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**Tree Preservation Order: The Hall Entrance,
Vicarage Lane, Scawby, North Lincolnshire.**

Report on two beech trees adjacent to brick wall – Grade II Listed.

I carried out my inspection on 10 June 2003 and was accompanied by Mr Andrew Inglis, of Jas Martin & Co, Estate Agents, Lincoln.

In this report I shall endeavour to consider the overall situation to find a way forward for the good management of the Grade II Listed wall in relation to my assessment of the trees. At the same time I shall consider succession planting so that tree cover in the area is maintained for future years.

1. Background

On behalf of Scawby Estate, Jas Martin & Co made an application to North Lincolnshire District Council (NLDC) to fell the two large beech trees that are in a Conservation Area. They stand on either side of the entrance to Scawby Hall, and are very close to a 2.0m approximately high Grade II Listed brick wall. It is considered the trees have caused damage to wall.

Subsequently NLDC made a Tree Preservation Order (TPO) on these two beech trees.

2. General assessment of the position

In the area there is an adequate number of other trees, some of which are quite large, providing good amenity. The two beech trees are part only of the general scene.

“The Lodge” is the only dwelling within falling distance of the trees. Vicarage Lane and the road running westwards, and the entrance to the Hall form a cross-roads.

In addition to considering the risk of the trees causing damage/further damage to the wall it is necessary to make a risk assessment of them in relation to the highway and the entrance to the Hall.

3. Brief and objectives of report

- a. To carry out a survey and inspection of the two beech trees that are very close to the Grade II Listed brick wall.
- b. To excavate a soil pit to determine the soil type, as required by NLDC, and to make an assessment of the soil in relation to damage/further damage to the wall.

Comment: As clay was not found at the depth of the soil pit, described later in this report, it is considered most probable that it is the development of the roots (now very large) over many years and their close proximity to the wall that has caused damage to this Grade II Listed feature.

- c. To assess the general condition of the two trees, give advice for their appropriate management, and provide a considered opinion of the possible risk of their causing injury/damage to people and/or property. (Risk assessment is shown on the attached schedule.)
- d. As the trees are now the subject of an unconfirmed TPO, to explain my reasoning for the recommended work so that the position can be fully considered by NLDC as I believe that it is virtually impossible to retain both the trees and the wall. Please see my document General Procedures and Guidance for Implementing Tree Work attached.
- e. Further, to consider the future position regarding trees in this location and to suggest appropriate replanting to provide a continuity of tree cover near this important entrance to Scawby Hall.

4. Soil investigation

I excavated a pit to a depth of 75cm when I came to limestone which prevented me from getting deeper. Its approximate position is shown on the NLDC plan. Down to 45cm I found the topsoil to be a light brown sandy loam with virtually nil pebbles present. Beneath this from 45cm to 75cm depth I found a yellowish limestone brashy soil mixed with a few pieces of limestone of 6-10cm length by 5cm thickness. The soil was dry throughout the profile.

As stated earlier in this report I consider the subsoil, at the depth I excavated, not to be a shrinkable material.

Comment: It is from this information that I have concluded that it is the growth and consequent expansion in size of the roots that is the most likely explanation for the damage to the wall.

5. Information requested by NLDC on the soil

The "Soils of England and Wales" map, Sheet 4, Eastern England, shows the area as item 511 and states: "Permian, Jurassic and Eocene limestone – shallow, locally brashy, well drained calcareous fine loamy soils over limestone. Some deeper calcareous soils in colluvium". It is probably Jurassic limestone on this site.

The information provided by the Soils Map confirms my findings on the site.

6. Risk Assessment

I have used the publication "Evaluation of Hazard Trees in Urban Areas" Matheny and Clark, published by the International Society of Arboriculture 1994, in reaching my assessment. It is based on the following factors, against which I have given my scores, and is set out in the table below.

