

Tree Constraints and Arboricultural Impact Report

IN ACCORDANCE WITH BS 5837: 2012
"TREES IN RELATION TO DESIGN, DEMOLITION AND CONSTRUCTION" - RECOMMENDATIONS

Ref: 653/16d

Location: Land South of the A17, Holbeach

Client: South Holland District and Lincolnshire County Councils

Date(s) of Inspection: 23rd August 2016

Prepared by:

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- I Default specification for protective barriers

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- a) Original plans at 1:1250 scale as A3 included in hard copy
- b) Plans at A4 included in electronic copy (nb will not be to scale)

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Our reference: 653/16d

Date(s) of inspection: 23/08/2016

SURVEY AND REPORT ON TREES GROWING ON LAND: SOUTH OF THE A17, HOLBEACH

SECTION 1:

Introduction, general guidance and Arboricultural Implications Assessment

1 Instructions and scope of report

As requested by Julie Robinson (of the Robert Doughty Consultancy) in an e mail dated 15th July 2016, I have now inspected trees at the above site in relation to proposed development; this report includes the following:

- (i) A schedule of the inspected trees**
- (ii) A plan showing tree constraints**
- (iii) An assessment of Arboricultural Implications**

Our service is in accordance with our terms and conditions, which were sent to our clients, via Julie Robinson, in an email dated 25th June 2016.

1.1 Qualifications and Experience

I confirm that I am a Professional Member of the following organisations:

- Arboricultural Association
- The Institute of Chartered Foresters
- Consulting Arborists Society (A professional affiliation of the International Society of Arboriculture)

I also hold the LANTRA Professional Tree Inspectors award, and have been working with trees in a professional capacity since 1980.

2 Report limitations

My inspection of the trees was carried out from ground level; where appropriate I also use a sounding hammer and monocular. Should further investigation be required it will be highlighted in my recommendations.

I am only able to comment on areas of the tree visible to me; no obstructions, including growth of Ivy, shrubs or other objects (builders rubble, spoil, stored objects etc) have been removed to facilitate our inspection.

Trees and shrubs are living organisms whose health and condition can change rapidly. The health, condition and safety of trees should be checked by a competent person on a regular basis, preferably at least once a year; information provided by the National Tree Safety Group provides further guidance on this, see www.forestry.gov.uk/publications (for householders it is also available to download from our web site www.treelincs.co.uk).

My conclusions and recommendations are valid for a period of one year. This period of validity may be reduced in the case of any change in conditions above or below ground close to the trees.

The report is based on recommendations given in British Standard 5837 (2012) "Trees in relation to design, demolition and construction - Recommendations" which was published on 30th April 2012.

It is not the intention of this report to comment/advise on any underground services that may be affected.

3 Information supplied

I was supplied with the following document:

Title	Format	Sender
RDCHolbeachTotal	.dwg	Julie Robinson (RDC)
FEZ Holbeach	.dxf	Mike Braithwaite (RDC)
1202 – 1 – MP01 Masterplan	.pdf	Mike Braithwaite (RDC)

Our plans are based on the above files, the first two of which were imported to our mapping software for revision. Crown limits for woodland groups are taken as those indicated by the topographic survey.

4 Introduction & site description

The site in question is a large area of land bordered by the A17 to the north, the A151 to the east, a holiday home park to the south and farmland to the west; this is currently occupied by a range of businesses and tenants.

The Robert Doughty Consultancy are instructed to apply for planning permission for a variety of uses on site, likely to include areas for research and crop development, engineering, food processing, packaging/storage, and logistics and education.

The inspected trees are not individually marked on site but may be identified by reference to the attached plan and tree schedule.

A total of 31 trees and 14 groups (including some woodland) are reported on.

5 Soils

Viewing soil survey for England and Wales information for the area suggests the presence of marine alluvium giving rise to deep stoneless calcareous coarse silts.

6 Tree Preservation Orders and other regulatory protection

The planning authority's consent is not required for cutting down or carrying out work on **protected trees** if required to implement a FULL PLANNING PERMISSION; e.g. if a tree has to be removed to make way for a new building for which planning consent has been granted.

NB: When granting full planning permission the LPA should consider informing the applicant, by reference to approved drawings (and the Tree Constraints Plan) which trees they consider may be cut down or have work carried out on them without further consent; (consent WILL still be required for works to any other protected trees; where they are within a building conservation area then the LA should be given 6 weeks advance notice of intent).

If only **outline planning consent** has been granted, the LPA's consent is still required before cutting down or carrying out works to trees.

All trees within a **conservation area** are afforded protection; in this instance the law states that Local Authorities shall be given 6 weeks notice of proposed works; in response to a notification of proposed works all councils should reply that either the notification is valid and the 6 week period begins thereafter, or it isn't valid and more information is required.

The consent of the LPA is also required before cutting down or carrying out works to protected trees to implement work under **permitted development rights**.

Finally, under **felling licence regulations** a licence from the Forestry Commission is required to fell trees totalling more than 5 cubic metres in volume during any calendar quarter (of which only 2 cubic metres of that may be sold); certain exemptions apply including trees in gardens but it is worth checking if in doubt.

7 Data Presented (glossary)

A schedule of information recorded for the inspected trees and groups is attached. Notes below are intended to guide the reader regarding the information provided.

