

## ARBORICULTURAL ASSESSMENT - SPORT WALES NATIONAL CENTRE

<b>Location:</b>	Sport Wales National Centre, Sophia Gardens, Cardiff CF11 9SW		
<b>Client:</b>	Sport Wales	<b>Reference:</b>	S240102.2
<b>Author:</b>	John Mitchener	<b>Report Date:</b>	12 January 2024
<b>Surveyor:</b>	John Mitchener	<b>Survey Date:</b>	05 January 2024

### TERMS OF REFERENCE

TR33 Environments were instructed by Sport Wales to undertake and arboricultural assessment of all trees at Sport Wales National Centre, Sophia Gardens, Cardiff CF11 9SW (hereafter referred to as 'the Site').

The primary purpose of the assessment is to advise on the discharge of the duty of care to manage the risk from trees. This duty of care arises in civil law and comprises a common law duty of care to take reasonable care to avoid acts or omissions that cause a foreseeable risk of injury to persons or property.

Where appropriate, general advice relating to the management of trees within the Site is also provided. This advice is based upon the surveyor's observations at the time of the visit, is advisory only and is delivered without knowledge of any site management aims and objectives.

### ASSESSMENT METHODOLOGY

Trees have been assessed in accordance with the methodology described in **Annex B - Assessment Methodology**. Assumptions and limitations associated with the assessment are detailed in **Annex C: Limitations and Assumptions**, relevant photographs are presented in **Annex A – Photographs** and a glossary of terms is included in **Annex D: Glossary of Terms**.

### RESULTS

The results of the assessment are included within **Table 1: Assessment Results**. Tree locations are shown in **Figure 1**.

A summary of the assessment is as follows:

#### *Tree Risk Assessment*

- All trees within the Site were subject to a basic level of visual assessment. A basic assessment requires observation for tree features which may increase the likelihood of tree failure or generate an unacceptable or intolerable level of risk.

- A single tree was identified as presenting risk related features and was therefore subject to a detailed assessment. This tree is a semi-mature tulip tree *Liriodendron tulipifera* which is located on land immediately north of the car park. Its tag number is 539.
- Tree 539 exhibits crown dieback and deadwood formation on its southwestern side. This includes the part of the crown which overhangs the car park. The deadwood is at increased risk of breakage and its presence in this location presents a Not Tolerable risk of damage to parked cars. On this basis, deadwood should be removed as soon as is reasonably practicable.
- Deadwood formation in a semi-mature tree is often symptomatic of root dysfunction and may represent the initial symptoms of a more significant disease or episode of physiological decline. On this basis it would be prudent to ensure tree 539 is monitored, at least initially, on an annual basis to identify whether further deadwood is formed, or other symptoms appear. Tree 539 should therefore be re-inspected no later than August 2025.

### *Management Recommendations*

Five trees and one tree group were identified as likely to benefit from a degree of proactive management. Management of these trees is not required for safety reasons but may be considered as a matter of good arboricultural practice. Recommendations for remedial work may be undertaken when convenient.

- One 'not tagged' common beech tree *Fagus sylvatica* whose crown is obstructing a nearby lighting column. This tree is within the ownership of Cardiff Council but, due to being suppressed by larger neighbouring trees, has developed a crown which extends across the property boundary and into the Site. The crown of this tree is obstructing a lighting column which is also at risk of damage from swaying branches.

The crown of this tree should be pruned back to obtain a 1-2m separation distance from the lighting column.

- Tree 535 is a young common beech with a drawn form, and which is heavily suppressed by larger neighbouring trees. It is within the ownership of Cardiff Council but has a stem which leans across the property boundary close to the top of the Site security fencing. This tree exhibits a growth habit which means that it is growing close to the corner of the nearby building and, if not managed, has branches which will grow to contact, and potentially damage, the roof of the nearby building.

Tree 535 should be reduced in height to the top of the adjacent wire boundary fence. This will remove the portion which overhangs the property boundary and will prevent future growth from causing structural damage to the adjacent building.

