DERBY CITY COUNCIL

PLANNING CONTROL COMMITTEE
3 APRIL 2008

ITEM 8b

Report of the Assistant Director - Regeneration

Tree Preservation Order 2008 Number 512 (111 Duffield Road)

RECOMMENDATION

1. To approve confirmation, without modification, Tree Preservation Order 2008 number 512(111 Duffield Road, Derby).

SUPPORTING INFORMATION

2.1 On 18 February 2008 Derby City Council, in exercise of the powers conferred by sections 198, 201 and 203 of the Town and Country Planning Act 1990, made the above Tree Preservation Order (TPO) on 111 Duffield Road, Derby, as shown on the plan attached as Appendix 2.

1. The reason why the TPO was made is cited as: The tree indicated in this Order is proposed for protection in the interests of visual public amenity. The tree is situated in a prominent position and can be appreciated from the immediate vicinity as well as from further afield. The tree contributes materially to the amenities of the locality by playing an important part in providing a sense of scale and maturity and by significantly contributing to the general greening effect on the immediate and surrounding area. A notification was received of the owner's intention to fell this tree which is located in Strutts Park Conservation Area. The notification was made following correspondence from Halifax Insurance, acting in the interests of their client at 109 Duffield Road, in relation to alleged subsidence at their property.

2.2 A letter objecting to the TPO was received from Marishal Thompson & Co. A copy of the objection letter is attached as Appendix 3.

2.3 Marishal Thopmson's objection is listed below followed by the Assistant Directors response.

2.4 **Marishal Thompson's objection:** They believe that the Beech tree is involved in the clay shrinkage subsidence damage at 109 Duffield Road and subsequently that they would provide technical reports at a later date if they were instructed by their clients to make an application to fell the tree.

JH/CG
Duffield.PCC

2.5 **Assistant Director's response:** The original notification proposing to fell the Beech tree which led to the making of the order, together with data that had been made available to the tree owner was forwarded to one of the City Council's engineers for their comments (see appendix 4 for report). Their reply was important in forming our decision as to whether or not the tree should be made the subject of a Tree Preservation Order. The Engineer's report suggests that not enough evidence has yet been provided that proves the tree caused the subsidence at No.109. He suggests that more detailed trial pit locations and at least 12 months continuous seasonal monitoring of cracks would need to be submitted as part of that evidence. Based on the Engineer's report and the fact that Marishal Thompson have yet to submit conclusive evidence to substantiate the claims that the Beech tree is responsible for the alleged subsidence we consider that the public amenity value of the tree is of such significance that it should be protected until such a time that conclusive evidence is submitted.

For more information contact:	Jason Humphreys, Tree Preservation Order Officer, Tel - 01332 256031 E-mail – jason.humphreys@derby.gov.uk
Background papers:	Tree Preservation Orders, A Guide to the Law and Good Practice
List of appendices:	Appendix 1: Implications Appendix 2: Plan of tree's location Appendix 3: Email of objection Appendix 4: Council Engineer's report

JH/CG
Duffield.PCC

IMPLICATIONS

Financial

1. None.

Legal

2.1 The Local Planning Authority must, before deciding whether to confirm the Tree Preservation Order, consider any duly made objections.

