

Hillcrest,
Raglan

Arboricultural Condition Survey 2022



Surveyed by

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12th April 2022



Mackley Davies Associates Ltd

Landscape Architecture . Environmental Planning . Tree Surveying

Pensaerniaeth Tirwedd . Cynllunio Amgylcheddol . Arolygu Coed



1 Introduction:

- 1.1 The following report was instructed by Pamela James and concerns the property of Hillcrest, Monmouth Road, Raglan NP15 2HQ. The report is intended to provide an assessment of the condition an existing horse chestnut tree on the roadside boundary of the property with particular emphasis on the impacts of recent construction works within the root protection area of the tree. In addition the tree has been inspected for any hazards, defects or other noteworthy characteristics to be included within the schedule.
- 1.2 The report is based upon data collected on a visit to the site made on 12th April 2022: weather conditions were cold and dry with adequate visibility for the purposes of the inspection. The tree assessment comprised a visual inspection carried out from ground level only, using hand tools such probes and a sounding hammer where appropriate. The inspections were intended to identify distinct defects and other failure-prone characteristics of the trees and the sites in which they are growing, where these features might give rise to hazard. It must nevertheless be recognised that no tree is entirely safe, given the possibility that an exceptionally strong wind or other unusual circumstances could damage or uproot even a mechanically 'perfect' specimen¹.
- 1.3 While every attempt has been made to provide a realistic and accurate assessment of the trees' condition at the time of inspection, no responsibility can be accepted for damage or injury sustained as a result of the failure of any tree due to faults not apparent upon a visual, ground level inspection carried out at this season, or to faults developing subsequent to the survey. Similarly, no liability can be accepted for the condition of trees that are obscured in part or in whole (e.g. by dense Ivy or other foliage), nor for any that proved inaccessible to the inspector. Certain features which might provide evidence of ongoing decay or decline (such as seasonal fungal fruiting bodies, damage to foliage, insect emergence holes etc.) may not have been in evidence: Only those features that *are* apparent at the time of the inspection could be assessed.
- 1.4 Recommendations for action have been provided, however it should be appreciated that any such recommendations are in outline form only and do not constitute a detailed specification of any works that may be required. It is assumed that any tree surgery would be carried out by qualified and skilled arborists who would be able to interpret the recommendations in order to carry out necessary works in accordance with current Best Practice (see references below).

¹ Lonsdale (2000): *see list of references and relevant texts provided at the end of this report*

2 Methodology for the assessment of Risk in Trees:

- 2.1 The inspection is intended to identify distinct defects and other failure-prone characteristics of the trees surveyed. However the identification of a 'defect'² associated with a tree does not tell us anything about the actual risk that it represents to person or property. To make a realistic risk assessment consideration of three distinct aspects of the situation are required:
- i) The likelihood that a failure, should it occur, will actually lead to any injury or damage. (i.e. are there vulnerable buildings or other structures within the potential 'target area'? If the tree is near a road, a driveway or a footpath, what is the frequency of use? How often are people, cars, bicycles etc. actually present in the area immediately around the tree?
 - ii) The size of the defective part (ie. how much damage would it cause were it to fail);
 - iii) The likelihood that failure will actually occur (i.e. what is the realistic probability that the dead limb, decayed tree etc. will actually break in the foreseeable future)
- 2.2 Consideration of the length of time that a pedestrian or a moving vehicle is actually within the area likely to be affected by a tree failure, frequently amounts to no more than a matter of seconds. Furthermore, tree failure can occur at any time of the day or night throughout the year and for much of that time the frequency of occupation may be negligible. Although dependant upon the frequency of traffic within the 'target area', it is often the case that total time that a 'target' is present and potentially vulnerable to tree failure will be a very small proportion of the overall time during which a failure might occur. It may also be of significance that site usage rates, particularly by pedestrians, will be reduced at times of bad weather, when tree failures are more likely to occur. While the risk posed by trees should never be wholly disregarded, the level of safety that a situation demands must be set within the context of its environment. A tree at some distance from any building situated in a quiet side street will require considerable less stringent safety margins than would one growing in a town centre or alongside a busy road.
- 2.3 Within the methodology used in this report attempts are made to assess each of the three aspects described above. Point (i) is defined by a "Target Status" code allocated to each tree, determined by its location in relation to features that could prove susceptible to harm. Where a hazard has been identified in a tree, it's magnitude is defined by a "Hazard Code" (point ii), while the "probability of hazard failure" is also designated a code (point iii). These factors are defined in more detail, along with the other parameters assessed, in the appendix. There are subjective elements to each of these factors, but the intention is to use them to provide an

