

**HAZARD EVALUATION / CONDITION ASSESSMENT and
PLAN OF REMEDIAL WORKS
for
Newbridge Co. Kildare.**

PREPARED BY

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1.0 EXECUTIVE SUMMARY

Arbor-Care Ltd (Professional Consulting Tree Service) was retained Studio Red Architects on behalf of Kildare County council, to undertake a hazard evaluation and condition assessment on a row of early mature Lime trees located on the main street outside the Riverbank centre.

The purpose of the survey was to assess the current condition of the trees and to determine whether they are in a good enough condition to allow them to be retained not the near future.

The objective of the report is to ensure that all the surveyed trees remain at a level of acceptable risk whilst maintaining their over aesthetic appeal and integrity. The report will provide a hazard rating and condition assessment for each tree. By commissioning the tree survey the site manager is taking pre-emptive measures to ensure that the trees on the site are maintained at a level of acceptable risk.

The following report and evaluation identifies the foreseeable hazards and risks that the assessed trees may pose. The goal of the hazard evaluation process is to assess the danger and risk associated with the trees. By conducting a systematic, thorough evaluation, the parts of the tree that are likely to fail are identified so that appropriate remedial action can be undertaken to reduce the hazard whilst maintaining the aesthetic value of the tree.

The report will also offer a timeframe for these works to be carried out based on the risk of a misfortune occurring, the report will also recommend a schedule of further inspections for the above trees in order to provide a regular management programme with the objective of further reducing the probability of an foreseen event occurring.

2.0 ASSIGNMENT.

1. To undertake a visual tree to hazard/condition assessment of the trees that may pose a health and safety risk to members of the public, and to prescribe the necessary remedial works required to minimise the risk of the hazard occurring also to assess their current condition
2. Present a written report on the inspection of the trees.

2.1 LIMITS OF THE ASSIGNMENT

Unless otherwise stated tree inspections have been undertaken from ground level and using non-invasive techniques only. Comments on the condition and safety of any tree relate to the condition of that tree at the time of the survey. It should be recognised that tree condition is subject to change due to, for example the effects of disease, wind or nearby development works. Changes in land use are also significant in respect of risk assessment. Trees should therefore be inspected at intervals relative to identified site risk. The findings in this report are valid for 12 months.

2.2 CONSTRAINTS AND REPORT TERMINOLOGY

2.2.1. Constraints Table

ITEM	RETAINED TREE PROTECTION DESCRIPTION
Tree works & operations	<i>Tree work is a hazardous occupation. All tree work contractors should be required to provide evidence that they are competent to undertake the required works and are adequately insured. The contractor should also be asked to provide a site specific risk assessment prior to commencement of any tree works. All tree works should be in accordance with BS: 3998 :2012 'Recommendations for Tree works'</i>

2.2.2. Terms of Tree Condition

- Deadwood - Wood that is dysfunctional
- Major Deadwood - Dead Branch/limb that is between 150- 250+mm in diameter
- Moderate Deadwood - Dead Branch/limb that is between 100-150mm in diameter
- Minor Deadwood - Dead branch/limb that is between 50-100mm
- Basal Cavity - Cavity/opening located at the lower region of the tree- ground level
- Stem Cavity - Cavity/opening located on the main stem/trunk of the tree
- Stem Wound - Wound/injury located on the stem/trunk of the tree
- Included Bark - Pattern of development at branch junctions where bark is turned inward rather than a pushed out U shaped union

2.2.3. Tree Pruning Terms

Crown Clean

This involves the removal of all dead, dying and diseased branches as well as crossing limbs. This form of tree pruning is not as aggressive as a full crown thin as it primarily deals with the removal of dead, dying and diseased branches which will improve the overall health of the tree

Crown Lifting (or Crown Raising)

Crown lifting is the removal of the lowest branches and/or preparing of lower branches for future removal. Good practice dictates crown lifting should not normally include the removal of large branches growing directly from the trunk as this can cause large wounds which can become extensively decayed leading to further long term problems or more short term biomechanical instability.

Crown lifting on older, mature trees should be avoided or restricted to secondary branches or shortening of primary branches rather than the whole removal wherever possible.

Crown lifting is an effective method of increasing light transmission to areas closer to the tree or to enable access under the crown but should be restricted to less than 15% of the live crown height and leave the crown at least two thirds of the total height of the tree.

Crown lifting should be specified with reference to a fixed point, e.g. 'crown lift to give 2.5m clearance above ground level'.

Crown Reduction

The reduction in height and/or spread of the crown (the foliage bearing portions) of a tree. Crown reduction may be used to activate mechanical stress on individual branches or the whole tree, make the tree more suited to its immediate environment or to reduce the effects of shading and light loss, etc. The final result should retain the main framework of the crown, and so a significant proportion of the leaf bearing structure, and leave a similar, although smaller outline, and not necessarily achieve symmetry for its own sake.

