GREENACRE
ARBORICULTURE

The Foundry Business Park
Station Approach
Hockley
SS5 4HS

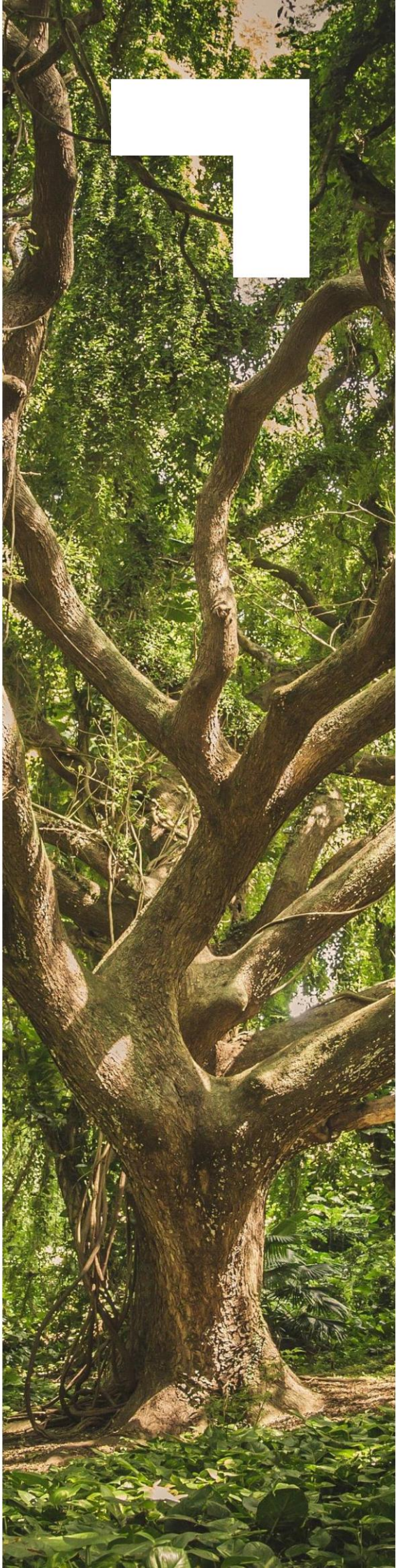
Arboricultural Impact Assessment
Ref. 08/202310

Date instructed:
12.10.2023

Date of survey:
19.10.2023

Prepared by:
C.A. Jones

Date completed:
16.09.2024



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1. Introduction and Background Information

1.1 Instruction

Greenacre Arboriculture Ltd, in association with Essex Tree Brothers Ltd, has been instructed by James Botley of Govey Homes Ltd to carry out a survey of the trees situated in and adjacent to the site of The Foundry Business Park, Station Approach, Hockley, SS5 4HS and produce an arboricultural report, in accordance with BS5837:2012.

1.2 Documents provided

- 18 Foundry Business Park - MBS.dwg
- FBP Building C - site plan 26.10.2023.dwg
- FBP Site Plan 07.02.2024.dwg

2. Tree Survey

2.1 Scope

To undertake a survey of the trees located within and adjacent to the proposed development site, in accordance with BS5837:2012.

The management recommendations provided are based upon the condition of individual or group relative to their surroundings and current landscape, and not in relation to the proposed development.

Management recommendations specified to trees would include those which are identified as posing a significant or immediate hazard to life or property.

2.2 Survey methodology

The data and information recorded within this report are used to identify trees suitable for retention during construction and development. The categorisation of trees included within the survey is carried out in accordance with the cascade chart, which is given as Table 1 in BS5837:2012. A copy of this table is provided within this report as Appendix 2.

Tree information recorded includes the species identification, tree height, stem diameter, crown spread radius to all cardinal points, crown clearance, height to first significant branch, age classification, physiological condition, observations and structural condition of tree, preliminary works recommendations, categorisation of their retention value and estimated remaining contribution to the landscape within years.

Trees included within the survey are those which have a stem diameter of 75mm or greater at a height of 1.5m above ground level.

Additionally, trees within third-party properties which are estimated to be within a distance equivalent to 12 times their stem diameter will be included.

The survey is of a preliminary nature and is based on the Visual Tree Assessment (VTA) methodology (Mattheck and Breloer, 1994). The findings are not to be taken as a detailed assessment of tree health or risk.

All information is recorded using Pear Technology tree mapping and management software on a handheld tablet device and ordnance survey map. The locations of trees have been plotted using GPS reference systems, with a reported accuracy of approx. 1m to 3m. Where possible, the locations of trees have been calibrated using measurements recorded on site from fixed datum points.

2.3 Details of Tree Constraints Plan

The Tree Constraints Plan (TCP) identifies constraints posed by trees on and adjacent to the proposed development site. This information is then used to advise the areas where development can be considered.

In addition to showing the locations of trees, the Tree Constraints Plan depicts their calculated root protection area (RPA). The RPA is plotted as a circle from the centre of the main stem and is calculated from measurements recorded during the tree survey. The RPA is created to limit access to the surrounding areas of the trees, in relation to construction and development.

Where details regarding the development, such as location have already been defined, the trees included within the survey and TCP are evaluated regardless of this information.

