ Negligible: low-value property damage or disruption that can be replaced or repaired, and do not involve personal injury. ○ Minor: low-to-moderate property damage or small disruptions to traffic or a communication utility. ○ Significant: property damage of moderate to high value, considerable disruption, or personal injury. ○ Severe: serious personal injury or death, damage to high-value property, or disruption of Important activities.
<p>Risk of harm</p>	<p>Evaluation of risk: Low, Moderate, High or Severe (1 – 12)</p>
<p>Recommendation of work</p>	<p>Tree works to reduce the risk of physical harm or damage to acceptable levels with timescale.</p> <p>Arboricultural – Remedial tree works that involves pruning to a specification in accordance with the arboricultural best practice BS3998: 2010 Tree work – Recommendations. Examples include crown reduction, crown thinning, reducing specific branches and crown lifting.</p> <p>Safety works- nature of the works is to ensure the trees are kept in a safe manner.</p> <p>Facilitative – one off pruning works associated with development works whereby branches are removed to allow the movement of plant machinery within the grounds of the site without harming the trees visual appearance.</p>
<p>Time scale</p>	<p>Critical – works must be carried out within 24 hours of being identified by the surveyor</p> <p>Urgent – prescribed works must be carried out as quickly as possible, preferably within 5 working days.</p> <p>Long term – No specific date is set but consideration should be given to undertaking the works when there is sufficient budget</p> <p>Intermediate – works should be completed by the required date e.g. 6 – 8 months</p> <p>6 months – works are to be completed within six months of the survey.</p> <p>By next inspection – works are to be completed by the next date of inspection.</p> <p>1 month, 1 year and 2 years – to be completed within the timeframe stated.</p>
<p>Re-inspection date</p>	<p>Recommended date for visiting the site to assess the condition of the trees.</p>

Glossary of terms

Adaptive growth. In tree biomechanics, the process whereby the rate of wood formation in the cambial zone, as well as wood quality, responds to gravity and other forces acting on the cambium. This helps to maintain a uniform distribution of mechanical stress

Adventitious shoots. Shoots that develop other than from apical, axillary or dormant buds; see also 'epicormic'

Anchorage. The system whereby a tree is fixed within the soil, involving cohesion between roots and soil and the development of a branched system of roots which withstands wind and gravitational forces transmitted from the aerial parts of the tree

Bacteria. Microscopic single-celled organisms, many species of which break down dead organic matter, and some of which cause diseases in other organisms

Bark. A term usually applied to all the tissues of a woody plant lying outside the vascular cambium, thus including the phloem, cortex and periderm; occasionally applied only to the periderm or the phellem

Bracing. The use of rods or cables to restrain the movement between parts of a tree

Branch:

- **Primary.** A first order branch arising from a stem
- **Lateral.** A second order branch, subordinate to a primary branch or stem and bearing sub-lateral branches
- **Sub-lateral.** A third order branch, subordinate to a lateral or primary branch, or stem and usually bearing only twigs

Buckling. An irreversible deformation of a structure subjected to a bending load

Callus is the name given to the thin walled, mostly round, meristematic cells that first form after wounding about the edges of the wound. Callus has very little lignin, the tough "natural cement" that gives cell walls great strength. After callus cells continue to form, the pressure begins to build again as internal round callus cells begin to squeeze against other callus cells. As pressure increases internally, the shape of newly formed cells begins to change.

Within a few weeks to a few months after wounding during the growth period, callus formation begins to diminish and woundwood formation begins.

Cambium. Layer of dividing cells producing xylem (woody) tissue internally and phloem (bark) tissue externally

Cavity. Hole in a woody part of a tree caused by decay or damage

Co-dominant stem/branch. Upward growing stem/branch with a similar height and disposition as another stem/branch

Compartmentalization. The confinement of disease, decay or other dysfunction within an anatomically discrete region of plant tissue, due to passive and/or active defences operating at the boundaries of the affected region

Compression strength. The ability of a material or structure to resist failure when subjected to compressive loading; measurable in trees with special drilling devices

Compressive loading. Mechanical loading which exerts a positive pressure; the opposite to tensile loading

Condition. An indication of the physiological vitality of the tree. Where the term 'condition' is used in a report, it should not be taken as an indication of the stability of the tree

Crown/Canopy. The main foliage bearing section of the tree

Crown lifting. Removal of lower branches to achieve a stated vertical clearance above ground level or other surface

Crown reduction. Operation that results in an overall reduction in the height and/or spread of the crown of a tree by means of a general shortening of twigs and/or branches, whilst retaining the main framework of the crown.

Crown spread. Branch spread in metres taken at the four cardinal points to derive an accurate representation of the crown.

