

National Trust - Tredegar

Arboricultural Method Statement

Project:	National Trust – Car Park Infrastructure		
Our reference:	100124714-MMD-HE-RP-31		
Prepared by:	L Murphy	Date:	August 2026
Approved by:	Tim Butcher	Checked by:	Rhys Lennon
Subject:	Arboricultural Method Statement - Tredegar		

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1 Introduction

1.1 Purpose of Report

1.1.1 Mott MacDonald (MM) have been commissioned by The National Trust (NT) to produce an Arboricultural Method Statement (AMS) for the installation of parking equipment at Tredegar House National Trust car park, Pencarn Way, Duffryn, Newport NP10 8YW, hereafter referred to as 'the site'.

1.1.2 This AMS and associated Proposed Tree Protection Site Plan (TPP) has been produced to discharge condition 2 of the Granting of Planning Permission:

No development, to include demolition, shall commence until a Tree Protection Plan (in accordance with BS 5837:2012) has been submitted to and approved in writing by the Local Planning Authority. The Tree Protection Plan shall contain full details of the following: -

- (a) Trees and hedges to be retained/felled clearly identified and marked on a plan;*
- (b) Trees and hedges requiring surgery;*
- (c) The root protection areas to be identified on plan for retained trees and hedges;*
- (d) The type and detail of the barrier fencing to be used to safeguard the root protection areas;*
- (e) The precise location of the barrier fencing, to be shown on plan.*
- (f) Method of ground works excavation relating to the ANPR column.*

The development shall be carried out in accordance with the approved Tree Protection Plan. Reason: To protect important landscape features within the site in accordance with Policy GP5 of the Newport Local Development Plan 2011 - 2026 (Adopted January 2015).

1.1.3 The AMS has been produced in accordance with *BS5837:2012 – Trees in Relation to Design, Demolition, and Construction – Recommendations*¹.

1.2 The Scheme

1.2.1 The NT is proposing to upgrade and enhance the infrastructure across Tredegar NT site and ensure the car park can fulfil the demands of visitors and functions in an efficiently. The proposed infrastructure at Tredegar has been informed by discussions between the National Trust and their supplier to decide on the best hardware solutions for different sites based on factors such as size, environmental constraints, staffing and data connectivity.

1.2.2 At Tredegar the most appropriate solution is:

- 1 x Dual Lane Automatic Numberplate Recognition (ANPR) camera mounted on a new camera column 4 metres in height from the ground facing out of the car park;
- Removal of 1 x existing terminal and the installation of 1 x (black in colour) mains powered, contactless and coin payment terminal measuring 1540mm in height, using a conversion plate;
- Removal of 1 x existing terminal and the installation 1 x (black in colour) mains powered, contactless payment terminal measuring 1540mm in height, using a conversion plate; and

¹ British Standards Institution (2012) Trees in relation to design, demolition and construction – recommendations. ISBN: 978 0 580 69917 7

- A power & data connection will be installed to power the ANPR cameras, this will require a trench to be dug measuring 10m in length, 0.1m in width and 0.45m in depth. An additional 7m slot cut is required which will measure just 45mm in depth and 10mm in width. The connection also requires the installation of a feeder pillar.

- 1.2.3 The position of each aspect of the proposed development mentioned above is illustrated in the Proposed Tree Protection Site Plan (Document Reference: 100124714-MMD-00-XX-DR-A-1129).

1.3 Baseline Data

- 1.3.1 An arboricultural survey was undertaken by MM on 31 July 2026 in order to inform the Planning Statement for the proposed works. The survey focused on trees within the Main Car Park.
- 1.3.2 The survey was based upon a visual inspection only. Trees are living organisms whose health, condition and structure can change over time. This survey is not, nor should be taken to be, a full or thorough assessment of the health and safety of trees on or adjacent to the site. Therefore, it is recommended that detailed tree inspections are undertaken on a regular basis with the express purpose of complying with the landowner's duty of care and satisfying health and safety requirements.
- 1.3.3 Tree locations were determined on site using digital survey software and hardware which use a combination of georeferenced topographical survey, aerial imagery and the devices inbuilt Global Position System (GPS). Trees plotted with the internal GPS can be assumed to have an accuracy of +/- 5 m.