- One 'not tagged' tree group includes a number of young/semi-mature common beech trees with branches which are either low over the car park or unreasonably encroach towards the building located in the north-eastern corner of the Site. Also included are several larger mature lime trees with lower branches which have been previously pruned and which have subsequently regrown.

Where practicable, this tree group should be crown lifted to 5.2m over the car park. Where older trees have substantial branches below this height then they should be retained and trimmed back to the previous pruning points. Trees near the building in the north-eastern corner should have their branches pruned to obtain 3m clearance from the building roof and

sides. This work will ensure that the car park can accommodate the movement of high-sided vehicles such as skip lorries and that the possibility of future building damage is avoided.

- Trees 536, 537 and 538 are mature limes. All trees exhibit a degree of deadwood within their crowns with trees 537 and 538 also having epicormic growth the either their stem and/or branches.

All trees should have deadwood over 25mm diameter removed from their crowns. This is necessary to prevent deadwood falling onto buildings, an access road and nearby structures. Although the risk of falling deadwood causing substantial damage is low the possibility cannot be entirely discounted, and pre-emptive removal is advised.

Trees 537 and 538 are located within an island in the middle of the access road to the car park. These trees have been historically crown lifted to prevent them obstructing the passage of vehicles but now exhibit a degree of regenerative growth in the form of epicormic shoots and small branches. These shoots and small branches are starting to restrict the access of high-sided vehicles and should preferentially be removed. Removal is only required at, or below, the height to which they have been historically crown lifted.

#### *Statutory Controls*

- The Site is located within the Cathedral Road Conservation Area. This means that, subject to certain limited exemptions, Cardiff Council must be provided with six weeks' notice of the intention to undertake any tree work.

**Table 1: Assessment Results**

Tag Number	Species	Height (m)	Stem Diameter (mm)	Crown Spread (m)	Notes	Risk	Highest Risk Is	Recommended Remedial Work
<b>Tree not tagged</b>	Fagus sylvatica (common beech)	6	250	8	Offsite tree (Cardiff Council) - Suppressed; Poor form; Branch extends horizontally and obstructs lighting column	Management Recommendation	-	Shorten horizontal branch to side lateral to obtain 1m-2m clearance from lighting column; Trim remaining branches to obtain 1-2m clearance from lighting column

Tag Number	Species	Height (m)	Stem Diameter (mm)	Crown Spread (m)	Notes	Risk	Highest Risk Is	Recommended Remedial Work
<b>Tree group not tagged</b>	Fagus sylvatica (common beech); Tilia sp. (lime)	-	-	-	Low branches (<5.2m clearance) over car parking area; Car park is on occasion used by high-sided vehicles meaning that branches potentially obstruct access Some low branches encroaching towards building in north-eastern corner of the Site	Management Recommendation	-	Crown lift over car park - crown lift to 5.2m where possible or to height of lowest significant branch; Re-pollard branches which have been previously cut back Where practicable, crown lift to obtain 3m clearance from roof of adjacent building. Shorten upper branches to obtain 3m clearance from wall of adjacent building
<b>535</b>	Fagus sylvatica (common beech)	10	125	3	Offsite tree (Cardiff Council) - Suppressed; Crown encroaching towards roof of nearby single storey building	Management Recommendation	-	Reduce height to top of adjacent wire fence (i.e. cut back to boundary)
<b>536</b>	Tilia sp. (lime)	26	1300	8	Deadwood within crown >25mm diameter	Management Recommendation	-	Remove deadwood >25mm diameter from crown over access road, smoking shelter and prefabricated building

Tag Number	Species	Height (m)	Stem Diameter (mm)	Crown Spread (m)	Notes	Risk	Highest Risk Is	Recommended Remedial Work
537	Tilia sp. (lime)	26	1000	7	Deadwood within crown >25mm diameter; Epicormic growth to lower stem	Management Recommendation	-	Remove deadwood >25mm diameter from crown; Remove epicormic growth from stem up to crown break
538	Tilia sp. (lime)	26	1000	7	Deadwood within crown >25mm diameter; Canopy low over access road	Management Recommendation	-	Remove deadwood >25mm diameter from crown; Remove epicormic from lower branches; Reduce re-growth back to historical pruning points on lower limbs to a height of approximately 5.2m
539	Liriodendron tulipifera (tulip tree)	13	350	4	Dead/dying branches over car park	Not Tolerable	Deadwood failure into car park	Remove dead/dying branches; Re-inspect before August 2025 to confirm whether further deadwood has formed within the crown