² A 'defect' here is used to mean any feature of a tree that could predispose it to failure; it does *not* imply that its presence indicates that a failure *will* occur, let alone that it is necessarily likely to result in harm.

informed assessment of the priority that should be given to dealing with any given hazard.

3 General observations and recommendations:

- 3.1 The schedule below records information recorded during the inspection and provides outline recommendations for any action that was felt to be advisable. The present section is intended to provide some additional relevant information.
- 3.2 The mature horse chestnut (T1) appears to be in good condition with adequate clearance to the adjacent building following previous crown lifting works.
- 3.3 There are numerous branch pruning wounds in the lower canopy with one recent pruning wound at 2.0m on the northern side of the tree.
- 3.4 The tree is protected by a tree preservation order however potentially damaging works have been carried out within the root protection area (RPA) without permission from the Local Planning Authority.
- 3.5 A deep trench has been excavated within the RPA to south-east of the tree to within 5.4m of the base of the trunk, four fence post-holes have been augured within the RPA and excavations (200mm deep) have been dug for a gravel board on the north-east side of the tree.
- 3.6 Spoil from the excavated trench remains mounded-up within the RPA of the tree.
- 3.7 There is evidence of a small number of minor roots severed in the trench however there is no evidence of roots greater than 25mm diameter having been cut. There are two roots (25mm diameter) severed adjacent to the post hole at the base of the trunk and one larger (40mm diameter) which remains intact.
- 3.8 The arboricultural impact of the works has damaged a small number of roots but it is considered that the scale of the damage is relatively small and will have no lasting significant affect on the health and condition of the tree.
- 3.9 Recommendations to make good the damage are as follows:
 - Remove all excavated spoil and all stored materials from the root protection area back to pre-existing levels.
 - Trim back severed roots with secateurs and back fill soil to pre-existing levels.
 - Do not install a gravel board in the fence panel at the base of the tree to avoid any further damage.
 - Re-install protective barriers and maintain for the duration of the works as per the original tree protection plan.

- Construct the footings and retaining wall to the south-east of the tree but do not carry out any further excavations within the RPA. Do not track machinery & plant over the ground within the root protection area and provide ground protection for wheel barrow/pedestrian access within the RPA (as detailed below):

for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane.

REFERENCES:

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10. MATTHECK, C & BRELOER, H (1998). The Body Language of Trees: A Handbook for Failure Analysis (Research for Amenity Trees 4) HMSO, London.
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TREE SCHEDULE:

ID no.	Species	Height (m)	Diameter (mm)	Maturity	Target Status	Condition	General Notes &/or, Defect type <i>[If M or H]</i>	Hazard Magnitude	Probability of Failure	Recommended action	Priority
T1	Horse chestnut	12	850	M	3	M	Tree located on boundary within adjacent property. Tree has had previous crown lifting works with numerous pruning wounds in lower canopy (one recent to west side). Recent fencing work has resulted in excavations within the root protection area	4	1	Remove excavated spoil and all materials from RPA, trim back severed roots and backfill with soil to pre-existing levels, do not instal gravel board at base of tree, provide ground protection within the RPA, re-erect tree protection fencing	M

TREE SCHEDULE:

PHOTOGRAPHS:



T1 Horse chestnut – trench to SE of tree



T1 Horse chestnut – Spoil and materials within the RPA

TREE SCHEDULE:



T1 Horse chestnut – do not place gravel board at base of tree



Trim back severed roots and retain large root (40mm diameter) intact, back fill with topsoil

APPENDIX - Codes & Definitions used in the Tree Hazard Survey

Height:

P	sapling:	Trees under 3.5m (<11')
S	Small;	Between 3m & 8m (10'-26')
M	Medium;	Between 7.5m & 15m (25'-50')
L	Large;	Between 14m & 23m (45'-75')
V	Very Large;	Trees over 22m (>75')

Diameter:

P	sapling:	Diameter under 7.5cm (<3")
S	Small:	Between 7.5cm & 30 cm (3" -1')
M	Medium:	Between 30cm & 75cm (1' -2'6")
L	Large:	Between 75cm & 125cm (2'6" -4')
V	Very Large:	Over 125cm (Over 4')

(Estimated where tree inaccessible or ivy-covered etc.)

