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Tree Report

Site: Small Drove, Weston, Spalding.

Client: Welland Homes Ltd.

Architectural design: Framework Architects.

Date of inspection: 18 July 2017.

Weather conditions: Hot/dry.

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Tree survey sheet.

Extracts from BS5837:2012, Section 6.2 - Temporary protective fencing.

Tree protection plan.

1. Instructions and limitations.

1.1 I have been instructed by Peter Goodrick, Housing Development Programme Manager, South Holland District Council to provide a tree report for a proposed housing development at Small Drove, Weston.

1.2 The Root Protection Area is hereafter referred to as the RPA and the Tree Protection Plan as the TPP. AGL means "above ground level".

2. Site

2.1 Situated on the east side of Small Drove, the current use is small residential bungalows. The site is bounded to the north east by Delgate Avenue, to the south west by housing, and to the south east by open countryside. There are residential bungalows and Weston St Mary's C Of E Primary School opposite, on the west side of Small Drove.

3. Arboricultural implications

3.1 T1-T4 are to be retained. These are mature lime street trees growing in the grass verge on the south side of Delgate Avenue. They have been maintained in the past by pollarding and the Google street view of April 2009 shows them with 2 seasons regrowth, so they have not been pollarded for ten years but, they appear well maintained. All have the cavities and pockets of decay associated with old pollards, but these should not be a problem as long as they are regularly inspected and maintained, but they are overdue for pollarding. They carry numbered tags.

3.2 All the existing trees within the site are scheduled for removal. Several of those marked on the topographical survey are ash trees, and there are also some smaller young volunteer ash nearby. Other small trees on site not marked on the topographical survey are a pear and several conifers of no particular note. Volunteer ash are also growing in the privet hedges but these have been trimmed in line with the privet. The ash have been graded category c on the survey sheet as these are very likely to be killed or badly affected by ash dieback in the next 10 years or so, though they presently are not showing obvious signs of infection.

3.3 The healthy middle aged Scots pine T7 and young birch T10 will be removed but a replacement planting scheme will help to mitigate their removal.

3.4 Existing hedges are to be removed and replaced by fencing. It is mostly privet with volunteer ash, or mixed species cypress conifers.

4. Tree Protection

4.1 The appended extract from BS5837:2012 details the fencing specification.

4.2 The following restrictions will apply to the protected areas:

■ Protective fencing to be in place before any construction vehicles or

plant access the site.

- The fenced areas to be completely in-accessible to the building contractors with no storage of materials allowed therein.
- No mixing of cement based products within the RPAs.
- No use of any machinery that could lead to spillages of fuels/oils or other noxious substances either within the RPAs or which could leach into the RPAs from nearby areas.
- No changes in levels within RPAs except where illustrated in the approved Architect's drawing.
- The specification for protection is to comply with BS5837:2012. The welded mesh fencing is illustrated in the appended BS5837:2012 diagram.

5. Access and working/storage area.

5.1 The working/storage area to be outside of any protected areas. Contractors to follow the precautions outlined in para. 4.2.

6. Tree planting

6.1 Scheme to be produced when the final layout is confirmed.

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2 August 2017

Appendix:

Tree survey sheet.

Extracts from BS5837:2012, Section 6.2 - Temporary protective fencing.

Tree protection plan.

Small Drove, Weston. 19 July 2017 -- KEY to tree survey sheet

Stem diameter: Taken at 1.5m unless otherwise stated. m indicates a multi-stemmed tree with the rpa calculated as per BS5837:2012. b indicates measurement taken below 1.5m, either at the base in a multi-stemmed tree, or between the base and the spring of the branches, if that is below 1.5m. Both measured at the narrowest point. b measurements are taken where it is not possible to measure all stems at 1.5m.

Age class: y-young, ma-middle aged, m-mature, om-over mature, v-veteran.

Physiological condition: g-good, f-fair, p-poor, d-dead.

.Tree ref. No.	.Species	.RPA radius (m)	.Height (m)	.Stem dia (cm)	Branch spread (n)	Branch spread (e)	Branch spread (s)	Branch spread (w)	Height of crown (m)	.Age class	.Physio-logical condition	.Structural condition	.Preliminary management recommendation	.Estimated remaining contribution (years plus)	.Category grading
1	Lime	5.2	11	43	4	4	4	4	3	m	g	f		40	b
2	Lime	5	11	42	4	4	4	4	3	m	g	f		40	b
3	Lime	4.3	11	36	4	4	4	4	3	m	g	f		40	b
4	Lime	4.8	11	40	4	4	4	4	3	m	g	f		40	b
5	Ash	2.9	8	24	3	3	3	2	1	y	g	g	Marked for removal on proposal	10	c
6	Ash	2.9	8	24	3	3	3	3	1	y	g	g		10	c
7	Scots pine	4.8	10	40	4	4	4	4	2	ma	g	g		40	b
8	Ash	2.6	10	22	3	3	3	3	3	y	g	g		10	c
9	Cherry	4.7	8	m39	4	4	5	4	2	m	g	p		10	c
10	Birch	2.9	10	24	3	3	3	3	2	y	g	g		40	b

