Barnburgh View, Goldthorpe Ph 3
for Gleeson Homes & Regeneration

ARBORICULTURAL METHOD STATEMENT

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See drawings 3627/2 - 3 and refer to the Tree Survey document dated 03 Apr 20

1.0 INTRODUCTION

1.1 This Method Statement has been drawn up to assist Barnsley Metropolitan Borough Council and the developer in overseeing the construction of the proposed housing development by Gleeson Homes and Regeneration.

1.2 The document seeks to describe the site and its tree cover, list those trees which are proposed for removal due to the development, those which need to be removed for technical reasons and those which are to remain.

1.3 It describes the proposals for ensuring that the trees that are to remain would survive the development and thrive after the development.

1.4 The development and timing of construction operations are described, together with materials which would be used in order to maximise tree protection.

1.5 The document also includes a section of useful telephone numbers and addresses.

1.6 This Statement will be included as part of the specification and schedule of works issued to the building contractor and will form part of the contract. The Statement will be available on site for inspection.

2.0 SITE DESCRIPTION

2.1 The study site is located towards the southern edge of the settlement of Goldthorpe which itself lies midway between Barnsley and Doncaster. It is bounded to the north by the rear gardens of existing dwellings and the east by an area of land shortly due to be developed for residential use. An area of abandoned allotments abuts the site to the west whilst open land in agricultural use lies to the south.

2.2 The site was formerly in agricultural use is presently unused - covered in long grass and brambles. Ground falls gradually across the site from north to south. The lowest point on site is in the south east corner. Beyond the site boundary to the north ground levels rise gradually within the Goldthorpe urban area whereas in all other directions they remain level or fall away gradually.

3.0 TREES AFFECTED BY DEVELOPMENT

3.1 The majority of trees on site are due to remain and are listed as follows:

G1 2nr. Field Maple
H2 Hawthorn, Blackthorn
T3 Hawthorn
T4 Hawthorn
H5 Hawthorn, Blackthorn
T6 Hawthorn
H7 Hawthorn, Blackthorn
T8 Hawthorn
H9 Elder, Hawthorn, Blackthorn
H10 Lawson Cypress
H11 Hawthorn
H12 Blackthorn

3.2 Trees recommended for removal on arboricultural grounds and are listed as follows:

T3 Hawthorn
T4 Hawthorn
T6 Hawthorn

3.3 There are no trees that are to be removed for development purposes. The following hedge will be removed for development purposes:

H9 (Northern section) Elder, Hawthorn, Blackthorn

4.0 TREE REMOVAL

4.1 The first operation on the site will be the removal of all trees and the hedge as scheduled.

4.2 These works will be undertaken with care to avoid damage to adjacent specimens due for retention.

5.0 REMEDIAL WORK

5.1 When all the felling is completed, the necessary tree surgery will be carried out.

5.2 This will principally involve only the general removal of deadwood from the crowns of trees and the removal of the lowest limbs (light crown lift) of some trees.

5.3 All work will comply with British Standard 3998 (2010).

5.4 In addition to this the following works are required within the development and are to comply with British Standard 3998 (2010): See drawing 3627/4.

G1	***2nr Hawthorn***	***Trim back crown on western side***
T8	***Hawthorn***	***Trim back crown on north side***
H2	***Hawthorn, Blackthorn***	***Trim back hedge on west side***
H5	***Hawthorn, Blackthorn***	***Trim back hedge on west side***
H7	***Hawthorn, Blackthorn***	***Trim back hedge on north side***
H9	***Elder, Hawthorn, Blackthorn***	***Trim back southern section on east side***
H11	**Hawthorn**	***Trim back hedge on south west side***
H12	***Blackthorn***	***Trim back hedge on west side***

6.0 PROTECTIVE FENCING

6.1 Prior to machinery entering the site for any building, levelling or site clearance purposes, all trees listed to be retained within the development will be fenced off in a continuous line around their crowns; or where practical, in accordance with British Standard (BS) 5837: 2012: clause 7.1 and 7.2 (see Appendix A and drawings 3627/4).