	Rating	Assessment	
		Tree 1 beech	Tree 2 beech
Failure potential			
1 point	Low – defects are minor		
2 points	Medium – defects are present and obvious		
3 points	High – numerous and/or significant defects present		3
4 points	Severe – defects are very severe	4	
Size of defective part			
1 point	Most likely failure less than 15cm diameter		
2 points	Most likely failure 15-45cm diameter		
3 points	Most likely failure 45-75cm diameter		3
4 points	Most likely failure greater than 75cm diameter	4	
Target rating			
1 point	Occasional use		
2 points	Imminent use		
3 points	Frequent use		
4 points	Constant use (year round use for a number of hours each day, residences etc)	4	4
Total points		12	10
Hazard rating = Failure potential + Size of part + Target rating.			

It is demonstrated that Tree 1 has the maximum hazard rating of 12 points. Regarding Tree 2, it also has a high rating that would be increased in the event of Tree 1 being removed and it being fully exposed to the elements.

7. Documents prepared by A Arbon and attached to this report

- a. Schedule of trees stating species, dimensions, condition, risk in association with safety, and recommendations for proposed work.
- b. An A4 plan of the TPO, kindly provided by you, on which are shown the positions of the trees.
- c. General Procedures and Guidance Notes for Implementing Tree Work.

8. Extent of report

This report is intended to cover the trees shown on the above-mentioned schedule only, and considers structural problems to the brick wall. It is also an arboricultural report on the condition of the trees.

The report is NOT intended to be a tender, specification for works or, a conditions of contract document.

9. Position regarding

(a) Department of Environment Circular Tree Preservation Orders – A Guide to the Law and Good Practice, October 1994, and

(b) British Standard 5837 : 1991, Guide for Trees in Relation to Construction

Chapter 5 of the Circular, in paragraph 5.9 advises an LPA to place trees on a site into the following categories:

- i. those which must be retained at all costs;
- ii. those whose retention is very desirable;
- iii. those whose retention is desirable; and
- iv. those not worthy of protection.

For the purpose of assessing Tree 1 it is considered to be a tree that falls into item (iv) above. This is to say that it should NOT be considered for retention, because it is in a potentially dangerous condition. Justification for the removal of Tree 2 is based on the fact that it will be exposed to the elements when Tree 1 has been removed.

British Standard 5837 states in Selection of Trees for Retention - 6.2.4 that care should be exercised over misplaced tree preservation orders.

10. Proposed programme of work

My proposals are that as a matter of urgency Jas Martin & Co should submit to NLDC the information requested by them, and make application for the TPO to be withdrawn/revoked so that the trees can be felled and the safety issue addressed. This, in turn, will resolve the position so that the Grade II Listed wall can be repaired.

11. Public Relations

It is my experience that members of the public can often misinterpret the purpose of work being carried out on trees in their neighbourhood. With this in mind I recommend the Estate finds a way of letting local people know why the trees should be felled, and that replanting will be carried out.

12. Replanting

I expect NLDC will require replanting on a “one for one” basis using native species. I suggest the Estate obtains two extra heavy standard containerised specimens by 4-5m height from Barcham Trees plc, Barcham, Ely, Cambridgeshire.

They should be planted at least 5m from the wall. Spring and summer watering will be required until the trees are fully established.

13. British Standards for tree work

The relevant document for tree felling is British Standard 3998 : 1989 “Recommendations for tree work”, and as appropriate it should be specified in any order given.

14. Limitation of report

My inspection was carried out from the ground only. It was not a climbing inspection, nor was any arborsonic equipment used to determine the condition of the trees. Should you require this service please advise me and I will arrange for such inspections to be made.

Inspections carried out whilst trees are in leaf provide the opportunity to assess health and vigour from their foliage, but the opportunity to readily see their structure is restricted. After leaf fall the reverse applies. I will be happy to inspect the trees again in the subsequent season, against your instructions.

Whilst ivy is a good native woody growth that provides quality habitat benefits, it nevertheless restricts the full inspection of trees. To enable an inadequate assessment to be made it is necessary to remove ivy. Insofar as trees with which this report is concerned, I shall be happy to re-inspect them if you decide to remove the ivy.