Key to information contained in the tree schedule (nb detailed description and recommendations for remedial work are only given for trees within ownership):

- a No/ref** – Tree number or reference as shown on our plans, and referred to in the schedule of inspected trees.

- b Species** – common english name (scientific names shown for less common species).
- c Height** – approximate total height to the nearest half metre for trees up to 10m and to the nearest whole metre for those over 10m.
- d Stem diameter** – measured in millimetres (rounded to the nearest 10mm and accounting for lvy if present), multiple stems are shown individually up to 5 stems, and as an average for greater numbers.
- e Crown radius** – at the four cardinal compass points where relevant to development, measured to the nearest 0.1 metres up to 10 metres, rounded to the nearest metre beyond that size.
- f Existing height above ground level of:**
- 1) Canopy: to inform ground clearance, crown/stem ratio and shading
 - 2) First significant branch and direction of growth (e.g. 2.4 – N) – shown as N/A if no significant branch is present (eg in finely branched conifers. Direction of growth may not be indicated if multiple branches are present (eg at the crown junction)
- g Life stage** – shown as:
- 1: Young (<1/3 expected safe useful lifespan)
 - 2: Early mature (1/3 – 2/3)
 - 3: Mature (>2/3)
 - 4: Overmature
 - 5: Dead
- h General observations:** A description of significant and relevant physiological and structural factors.
- i Preliminary management recommendations** (including a recommended timescale for works where appropriate).
- j Estimated remaining useful contribution** in years (<10, up to 20 years, up to 40 years, more than 40 years).
- k Recommended quality category** as:
- U** – Less than 10 years useful life expectancy, including after removal of neighbouring trees, with serious irremediable defects, overall decline or poor general health – **crown shown red on plans**
- A** – Those of high quality & value, in such a condition as to make a useful contribution of at least 40 years – **crown shown light green on the TCP**
- B** – Those of moderate quality and value and with a minimum of 20 useful years remaining – **crown shown mid blue on the TCP**

C – Those of low quality and value and with a minimum of 10 useful years remaining, or young trees with a stem dia <150mm – **crown shown grey on the TCP**

U/C – Uncategorised: usually those outside of ownership – **crown shown black on plans, and with no associated quality category**

Each of the trees in categories A, B and C will also qualify under at least one of sub categories 1 (mainly arboricultural values), 2 (mainly landscape values), or 3 (mainly cultural values including conservation).

I **Minimum Root Protection Area (RPA)** – in square metres (to a maximum 707 m²) representing an area equal to 12 x stem (or equivalent for multiple stems) diameter. This is suggested as the minimum protected root area that the trees need to thrive, although the final shape of this area may vary according to site constraints and individual tree characteristics.

The default position is that structures will be located outside of tree RPA's; where there is an overriding justification for construction within the RPA there will be a need to demonstrate that the trees can remain viable.

The RPA will be indicated on the **Tree Constraints** and **Arboricultural Impact Plan(s)**, and represents an area of total exclusion (unless ground protection or specialist building techniques are proposed) to be demarcated on site by robust fencing (see app I for further detail).

8 Arboricultural Impact Assessment (based on designs received to date) – attached plans 653/16d/tci/1(N) and 653/16d/tci/2(S) should also be viewed:

a. Summary of existing site and current proposals:

The existing site occupies a substantial area, which is currently under a range of agriculture based uses, including a farm products and contract company and arable fields.

The current green infrastructure includes an internal broadleaved woodland copse (Group G5), a range of individual trees in and around the Old Distillery and vacant dwelling, a line of regularly spaced and relatively young broadleaves along the verge of the A151 to the east, as well as areas of semi mature woodlands to the west, including a group of late mature Lombardy poplar, visible from a distance.

Proposed developments (as per Robert Doughty Consultancy Masterplan ref: 1202-1-MPO1) will occupy the whole area, and include several elements of green infrastructure, predominantly within the “central zone”, and radiating from it, along the main entrance and access to the aforementioned, and with lesser areas to the north and east margins

b. Above and below ground constraints and conflicts

- i. Woodland Copse G5 is fully within the proposed education zone new build and car parking area – this early mature woodland makes a significant contribution to the local landscape and has the potential to provide ongoing green infrastructure and ecological interest, with particular relevance to this area. Internal standing deadwood already shows evidence of use by woodpeckers.
- ii. Widening of verges and provision of access off the A151 to the east, via a roundabout, potentially conflicts with most of the late establishment phase trees T1 - 13 planted along the highway verge. These include Sycamore, Field maple and Common ash, though the latter are vulnerable potentially to Ash dieback (*Hymenoscyphus fraxinea*); maximum heights are to 6 metres
- iii. A range of trees and sizes are present within the area to the north east known as “Distillery Farm” and within the curtilage of the disused dwelling, this area is proposed for use as a food processing and development zone, to include a feature building to the A17 frontage to the North.
- iv. Existing woodland belts and Lombardy poplar, to the western boundary, it would seem are at least in part, outside of ownership; they provide attractive substantial screening and amenity and are likely to remain in perpetuity; the suggested adjacent developments are unlikely to present a significant conflict, though it will be important to ensure protection throughout development.

c. Potential remedial measures to accommodate the proposed development

- i. Woodland copse G5 has the potential to be a significant central feature of the site, appropriately located within the education zone and close to the university building.

