

Tree health and safety report for Strategic Park

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Disclaimer	This report has been prepared to provide data and recommendations for the client based on the ground-based visual inspection of tree health and safety. This will be derived from observable factors of the tree's physiology at the time that the survey is conducted. It is the client's duty of care to undertake the necessary mitigating actions from the findings of this report within the proposed time limits. This might entail further aerial or advanced survey techniques or the recommended remedial tree management actions. However, in some cases access, vegetation, topography and time of year may limit the surveyor's ability to visually inspect a trees condition or detect pests, pathogens and diseases and should be noted within this report. Further work might be necessary to assess a tree, or group of trees health in these cases. Although the surveyor will endeavour to identify visual tree defects and propose mitigating management recommendations, trees can fail from undetected physiological conditions, weather events and acts of god. Therefore the surveyor cannot guarantee the safety of any tree, or group of trees detailed within this survey. No tree can be deemed risk free and therefore we do not accept any liability for tree or branch failure under any circumstances.

Table of contents:

Report information and disclaimer	2
Introduction	3
Scope	3
Background	4
Summary	4
Survey data Grouped trees (Table 1)	5
Survey data Individual trees (Table 2)	13
Remedial management actions (Table 3)	17
VTA location map	27
Hazard Class ratings and timescales	28
Glossary of Arboricultural Terms	29

1. Introduction

At the instruction of the client, Nurture Landscapes Ltd, a ground-based visual tree inspection (VTA) was carried out for all trees and major vegetation present within the boundaries of, and neighbouring lands with trees affecting buildings and property of Strategic Park, Comines Way, Southampton, SO30 4FW (hereby referred to as Strategic Park).

The landowner has a duty of care under a number of legislative acts including but not limited to:

- Occupiers liability act 1957 and 1984
- Health and Safety at Work Act 1974
- The Town and Country Planning Act 1990 and 2008
- The Town and Country Planning Regulations 2012

Under current legislation, the occupier, within reason, should take all reasonable practicable steps to prevent harm to visitors on their land by tree related hazards. This includes regular tree inspections and the implementation of remedial management recommendations.

At the time of this report, there is a group Tree Preservation Order (TPO No. 226-E) primarily protecting a belt of mature oak, beech, birch and holly running from west to east along the north of the site from Upper Northern Drive, bordering along the A334 Charles Watts Way to Junction 7 of the M27. Strategic Park is not situated within a Conservation Area (<https://emaps.eastleigh.gov.uk/WebMaps/Map.aspx?MapName=WebmapsNoLocalPlan>).

2. Scope

This report covers all trees within or affecting people, property and infrastructure at Strategic Park. Through a ground-based visual inspection using binoculars, a sounding hammer, probe and external features, we provide an assessment of the trees health and potential risk factor taking into account potential targets and land-use. Tree locations and findings were recorded using GPS enabled OTISS Tree Survey Software ([OTISS - Website - https://www.otiss.co.uk/treesurvey/index.html](https://www.otiss.co.uk/treesurvey/index.html)).

At the time of year that this survey was conducted (30/04/24-01/05/24), potential tree pests, pathogens and diseases, including fungal fruiting bodies, might not be visible.

3. Background

Strategic Park mainly consists of two large commercial units surrounded by semi-mature planted trees alongside the access road and surrounding the carparks and units. In amongst the planted trees there is a belt of old growth mature oak and beech which, as previously mentioned, are protected by a TPO. Furthermore, there is an open space of grassland and scrub habitat on the east of the site between the units and the motorway with some small patches of semi-mature and mature woodland habitats along its boundaries.

However, without any further information available, the boundaries managed by the governing body were derived from the previous tree survey, and as such, the survey was limited to areas previously surveyed in the 2023 Tree Risk Assessment report (N. Baxter Tree Risk Assessment 2023). We also took the site boundary as the main access gate and surrounding fence line at the west of the site as the area previously included within the survey outside of the access gate is not accessible for survey due to dense undergrowth and bramble. Therefore, these trees pose little risk to people or property as people are unlikely to be among them should there be a branch or catastrophic stem failure and the tree crowns are not likely to reach the road.

4. Summary

In total, we surveyed 129 individually recorded trees, some of which were grouped, plus numerous trees within larger grouped sections that were not individually listed unless a specific defect or advisory concern was noted. All larger semi-mature and mature specimens within the planted groups were more closely inspected if they had the potential to cause harm to people or property.

Of these surveyed trees, 16 were dead and mainly consisted of smaller trees (4-7m) that are situated within the carpark islands. It is up to the management body and their clients to decide if replanting is the most desirable course of action considering the poor overall success rate of these trees and the condition of those remaining (G002 – G005 and G021 – G027 and G034 (Table 1,3 and Map 1)). Further to the dead carpark trees we advise the rapid section felling of T010 due to its proximity to the motorway slip road and the likelihood of the tree failing at the base (Table 2, 3 and Map 1).

Most of the trees surveyed on site were in a good 'overall condition', however we have recommended several remedial management actions for trees to reduce their hazard potential (Tables 1, 2 & 3 and Appendix 1 for Hazard Class Ratings).

However, Strategic Park has numerous ash trees onsite. These are predominantly semi-mature planted trees bordering the access road and carparks and therefore pose a greater hazard due to their location. At the time of survey (30th of April – 1st of May 2024), the ash were not in leaf and so it is difficult to detect the early onset of Chalara ash dieback (*Hymenoscyphus fraxineus*). Therefore, we have recommended that the ash trees within falling distance of the road within those sections (G010 – G011, Table 1,3 and Map1) are removed within a timescale of 3 months when Chalara will be at its most detectable in the later summer months. However, at present the ash trees looked to be in a 'fair overall' condition.