2.2 The Local Planning Authority may modify the Tree Preservation Order when confirming it.

Personnel

3. None directly arising.

Corporate objectives and priorities for change

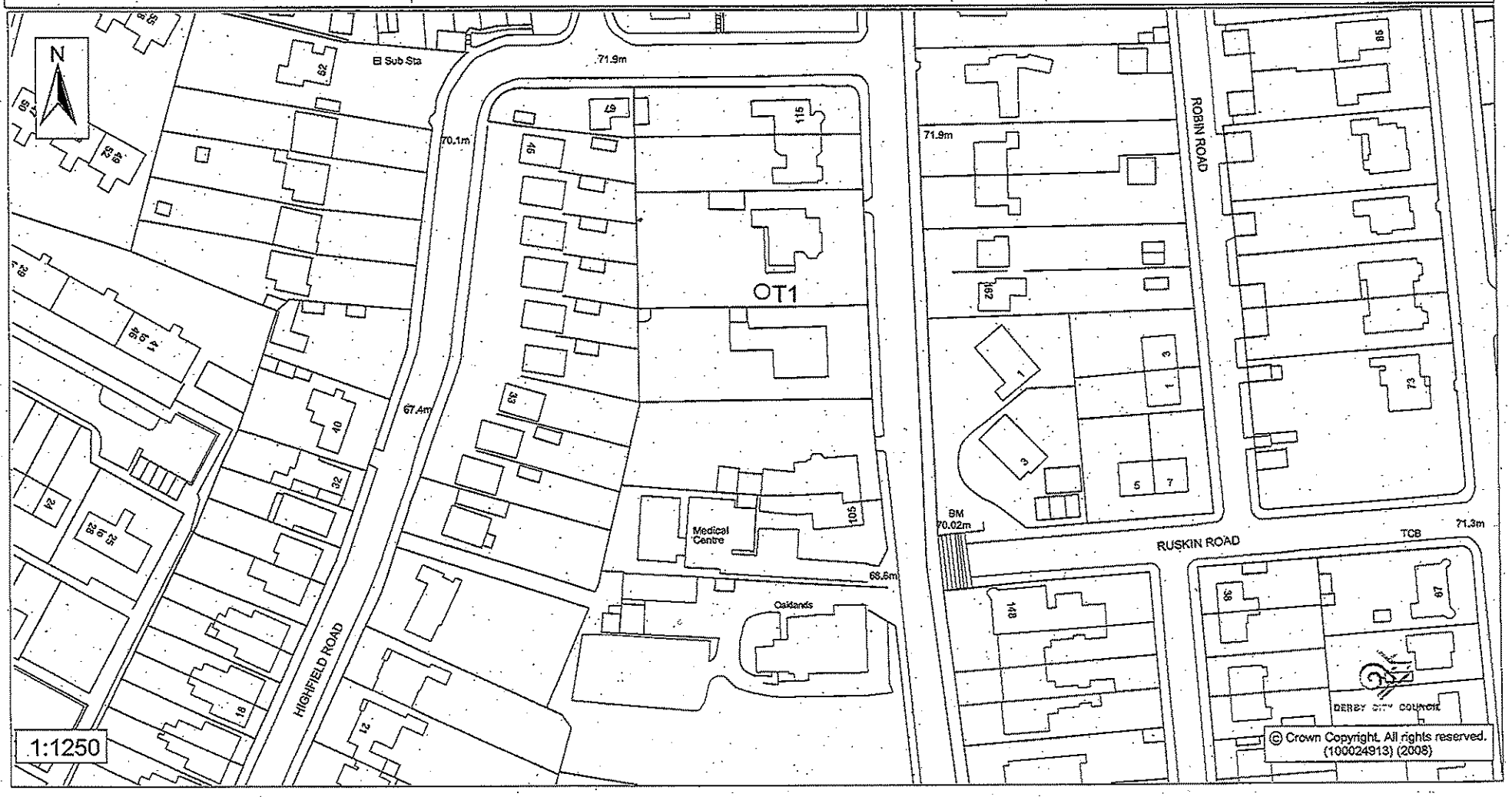
4. The confirmation of Tree Preservation Order 2008 Number 512 will support the Council's vision and priorities by contributing to the priority "Leading Derby towards a better Environment".

DERBY CITY COUNCIL

DERBY CITY COUNCIL
TREE PRESERVATION ORDER
Map referred to in the Derby City Council
111 Duffield Road (Derby)

Tree Preservation Order 2008 No. 512

Regeneration and Community
Roman House
Friar Gate
Derby
DE1 1XB



Humphreys, Jason

From: Jon Freeman
Sent: 26 February 2008 11:14
To: Humphreys, Jason
Subject: Your Ref: JF/CG/512

MT Ref: MI/1501071429/JG
Halifax Ref: 413167508

Hi Jason,

Further to your recent correspondence, we can confirm that we would like to raise an objection to your proposal to place a preservation order on the Beech tree in 111 Duffield Road.

