DR. FRANK HOPE

Forensic & Planning Arboricultural Consultant

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ARBORICULTURAL METHOD STATEMENT RELATING TO THE PHYSICAL PROTECTION OF THE TREES WITHIN, AND ADJACENT TO, NUMBER 40 PLATTS LANE, LONDON, NW3.

CLIENT NAME:	Mr & Mrs Smithson C/O Simon Smith and Michael Brooke (Architects) No.3 Scout Lane London SW4 0LA **Ref:** None specified
REFERENCE:	FH-Smithson-Schmidt-40-Platts-Lane-London Method Statement

1.0 FORMAL DETAILS.

1.1 My name is Dr. Frank Hope and I am currently 66 years of age. I am an independent Arboricultural Consultant based at Chestnut House, Northside, Thorney, Peterborough. The practice specialises in arboriculture, urban forestry, biological sciences and project management. I have advised many major clients during the past thirty years, for example, Sainsburys, Midland Bank, Alfred McAlpine, P&O, Ministry of Defence, Environment Agency, Local Authorities, Insurance Companies and Loss Adjusters.

1.2 For five years (April 1998 to April 2003), I acted for the Office of the Deputy Prime Minister (ODPM) as an Inspecting Officer on Tree Preservation Order Appeals. This provided me with a detailed insight into this topic.

1.3 In addition to having a doctorate and masters degree in Biological Sciences (research on woody plants), I hold the National Diploma in

Arboriculture (RFS) which is the foremost practical British qualification in trees and their management. I also hold numerous general horticultural qualifications, the most notable of which is the National Diploma of Horticulture (now the Master of Horticulture (RHS)).

1.4 I am a retired Fellow of the Arboricultural Association, and a retired Fellow of the Institute of Groundsmanship. I am a past member of the education committee of the Arboricultural Association, past vice Chairman of the East Anglian Branch, and am a past member of the governing council. I am also a past member of the governing body of the East of England Show.

1.5 During 1997 I was one of three people commissioned by the Arboricultural Association to develop a computerised model capable of assessing the future risk of subsidence damage to buildings when trees are growing close-by.

1.6 For further detail on my qualifications and experience see Appendix -A-.

2.0 AUTHORITY AND BRIEF.

2.1 The initial authority for this commission was provided by Mrs Smithson in the form of an email.

2.2 The objectives of this commission are to:

- produce a method statement relating to the protection of the trees growing within, and adjacent to , number 40 Platts Lane, London.

3.0 BRIEF INTRODUCTION TO THE REQUIREMENT OF THIS REPORT.

3.1 I first visited the site on the morning of the 26th of July 2012, and revisited on the 4th of December 2015, i.e. to update my initial impact assessment report which was by then over two years old. At the time of my second visit no planning consent had been given, and no confirmation had been obtained for the removal of any vegetation within the grounds of the property. I had not been provided with detailed documentation covering the various aspects of the proposed development.

3.2 Planning consent has now been granted to erect a new brick-built wall with timber fencing, timber gates and a new driveway hard-standing, with

associated tree works. Permission has been granted to remove all but one of the trees and all the hedging within the property.

3.3 The Local Planning Authority has imposed a tree-related condition (Number 3) covering the protection of the retained trees prior to, and during, the development works. The condition is as follows:

"*Prior to commencement of any works on site, details demonstrating how trees to be retained shall be protected during the construction work shall be submitted to and approved by the Council in writing. Such details shall follow guidelines and standards set out in BS5837:2012 "Trees in Relation to Construction". All trees on the site, or parts of trees growing from adjoining sites, unless shown on the permitted drawings as being removed, shall be retained and protected from damage in accordance with the approved protection details.*"

Reason:

"*To ensure that the development will not have an adverse effect on existing trees and in order to maintain the character and amenity of the area in accordance with the requirements of policy CS15 of the London Borough of Camden Local Development Framework Core Strategy."*

3.4 The Local Planning Authority has imposed a landscape condition (Number 4) covering the protection of the retained trees prior to, and during, the development works. The condition is as follows:

"*Prior to the end of the next available planting season, replacement tree planting shall be carried out in accordance with details of replanting species, position, date and size, where applicable, that have first been submitted to and approved by the local planning authority in writing.*"

Reason:

"*To ensure that the development achieves a high quality of landscaping which contributes to the visual amenity and character of the area, in accordance with the requirements of policies CS14, CS15 of the London Borough of Camden Local Development Framework Core Strategy and policy DP4 of the London Borough of Camden Local Development Framework Development Policies.*"