6.2 The fencing will be constructed with a framework of scaffolding poles driven 600mm into the ground, braced together and backstays will then be added at 3m centres. Onto this will be attached a continuous line of welded mesh panels. Alternatively Ply or corrugated sheet metal panels may be used to be securely fixed to the frame with wire or scaffold clamps in accordance with BS 5837: 2012.

6.3 Where fence installation into soft ground is not possible an alternative specification of fencing described as acceptable within the BS (see Fig.3, Appendix A) is the use of welded mesh panels ('Heras' or similar) on

rubber or concrete feet supported on the inner side by stabiliser struts on a base plate secured with ground pins (or on a block tray if sitting on retained hard surfacing).

6.4 Site notices on fencing will be used in the form of pre-printed laminated waterproof signs A3 in size fixed securely to fencing panels on each enclosure at 9m intervals. The signs will clearly read:

PROTECTED TREE ZONE
NO STORAGE OR OPERATIONS WITHIN FENCED OFF AREAS

6.5 Failure to comply with the above requirements could lead to enforcement action, including the issuing of a Stop Notice, until the matter has been remedied. Where damage has occurred to legally protected trees, the owner of the site may be liable for prosecution.

7.0 SITE INSPECTION

7.1 After tree felling and remedial work to trees have been completed (and following erection of the protective fencing), the developer's arboriculturist will visit the site. The reasons for this visit are firstly to check that the work to the trees is satisfactory, secondly to check the protective fencing, and thirdly to meet with the local authority's tree officer to ensure that they are also satisfied.

7.2 Any necessary amendments and improvements to the protective fencing agreed at this meeting will be undertaken following confirmation of the agreed changes in writing.

8.0 DEVELOPMENT PHASE

8.1 After all the felling, pruning and fencing has satisfactorily been completed, the developer can commence the on-site preparation works and construction can begin.

8.2 During the development phase the developer's arboriculturist will visit the site on a regular basis to check the protective fencing and make any recommendations on any maintenance required to it.

8.3 The local authority's tree officer will have reasonable access to the site to report any problem areas directly to the developer's arboriculturist who will then visit the site and make recommendations to the developer on how best to rectify the situation.

9.0 DEVELOPMENT NEAR TREES

9.1 In the unlikely event that the tree protection fence needs to be moved during the development, a meeting will be called to which the local authority's tree officer will be invited. This is to agree that the methods and new position of the tree protection fencing are adequate and meet with the local authority's approval.

9.2 Any other process which will require the movement of the protective fence line will require the presence of the developer's arboriculturist and the local authority's tree officer throughout the process. This work will therefore require to be carried out immediately following the removal of fencing (ideally within a single working day).

9.3 The following procedures will be adopted where construction work is required within the canopy zone of any retained tree ('protected zone'):

9.3.1 Prior to any work commencing within protected zones the contractor and developer's arboriculturist will meet on site to discuss appropriate procedures.

9.3.2 Excavations within protected zones will be backfilled with subsoil and good quality topsoil as soon as possible to minimise root desiccation

10.0 REMOVAL OF HARD MATERIAL FROM BENEATH TREE CANOPIES

10.1 Where hard surfaces are to be found beneath the canopies of existing trees these will be removed as detailed below:

10.1.1 Carefully break up hard surface by mechanical or hand means radially from the stem of each tree to minimise root damage. The depth of material thus removed will be kept to a minimum and in no case exceed 200mm. This will probably include only the wearing course and base course thus leaving the sub-base intact around the rooting zone.

10.1.2 Foundations of new retaining structures will incorporate where possible the existing foundations of the walls to minimise disturbance to tree roots.

10.1.3 The existing material will be levered up to minimise removal of the root mat beneath the existing surface. A geotextile membrane will be used to protect tree roots.

10.1.4 Remove material thus loosened again radially from the stem of the tree. Any machinery must be located beyond the canopy limit of the tree with a hydraulic arm used to reach under the canopy and retrieve material. Care must be taken at this stage not to excavate any deeper than the layer of loosened material.