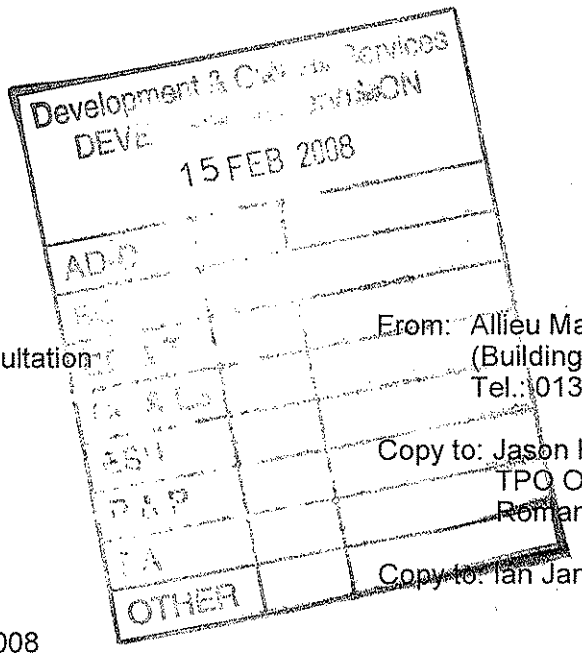
We are now seeking further instruction from our clients as to whether they would like us to make a consent application to request removal of the temporary order and will contact you again in due course.

Many thanks

Jon

Jon Freeman
Client Support Manager
Marishal Thompson & Co.

T: 0117 9658165
F: 08702 414 339
E: jon.freeman@marishalthompson.co.uk



MEMO

To: Sara Claxton
Planning Consultation
Roman House

From: Allieu Mackie
(Building Structures)
Tel.: 01332 256089

Copy to: Jason Humphreys
TPO Officer
Roman House

Copy to: Ian Janes/File

Date: 14th February 2008

TPO (Code No: DER/01/08/00074/PRI): 111 Duffield Road, Derby.

I refer to your request for a structural assessment and/or inspection of the above property and the property no. 109 Duffield Road. I can confirm a limited visual structural inspection was carried out on the 13th of February 2008.

My observations and inferences are as follows:

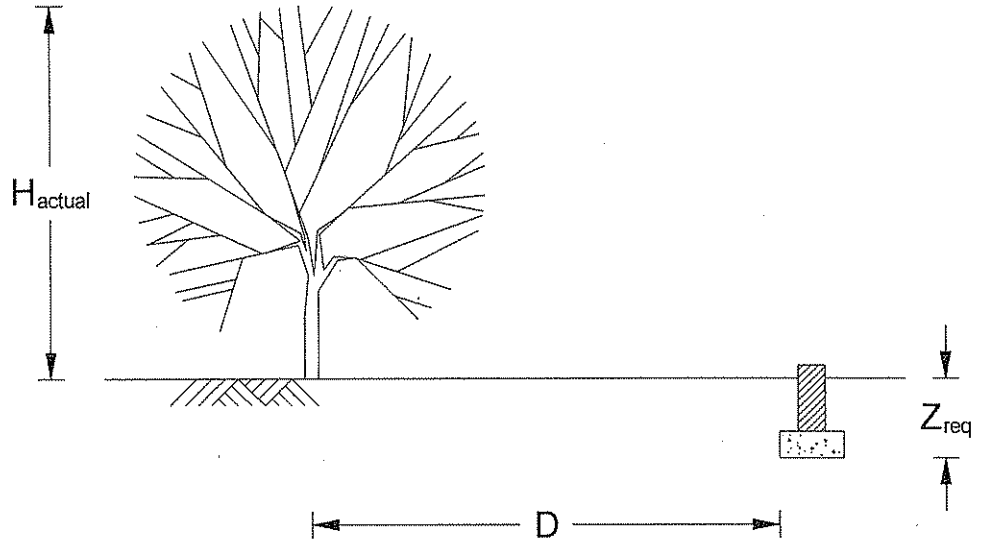
- Rear trees T3, T4 & T5 are Laburnum, Holly and Beech species respectively at distances 6m approximately from the face of property at no. 109 Duffield Road.
- The Laburnum and Holly species are low water demand trees with the Laburnum tree still growing at an estimated height of 9m (approximation by Marishal Thompson & Co.) and the Holly tree at an estimated height of 15m (approximation by Marishal Thompson & Co.). Both heights appear to be slightly overestimated; their mature heights are 12m.
- The Beech specie is a Moderate water demand tree at an approximate height of 15m (Marishal Thompson & Co. approximate it at 20m – an overestimate) and is still growing (its mature height is 20m).
- Rear tree T8 is Oak specie at a distance 15 - 20m approximately from the face of property at no. 109 Duffield Road. The Oak species are high water demand trees with mature heights varying from 16 – 24m.
- The existing structure (109 Duffield Road) at a distance of 6m from the Beech tree alone would require a foundation depth of 1.75m (minimum 0.9m as required by Part A of the Building Regulations) with no Low & High water demand trees within a distance "0.5 x mature height" and "1.25 x mature height" respectively from the face of the foundations (this estimate is based on the maximum Plasticity Index of 43% from test results submitted by Marishal Thompson & Co.). The Laburnum and Holly trees are within 10m from the face of the foundations. It would appear that a combination of T3, T4, T5 and the mixed species group (SG3) may be contributing to volume changes in the soil within 10m of their combined footprint provided the soil has a medium to high volume change potential.
- From the test results submitted by Marishal Thompson & Co. (with no detailed plan(s) of borehole or trial pit locations), the plasticity indices of the soil between the trees and the structure ranges from 14 - 43%, hence the volume change potential of the soil ranges from low to very high in some locations and it remains unclear as to where the maximum values exists.