LEGEND:

- Assessed Tree
  - Risk - Not Tolerable
  - Management Work Required
- Assessed Tree Group
  - Management Work Required
- Other Information
  - ▭ The Site

0 10 20 30 40 m

DRAWING TITLE:  
**Tree Location Plan**

CLIENT:  
**Sport Wales**

PROJECT:  
**Sport Wales National Centre**

DATE: **12/01/2024** | SCALE @ A4: **1:1,250**

DRAWING REF:  
**Figure 1**

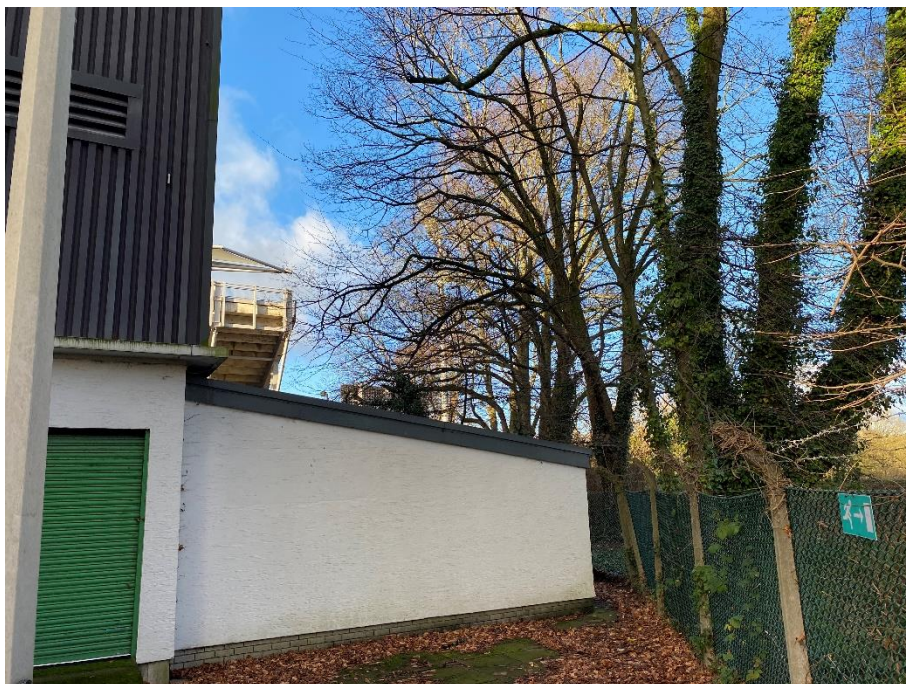


## **ANNEX A – PHOTOGRAPHS**

***Photograph 1: Not tagged common beech obstructing lighting column***



***Photograph 2: Not tagged tree group – branches encroaching on building***





**Photograph 3: Not tagged tree group – low branches over car park**



**Photograph 4: Tree 538**



## **ANNEX B - ASSESSMENT METHODOLOGY**

TR33 uses VALID<sup>1</sup> to assess the level of risk associated with surveyed trees. VALID is a tree risk assessment process which applies ToR and ISO 31000 - Risk Management<sup>2</sup> to tree risk-benefit management and assessment.

### **STRATEGY**

VALID conforms to the following strategic principles in terms of tree risk assessment.

#### **Benefits and Risk**

Trees provide many benefits including visual amenity, timber, fruit, wildlife habitat, pollution filtering, and reducing the harmful effects of both weather and climate change. Trees also have important social value as part of our culture, history, or because they commemorate an important event. Furthermore, there is also an ever-increasing body of scientific evidence which demonstrates that trees are essential for our physical health, mental wellbeing, and quality of life.