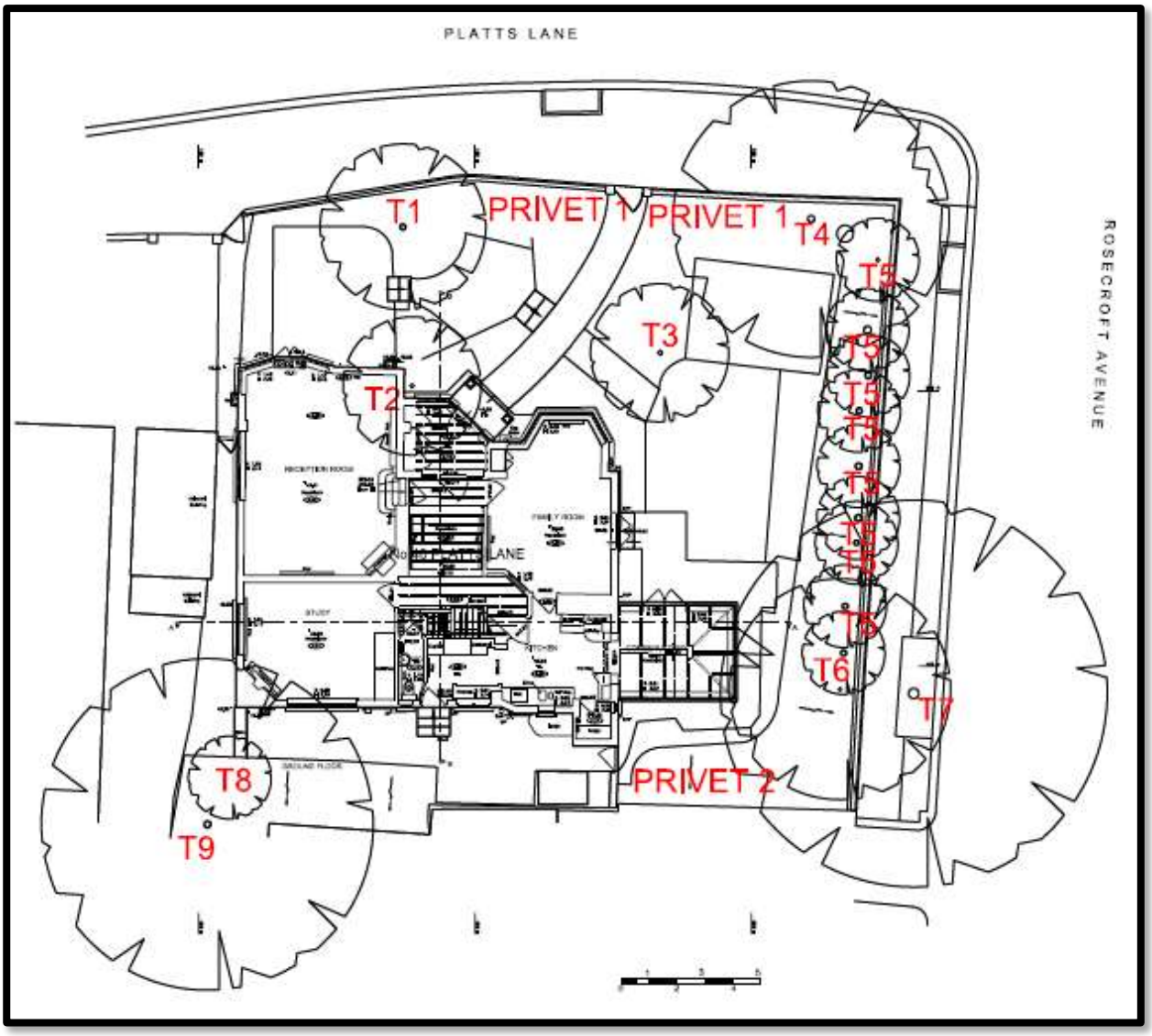
3.5 This Arboricultural Method Statement has been commissioned to address

the tree protection issues of the site.

4.0 THE VEGETATION PRESENT AT THE TIME OF MY INITIAL VISIT INSPECTION.

4.1 The following plan shows the location of the trees within, and adjacent to, the site at the time of my initial site visit.

Plan showing the location of the trees on the site.