10.2 Care will be taken not to incur damage to the branching structure of the tree using the hydraulic arm.

10.3 No machinery will track over the ground beneath the tree canopies, to avoid compaction of the rooting zone.

11.0 SURFACE TREATMENT BENEATH TREE CANOPIES

11.1 The proposals involve the installation of a substation and footpath beneath the crown of T8 which is due to be retained. It is assessed that 28.6% of the Root Protection Area (RPA) will be adversely affected to a significant extent.

11.2 The substation installation will have an effect of 8% of the RPA. When roots are encountered following excavation, they should be cut cleanly with a hand saw and exposed root ends covered with damp hessian to minimise desiccation until the excavation can be backfilled (which should ideally be undertaken within one working day).

11.3 The installation of the footpath beneath the crown of T8 shows the RPA might be adversely affected to a significant extent unless special measures are taken.

11.4 It is therefore proposed that the footpath is installed using a no-dig method of construction in line with the Arboricultural Association's Guidance note 12 (The use of Cellular Confinement Systems near trees: A Guide to Good Practice, published September 2020).

11.5 Part of the approved development involves construction of a garage to the north of the site and parking bays to the east. These lie with in close proximity of the retained hedges and potentially parts of the root protection zone. It is inevitable therefore that the protection fencing will require to be re-located to enable this to proceed.

11.6 The fencing will only be moved immediately prior to laying of the road surface/garage construction and the operation will be overseen throughout by the developer's arboriculturist.

12.0 SERVICES

12.1 All service runs will be aligned to pass beneath the surface of the roads and pavements where possible.

12.2 Should the need arise to dig within the protective fence lines at any time, the developer's arboriculturist will be present, and hand digging will be used.

12.3 All work to services on site will be undertaken in line with the NJUG "Guidelines for Planning, Installation and Maintenance of Utility Services in Proximity to Trees".

12.4 Fencing will be constructed at 2 metres from either side of the proposed sewers to permit access for excavation. Following construction, the excavation will be backfilled with clean subsoil (and topsoil to depth of surrounding areas) as quickly as possible – ideally within one working day. Any exposed roots will be covered with damp hessian to prevent desiccation.

13.0 REMOVAL OF THE PROTECTIVE FENCING

13.1 When the development is complete, all drainage and service runs are in place and the main site machinery has been removed, temporary protective fencing will be dismantled. This must be done with great care and will need to be supervised to avoid heavy machinery being used.

14.0 LANDSCAPING WITHIN THE TREE CANOPIES

14.1 The trees in G1 will be subject to some form of replacement planting or seeding beneath the canopy after the main development phase has been completed. At this stage it is inevitable that the protective fencing will have to be removed.

14.2 In view of this, the planting will need to be carried out in such a way as to avoid level changes, deep digging and rotovating. Such details will be specified within the landscape contract and work will be supervised where appropriate by the developer's arboriculturist.

15.0 COMPLETION MEETING

15.1 Upon completion of all the works specified above and procedures also specified, the developer's arboriculturist will invite the local authority's tree officer to meet on site to discuss the process and to agree on any remedial works required.

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19 October 2022

APPENDIX

BS 5837: 2012 (ABSTRACT)

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).