On a final note, we have observed standing dead trees in addition to recording major and minor deadwood within the canopy on numerous trees within planted sections, woodland and over low use areas. Deadwood is an important ecological habitat and of conservation importance as it sustains a rich flora and fauna of fungi, insects and other important constituents of the food chain and biological cycles. Therefore, we have only advised the removal of deadwood whether standing or within trees, if it is over, or in falling distance, of footpaths, roads, property and infrastructure.

Table 1 Survey data for tree groups

Ref.	Species	Measurements	Description	Survey Notes	Physical Condition	Structural Condition	Overall Condition
G001	Norway maple x5 (<i>Acer platanoides</i>)	Height (m): 0-5 DBH (cm): 10-15 Trees: 5 Life Stage: Young	Carpark island tree Target # - car park.	1 dead tree 4 with no obvious defects	Dead	Collapsing	Dead
G002	Willow x2 (<i>Salix sp.</i>)	Height (m): 5-10 DBH (cm): 20-25 Trees: 2 Life Stage: Semi Mature	Carpark island tree Target # - car park.	Dieback within crown Major deadwood over parking bays	Fair	Fair	Fair
G003	Norway maple x4 (<i>Acer platanoides</i>)	Height (m): 0-5 DBH (cm): 5-10 Trees: 4	Carpark island tree Target # - car park.	3 dead trees 1 tree showing poor vitality	Poor	Poor	Poor
G004	Raywood ash x9 (<i>Fraxinus angustifolia oxycarpa</i>)	Height (m): 5-10 DBH (cm): 10-15 Trees: 9 Life Stage: Young	Carpark island tree Target # - car park. Target # - road.	Deadwood over parking bays and road Cannot inspect base due to vegetation and ivy No obvious defects	Fair	Good	Fair
G005	Norway maple x5 (<i>Acer platanoides</i>)	Height (m): 0-5 DBH (cm): 15-20 Trees: 5 Life Stage: Semi Mature	Carpark island tree Target # - car park. Target # - street lights.	1 tree showing advanced crown dieback and poor vitality 4 healthy stems 1 stem encroaching on street light No significant defects on other 4 trees	Fair	Fair	Fair
G006	Common ash x3 (<i>Fraxinus excelsior</i>)	Height (m): 5-10 DBH (cm): 10-15 Trees: 3 Life Stage: Semi Mature	Woodland tree. Target # - car park.	Woodland edge trees showing poor vitality. Pests and Diseases: Ash Dieback Infection Level 2: 25% to 50%	Good	Fair	Fair

Ref.	Species	Measurements	Description	Survey Notes	Physical Condition	Structural Condition	Overall Condition
G007	Common ash (<i>Fraxinus excelsior</i>) Silver birch (<i>Betula pendula</i>) Willow (<i>Salix sp.</i>) Norway maple (<i>Acer platanoides</i>) Wild cherry (<i>Prunus avium</i>) Raywood ash (<i>Fraxinus angustifolia oxycarpa</i>)	Height (m): 10-15 DBH (cm): 25-30 Life Stage: Early Mature	Woodland tree. Tree in hedge. Target # - car park. Target # - street lights.	Belt of mixed species, size and age class trees bordering carpark and entrance road No obvious defects	Good	Good	Good
G008	Pedunculate oak(<i>Quercus robur</i>) Common beech(<i>Fagus sylvatica</i>)	Height (m): 15-20 Trees: 15 Life Stage: Over Mature	Woodland tree.	Belt of mature oak and beech with young planted trees along site boundary All oak and beech are mature trees with major deadwood over low use areas Some trees have basal cavities and other features typical of over mature trees.	Good	Fair	Fair
G009	Field maple (<i>Acer campestre</i>)	Height (m): 0-5 DBH (cm): 10-15 Trees: 2 Life Stage: Semi Mature	Roadside tree. Target # - street lights.	Field maples encroaching on street light No obvious defects	Good	Good	Good
G010	Silver birch (<i>Betula pendula</i>) Field maple (<i>Acer campestre</i>) Wild cherry (<i>Prunus avium</i>) Holly (<i>Ilex sp.</i>) Common ash (<i>Fraxinus excelsior</i>)	Height (m): 10-15 Life Stage: Semi Mature	Roadside tree. Target # - road.	Belt of mixed species planted bordering road and site boundary Some ash showing signs of Chalara ash dieback but not in full leaf. No other obvious defects	Fair	Good	Good

Ref.	Species	Measurements	Description	Survey Notes	Physical Condition	Structural Condition	Overall Condition
G011	Goat willow (<i>Salix caprea</i>) Norway maple (<i>Acer platanoides</i>) Silver birch (<i>Betula pendula</i>) Hazel (<i>Corylus avellana</i>) Wild cherry (<i>Prunus avium</i>) Ash (<i>Fraxinus excelsior</i>)	Height (m): 10-15 Life Stage: Early Mature	Roadside tree. Target # - road.	Belt of semi-mature planted trees Some ash showing signs of Chalara ash dieback but not in full leaf. No other obvious defects	Fair	Good	Good
G012	Wild cherry(<i>Prunus avium</i>) Pedunculate oak(<i>Quercus robur</i>) Field maple(<i>Acer campestre</i>) Common ash(<i>Fraxinus excelsior</i>)	Height (m): 5-10 Trees: 4 Life Stage: Semi Mature	Roadside tree.	Pruning history - Reduced.	Good	Good	Good
G013	Field maple (<i>Acer campestre</i>) Silver birch (<i>Betula pendula</i>) Pedunculate oak (<i>Quercus robur</i>) Common ash (<i>Fraxinus excelsior</i>) Norway maple (<i>Acer platanoides</i>) Goat willow (<i>Salix caprea</i>)	Height (m): 10-15 Life Stage: Semi Mature	Parkland tree.	Belt of planted trees behind gate house, bordering road and site boundary Some ash showing signs of ash dieback but within low use areas No obvious defects	Good	Good	Good