Maturity: - *Necessarily subjective and based on the appearance of the trees, not on their chronological age; (Note: "SULE" = Safe, Useful Expected Lifespan. May vary between species & with other circumstances.)*

- P Sapling or newly Planted tree; not fully established. (Transplantable or easily replaced.)
- Y Young: Establishing; usually with good vigour, but as yet of limited landscape value.
- EM Early-Mature; established; normally vigorous & increasing in height. Of increasing landscape value.
- M Mature; Well established trees around the middle half of their SULE and retaining good vigour. Achieving full height but their crowns still spreading.
- LM Late-mature: Fully established trees, generally retaining moderate vigour but growth slowing.
- O Old: Fully mature trees in last quarter of their SULE; vigour declining.
- A Ancient: Very old; low vigour; liable to decline. May include important Veteran Trees.

NOTE: *Where groups or areas of trees are considered collectively, the same codes are used to describe the general character of the majority of the trees, or the range of sizes found within the stand (e.g. S-L = Small to Large; Y-M = Young to Mature).*

Target Status (T/S):

This is an estimate, largely based on appearances at the time of inspection, of the perceived target occupancy of the area around a tree, i.e. how probable is it that a "target" will be present should some form of failure occur, considered together with an estimate of the seriousness of the possible consequences of such a failure, i.e. the vulnerability of the potential target to harm.

Thus any substantial tree near a busy road, where a failure could cause a serious accident, would have a High target status, while a tree in an open field would have a low score, even if it were in poor condition. However a relatively fragile structure, such as a prefabricated office or temporary classroom unit, may demand a High target status, even if the frequency of occupation is only moderate.

The Target Status is essentially independent of the other parameters, being a reflection of the tree's external environment. However the score of a tree may be reduced where its youth and small size indicate that failure is highly unlikely to result in damage. In such cases the score may be increased over time, as the tree grows. By contrast there are certain site types, including school premises and certain commercial leisure venues, where there may be a heightened duty of care, which may be accounted for by assuming a Target Status that is slightly above that which would reflect the actual, objective level of target occupancy.

The examples of site types given below are representative but are not exhaustive.

- 0 - Negligible target occupancy; very low risk of harm being caused. (e.g. low-use parts of open spaces & woodland)
- 1 - Low target occupancy: (e.g. Parts of amenity areas away from main footpaths; peripheral parts of parks, playing fields etc.)
- 2 - Moderate target occupancy (e.g. intermittently occupied areas; near moderate-use foot-paths, quiet side roads and private gardens; trees near unoccupied/low-value buildings etc.)
- 3 - Significant target occupancy (e.g., Near well-used footpaths, playgrounds, access routes & secondary roads. Most car parking areas. Trees over low-occupancy buildings and structures not liable to major damage in the event of tree failure)
- 4 - High target occupancy (e.g. high-use footpaths and play areas; main access and assembly areas; near busy roads & car-parks; near high-occupancy buildings & structures liable to significant damage in the event of tree failure.)

- 5 - **Permanent** target occupancy (e.g. trees close to vulnerable, permanently occupied structures, or in other areas where tree failure is likely to lead to serious injury or damage, such as near fast trunk roads, in town centres etc.)

Condition:

- G Good:** No significant defects noted. **Trees classified thus are not considered further**, (although additional comments may be provided in the "Notes" column).
- M Minor or Management issues:** Minor or *potential* problems/defects observed, but not such that is likely to represent a significant hazard within the next three years (or within the routine inspection cycle, whichever is the shortest). Also, trees where work may be advisable to abate an immediate or foreseeable nuisance, or where preventative formative pruning would be significantly beneficial.
- H Hazard** of some kind noted
- If the Condition Code is either M or H the following parameter is included:**

Defect Description &/or General Notes: Brief notes identifying the nature and location of the hazard, defect or other characteristic observed.

- In cases where a Hazard has been identified (i.e condition code = H) the following two additional parameters are assessed, Magnitude of Hazard & Probability of Hazard Failure, as defined below:**

Hazard Magnitude:

In considering the feature giving rise to hazard, what degree of harm is likely to arise were it to fail and find a target?

<u>Hazard Magnitude size</u>	<u>Degree of likely/possible harm</u>	<u>Approx.</u>
1. Minor:	Defective material small; unlikely to result in more than minor injury or easily repairable damage to objects or structures.	(<50mm)

2. **Moderate:** Some possibility of injury requiring first aid; damage to objects or structures generally repairable at moderate cost. (50-150mm)
3. **Significant:** Injury requiring hospitalisation possible; buildings etc. liable to structural damage; vehicles liable to be rendered unusable.(150-300mm)
4. **Large:** Severe disabling or even fatal injuries; significant structural damage likely to structures and vehicles. (300-750mm)
5. **Major:** Single or multiple fatalities likely; major structural damage; vehicles crushed. (>750mm)

Probability of Hazard Failure:

Based on the condition of tree or its defective part, on the species characteristics, on its location and exposure and other factors deemed to be significant, within what period might failure reasonably be expected to occur?

N.B. Given the large number of variables that may determine when a tree might fail (e.g. weather conditions; severity of tissue degradation; further damage occurring; alterations in environment, including increased exposure etc. etc.) it is impossible to specify the probability of failure with any accuracy. The following categories are intended to provide guidance based on the conditions & circumstances at the time of the inspection, and assuming that weather conditions will not exceed what might reasonably be considered to be the 'normal' range to be expected in the locality. The time-scales indicated are thus indicative only; they do **not** indicate periods over which the defects may be considered 'safe'!

1. **Low:** Defects effectively stable and unlikely to deteriorate in the foreseeable future (e.g. failure not probable for at least 3-5 years)
2. **Developing:** Failure foreseeable but not likely to occur soon (e.g. *within* 3-5 years).

APPENDIX - Codes & Definitions used in the Tree Hazard Survey

- 3. Moderate:** Failure considered to be moderately likely to occur (e.g. within 1-3 years)
- 4. Probable:** Failure considered to be probable (e.g. within 1 year)
- 5. Imminent:** Failure likely to occur at any time

Notes / Action:

Brief details of any action that may be recommended or suggested for any tree. All works commissioned should conform to **BS3998:2010 – Tree works-Recommendations**.

The present survey does not give an opportunity for the detailed assessment of each tree and in certain cases further investigations, such as a climbing assessment or decay mapping may be advised. A Client Inspection may also be advised where work proposed may be controversial, or where a number of alternative options may be considered

Priority:

Based on consideration of the Target Status, the Magnitude of Hazard and the Likelihood of Failure, a **Priority code** is allocated to provide guidance as to the degree of urgency with which an identified hazard should be treated.

It is recommended that all works with a code of 1 or more be dealt with at the first opportunity, but where there are other limiting constraints (e.g. the availability of funds), operations should be prioritised as indicated.

Operations meriting Priority Codes 4 or 5 will normally be communicated to the client immediately (i.e. prior to the submission of a written report).

(Where the tree in question is considered to be of particularly high amenity value, and a defect threatens its well-being or survival, it may be given an

upgraded priority rating even if there is no major risk of harm to person or property.)

- | | |
|---|---|
| 0 <i>(or not set)</i> -

M <u>Monitor</u>

D <u>Discretionary:</u> | No action deemed necessary on the basis of this inspection.

Hazard, health or other factor identified that is deemed not to require positive action at this time but to which future assessments should pay particular attention.

Risk to person/property below action level but work nonetheless recommended; includes problems of nuisance & those currently minor or incipient. (Note: this may include matters where timely action may be cost-effective by preventing more serious problems developing.) |
| 1 <u>Low priority:</u>
2 <u>Medium priority:</u>
3 <u>High priority:</u>
4 <u>Urgent*:</u>
5 <u>Emergency*:</u> | <div style="text-align: center; margin-bottom: 10px;"> ↗ ↘
 Work recommended </div> Serious risk of significant harm: <u>attention required without delay</u>

<u>Immediate attention required:</u> <i>Emergency call-out of contractors; road closure &/or site evacuation may be required.</i> |

(* Note: Such cases would normally be notified to the relevant authority immediately and should therefore have been dealt with by the time the written report is received.)

SUMMARY OF TERMS & CODES USED IN THE TREE HAZARD ASSESSMENT

<u>Height Codes:</u>			<u>Diameter:</u>			<u>Maturity: -</u>	
P	SaPling:	Trees under 3.5m (<11')	P	SaPling:	Diameter under 7.5cm	Min	Minor tree (Sapling / newly Planted tree)
S	Small;	Between 3m & 8m (10'-26')	S	Small:	Between 7.5cm & 30 cm	Y	Young:.
M	Medium;	Between 7.5m & 15m (25'-50')	M	Medium:	Between 30cm & 75cm	EM	Early-Mature
L	Large;	Between 14m & 23m (45'-75')	L	Large:	Between 75cm & 125cm	M	Mature
V	Very Large;	Trees over 22m (>75')	V	Very Large:	Over 125cm	LM	Late-mature:
						O	Old
						A	Ancient (veteran)

Note: 'Minor Trees' are small, young & non-hazardous individuals; they will be recorded by species only with no additional detail given.

<u>Target Status:</u> -	0 - <u>Negligible</u> target occupancy	2 - <u>Moderate</u> target occupancy	4 - <u>High</u> target occupancy
	1 - <u>Low</u> target occupancy:	3 - <u>Significant</u> target occupancy	5 - <u>Permanent</u> target occupancy

<u>Condition:</u> -	G <u>Good:</u> <i>Trees classified thus are not considered further.</i>	M <u>Minor or Management issues</u>	H <u>Hazard</u> of some kind noted
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- If Condition is **M** or **H**, a **Defect Description** is included; if Condition is **H**, the following 2 parameters are included:

<u>Magnitude of Hazard:</u> In considering the feature giving rise to hazard, what degree of harm is likely to arise were it to fail and find a target?				
1 <u>Minor:</u>	2 <u>Moderate</u>	3 <u>Significant</u>	4 <u>Large</u>	5 <u>Major</u>

<u>Probability of Hazard Failure:</u> Based on the condition of tree or its defective part, on the species characteristics, on its location and exposure and other factors deemed to be significant, within what period might failure reasonably be expected to occur?	
1 <u>Minimal:</u> Defects effectively stable and unlikely to deteriorate in the foreseeable future (e.g. failure not probable for at least 3-5 years)	3 <u>Likely:</u> Failure considered likely to occur (e.g. within 1-3 years)
2 <u>Developing:</u> Failure foreseeable but not likely to occur soon (e.g. within 3-5 years).	4 <u>Probable:</u> Failure considered to be probable (e.g. within 1 year)
	5 <u>Imminent:</u> Failure likely to occur at any time

<u>Priority:</u>	The degree of urgency with which an identified hazard should be treated. However all remedial and preventative works are recommended to be put in hand as soon as practicable.	
0 (or not set) - No action deemed necessary on the basis of this inspection.	Remedial or preventative work should be prioritised as below	
M <u>Monitor</u> A feature identified which is not deemed to require positive action at this time, but to which future assessments should pay particular attention	1 <u>Low priority:</u>	
D <u>Discretionary:</u> Work recommended to deal with minor problems representing no immediate hazard; may be considered optional or postponable (but work now may avoid problems developing subsequently).	2 <u>Medium priority:</u>	
	3 <u>High priority:</u>	
	4* <u>Urgent:</u>	<u>Attention required without delay</u>
	5* <u>Emergency</u>	<u>IMMEDIATE ACTION REQUIRED</u>

(* Note: Urgent & Emergency works would normally be notified to the relevant authority immediately and should therefore have been dealt with by the time the written report is received.)