The TCP is provided as an attachment to this report and should be viewed alongside the information within this document.

3. Limitations

Limitations of the Arboricultural Impact Assessment

The inspection and survey were based on visual observations as recorded and described within the report.
A climbing inspection was not carried out, unless stated otherwise within the report.
No below ground inspections were carried out, unless stated otherwise within the report.
All observations were made from within the boundaries of the property, or from public land unless otherwise stated. Trees within third-party properties are inspected from within the boundaries of the permitted property access or public land.
All measurements are estimated, unless otherwise stated within this report.

Management recommendations

The management recommendations in this report are valid for one year, any alterations or amendments render this report invalid. Management recommendations will become invalid if changes develop to the site that affect the condition of the tree, the site as evaluated, or the hazards as identified at the time of the survey.
It is recommended that a new tree survey/report is undertaken if such changes occur to any of the aforementioned details.
The recommended works stated above are deemed necessary for the appropriate management of the tree(s) and should be acceptable to the local authority. The local authority does have the right to refuse the recommendations made in this report.

Trees subject to statutory controls

If the tree(s) are covered by a Tree Preservation Order or are located in a Conservation Area it will be necessary to contact the local authority before any form of tree work operations, other than particular exemptions, can be carried out.

Provided information

Any information provided to Greenacre Arboriculture Ltd in relation to this report is assumed to be accurate.

Trees in relation to subsidence or heave

Assessment of the risks of indirect damage occurring or associated with the development or third-party properties is not covered within this report.

Trees in relation to change outside human control

Trees are a form of living organism which are subject to changes outside of human control and susceptible to failure even when considered sound (Mattheck and Breloer, 1994). Phenological changes influence and impact trees' growth when in dormancy and in leaf. Extreme changes in weather can warrant inspection or re-inspection of trees to assess their associated health and safety.

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4. Site Details

4.1 Property and site description

The Foundry Business Park consists of approximately 21 industrial and business units with parking areas. The site is situated adjacent to Hockley train station and is accessible via Station Approach adjoining Spa Road, which typically experiences moderate traffic usage.

The site is predominantly level throughout, with no adverse topographical features present.

The current tree population located within the site and the surrounding area consists of a mixture of both native and non-native species, which typically range in age from semi-mature to mature.

Figure 1. Overview of site (highlighted in red). Image referenced from Google Earth and accurate as of 15.06.2022.

4.2 Tree Preservation Order and Conservation Areas

Email correspondence received from Rochford District Council on 10.11.2023 confirmed there are no trees situated within the site subject to a Tree Preservation Order, nor is the site situated within a designated Conservation Area.

5. Impact Assessment

5.1 Purpose of impact assessment

Following the Tree Survey, an Arboricultural Impact Assessment (AIA) can be undertaken on the proposed development site. This will consider the impacts posed by the proposed development and consider how this may affect the surrounding trees in the present and future.

The AIA will seek to address the following:

- Constraints posed by the development, above and below ground.
- Infrastructure requirements.
- Issues relating to the proximity of the trees to the development.
- Issues relating to the requirement to prune trees due to encroachment and to facilitate access.
- Options for mitigating tree loss through planting within the development.

5.2 Development description

My understanding is that the proposed development includes the following works:

1. Demolition of existing commercial and industrial units within The Foundry Business Park.
2. Construction of a new building complex to include 50 residential units and 1907m^2 of commercial units.
3. Construction of below ground and above ground parking spaces for both residential and commercial purposes.
4. Bicycle and bin storage facilities.
5. Hard landscaping including footpaths.
6. Soft landscaping including new tree and hedgerow planting.

5.3 Details of trees to be affected by the proposed development

The table below details which trees are required to be removed to facilitate the development and those which can be retained. Included are the preliminary details of the mitigation required for the retained trees to accommodate the development, along with any pruning works to facilitate construction or access.

This is the result of an assessment based on the proposed site plan whilst referencing data included within the tree survey.

Table 1. Details of the proposed development, how it impacts the surrounding trees and the preliminary details of the mitigation required

Tree no.	Species	Cat (BS5837)	Removal due to		Pruning required	Mitigation required	Details of impacts posed and preliminary mitigation required
			Works	Cond.			
T001	Mountain ash	C1	✓	n/a	n/a	n/a	Proposed development RPA incursion – Approx. 10% Whilst the extent of encroachment within the RPA posed by aspects of the development is not significant, it is considered more appropriate for the tree to be removed due to being a low value specimen and a replacement planted as part of the proposed soft landscaping design. Outline of works - Fell and grind stump. - Replant with suitable native species replacement. Minimum recommended size: Standard (S)/ Height 2.5-3.0m/ Stem Girth 8-10cm
T002	Silver birch	B1/2	n/a	n/a	✓	✓	Proposed development RPA incursion – Approx. 20% Crown incursion – Approx. 2.0m Whilst the extent of encroachment within the RPA posed by aspects of development would typically be considered significant, the existing non-permeable hard surfacing south of the tree is considered likely to have limited rooting activity in this area. As such, the impacts posed by the development are considered to be reduced. In addition to this, the proposed design results in a decrease in permanent hard surfacing in the RPA due to the grass areas proposed as part of the soft landscaping on site. However, the tree is a prominent specimen within the surrounding area and located on third-party land, therefore mitigation is deemed necessary to prevent root damage and disturbance during construction. Facilitation pruning is required to enable construction access. Outline of mitigation - Removal of existing hard surfacing within the RPA is to be carried out using hand-held tools only. - Existing sub-base within RPA is to be retained. - Arboricultural supervision required during excavations. - Root pruning, where necessary, in line with NJUG Vol 4 guidance. - Reduce lateral spread of crown to the south by approx. 3.0m, back to boundary.