Ref.	Species	Measurements	Description	Survey Notes	Physical Condition	Structural Condition	Overall Condition
G014	Alder (<i>Alnus sp.</i>) Hazel (<i>Corylus avellana</i>) Pedunculate oak (<i>Quercus robur</i>) Silver birch (<i>Betula pendula</i>) Cherry (<i>Prunus sp. 'Cherry'</i>) Common ash (<i>Fraxinus excelsior</i>)	Height (m): 10-15	Parkland tree.	Belt of planted trees No obvious defects	Good	Good	Good
G015	Wild cherry(<i>Prunus avium</i>)White poplar(<i>Populus alba</i>)Hazel(<i>Corylus avellana</i>)Crack willow(<i>Salix fragilis</i>)Field maple(<i>Acer campestre</i>)Silver birch(<i>Betula pendula</i>)Common ash(<i>Fraxinus excelsior</i>)Hawthorn(<i>Crataegus sp.</i>)	Height (m): 15-20 Life Stage: Early Mature	Belt of planted trees	Belt of planted trees No obvious defects	Good	Good	Good
G016	Common ash (<i>Fraxinus excelsior</i>) Monterey pine (<i>Pinus radiata</i>) Silver birch (<i>Betula pendula</i>)	Height (m): 5-10 Trees: 4 Life Stage: Semi Mature	Parkland tree. Target # - building	Small planting of semi trees No obvious defects	Good	Good	Good
G017	Silver birch (<i>Betula pendula</i>) Pedunculate oak (<i>Quercus robur</i>)	Height (m): 15-20 Life Stage: Mature	Woodland tree. Tree in fence line.	A belt of mature oak and birch along the boundary fence. Major deadwood and some standing dead trees but in low use areas mostly surrounded by bramble Several fencelines run down boundary and ownership is unclear	Good	Fair	Fair

Ref.	Species	Measurements	Description	Survey Notes	Physical Condition	Structural Condition	Overall Condition
G018	Goat willow (<i>Salix caprea</i>) Silver birch (<i>Betula pendula</i>) Sycamore (<i>Acer pseudoplatanus</i>)	Height (m): 10-15	Woodland tree.	Mixed species and age class of trees A lot of standing deadwood and major deadwood over low use areas Multiple trees with basal cavities Birch polypore on several standing dead birch Typical small woodland habitat in low use area Dangerous trees in falling distance of sliproad identified separately			
G019	Goat willow(<i>Salix caprea</i>)Silver birch(<i>Betula pendula</i>)Cherry(<i>Prunus sp.</i> 'Cherry')Hawthorn(<i>Crataegus sp.</i>)Common ash(<i>Fraxinus excelsior</i>)Alder(<i>Alnus sp.</i>)White poplar(<i>Populus alba</i>)	Height (m): 10-15 Life Stage: Early Mature	Woodland tree.	Belt of planted trees in low use areaMajor deadwood and standing deadwood Chalara ash dieback presentTypical small woodland habitat	Good	Good	Good
G020	Cherry (<i>Prunus sp.</i> 'Cherry') Oak (<i>Quercus sp.</i>)	Height (m): 15-20 Life Stage: Mature	Woodland trees	Mature woodland trees bordering site boundary Typical old growth feature with major deadwood and basal cavities on some trees. Low use areas with a lot of bramble preventing further inspection	Good	Fair	Good
G021	Not identified (<i>Not identified</i>)	Height (m): 0-5 DBH (cm): 5-10 Life Stage: Dead	Carpark island tree Target # - car park.	3 dead trees	Dead	Collapsing	Dead
G022	Willow x4 (<i>Salix sp.</i>)	Height (m): 5-10 DBH (cm): 20-25 Trees: 4 Life Stage: Semi Mature	Carpark island tree Target # - car park.	Deadwood throughout crown Crowns showing signs of dieback 3 trees growing in to the tree guards as base to 1m Stem damage from base to 1.5 m on NE tree of the 4 showing advanced occlusion	Fair	Fair	Fair
G023	Not identified x2 (<i>Not identified</i>)	Height (m): 5-10 Trees: 2 Life Stage: Dead	Carpark island tree Target # - car park.	Dead trees	Dead	Collapsing	Dead

Ref.	Species	Measurements	Description	Survey Notes	Physical Condition	Structural Condition	Overall Condition
G024	Raywood ash x6 (<i>Fraxinus angustifolia oxycarpa</i>)	Height (m): 5-10 DBH (cm): 20-25 Trees: 6 Life Stage: Semi Mature	Roadside tree. Target # - building Target # - car park.	Major deadwood overhanging delivery yard and low use areas Cannot inspect base due to vegetation	Fair	Fair	Fair
G025	Raywood ash x2(<i>Fraxinus angustifolia oxycarpa</i>)	Height (m): 5-10DBH (cm): 20-25Trees: 2Life Stage: Semi Mature	Carpark island treeTarget # - car park.Target # - footpath.	Deadwood over carpark, smoking area and entrance gateCannot inspect base due to vegetation	Fair	Fair	Fair
G026	Pear x3 (<i>Pyrus sp.</i>)	Height (m): 5-10 Trees: 3 Life Stage: Semi Mature	Carpark island tree Target # - building Target # - car park.	No obvious defects	Good	Good	Good
G027	Norway maple x3 (<i>Acer platanoides</i>) Goat willow x2 (<i>Salix caprea</i>)	Height (m): 5-10 Trees: 5 Life Stage: Semi Mature	Carpark island tree Target # - car park.	Largest goat willow is multi-stemmed at 1m with poor crown vitality. Other trees are healthy with no obvious defects Pruning history - crown lifted	Good	Good	Good
G028	Sweet chestnut (<i>Castanea sativa</i>) Oak (<i>Quercus sp.</i>) Field maple (<i>Acer campestre</i>) Common ash (<i>Fraxinus excelsior</i>) Cherry (<i>Prunus sp. 'Cherry'</i>) Raywood ash (<i>Fraxinus angustifolia oxycarpa</i>) Goat willow (<i>Salix caprea</i>)	Height (m): 10-15 Life Stage: Semi Mature	Roadside tree. Target # - footpath. Target # - road.	Belt of planted trees along entrance road to carpark No obvious defects	Good	Good	Good