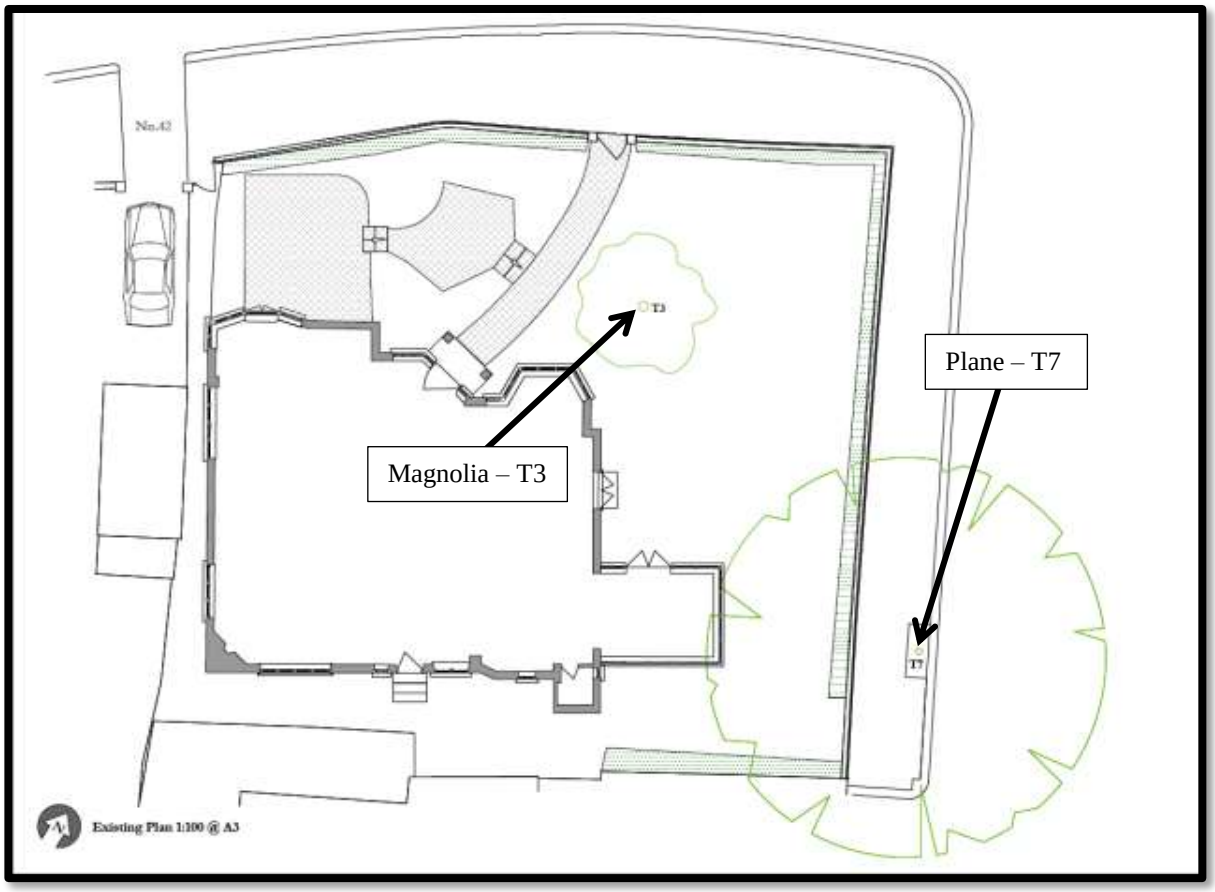


4.2 The following tree survey schedule provides detail on the trees within, and adjacent to, the site at the time of my site visit. Some of the numbers in the schedule represent groups of trees, not individuals.

TREE SURVEY SUMMARY											
Tree No.	Species	Height (m)	Branch spread Av. m	Stem Dia Mm	Age class	Height of crown clearance m	Physiological condition	Structural Condition	Prelim. Recomms..	Remaining contri-bution in years	BS: Cat.
T1	Lawson's Cypress	12.0	N 3.0 S 3.0 E 3.0 W 3.0	235, 153, 150, 54,54 86,76	M	2.0	Poor	Poor	Could retain	<20	C1
T2	Ceanothus	3.5	N 2.5 S 2.5 E 2.5 W 2.5	120	M	4.0	Poor	Very poor	Remove	<10	U
T3	Magnolia	6.0	N 3.5 S 3.5 E 3.5 W 3.5	178	M	0.7	Average	Average	Could retain	<20	C1
T4	Removed	-	N - S - E - W -	-	-	-	-	-	Removed	-	-
T5	Leyland Cypress hedge	14.0	N 2.5 S 2.5 E 2.5 W 2.5	280	M	0.4	Average	Poor	Remove to rebuild wall	<10	U
T6	Ash	12.0	N 3.0 S 3.0 E 3.0 W 3.0	140	MA	4.0	Poor	Very poor	Remove to rebuild wall	<10	U
T7	London Plane	13.0	N 5.5 S 5.5 E 5.5 W 5.5	380	MA	4.0	Average	Average	Retain	>40	B1
T8	Ash	12.0	N 3.0 S 3.0 E 3.0 W 3.0	160	MA	4.0	Poor	Poor	Ideally remove	<20	U
T9	Sycamore	12.0	N 4.0 S 4.0 E 4.0 W 4.0	180	MA	4.0	Poor	Poor	Ideally remove	<20	C1/U
---	Privet 1	Up to 4.0	N 2.0 S 2.0 E 1.0 W 1.0	-	M	0.3	Poor	Poor	either remove or re-clip	>40	-
---	Privet 2	4.0	N 1.5 S 1.5 E 1.5 W 1.5	-	M	1.0	Poor	Poor	Ideally remove, but could re-clip	<20	-

4.3 The plan on the following page identifies the location of the two trees to be retained following the consent. Tree T3, is a maturing Magnolia growing within the front garden of the property, and tree T7 is a London Plane tree located within the public pavement along Rosecroft Avenue.

Plan showing the locations of the two trees to be retained.



Picture showing the Magnolia grandiflora (Tree T3).

5.0 THE MAGNOLIA – T3.

5.1 The Magnolia (*Magnolia grandiflora*) is a maturing evergreen shrub growing in the front garden. It is currently 6.0 metres tall, with an overall crown spread of 7.0 metres, and a trunk diameter of 178mm, at a height of 700mm above ground level. The main branches emanate 700mm above ground level. The tree appears generally healthy, although it does have an open crown (See the picture on page 6 above). It cannot be seen to any extent from outside the property, and has a British Standard 5837 category rating of "C1".

6.0 THE LONDON PLANE – T7.

6.1 A middle-aged London Plane (*Platanus x hispida*) growing within the pavement along Rosecroft Avenue. It is currently approximately 13.0 metres tall, with an average crown spread of 11.0 metres and a trunk diameter of 380mm. The main branches emanate 3.0 metres above ground level, and it appears generally healthy (See the picture below). Part of the crown overhangs the garden of number 40 Platts Lane. It has a British Standard 5837 category rating of "B1".

Picture showing the London Plane (Tree T7) growing in the pavement at the side of the property.