- The existing structure (109 Duffield Road) at a distance of 6m from the Laburnum and Holly trees would require a foundation depth of 1m (minimum 0.9m as required by Part A of the Building Regulations). The structure (109 Duffield Road) pre-dates the trees but no information on the nature and extent of the foundation has been submitted by Marishal Thompson & Co. It remain unclear as to whether the design did or didn't make allowance for the effect of trees at such close proximity on high plasticity soils in terms of minimum foundation depth requirements.
- Seasonal monitoring of cracks within the property needs to be carried out for at least four seasons (on a continuous basis) to ascertain/relate movements to the trees' zone of influence. The crack monitoring or tell-tale results supplied so far appears to be insignificant and/or inconclusive. They may be reflecting on movements due to stress imbalance changes (expansion of structural elements, say) in the structure due to inherent defects that can occur with or without the influence of a nearby tree (with the soil being of moderate to high plasticity for the tree's influence to be active).
- Now the presence of the Beech tree in combination with the Laburnum & Holly trees (for soil shrinkage purposes) in the vicinity may tend to exacerbate soil volumetric change potentials, even though in this case, the exact spatial variation of soil parameters remains unclear. Removal of the Laburnum & Holly trees will reverse this effect, it is understood that permission may be granted by DCC Planning Consultation to fell the Oak, Laburnum & Holly trees. Removal of the Oak, Laburnum & Holly trees would partially satisfy the minimum depth required by Part A of the Building Regulations.
- In terms of water movements leading to shrinkage/swelling of the soil, the owner may re-submit in evidence details of soil tests carried out from trial pit or bore hole logs (including accurate locations on plans) to establish soil type, fluctuations of water table (if any), more realistic height of trees estimated, accurate distances of trees to both properties (109 & 111 Duffield Road) soil plasticity and foundation depth (minimum depth 0.9m). Cleary demonstrate how these parameters interact with the Beech tree and the resulting movements in the building.
- The extent/depth of the existing foundations needs to be confirmed for a full assessment.
- It is evident that an engineering solution is required to remedy/address the cracking/movements within the property irrespective of whether any tree is removed or not.
- If the Oak, Laburnum & Holly trees are felled/removed, all shrubs (mixed species group SG3) within 3m removed and the depths of the foundation are corrected to at least 1.75m (by an equivalent approved engineering solution), then removal of the Beech tree may not be justified, *i.e.* ***no Beech tree removal***.
- Also, new shrubs may not be planted within 3m of the face of the foundations (as observed on existing conditions).

This report only covers a limited visual inspection of the external walls of the property adjacent to the trees concerned. Any damage which may become apparent from other areas cannot be predicted.

Should you require any further clarification on this matter please do not hesitate to contact Mr. Allieu Mackie on Tel. 01332 256089.

