ARBORICULTURAL IMPLICATIONS ASSESSMENT & TREE PROTECTION PLAN

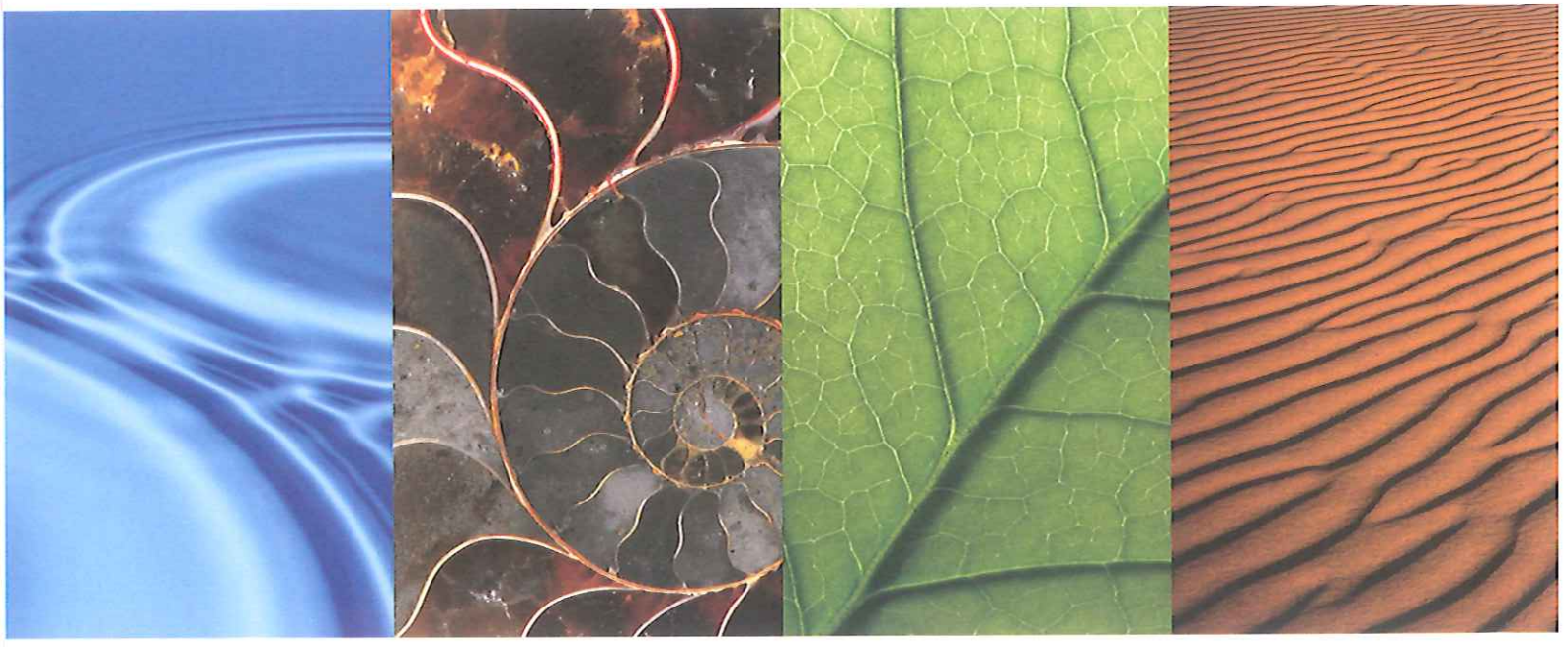
Job No. 19585

Proposed Eco House
Magellan Way, Spalding PE11 2FG

For Mr John Retchless

March 2015

civil • structural • environmental • surveying



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1.0 INTRODUCTION

1.1 This report aims to provide relevant information on the effect the proposed new single storey eco house on land to the south and west of Magellan Way and north of Hudson Road, Spalding PE11 2FG will have on any trees within the immediate vicinity of the works.

1.2 An innovative ecological dwelling of timber/steel construction on stilts has been carefully designed to minimise disturbance of the vegetation within the site. The dwelling aims to enhance and blend with the natural surroundings and contribute to the overall upkeep of the site.