6.2 Barriers and ground protection

6.2.1 General

6.2.1.1 All trees that are being retained on site should be protected by barriers and/or ground protection (see **5.5**) before any materials or machinery are brought onto the site, and before any demolition, development or stripping of soil commences. Where all activity can be excluded from the RPA, vertical barriers should be erected to create a construction exclusion zone. Where, due to site constraints, construction activity cannot be fully or permanently excluded in this manner from all or part of a tree's RPA, appropriate ground protection should be installed (see **6.2.3**).

6.2.1.2 Areas of retained structural planting, or designated for new structural planting, should be similarly protected, based on the extent of the soft landscaping shown on the approved drawings.

6.2.1.3 The protected area should be regarded as sacrosanct, and, once installed, barriers and ground protection should not be removed or altered without prior recommendation by the project arboriculturist and, where necessary, approval from the local planning authority.

6.2.1.4 Where required, pre-development tree work may be undertaken before the installation of tree protection measures, with the agreement of the project arboriculturist or local planning authority if appropriate (see also **8.8.1**).

6.2.1.5 It should be confirmed by the project arboriculturist that the barriers and ground protection have been correctly set out on site, prior to the commencement of any other operations.

6.2.2 Barriers

6.2.2.1 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.

6.2.2.2 The default specification should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated in Figure 2. The vertical tubes should be spaced at a maximum interval of 3 m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed. Care should be exercised when locating the vertical poles to avoid underground services and, in the case of the bracing poles, also to avoid contact with structural roots. If the presence of underground services precludes the use of driven poles, an alternative specification should be prepared in conjunction with the project arboriculturist that provides an equal level of protection. Such alternatives could include the attachment of the panels to a free-standing scaffold support framework.

6.2.2.3 Where the site circumstances and associated risk of damaging incursion into the RPA do not necessitate the default level of protection, an alternative specification should be prepared by the project arboriculturist and, where relevant, agreed with the local planning authority. For example, 2 m tall welded mesh panels on rubber or concrete feet might provide an adequate level of protection from cars, vans, pedestrians and manually operated plant. In such cases, the fence panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fence couplers should be at least 1 m and should be uniform throughout the fence. The panels should be supported on the inner side by stabilizer struts, which should normally be attached to a base plate secured with ground pins (Figure 3a). Where the fencing is to be erected

on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g. due to the presence of underground services, the stabilizer struts should be mounted on a block tray (Figure 3b).

NOTE 1 Examples of configurations for steel mesh perimeter fencing systems are given in BS 1722-18.

NOTE 2 It might be feasible on some sites to use temporary site office buildings as components of the tree protection barriers, provided these can be installed and removed without damaging the retained trees or their rooting environment.

6.2.2.4 All-weather notices should be attached to the barrier with words such as: "CONSTRUCTION EXCLUSION ZONE - NO ACCESS".