Compared to other everyday risks which we readily accept, the overall risk from falling trees or branches is extremely low. The annual risk of being killed or seriously injured by a tree is less than one in a million. This means that there is greater risk from driving 250 miles than from injury due to falling branches and trees during an entire year. Being killed or injured by a tree is a rare event; one that usually happens during severe weather.

We cannot be an insurer of nature, and trees are living structures that sometimes shed branches or fall over. However, this usually happens because of severe weather or because they have an obvious risk feature. Since we need the many benefits from trees, we must accept we cannot remove all the risk. Trees also drop leaves, bark, cones, nuts, and fruits, but the risk from this natural debris falling is so low that it is considered as socially and legally acceptable.

#### **Duty of Care**

Tree owners have a duty of care to manage the risk from their trees. The duty requires that management should be reasonable, proportionate, and reasonably practicable. That means there is a balance to be struck between the many benefits trees provide, the risk, and the costs of managing the risk. By taking a balanced approach, we do not waste resources by reducing risk - and losing benefits - when the risk is already acceptable or tolerable.

Furthermore, the Law expects us all to act reasonably and responsibly. When severe weather is forecast, we can manage our exposure to the higher risk from tree failure by not going out. If we go out, we are choosing to accept some of the risk.

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<sup>1</sup> [Tree Risk-Benefit Management & Assessment | VALID \(validtreerisk.com\)](https://www.validtreerisk.com)

<sup>2</sup> International Organisation for Standardisation., 'ISO 3100 Risk Management', 2022 [ISO - ISO 31000 — Risk management](https://www.iso.org/standard/72431.html)

## Risk Tolerance

The Tolerability of Risk Framework (ToR) is an internationally recognised approach to making risk management decisions. Duty holders use it where they manage a risk that is imposed on the public. ToR defines 'broadly acceptable' and 'unacceptable' levels of risk. Between them is a region where the risk is 'tolerable' if it is 'as low as reasonably practicable' (ALARP). Put simply, ALARP means the risk is tolerable if the costs of the risk reduction are much greater than the value of the risk reduction. VALID manages risk to an acceptable or tolerable level.

## METHODOLOGY

VALID is applied in the form of an **Active Assessment**. Active Assessment involves looking for tree features where the risk might not be acceptable or tolerable. It has three levels to it that increase in depth of evaluation from **Basic**, to **Detailed**, and then **Advanced**.

A flowchart illustrating the active assessment process is provided in **Figure 2**.

### Basic Assessment

All trees are subject to a basic assessment. At this level of assessment trees are observed to identify obvious features where the risk might not be acceptable or tolerable. Trees are also visually assessed for features that might significantly increase the likelihood of failure. If such features are identified, then a detailed assessment is undertaken.

The basic assessment is conducted from an accessible location and from a position of safety. Unless a tree has a safety-related feature which is sufficient to warrant conducting a detailed assessment, then the level of risk is deemed acceptable.

If there are any trees that require a detailed assessment, but cannot be accessed because of climbing plants, undergrowth, hedgerows, boundaries, or basal growth, or because the ground is too difficult, the requirement to provide access and undertake further assessment will be recorded as recommended remedial work.