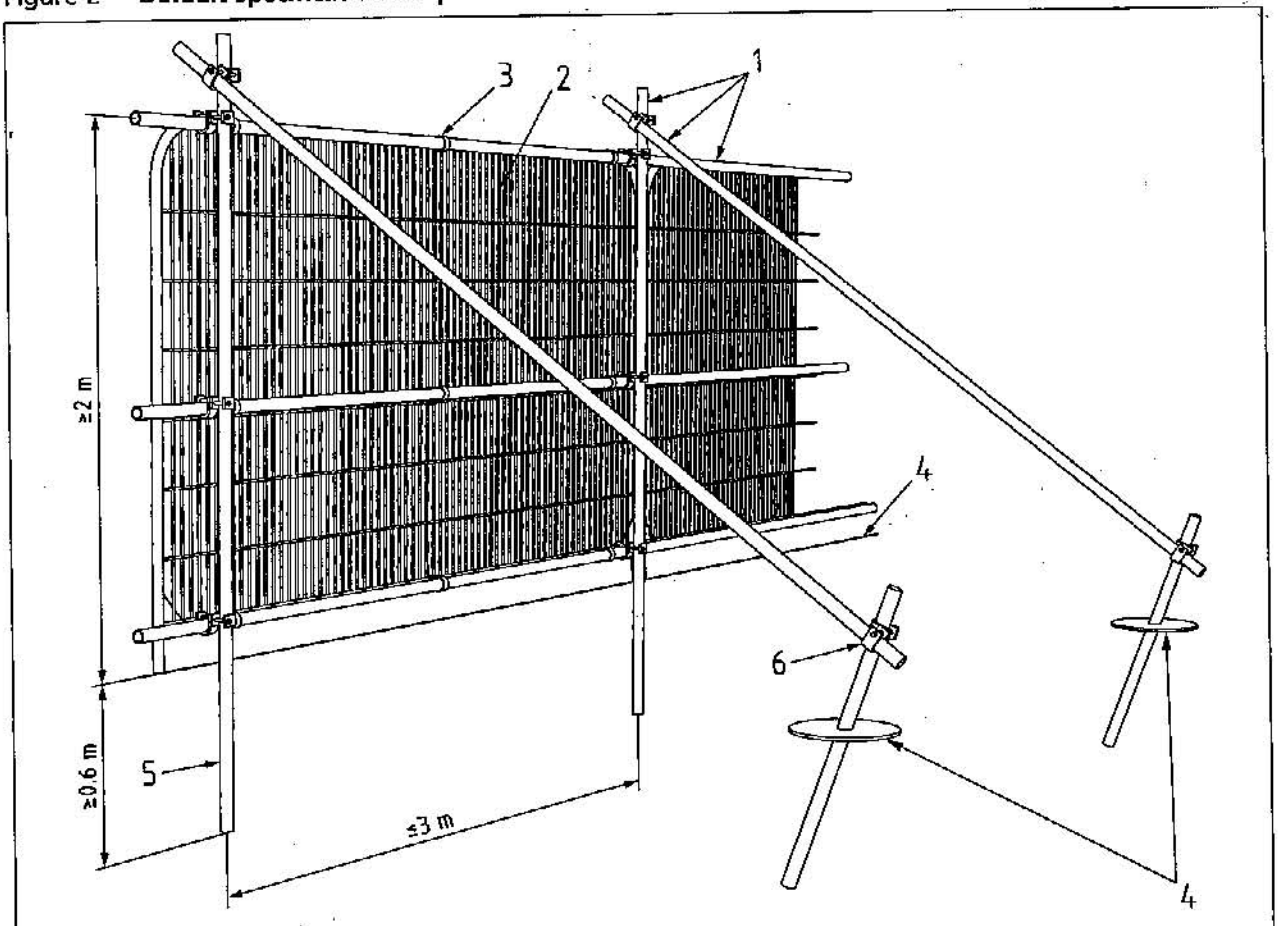
NOTE 1 Examples of configurations for steel mesh perimeter fencing systems are given in BS 1722-18.

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".