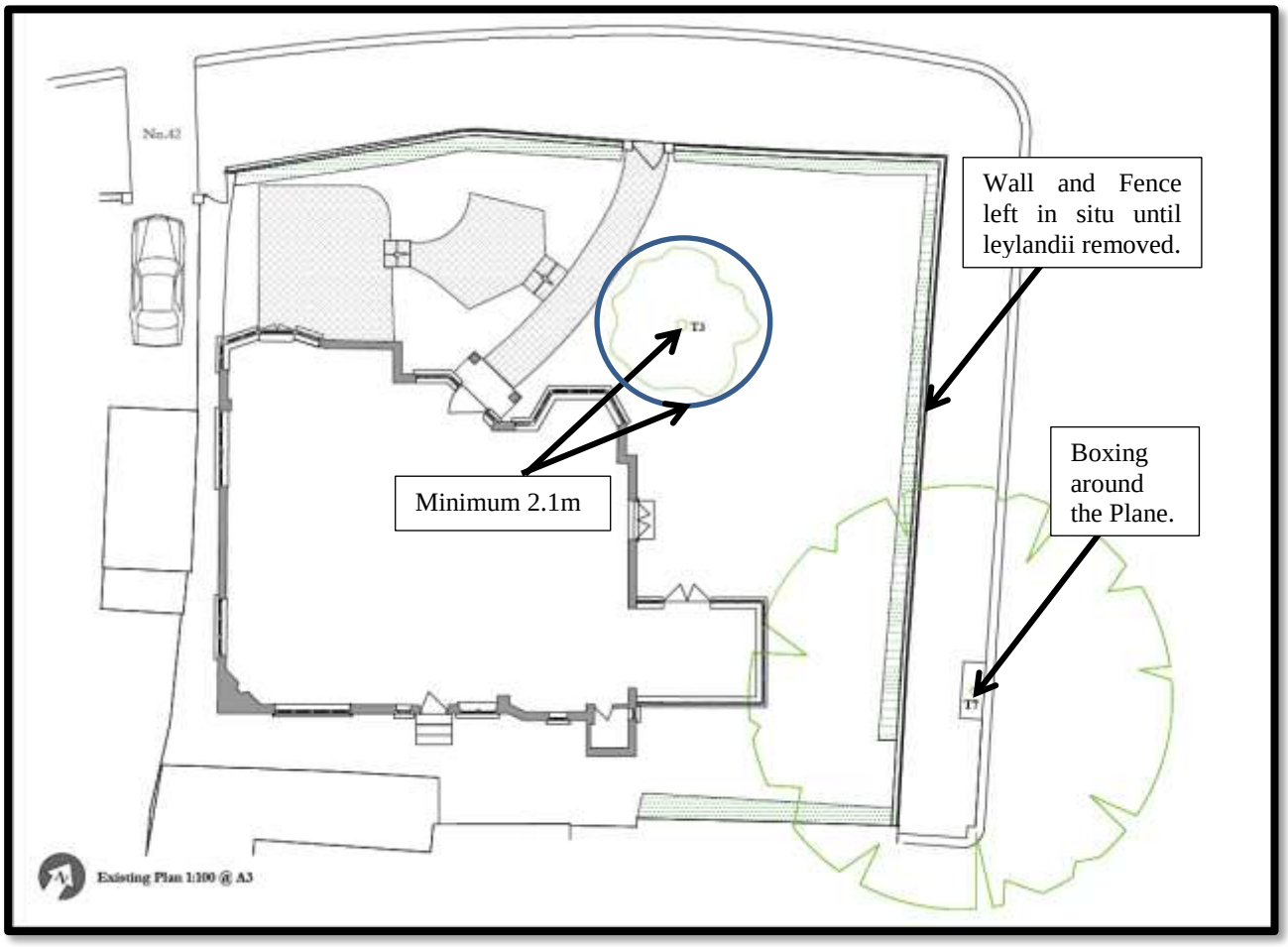
7.0 THE CALCULATED ROOT PROTECTION AREAS.

7.1 The following table includes the circular theoretical Root Protection Areas for the Magnolia (T3) shrub in the front garden of number 40 Platts Lane, and that of the Plane (T7) located in the pubic pavement on Rosecroft Avenue, to the side of the property.

No.	Location	Tree species		Radius of Circle	RPA (m^2)
T3	Front garden	Magnolia	(C1)	2.1m	14
T7	Roadside	London Plane	(B1)	4.5m	64

7.2 It should be noted, and has effectively been accepted by the Local Planning Authority, that the Root Protection Area of the Plane in this instance is largely academic, due to the presence of the boundary wall, and the steeply sloping section of the garden.

Plan showing the locations of the two trees to be retained.



7.3 The plan on page 8 above shows the position of the proposed protective fencing around the Magnolia. The fencing will be located outside the Root Protection Area of the plant (minimum 2.1 metres) but also outside its canopy spread.

7.4 The trunk of the Plane will be "boxed-in" with 2.0 metre high plyboard, and the existing boundary wall and fencing will be retained until the Leylandii hedge and privet are removed.

8.0 INTRODUCTION TO TREE PROTECTION MEASURES.

8.1 The majority of damage to trees on development sites occurs within a few hours of machinery first entering the site. The damage can occur in numerous ways. It can be direct, i.e. where the trees are physically hit by moving plant, or indirect, where the soil structure or levels are changed to such an extent that the moisture regimes are altered. It should also be appreciated that other agencies, such as spilt fuel, or fires can cause significant damage.

8.2 It is essential that tree protection measures are put in place before any demolition/construction takes place, and before any construction traffic is allowed on the sensitive sections of a site.

8.3 Section 6 of the current British Standard 5837 provides guidance and recommendations relating to the protection of the construction exclusion zone. Abbreviated notes from the British Standard, i.e. which are relevant to the protection of the Magnolia and Plane are identified below.