Crown thinning. Removal of a proportion of small, live branches from throughout the crown to achieve an even density of foliage around a well-spaced and balanced branch structure

Deadwood. Branch or stem wood bearing no live tissues. Retention of deadwood provides valuable habitat for a wide range of species and seldom represents a threat to the health of the tree. Removal of deadwood can result in the ingress of decay to otherwise sound tissues and climbing operations to access deadwood can cause significant damage to a tree. Removal of deadwood is generally recommended only where it represents an unacceptable level of hazard

- **Minor deadwood.** Deadwood of a diameter less than 25mm and or unlikely to cause significant harm or damage upon impact with a target beneath the tree
- **Medium deadwood.** Deadwood of a diameter between 25mm and 100mm or likely to cause some harm or damage upon impact with a target beneath the tree
- **Major deadwood.** Deadwood of a diameter above 100mm or likely to cause significant harm or damage upon impact with a target beneath the tree

Defect. In relation to tree hazards, any feature of a tree which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment

Dieback. The death of parts of a woody plant, starting at shoot-tips or root-tips

Disease. A malfunction in or destruction of tissues within a living organism, usually excluding mechanical damage; in trees, usually caused by pathogenic micro-organisms

Dormant bud. An axial bud which does not develop into a shoot until after the formation of two or more annual wood increments; many such buds persist through the life of a tree and develop only if stimulated to do so

Dysfunction. In woody tissues, the loss of physiological function, especially water conduction, in sapwood

Epicormic shoot. A shoot having developed from a dormant or adventitious bud and not having developed from a first year shoot

False heartwood - is wood so depleted of elements essential for life that few organisms can grow in it. False heart- wood is often trunk wood associated with dying and dead branches. As the branches die, the trunk wood associated with the branches deplete their supply of elements, especially nitrogen-based molecules, that are essential for life.

Generating system - New parts and processes form in new spatial positions; plants.

Habit. The overall growth characteristics, shape of the tree and branch structure

Hazard. "A hazard is the disposition of a thing, a condition or a situation to produce injury" (Health and Safety Executive 1995). A tree-failure hazard is present when a tree has potential to cause harm to people or property.

Hazard beam. An upwardly curved part of a tree in which strong internal stresses may occur without being reduced by adaptive growth; prone to longitudinal splitting.

Heartwood. Dead or predominantly dead central wood of tree species whose sapwood has a finite and pre-determined lifespan NOTE In some species heartwood is highly durable because it contains pre-formed defensive substances. In certain others, it remains chemically reactive when exposed to air and/or fungal colonization. It is sharply delineated from the sapwood because the sapwood–heartwood conversion involves the death of most of the sapwood cells at about the same time. It can be harder than the sapwood and/or distinctly coloured.

Health - The ability to resist strain.

Inherent Risk. The exposure arising from a specific risk before any action has been taken to manage it.

Incipient failure. In wood tissues, a mechanical failure which results only in deformation or cracking, and not in the fall or detachment of the affected part

Included bark (ingrown bark). Bark tissue lodged in the union between a branch and the parent stem, in the crotch of two branches, or between the bases of co-dominant stems, indicating potential weak attachment

Infection. The establishment of a parasitic micro-organism in the tissues of a tree or other organism.

Lapsed coppice/lapsed pollard. Tree that has been coppiced/pollarded but has not been maintained by cycles of cutting

Loading. A mechanical term describing the force acting on a structure from a particular source; e.g. the weight of the structure itself or wind pressure

Longitudinal. Along the length (of a stem, root or branch)

Lopping. A term often used to describe the removal of large branches from a tree, but also used to describe other forms of cutting

Occluding tissues. A general term for the roll of wood, cambium and bark that forms around a wound on a woody plant (cf. woundwood)

Occlusion. The process whereby a wound is progressively closed by the formation of new wood and bark around it

Pathogen. A micro-organism which causes disease in another organism

Pollard. Tree that has formed a crown consisting of numerous branches arising from the same height on a main stem or principal branches.

NOTE. This can be by natural process or by pollarding.

Pollarding. Cutting a tree so as to encourage formation of numerous branches arising from the same height on a main stem or principal branches.

NOTE 1. This process is initially carried out on trees that have not yet reached maturity. The form of the tree can then be maintained by cycles of cutting. This is not the same as topping.

NOTE 2. The pollard heads collectively, and the framework of a pollarded tree, are both known as the bolling.

Primary branch. A major branch, generally having a basal diameter greater than 0.25 x stem diameter

Priority. Works may be prioritised, 1. = high, 5. = low

Probability. A statistical measure of the likelihood that a particular event might occur

Pruning. The removal or cutting back of twigs or branches, sometimes applied to twigs or small branches only, but often used to describe most activities involving the cutting of trees or shrubs

Reactive Growth/Reaction Wood. Production of woody tissue in response to altered mechanical loading; often in response to internal defect or decay and associated strength loss (cf. adaptive growth)

Residual wall. The wall of non-decayed wood remaining following decay of internal stem, branch or root tissues

Residual Risk. The exposure arising from a specific risk after action has been taken to manage it and making the assumption that the action is effective.