Ref.	Species	Measurements	Description	Survey Notes	Physical Condition	Structural Condition	Overall Condition
G029	Silver birch (<i>Betula pendula</i>) Norway maple (<i>Acer platanoides</i>) Goat willow (<i>Salix caprea</i>) Common ash (<i>Fraxinus excelsior</i>) Cherry (<i>Prunus sp. 'Cherry'</i>)	Height (m): 10-15 Life Stage: Semi Mature	Belt of planted trees bordering carpark and old growth trees	Belt of planted trees No obvious defects	Good	Good	Good
G030	Sweet chestnut(<i>Castanea sativa</i>) Pedunculate oak(<i>Quercus robur</i>) Holly(<i>Ilex sp.</i>)	Height (m): 15-20DBH (cm): 75-100Life Stage: Mature	Old growth trees covered by TPO	Old growth trees with mixed understoreyBase of most trees Cannot be inspected due to vegetation Major deadwood over low use areasTrees of concern recorded separately	Good	Good	Good
G031	Silver birch (<i>Betula pendula</i>) Hazel (<i>Corylus avellana</i>) Sweet chestnut (<i>Castanea sativa</i>) Crack willow (<i>Salix fragilis</i>) White poplar (<i>Populus alba</i>) Norway maple (<i>Acer platanoides</i>) Goat willow (<i>Salix caprea</i>) Corsican pine (<i>Pinus nigra laricio</i>)	Life Stage: Early Mature	Belt of planted trees bordering site on embankment Target # - building	Belt of planted trees with larger specimens of crack willow, white poplar and pines along Central ridge. Old tree ties still in place and causing girdling Major deadwood over low use areas Standing dead trees within low use areas with no targets No obvious defects	Good	Good	Good
G032	Leyland cypress x22 (<i>X Cuprocyparis leylandii</i>)	Height (m): 5-10 DBH (cm): 30-40 Trees: 22	Tree in fence line.	Pruning history - Topped and sided Asymmetrical crowns with lean towards	Good	Fair	Fair

Ref.	Species	Measurements	Description	Survey Notes	Physical Condition	Structural Condition	Overall Condition
				low use areas Several trees have basal wounds to 1.5m			
G033	Black hybrid poplar x2 (<i>Populus x canadensis</i>)	Height (m): 15-20 Trees: 2 Life Stage: Mature	Tree in fence line.	Boundary trees Cannot inspect base due to vegetation No obvious defects	Good	Good	Good
G034	Not identified x3 (<i>Not identified</i>)	Height (m): 0-5 DBH (cm): 5-10 Trees: 3	Carpark island tree Target # - car park.	3 dead trees	Dead	Collapsing	Dead
G035	Sycamore (<i>Acer pseudoplatanus</i>) Cherry (<i>Prunus sp. 'Cherry'</i>) Sweet chestnut (<i>Castanea sativa</i>)	Height (m): 10-15 Trees: 15 Life Stage: Semi Mature	Woodland tree.Target # - road.	Scrubby woodland habitat with self-set saplings and some semi-mature trees along boundary fence with road.Twin stem cherry on boundary, stem nearest road is leaning on fence. Some roots are exposed but no sign of heave or major defects. If failure occurs, trees might breach roadside verge.Other trees along boundary fence have no major defects	Good	Fair	Good

Table 2 Survey data for individually recorded trees

Ref.	Other ref.	Species	Measurements	Description	Survey Notes	Physical Condition	Structural Condition	Overall Condition
T001		Norway maple (<i>Acer platanoides</i>)	Height (m): 0-5 DBH (cm): 10-15	Carpark island tree Target # - car park.	No obvious defects	Good	Good	Good
T002		Common ash (<i>Fraxinus excelsior</i>)	Height (m): 10-15 DBH (cm): 25-30 Life Stage: Early Mature	Woodland tree. Target # - building	Included union at 1.5m with ears forming below and extending into 2 codominant stems Another included union at 4m with ears forming below Tree not in full leaf so unable to detect ash dieback	Good	Fair	Fair
T003	0685	Pedunculate oak (<i>Quercus robur</i>)	Height (m): 15-20 DBH (cm): 75-100 Life Stage: Over Mature	Woodland tree. Target # - road.	Small oak growing out from base with large cavity within base plate, flared buttressed root structure Main stem has large cavity with extensive basal decay and fungal brackets extending from base to 10m. Showing strong signs of adaptive growth. Large limb at 3m previously removed Major deadwood over low use areas If either tree failed they are most likely to fall within the low use area Fungus: Ganoderma spp.	Good	Fair	Fair
T004		Common ash (<i>Fraxinus excelsior</i>)	Height (m): 5-10 DBH (cm): 30-40 Life Stage: Early Mature	Parkland tree.	Deadwood throughout crown but over low use area Pruning history - crown lifted No obvious defects but not in leaf	Good	Good	Good
T005	0657	Pedunculate oak (<i>Quercus robur</i>)	Height (m): 15-20 DBH (cm): 75-100 Stems: 2 Life Stage: Mature	Target # - building	Twin stem from strong union at 1m Southerly stem is asymmetrical with weight leaning toward building Major deadwood over low use areas Pruning history - crown lifted No obvious defects	Good	Good	Good
T006		Crack willow (<i>Salix fragilis</i>)	Height (m): 15-20 DBH (cm): 75-100 Life Stage: Mature	Parkland tree.	Multi-stemmed from 1m with unions showing some signs of stress with ears forming below No significant defects	Good	Good	Good