In writing this report I am NOT able to say there is nil risk of the trees falling, branches falling from the crowns, or any other risks arising from the trees. Such happenings could occur from weather conditions or other situations that I am not able to predict.

I have to say that my report is written as an arborist only as I am not a structural engineer.

15. Comments on previous correspondence – attached to this report

a. Letter of 23 January 2003 from Jas Martin & Co to NLDC

I agree entirely with the comments made in this letter and, knowing how sensitively Jas Martin and Co deal with amenity considerations, understand their reluctance in making application to fell the trees. I have to say this work will be very costly to the Estate.

b. Mailbox letter of 18 March 2003 from Ian Goldthorpe, NLDC, to Jas Martin & Co

It is agreed that the trees have significant amenity value.

The information requested for a thorough investigation regarding the collapse of sections of the wall is provided by Simpkins Kenny Ltd, Consultant Civil and Structural Engineers, Brigg, North Lincolnshire, and the arboricultural information provided in this report.

Additional arboricultural information requested by NLDC:

- an analysis of the soil composition in the vicinity of the wall and the trees is provided above at Item 4 Soil Investigation. As clay was not found, neither soil shrinkage or ground heave is considered likely to be “a contributory factor in the apparent movement of the wall”.
- I have concluded that it is the growth and consequent expansion in size of the roots that is the most likely explanation for the damage to the wall.

In the soil pit I prepared I found roots to a depth of approximately 50cm. This agrees with the rule of thumb understanding that the majority of roots are normally in the top 60cm of the soil.

Regarding the extent of root growth, they may not have developed very far to the west, towards the highway, as this comprises hard materials of the wall, public footpath and carriageway. I suggest 5m may be the extent of the effective rooting system on this side of the trees.

Roots on the eastern side of the trees are expected to have a much more extensive distribution. The document *Trees in Focus – Driveways close to trees* (Arboricultural Advisory and Information Service) suggests that roots extend to the equivalent distance of a tree’s height. I suggest this may be excessive but would accept they could extend to a distance of some 15m from the boles of the trees.

The only way to determine the position is by undertaking extensive trenching. This would take a lot of time, disturb the lawn and garden area adjacent to the trees, and cause damage to the roots. At the same time excavations on the western side of the trees are impracticable for the reasons stated above.

For practical purposes I suggest my generalised distances shown above are adequate.

- Regarding the extent, depth and construction of the foundations of the wall, detailed excavation is requested. Again, this is likely to damage roots, particularly buttress roots that are adjacent to the wall. My other thought is that depth of construction of foundations has increased considerably since the time this wall was built and it may not have adequate foundations.

- I note that NLDC suggests one possible scenario arising from the investigations may be the removal of the trees followed by adequate replanting. Such proposals have been put forward earlier in this report.
- Regarding the suggestion that with novel construction details in the wall the trees could be retained, this is unlikely to be satisfactory as important tree roots, close to the bole, would be seriously damaged by such work.

c. Letter of 15 June 2003 from Simpkins Kenny Ltd to Jas Martin & Co

It is noted that Simpkins Kenny are convinced that the majority of the wall damage can be attached to mechanical damage from the trees; it would appear that the wall foundations are presently in very close proximity and even bearing on to the large tree roots.

They also suspect that the effects of any shrinkability potential in the surrounding soils have been relatively limited over the years.

They suggest that strengthening the wall could still damage the tree root system and find it difficult to envisage how the walls and the trees could continue to co-exist.

Further, they mention the Estate's duty of care to members of the public.

Comment: I agree with the above statements.

In this context I recall an incident that happened at Skegness many years ago when a fatal accident occurred by a wall falling on to a man who was walking on the public highway.

16. **Conclusion/Rationalisation**

As mentioned above, I consider that the initial letter by Jas Martin & Co to NLDC giving notice to fell both trees was relevant to the situation.

It can be accepted that NLDC would like to retain both the trees and the wall, and this can be understood, but regrettably this is not considered to be compatible.