1.3 The ethos of the project is to keep the site as much as practicable in its present natural format; the site currently offers a diverse range of habitats for many creatures; its natural charm will be retained with minimal disturbance to the environment whilst providing a family home in keeping with its surroundings.

1.4 The report is based on the recommendations outlined in the British Standard 5837:2012 'Trees in relation to design, demolition and construction – recommendations'.

1.5 The site has been surveyed and the trees plotted accordingly.

1.6 The position, species, height, crown spread and root protection areas (RPA) have been recorded and this data is shown on the Tree Survey Schedule – Appendix B. The recordings form the basis of the Tree Constraints Plan (TCP) drawing which incorporates the Tree Protection Plan (TPP) - Plandescil drawing no. 19585/901 – appendix C. The position of the surveyed trees is based on EALS drawing no. 8835.1.

1.7 The root protection area is an area surrounding the tree, shown as a theoretical circle on the Tree Constraints Plan, which has a sufficient root volume to ensure the tree remains healthy. The root protection area is equivalent to an area with a radius of 12 times the diameter for a single standard tree or for multi stemmed trees the total diameter of all trunks, measurements are taken at 1.5m above ground level. This area is capped at 707sq.m which equates to a circle with a radius of 15m.

1.8 All personnel on site must be made aware of any overhead lines within and around the site.

2.0 SITE DESCRIPTION

2.1 The site is an area of ground around ½ an acre in size. It sits between an access road and a housing estate.

2.2 The entrance to the site is through an existing gateway along the western boundary, close to the north of the site, off Hudson Road the housing development to the west of the site.

2.3 Currently the site is designated as 'public open space', however in reality it is not an area conducive to this term.

Humans often abuse such areas and evidence suggests this site has been used, and will probably continue to be used, as a partial 'fly tipping' area. Old sofas, garden waste, pet litter tray contents and general household rubbish were noted.

The whole site appears to suffer from neglected past management.

Approximately half of the site consists of an overgrown reed-filled pond with quite steep banks to the south, east and west. Trees are around the perimeter of the site. Dense brambles cover the majority of the 'open area' to the north.

2.4 The mixture of vegetation on the site provides habitats for a diverse range of wildlife.

2.5 The trees along the eastern boundary are subject to a group Tree Preservation Order implemented in 1985 by South Holland District Council.

3.0 TREE SURVEY OBSERVATIONS

3.1 The tree survey was carried out in December 2014. The weather was dry and overcast. The report represents the condition of the site and the trees at that time.

3.2 All observations were from ground level.

3.3 8 no. individual trees and 1 no. 'group of trees' have been surveyed and plotted on drawing no. 19585/901. The Tree Schedule Survey, Appendix B, gives the survey findings in tabular form.

3.4 Photographs illustrating the position of the trees in relation to the site are shown in Appendix A.

3.5 Measurements of the trees along the southern boundary were not individually noted as these were far beyond the area where the proposed dwelling will be sited. No significant indicators of decay or disease were noted on these trees.

3.6 As trees are living organisms periodic inspections are recommended.

4.0 ARBORICULTURAL IMPLICATIONS ASSESSMENT

The data from the tree survey schedule Appendix B and the submitted development layout (based on Parsons + Whittley's drawing no. 3204.01 Rev A) are shown on Plandescil drawing no. 19585/901 – this data forms the basis of the Arboricultural Implications Assessment and assesses the risk of damage to the trees.

Trees on/adjacent to the site and their Root Protection Areas (RPAs)

Of the 8 individual trees surveyed 7 are Ash – Fraxinus excelsior and 1 is a White Willow – Salix alba, no. 9 is a line of Ash trees along the eastern boundary, all subject to a group Tree Preservation Order (TPO). The Ash trees have an under storey of Hawthorn, Elder, Brambles and Ivy.

None of the trees individually are of high quality but collectively they form a natural screen from the Magellan Way to the housing development beyond.

