

Tree Experts in the
Built Environment



John Morris Arboricultural Consultancy

Tree Risk Assessments

Trees, Planning & Development

Expert Witness

Arboricultural Clerk of Works

Government Support

Client: South Dublin County Council

Project: Carrigmore Park

Site: Carrigmore Park
Citywest
Dublin

Date: 11th September 2023

Ref: 23-429-03

Version: 1

ARBORICULTURAL REPORT



DOCUMENT CONTROL SHEET

Originating Author:	Date:	Version	Notes:
RC	11.09.23	1	Original document
Reviewed By:			
JM	11.09.23	1	Quality Control
Approved for Issue By:			
JM	12.09.23	1	Final document for Client

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Purpose of Document

Landowners have a statutory duty of care¹ to do all that is reasonably practical to ensure that people are not exposed to a risk to their health and safety. This duty can be fulfilled by having a system in place to control the risk from trees.

The purpose of this report is to offer guidance on the management of trees that have the potential to impact targets. In doing so, it provides the landowner with a system that identifies, evaluates and manages significant risks arising from trees, with recommendations for the implementation of a reasonable system for control of those risks.

The sum of these elements will provide South Dublin County Council with a defensible risk management system through the provision of:

- A clear audit trail;
- A tree risk assessment; and
- A clear management system to detail what action will be taken to reduce the risk through mitigation of hazards.

The report also provides an assessment of the general health and condition of trees within the park. It provides recommendations for management interventions that may be required for reasons of good arboricultural practice to ensure longevity of trees, and specific or long-term interventions for the management of high value trees, or those that contribute to the historical, cultural, ecological or amenity value of the park.

¹ Occupiers Liability Act 1995



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ATTACHMENTS

DOCUMENT TITLE	DOCUMENT REFERENCE
TREE SCHEDULE	23-429-02
TREE LOCATION PLAN	23-429-03



1. INTRODUCTION

Instruction

- 1.1. John Morris Arboricultural Consultancy Ltd was instructed by South Dublin County Council to assess the health and condition of trees at Carrigmore Park in Citywest, Dublin (hereinafter referred to as 'the Park').

Scope

- 1.2. The scope of the inspection has been defined by South Dublin County Council as a ground level survey to assess trees and hedgerows for the purposes of tree risk management and to assist with proposals for re-development of the park.
- 1.3. The extent of the survey is illustrated in Figure 1.



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Figure 1. Extent of survey area at Carrigmore Park (Source: South Dublin County Council).

Tree Inspection Methodology

- 1.4. Managing the risk from trees falls on the owners and managers of the land on which they grow and they have a legal duty of care to ensure that risks are reduced to a reasonable, practicable and proportional level. This needs to be put in context however, as the overall risk from trees to human safety is recognised as being extremely low, representing about a one in 10 million

chance of an individual being killed by a tree (or part of a tree) in any given year.² Although large trees can present greater risks, they also provide the most benefits. Balancing risk and benefit are key and the wide-ranging benefits that trees provide to the environment, economy and society as a whole are becoming increasingly well recognised.

- 1.5. A defensible tree risk management policy is one that can demonstrate providing a duty of care based on reasonable care, reasonable likelihood and reasonable practicability. Being reasonable involves taking actions proportionate to the risk which has both reactive elements – responding to issues from dangerous trees as they arise, and proactive elements – pre-emptive procedures to reduce the likelihood of potential issues occurring in the future.
- 1.6. The inspection of trees has been undertaken in accordance with industry best practice guidelines and following the Visual Tree Assessment methodology (VTA) devised by Mattheck and Breloer (1994). The risk assessment element has been carried out following the recommendations and process defined by the National Tree Safety Group ‘Common Sense Risk Management of Trees’ (2011) and International Society of Arboriculture (ISA) Tree Risk Assessment Best Practice Guidance.
- 1.7. These processes identify all potential targets that could be impacted by the failure of a hazard. They then identify all potential hazards relating to the tree. Each hazard is then assessed to consider the likelihood of failure, the likelihood of the target being impacted in the event of a failure, and the consequence of that impact taking into consideration protection factors (e.g. other trees/structures between the identified tree and the target). A risk rating is then derived from the combination of these factors.
- 1.8. A summary of the risk assessment methodology can be found in Appendix 1.
- 1.9. The main designated targets included within the survey areas at Carrigmore Park include:
 - Residential dwellings and gardens surrounding the park
 - Carrigmore Green and Verschoyle Green
 - Carrigmore Car Park
 - Carrigmore play park