CSC TEDDS	Job Ref.
Roman House, Friar Gate, Derby DE1 1XB	TPO - 111 Duffield Road / DER/01/08/00074/PRI
	Section: Rear Tree T5 / Sheet no./rev.: 1
	Calc. by: A. Mackie / Date: 14/02/2008 / Chk'd by / Date / App'd by / Date



BUILDING NEAR TREES - NHBC STANDARDS CHAPTER 4.2

Tree details

Species of tree	**Broad leaf - Beech**
Mature height of tree	H_{mature} = **20** m
Actual height of tree	H_{actual} = **15** m

The tree is to remain at the site

Tree height for calculation	H = **20** m
Water demand	**Moderate**

From NHBC Standards, Chapter 4.2, Table 2

Zone of influence factor	K = **0.75**
Zone of influence	x = K × H_{mature} = **15** m
Distance from centre of tree to face of foundations	D = **6** m

The foundations are within the zone of influence excerted by the tree

Site details

Site location	**Derby**

From NHBC Standards, Chapter 4.2, Figure 13

Reduction in foundation depth due to climate variations Z_c = **0.10** m

Determine the volume change potential of the soil

Plasticity index from lab tests	I_p = **43** %
Percentage of particles smaller than 425 μm	p_{425} = **100** %
Modified plasticity index	$I'_p = I_p \times p_{425} / 100\%$ = **43** %

From NHBC Standards, Chapter 4.2, Table 1

Volume change potential	**High**

Determine the required foundation depth

From NHBC-Table 15 Broad leafed trees

Base foundation depth	Z_b = **1.85** m
Foundation depth corrected for climate	$Z = Z_b - Z_c$ = **1.75** m

From NHBC Standards, Chapter 4.2, Table 5

Minimum foundation depth	Z_{min} = **1.00** m

Required foundation depth Z_{req} = **1.75** m

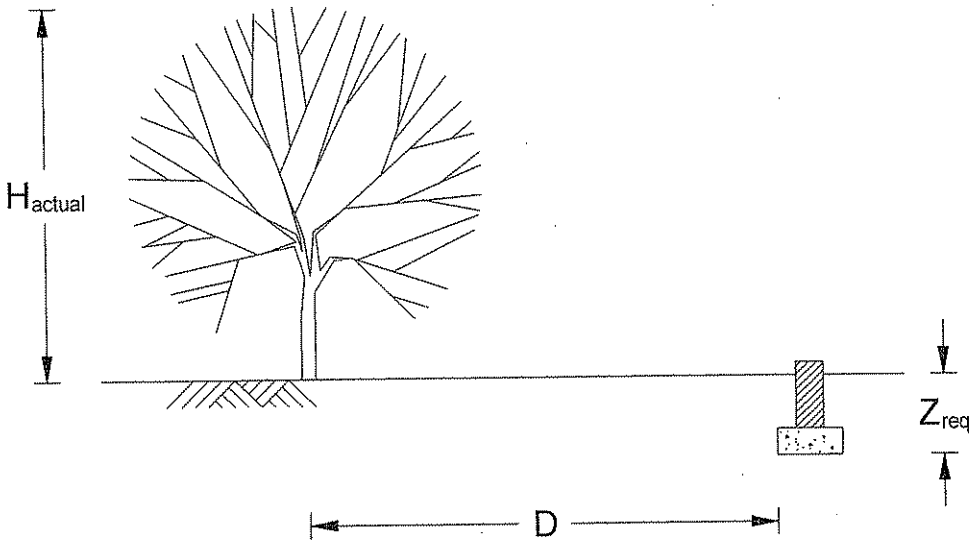
Restrictions on new planting

No new low water demand trees within a distance of 0.5 × mature height from the face of the foundations

No new moderate water demand trees within a distance of 0.75 × mature height from the face of the foundations

No new high water demand trees within a distance of 1.25 × mature height from the face of the foundations

There are no restrictions on the planting of new shrubs



BUILDING NEAR TREES - NHBC STANDARDS CHAPTER 4.2

Tree details

Species of tree	**Broad leaf - Holly**
Mature height of tree	H_{mature} = **12** m
Actual height of tree	H_{actual} = **15** m