Tree no.	Species	Cat (BS5837)	Removal due to		Pruning required	Mitigation required	Details of impacts posed and preliminary mitigation required
			Works	Cond.			
G001	Mixed species group	C2	n/a	n/a	✓	n/a	Proposed development RPA incursion – Approx. <5% Crown incursion – Approx. 0.5m The extent of encroachment within the RPA is not considered significant, therefore no mitigation is deemed necessary. Facilitation pruning is required to enable construction access. Outline of works - Reduce lateral spread of crowns to the south by approx. 0.5-1.0m, back to boundary.
T003	Goat willow	C1/2	n/a	n/a	n/a	✓	Proposed development RPA incursion – Approx. 30% Whilst the extent of encroachment within the RPA posed by aspects of the development would typically be considered significant, the existing non-permeable hard surfacing south of the tree is considered likely to have limited rooting activity in this area. As such, the impacts posed by the development are considered to be reduced. However, the tree is located on third-party land, therefore mitigation is deemed necessary to prevent root damage and disturbance during construction. Outline of mitigation - Removal of existing hard surfacing and excavations within the RPA are to be carried out using hand-held tools only. - Arboricultural supervision required during excavations. - Root pruning, where necessary, in line with NJUG Vol 4 guidance.
T004	Goat willow	C1/2	n/a	n/a	n/a	n/a	Proposed development RPA incursion – Approx. <5% The extent of encroachment within the RPA is not considered significant, therefore no mitigation is deemed necessary.
T005	Plum	C1/2	n/a	n/a	n/a	n/a	Proposed development RPA incursion – Approx. <3% The extent of encroachment within the RPA is not considered significant, therefore no mitigation is deemed necessary.
T006	*Acer* sp.	U	n/a	✓	n/a	n/a	Tree condition Dead standing tree. Low quality specimen. Outline of works - Fell and grind stump. - Replant with suitable native species replacement. Minimum recommended size: Standard (S)/ Height 2.5-3.0m/ Stem Girth 8-10cm

Tree no.	Species	Cat (BS5837)	Removal due to		Pruning required	Mitigation required	Details of impacts posed and preliminary mitigation required
			Works	Cond.			
G002	Mixed species group	C2	n/a	n/a	✓	✓	Proposed development RPA incursion – Approx. <10% Crown incursion – Approx. 1.0m The extent of encroachment within the RPA posed by aspects of development is not considered significant. In addition to this, the existing building south of the group is considered likely to have limited rooting activity in this area. As such, the impacts posed by the development are considered to be reduced. However, mitigation during the demolition of the existing building is considered necessary due to the trees being located on third-party land and to prevent potential root damage and disturbance. Facilitation pruning is required to enable construction access. Outline of mitigation - Demolition to be undertaken using a combination of excavator and handheld tools. - Arboricultural supervision required during excavations to remove foundations. - Root pruning, where necessary, in line with NJUG Vol 4 guidance. - Reduce lateral spread of crowns to the south by approx. 1.0-1.5m, back to boundary.
T007	Norway maple	C1	n/a	n/a	n/a	n/a	No issues.
T008	Silver birch	C1	✓	n/a	n/a	n/a	Proposed development RPA incursion – Approx. 30% Crown incursion – Approx. 2.5m It is not considered viable for the tree to be retained during the development due to the extent of encroachment within the RPA and pruning required. Low quality specimen. Outline of works - Fell and grind stump. - Replant with suitable native species replacement. Minimum recommended size: Standard (S)/ Height 2.5-3.0m/ Stem Girth 8-10cm
T009	Honey locust	C1	✓	n/a	n/a	n/a	Proposed development RPA incursion – Approx. 25% Crown incursion – Approx. 3.5m It is not considered viable for the tree to be retained during the development due to the extent of encroachment within the RPA and pruning required. Low quality specimen. Outline of works - Fell and grind stump. - Replant with suitable native species replacement. Minimum recommended size: Standard (S)/ Height 2.5-3.0m/ Stem Girth 8-10cm