The Ash trees within the group TPO are all of moderate to low quality, they have very little canopy and appear to be suffering from die back.

Taking into consideration the long term value of the group TPO we would suggest some new planting is installed within the TPO area, planting new trees along the bank every 10-15meters. Suitable new trees for considered planting would be Common Alder – Alnus glutinosa, Hornbeam – Carpinus betulus or Field Maple – Acer campestre and, if permitted by the local authority at the time of planting, Ash – Fraxinus excelsior all planted as young whip trees 60-90cm high.

All of the trees surveyed, including most of the group of Ash, have dense ivy growing into their canopies restricting inspection. Although ivy is beneficial to wildlife it can also add unnecessary weight to the trees, will reduce light to the canopies and impede close inspection as to the condition of the trees. It is therefore recommended the ivy is removed. Whilst it would be possible to remove the majority of the ivy, inevitably a lot will not be accessible and will remain allowing wildlife to continue to flourish.

4.1.1 Tree nos. 1 – 2 are both category B2 Ash trees of moderate quality. No. 3 is a Category C Ash. Tree no. 1 divides into 2 @ 1.2m, no. 3 divides into 2 at ground level. These trees are located to the north of the existing entrance gate on Hudson Road. Lift canopies to 3m.

4.1.2 Tree nos. 4 & 5 are also category B Ash of moderate quality, no. 5 divides into 4 at ground level, they are located to the south of the existing entrance gate way roughly in line with the north end of the pond. These trees will need to be felled to facilitate the new build.

4.1.3 Tree no. 6 is a category B Ash of moderate quality in the north east corner of the site. Branches over hanging Magellan Way need to be cut back in line with the site boundary.

4.1.4 Tree no. 7 is a very large category B Willow, 8no. trunks merge from one base. This tree is approx. 3m below the road level. Due to the large number of trunks the root protection area extends over a considerable area. This tree has been pollarded to keep the canopy confined. Branches over hanging Magellan Way need to be cut back in line with the site boundary, other smaller branches may need to be cut back to facilitate the new build.

4.1.5 Tree no. 8 is a category B Ash of moderate quality which lean to the southeast. No works need to be done to this tree.

4.1.6 No. 9 is the group of Ash trees all within the group Tree Preservation Order area, however none of these trees individually are of high quality. Most have some form of die back.

As stated above, the canopies of the trees around the entrance to the site will need to be lifted to 3m to ensure they are not damaged when materials are brought onto the site. Trees immediately to the south of the existing entrance will need to be felled.

To prevent any leachates from wet concrete coming into contact with roots an impermeable DPM1200g black polythene membrane liner must be installed around any areas where concrete may be used within the RPAs. As the proposed build is to be built on stilts within the RPA of tree no. 7 and within the water area all the footings should be lined with a plastic membrane.

A large area where the proposed new build is located is within the root protection area of the Willow, tree no. 7. The new build will be raised off the ground on stilts and will not have conventional strip foundations, the stilts will be on pile foundations reducing the impact on the tree. Prior to placing the stilt/pile foundations exploratory trial holes must be excavated to ensure no large roots are damaged. Site geology conditions must be taken into account and exact design details must be specified by an engineer and the advice of specialist piling contractors may be required.

4.2 Installation of Services

4.2.1 It is thought the utilities will enter the site through the new entrance. The services should be routed where possible outside the RPAs of all trees. The installation of services must comply with the National Joint Utilities Group 'Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees' Volume 4 - Issue 2. London: NJUG, 2007 - Guidance on installing underground services adjacent to trees is given in this document.

5.0 ARBORICULTURAL METHOD STATEMENT

5.1 Temporary protective fencing must be installed as illustrated on drawing 19585/901 – Tree Constraints Plan incorporating Tree Protection Plan, the fencing must be installed prior to all works commencing. In reality the fence line will need to be set back into the RPA areas as illustrated, this will allow works to be carried out in a restricted working area.

Due to the current poor condition of these trees it is very unlikely they will suffer unduly in connection with the works on site, the objective is ultimately their conditions will be stabilized as a result of the works improving the site conditions.