Caveats & Limitations

- 1.10. The trees were assessed on 30th and 31st August 2023.
- 1.11. Tools used during the assessment have been limited to a sounding mallet, probe or binoculars. No invasive or diagnostic equipment has been used, nor have any aerial inspections, belowground root investigations; or soil, leaf or root samples been taken for further testing or analysis.
- 1.12. The information gathered during the survey pertains to that moment of time. Any changes to the site or local environment following the inspection may have an impact on the trees. This report cannot consider events which have occurred without the authors knowledge. Trees are

² NTSG Common Sense Risk Management of Trees

self-optimising, biomechanical structures that grow in and react to the environment in which they are located. They are living organisms that live and die and are capable of being wounded or infected by objects or other organisms. This means that even a mechanically perfect tree could be damaged or caused to fail by extreme events (e.g. weather) that overload specific areas (break points).

- 1.13. All tree works recommended within the report should be undertaken by a qualified and insured tree contractor and in accordance with BS3998:2010 *Tree Work Recommendations*.

Frequency of Inspection

- 1.14. The assessment of risk has been determined by considering the likelihood of a noted hazard failing within three years from the date of the assessment.
- 1.15. The reason for this is due to maturity, size, and location of these trees in proximity to high occupancy locations and targets.

2. TREE SURVEY

Overview

- 2.1. Carrigmore Park is a well-used, high occupancy public open space, popular with dog walkers and young families enjoying informal recreation within a busy residential area. It consists of an open landscape of amenity grassland with mature hedgerows and pockets of scrub. Mature tree cover is limited to a number of larger ash specimens within the hedgerows adjacent to residential properties and agricultural lands to the south west and the park car park. There has been a significant amount of planting of young trees in recent years along the northern boundary, predominately of oak and cherry. No high-risk trees were identified during the survey, the majority of the works focused around managing the ash population and recommending pro-active works for younger semi-mature trees.

Young trees

- 2.2. The vast majority of semi-mature planted trees around perimeter all have repeated damage to the base and stem from grounds maintenance machinery (mowers/strimmers). A minimum of 0.5m radius buffer of uncut grass should be left around stems or consideration given to the creation of wildflower meadows around plantations that are cut annually to prevent further damage and reduce compaction in the rooting area. The majority of the trees are well established and are young enough to cope with minor damage and have potential to deliver ecosystem services in the medium to long term. Some formative pruning of specimens is required to remove broken or over-extended limbs or to maintain a clear stem. Some trees have been vandalised or are in such poor health or form that removing and replanting would be the most pragmatic option.

Ash

- 2.3. The mature ash within the field boundary bordering the residential properties to the south are generally in fair health although Ash Dieback (*Hymenoscyphus fraxineus*) is present. Those specimens displaying intermediate to advanced symptoms should be removed, the larger trees are generally more resilient to Ash Dieback and provide significant landscape, ecological and

amenity benefits – those displaying very early stage die back should be assessed annually to monitor crown condition. The removal of dense ivy cover at the base of some will aid future inspection. The mature ash specimens adjacent to the agricultural boundary are more advanced with Ash Dieback, those with little target can be allowed to decline naturally within the hedgerow/field margin, with all the associated benefits that declining mature trees provide. Others, bordering the amenity grassland a little further west have a higher footfall beneath the canopy and are recommended to be reduced to standing snags or monoliths to provide valuable standing deadwood habitat. An ash tree by the car park is recommended for crown reduction as well reinstatement of its root protection area which has been encroached by current ground works.