Tree no.	Species	Cat (BS5837)	Removal due to		Pruning required	Mitigation required	Details of impacts posed and preliminary mitigation required
			Works	Cond.			
T010	Common elder	C1	n/a	n/a	✓	✓	Proposed development RPA incursion – Approx. 30% Crown incursion – Approx. 1.5m As a result of the development the existing hard surfacing within the RPA is proposed to be removed and replaced with grass, resulting in a decrease in permanent hard surfacing in the RPA. As the tree is located on third-party land mitigation during construction is deemed necessary to prevent root damage and disturbance during construction. Facilitation pruning is required to enable construction access. Outline of mitigation - Removal of existing hard surfacing and excavations within the RPA are to be carried out using hand-held tools only. - Reduce lateral spread of crown to the north by approx. 1.5m, back to boundary.
G003	Mixed species group	C2	n/a	n/a	✓	n/a	Proposed development and access Crown incursion – Approx. 2.0m It is considered that should the existing hard surfacing within the RPA of G003 be retained during the development, there will be minimal impact to the group and therefore no mitigation is required. However, facilitation pruning will need to be carried out to enable construction access. Outline of works - Reduce lateral spread of crowns to the northwest by approx. 2.0m.
T011	Myrobalan plum	C1	✓	n/a	n/a	n/a	Proposed development The main stem is located in the footprint of the proposed footpath, as such it is not considered viable for the tree to be retained. Low quality specimen. Outline of works - Fell and grind stump. - Replant with suitable native species replacement. Minimum recommended size: Standard (S)/ Height 2.5-3.0m/ Stem Girth 8-10cm
T012	Crab apple	C1	✓	n/a	n/a	n/a	Proposed development The main stem is located in the footprint of the proposed footpath, as such it is not considered viable for the tree to be retained. Low quality specimen. Outline of works - Fell and grind stump. - Replant with suitable native species replacement. Minimum recommended size: Standard (S)/ Height 2.5-3.0m/ Stem Girth 8-10cm

Tree no.	Species	Cat (BS5837)	Removal due to		Pruning required	Mitigation required	Details of impacts posed and preliminary mitigation required
			Works	Cond.			
T013	Norway maple	C1	✓	n/a	n/a	n/a	Proposed development The main stem is located in the footprint of the proposed bicycle storage, as such it is not considered viable for the tree to be retained. Low quality specimen. Outline of works - Fell and grind stump. - Replant with suitable native species replacement. Minimum recommended size: Standard (S)/ Height 2.5-3.0m/ Stem Girth 8-10cm
T014	Wild cherry	C1	✓	n/a	n/a	n/a	Proposed development RPA incursion – Approx. <5% Whilst the extent of encroachment within the RPA posed by the development is not significant, it is considered more appropriate for the tree to be removed due to being a low value specimen and a replacement planted as part of the proposed soft landscaping design. Outline of works - Fell and grind stump. - Replant with suitable native species replacement. Minimum recommended size: Standard (S)/ Height 2.5-3.0m/ Stem Girth 8-10cm

5.4 Overview of impacts posed by the proposed development

To facilitate the development there is a requirement for seven individuals to be removed. Additionally, one individual is proposed for removal for arboricultural reasons.

To facilitate development construction and access there will be a requirement for two individuals and three groups to be pruned.

Of the retained trees, two individuals and one group will require mitigatory works to facilitate construction within the RPA.

Table 2. Overview of the number of trees impacted by the development

	Category A	Category B	Category C	Category U	Total
No. of trees, groups or hedges present on site:	0	1	15	1	17
No. of trees, groups or hedges required to be removed for development:	0	0	7	0	7
No. of trees, groups or hedges proposed to be removed for arboricultural reasons:	0	0	0	1	1
No. of trees, groups or hedges required to be pruned:	0	1	4	0	5
No. of trees, groups or hedges requiring mitigatory works:	0	1	3	0	4

5.5 Consideration of below ground utilities

Currently, no details regarding changes to infrastructure relating to the development have been provided. Where practically possible, existing drainage locations should be used.

Any new installations of underground services should be located outside the RPA of retained trees.

5.6 Assessment of growth potential from retained trees within the next 10 years

Table 3. Management recommendations relating to growth potential from retained trees

Tree no.	Species	Details of works required	Timing/ Frequency
T002	Silver birch	Reduce lateral spread of crown to the south by approx. 1.0-2.0m, back to boundary, to provide clearance from building.	3-5 year cyclical basis
G001	Mixed species group	Reduce lateral spread of crowns to the south by approx. 1.0-1.5m, back to boundary, to provide clearance from building.	3-5 year cyclical basis
T003	Goat willow	Reduce lateral spread of crown to the south by approx. 1.0-2.0m, back to boundary, to provide clearance from building.	3-5 year cyclical basis
G002	Mixed species group	Reduce lateral spread of crowns to the south by approx. 1.0-2.0m, back to boundary, to provide clearance from building.	3-5 year cyclical basis

6. Conclusion

In relation to the proposed development, fourteen individuals and three groups have been assessed. This included trees of predominantly low value such as 'C Category' specimens. To facilitate the development there will be a requirement for the removal of seven individuals, whilst one other individual is proposed to be removed for arboricultural reasons.

Whilst the development requires the removal of several trees on site, the individuals required to be removed have been identified as having a low retention value. It is considered that with the provision of new native tree and hedge planting, there will be an opportunity for increasing green infrastructure and improving biodiversity among the tree population in the surrounding area.

Several trees included in the survey are located on third-party land. This includes T002, T003 and G002. Whilst the trees are predominantly of lower value excluding T002, their retention as part of the development is considered necessary to minimise impacts posed to the landscape. As such, the trees will require mitigatory construction methods or facilitation pruning to enable the development. The works proposed, however, are not considered to significantly impact their health or structural condition.