1.4 Statutory Designations

- 1.4.1 The site falls under the administrative boundary of Newport City Council website (NCC). A check of the NCC website² has confirmed that the site is located within the Tredegar House and Grounds Conservation Area. Reaching out the council directly via email confirmed there are no Tree Preservation Orders (TPOs) in or adjacent to the site.
- 1.4.2 A check of the Department of Environment Food and Rural affairs (DEFRA) MAGIC³ Map Application has confirmed that there are no designated ancient woodlands within 50m of the site. There are no areas of designated priority habitat (deciduous woodland, traditional orchard, wood pasture and parkland) within or adjacent to the site.
- 1.4.3 A check of the Woodland Trust's Ancient Tree Inventory⁴ confirmed there is one veteran Pedunculate Oak tree within 50m of the site, located in the north-west corner of the car park. tree will not be affected.

1.5 Limitations and Assumptions

- 1.5.1 The health and condition of trees can change rapidly and all trees, even healthy ones, are at risk from unpredictable climatic and man-made events. This report is based on the observed health and structural condition of the trees at the time of survey by suitably qualified inspectors. The health,

² [Conservation areas | Newport City Council](#)

³ [MAGIC](#)

⁴ [Ancient Tree Inventory - Woodland Trust](#)

condition and safety of trees should be checked on a basis commensurate with the level of risk and preferably on an annual basis, as recommended in Common Sense Risk Management of Trees⁵.

2 Arboricultural Method Statement

2.1 Introduction

- 2.1.1 The most important and effective process, in terms of preventing damage to trees on a construction site, is to exclude all construction activity from the canopy and Root Protection Areas (RPAs) of retained trees on site. This is assured through the timely erection of temporary protection barriers. These must be erected as the first operation on site, for example, before access track construction, before Contractor's site cabins, and before trenching for service runs.
- 2.1.2 However, it is noted that the barriers provide an unnecessary and potentially dangerous restriction to essential tree works and therefore tree works should be carried out before barriers are erected.
- 2.1.3 To protect retained trees correctly throughout the construction process, tree protection measures should be removed in the exact opposite order and methodology they were installed so that one of the last actions onsite is the removal of the tree protection measures.
- 2.1.4 A formal Tree Protection Plan (TPP) has been produced in association with this report and can be found in Appendix B.
- 2.1.5 Any changes during construction outside of the agreed scope of arboricultural works are to be discussed and agreed by all relevant parties prior to being undertaken and advice sought from an appropriately qualified arboriculturist.

2.2 Root Protection Areas (RPAs) - background information

- 2.2.1 Working anywhere in the vicinity of trees is likely to cause some root damage because in the order of 80% of the roots of any tree will occur within the upper 600mm of the soil. Roots will spread out for a considerable distance from a tree and may be encountered at a distance beyond the canopy spread of a tree.
- 2.2.2 Where construction activities are proposed within the rooting zone of trees, the potential for significant damage exists. Section 4.6 of BS 5837:2012 prescribes a methodology for the calculation of an RPA.
- 2.2.3 The RPA represents the minimum area that should be retained undisturbed around a tree or trees for the avoidance of an unacceptable degree of root disturbance. The required RPA of a tree is calculated and typically plotted as a circle (or where appropriate as a square of equivalent area) to determine constraints or the location of protective fencing. In certain circumstances the actual

⁵ National Tree Safety Group, 2011

shape of this area may then be adjusted to take account of local topography or any existing site features that may serve as restrictions to 'normal' root development.

2.3 Tree 1

- 2.3.1 Tree 1 is a silver birch (*Betula pendula*), has a calculated RPA of 3.8m. The excavation required for the ANPR cameras will in close proximity to this tree however remains outside the calculated RPA. The tree is rooted within a small, kerbed island associated with the car park, and the kerbs are likely to have constrained root development, resulting in a higher density of roots within this grassed island than would be expected within an open grown tree. Also, long term, the tree foliage and branches could cover or impact the cameras as the tree grows, and this should be continually monitored (Section 2.12).
- 2.3.2 Due to the constrained rooting area of the tree, there is potential for the root system to extend outside of the calculated RPA. Where works within this area of grass involve excavations and digging it is suggested that the recommendations in Sections 2.14, 2.15 and 2.16 are followed in case roots are discovered within the working area. Temporary protection barriers (Section 2.11) are required to protect the maximum extent of the RPA (alignment indicated on the TPP, Appendix B).