Hedgerows

- 2.4. The mature hedgerows that cut across the park and form field boundaries, provide a direct cultural link to the area's pastoral, rural landscape, in what is now a rapidly developing residential suburb. Mature hawthorn dominates with pockets of grey willow and elder and dense vegetation. There is an opportunity to re-stock gaps in hedgerows with a native species mix as well as planting of standards within the hedge to enhance landscape and species diversity.

Tree diversity

- 2.5. The current mix of trees is limited to a small number of semi-mature species dominated by oak, field maple and wild cherry as well as a mature population of ash. Future tree planting should consider a much more diverse range of species to develop a resilient tree population within the park. Vandalism of young trees is an obvious issue and more robust metal mesh guards for new trees might be a consideration. The planting of small groups and copses to create more of a parkland landscape and the mulching of younger trees to aid establishment and strong root growth would also be beneficial.

3. AUTHORS QUALIFICATION & EXPERIENCE

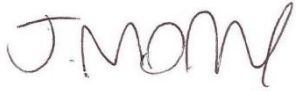
About the Authors

- 3.1. This report has been written by John Morris (Director & Principal Arboricultural Consultant) and Robin Crowther (Arboricultural Consultant).
- 3.2. John Morris has a First Class BSc (Hons) in Housing (Ulster University) and a Post Graduate Diploma (UK NQF Level 7) in Arboriculture & Urban Forestry (Myerscough College & University of Central Lancashire). John is a Professional Member of the Arboricultural Association, Associate Member of the Institute of Chartered Foresters and has worked in the arboricultural sector for over 10 years. John regularly undertakes continuous professional development in all areas of arboriculture and wider business administration.
- 3.3. Robin Crowther has a second-class BA (Hons) in Geography (Kings College London), a Level 4 Diploma in Arboriculture and is currently undertaking an MSc in Arboriculture & Urban Forestry (Myerscough College & University of Central Lancashire). Robin is a Technician member of the Arboricultural Association, Student member of the Institute of Chartered Foresters and has

worked in the land management and arboricultural sectors for 20 years. Robin regularly undertakes continuous professional development in all areas of arboricultural study.

Signed:

Date: 11th September 2023



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Appendix 1 - Tree Risk Assessment Methodology

In order for risk to exist, there needs to be a hazard. A hazard is defined as something that has the potential to cause harm. In relation to trees, any part of a tree that could fail has the potential to be a hazard. Therefore, all trees are potentially hazardous.

A hazard is something with the potential to cause harm, whereas risk is the likelihood of potential harm from that hazard being realised. The extent of the risk will depend on:

- (i) the likelihood of that harm occurring;
- (ii) the potential severity of that harm, i.e. of any resultant injury or adverse health effect; and
- (iii) the target (person, property or infrastructure) which might be affected by the hazard.

The International Society of Arboricultural has devised a programme for tree risk assessment which assesses tree related risk uses two matrices to consider the likelihood of failure, the likelihood of a failed part impacting a target and the severity of that impact. The resulting output of the matrices provides an assessed risk rating (Extreme, High, Moderate & Low), but the management of that risk is retained with the landowner.

Every person or organisation will have a different attitude to risk and therefore the risk threshold will differ. The Risk Assessment does not seek to set a threshold but instead to provide a reference point for the risk manager to base any decision upon.

In order to assist in determining the level of risk associated with a hazard, the risk assessor needs to follow several stages:

- 1) Assessment of the potential target: The assessor must consider everything, whether inanimate or animate, which could be impacted by a hazard. Having considered what each target it, the assessor must then provide an occupancy rating based on the criteria in Table 1.

Table 1 - Occupancy Rates

<u>Occupancy Rates</u>	
Constant	A target is present at all time, 24 hours a day, 7 days a week
Frequent	A target is occupied for a large portion of the day or week
Occasional	The target zone is occupied by people or targets infrequently or irregularly
Rare	The target zone is not commonly occupied by people

- 2) Having considered the potential target/s, the risk assessor must then consider the likelihood of each specified hazard failing. **Table 2** provides details of the likely failure definitions.