Figure 2 **Default specification for protective barrier**

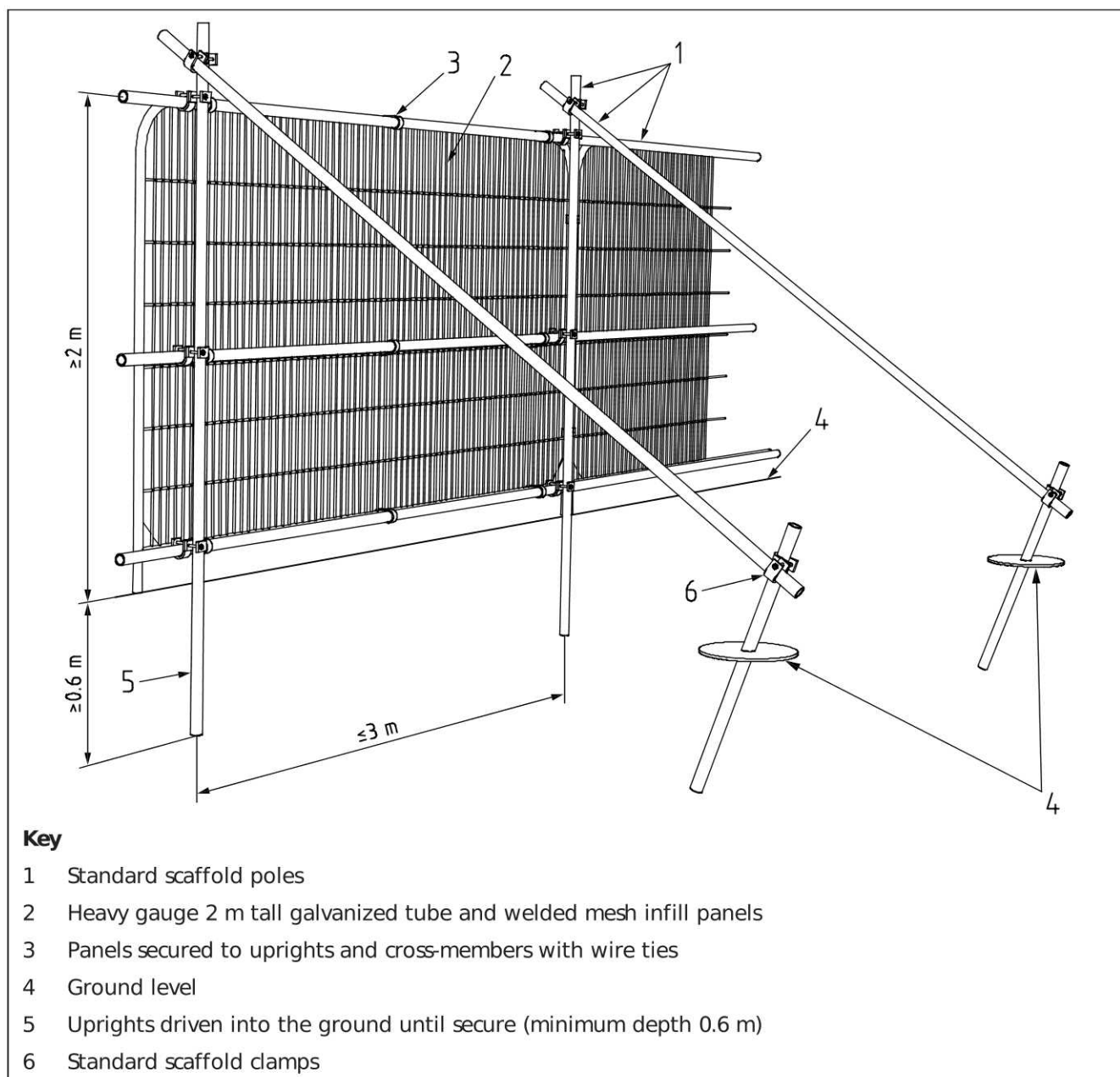
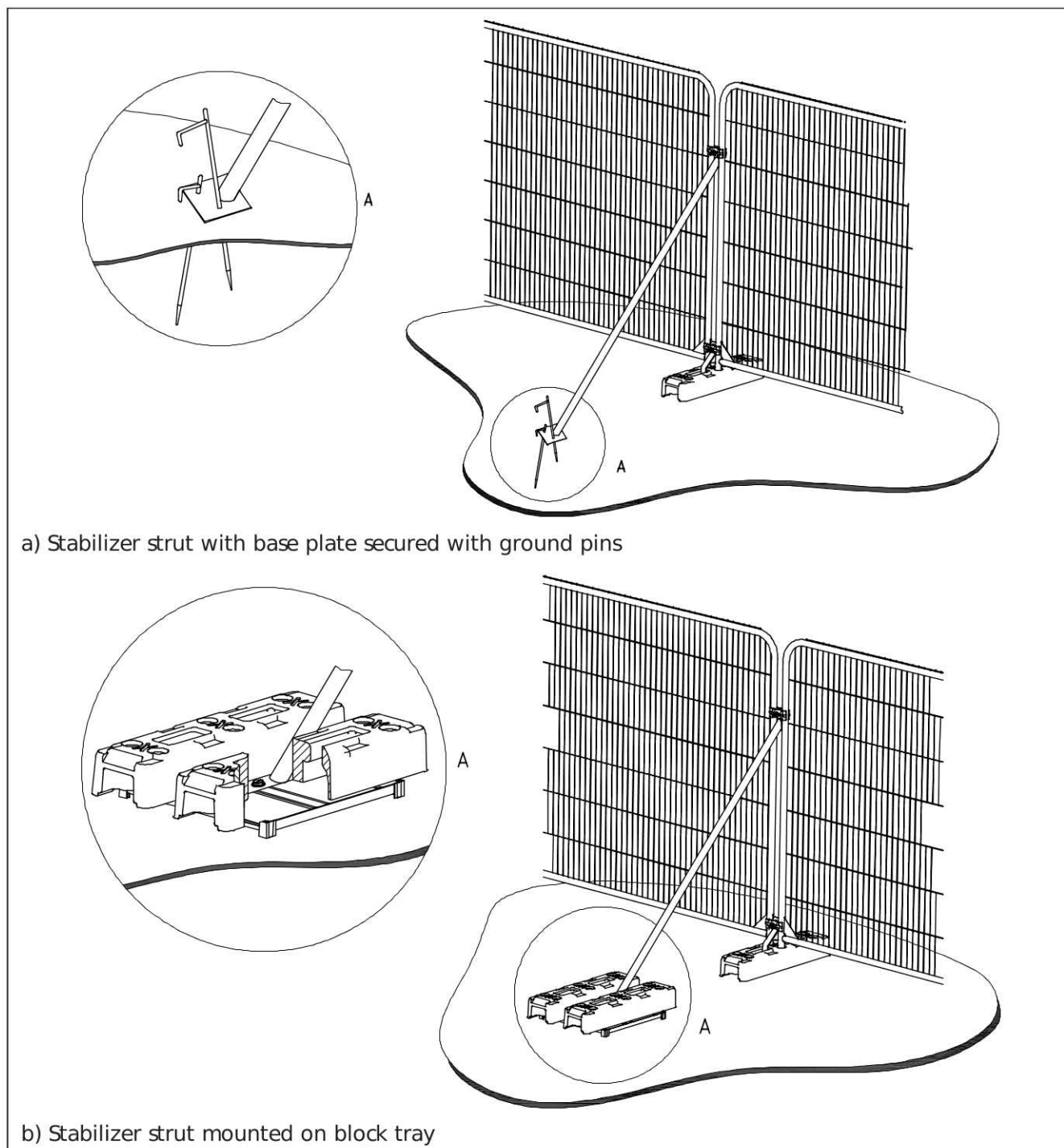