### Detailed Assessment

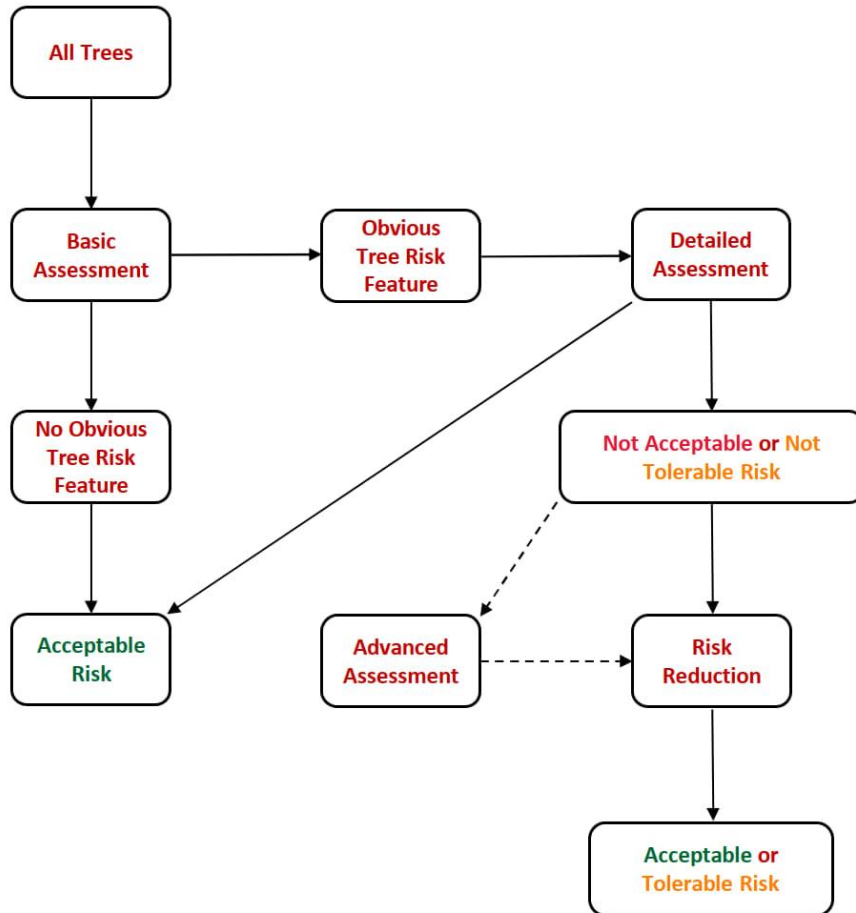
A detailed assessment will be conducted on trees that are identified during a basic assessment as having risk related features.

The assessment will be done from ground level with VALID's Tree Risk App. If any tree is identified as requiring emergency work, this will be reported via telephone, email or verbally before the surveyor leaves site.

### Advanced Assessment

In situations where additional information is required to inform the likelihood of failure, an advanced assessment can be conducted. An advanced assessment may be appropriate in instances where a tree has decay which may result in significant strength loss, and it is necessary to find out whether the tree is strong enough. Or, where an aerial inspection is required to take a closer look at the upper stem and branches.

**Figure 2: VALID Active Assessment Process**



## RISK RATINGS

VALID provides risk ratings using four easy to understand traffic light-coloured categories. These are described in **Table 2**.

Risk ratings have limitations that depend on the level of assessment at which they are made. For instance, when undertaking a basic assessment, if there are no obvious tree risk features, then the risk is acceptable at that level of assessment. A detailed or advanced assessment is an increase in depth of evaluation, which might reveal features that were not apparent at a basic level and could mean a higher risk. However, conducting higher levels of assessment, with the additional financial costs, when there are no obvious features to trigger it is not reasonable, proportionate, or reasonably practicable.

**Table 2: VALID Risk ratings and risk reduction requirements**

VALID risk rating	Risk reduction
<b>Not Acceptable</b>	Risks will be reduced to an Acceptable level. Mitigatory work to be undertaken as a priority.
<b>Not Tolerable</b>	Risks will be reduced to an Acceptable level, but with a lower priority than red Not Acceptable risks. Mitigatory work to be undertaken as soon as is reasonably practicable.
<b>Tolerable</b>	Risks do not need to be reduced but may require an increased frequency of assessment than green Acceptable risks. Completion of mitigatory work will avoid need for an increased frequency of assessment and may prevent the development of Not Acceptable or Not Tolerable risks.
<b>Acceptable</b>	Risks do not need to be reduced. Completion of mitigatory work is recommended based on good arboricultural management and/or to prevent or abate a nuisance

## **ANNEX C: LIMITATIONS AND ASSUMPTIONS**

This report is subject to the following assumptions and limitations.

### **VALIDITY PERIOD**

Trees are biological entities which may be affected by a wide range of biotic and abiotic factors. Their structural and physiological condition can therefore change over a limited period.

The recommendations made in this report do not take account of the effects of extremes of climate, vandalism, or accident, whether physical, chemical or fire. TR33 Environments cannot therefore accept any liability in connection with these factors, nor where prescribed work is not conducted in a correct and professional manner in accordance with current good practice. The authority of this report ceases after 12 months from the date of the survey or when any site conditions change, or pruning or other works unspecified in the report are conducted to, or affecting, trees within the Site, whichever is the sooner.