Crown reduction cuts should be as small as possible and in general not exceed 100mm diameter unless there is an over-riding need to do so. Reductions should be specified by actual measurements, where possible, and reflect the finished result, but may also refer to lengths of parts to be removed to aid clarity, e.g. 'crown reduce in height by 2.0m and lateral spread by 1.0m, all round, to finished crown dimensions of 18m in height by 11m in spread (all measurements approximate.)'.

Not all species are suitable for this treatment and crown reduction should not be confused with 'topping', an indiscriminate and harmful treatment.

2.2.4. Hazard Rating

Hazard ratings define the seriousness and extent of potential danger to site users. They assign a level of risk to activity in and around an individual tree. The greater the hazard rating the greater the risk associated with that tree. The hazard rating is obtained by assessing three key components.

1. ***The failure potential (1 to 4 points)*** Identifies the most likely failure and rates the likelihood that the structural defects will result in failure within the inspection period, for example, one point is given for defects that are minor such as dead twigs, 3 points if defects are high, having numerous significant defects such as a cavity, or multiple pruning wounds
 2. ***Size of the defect part (1 to 4 points)*** Rates the size of the part most likely to fail, the larger the part the greater for potential damage for example, 1 point is given for most likely failure being less than 10cm in diameter. 4 points is given for the most likely failure being greater than 75cm in diameter
 3. ***Target rating (1 to 4 points)*** Rates the use and occupancy of the area that would be struck by the defective area. For example one point for occasional use, 3 points for frequent use
- **Low risk**=Whole or partial tree failure is unlikely under normal conditions and if failure occurs the risk of damage is low.
 - **Moderate risk**=Whole or partial tree fail is likely to occur if remedial action is not taken and should failure occur there is a probable chance that the target will be impacted
 - **High risk**=Whole or partial tree failure is imminent and remedial action must be taken as soon as possible, the risk of the target being impacted is high

HAZARD RATING = FAILURE POTENTIAL + SIZE OF PART + TARGET RATING

2.2.5.

Risk Zone: A description of the observed target areas under or within falling distance of the tree. The zone reflects normal usage.

- Zone 1: Top priority zones include; near buildings, key areas of high traffic volumes such as roads; high pedestrian occupancy, such as tarmac paths & busy lawns. i.e. **'high'** occupancy by people & buildings.
- Zone 2: Mid priority zones include areas of high occupancy, but not necessarily high volumes of pedestrians and vehicle usage. Such areas exist around car parks, or close to access points where visitors are likely to congregate and linger beneath the crowns of trees. i.e. **'moderate'** occupancy by people & buildings.
- Zone 3: Areas of the park further away from roads and access points. It also includes minor footpaths, cycle lanes and bridle paths in more remote areas of the park that may be frequently used. In these areas the occupancy is lower as people tend not to linger. i.e. **'low'** occupancy by people & buildings.
- Zone 4: Areas with no access or restricted access. i.e. **'little or no'** occupancy by people or buildings.

Priority: On the basis of this assessment, an estimate of the likely urgency attached to the recommended tree works. The works are to be prioritised into one of the following categories:

- Priority A: Trees requiring **urgent** immediate attention. To be highlighted in red ink and an immediate phone call to the Park Superintendent or site manager. Works to be carried out immediately or within next 3 months, subject to resources.
- Priority B: Trees requiring essential attention, which are **high risk** due to major defects, action within 12 months, subject to resources.
- Priority C: Trees with defects, which would be considered **medium risk** and these desirable works to be carried out when resources permit, within 12 months if zone 1 or within 36 months for all other zones.
- Priority D: Items of work that are considered **low risk** and may be carried out as part of the regular maintenance of the site or not at all.

3.0 METHODOLOGY

The tree survey and visual condition assessment was conducted on 20th of February 2024. For the purpose of this report only the trees as set out in the tender were assessed. Tree tags from another survey were used

Significant trees can be equated as those trees whose visual importance to the surrounding area is sufficient to justify special efforts to protect/preserve and whose loss would have an irremediable adverse impact on the local environment. Significance can also be placed depending on the trees age, another variable to imply significance can be the aesthetic merit of the tree based on its unusual size, intrinsic physical features or outstanding appearance or occurring in a unique location or context, and thus provides a special contribution as a landmark or landscape feature.

All above parts of the trees were visually examined. Tree diameters (DBH) were estimated at 1.5 meter above grade as per standard arboricultural practice. Tree height was measured with the use of a clinometer (Where practical). A generalised system was employed to describe the overall health of the trees. The system uses a five tier rating scale with the following descriptors,

IMPORTANT NOTE

Specimen condition is based on a 5-tier rating system, where 100% would be a perfect species phenotype

- Poor = 1 - 30%
- Fair = 31 - 60%
- Good = 61 - 100%

Appendix 1 – Tree Inventory

Tree Inventory Legend

Tree Dimensions - All dimensions are in meters.