5.2 Wherever possible all building materials, machinery, contractor's huts, toilets or other temporary buildings brought on site must not be sited within the RPAs of the retained trees.

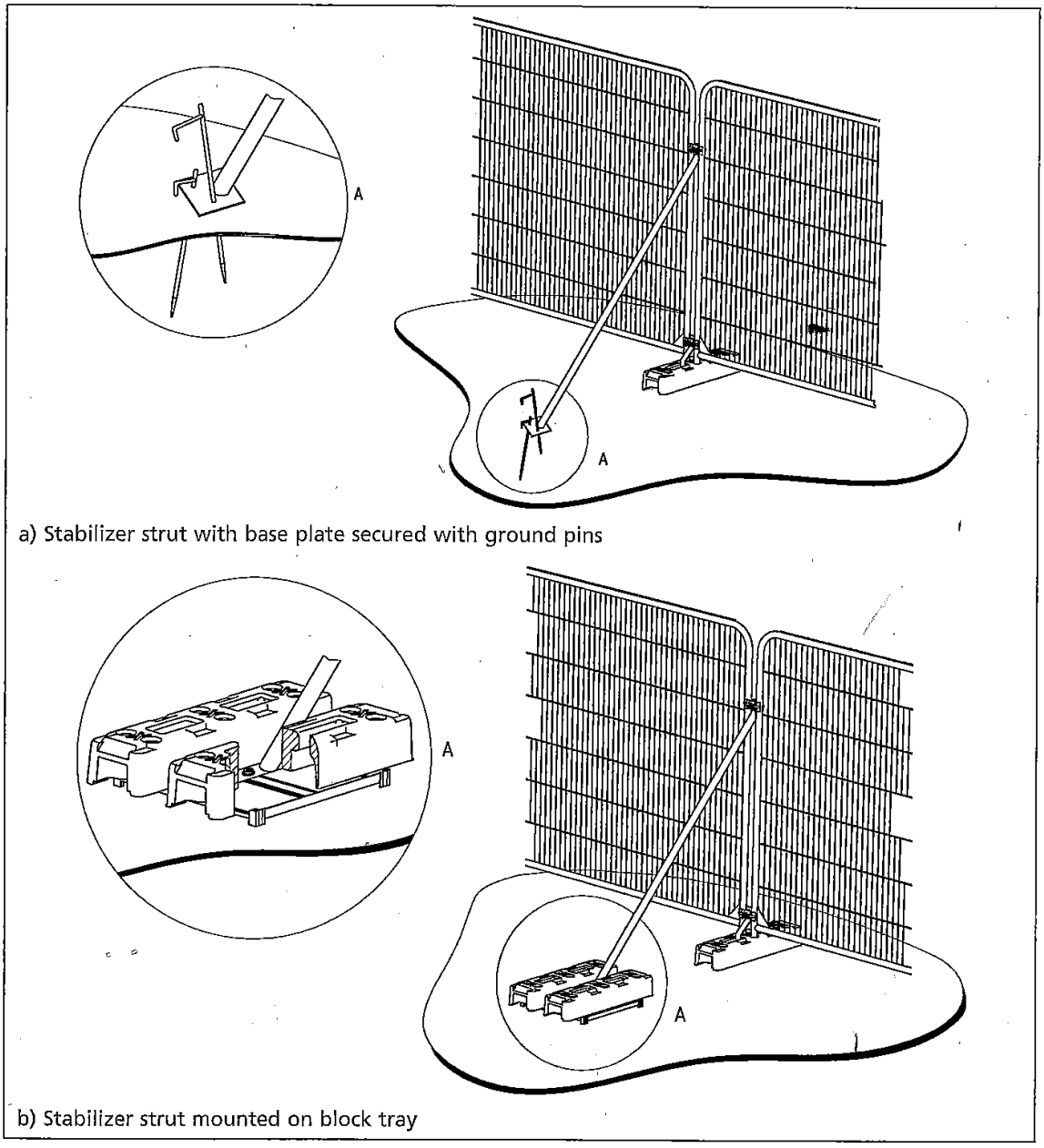
5.3 No activity that could lead to soil contamination should be undertaken on the site and any uncontrolled activity must be beyond 10m of the Root Protection Areas (RPA) of retained trees.

5.4 Should any controlled fires be lit they must be 10m beyond the RPA of any retained trees.

FIGURE 1 - EXAMPLE OF ABOVE-GROUND STABILIZING SYSTEM

BRITISH STANDARD **BS 5837:2012**

Examples of above-ground stabilizing systems



a) Stabilizer strut with base plate secured with ground pins

b) Stabilizer strut mounted on block tray

Timetable for Protection Works for Proposed Works at Magellan Way, Spalding PE11 2FG

No.	Action	Before Commencing Construction Works	During Construction Of Works	On Completion
1.	Erect all temporary protective fencing on the edge of the Construction Exclusion Zone (CEZ) as shown by a red line on drawing 19585/901 Appendix C.	x		
2.	In reality the fence line will need to be set back to allow the trees south of the existing entrance to be felled and the canopies to the trees north of the existing entrance to be raised to 3m.		x	
3.	Ensure protective fencing is kept in good condition. Should any issues arise liaise with the Local Planning Authority.	x	x	x
4.	The temporary protective fencing should be the last working equipment to leave the site.			x
5.	Check the condition of the protected trees and inspect for any remedial works that may be necessary.			x

All of the above works must comply with BS5837:2012 'Trees in relation to design, demolition and construction - recommendations' and with the Arboricultural Method statement in this report.

6.0 CONCLUSION

6.1 The proposed dwelling has been designed in sympathy with the surrounding landscape to create an aesthetically pleasing property with an objective of enhancing the site. By managing the site its natural beauty and habitats can be enhanced bringing a greater diversity to the vegetation and wildlife within and around the whole area.

6.2 The trees within the site have been neglected over a long period and exhibit signs of neglected past management. The removal of the trees within the proposed new entrance, lifting the canopies of the trees around the entrance and cutting back the branches of the trees in the northeast corner of the site which overhang Magellan Way will need to carried out prior to the proposed build being constructed.

6.3 The trees along the eastern boundary are subject to a group Tree Preservation Order. As the trees are mostly sited along, or just at the top of, a steep bank in reality it is not practicable to erect a temporary fence line around these trees on the site side as it would not serve the purpose it was intended for.

6.4 Temporary protective fencing should be installed as illustrated in drawing 19585/901 around the trees to the north of the site.

6.5 It is recommended over the next five years new tree planting is installed within the TPO group of trees on the northern boundary. New planting would ensure this tree belt is retained for future generations when the existing tree conditions deteriorate further and they need replacing. Suggested new species would be Alder, Field Maple, Hornbeam and if permitted Ash.

Report Prepared by:-

Prue Kahn..... P Kahn ..... (Tree Technician)
NCH, RFS Cert in Arb. (Theory)
For and on behalf of Plandescil Ltd.

Date ..... 20th March 2015 .....

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APPENDIX A Photographs illustrating position of trees in relation to site.



Trees to the right of the existing entrance canopies to be raised to 3m - looking east.



Trees to the right of the existing entrance to be removed – looking east.



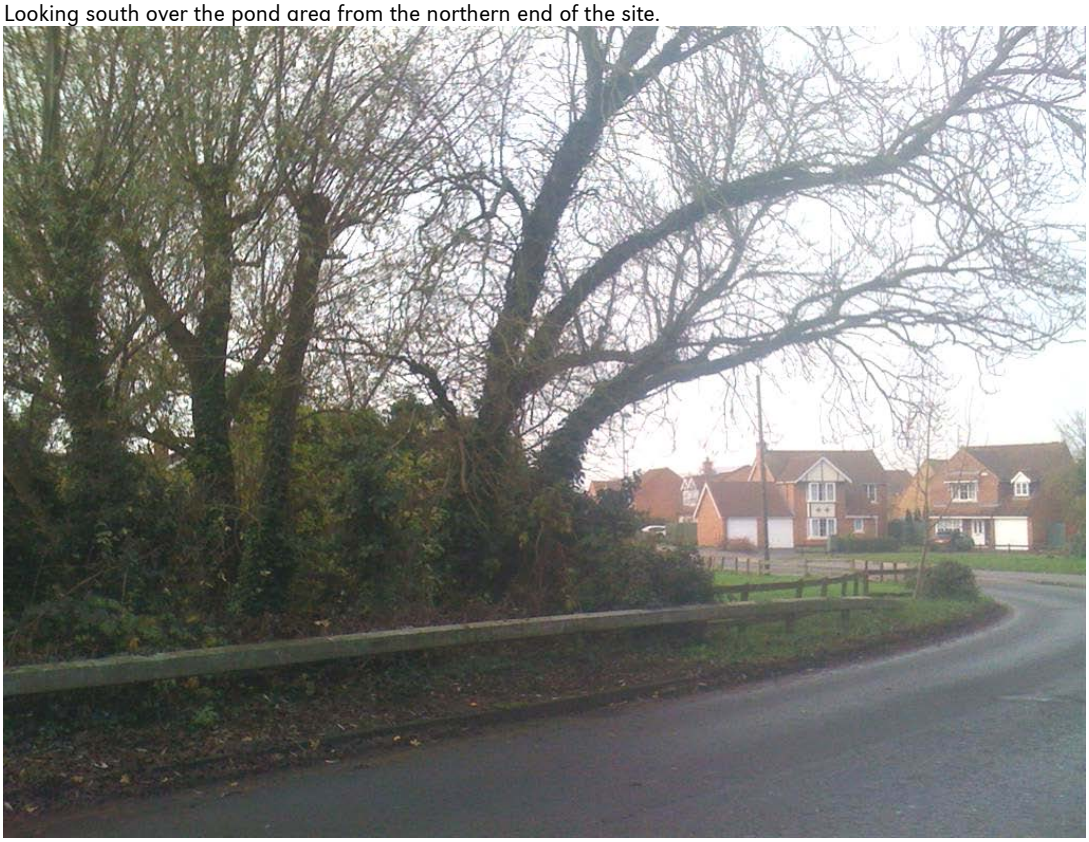
Tree no. 7 Willow to be cut back if required to facilitate the proposed new build and any branches overhanging Magellan Way cut back – looking north east.



Trees within the group Tree Preservation Order, along the eastern boundary.



Looking south over the pond area from the northern end of the site.



Tree nos. 6 Ash and 7 Willow to have overhanging branches cut back along Magellan Way – looking northwest.





Trees along Magellan Way, for side of road, subject to group Tree Preservation Order.

Tree Survey Schedule Appendix B

1	2	3	4	5				6	7	8	10	11	12
Tree No.	**Species**	**Ht (m)**	**Stem dia (mm)**	**Branch spread (m)**				**Ht of clearance (m)**	**Age Class**	**Condition & Works Needed**	**Category grading**	**Radius of RPA (m)**	**RPA (sq m)**
				N	**S**	**E**	**W**						
1	Ash - Fraxinus excelsior	15	500	6	4	6	5	3w	M	Moderate tree covered in dense ivy. Divides into 2 @1.2m. Lift canopy to 3m.	B2	6.0	113.1
2	Ash - Fraxinus excelsior	14	240	2	3	3	3	2w	M	Moderate tree covered in dense ivy. Lift canopy to 3m.	B2	2.9	26.1
3	Ash - Fraxinus excelsior	13	400	2	2	2	2	5e	M	Moderate tree covered in dense ivy. Lift canopy to 3m.	C2	4.8	72.4
4	Ash - Fraxinus excelsior	15	220	4	4	5	4	3w	M	Moderate tree covered in dense ivy. Fell.	B2	2.6	21.9
5	Ash - Fraxinus excelsior	17	780	5	5	7	6.5	1.5w	M	Moderate tree covered in dense ivy. Fell.	B2	9.4	275.3
6	Ash - Fraxinus excelsior #	17	420	8	4	8	5	2.5n	M	Moderate tree covered in dense ivy. Cut back branches above road.	B2	5.0	79.8
7	White Willow - Salix alba #	20	1800	7	6	6	7	2s	M	Moderate tree which dividing into 8 trunks. Cut back branches above road.	B2	21.6	1465.9
8	Ash - Fraxinus excelsior #	17	350	1	7	8	6	4.5e	M	Moderate tree leans to southeast.	B2	4.2	55.4
9	Ash - Fraxinus excelsior #	14	220	3	3	3	3	2n	M	Line of Ash along Magellan Way subject to Tree Preservation Orders.	B2	2.6	21.9
# = estimated dimensions as trees inaccessible and accurate data cannot be recovered.													



civil engineering & building

- Industrial, commercial, agricultural and domestic building design
- Foundation design and ground improvements
- Highway engineering
- Retaining walls
- Sheet piling
- Bridges
- Earth impounding structures
- Infrastructure planning and design
- Civil engineering quantity surveying
- Architectural design of industrial buildings
- Planning applications for industrial buildings



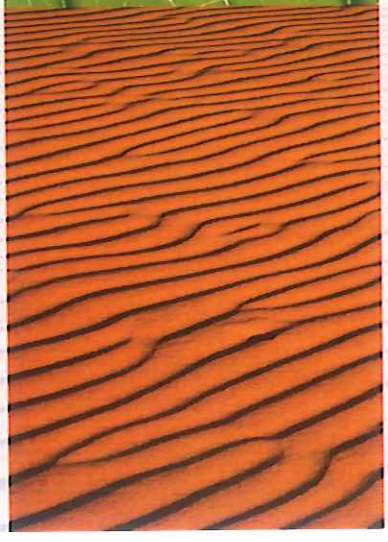
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- Structural design in steel, concrete, timber, alloys and masonry
- Structural surveys and structural suitability surveys
- Building regulation applications
- Structural failure studies
- Subsidence claims
- Temporary works design
- 3D finite element analysis
- Structural monitoring
- Professional expert for litigation
- Structural enhancement / remedial work
- Historic building advice



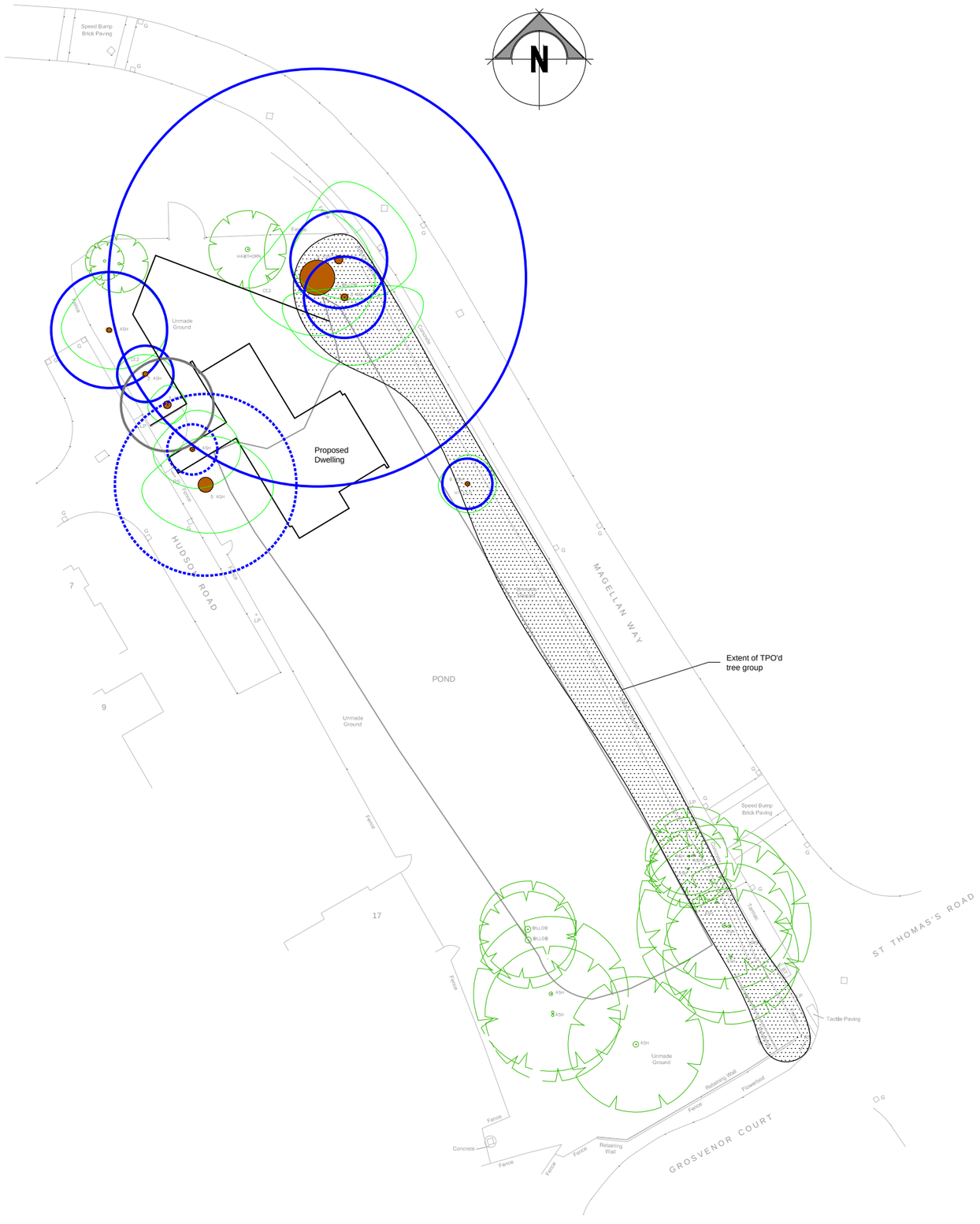
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- Drainage scheme design
- Foul & surface water sewer design
- Flood Risk Assessments
- Environmental Impact Assessments
- Environmental permits
- Water supply, treatment, storage & distribution
- Effluent treatment & disposal
- Environment Agency consent to discharge
- Urban drainage & flood alleviation
- Tree surveys



surveying land & buildings

- Geomatic/topographical site surveys
- Buildings, road and earthworks set out
- 3D digital terrain modelling
- Volumetric analysis
- Site area computations
- Flood risk surveys using GPS active network
- Measured building floor plans and elevation surveys
- As built record surveys
- Land transfer plans to land registry requirements
- Assistance in land boundary disputes
- Sewerage network surveys
- Deterioration monitoring
- Preparation of asset plans



Tree No.	Species	Ht (m)	Stem dia (mm)	Branch spread (m) N	S	E	W	Ht of clearance (m)	Age Class	Condition & Works Needed	Category grading	Radius of RPA (m)	RPA (sq m)
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= estimated dimensions as trees inaccessible and accurate data cannot be recovered.

Note:

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DRAWING KEY

- Crown spread
- Category A Grade RPA
- Category A To Be Removed
- Category B Grade RPA
- Category B To Be Removed
- Category C Grade RPA
- Category C To Be Removed
- 18 — Tree No. To Remain
- 17 — Tree No. To Be Removed
- Dead Tree
- CEZ — Construction exclusion zone
- Construction barrier/Temporary fencing

Note:
Drawing to be read in conjunction with Arboricultural Implications Assessment Report

1:250 - DRAWING SCALE REFERENCE (m)

10 5 0 5 10 15 20 25

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Rev	Date	Chkd	Description
0	17.03.15	PK	First Issue

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Project
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Magellan Way
Spalding
Lincolnshire

Drawing Title Appendix C
Tree Constraints Plan (TCP)
Inc. Tree Protection Plan (TPP)
Drawing to be read in conjunction with Arboricultural Report

Scale	U.N.O.	Date	Drawn By
1:250 (A1)		16-03-2015	JB

Drawing No. 19585/901 Rev 0



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