Ref.	Other ref.	Species	Measurements	Description	Survey Notes	Physical Condition	Structural Condition	Overall Condition
T007		Alder (<i>Alnus sp.</i>)	Height (m): 0-5 DBH (cm): 10-15 Life Stage: Dead	Target # Fence	Dead and leaning over fence	Dead	Poor	Dead
T008		Lombardy poplar (<i>Populus nigra italica</i>)	Height (m): 10-15 DBH (cm): 20-25 Life Stage: Semi Mature	Tree in fence line.	No obvious defects	Good	Good	Good
T009		Sycamore(<i>Acer pseudoplatanus</i>)	Height (m): 15-20 DBH (cm): 40-50 Life Stage: Mature	Woodland tree. Tree in fence line. Target # - road.	Included unions at 2 and 4m extending into codominant stems with ears forming below. Tree is within falling distance of M27 slip road. No other obvious defects	Good	Fair	Fair
T010		Sycamore (<i>Acer pseudoplatanus</i>)	Height (m): 10-15 DBH (cm): 25-30 Life Stage: Early Mature	Woodland tree. Tree in fence line. Target # - road.	Twin stem from 50cm Bark peeling around base and buttressed roots Crown dieback Tree within falling distance of M27 slip road	Poor	Poor	Poor
T011		Sycamore (<i>Acer pseudoplatanus</i>)	Height (m): 15-20 DBH (cm): 25-30 Life Stage: Mature	Woodland tree. Target # - road.	Vertical fracture running from 1m up to 4m Crown leaning toward M27 slip road	Good	Fair	Fair
T012		Pedunculate oak (<i>Quercus robur</i>)	Height (m): 5-10 DBH (cm): 50-60 Life Stage: Mature	Parkland tree.	No obvious defects	Good	Good	Good
T014	1832	Pedunculate oak (<i>Quercus robur</i>)	Height (m): 10-15 DBH (cm): 75-100 Life Stage: Mature	Woodland tree. Target # - footpath.	Bark peeling at base on NW side with an occluded cavity beneath Major deadwood over footpath and low use areas	Fair	Fair	Fair
T015		Pedunculate oak (<i>Quercus robur</i>)	Height (m): 10-15 DBH (cm): 75-100 Life Stage: Mature	Woodland tree. Target footpath and seating area	Cannot inspect 50% of base due to ivy Major deadwood over seating, footpath and low use areas	Good	Good	Good
T016	0683	Pedunculate oak (<i>Quercus robur</i>)	Height (m): 10-15 DBH (cm): 75-100 Life Stage: Mature	Woodland tree.	Basal cavity on eastern side up to 1m with decaying heartwood exposed and partially obscured by ivy Major deadwood over low use areas	Good	Fair	Good

Ref.	Other ref.	Species	Measurements	Description	Survey Notes	Physical Condition	Structural Condition	Overall Condition
T017	0682	Sweet chestnut (<i>Castanea sativa</i>)	Height (m): 10-15 DBH (cm): 75-100 Stems: 4 Life Stage: Mature	Woodland tree. Target # - car park.	Multi-stemmed from base Major deadwood over low use areas SW stem protruding toward carpark has wound from base to 3m on torsion side of trunk.	Good	Fair	Fair
T018	0681	Sweet chestnut (<i>Castanea sativa</i>)	Height (m): 10-15 DBH (cm): 50-60 Life Stage: Mature	Woodland tree. Target # - car park.	Basal cavity on SW side of stem. upto 2m partially occluded Major deadwood over low use areas	Good	Fair	Fair
T019		Sweet chestnut (<i>Castanea sativa</i>)	Height (m): 10-15 DBH (cm): 30-40 Life Stage: Semi Mature	Woodland tree.	Basal wound on S side upto 5m on torsion side. Vertical fracture from 2-4m Catastrophic failure is unlikely to cause harm to people or property as over low use area.	Fair	Poor	Poor
T020		Crack willow (<i>Salix fragilis</i>)	Height (m): 15-20 DBH (cm): 30-40 Life Stage: Semi Mature	Woodland tree.	Multi-stemmed at base to 1m with included union and ears forming below. Unlikely to cause harm to people or property if failure should occur	Good	Fair	Good
T021	0678	Black hybrid poplar(<i>Populus x canadensis</i>)	Height (m): 20-25 DBH (cm): 75-100 Life Stage: Mature	Target # - building	Pruning history - sided back from building reducing weight on asymmetrical crown Cannot inspect base due to vegetation Codominant stems from 1m lvy prevents structural inspection No obvious defects	Good	Good	Good
T022	0666	Pedunculate oak (<i>Quercus robur</i>)	Height (m): 15-20 DBH (cm): 125-150 Stems: 2 Life Stage: Mature	Parkland tree.	Included union at 1m extending to codominant stems. Major deadwood over low use areas No targets if tree were to catastrophically fail	Good	Fair	Good
T023	0667	Pedunculate oak (<i>Quercus robur</i>)	Height (m): 10-15 DBH (cm): 75-100 Life Stage: Mature	Parkland tree.	Asymmetrical crown Major deadwood over low use areas No obvious defects	Good	Good	Good
T024	0668	Pedunculate oak (<i>Quercus robur</i>)	Height (m): 15-20 DBH (cm): 75-100 Life Stage: Mature	Woodland tree. Target # - road.	Flared buttressed roots with small basal cavity on western side Asymmetrical crown with predominant weight towards the road No significant defects	Good	Good	Good
T025	0668	Pedunculate oak (<i>Quercus robur</i>)	Height (m): 15-20 DBH (cm): 75-100 Life Stage: Mature	Roadside tree. Woodland tree. Target # - road.	Major deadwood over low use areas Asymmetrical crown No obvious defects	Good	Good	Good