Barriers:

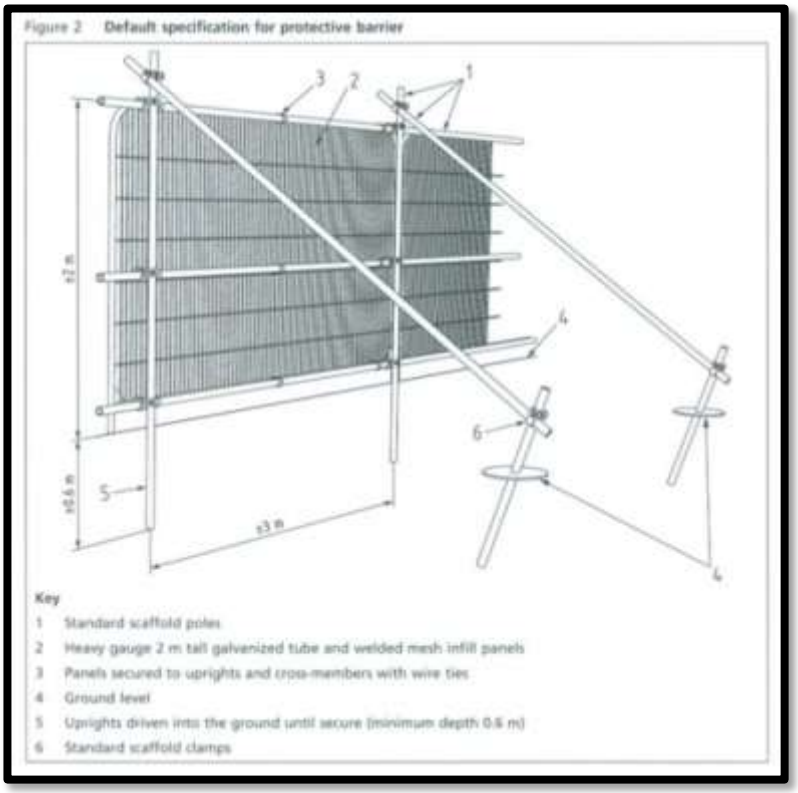
"Barriers should be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained tree(s). Barriers should be maintained to ensure that they remain rigid and complete."

The default specification of the protection should consist of a vertical and horizontal scaffold framework well braced to resist impacts, as illustrated in Figure 2."

8.4 Figures 2 and 3 of British Standard 5837 are included on the following page for ease of reference.

Figures 2 and 3 of British Standard 5837.

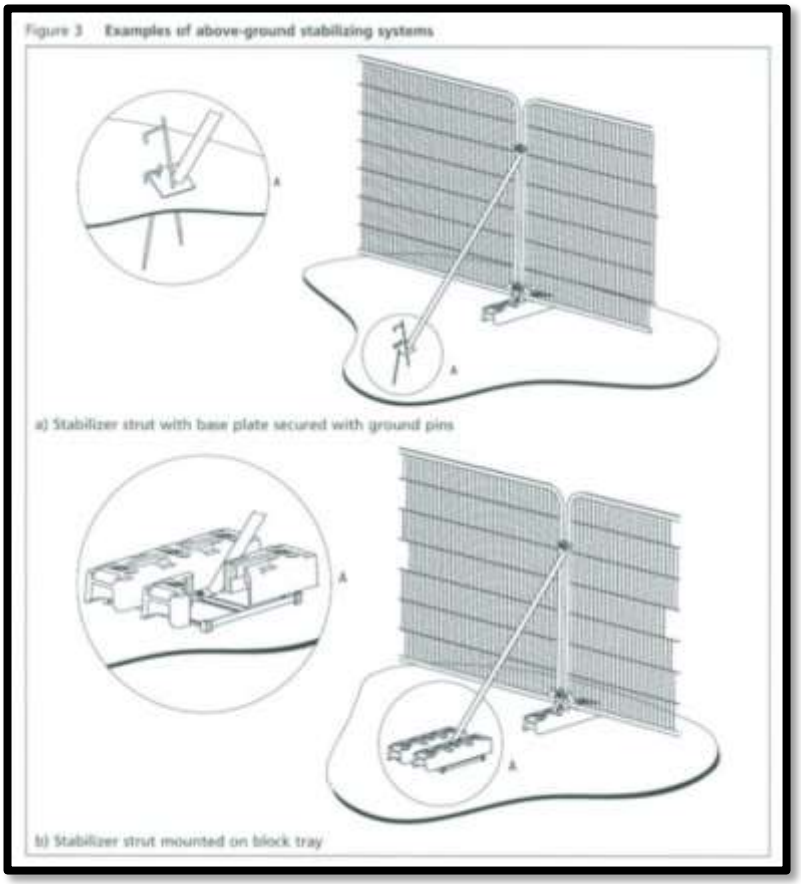
Figure 2 **Default specification for protective barrier**



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Figure 3 **Examples of above-ground stabilizing systems**



a) Stabilizer strut with base plate secured with ground pins

b) Stabilizer strut mounted on block tray

8.5 The protected areas should be considered as being sacrosanct, and once the protective measures are constructed, they should not be moved, or modified, without prior consultation with the project Arboriculturalist.

8.6 It is essential that no protective fencing or boarding is removed until all of the construction works are completed.

9.0 METHOD STATEMENT RELATING TO THE PROTECTION OF THE MAGNOLIA (T3).

9.1 Prior to the commencement of any construction works, or any tree removal being carried out, the Local Planning Authority will be provided with the name and contact details of the project Arboriculturalist.

9.2 In this instance the arboriculturalist will be Dr. Frank Hope, whose landline telephone number is 01733 350500, and his mobile number is 07860 227002. Dr Hope's email address is frank.hope@btconnect.com.