The tree is to remain at the site

Tree height for calculation	H = **12** m
Water demand	**Low**

From NHBC Standards, Chapter 4.2, Table 2

Zone of influence factor	K = **0.50**
Zone of influence	x = K × H_{mature} = **6** m
Distance from centre of tree to face of foundations	D = **6** m

The foundations are within the zone of influence excerted by the tree

Site details

Site location	**Derby**

From NHBC Standards, Chapter 4.2, Figure 13

Reduction in foundation depth due to climate variations Z_c = **0.10** m

Determine the volume change potential of the soil

Plasticity index from lab tests	I_p = **43** %
Percentage of particles smaller than 425 μm	p_{425} = **100** %
Modified plasticity index	$I'_p = I_p \times p_{425} / 100\%$ = **43** %

From NHBC Standards, Chapter 4.2, Table 1

Volume change potential	**High**

Determine the required foundation depth

From NHBC-Table 16 Broad leafed trees

Base foundation depth	Z_b = **1.00** m
Foundation depth corrected for climate	$Z = Z_b - Z_c$ = **0.90** m

From NHBC Standards, Chapter 4.2, Table 5

Minimum foundation depth	Z_{min} = **1.00** m

Required foundation depth Z_{req} = **1.00** m

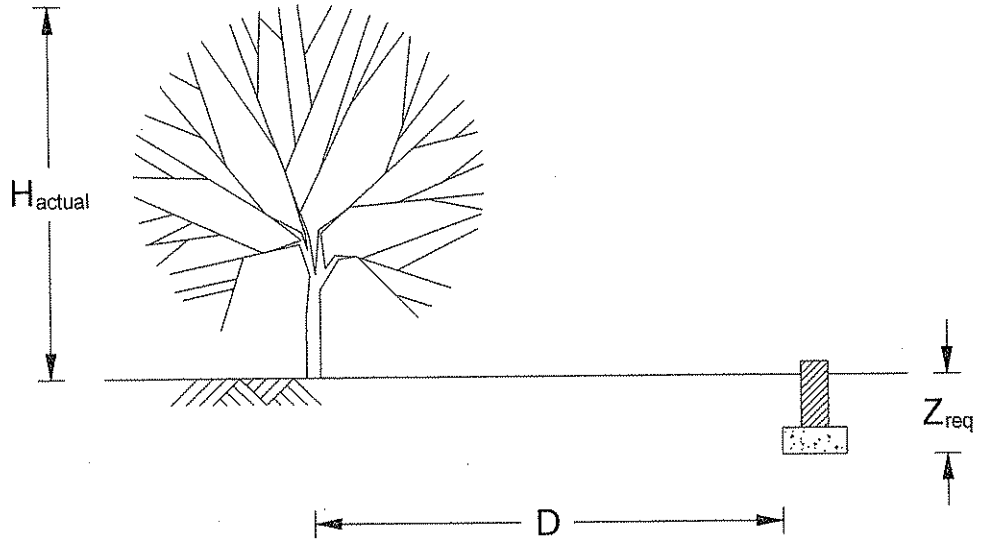
Restrictions on new planting

No new low water demand trees within a distance of 0.5 × mature height from the face of the foundations

No new moderate water demand trees within a distance of 0.75 × mature height from the face of the foundations

No new high water demand trees within a distance of 1.25 × mature height from the face of the foundations

New shrubs may not be planted within 3.0 m of the face of the foundations



BUILDING NEAR TREES - NHBC STANDARDS CHAPTER 4.2

Tree details

Species of tree	**Broad leaf - Laburnum**
Mature height of tree	H_{mature} = **12** m
Actual height of tree	H_{actual} = **9** m

The tree is to remain at the site

Tree height for calculation	H = **12** m
Water demand	**Low**

From NHBC Standards, Chapter 4.2, Table 2

Zone of influence factor	K = **0.50**
Zone of influence	x = K × H_{mature} = **6** m
Distance from centre of tree to face of foundations	D = **6** m