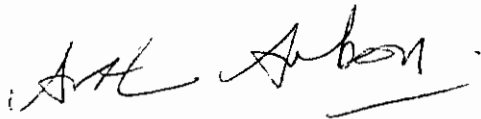
After careful consideration both Simpkins Kenny Ltd and I reach the same conclusions in that it is not possible to reconcile the situation by retaining the trees and repairing/rebuilding the wall, ie by providing adequate foundations and rebuilding the wall with the trees in situ, roots are expected to be damaged to the detriment of the trees; and by retaining the trees their future growth will continue to be a problem to the wall.

The key to the position is the structural weakness of Tree 1, because of its inherent defects together with its size and age.

Because of the urgent need to fell this tree for safety reasons, and in consequence also felling Tree 2, priority can properly be given to the repair of the Grade II Listed brick wall. There would then be opportunity to replace the two beech, that are both mature to over-mature and at the end of their safe useful life expectation. By using extra heavy standard containerised specimens, of a good size and specification, tree cover will be provided for succession purposes.

It should be noted that in the general area there are other trees, some of which are quite large and provide good amenity effect. The two beech trees are only part of the overall scene and their removal would not represent a total loss to this pleasant location. Once the wall has been restored the best solution will have been achieved.

When the recommended work has been completed, the risk from these trees will have been eliminated and what may now be a potentially dangerous wall will have been made safe.

A handwritten signature in black ink, appearing to read 'Arthur Arbon', with a horizontal line underneath the name.

Arthur Arbon
12 June 2003

A4

Printer Frame

Map Area 196mm / 17.8cm

Notes

Rev No	Revision Details	Rev'd By	Re Da



Directorate of Environment and Public Protection

Environment Team

Director, E. Lodge, BA, DMA, MCIEH, MInstWM, MIF

Project Title

Tree Preservation Order

Drawing Title

The Hall Entrance Vicarage Lane Scawby

Drawn by:

Date: 26th Feb, 2003

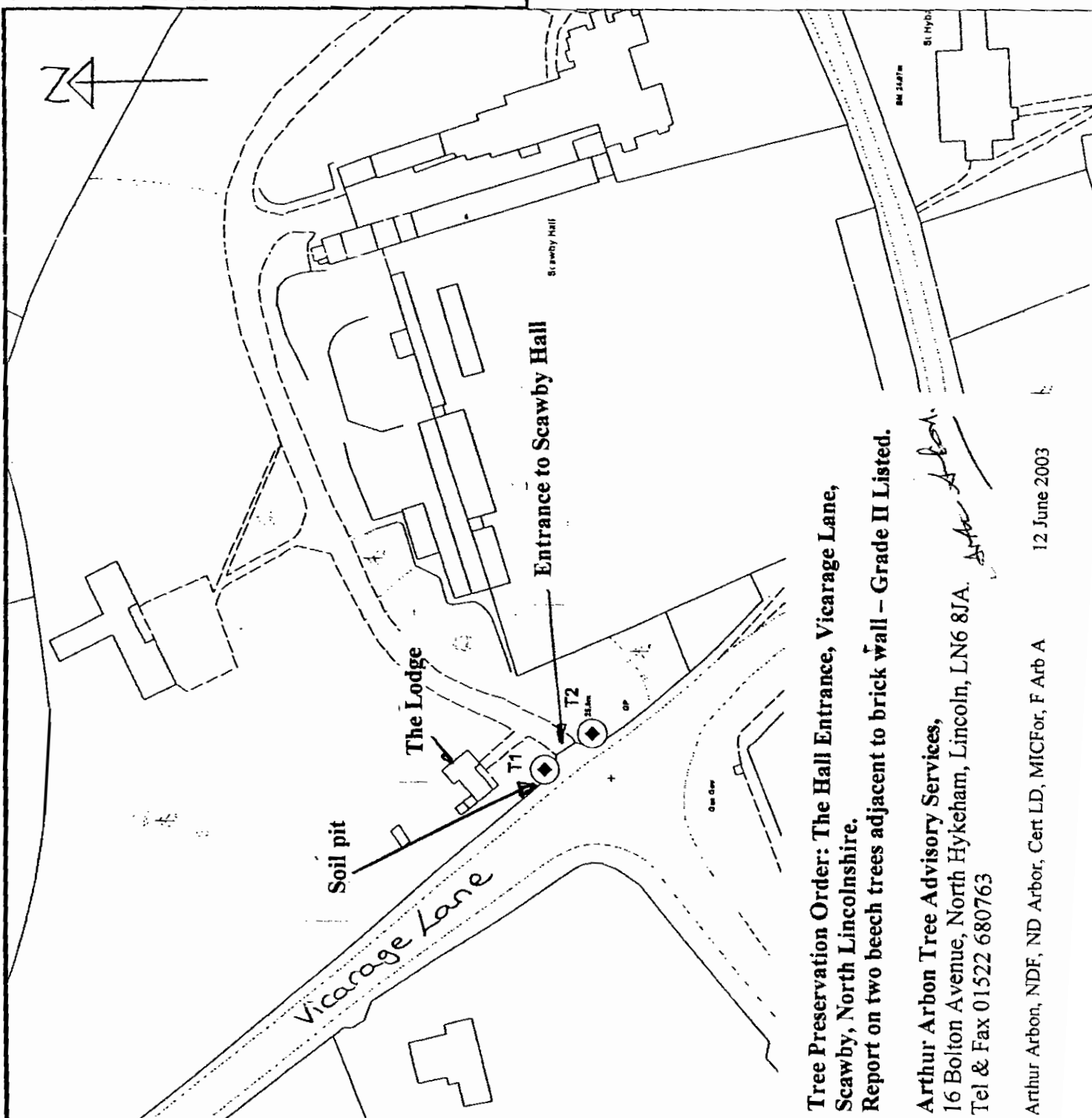
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Arthur Arbon Tree Advisory Services,
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 Tel & Fax 01522 680763

Arthur Arbon, NDF, ND Arbor, Cert LD, MICFor, F Arb A
 12 June 2003

Tree Preservation Order: The Hall Entrance, Vicarage Lane, Scawby, North Lincolnshire

Report on two beech trees adjacent to brick wall – Grade II Listed.

Date of inspection: 10 June 2003

TPO No	Species	Est ht (m)	Spread of crown radius (m)	Measured diam at 1.5m above ground level	Size for species	Est age	Replanting recommendation
1	Beech	28	N E S W 9 9 4 9	107cm	Massively large	130 - 140 years	1 No extra heavy standard containerised beech (<i>Fagus sylvatica</i>)
Measured distances from highway and brick wall	Tree adjoins Vicarage Lane and is 4.5m from edge of carriageway. 1.3m from centre of tree to wall. 70cm nearest point of tree to wall. Buttresses (large) of tree on west side are touching and clearly underneath the wall.						
Description/condition	<p>Mature to over-mature. Healthy and vigorous. Nil serious disease noted, but ivy on the bole prevented a full inspection.</p> <p>Many years ago large branches were removed from the bole of the tree up to 5m above ground level. The wounds have now calloused over and rot could be present behind them.</p> <p>On the north side of the tree at approx 12m high I noted a crack of some 6m length on one of the main vertical limbs.</p> <p>I also noted that a large branch on the eastern side of the tree had fallen from the crown and understand this happened a few years ago. Because of the size and weight of the large limbs of the tree further branches could fall.</p> <p>The most important structural defect I found concerns two extremely large limbs that have developed as a tight “V” fork from which point the crown of the tree develops at 5m above ground level.</p> <p>Ivy at the fork was cleared at the time of the inspection and a crack that extends some 5m vertically was noted. In my experience such a crack is a weak structural feature. I do not expect it to be superficial, ie only in the bark, but to extend through the full diameter of the tree at the fork. With this inherent weakness there is a high risk of the tree splitting at the fork, in which case limbs of considerable size would fall. There is very heavy cantilevered weight above the fork due to its massive size and height.</p> <p>Tree has a few low branches over the footpath of less than 2.5m overhead clearance.</p> <p>I noted several new cracks on the brick wall, and other older cracks that had been repaired some years ago.</p>						
Assessment of risk of injury/damage to people/property	<p>I assess the tree as having a very high risk as it is potentially dangerous to the target areas of “The Lodge” and Vicarage Lane. I have seen a number of beech of this size with similar weak “V” forks that have split apart and fallen.</p> <p>As the fork is on a north/south axis the eastern limb, should it fall, could damage “The Lodge” and should the limb on the west fall it would affect Vicarage Lane. Either way serious injury/damage to people/property could result.</p>						
Recommended work	<p>Fell tree because of the high risk it presents to “The Lodge” and the public highway.</p> <p>Crown reduction on beech, especially trees of this size and maturity, is not recommended as this species does not produce regrowth following such work.</p> <p>Because of the large size of the branches cable bracing is unlikely to be successful and is NOT recommended.</p>						