9.3 Prior to any demolition/construction work or tree removal commencing on the site, the Magnolia will be physically protected using protective fencing as per Figures 2 and 3 of British Standard 5837. The fencing will be erected outside the Root Protection Area of the plant, i.e. a minimum of 2.1 metres from the centre of its trunk, but also outside its canopy spread whichever is the greater (See the plan on page 8 above).

9.4 No access facilitation pruning will be required to be carried out on the Magnolia.

9.5 All-weather notices will be attached to the protective fencing containing the words "CONSTRUCTION EXCLUSION ZONE – NO ACCESS".

9.6 Once the protective fencing is erected, and prior to the commencement of any site works, the Local Planning Authority Arboricultural Officer will be provided with the opportunity to verify the appropriateness and placement of the protective fencing.

9.7 Once the protective fencing has been erected, and verified by the Local Planning Authority Arboricultural Officer, the protected Root Protection Area will be sacrosanct, and under no circumstances will any personnel or equipment be allowed to enter the protected area. All subsequent work will be carried out from the construction side of the fencing, unless specifically agreed in writing with the Local Planning Authority.

9.8 All materials for the proposed development will be stored outside the protective fencing, and no heavy mechanical machinery or site facilities will be allowed within the protected area.

9.9 No fires will be allowed within the garden of the property, and no fuel or toxic materials will be stored in the garden.

9.10 The Local Authority Arboricultural Officer will be provided with access at all times during normal working hours.

9.11 If any tree-related problems arise in relation to the safety of the Magnolia, or any bad practices are noted, the work within the area will immediately be stopped, and will not commence until the project Arboriculturalist identifies and agrees appropriate remedial actions.

9.12 Once the development is complete the protective fencing will be dismantled from around the Magnolia, and be removed from the site.

10.0 METHOD STATEMENT RELATING TO THE PROTECTION OF THE LONDON PLANE (T7).

10.1 The London Plane is located within the public pavement on Rosecroft Avenue.

10.2 Prior to any demolition/construction work or any tree removal commencing on the site, the trunk of the Plane tree will be physically protected using marine 2.0 metre high plyboard sheeting, i.e. to "box-in" the trunk and prevent any physical damage occurring during the removal and reconstruction of the boundary wall.

10.3 Some of the canopy of the Plane overhangs the boundary of number 40 Platts Lane. However, no Access Facilitation Pruning will be required to be carried out on the tree. If, during the development, any pruning is identified as being required, the project Arboriculturalist will consult, and agree with, the Local Planning Authority Arboricultural Officer as to the extent of acceptable pruning.

10.4 All-weather notices will be attached to the plywood boarding containing the words "CONSTRUCTION EXCLUSION ZONE – NO ACCESS".

10.5 Once the protective boarding is erected, and prior to the commencement of any site works, the Local Planning Authority Arboricultural Officer

will be provided with the opportunity to verify the appropriateness and placement of the protective boarding.

10.6 When the protective boarding has been erected, and verified by the Local Planning Authority Arboricultural Officer, the protected area will be sacrosanct, and under no circumstances will any personnel or equipment be allowed to enter the protected area. All subsequent work will be carried out from the construction side of the boarding, unless specifically agreed in writing with the Local Planning Authority.

10.7 The public pavement between the Plane tree and the boundary wall of the property will be retained in situ, so as to protect the roots of the tree.

10.8 All materials for the proposed development will be stored outside the canopy spread of the tree, and no site huts or heavy mechanical equipment will be stored beneath the tree canopy.

10.9 If any tree-related problems arise in relation to the safety of the Plane, or any bad practices are noted, the work within the area will immediately be stopped, and will not recommence until the project Arboriculturalist identifies and agrees appropriate remedial actions.

10.10 In order to ensure that the Plane is not harmed in any way during the removal of the Leylandii hedge, i.e. running along the boundary edge of the property, the existing boundary wall, and the wooden fencing on top of the wall will initially be retained in situ.

10.11 Following the protection of the Plane's trunk, the Leylandii hedge will be removed from the boundary of the property, with all of the other trees and hedges identified for removal. The work will be carried out by an Arboricultural Association registered contractor, acceptable to the Local Planning Authority Arboricultural Officer, and where appropriate the work will comply with British Standard 3998 "Tree Work" 2010.

10.12 All of the roots of the Leylandii hedge will be removed from the site to enable the reconstruction of the boundary wall. The roots of trees on level ground will be either dug out, or ground out.

10.13 The Local Planning Authority Arboricultural Officer will be given the opportunity to inspect the tree/hedge removal works.

10.14 Once the Leylandii hedge is removed, the existing wooden fencing and

boundary wall will be removed by hand, and the materials will be disposed of off site.

10.15 The project Arboriculturalist will monitor the removal of the boundary wall and fencing to ensure that no damage occurs to the Plane.

10.16 A detailed inspection of the works will be carried out to identify if any significant roots are present beneath the foundations of the boundary wall. If any live roots in excess of 25mm in diameter are encountered beneath the existing foundations the project Arboriculturalist will consult with the Local Authority Arboricultural Officer to decide the most appropriate action to be taken. Any roots up to 25mm that are encountered will be severed with a sharp saw to minimise the risk of disease ingress.

10.17 Following the demolition of the boundary wall and fencing, the new wall will be constructed as per the methodology provided by the project Structural Engineer, Mr Rajesh Sapkal (See Appendix "B").

8.16 Once the development is complete the protective boarding will be dismantled from around the Plane, and be removed from the site.