As a result of the development, there is an opportunity to increase green infrastructure within the site along with improving the amenity of the area and the biodiversity of species present. It is considered that there will be minimal impact to the retained trees or surrounding landscape provided that the details within the Arboricultural Method Statement are adhered to throughout the construction process.

7. Arboricultural Method Statement

7.1 Purpose of method statement

The Arboricultural Method Statement (AMS) is produced following the Arboricultural Impact Assessment (AIA). It includes work methodologies suitable to mitigate and prevent damage posed by aspects of the proposed development to trees which have been identified as suitable for retention.

The AMS considers activities such as construction and installation within the surrounding areas of retained trees, as well as issues relating to site access and storage of materials.

Outlined within the report are tree works necessary to facilitate the development as well as the sequence of events in relation to phases of construction affecting the retained trees.

7.2 Details of Tree Protection Plan

Along with the AMS, the Tree Protection Plan (TPP) depicts trees that are to be retained, pruned or removed during the development, as well as preliminary locations of protective measures such as protective fencing and ground protection.

The TPP is provided as an attachment to this report and should be viewed alongside the information within this document.

7.3 Details of personnel involved

The table below includes contact details of the personnel involved with the development:

Table 4. Site contact information

Name	Role/ Organisation	Contact information
James Choat	Arboricultural Officer/ Rochford District Council	01702 318 067 james.choat@rochford.gov.uk
Derek Govey	Site Manager/ Govey Homes Ltd	07904 940 079 del@goveyhomes.co.uk
James Botley	Head of Operations/ Govey Homes Ltd	07932 388 760 james@goveyhomes.co.uk
Akos Doboczi	Architect/ A9 Architects	07779 018 888 info@a9architects.com
Christopher Jones	Project Arboriculturist/ Greenacre Arboriculture Ltd	07857 296 620 chris@greenacrearboriculture.co.uk

8. Site Management and Monitoring

8.1 Site management

The protective measures set out within this document must be available and recognised by all of those involved with the management and construction of the development.

It is the site manager's responsibility to make all personnel working on the site at any stage, aware of and understand the details within this AMS. It is advisable that the details within the AMS are included during all site inductions. Those who are working within or adjacent to the canopies or RPAs of retained trees on site must be provided with a copy of this method statement and accompanying tree protection plan.

It will be the site manager's responsibility to ensure all tree protective measures in place at the development are maintained and monitored accordingly, on a daily basis.

It is recommended that the protective measures on site are checked at regular intervals, with details of the checks recorded and documented. This may be done using a basic check sheet accompanied with photographic evidence and undertaken by the site manager, or other designated individual.

In the absence of the site manager, another individual will be designated to ensure protective measures are being retained until the site manager returns.

Any incidents of damage to retained trees on site or to the tree protective measures must be recorded and documented by the site manager. The information relating to these incidents will then be provided immediately to the project arboriculturist, with any form of development work within this area ceasing until an inspection of the damage can be made by the project arboriculturist. At this stage, the local authority must be notified so that a suitable mitigation plan can be agreed upon with the local tree officer.

It is the site manager's responsibility to ensure that the conditions attached to the planning consent are always adhered to and that scheduled monitoring and supervision of any works associated with the development within or adjacent to the RPAs are applied.

8.2 Site supervision

At certain stages during the development, it may be deemed necessary that arboricultural supervision is required. This allows for advice to be provided as issues arise during the relevant stage of works, and to ensure working methods are adhered to.

A report summarising the details of supervision will be produced to document the works undertaken and provided to the Local Planning Authority.

Details of the relevant stages requiring supervision are stated within section 10.1 of this method statement.

9. Works Schedule

9.1 Tree work schedule

The table below details the list of tree works to be undertaken prior to the installation of protective fencing and ground protection.

Development construction is not to commence, including the delivery of construction materials, until the scheduled tree work has been completed and protective measures installed.

All tree work is to be undertaken in accordance with British Standard BS3998:2010, Recommendations for Tree Work.

All arisings produced from the tree work carried out are to be removed from the site, leaving the site in a safe and tidy condition.

When undertaking tree surgery operations, there is potential to disturb and/ or compact the soils surrounding retained trees. No plant machinery or vehicles shall be used, driven, or positioned beneath the crowns of any retained trees. This will prevent physical damage to any part of the tree, above or below ground and prevent subsequent compaction of soils.

Table 5. Tree work schedule

Tree no.	Species	Category (BS5837)	Works to be carried out
T001	Mountain ash	C1	Fell and grind stump.
T002	Silver birch	B1/2	Reduce lateral spread of crown to the south by approx. 3.0m, back to boundary.
G001	Mixed species group	C2	Reduce lateral spread of crowns to the south by approx. 0.5-1.0m, back to boundary.
T006	*Acer* sp.	U	Fell and grind stump.
G002	Mixed species group	C2	Reduce lateral spread of crowns to the south by approx. 1.0-1.5m, back to boundary.
T008	Silver birch	C1	Fell and grind stump.
T009	Honey locust	C1	Fell and grind stump.
T010	Common elder	C1	Reduce lateral spread of crown to the north by approx. 1.5m, back to boundary.
G003	Mixed species group	C2	Reduce lateral spread of crowns to the northwest by approx. 2.0m.
T011	Myrobalan plum	C1	Fell and grind stump.
T012	Crab apple	C1	Fell and grind stump.
T013	Norway maple	C1	Fell and grind stump.
T014	Wild cherry	C1	Fell and grind stump.