The creation of additional green infrastructure would further enhance the ecological benefit and could include adjacent areas of wild flower meadow, lawns and native hedgerows linking G5 in particular to woodland belts to the west; some sort of natural water feature (pond or series of seasonal scrapes) would also be both attractive and potentially offer educational opportunities; it is noted that the masterplan seen indicates the presence of two possible water features

Protection of G5 to at least the crown limits of existing trees, or 3.9m radius from each stem (whichever the larger) will be the minimum requirement, but suggestions above allow for the enhancement of an attractive natural feature rather than the minimum protection requirement

- ii. Trees within the highway verge adjacent to the A151, though substantially now established and beginning to develop well (but vulnerable to dieback in the case of Ash) are still relatively small, and their contribution could be replaced by new planting in a relatively few years
- iii. Trees within the area to the north east are, with one or two exceptions of relatively low quality from an amenity perspective, though the small copse including trees T19 – T26 may provide some short term immediate benefit, though several of the component trees are declining/have declined

The few trees of some note here include Lime T18, though it has inherent structural defects, and trees T26 (White willow) and T30 (Leyland cypress), which are currently healthy, young and unlikely to present significant constraints to development if retained

- iv. The woodland belts to the west (groups G10-13 including the Lombardy poplar) though it is believed substantially outside of ownership, provide an attractive feature and backdrop, and will be best protected by the retention of uncultivated margins to at least their full crown spread, and preferably within a belt of some 6 metres beyond; this could again include wild bird/flower seed mixes, maintained by mowing and/or only occasionally shallowly cultivated

d. Infrastructure requirements: services will be routed outside of indicated root protection areas of trees to be retained

e. Shading of buildings and open space: guidance in the BS suggests the following (note 1 and section 5.3 a 1 and 2): *“shading can be desirable to reduce glare or excessive solar heating, or to provide for comfort during hot weather. The combination of shading, wind speed/turbulence reduction and*

evapo transpiration effects of trees can be utilised in conjunction with the design of buildings and spaces to provide local microclimatic benefits

Para a) 1: *“proposed buildings should be designed to take account of existing trees, their ultimate size and density of foliage, and the effect these will have on light”*

f. Para a) 2: *“open spaces such as gardens and sitting areas should be designed to meet the normal requirement for direct sunlight for at least part of the day”*

g. New planting: a scheme of this size offers the opportunity to plant a substantial number of new trees, and even small copses and even avenues, to the benefit of the environment and local and the wider amenity; this is likely to be addressed in detail by the planning advisers at a later date, though reference to species and provenances likely to endure expected climate change is encouraged

9 Summary:

The proposed development is fortunate, with a few exceptions, to have a relatively clean palette from the perspective of green infrastructure.

Woodland copse G5 is an important, and increasingly attractive feature but could be usefully incorporated into development proposals, providing both amenity and educational potential enhanced by the creation of additional environmental features including native hedgerows, ponds/scrapes, wild flower meadows and other trees.

The woodland blocks and Lombardy Poplar to the west are unlikely to represent significant constraints to the proposed development, and their presence will significantly enhance the attractiveness of the future site.

Few other high quality trees are present on site, and the whole area could be substantially improved from an amenity perspective by protection/enhancement of the important existing features and by the creation of new green infrastructure

10 Guidance on tree management post construction phase

Paragraph two of our report offers further information.

11 General Information

If appointing an arboricultural or forestry contractor, please use only properly qualified and experienced companies and always check that they carry Public and Products Liability Insurance and the relevant Employers Liability Insurance.

All tree works should be carried out to British Standard 3998: 2010 "Recommendations For Tree Works".

Please do not hesitate to contact me if I can be of further assistance.

Yours sincerely

**MARK HUDSON NDF, MIC For, M Arbor A
CHARTERED FORESTER & ARBORIST**

Report completed: 09/09/2016

REFERENCES:

British Standard 5837 (2012) - Trees in relation to Design, Demolition and Construction
BS 3998 (2010) Tree work. Recommendations
Principles of Tree Hazard Assessment and Management – Research for Amenity Trees No.7
Visual Amenity Valuation of Trees and Woodlands – Arboricultural Association Guidance Note 4
NHBC: Building near trees - Chapter 4.2

SITE: Land South of the A17, Holbeach
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SECTION 2: SCHEDULE of INSPECTED TREES, GROUPS & HEDGELINES