11.0 MITIGATION PLANTING.

11.1 Once the construction works are complete the site will be landscaped as per the approved scheme (See Appendic "C"). The planting of the mitigation planting will be carried out during the autumn and winter following the completion of the construction works.

F Hope

17th March 2016

APPENDIX -A-

Dr. Frank Hope

PROFESSIONAL QUALIFICATIONS AND EXPERIENCE

Dr. Hope has been involved with the land-based industries for the past 48 years. During this time he has worked for local government, the Royal Horticultural Society, the Institute of Groundsmanship and private industry. In the early 1970's he trained at the RHS Gardens Wisley and later became a practical arborist in the gardens. For four years he was a lecturer in Horticulture and Arboriculture at the Cheshire College of Agriculture, and has more recently been a part-time lecturer to the BTEC National Diploma course in Countryside management, at the Cambridgeshire College of Agriculture. He has been an Arboricultural and Horticultural examiner for the Royal Forestry Society, the Royal Horticultural Society and the Institute of Groundsmanship.

The majority of his work is based in East Anglia, and London, although he has taken commissions throughout the world. For example, in the 1980's he was involved in the management and harvesting of a 26,000 acre hardwood crop in Malaya. He carries out technical projects for a range of organisations on both Arboricultural and general Horticultural subjects, and has been involved in the proposed re-development of the Elephant and Castle, and the area around Waterloo station in London. He specialises in both legal and planning aspects of trees.

He has been a technical adviser to the Jockey Club and Racecourse Association, and organised all their training courses for over five years.

During 1997, Dr. Hope was one of three people commissioned by the Arboricultural Association to develop a computerised model capable of assessing the future risk of subsidence damage to buildings when trees are growing close-by. He has also given the Association advice on the Arboricultural Appendix to the ISE handbook.

Over the past 20 years, Dr. Hope has been involved in over 3,500 cases involving trees and subsidence damage to buildings. He regularly gives evidence in court, and has experience as a single joint expert. Notable cases in which he has been involved are Siddiqui & Sohanpal -v- London Borough of Hillingdon, Loftus Brigham -v- London Borough of Ealing, Dayani -v- London Borough of Bromley, Berent -v- Family Mosaic & The London Borough of Islington, Robbins -v- London Borough of Bromley, and Battley -v- Wycombe District Council.

For five years (until April 2003), Dr. Hope acted for the Office of the Deputy Prime Minister as an Inspecting Officer on Tree Preservation Order Appeals, which provided him with a detailed insight into this topic.

In addition to having a Doctorate and a Masters degree in Biological Sciences (based on Arboricultural and Horticultural research), Dr Hope holds the National Diploma in Arboriculture (RFS), which is the premier practical qualification for Arboriculture, and the National Diploma in Horticulture (now the Master of Horticulture), administered by the Royal Horticultural Society. The Master of Horticulture is the world premier qualification for general horticulture. Dr. Hope is a past examiner for the final stages of the Master of Horticulture qualification. His personal qualifications are at the highest level; the major ones are as follows:

Doctor of Philosophy (Ph.D):	University of Bath, Biological Sciences Dept. The Development of a computerised Plant Establishment and Growth Model for use with Landscape Trees and Shrubs.
Master of Philosophy (M.Phil):	University of Bath Biological Sciences Dept. The Development of a Computerised Information Retrieval System for Decorative Plant Selection.
National Diploma in Horticulture:	Administered by the Royal Horticultural Society.
National Diploma in Arboriculture (N.D.Arbor):	Royal Forestry Society.

National Certificate in Arboriculture (Distinction):	Royal Forestry Society.
Wisley Diploma in Horticulture:	Royal Horticultural Society.
Advanced Diploma in Horticulture:	Writtle Agricultural College.
Certificate of Education:	Wolverhampton Teacher Training College, (Wolverhampton Polytechnic).

SOME PUBLISHED WORKS

Recognition and Control of Pest and Diseases of Farm Crops	Blandford Press 1980 ISBN 0 7137 0995
The Garden Planner	Hardback - Collins 1981 Softback - Fontana 1981 Softback - Pilot 1983 ISBN 0 00 4116622 Co-author of each edition
QL Gardener Manual	Sinclair Research 1985 ISBN 1 850 160449
The New Organic Grower	Cassall Publishers 1990 ISBN 0 304 34013 8
Turf Culture	Blandford Press 1978 ISBN 0 7137 0873 5
Turf Culture - A manual for the Practising Groundsman	Cassall 1990 ISBN 0-304-31854-X
Rasen	German Edition of Turf Culture ISBN 3-8001-5038-7
NVQ Levels 1 & 2 manuals	Technical author for the British Association of Landscape Industries (BALI) instruction manuals for general horticulture and turfculture at levels 1 and 2, for the National Vocational Qualifications.

Numerous articles on Horticulture, Arboriculture and computers in a range of magazines, e.g. Horticulture Week, The Groundsman, Personal Computer World.

SOME PUBLISHED SOFTWARE

Horticultural Key	Quanta magazine.
Plant Selector II	A.J. Harding Molimerx Ltd.
Computerised Ornamental Plant Retrieval System	University of Bath.
Genus Plant Selector	Intersearch Ltd.

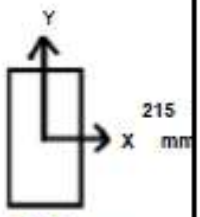
Plant Establishment and Growth Model	University of Bath.
QL Gardener	Sinclair Research.