10. Development Details

10.1 Sequence of development phases

The table below includes the sequence of the phase of works in relation to the development.

Table 6. Sequence of development phases and events

Sequence	Phase of works	Details of arboricultural input
1	Pre-commencement site meeting.	Yes – Project arboriculturist to attend site meeting and discuss working methodologies, proposed timescales and tree protective measures.
2	Carry out tree works as specified in the tree work schedule (section 9.1).	n/a
3	Installation of protective barriers and to establish temporary storage areas.	Yes - Site visit to check protective barriers are of adequate specification and within correct locations.
4	Demolition of existing commercial and industrial units within the Foundry Business Park.	Yes – Arboricultural supervision required during excavations to remove foundations associated with 'building 5'.
5	Construction of a new building complex to include 50 residential units and 1907m^2 of commercial units.	Yes – Arboricultural supervision required during excavations to facilitate construction of new building complex.
6	Construction of below ground and above ground parking spaces for both residential and commercial purposes.	Yes - Site visit to check protective barriers and ground protection are being retained during development.
7	Bicycle and bin storage facilities.	Yes - Site visit to check protective barriers and ground protection are being retained during development.
8	Hard landscaping including footpaths.	Yes – Arboricultural supervision required during phase of works.
9	Soft landscaping including new tree and hedgerow planting.	Yes - Site visit to check protective barriers and ground protection are being retained during development.
10	Removal of protective barriers, ground protection and temporary storage areas following completion of works.	Yes - Site visit to check condition of retained trees.

11. Demolition of Building 5

To facilitate the construction of the new building complex, it will be necessary to demolish and remove several of the existing buildings on site, including building 5 which is situated to the northwest of The Foundry Business Park.

The footprint of building 5 encroaches within the RPA of G002, therefore mitigation is required to prevent root damage and disturbance during the removal of existing building foundations.

The following methodology must be adhered to during works:

1. Demolition will be carried out using a combination of both excavator and hand-held power tools inwards from within the footprint of the existing building working away from retained trees. The excavator used during demolition should be the smallest size practical for undertaking the works.

2. Works associated with the removal of foundations will be carried out under arboricultural supervision.

3. Whilst it is considered likely that the existing foundations for building 5 will have provided a barrier limiting rooting activity associated with G002 in this area, roots may be discovered during the removal of foundations.

4. Should roots <25mm in diameter be discovered, they may be pruned using a sharp blade such as a secateur, preferably to a suitable growth point.

5. If significant roots >25mm in diameter are discovered during excavations, an assessment will be made by the project arboriculturist, whether their removal or severance will severely impact the stability and health of the tree.

6. Details of all significant roots pruned will be recorded and documented, to assist with the future management of the trees, with a copy of the report provided to the LPA.

7. Any pruning wounds created during excavations will be treated using a mixture of soil, biochar and phosphites enclosed within a hessian material to help encourage callus tissue growth to compartmentalise the wounds.

8. Arisings shall be removed immediately for disposal off-site and not spread or placed in any RPA.

9. The crowns of trees part of G002 are in close proximity to the demolition area, therefore it could possibly experience a significant build-up of dust on their foliage. As such, it may be deemed necessary to hose down the affected area of the crown.

12. Construction of New Building Complex

The footprint of the proposed new building complex encroaches within the RPA of T003.

To limit any potential for root damage and disturbance, the following methodology must be adhered to during works:

1. All works associated with the removal of existing hard surfacing and excavations to facilitate the construction of new foundations will be carried out under arboricultural supervision.

2. Ground preparation within the RPA of T003 including the removal of existing hard surfacing is to be carried out using handheld tools only.

3. Where the footprint of the new building complex encroaches within the RPA of T003, exploratory excavations will be carried out down to a maximum depth of approx. 600mm. This will be done using equipment such as AirSpade® and handheld tools only. This is to establish the presence of roots within the area where the foundations of the new building complex are proposed.

4. Whilst it is considered likely that the existing non-permeable hard surfacing and compacted sub-base will have provided a barrier limiting rooting activity associated with T003 in the area of the proposed construction, roots may be discovered during excavations.

5. Should roots <25mm in diameter be discovered, they may be pruned using a sharp blade such as a secateur, preferably to a suitable growth point.

6. If significant roots >25mm in diameter are discovered during excavations, an assessment will be made by the project arboriculturist, whether their removal or severance will severely impact the stability and health of the tree.

7. Details of all significant roots pruned will be recorded and documented, to assist with the future management of the trees, with a copy of the report provided to the LPA.

8. Any pruning wounds created during excavations will be treated using a mixture of soil, biochar and phosphites enclosed within a hessian material to help encourage callus tissue growth to compartmentalise the wounds.

13. Permanent Hard Surfacing

The location of the new footpath encroaches within the RPA of T002. Whilst the proposed landscaping design results in a decrease in permanent hard surfacing within the RPA of T002, mitigation during construction is required to prevent root damage or disturbance.