2.4 Tree 2

- 2.4.1 Tree 2 is a silver birch (*Betula pendula*) and has a calculated RPA of 3.2m. Works will remain outside of the RPA and canopy area, with works having no impact on the tree.

2.5 Tree 3

- 2.5.1 Tree 3 is a walnut (*Juglans regia*) and has a calculated RPA of 5.8m. Works will remain outside of the RPA and canopy area, with works having no impact on the tree.

2.6 Tree 4

- 2.6.1 Tree 4 is a maple (*Acer spp.*) and has a calculated RPA of 4.4m. Works will remain outside of the RPA and canopy area, with works having no impact on the tree.

2.7 Group G1

- 2.7.1 Group G1 consists of three silver birch trees and each have a calculated RPA of 6.4m. Works will remain outside of the RPA and canopy area, with works having no impact on the tree.

2.8 Group G2

- 2.8.1 Group G2 consists of two red oak trees (*Quercus rubra*) and each have a calculated RPA of 7.3m. Works will remain outside of the RPA and canopy area, with works having no impact on the tree.

2.9 Site Supervision

- 2.9.1 Prior to work commencing the Scheme Arboriculturist should provide a toolbox talk (TBT) to all site operatives to brief them on the site-specific tree constraints and required tree protection methods.
- 2.9.2 The Scheme Arboriculturist must inspect and sign off the alignment of protection barriers prior to works beginning on the site. The Scheme Arboriculturist must be contacted a minimum of 7 days

prior to the date of installation of the tree protection measures to enable monitoring/supervision of the measures. The Scheme Arboriculturist should undertake a pre-commencement walk over of the site with the site engineer and/ or supervisor to confirm and check the installation of the agreed protection measures and where necessary recommend adjustments.

- 2.9.3 If there are any changes to the proposed works or any queries while on site, the Scheme Arboriculturist should be consulted to provide guidance and update recommendations.
- 2.9.4 On completion of the scheme, the Scheme Arboriculturist must look for signs of intolerance to the change in conditions, the effect of the scheme and any accidental damage to retained trees, to identify the need for further tree works in addition to those originally specified at the outset of the project.

2.10 Tree Removal Summary

No felling is required to facilitate the proposed works.

2.11 Temporary Protection Barriers

- 2.11.1 Where specified in this AMS, protection barriers must be constructed in accordance with BS 5837:2012 and be fit for the purpose of excluding any construction activity from the RPA of trees identified for retention (Appendix B). Any other fence or barrier used must be approved by the Scheme Arboriculturist prior to installation. The TPP identifies trees requiring the installation of protection barriers around the extent of their RPAs or around the extent of their canopies. This is dependent on whether the RPA is open grown in soft landscaping or is already protected by existing hardstanding or fencing.
- 2.11.2 The barriers must be erected in accordance with BS 5837:2012 and positioned to enclose any exposed RPA dimensions and the 'above ground' structure of these trees. Any other fence or barrier used must be approved by the Scheme Arboriculturist prior to installation.
- 2.11.3 Protection barriers will ensure that construction can be undertaken without intruding into exposed sections of the RPA, remaining in place until the work has been completed.
- 2.11.4 The area within the protection barriers i.e. tree side, will be a 'Construction Exclusion Zone' (CEZ) for the duration of the works.
- 2.11.5 All weather notices should be erected on the barrier with words such as:
- 2.11.6 "Tree Protection Area — Keep out".
- 2.11.7 The following prohibitions shall also apply within the area enclosed by the temporary protection barriers:
- No mechanical digging or scraping.
 - No storage of plant, equipment, or materials.
 - No vehicular or plant access.
 - No fire lighting within 10m of tree canopies.
 - No handling, discharge, or spillage of any chemical substance, including cement washings and vehicle washings within 10m.
 - No action likely to cause localised waterlogging.
 - No alteration of ground levels.
 - No construction of hard surfaces.

- No attachment of boards, hoarding, cables, or notices or fencing to trees.
- No storage of excavated materials.

2.11.8 Special care is to be taken on sloping ground where spillages could run towards the trees. A collecting channel dug along the outer line of the protection fencing would be one method of avoiding such damage.

2.11.9 If excavators are to be used during construction, at no time is the excavating arm to encroach over the position of the tree protection barriers.

2.11.10 The Scheme Arboriculturist should be contacted to review and confirm the alignment of temporary protection barriers when the design is finalised, or if any other design changes occur.

2.12 Facilitation Pruning and Tree Felling

2.12.1 Tree 1 may require pruning in the future to prevent obscuring the ANPR camera. Tree works should be approved by the LPA Tree Officer and should be carried out in accordance with BS3998:2010 'Tree Works - Recommendations'⁶

2.13 Works within Root Protection Areas (RPAs)

2.13.1 The area within the temporary protection barriers will normally be considered a CEZ for the duration of the works to protect the above and below ground structure of any retained trees. However, due to the nature of this Scheme, works may be required within the RPA of Tree 1.

2.13.2 For this tree, where temporary works are required within the RPA, protection barriers must be installed at the furthest distance from the stem of the tree whilst still allowing the works to proceed. Once the works are complete, the protection barrier should be realigned to protect any exposed sections of the RPA of the tree. As excavation is likely required within the RPA, the recommendations in Section 2.14 should be adhered to.

2.14 Excavations within RPAs

2.14.1 Where excavations are taking place within the RPA of a tree but are not covering the entirety of the exposed area, suitable ground protection must be installed to protect the exposed RPA from compaction associated with the proposed works (Section 2.14, Appendix B).

2.14.2 Where excavation works will be taking place within the RPA of a tree, the maximum extent practicable of the RPA should be protected by temporary protection barriers and ground protection

⁶ British Standards Institution (2010) Tree work – recommendations. ISBN: 978 0 580 53777

(Section 2.11, Appendix B). Any excavations should be hand dug in accordance with the recommendations in Section 2.16.

- 2.14.3 An arboriculturist must inspect the tree post-construction to check for signs of intolerance and to identify any further tree works. It must be noted that the retention of this tree cannot be guaranteed post-works.

2.15 Ground Protection

- 2.15.1 Where unmade ground is situated within the RPA of trees, but outside the protective barrier, then roots have the potential to be exposed to construction damage and/or soil compaction, temporary ground protection should be installed immediately following the erection of tree protection fencing and prior to starting work on site. Without this ground protection, there is a safety risk of trees failing and causing damage to people, machinery, and the site itself.
- 2.15.2 The ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil. BS 5837:2012 suggests temporary ground protection might comprise of one of the following:
- 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 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.
 - For pedestrian-operated plant up to a gross weight of 2t, proprietary (EuroMat or similar), interlinked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip) laid onto a geotextile membrane.
 - For wheeled or tracked construction traffic exceeding 2t 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. It may be that a cellular confinement system, such as Presto Geoweb or similar, laid on geotextile membrane and over filled with angular clean stone is more appropriate.
- 2.15.3 Existing hard surfaces offer good ground protection, and as far as possible should remain in situ as temporary ground protection during site works. Upon completion of works the surface can be carefully lifted if not required or used as a sub-base as appropriate.
- 2.15.4 An example of a potential suitable ground protection type is Safe Trak Mats⁷. Other options are also available.
- 2.15.5 Following completion of works, the ground protection should be removed, and the ground reinstated without soil disturbance.

2.16 General Recommendations

- 2.16.1 The following general recommendations must be followed during the construction phase of this Scheme:
- Where roots are encountered, every effort should be made to avoid severance or damage to the root bark;

⁷ [Vehicle Access & Ground Protection Mats | Ground Protection](#)

- Any exposed roots over 25mm in diameter, or bundles of several smaller roots must be protected to avoid drying or extremes of temperature. This is best achieved by immediately covering with damp Hessian or similar material;
- Should roots be severed they must be trimmed back using a sharp tool (pruning saw, secateurs or loppers), then protected as above;
- If roots larger than 25mm are identified, and are in direct conflict with construction works, then the advice of the Scheme Arboriculturist should be sought prior to any severance or damage of the root;
- Infill around exposed or severed roots should comprise a clean, moist, sharp sand (not “builder’s” sand) and good quality topsoil. This fill should be gently firmed but must not be compacted. Backfilling should be undertaken as soon as possible;
- Soil levels around the base of retained trees are to be maintained as existing; and,
- The site agent or manager is to be responsible for the day-to-day prevention and exclusion of all actions and operations near protected trees that are likely to cause damage to retained or protected trees, such as the use of cranes and excavators, transportation of equipment or hot works.

2.17 Sequence of Activities

2.17.1 To ensure adequate protection for the trees, the following order of activities should be followed:

- The Site Agent/Manager must be provided with a copy of this AMS and the TPP prior to the commencement of any site clearance or construction works.
- Undertake tree works (as appropriate, and subject to such consents as may be appropriate).
- Inform the scheme Arboriculturist of the date that temporary protection barriers and ground protection are to be installed.
- Erect tree protection barriers and ground protection in accordance with this AMS and directions given by the Scheme Arboriculturist on site.
- Brief all site operatives, visitors, and sub-contractors on the presence of tree protection barriers and ground protection, and the need to ensure that all operations remain wholly outside the protected areas as part of site induction procedures.
- Implement the main site operations associated with the demolition and construction phase.
- Remove temporary protection barriers and ground protection once all site operations have ceased.

2.18 Responsibilities

- 2.18.1 The site agent or manager is to be responsible for the day-to-day prevention and exclusion of all actions and operations near protected trees that are likely to cause damage to retained or protected trees, such as the use of cranes and excavators, transportation of equipment or hot works.
- 2.18.2 It will be the responsibility of the Contractor to ensure that a monitoring regime regarding tree protection is adopted on the site.
- 2.18.3 The Contractor will be responsible for contacting the Scheme Arboriculturist any time issues are raised relating to the trees on site.
- 2.18.4 The Contractor will be responsible for ensuring that protected species are considered during any tree works and the timing of tree works should be carefully considered. European protected species such as bats (*Chiropter spp.*), dormice (*Muscardinus avellanarius*) and great crested newts (*Triturus cristatus*) are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017. Other species that may be affected by tree works include breeding birds, badgers and reptiles which are protected under the Wildlife and Countryside Act 1981 (as amended). If tree works are carried out during the bird nesting season

(March to August inclusive), trees would need to be inspected by a qualified ecologist within the 24-hour period prior to the commencement works.

A. Temporary Protection Barriers

Figure A.1: Extract from BS5837:2012 Default specification for protection barrier