APPENDIX -B-

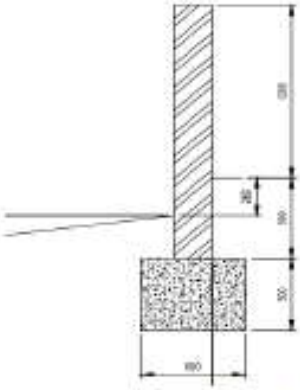
BRICK MASONARY RETAINING WALL DESIGN

1) 215 ~220 MM THICK BRICK WALL DESIGN Oak

GENERAL DATA			WALL DATA	
Density of Brick (kN/Cum):	18.0		Depth 'h' [mm] =	215
Bending Stress (Mpa) :	0.3	BS5628	Width 'b' [mm] =	1000
Mortor	1:1:6		Total 'l' [mm] =	2400
Surcharge Load (kN/Sqm)	2.0		Ixx [cm4] =	82819.79
Density of Soil (kN/Cum):	16.0		Zxx [cm3] =	7704.17
Angle of Repose (30°) , K :	0.33	(Assumed)	Wall Height [mm] =	1760
Density of Concrete (kN/Cum):	24.0		Self weight, [kN/m],W =	6.81



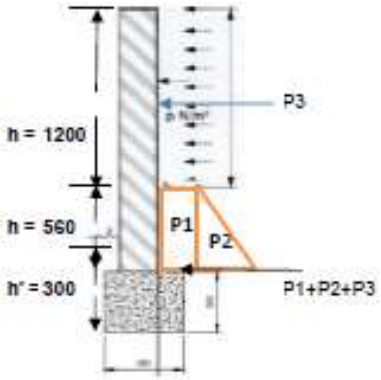
1,000 mm
Wall width for design



WIND LOAD ON WALL

The wall height above ground level is less than 3 m, thus use minimum wind pressure 1 kN/Sqm, considering ground roughness category -3 & wind speed (38m/sec

TYPICAL RETAINING WALL SECTION



LOADING DIAGRAM

P1 =	K x p x h =	0.37	kN/m	Reaction on support, P =	2.398	kN (P1+P2+P3)
P2 =	K x d x h x h /2 =	0.83	kN/m	Bending Moment wall Bottom, M =	1.536	kN/m
P3 =	1.0 X h =	1.20	kN/m			

Check stresses at wall bottom : W/ A ± M/Zxx

= 0.030 ± 0.20

= 0.230 Mpa (Compression)

= -0.169 Mpa < 0.3 Mpa (Tension) Safe

CLIENT :	Mr & Mrs Smithson, 40 Platt's Lane London, NW3 7NT.		Rajesh Sapkal Civil Engineer 35, Rodwell Court KT12 1RF
SUBJECT:	Brick Retaining Wall Design	PAGE No.: 1 DATE : 31/05/2015	

2) FOUNDATION DESIGN

Loading on Foundation - Foundation Area, a = 0.6 Sqm Section Modulus, z = 0.06 cum

Self weigh of wall =	6.81	kN				
Self weigh of foundation =	4.32	kN	(	300	mm deep x	600 mm wide)
Total vertical Load, P =	11.13	kN				

Bending moment about bottom of foundation - M + P x h'

= 1.538 + 2.398 x 0.30

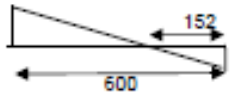
M' = 2.26 kNm

Check stresses at foundation bottom = P/ a ± M'/z

= 18.552 ± 37.62

56.17 = 56.17 kN/Sqm (Compression) < 100 kN/Sqm

-19.07 = -19.07 kN/Sqm Tension for filled soil OK



Foundation area in tension = 152 / 600 = 0.25 % Acceptable

Summary

Brick Wall = 220 mm Wide

Foundation Size = 600 mm wide X 300 mm Deep X length of Wall

CLIENT :	Mr & Mrs Smithson, 40 Platt's Lane London, NW3 7NT.		Rajesh Sapkal Civil Engineer 35, Rodwell Court KT12 1RF
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SUBJECT :	Brick Retaining Wall Design	DATE : 31/05/2015	

APPENDIX -C-

landcreations

40 Platts Lane
London
NW3 7NT

Planting Schedule

Plants	Planting Season	Pot size	Height	No
Jasmin Trachelosperum (climber)	All Year	15l	3m	10
Taxus Baccata	October - March	RB	2.2m	110
Multi-stem Silver Birch Jaquemonti	All Year	200L	4m	4
Buxus Balls	All Year	30l	60cm diameter	8
Prunus Royal Burgundy	All Year	200	4-5m	4
Aquilegia Vulgaris	All Year	2l		50
Anemone huphensis 'Hadspen Abundance'	All Year	2l		40
Euphorbia amydaloids var.robbiae	All Year	2l		35
Skimmia x confuse 'Kew Green'	All Year	10l		18
Viburnum Plicatum Mariesii	All Year	15l		6
Hydrangea aspera ssp villosa	All Year	10l		6
Nandina Domestica 'Fire Power'	All Year	5l		15
Pittosporum Tobira	All Year	10l		10
Helleborous Orientalis	All Year	2l		25
Loropetaum x chinense 'Fire Dance'	All Year	2l		40
Camelia Pearl Maxwell	All Year	30l		4
Agapanthus 'Blue Storm'	All Year	7l		20
Dryopteris Filix-Mas	All Year	7l		25
Pachysandra Terminalis	All Year	2l		45
Lavender Hidcote	All Year	2L		45
Geranium Johnson's blue	All Year	2L		30
Sarcacocoa	All Year	5L		20
Salvia Officinalis	All Year	2L		30

garden design | construction

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Proposed landscape scheme.