The following methodology must be adhered to during works:

1. All works associated with the removal of existing hard surfacing will be carried out under arboricultural supervision.

2. The removal of existing hard surfacing or vegetation within the RPA of T002 is to be carried out using handheld tools only.

3. Where practically possible, the existing sub-base should be retained during construction.

4. Whilst it is considered likely that the existing non-permeable hard surfacing and compacted sub-base will have provided a barrier limiting rooting activity associated with T002 in the area of the proposed footpath, surface roots may be discovered during the removal of existing hard surfacing.

5. Should roots <25mm in diameter be discovered, they may be pruned using a sharp blade such as a secateur, preferably to a suitable growth point.

6. If significant roots >25mm in diameter are discovered during excavations, an assessment will be made by the project arboriculturist, whether their removal or severance will severely impact the stability and health of the tree.

7. Details of all significant roots pruned will be recorded and documented, to assist with the future management of the trees, with a copy of the report provided to the LPA.

8. Any voids or hollows within the existing sub-base will be filled with clean sharp sand to a maximum depth of 150mm, creating a level surface. Builders sand is not to be used under any circumstances.

9. It is necessary that the final wearing course is permeable to both water and air. Examples of finished-wearing courses suitable include porous block paving, gravel and porous asphalt.

10. Edge supports of suitable size and strength should be set above ground level, preventing the need for excavation to be carried out. This should then be secured with haunching into the ground.

14. Site Conditions and Protective Measures

Access to site

Access will be from Station Approach located east of the proposed development site. This is the only known access to the site.

Protective barriers

Prior to the commencement of any works on site (other than those outlined in the schedule of tree works), suitable protective barriers must be erected. The location of the barriers is depicted and shown on the Tree Protection Plan. The barriers are to be erected to create a 'Construction Exclusion Zone' (CEZ) around the RPA of retained trees. The barriers will remain in place until the main construction phase has been completed.

Other than works detailed within this method statement or approved in writing by the local planning authority, no works shall take place within these exclusion zones. No vehicles will be allowed to enter these areas protected by the barriers.

The specification for protective barriers is included in Appendix 4.

Ground protection

The location of ground protection is depicted and shown on the Tree Protection Plan. No excavations are to be carried out under any circumstances to facilitate the installation of ground protection, within the RPA of retained trees on site. Ground protection installed will remain in place until the main construction phase has been completed, unless otherwise stated within this document.

No vehicles or plant machinery will be allowed to enter or be used in these areas unless the ground protection installed is to a suitable specification. Should the project engineer determine any existing hard surfacing does not provide adequate protection from the expected loading, ground protection is to be installed to the specification provided by the structural engineer.

Should machinery be used or stored in the areas where ground protection is installed within the RPA of the retained trees, an impermeable material will need to be applied to the ground protection. This will prevent oils, fuel or chemicals leaching into the soil within or adjacent to the RPAs.

Should it be necessary to remove the debris, vegetation or the existing surfacing to accommodate the installation of ground protection on site, then this must be carried out using handheld tools only.

Examples of suitable ground protection are included in Appendix 5.

Storage of materials

No storage of materials is to take place within the RPA of trees included within this document, unless otherwise stated. Storage areas will be designated by the site manager, post discussion with the project arboriculturist. Existing hard standing surfaces should be utilised for storage areas to avoid compaction of soils.

Below ground utilities

Where practically possible, existing drainage locations should be used. Should existing services located within the RPA of retained trees require works to be carried out to them, it is essential that works are carried out in a cautious and caring method, minimising disturbance to these areas using trenchless techniques where practically possible.

Where new services are to be installed on the site, they should be located outside of RPAs. Should it be necessary to excavate within the RPA of any retained tree, they will need to be carried out using handheld tools only, under the supervision of the project arboriculturist in accordance with NJUG guidance. Prior to excavations commencing, finalised locations of the proposed services will need to be approved by the project arboriculturist and Local Planning Authority.

Plant and machinery

Under no circumstances is any plant or machinery to be operated or stored within the RPA of any retained trees on site, unless otherwise stated within this document. Refuelling of plant or machinery is to take place a minimum of 5m from the RPA of retained trees. Should machinery be operated within 5m of the canopies of retained trees, then this will need to be done under the supervision of suitably qualified banksmen.

Discharge of contaminants

No materials should be discharged within the RPA of trees that are to be retained. Examples of such materials include oils, cement and fuels, which would likely negatively impact the trees' health. These materials should be disposed of appropriately and following manufacturers' guidelines.

Contingency plans

Should any contaminants enter within or adjacent to the RPA there must be appropriate equipment available to deal with such situations. Assessment can then be made whether additional soils would need to be removed. This should be done with the consultation of the project arboriculturist. Protective barriers that are erected on site should be able to be dismantled with ease in case of this scenario.

Lifting equipment

All lifting equipment, including cranes, should be positioned so they may operate without contacting retained trees. Lifting operations are to be guided by a suitably qualified banksman to ensure that no part of the crane or materials being transported come into contact with any part of retained trees.