Ref.	Other ref.	Species	Measurements	Description	Survey Notes	Physical Condition	Structural Condition	Overall Condition
T026		Silver birch (<i>Betula pendula</i>)	Height (m): 10-15 DBH (cm): 50-60 Life Stage: Mature	Woodland tree.	No obvious defects	Good	Good	Good

Table 3 Remedial management actions

Ref.	Species	Description	Measurements	Recommendation	Hazard class / Timescale	Photo
G001	Norway maple x5 (<i>Acer platanoides</i>)	Carpark island tree Target # - car park.	Height (m): 0-5 DBH (cm): 10-15 Trees: 5 Life Stage: Young	Fell dead tree	High (1 Month)	
G003	Norway maple x4 (<i>Acer platanoides</i>)	Carpark island tree Target # - car park.	Height (m): 0-5 DBH (cm): 5-10 Trees: 4	Fell 3 x dead trees	High (1 Month)	
T007	Alder (<i>Alnus sp.</i>)	Target # Fence	Height (m): 0-5 DBH (cm): 10-15 Life Stage: Dead	Fell	High (1 Month)	

Ref.	Species	Description	Measurements	Recommendation	Hazard class / Timescale	Photo
T010	Sycamore (<i>Acer pseudoplatanus</i>)	Woodland tree. Tree in fence line. Target # - road.	Height (m): 10-15 DBH (cm): 25-30 Life Stage: Early Mature	Fell both stems and ecopile within woodland	High (1 Month)	
G021	Not identified(<i>Not identified</i>)	Carpark island treeTarget # - car park.	Height (m): 0-5DBH (cm): 5-10Life Stage: Dead	Fell	High(1 Month)	
G023	Not identified x2 (<i>Not identified</i>)	Carpark island tree Target # - car park.	Height (m): 5-10 Trees: 2 Life Stage: Dead	Fell	High (1 Month)	

Ref.	Species	Description	Measurements	Recommendation	Hazard class / Timescale	Photo
G034	Not identified x3 (<i>Not identified</i>)	Carpark island tree Target # - car park.	Height (m): 0-5 DBH (cm): 5-10 Trees: 3	Fell	High (1 Month)	
G002	Willow x2 (<i>Salix sp.</i>)	Carpark island tree Target # - car park.	Height (m): 5-10 DBH (cm): 20-25 Trees: 2 Life Stage: Semi Mature	Pollard at 4m	Medium (3 Months)	
G004	Raywood ash x9(<i>Fraxinus angustifolia oxycarpa</i>)	Carpark island tree Target # - car park. Target # - road.	Height (m): 5-10 DBH (cm): 10-15 Trees: 9 Life Stage: Young	Remove deadwood >25mm and sever ivy where accessible	Medium(3 Months)	

Ref.	Species	Description	Measurements	Recommendation	Hazard class / Timescale	Photo
G005	Norway maple x5 (<i>Acer platanoides</i>)	Carpark island tree Target # - car park. Target # - street lights.	Height (m): 0-5 DBH (cm): 15-20 Trees: 5 Life Stage: Semi Mature	Fell smallest tree	Medium (3 Months)	No Photo
G006	Common ash x3 (<i>Fraxinus excelsior</i>)	Woodland tree. Target # - car park.	Height (m): 5-10 DBH (cm): 10-15 Trees: 3 Life Stage: Semi Mature	Fell 3 stems	Medium (3 Months)	
G022	Willow x4 (<i>Salix sp.</i>)	Carpark island tree Target # - car park.	Height (m): 5-10 DBH (cm): 20-25 Trees: 4 Life Stage: Semi Mature	Pollard at 4m and remove tree guards	Medium (3 Months)	

Ref.	Species	Description	Measurements	Recommendation	Hazard class / Timescale	Photo
G024	Raywood ash x6 (<i>Fraxinus angustifolia oxycarpa</i>)	Roadside tree. Target # - building Target # - car park.	Height (m): 5-10 DBH (cm): 20-25 Trees: 6 Life Stage: Semi Mature	Remove deadwood >25mm	Medium (3 Months)	
G025	Raywood ash x2(<i>Fraxinus angustifolia oxycarpa</i>)	Carpark island treeTarget # - car park.Target # - footpath.	Height (m): 5-10DBH (cm): 20-25Trees: 2Life Stage: Semi Mature	Remove deadwood >25mm	Medium(3 Months)	
T014	Pedunculate oak (<i>Quercus robur</i>)	Woodland tree. Target # - footpath.	Height (m): 10-15 DBH (cm): 75-100 Life Stage: Mature	Remove major deadwood over footpath	Medium (3 Months)	