Risk Assessment. The evaluation of risk with regard to the impact if the risk is realised and the likelihood of the risk being realised.

Risk Management. All the processes involved in identifying, assessing and judging risks, assigning ownership, taking actions to mitigate or anticipate.

System - A highly ordered connection of parts and processes that have a predetermined end point - product, or service.

Stress - A condition where a system, or its parts, begins to operate near the limits for what it was designed.

Strain - Disorder and disruption of a system due to operation beyond the limits of stress.

Target - The subject of injury or damage within range of a hazard

Vigour - The capacity to resist strain; a genetic factor, a potential force against any threats to survival.

Vitality - The ability to grow under the conditions present; dynamic action.

Veteran: A tree with unique features associated with advanced chronological age for its species, increasing its value as habitat for wildlife (cavities, cracks and deadwood)

Wood - A highly ordered connection of living, dying and dead cells that have walls of cellulose, hemicellulose and lignin.

Wound wood - has fewer vessels than "normal" wood. The cell walls are usually thicker than normal and usually contain more lignin. The wound wood cells cease to be meristematic. A new vascular cambium forms and continues to form wound wood. These wound wood tissues are seen as ribs about the margins of wounds. The wound wood ribs also add new strength to the weakened side of a stem, branch or woody root.

Wet wood - is wood infected by anaerobic bacteria mostly. The infected wood is altered in ways that disrupt membranes, and leakage of substances leads to high concentrations of elements, high pH, and low amounts of free oxygen as micro spaces are filled with water.

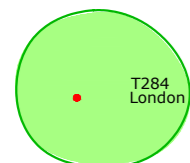
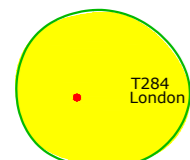
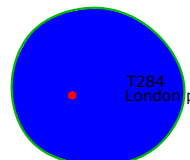
APPENDIX D – Description of works

All works mentioned in the schedule must comply with BS3998:2010 – Tree works Recommendations

Nature of works	Description	Benefits	Drawbacks
Crown thinning.	Removal of a proportion of small, live branches from throughout the crown to achieve an even density of foliage around a well-spaced and balanced branch structure	Reduces the shade cast/ wind load/ by the tree. Pruning wounds tend to be smaller	Loss of photosynthetic material Creation of pruning wounds which can act as entry points for microorganisms which can infection and shorten the life of the tree.
Coppicing	Form of management that leads to the removal of regrowth at ground level	Part of a traditional method of woodland management.	Can be unsightly.
Crown lifting.	Removal of lower branches to achieve a stated vertical clearance above ground level or another surface	Specific branches are removed to achieve the desired clearance. The natural form of the tree is not affected by these works.	Potential to create large pruning wounds which can act as entry points for microorganisms which can infection and shorten the life of the tree. Not always possible to achieve the desired clearance in one operation.
Crown reduction. (whole tree/ specific branches)	Operation that results in an overall reduction in the height and/or spread of the crown of a tree by means of a general shortening of twigs and/or branches, whilst retaining the main framework of the crown.	<ol style="list-style-type: none"> 1. Can alleviate biomechanical stress. 2. To reduce the weight of potentially dangerous limbs. 3. To balance a mis-shapen tree. 4. To prevent a tree obstructing or damaging buildings and property. 5. To prevent trees interfering with overhead telephone and power lines. 6. To maintain the balance between root and shoot 	Dependant on a number of factors; <ul style="list-style-type: none"> • Tree species and their tolerance to these works • Past pruning operations will influence whether it is possible to implement the crown reduction. • These works tend to result in the formation of numerous wounds throughout the crown structure which act as entry points for microorganisms which can infection and shorten the life of the tree.