The foundations are within the zone of influence excerted by the tree

Site details

Site location	**Derby**

From NHBC Standards, Chapter 4.2, Figure 13

Reduction in foundation depth due to climate variations Z_c = **0.10** m

Determine the volume change potential of the soil

Plasticity index from lab tests	I_p = **43** %
Percentage of particles smaller than 425 μm	p_{425} = **100** %
Modified plasticity index	$I'_p = I_p \times p_{425} / 100\%$ = **43** %

From NHBC Standards, Chapter 4.2, Table 1

Volume change potential	**High**

Determine the required foundation depth

From NHBC-Table 16 Broad leafed trees

Base foundation depth	Z_b = **1.00** m
Foundation depth corrected for climate	$Z = Z_b - Z_c$ = **0.90** m

From NHBC Standards, Chapter 4.2, Table 5

Minimum foundation depth	Z_{min} = **1.00** m

Required foundation depth Z_{req} = **1.00** m

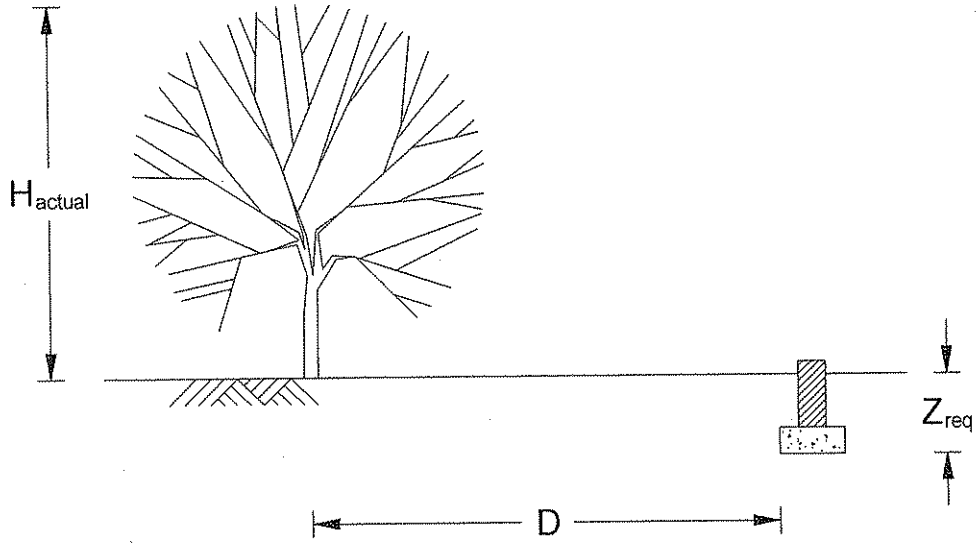
Restrictions on new planting

No new low water demand trees within a distance of 0.5 × mature height from the face of the foundations

No new moderate water demand trees within a distance of 0.75 × mature height from the face of the foundations

No new high water demand trees within a distance of 1.25 × mature height from the face of the foundations

New shrubs may not be planted within 3.0 m of the face of the foundations



BUILDING NEAR TREES - NHBC STANDARDS CHAPTER 4.2

Tree details

Species of tree	**Broad leaf - Holly**
Mature height of tree	H_{mature} = **12** m
Actual height of tree	H_{actual} = **15** m

The tree is to be removed from the site before construction

Tree height for calculation	H = **12** m
Water demand	**Low**

From NHBC Standards, Chapter 4.2, Table 2

Zone of influence factor	K = **0.50**
Zone of influence	x = K × H_{mature} = **6** m
Distance from centre of tree to face of foundations	D = **6** m

The foundations are within the zone of influence excerted by the tree

Site details

Site location	**Derby**

From NHBC Standards, Chapter 4.2, Figure 13

Reduction in foundation depth due to climate variations Z_c = **0.10** m

Determine the volume change potential of the soil

Plasticity index from lab tests	I_p = **43** %
Percentage of particles smaller than 425 μm	p_{425} = **100** %
Modified plasticity index	$I'_p = I_p \times p_{425} / 100\%$ = **43** %

From NHBC Standards, Chapter 4.2, Table 1

Volume change potential	**High**

Determine the required foundation depth

From NHBC-Table 16 Broad leafed trees

Base foundation depth	Z_b = **1.00** m
Foundation depth corrected for climate	$Z = Z_b - Z_c$ = **0.90** m