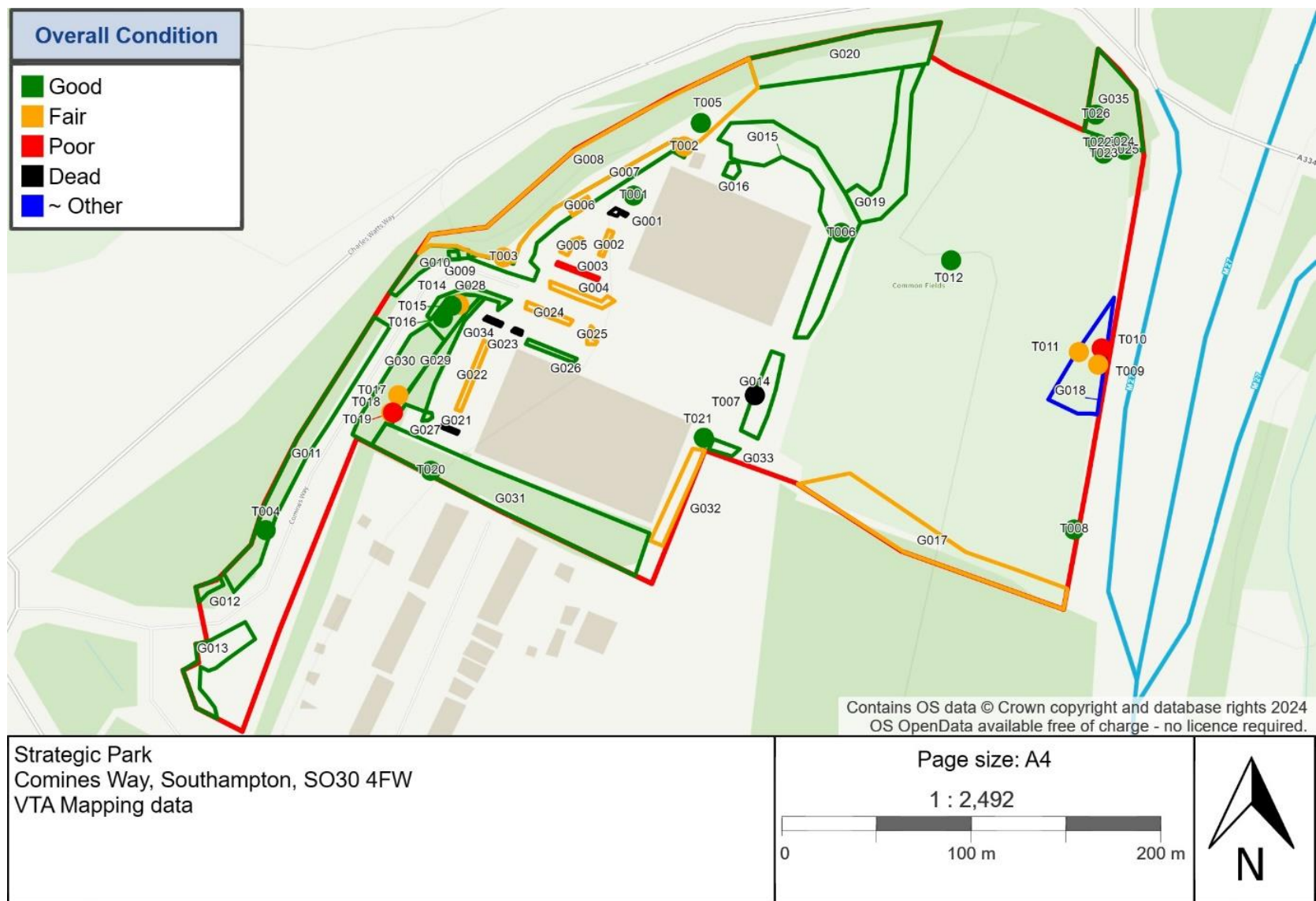
Ref.	Species	Description	Measurements	Recommendation	Hazard class / Timescale	Photo
T015	Pedunculate oak (<i>Quercus robur</i>)	Woodland tree. Target footpath and seating area	Height (m): 10-15 DBH (cm): 75-100 Life Stage: Mature	Remove major deadwood over footpath and seating	Medium (3 Months)	
G010	Silver birch (<i>Betula pendula</i>) Field maple (<i>Acer campestre</i>) Wild cherry (<i>Prunus avium</i>) Holly (<i>Ilex sp.</i>) Common ash (<i>Fraxinus excelsior</i>)	Roadside tree. Target # - road.	Height (m): 10-15 Life Stage: Semi Mature	Fell dead or dying ash within falling distance of road	Medium (3 Months)	

Ref.	Species	Description	Measurements	Recommendation	Hazard class / Timescale	Photo
G011	Goat willow(<i>Salix caprea</i>)Norway maple(<i>Acer platanoides</i>)Silver birch(<i>Betula pendula</i>)Hazel(<i>Corylus avellana</i>)Wild cherry(<i>Prunus avium</i>)Common ash(<i>Fraxinus excelsior</i>)	Roadside tree.Target # - road.	Height (m): 10-15 Trees: 150 Life Stage: Early Mature	Fell dead or dying ash within falling distance of road	Medium(3 Months)	
T009	Sycamore (<i>Acer pseudoplatanus</i>)	Woodland tree. Tree in fence line. Target # - road.	Height (m): 15-20 DBH (cm): 40-50 Life Stage: Mature	Reduce in height by 5m and shape crown. Ecopile arisings within woodland	Low (6 Months)	
T011	Sycamore (<i>Acer pseudoplatanus</i>)	Woodland tree. Target # - road.	Height (m): 15-20 DBH (cm): 25-30 Life Stage: Mature	Reduce in height by 5m and ecopile arisings	Low (6 Months)	

Ref.	Species	Description	Measurements	Recommendation	Hazard class / Timescale	Photo
T021	Black hybrid poplar (<i>Populus x canadensis</i>)	Target # - building	Height (m): 20-25 DBH (cm): 75-100 Life Stage: Mature	Sever ivy at base.	Low (6 Months)	
G009	Field maple(<i>Acer campestre</i>)	Roadside tree.Target # - street lights.	Height (m): 0-5DBH (cm): 10-15Trees: 2Life Stage: Semi Mature	Prune to clear street light by 1.5m	Low(6 Months)	
G012	Wild cherry (<i>Prunus avium</i>) Pedunculate oak (<i>Quercus robur</i>) Field maple (<i>Acer campestre</i>) Common ash (<i>Fraxinus excelsior</i>)	Roadside tree.	Height (m): 5-10 Trees: 4 Life Stage: Semi Mature	Prune to clear sign by 3m	Low (6 Months)	