Figure 3 Examples of above-ground stabilizing systems



6.2.3 Ground protection during demolition and construction

6.2.3.1 Where construction working space or temporary construction access is justified within the RPA, this should be facilitated by a set-back in the alignment of the tree protection barrier. In such areas, suitable existing hard surfacing that is not proposed for re-use as part of the finished design should be retained to act as temporary ground protection during construction, rather than being removed during demolition. The suitability of such surfacing for this purpose should be evaluated by the project arboriculturist and an engineer as appropriate.

6.2.3.2 Where the set-back of the tree protection barrier would expose unmade ground to construction damage, new temporary ground protection should be installed as part of the implementation of physical tree protection measures prior to work starting on site.

6.2.3.3 New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

NOTE The ground protection might comprise one of the following:

- a) *for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;*
- b) *for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane;*
- c) *for wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.*

6.2.3.4 The locations of and design for temporary ground protection should be shown on the tree protection plan and detailed within the arboricultural method statement (see **6.1**).

6.2.3.5 In all cases, the objective should be to avoid compaction of the soil, which can arise from the single passage of a heavy vehicle, especially in wet conditions, so that tree root functions remain unimpaired.

6.2.4 Additional precautions outside the exclusion zone

6.2.4.1 Planning of site operations should take sufficient account of wide loads, tall loads and plant with booms, jibs and counterweights (including drilling rigs), in order that they can operate without coming into contact with retained trees. Such contact can result in serious damage to the trees and might make their safe retention impossible. Consequently, any transit or traverse of plant in proximity to trees should be conducted under the supervision of a banksman, to ensure that adequate clearance from trees is maintained at all times. Access facilitation pruning should be undertaken where necessary to maintain this clearance.

NOTE In some instances, local planning authority consent for pruning might be required.

6.2.4.2 Fires on sites should be avoided if possible. Where they are unavoidable, they should not be lit in a position where heat could affect foliage or branches. The potential size of a fire and the wind direction should be taken into account when determining its location, and it should be attended at all times until safe enough to leave.

NOTE Local environmental health authorities might have specific restrictions.

6.2.4.3 Any materials whose accidental spillage would cause damage to a tree should be stored and handled well away from the outer edge of its RPA.

6.3 Site monitoring

Wherever trees on or adjacent to a site have been identified within the tree protection plan for protective measures, there should be an auditable system of arboricultural site monitoring. This should extend to arboricultural supervision whenever construction and development activity is to take place within or adjacent to any RPA.

NOTE Existing planning regulations include the provision for local authorities to enforce planning requirements. The project arboriculturist appointed by the developer can help monitor site activity, but enforcement is the responsibility of the local authority.

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