### **WALKOVER SURVEY**

#### **Site Occupancy**

Unless otherwise stated, site occupancy is defined by the surveyor based upon observations made at the time of the survey. Therefore, it may not account for moveable or transitory targets the presence of which cannot be foreseen.

## Seasonality

Whilst arboricultural surveys are not seasonally limited it is the case that certain pests and diseases may only be evident at specific times of the year.

Seasonally apparent pests and diseases include certain wood decaying fungi such as the Giant Polypore (*Meripilus giganteus*) where fruiting bodies are short-lived, and the initial stages of root decay may not result in other identifiable symptoms. They also include diseases such as ash dieback (*Hymenoscyphus fraxineus*) where, in the initial stages of infection, foliar symptoms can be the main method of identification, but which are absent during the winter months.

Survey data is therefore based upon observations made at the time of the site visit. The identification of seasonally apparent hazards must be addressed as part of a wider risk management strategy and are outside the scope of this assessment.

## Access

The survey has only been undertaken from land within the client's ownership, from public land or from areas where formal access has been arranged.

Whilst all reasonable efforts are made to view trees from the required angles this may not always be possible where they are located on the Site boundary, where safe access cannot be assured or where dense vegetation obscures views.

## WILDLIFE AND CONSERVATION

Trees have the capacity to provide habitat for species such as bats, birds, and mammals some of which may be protected under UK or European Legislation. It is a statutory offence to injure, kill or disturb any protected species or to damage or destroy their breeding site or resting place. It is also an offence to disturb any nesting bird.

Wildlife and conservation matters are beyond the scope of this report although incidental comments may be made where these are of direct relevance to the arboricultural survey or subsequent assessment. It is therefore advisable that specialist ecological advice is sought prior to any tree removal or maintenance activities. If applicable, then the recommendations contained within this report should be reviewed considering any ecological constraints which may be identified.

## ANNEX D: GLOSSARY OF TERMS

<b>Arisings:</b>	any parts of the tree (including stem, roots, branches, and leaves) derived from the tree during tree work operations.
<b>Bracket:</b>	the fruiting body of a wood decaying fungus.
<b>Canker:</b>	area of dead bark killed by a pathogen.
<b>Cavity:</b>	a hole in the woody part of a tree caused by decay or damage.
<b>Co-dominant:</b>	upward growing stem/branch with a similar height and disposition as another stem/branch. Where such stems/branches arise from the same point then their stability or the integrity of their attachment could be compromised.

<b>Coppicing:</b>	cutting trees close to ground level with the intention of encouraging regrowth in the form of multiple shoots.
<b>Crotch:</b>	forked region formed by the junction of a branch and the stem, or by two branches.
<b>Crown:</b>	main foliage-bearing part of the tree.
<b>Crown lifting:</b>	removal of lower branches to achieve a stated vertical clearance above ground level or another surface.
<b>Crown reduction:</b>	the shortening of twigs and branches to reduce the height and/or spread of the crown.
<b>Crown thinning:</b>	selective removal of live branches to reduce crown density.
<b>Dieback:</b>	condition in which the branches in the crown die from the tips towards the centre.
<b>Epicormic growth:</b>	shoots growing from a woody stem or branch.
<b>Heartwood:</b>	central wood within a stem.
<b>Included bark:</b>	bark lodged in the union between and branch and parent stem, in the crotch between two branches, or between the bases of co-dominant stems, indicating potential weak attachment.
<b>Phototropic:</b>	stem or branch whose growth is influenced by light; growing towards light.
<b>Pollard:</b>	a tree which has been cut so as to encourage the formation of numerous branches arising from the same height on the main stem and principal branches.
<b>Stem:</b>	principal above ground structural component of a tree that supports the branches.
<b>Vitality:</b>	overall measure of physiological and biomechanical processes, in which high vitality equates with near optimal function and low vitality equates with sub-optimal function.
<b>Windthrow:</b>	tree failure due to uprooting caused by wind.