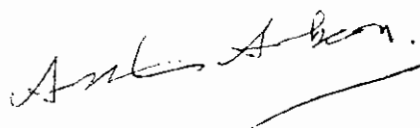
TPO No	Species	Est ht (m)	Spread of crown radius (m)	Measured diam at 1.5m above ground level	Size for species	Est age	Replanting recommendation
2	Beech	29	N E S W 7 8 8 9	112cm	Massively large	130 - 140 years	1 No extra heavy standard containerised beech (<i>Fagus sylvatica</i>)
Measured distances from highway and brick wall	Tree adjoins Vicarage Lane and is 4.5m from edge of carriageway. 1.2m from centre of tree to wall. 90cm nearest point of tree to wall. Buttresses (large) of tree on west side at ground level are 40cm from the wall and clearly underneath it.						
Description/condition	Mature to over-mature. The tree does not have the same vigour as Tree 1 and at its apex there are the first signs of die-back. This could indicate problems with its rooting structure, eg disease. There are dead branches in the crown, some of which are large particularly one that overhangs the entrance. Crown forms at approx 7m above ground level. The tree has some heavy limbs (hazard beams), one of which overhangs the entrance. Nil serious disease noted, but ivy on the bole prevented a full inspection.						
Assessment of risk of injury/damage to people/property	Because of age and size the risk assessment is moderate to high. There are signs that the tree has now reached the stage where it is starting to decline. When Tree 1 has been removed Tree 2 will be fully exposed to the elements and/or vulnerable to wind-throw, with the consequent risk it presents to "The Lodge" and the public highway.						
Recommended work	The felling of Tree 1 is justified because of its weak structural condition. This means that Tree 2 should not be retained because of the risk of its suffering damage. When felled the problems of dead wood in the crown, hazard beams and the few low branches overhanging the highway and footpath will have been addressed.						

Notes:

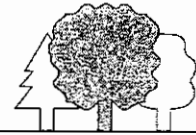
Both trees are massively large and have very heavy crown weight. The size of the crowns presents a considerable "sail area" to the wind with the risk of branches being blown from their crowns.

The trees are 9m apart. Should either be removed the remaining tree would not present an attractive, balanced shape, as the suppressed under-developed inner branches would be exposed to view.

Because of the close proximity of both trees to the wall and their large anchorage roots having developed beneath the wall, they are considered to be responsible for this Grade II Listed feature having been damaged.



Arthur Arbon
12 June 2003



ARTHUR ARBON

Tree Advisory Services

16 BOLTON AVENUE, NORTH
HYKEHAM, LINCOLN LN6 8JA
Telephone & Fax: 01522 680763

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GENERAL PROCEDURES AND GUIDANCE FOR IMPLEMENTING TREE WORK

1. Legal position - Tree Preservation Orders

As you are aware, work should not be carried out on these trees without the consent of North Lincolnshire District Council (NLDC).