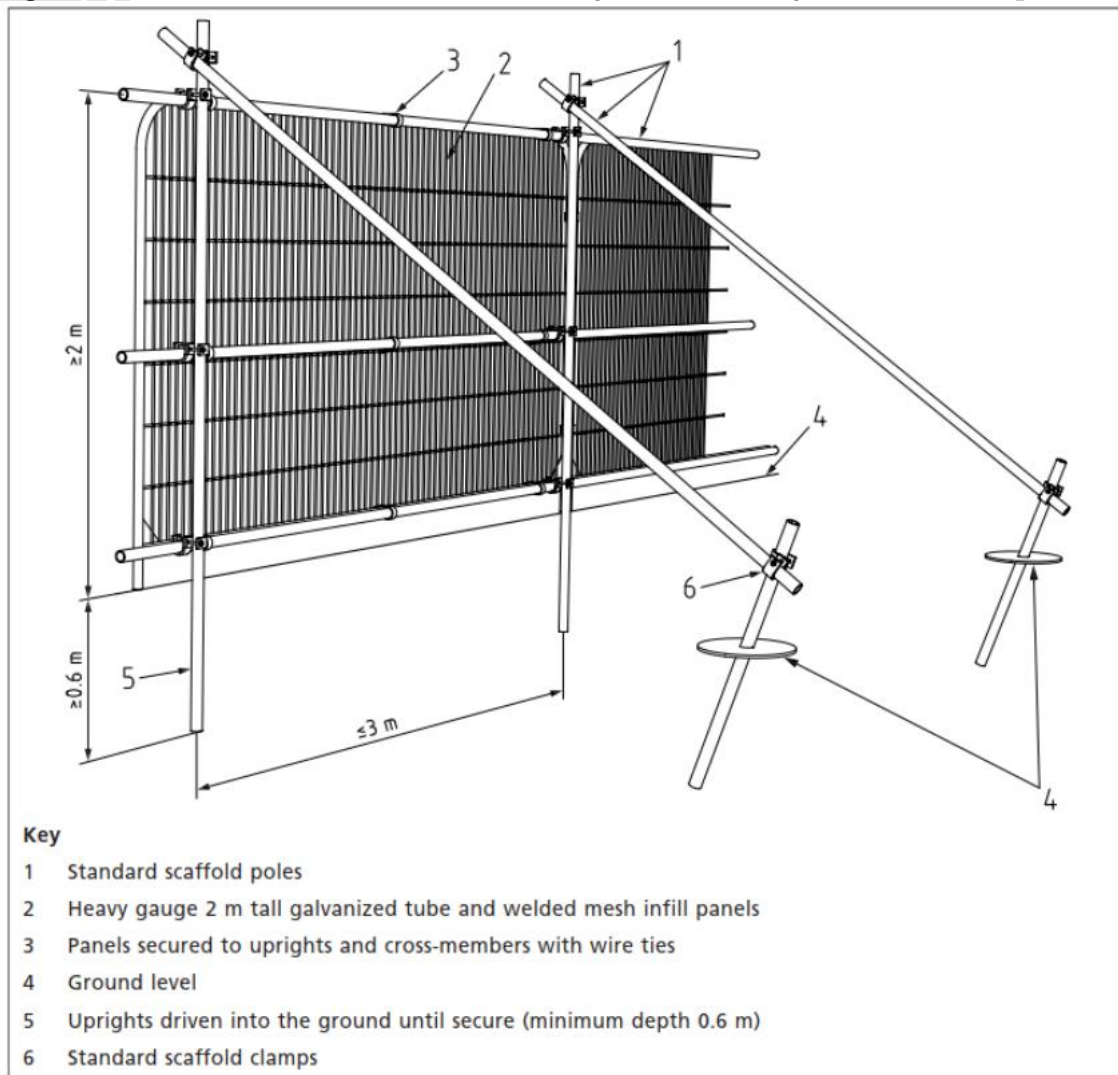


Figure A.2: Extract from BS5837:2012 Examples of Ground Stabilising systems

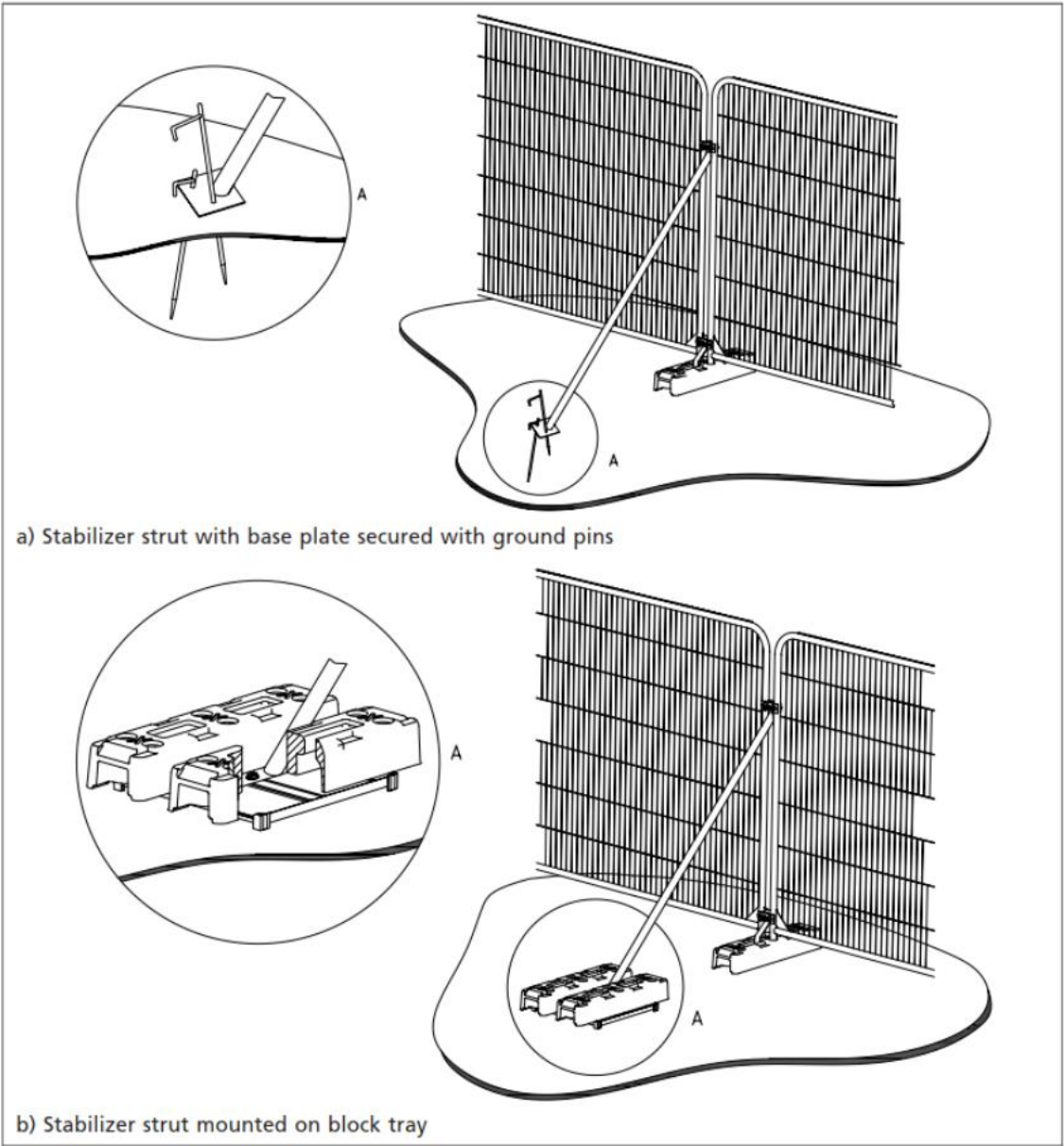


Figure A.3: Extract from BS 5837:2012 Ground Protection during Demolition and Construction

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.*

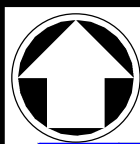
6.2.3.4 The locations of and design for temporary ground protection should be shown on the tree protection plan and detailed within the arboricultural method statement (see 6.1).

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.

B. Drawings

B.1 Proposed Tree Protection Site Plan

- 100124714-MMD-00-XX-DR-A-1129



Inside NT Boundary

MD TPP markup
20260825

Duffryn Shopping
Centre

Duffryn Community
Centre

Staff Car Park

Tredegar House Drive

Overflow
Car Park

Additional
Car Park

Playground

Pencarn Way

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Proposed Equipment Key

Main entrance/exit & exit only (after 5pm)
2 Dual Lane ANPR Cameras
New camera column
Power - Landlord supply cabinet
Distance -16m
Width - 6m/4m
Front in/rear out capture
Facing out of the car park
Gate closes across entry at 5pm

Camera column

Payment terminals
Mains powered
4G data connection
Existing power supply to be used conversion
plate used for the base

Payment terminal 1
1x contactless and coin payment

Payment terminal 2
1x contactless only payment

Soft dig - 10m shared

Slot cut - 7m shared

Shared 4G router
Power from CCTV column
Feeder pillar to be installed

Notes

- All dimensions are in millimetres unless otherwise stated.