Nature of works	Description	Benefits	Drawbacks
Dead wood removal	<p>Removal from the tree of dead, dying or diseased branchwood, broken branches or stubs left from previous tree surgery operations, and from within any cavities within the tree. In the tender documents the Employer shall identify one of three categories of deadwooding to be performed:</p> <ol style="list-style-type: none"> 1. complete dead-wooding the removal of dead, dying or diseased wood, broken branches and stubs left from previous tree surgery operations. PROVIDED SUCH MATERIAL EXCEEDS 10mm IN DIAMETER OR 100mm IN LENGTH (smaller material shall be allowed to remain in the tree unless the Employer states to the contrary in the tender documents) 2. major dead-wooding the removal of wood EITHER OVER 50mm IN DIAMETER OR OVER 200mm LONG, be that wood dead, dying or diseased branchwood. broken branches or stubs left from previous tree surgery operations 3. conservation dead-wooding dead wood over 50mm in diameter be BROKEN OFF BY HAND or be partly sawn through and broken off at the point where its diameter exceeds 5 mm 	<p>Removing branches which may be a hazard to pedestrians. No loss of live growth/ leaf bearing material essential for photosynthesis</p>	<p>Loss of habitat for invertebrates. Some species e.g.oak can retain major deadwood for the long term</p>
Formative prune	<p>Applied to young trees, examples of works;</p> <ul style="list-style-type: none"> • Removal of co-dominant stems with weak branch unions. • Removal of subservient branches with poor growth patterns. • Removal of rubbing branches • Creation of the desired crown height 	<p>To create a framework whereby they will be free from biomechanical weakness that will prevent them from reaching their full species potential</p>	<p>Loss of photosynthetic material Creation of pruning wounds which can act as entry points for microorganisms which can infection and shorten the life of the tree.</p>

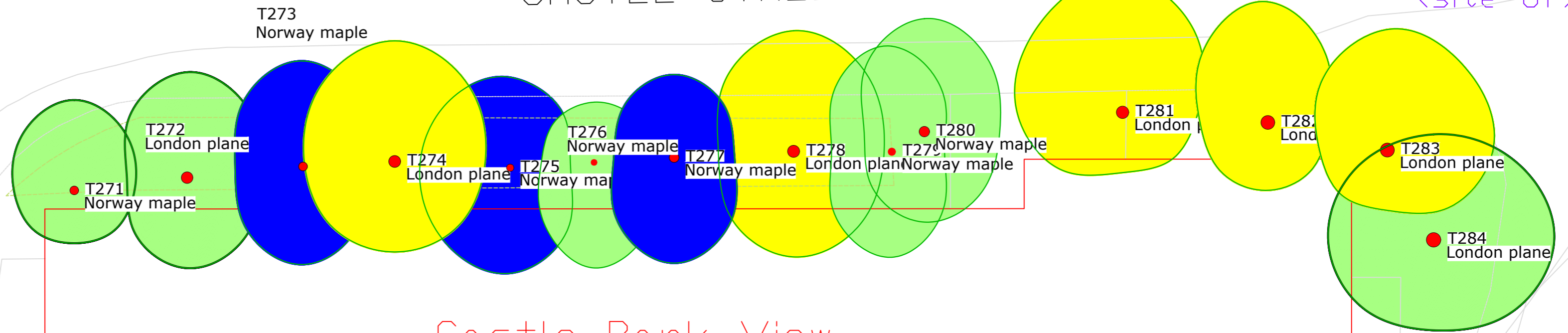
Nature of works	Description	Benefits	Drawbacks
Sever ivy	Remove a defined section of ivy at ground level e.g. 0.5 width	<p>Allows the ivy to die naturally and be removed at a later date and inspect trunk for defects.</p> <p>Less expensive than complete removal</p>	Loss of habitats and food for birds
Pollarding.	Cutting a tree so as to encourage formation of numerous branches arising from the same height on a main stem or principal branches	In certain situations, can increase longevity and are commonly found in historic landscapes such wood pastures and carried out on ancient trees.	Once implemented it must be continued to prevent poorly attached regrowth from failing and over dense crowns which result in shading. Quite often the urban environment trees subject to this form of management have lost their natural framework of branches creating an unnatural appearance.
Re-pollarding	Removal of regrowth back to the final pruning cut	To retain the tree and address issues such as common concerns such as height and shade.	Loss of photosynthetic material Creation of pruning wounds which can act as entry points for microorganisms which can infection and shorten the life of the tree.

-  T284 London plane No urgent works required
-  T284 London plane Works to be completed within 3 months
-  T284 London plane Works to be completed within 6 months

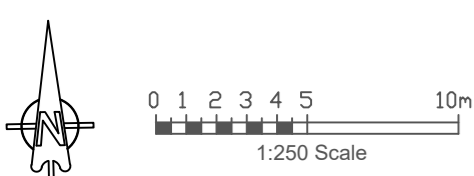
Castle Wall
(course of)

CASTLE STREET

Nether Gate
(site of)



Castle Park View
Block A



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Please ensure all dimensions on site and any if there are any discrepancies please notify us.

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Client	Savills
Title	Tree Location Plan - TLP-01
Site	Castle Park View, Castle Street, Bristol, BS2 0ND
Date	31st October 2023
Drawn	GRS
Job ref	GRS.91.23
Scale	1:250
Paper size	A2
Notes	Location of all trees are approximate
Drawing reference	TLP-01

ER HILL +
11.3m