From NHBC Standards, Chapter 4.2, Table 5

Minimum foundation depth	Z_{min} = **1.00** m

Required foundation depth Z_{req} = **1.00** m

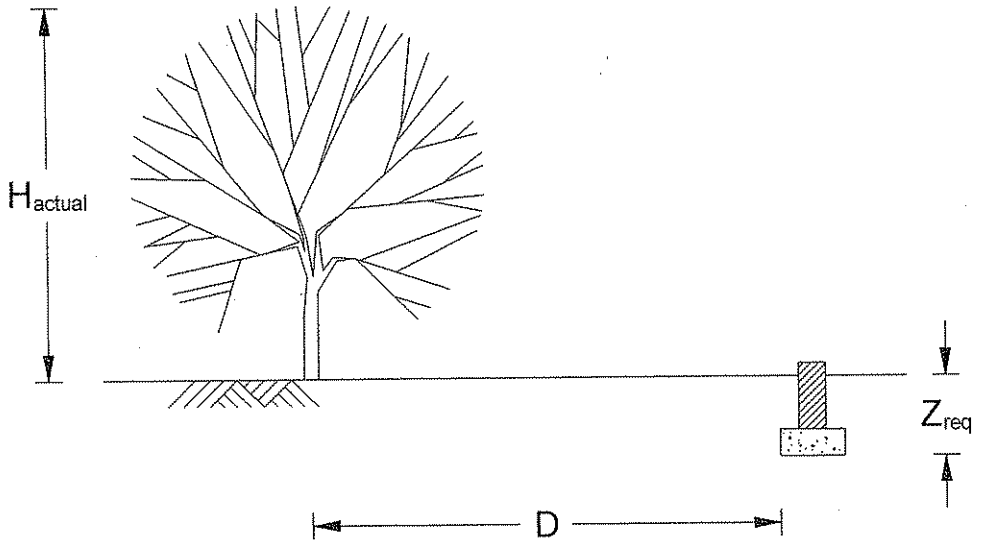
Restrictions on new planting

No new low water demand trees within a distance of 0.5 × mature height from the face of the foundations

No new moderate water demand trees within a distance of 0.75 × mature height from the face of the foundations

No new high water demand trees within a distance of 1.25 × mature height from the face of the foundations

New shrubs may not be planted within 3.0 m of the face of the foundations



BUILDING NEAR TREES - NHBC STANDARDS CHAPTER 4.2

Tree details

Species of tree	**Broad leaf - Laburnum**
Mature height of tree	H_{mature} = **12** m
Actual height of tree	H_{actual} = **9** m

The tree is to be removed from the site before construction

Tree height for calculation	H = **12** m
Water demand	**Low**

From NHBC Standards, Chapter 4.2, Table 2

Zone of influence factor	K = **0.50**
Zone of influence	x = K × H_{mature} = **6** m
Distance from centre of tree to face of foundations	D = **6** m

The foundations are within the zone of influence excerted by the tree

Site details

Site location	**Derby**

From NHBC Standards, Chapter 4.2, Figure 13

Reduction in foundation depth due to climate variations Z_c = **0.10** m

Determine the volume change potential of the soil

Plasticity index from lab tests	I_p = **43** %
Percentage of particles smaller than 425 μm	p_{425} = **100** %
Modified plasticity index	$I'_p = I_p \times p_{425} / 100\%$ = **43** %

From NHBC Standards, Chapter 4.2, Table 1

Volume change potential	**High**

Determine the required foundation depth

From NHBC-Table 16 Broad leafed trees

Base foundation depth	Z_b = **1.00** m
Foundation depth corrected for climate	$Z = Z_b - Z_c$ = **0.90** m

From NHBC Standards, Chapter 4.2, Table 5

Minimum foundation depth	Z_{min} = **1.00** m

Required foundation depth Z_{req} = **1.00** m

Restrictions on new planting

No new low water demand trees within a distance of 0.5 × mature height from the face of the foundations

No new moderate water demand trees within a distance of 0.75 × mature height from the face of the foundations

No new high water demand trees within a distance of 1.25 × mature height from the face of the foundations

New shrubs may not be planted within 3.0 m of the face of the foundations