Changes affecting the ground level

Certain works, including soft and hard landscaping, may require changes within the ground level. When undertaking the planning and carrying out of these operations, endeavour should be made to keep these changes in level to a minimum. Where the removal of soil may be necessary within the RPA of retained trees, this should be limited between 25mm and 50mm. Additionally, should the ground level within the RPA need to be increased, this should be limited to no more than 50mm in depth. Where soil and ground levels need to be increased, existing soils from the site or fresh topsoil should be used.

Appendix 1: Survey Terminology

Table 7. Arboricultural survey terminology

Tree no.	Reference number given to the tree in relation to the plan or drawing.
Species	Common name used for the species of tree with the scientific name given when considered relevant.
Height	The approximate height of the tree given in metres.
Stem dia.	This is the measurement of the stem diameter at 1.5m above ground level, given in millimetres.
Crown spread	Approximate spread of the crown measured from cardinal points/ directions (N, E, S, W) given in metres.
Height of crown clearance	This is the height of the clearance from ground level to the lowest point of the crown, given in metres.
Height to first major limb	This is the height of the first major lateral branch/ limb, which would be retained during crown lifting operations, when measured from ground level. The cardinal direction in which the branch is located is also specified, where necessary.
Age	Y – Young, in the first stages of the tree's life, less than a third of the tree's full life expectancy. SM – Semi-mature, approximately one third of the tree's life expectancy. EM – Early-mature, between one third and two thirds expectancy. M - Mature, over two thirds of the tree's life expectancy. OM – Over-mature, tree exceeding their life expectancy and now in decline.
Physical condition	This is a consideration based on the overall vitality of the tree and is assessed by the crown's condition. Words used to describe the vitality of the tree are: Good/ Fair/ Poor/ Dead, using intermediate descriptions of the same phrases, where necessary.
Observations and structural condition of tree(s)	These include comments and observations of the trees' structural and physical condition on the day of undertaking the survey. All comments and recordings are taken from the ground unaided, unless otherwise stated or mentioned.
Recommendation of works	Recommendations which have been identified as necessary remedial works, based on the structural observations of the tree. This is used to highlight potentially hazardous trees which require immediate attention. Other works which may be recommended would include the requirement for further detailed inspection of trees.
Estimated remaining contribution in years	The estimated remaining years that the tree will contribute to the surrounding landscape. The following grouping method is used: <10 years, 10+ years, 20+ years and 40+ years.
Category grading	The classification of trees following a qualitative assessment which is in accordance with the cascade chart given as Table 1 in BS5837:2012. A copy of this table is provided within this report as Appendix 2.

Appendix 2: BS5837:2012 Cascade Chart

Table 8. Copy of Cascade Chart used for tree quality assessment provided in BS5837:2012

Category and definition	CRITERIA (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management.	Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other U category trees (i.e. where, for whatever reason, the loss of the companion shelter cannot be mitigated by pruning). Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low-quality trees suppressing adjacent trees of better quality. NOTE- Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.			DARK RED
	1. Mainly arboricultural values	**2. Mainly landscape values**	**3. Mainly cultural values, including conservation**	**Identification on plan**
Trees to be considered for retention (see Note)				
Category A Those of high quality and value: in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested).	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue).	Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups).	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture).	LIGHT GREEN
Category B Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested).	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage).	Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality.	Trees with clearly identifiable conservation or other cultural benefits	MID BLUE
Category C Those of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150 mm.	Trees not qualifying in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit.	Trees with very limited conservation or other cultural benefits	GREY
	NOTE- Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150 mm should be considered for relocation; see 4.5.10.			

Appendix 3: Tree Survey Data

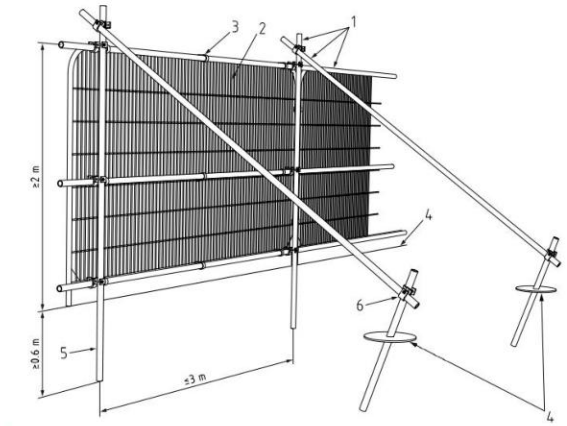
Table 9. Tree survey data

Tree no.	Species	Height (m)	Stem dia. (mm)	Crown spread (m)				Ht of crown clear. (m)	Ht to first major limb (m)	Age	Phys condition	Observations and structural condition of tree(s)	Recommendation of works	Est remaining con.	Cat	RPA radius (m)	RPA (m^2)
				N	E	S	W										
T001	Mountain ash	4	100	2.0	1.5	1.5	0	2.0	2 all	SM	Fair	Basal growth. Codominant stems form at 1.5m above ground level. Union appears currently stable. Historic wound in crown to west at approx. 2m above ground level.	No works presently required.	10+	C1	1.2	4.5
T002	Silver birch	15	250 250 250	4.5	4.5	4.0	4.5	2.0	2 all	M	Fair	Third-party. Limited access. Prevents full inspection. All measurements estimated. Multiple stems form at ground level. Light ivy encroachment on main stems. Cavities associated with historic pruning in lower crown. