ARBORICULTURAL CONSULTANTS

REPORT ON TREE INSPECTION
AT
1 LIME GROVE
HOLBEACH
PE12 7NG

PREPARED FOR

MR & MRS PENNY
OF
1 LIME GROVE
HOLBEACH
PE12 7NG

By

ARBORICULTURAL SOLUTIONS LLP

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1. Introduction

1.1. Instructions

1.1.1. I am instructed by Mr Penny of 1 Lime Grove, Holbeach, to visit the above site and report on the condition of a mature lime tree situated in the front garden. The inspection is to consider the tree's condition from a safety viewpoint, assess the potential for failure and make recommendations for management as necessary.

1.2. Background Information

1.2.1. Mr Penny is concerned that the condition of a mature lime tree close to the property may present a threat to their safety, that of the property and pedestrians. Mr Penny has noted staining on the trunk of the tree and a large patch of wet staining originating from the main forks of the tree. The Council has been informed of the situation and advised that an inspection is carried out on the tree to determine its condition and make recommendations to mitigate any potential threat.

1.2.2. We were informed on site that the tree is the subject of a TPO administered by South Holland District Council and this is confirmed using the Council's online interactive maps showing the trees are covered by preservation order Holbeach TPO No04 1971; the property is not within a Conservation Area.

1.3. Photographs

1.3.1. A number of photographs were taken, and are shown at Appendix 3.

2. Report on Site Inspection

2.1 General

2.1.1. I visited the site on the 22nd May 2014. All photographs and data within this report were obtained during this visit. Weather conditions were generally bright with *adequate visibility.*

2.2 Tree Inspection methodology

2.2.1. The tree was inspected from ground level and using a ladder to gain access to the main forks.

2.2.2 Data: Details of trees were recorded (all measurements metric) as:

- Species
- Height
- Trunk diameter at 1.5 metres from ground level
- Crown radius at the four cardinal points
- Age-class
- Comments on tree condition
- Recommendations for tree works
- Estimated remaining safe useful life

2.2.4. Refer to appendix 2 for explanation of terms.

2.3 Tree 1 - Lime

2.3.1. Refer to Appendix 1 for tree dimensions and comments and Appendix 3, (photographs 1- 4). The mature lime is growing in the front garden in close proximity to an early-mature copper beech tree; the tree is prominent and of high landscape value.

2.3.2. The tree is single-stemmed at ground level and is approximately 20m in height and crown radius of approximately 7m, with a suppressed crown on the north side to 4.5m, and trunk diameter of 76cm.

2.3.3. **Base** The base of the tree appears sound with no evidence of loose bark or fungal fruiting bodies

2.3.4. **Trunk** This showed firmly attached bark, true to species type. There are areas of bacterial staining on the northwest side of the trunk that may be a result of infection via the roots (photograph 4 Appendix 3). There is a large wet stain on the east side emanating from the main trunk fork, this is long standing as evidenced by the presence of moss (photograph 1 & 2 Appendix 3).

2.3.5. **Crown** The crown is full and healthy with minor small diameter deadwood present, typical for the species. The trunk forms a number of main stems from

approximately 3.5m and may be the result of past pollarding. This main fork was accessed by ladder to determine the possible causes of the staining. There is a cavity filled with detritus and water extending down into the trunk by up to 600mm (photograph 3 Appendix 3); at the point the probe ended there was no resistance to its insertion. Angling the probe toward the walls of the inner stems indicated soft wood although some resistance was felt. Probing the north stem on its south side indicated decay to at least 500mm below the main fork.

2.3.6. The trunk and stems were sounded using a nylon mallet (Thor 710 400g). The inner faces of the main stems adjacent to the cavity indicated incipient decay. Sounding up to 1m below the main fork on the outside of the trunk indicated areas of likely decay; there are some areas on the west side of the main trunk where a dull sound indicated potential incipient decay.

3. Discussion

3.1. Risk management

3.1.1. The main question in assessing the need for remedial action is whether failure to carry out such action would leave an unacceptable risk to persons or property. Major reduction or complete removal of this tree would remove all possibility of injury or damage, however, the concept of risk management is gaining acceptance on the part of tree owners and managers. If the risk is quantified as far as can be achieved with available methods appropriate decisions about remedial action can be taken. As with the assessment of hazards and risks, the decision whether or not to take remedial action must be made in the knowledge that there can never be an absolute guarantee of safety for trees or any other structures exposed to extremes of weather.

3.1.2. The choice of remedial action must be determined primarily by the need to remove or mitigate a hazard. Most forms of remedial action are directed towards defects in trees, the type and severity of treatment required can usually be determined by the nature of the defect and its estimated influence on the safety factor of the tree or the affected part of the tree. Most types of hazard involve the potential failure of a tree or part of a tree under its own weight or as a result of movement in the wind. In many cases, the likelihood of failure can be lessened by cutting back branches so the load placed on the defective zone by weight or wind pressure is reduced (or by the removal of deadwood where it represents a threat). This can be achieved effectively by shortening the 'lever arm' of the structure, for example, by reducing the height of the tree or the length of an individual hazardous branch, and by repeating such treatment if subsequent growth re-creates the hazard.

3.1.3. In this particular case there is the nearby Holbeach Primary School with a large restricted parking area that moves available parking to the adjacent side roads, including Lime Grove. Whilst the heavy use of Lime Grove is generally during the start and end of the school day it is clearly a very high value target.

3.2. Summary

3.2.1. Probing and sounding the cavity and surrounding areas of the trunk/stems indicates that there is likely to be an extensive cavity extending down into the trunk form the main fork. I was able to easily push a metal probe down to a depth of 600mm and it is highly likely that the cavity extends further down. Additional probing of the inside walls of the cavity indicated decay into the stems. Sounding with a mallet highlighted further areas on the main trunk that are likely to be decayed

4. Conclusions and recommendations

4.1. General

4.1.1. The tree is of high landscape value and contributes to local visual amenity. The tree is the subject of a Tree Preservation Order and therefore requires permission from the Local Planning Authority before carrying out any remedial action; if such permission is refused the Council may be liable for any future damages in the event of tree failure.

4.1.2. The tree stands in a position where any failure would pose a significant risk to persons using the road and to private property.

4.2. Threats

4.2.1. Threats posed by the tree may be considered as:

- Failure of main stem at fork

4.3. Main stem breakage

4.3.1. The weaknesses in this area have been identified by probing and sounding with a mallet as described above. The weak point is at approximately 3.5m at the main fork where several stems form, possibly from historical pollarding or stem loss. The resulting main stems angle away from each other to form a tall heavy crown. This structure leads to high tension at the junctions of the stems and therefore any progressive weakening of the internal wood can lead to failure at the forks.

4.3.2. The loading on the crown can be reduced by heavy crown reduction, however, the degree of pruning required would result in a significant loss of amenity and incur a substantial, ongoing maintenance cost.

4.4. Recommendation

4.4.1. In view of the problems identified and their likely implications, together with the position of the tree, I consider that it should be removed.

4.4.2. It is noted that the adjacent copper beech is likely to become a focal point once the lime is removed. In addition there is a young Wellingtonia that will develop to a prominent tree once the source of suppression is removed.

5. Arboricultural Standards.

5.1.1. Implementation of works: Any tree works should be done in accordance with the British Standard Recommendations for Tree work, BS 3998 as modified by later research. Works should be undertaken by properly qualified and experienced tree contracting company as recommended by a local authority or one approved by the Arboricultural Association. A Register of Contractors is available from The Arboricultural Association The Malthouse, Stroud Green, Standish, Stonehouse, Gloucestershire, GL10 3DL, England.
Tel +44 (0) 1242 522152 Fax +44 (0) 1242 577766
Email: admin@trees.org.uk.
Web: www.trees.org.uk

5.1.2. Statutory wildlife implications: Wildlife in this country is afforded protection under the Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000. Statutory protection is given to birds, bats and other species that inhabit trees. Tree work is governed by these statutes and advice should be sought from an ecologist before undertaking any works that may constitute an offence.

Report by: G. M. Causey *B. Sc. (Hons), RFS (Cert. Arb), F. Arbor A.*

APPENDIX 1

Tree Data: 1 Lime Grove

Tree No	Species	Height (m)	DBH (mm)	Crown radius (m)				Life stage	General observations	Recommendations	Est. Rem'ing contrib'n
				N	E	S	W				
T1	European lime	20	764	4.5	7	6.5	7	Mature	Bacterial wetwood on trunk Likely a former pollard Trunk forks at 3.5m Cavity within main fork Minor deadwood in crown Prominent tree *High landscape value* Screen value	Fell to ground level and poison stump to prevent re-growth, or grind out stump	<10

APPENDIX 2 - REFERENCES

1. Tree No.

Given in chronological order, commencing at "1".

2. Species

Names given are 'common names' followed by the Latin.

3. Height.

Measured approximately.

4. Crown spread.

Approximate diameter of the crown at the 4 cardinal points.

5. Dbh.

Trunk diameter at "breast height", 1.5m above ground level, given in millimetres.

6. Age class.

Young
Middle-aged
Mature
Over-mature

7. Comments.

Comments have been made relating to the following:

- Health or condition of the tree
- Safety of the tree, particularly close to actual or proposed public access
- Aesthetics of the tree where appropriate

8. Recommendations

Remedial works required to ensure health and safety of tree or to abate nuisance.

9. Safe remaining safe life

10. References

Principles of Tree Hazard Assessment and Management: David Lonsdale 1999
Diagnosis of ill-health in trees: David Lonsdale 1994
The body language of trees: Claus Mattheck & Helge Breloer 1995
The Face of Failure: Claus Mattheck 2004
Fungal Strategies of Wood Decay in Trees: F. W. M. R. Schwarze, J. Engels, C. Mattheck 2000

Appendix 3 – Photographs

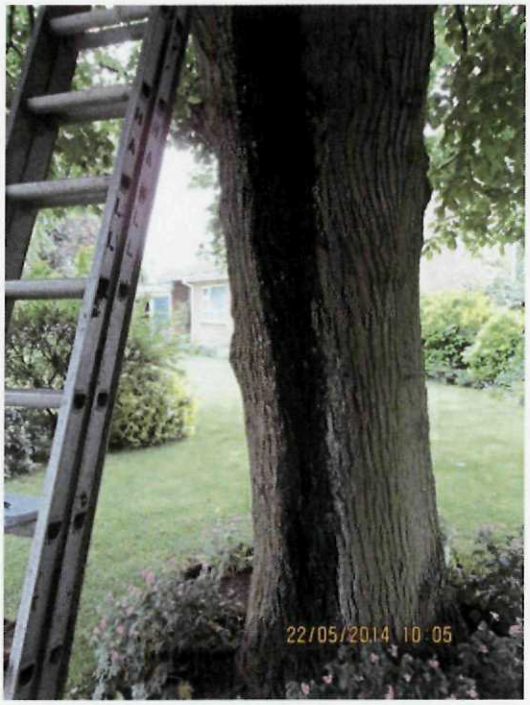


Fig 1. Tree T1 large area of wet staining



Fig 2. Tree T1 origin of staining, moss indicates long-term nature of condition



Fig 3. Tree T1 decay pocket between main stems



Fig 4. Bacterial staining on trunk