Ref.	Species	Description	Measurements	Recommendation	Hazard class / Timescale	Photo
T002	Common ash (<i>Fraxinus excelsior</i>)	Woodland tree. Target # - building	Height (m): 10-15 DBH (cm): 25-30 Life Stage: Early Mature	Pollard at 4m or fell	Low (6 Months)	
G027	Norway maple x3 (<i>Acer platanoides</i>) Goat willow x2 (<i>Salix caprea</i>)	Carpark island tree Target # - car park.	Height (m): 5-10 Trees: 5 Life Stage: Semi Mature	Pollard multi-stemmed willow at 3m	Advisory (1 Year)	

Ref.	Species	Description	Measurements	Recommendation	Hazard class / Timescale	Photo
G031	Silver birch(<i>Betula pendula</i>)Hazel(<i>Corylus avellana</i>)Sweet chestnut(<i>Castanea sativa</i>)Crack willow(<i>Salix fragilis</i>)White poplar(<i>Populus alba</i>)Norway maple(<i>Acer platanoides</i>)Goat willow(<i>Salix caprea</i>)Corsican pine(<i>Pinus nigra laricio</i>)	Belt of planted trees bordering site on embankmentTarget # - building	Life Stage: Early Mature	Remove old tree ties causing girdling on larger specimen trees	Advisory(1 Year)	
T017	Sweet chestnut (<i>Castanea sativa</i>)	Woodland tree. Target # - car park.	Height (m): 10-15 DBH (cm): 75-100 Stems: 4 Life Stage: Mature	Reduce stem extending toward carpark by 4m	Advisory (1 Year)	



Map 1 VTA mapping data

Appendix 1.

Hazard Class ratings, priority and associated time limits

Hazard Class	Definition	
Urgent	Tree proposes an immediate risk to people, property and infrastructure that could result in death, serious injury or substantial damage.	Remedial tree management actions should be undertaken as rapidly as possible to avoid potential harm.
High	Trees within target of a high risk area with the potential to cause serious harm to people, property and infrastructure	Remedial tree management actions should be undertaken within 3 months of VTA
Medium	Trees within a high risk area with the potential to cause minor damage or inconvenience as well as trees within a medium risk zone that are likely to cause harm.	Remedial tree management actions should be undertaken within recommended timescale of VTA
Low	Trees that require routine management for tree health or amenity value	Remedial tree management actions should be undertaken within recommended timescale of VTA
Advisory	Trees with no obvious defects. However, due to species and / or location we would recommend the following remedial management actions.	Remedial management actions are advised to be undertaken within recommended timeframe of VTA

Glossary of Arboricultural Terms (D. Lonsdale - The Principles of Tree Hazard Assessment and Management, Arboricultural Association 2017):

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

Brown-rot: a type of wood decay in which cellulose is degraded while lignin is only modified

Canker: a lesion formed by the death of bark and cambium usually caused by a pathogen, fungi or bacteria

Coppice: To cut a tree near to the base of the ground to enable new shoots to be produced from the stool

Crown: Where the main body of foliage bearing branches extend from the main trunk or stem

Crown reduction: A specified reduction in size, specified either in meters or as a percentage, of the canopy of a tree whilst maintaining a natural shape

Crown lift: The removal of branches from the tree canopy to a specified height whilst retaining the foliage above this height

Co-dominant: Two or more stems that are of a similar size and from the same origin

Defect: A feature of the tree that may lead to an increase in mechanical or structural failure

Dieback: Where the canopy, or parts thereof, lose vitality and die from the distal tips of the branches

Eco-pile: The stacking of branches and wood to form a diversity in habitat to benefit the flora and fauna that inhabit, forage and / or nest within it.

Epicormic growth: These are shoots growing from adventitious or dormant buds that lie beneath the bark. Epicormic growth is often associated with physiological stress but can be important in the management of veteran trees. They often grow into active shoots when

damage occurs in the upper canopy, including after crown reductions.

Failure: In connection with tree hazards, a partial or total fracture within woody tissues or loss of cohesion between roots and soil.

Fissure: A radial or vertical (longitudinal) crack in the bark which can extend into the woody tissue and result in the tree or branch splitting. Bark fissures can indicate internal weakness.

Girdling: in woody plants, any form of damage which destroys or kills the bark and cambium all the way around a stem, branch or root, usually leading to the death of the distal portion

Girdling root: a root that grows across the buttress zone or across the bases of other roots, eventually causing constriction of radial growth

Hazard: A tree or branch failure with the potential to cause harm

Hazard Beam: An upwardly curved branch or part of the tree in which strong internal stresses or loading may occur without the compensatory formation of extra wood which can result in a longitudinal fracture

Included union: An acute union of forked stems or branches where ingrowing bark of the adjacent parts of the tree prevent a strong woody union. Included unions can be more prone to failure

Major deadwood: Deadwood >50mm in diameter or >1m in length that has the potential to cause harm or damage

Minor deadwood: Deadwood > 50mm in diameter that is unlikely to cause harm

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

Pollarding: The complete or partial removal of the tree crown to encourage the development of numerous branches

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

Remedial action: in tree hazard management, action to remove or mitigate the risk of injury to persons or damage to property

Ring barking: a form of girdling, involving physical damage to the bark and cambium

Risk: risk is the combination of the probability of an event occurring and its consequence

Simultaneous white-rot: a kind of wood decay in which lignin and cellulose are degraded at about the same rate

Soft-rot: a kind of wood decay in which a fungus degrades cellulose within the cell walls, without any general degradation of the wall as a whole

Stringy white-rot: the kind of wood decay produced by selective delignification

Tree Preservation Order (TPO): in Great Britain, an order made by a local authority whereby the authority's consent is generally required for the cutting down topping or pruning of specified trees.

Vitality: in tree assessment, an overall appraisal of physiological and biochemical processes, in which high vitality equates with healthy function

White-rot: various kinds of wood decay in which lignin, usually together with cellulose and other wood constituents is degraded