Table 2 - Likelihood of failure

<u>Likelihood of Failure</u>	
Imminent	Failure has started or is most likely to occur in the near future, even if there is no significant wind or increased load
Probable	Failure may be expected under normal weather conditions within the specified time period
Possible	Failure could occur, but is unlikely during normal weather conditions within the specified period
Improbable	The tree or part is not likely to fail during normal weather conditions and may not fail in many severe weather conditions, within the specified period.

- 3) Once the likelihood of failure has been determined, the assessor must then consider the likelihood of the hazard impacting on the target (on the assumption that the hazard has failed). Table 3 provide a summary of the likelihood of impact definitions.

Table 3 - Likelihood of impact

<u>Likelihood of Impact</u>	
High	Failed tree or tree part will most likely impact the target
Medium	Failed tree or part is as likely as not to impact the target
Low	Not likely that the failed tree or part will impact the target
Very Low	The likelihood of the felled tree or tree part impacting the target is remote.

- 4) Having assessed the potential for failure and the potential of a hazard impacting the target, the assessor needs to consider the consequence of the hazard impacting the target. Table 4 provides details of the consequence definitions.

Table 4 - Consequence of failure

<u>Consequence of Failure</u>	
Severe	Serious personal injury or death, damage to high-value property or disruption of important activities
Significant	Personal injury, property damage of moderate to high-value or considerable disruption
Minor	Very minor personal injury, property damage of low to moderate-value, or small disruptions to traffic
Negligible	No personal injury, low value property damage, or disruption that can be mitigated or repaired.

Once all of the likely or potential outcomes have been considered, the risk assessor is able to reach a conclusion as to the risk rating, using the matrices provided in Table 5 - Likelihood of Failure vs Likelihood of Impact Table 5 and Table 6.

Table 5 - Likelihood of Failure vs Likelihood of Impact

		Likelihood of Impact			
		Very low	Low	Medium	High
Likelihood of failure	Imminent	Unlikely	Somewhat Likely	Likely	Very Likely
	Probable	Unlikely	Unlikely	Somewhat Likely	Likely
	Possible	Unlikely	Unlikely	Unlikely	Somewhat Likely
	Improbable	Unlikely	Unlikely	Unlikely	Unlikely

Table 6 - Risk Rating

		Severity of Impact			
		Negligible	Minor	Significant	Severe
Results of Table 1	Very Likely	Low	Moderate	High	Extreme
	Likely	Low	Moderate	High	High
	Somewhat Likely	Low	Low	Moderate	Moderate
	Unlikely	Low	Low	Low	Low

The definition for each risk rating has been derived from published guidelines relating to the management of risk from falling trees or branches (SIM 10/2007/05)³, which establishes the principle that the objective of a risk assessment system is to reduce a risk to “as low as reasonably practicable” (ALARP)⁴.

The risk system provides four levels of risk rating, as outlined in Table 8.

Table 7 - Risk Assessment Ratings

Rating	Description
Extreme	Failure is imminent with a high likelihood of the hazard impacting a defined target. The consequences of such an impact are severe, and likely to lead to death or highly significant injury. Remedial action will be required as soon as possible.
High	The failure of a hazard is highly likely to occur and the consequence of that hazard impacting a target would be significant, leading to a severe injury or damage to property. Remedial action will be required as soon as reasonably possible.
Moderate	The potential failure of a noted hazard is relatively low or minor, although it is still probable that it would impact a target. Mitigation options must be considered although the timing will be dependent on the tolerance of the landowner.
Low	Low risk hazards are those where the consequences of a hazard impacting a target would be insignificant or negligible, and/or where the likelihood of such an impact is low. Remedial action may be desirable but not necessary.

³ <http://vscg.org/documents/uploads/HSESIM.pdf>

⁴ <http://www.hse.gov.uk/risk/theory/alarplance.htm>



The principle that has been adopted for the site has been to ensure that mitigation is proposed to reduce risks to as low as is reasonably possible. Where trees have been identified as presenting hazards that are defined as low risk, we have made recommendations for works that are either precautionary or provide proactive tree management options.

In some cases, recommended actions are given as monitoring or further inspection, rather than a need for physical works to the trees.