Trees which are in the classification “dead, dying, dangerous” are exempt from TPOs. As I have given a high risk assessment for Tree 1, and in consequence recommended both Trees 1 and 2 are felled, this may be adequate justification for proceeding with the felling.

I do not, however, recommend you do this without further consultation with NLDC, as this could lead to serious problems.

The removal of dead wood and “cleaning” as specified in British Standard 3998 : 1989 “Recommendations for tree work” does not require consent. The removal of branches over a dwelling may require consent.

2. Felling Licences – Forestry Commission

You may not have to concern yourself with a felling licence as trees that are in gardens are exempt from these regulations. It could be argued that the two beech are located in the garden of Scawby Hall.

You will know of the regulations that apply to felling licences and the amount of timber that can be felled in a quarter year.

A document produced by the Forestry Commission (“Tree Felling – Getting Permission” April 2000) gives relevant information.

3. Use of contractors and insurance

Unless your Estate workers have training and skills in tree surgery work, you will no doubt look to the trade to provide this service.

You will know that tree work is inherently dangerous and it is essential that such work only be carried out by fully trained, competent and insured contractors.

The person instructing the work should be satisfied as to the credentials and competency of any contractors used. In particular, this person is recommended to inspect the insurance documents of any contractor, before giving instructions for the work to commence, to ensure that the contractor is insured for tree work and has current public liability insurance cover to £2 million, or the amount they require to specify.

In addition to normal methods of safety being employed by the contractor, operators should wear the correct safety climbing equipment when working off the ground. This should include the correct body harness and safety lines, so that whilst working in the tree there is nil risk of the operator falling from the tree.

Any order placed for tree work should make it clear that for safety reasons there is to be a minimum of two operatives on the site at all times when work is in progress.

Notification to the highway authority and/or police of when the work is to be carried out near the highway is advised. Road signing to the requirements of the highway authority should also be specified and required of the contractor when any orders for work are placed.

4. Standards of tree work, tender documents and contract specification

Tree work

Work should be specified to be carried out to British Standard 3998 : 1989 "Recommendations for tree work". I suggest that stumps and large buttress roots growing near the wall should be ground out to a minimum of 20cm below ground level. This will be much less complicated and expensive than grubbing them out.

Tender documents and contract specification

Regarding the preparation of a tender document and specification for work I find that information provided by the Arboricultural Association "Conditions of Contract" to be most helpful. Copies can be obtained from them at "Ampfield House", Ampfield, Romsey, Hampshire, SO51 0PA, telephone 01794 368717. The cost is £25.00 per copy.

It is advised you obtain more than one price for the work.

5. Disposal of arisings

No doubt the arisings will be disposed of by the Estate.

6. Contractors

Two contractors I have found to undertake satisfactory arboricultural work are:

Alan Myles, 5 Arlington Road, Newtoft, Market Rasen, LN8 3NP, telephone 01673 885056, mobile 0468 213577.

B & B Tree Services, Five Mile Lane, Washingborough, Lincoln, telephone 01522 790313,

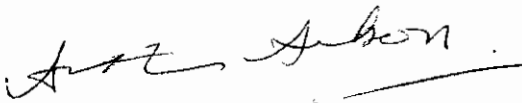
I do not have any business connection with either of these organisations.

7. Disturbance of birds and bats

Prior to starting work, it is necessary to be satisfied that birds are not nesting in trees at the site. Normally it is good practice to avoid tree work during the period March to the following July, although birds can nest either side of this period.

Further, it is necessary to be satisfied that bats are not inhabiting trees. It is a statutory offence intentionally or recklessly to damage or destroy any structure or place that a bat uses for shelter or protection. A bat roost is protected whether or not it is currently occupied.

Should it be found after work has commenced that bats are present, work should stop immediately and the matter reported to English Nature, for them to advise on the position.

A handwritten signature in black ink, appearing to read 'Arthur Arbon', with a horizontal line underneath.

Arthur Arbon
12 June 2003