Ref	Common name	Ht	Stem Dia/s	Crown spread (where relevant to development)				Crown clrnce & 1 st branch	Life stage	Description of: Physiological and Structural condition and general comment	Preliminary recommendations and work priority	Est. remaining contribution	Qual Cat.	RPA in M2 or rad
				N	E	S	W							
		mtr	mm	N	E	S	W	m	ht					
<u>TREES – REFERENCE: T</u>														
1	Sycamore	6	170 115	2	2	2	2	1	1	A developing tree. Substantial basal scar to N.	Nil	20-40	B1	20
2	Field Maple	4	190	4	3	3	3#	0	1	A developing tree of good form (beneath power lines).	Nil	>40	A1	17
3	Field Maple	5	200	2	3	2	2#	1	1	A developing tree of good form.	Nil	>40	A1	19
4	Common Ash	6	100	1#	1#	1#	1#	1.5	1	A developing tree of good form, vulnerable to Ash dieback.	Nil	>40 TBC	C1 TBC	5
5	Sycamore	5	200	2#	2#	2#	2#	0	1	A developing tree of good form.	Nil	>40	A1	19
6	Common Ash	5	100	1#	1#	1#	1#	1.3	1	A developing tree of good form. Potentially vulnerable to dieback; possible early dieback presence in upper crown.	Nil	<10 TBC	U TBC	0
7	Sycamore	5	195	2#	2#	2#	2#	0	1	A developing tree of good form.	Nil	>40	A1	18
8	Sycamore	5	90 70	2#	2#	2#	2#	1	1	A developing tree of good form.	Nil	>40	A1	6

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				2#	1#	1#	2#							
9	Common Ash	6	120	2#	1#	1#	2#	1.1	1	A developing tree, potentially vulnerable to dieback.	Nil	>40 TBC	C1 TBC	7
10	Sycamore	4	125	2#	2#	2#	2#	0	1	A developing tree of good form.	Nil	>40	C1	8
11	Field Maple	5	180	2#	2#	2#	2#	1	1	A developing tree of good form.	Nil	>40	A1	15
12	Field Maple	6	210	2#	2#	2#	2#	1	1	A developing tree of good form.	Nil	>40	A1	20
13	Field Maple	6	170	2#	3#	2#	2#	1	1	A developing tree of good form.	Prune to clear highway by minimum 1m. Within 12 months	>40	A1	14
14	Cypress	15#	5	3#	3#	3#	3#	N/A	5	One of two dead trees.	Fell within 12 months.	<10	U	0
15	Cypress	15#	5	3#	3#	3#	3#	N/A	5	One of two dead trees. One early mature Cherry (Cat C) to SE crown limit of T15 shows crown dieback.	Fell the Cypress within 12 months.	<10	U	0
16	Cypress (possibly Monterey)	16	455 305	5#	5#	2#	5#	3	2	Showing c.10% dieback in upper crown; declining.	Nil	<10	U	0
17	Domestic Plum	3	120	1#	2#	1#	2#	0.5 2	2	Heavily reduced in height recently. Of only low amenity.	Nil	20-40	C1	7

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				6	4#	5#	3#							
18	Lime	14	540	6	4#	5#	3#	1.5	2	An attractive tree, multiple areas of included bark c.2m agl not yet judged significant defects.	Reinspect annually for weak unions.	20-40	B1,2	132
19	Mountain Ash	8	240	3	4	4	3	1 2.2	3	Showing c.10% crown dieback.	Nil	10-20	C1	27
20	Mountain Ash	10	280	3	5	3	2	1.5 1.5	3	Showing c.10% crown dieback.	Nil	10-20	C1	36
21	Variegated poplar (<i>P. candicans aurora</i>)	16	380	4	5	3	3	N/A	3	Showing multiple defects including dieback, deadwood and stem cankers. (Common to the variety)	Nil	<10	U	0
22	Silver Birch	13	160	2	4	1	1	c.10	2	A rubbing branch from T23 is causing stem abrasion. Basal scarring present.	Nil	10-20	C1	12
23	Ornamental Cherry	11	470	7	8	7	6	1.6 2	3	An attractive tree though showing minor crown dieback. Lateral branch to E (with delamination) has lodged against T22.	Remove lodged branch to a point c.30-40 cms W of T22. June – August 2017 (to minimise potential for bacterial canker colonisation)	10-20	C1	100
24	Silver Birch	11	190	4#	3	1	4	3.5 3.3SE	2	Suppressed to W but adds diversity. Large pruning wound c.2m height and basal scar are potential early entry points for pathogens.	Nil	10-20	C1,2	17

= Estimated N/A = not assessed

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25	Silver Birch	10	265	3	3	2	2	0.7 3.5W	2	An attractive early mature tree.	Nil	20-40	B1,2	32
26	White Willow	7	450#	7#	7#	5#	6#	0 2	2	Multiple stems. Growing within open dyke. Adds diversity.	Clear at base and reinspect before development commences.	20-40	B1,2	92
27	Leyland Cypress	15	590	5	4	2	5	1.1 2.5N	3	A substantial tree. A partially attached branch hangs c.4m agl to N. Will increasingly suppress T18.	Remove the partially attached branch Within 3 months	10-20	C1,2	158
28	Common Ash	11	275	6	4#	4	3	3 1.8N	2	An early mature tree, vulnerable to dieback.	Nil	>40 TBC	B1 TBC	35
29	Hawthorn	3	N/A	2#	2	3	3	0	1	Likely to have regenerated naturally. Adjacent to and growing within the fenceline.	Remove to clear fence. Winter 2016/17	<10	U	0
30	Leyland Cypress	7	350#	3#	3#	3#	3#	0 0	2	A developing tree of good form.	Nil	>40	B1,2	56
31	Common Ash	12	9 x 260 # avg	7	7#	7	7#	0 3	2	Multiple stems likely to be of coppice origin, c.10% crown dieback may indicative of Chalara colonisation.	Reinspect July 2017 to confirm dieback.	TBC	TBC U/C	276