Ht - Tree Height

Crown clearance - Lowest canopy height (distance from ground level to the first live branch)

Crown spread - Tree Canopy Spread measured by radii at north, east, south and west

Dia. - Stem diameter at approx. 1.50m from ground level.

RPA - Root Protection Area, as a radius measured from the tree's stem centre.

Physiological Condition

Good - A specimen of generally good form and health

Fair - A specimen with defects or ill health that can be either rectified or managed typically allowing for retention

Poor - A specimen whom through defect, disease attack or reduced vigour has a limited longevity or may be unsafe

Dead - A dead tree

Structural Condition - Information on structural form, defects, damage, injury or disease supported by the tree

PMR (Preliminary Management Recommendations) – refers to Arboricultural actions or works considered necessary at the time of the inspection and relating to the existing site context and tree condition. *Note is also made of works considered as urgent.*

Age Class - Young: A tree, which has been planted in the last 10 years.

Semi -mature A tree that is less than 1/3 the expected height of the species in question.

Early mature: A tree, which is approximately 2/3's the expected height of the species in question.

Mature: A tree that has reached the expected height of the species in question, but still increasing in size.

Over mature: A tree at the end of its life cycle and the crown is starting to break up and decrease in size.

Species Common name is given; botanical name is also given upon its first entry, in *Italics*.

4.0 Tree Assessment

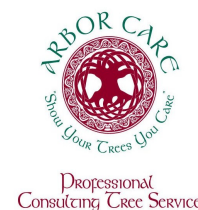
Tag #	Species Botanical Name	Age class	DBH (MM)	Height (M)	Condition	Structural/Physiological Observations	Hazard rating	PMR	Zone	Works required
The survey is commencing at the junction of Liffey Terrace and the Main street										
306	Lime	EM	220	6	Good	An early mature lime displaying a good overall condition. At the time of the assessment there was no evidence of any fungal fruiting bodies and/or basal defects. This tree has a well-balanced canopy and good u-shaped unions throughout. There is no evidence of footpath damage	Low	• No works required	1	Maintain at existing height
307	Lime	EM	220	6	Good	An early mature lime displaying a good overall condition. At the time of the assessment there was no evidence of any fungal fruiting bodies and/or basal defects. This tree has a well-balanced canopy and good u-shaped unions throughout. There is no evidence of footpath damage	Low	• No works required	1	Maintain at existing height
308	Lime	EM	110	6	Good	An early mature lime displaying a good overall condition. At the time of the assessment there was no evidence of any fungal fruiting bodies and/or basal defects. This tree has a well-balanced canopy and good u-shaped unions throughout. There is no evidence of footpath damage	Low	• No works required	1	Maintain at existing height

4.0 Tree Assessment

Tag #	Species Botanical Name	Age class	DBH (MM)	Height (M)	Condition	Structural/Physiological Observations	Hazard rating	PMR	Zone	Works required
309	Lime	EM	200	6	Good	An early mature lime displaying a good overall condition. At the time of the assessment there was no evidence of any fungal fruiting bodies and/or basal defects. This tree has a well-balanced canopy and good u-shaped unions throughout. There is no evidence of footpath damage	Low	No works required	1	Maintain at existing height
310	Lime	EM	180	6	Good	An early mature lime displaying a good overall condition. At the time of the assessment there was no evidence of any fungal fruiting bodies and/or basal defects. This tree has a well-balanced canopy and good u-shaped unions throughout. There is no evidence of footpath damage	Low	No works required	1	Maintain at existing height
311	Lime	EM	110	6	Good	An early mature lime displaying a good overall condition. At the time of the assessment there was no evidence of any fungal fruiting bodies and/or basal defects. This tree has a well-balanced canopy and good u-shaped unions throughout. There is no evidence of footpath damage	Low	No works required	1	Maintain at existing height
312	Lime	EM	210	6	Good	An early mature lime displaying a good overall condition. At the time of the assessment there was no evidence of any fungal fruiting bodies and/or basal defects. This tree has a well-balanced canopy and good u-shaped unions throughout. There is no evidence of footpath damage	Low	No works required	1	Maintain at existing height

Tag #	Species Botanical Name	Age class	DBH (MM)	Height (M)	Condition	Structural/Physiological Observations	Hazard rating	PMR	Zone	Works required
313	Lime	EM	200	6	Good	An early mature lime displaying a good overall condition. At the time of the assessment there was no evidence of any fungal fruiting bodies and/or basal defects. This tree has a well-balanced canopy and good u-shaped unions throughout. There is no evidence of footpath damage. There is a minor branch broken in the mid canopy.	Low	Remove the broken limb	1	Maintain at existing height

The above trees are all in a good condition. They are appropriate for their location and given their prominent location they are of high amenity value. It is recommended that they are crown reduced by 1-2m every 2nd year and to be maintained at this height



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Yours in Conservation,

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