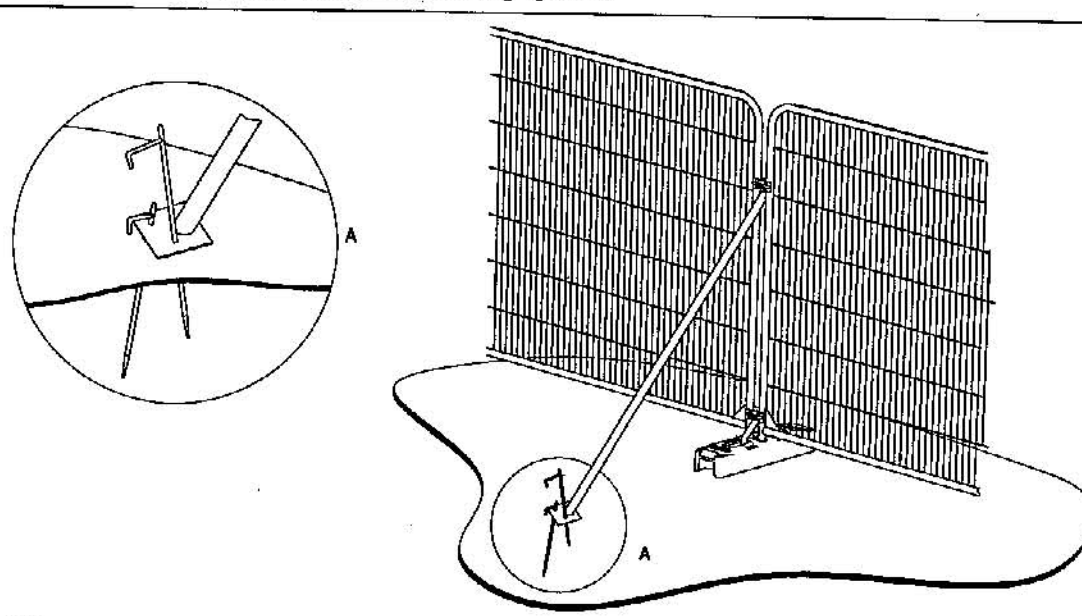
Figure 2 **Default specification for protective barrier**



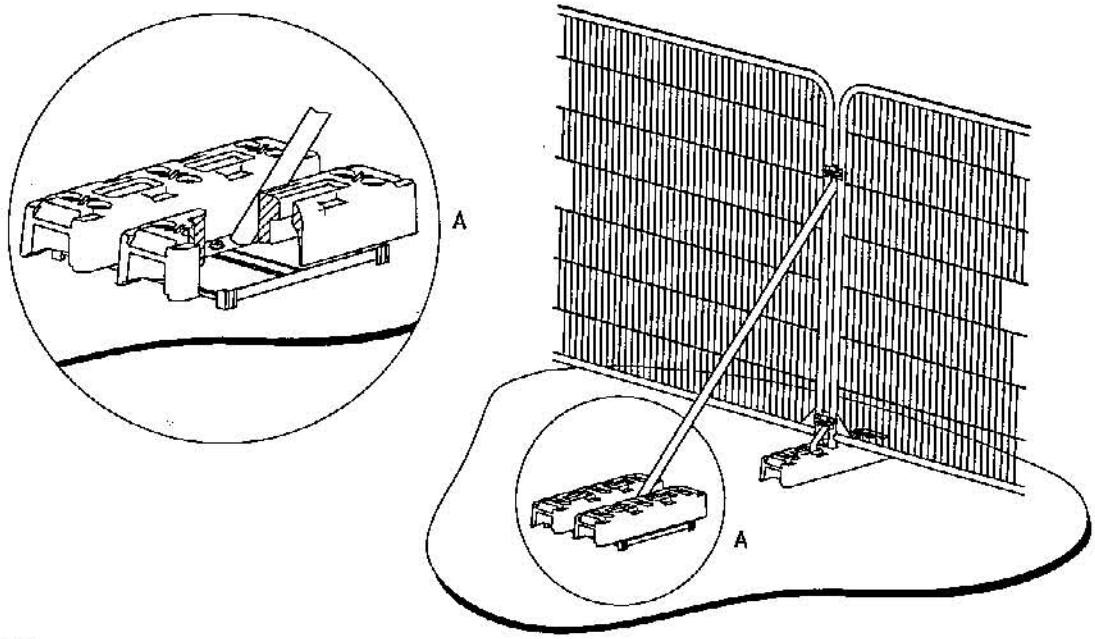
Key

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

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.