- Locations of equipment and areas are based on information supplied to Mott MacDonald or information based on Ordnance Survey data mapping.
- Any drawing errors or discrepancies should be brought to the attention of Mott MacDonald. The designs shown are subject to detailed site investigations, the CDM Regulations and review of Statutory Undertakers available information, etc.
- This drawing is to be read in conjunction with all other submitted documents and drawings.
- No unauthorised use, disclosure, storage or copying.

Key to Symbols

Site boundary	Vehicle entrance
National Trust ownership	Vehicle exit
Existing buildings	Pedestrian entrance
Parking/ vehicle access	Footpath
Heritage assets	Bus stop
Body of water	Car travel direction
Grass/ soft landscape	One way traffic spikes
Hedges	Speed bump
Grouping of trees	Camera columns
Trees	Bollards
Category B trees	Root protection area
Root protection area encroachment	Temporary root protection barrier

Reference Drawings

P01	11.08.2026	JLT	Preliminary Issue	CW	CW
Rev	Date	Drawn	Description	Ch'k'd	App'd

Status Stamp

M
MOTT
MACDONALD

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Title

National Trust Car Park Infrastructure
Proposed Tree Protection Site Plan
Tredgar House
Newport
NP10 8YW

Designed	J. L. Taylor	JLT	Eng. Check		
Drawn	M. Goyal	MG	Coordination		
Dwg. Check	K. Sapsed	KS	Approved	C. Way	CW

MMD Project Number	Scale at A1	Seq. Number	Security
100124714	1:500	S3	STD

Suitability Description	Suit. Code
Suitable for Review and Comment	

Drawing Number	Rev
100124714-MMD-00-XX-DR-A-1129	P01

1:500 0 25m 50m