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<u>GROUPS – REFERENCE: G</u>											
1	Broadleaves	5 max	100# max	As plan #	0	1	A linear group, predominantly White Willow, Goat Willow and occasional Ash. Likely to be naturally regenerated, growing in the dyke.	Nil. (Likely to be removed for drain maintenance).	10-20	C2	Crn sprd
2	Orchard fruit	3	100 max	As plan #	0	1	One each Apple and Pear.	Remove cable ties from stem.	>40	C1,2	1.2m rad
3	Common Beech	9	310 max	As plan #	1.3 2.2	2	A group of trees likely to have originated as a beech hedge – some within show dieback.	Nil	10-20	C2	3.7m rad
4	Orchard fruit	3 max	80 mm max	As plan #	0	1	A linear group of Apple, Plum and Pear.	Nil	20-40	C1,2	1.0m rad
5	Broadleaved woodland	18# max	320# max	As plan #	Var	2	An attractive early mature clump and landscape feature. Includes Lime, English Oak, Alder, Field maple, Crab Apple and Ash (the latter vulnerable to dieback) Osier present to E and W ends. Also Elder, Hawthorn, Guelder rose, Hazel, Privet and occasional standing deadwood (with Woodpecker holes) and fallen deadwood.	Nil	>40	A1,2 ,3	3.9m rad min

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6	Common Beech	10	180 max	As plan #	1.6 3	1	A small section of outgrown hedge. Suppressing the adjacent trees. Will increasingly suppress T18.	Nil	10-20	C2	2.2m rad
7	Leyland Cypress	13	530# max	As plan #	0 N/A	3	A substantial linear screening group. Occasional lateral branches are likely to fail periodically. One dead tree present to SE of T28.	Maintain at or below the current height Fell the dead tree. Within 12 months	10-20	C2	6.4m rad
8	Lawsons Cypress	4#	N/A	As plan #	N/A	2	An untidy linear group. Appears to have been heavily reduced to clear the overhead electricity line.	Fell. Within 12 months LIASON WITH ELECTIRCITY PROVIDER REQUIRED	<10	U	0
9	Silver Birch	9	180# max	As plan #	1.1	2	A group of 4 trees, all with multiple stem scars, and showing early dieback.	Nil	10-20	C1,2	2.2m rad
10	Broadleaved Woodland	20 max	500# max	As plan #	0	2	Early mature broadleaved woodland, predominantly Ash, English Oak, White Willow, Lime and Osier. Arable field has been cultivated to within 3.5m of tree stems. Not inspected in detail.	Nil. (Protect to crown spread).	>40 (Ash TBC).	TBC A2,3	Crn sprd
11	Lombardy Poplar	21	800# max	As plan #	0	2	An intermittent line of trees, providing an attractive longer distance amenity/landscape feature, though nearing the end of their useful life. Bramble/Ivy and shrub growth obscured most of the lower stems.	Sever ivy.	10-20	C1,2	9.6m rad

= Estimated N/A = not assessed

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SECTION 2: SCHEDULE of INSPECTED TREES, GROUPS & HEDGELINES

Ref	Common name	Ht	Stem Dia/s	Crown spread (where relevant to development)	Crown clrnce & 1 st branch	Life stage	Description of: Physiological and Structural condition and general comment	Preliminary recommendations and work priority	Est. remaining contribution	Qual Cat.	RPA in M2 or rad
12	Broadleaved Woodland	12 max	Var c400	As plan #	0	2	Early mature mixed broadleaved woodland including Field Maple, Wild cherry, Lime, Willow, Alder, Crab Apple and Osier. Occasional standing and fallen deadwood within.	Nil	>40	A1,2,3	4.8m rad
13	Broadleaved Woodland	18 max	Var c400	As plan #	0	2	Early mature mixed broadleaved woodland including Lime, Cherry, Common Ash, Common Alder, and Field Maple. Ash are vulnerable to dieback. Apparently used as an informal footpath, several tree stems within show scarring. Crops cultivated to within c.4m. Occasional dead trees within.	Nil	>40 Ash TBC	A1,2,3 Ash TBC	4.8m rad
14	Broadleaves	7 max	150 #	As plan #	0	1	Outside of ownership. An establishing broadleaved screen including Alder, Goat Willow Osier and Cherry Laurel.	Outside of ownership.	N/A	U/C	1.8m rad

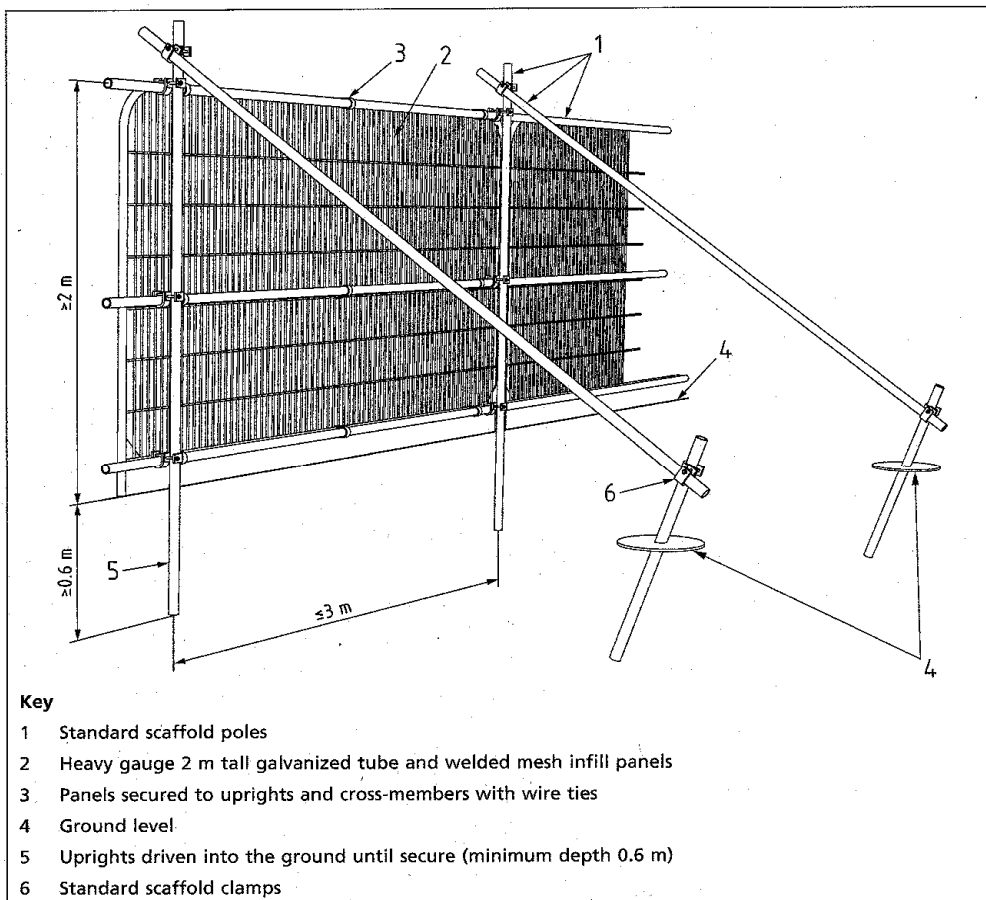
HEDGELINES – REFERENCE: H

1	Leyland cypress	4	An untidy feature, c 25% of stems are dead								
2	Leyland cypress	4	Provides useful screening to/from the highway								

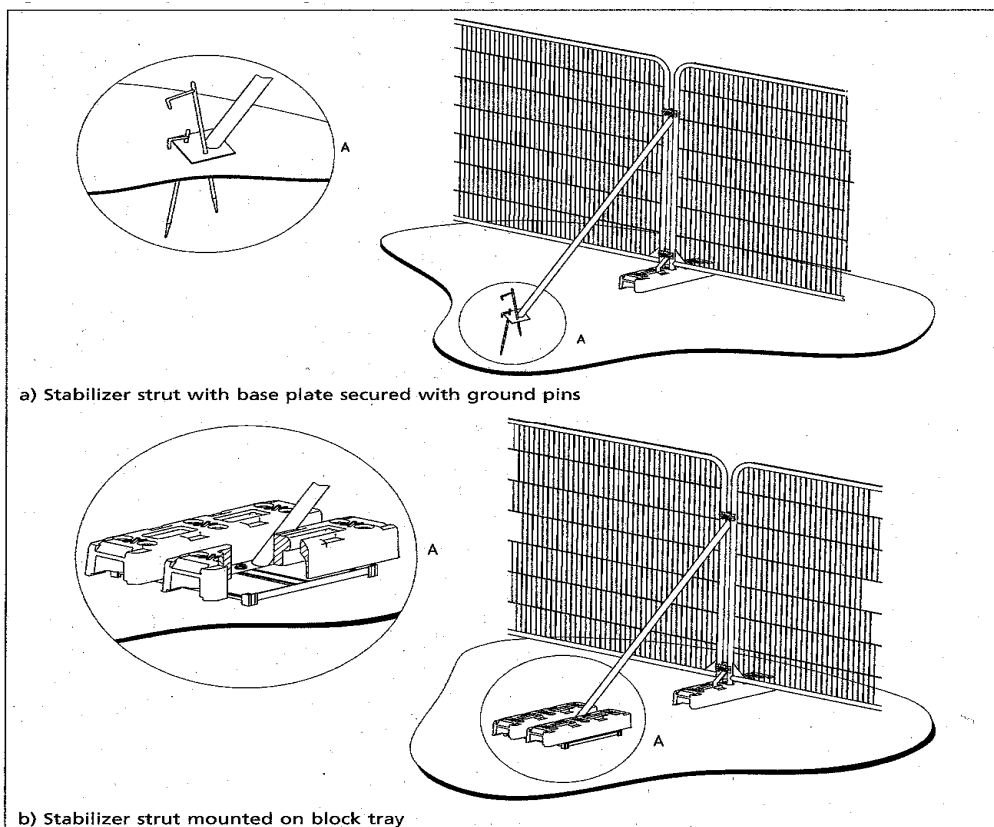
GENERAL NOTES

- Ash in the UK are increasingly being colonised by Ash dieback (*Hymenoscyphus fraxineus*); though up to 55% may show tolerance it may take a number of years before this is proven
- Recommended RPA's for groups should be viewed as minimum; crown spreads/limits should be used if greater than recommended RPA dimensions

DEFAULT SPECIFICATION FOR PROTECTIVE BARRIERS



EXAMPLES OF ABOVE GROUND STABILIZING SYSTEMS



SITE: LAND SOUTH OF A17, HOLBEACH
 CLIENT(S): LINCOLNSHIRE COUNTY &
 SOUTH HOLLAND DISTRICT COUNCILS

MAP TITLE: TREE CONSTRAINTS AND IMPLICATIONS
 MAP 1 (NORTH)
 (ORIGINAL IN COLOUR)

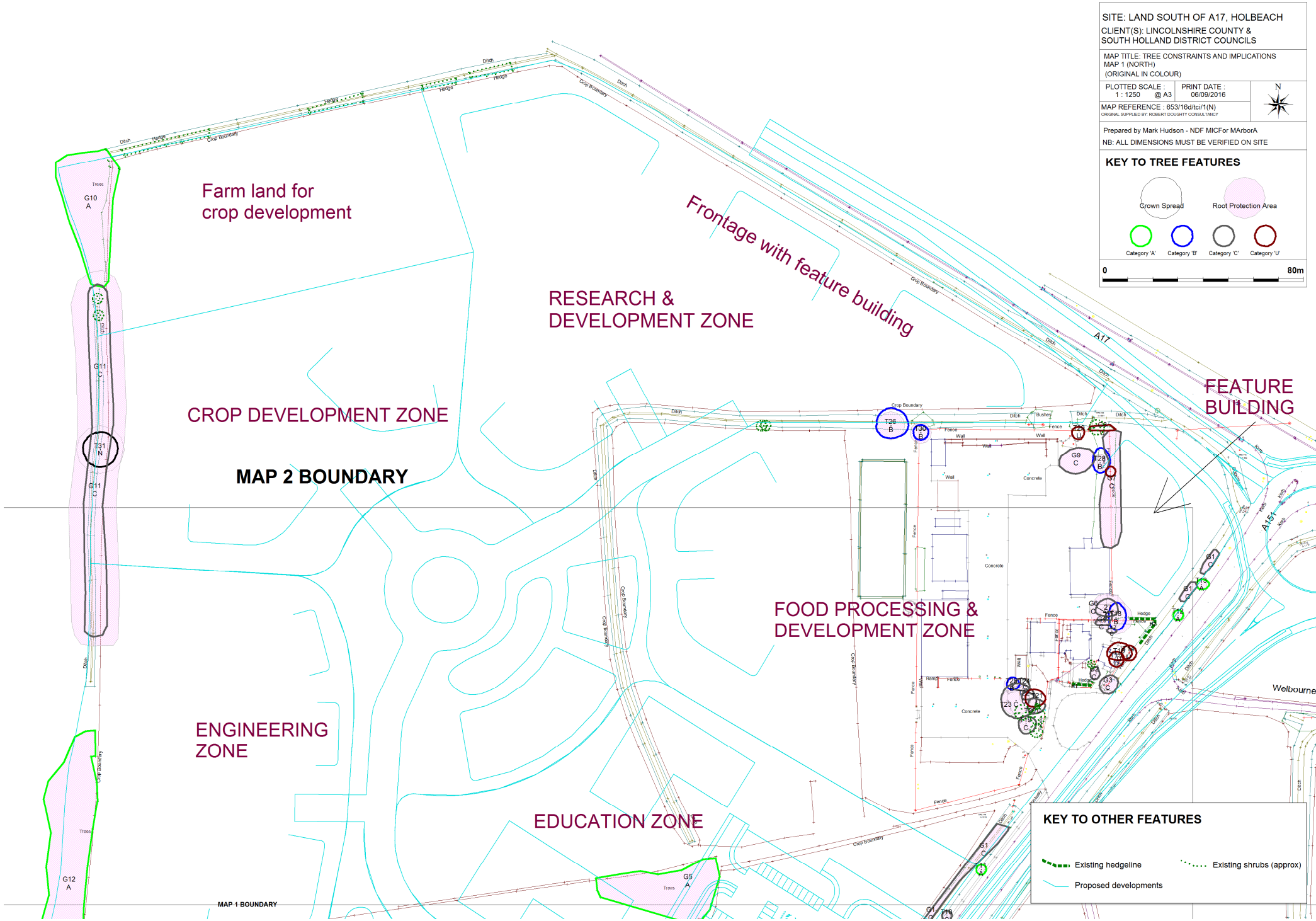
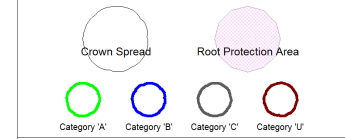
PLOTTED SCALE: 1:1250 @ A3 PRINT DATE: 06/09/2016

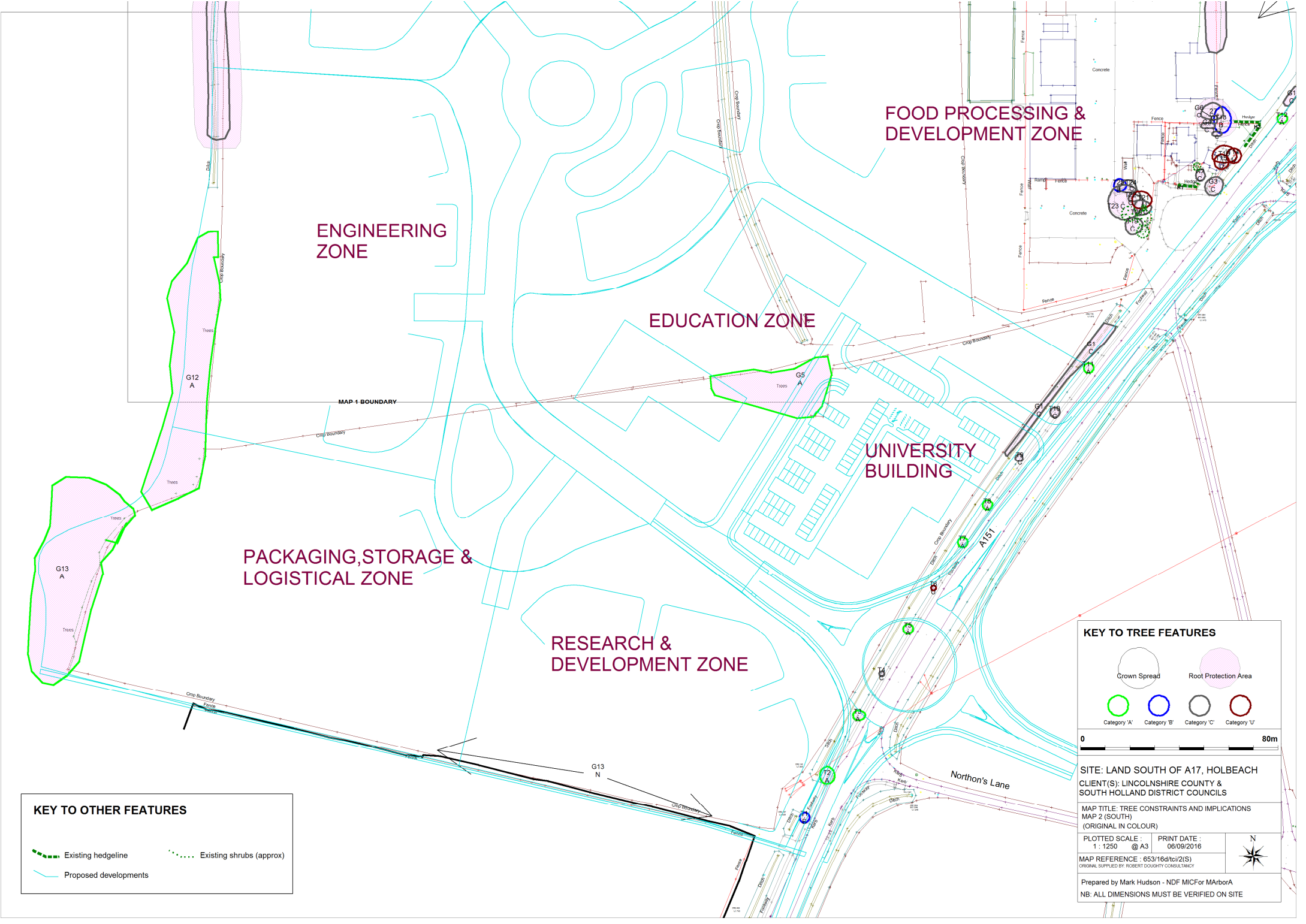
MAP REFERENCE: 653/16d/ctc/1(N)
ORIGINAL SUPPLIED BY ROBERT COOPER CONSULTANCY



Prepared by Mark Hudson - NDF MICFor MarborA
 NB: ALL DIMENSIONS MUST BE VERIFIED ON SITE

KEY TO TREE FEATURES





ENGINEERING ZONE

EDUCATION ZONE

FOOD PROCESSING & DEVELOPMENT ZONE

UNIVERSITY BUILDING

PACKAGING, STORAGE & LOGISTICAL ZONE

RESEARCH & DEVELOPMENT ZONE

KEY TO OTHER FEATURES

- Existing hedgeline
- Existing shrubs (approx)
- Proposed developments

KEY TO TREE FEATURES

- Crown Spread
- Root Protection Area
- Category 'A'
- Category 'B'
- Category 'C'
- Category 'U'



SITE: LAND SOUTH OF A17, HOLBEACH
 CLIENT(S): LINCOLNSHIRE COUNTY & SOUTH HOLLAND DISTRICT COUNCILS

MAP TITLE: TREE CONSTRAINTS AND IMPLICATIONS
 MAP 2 (SOUTH)
 (ORIGINAL IN COLOUR)

PLOTTED SCALE: 1:1250 @ A3
 PRINT DATE: 06/09/2016

MAP REFERENCE: 653/16d/rc1/2(S)
 ORIGINAL SUPPLIED BY: ROBERT DOUGHY CONSULTANCY

Prepared by Mark Hudson - NDF MICFor MArborA
 NB: ALL DIMENSIONS MUST BE VERIFIED ON SITE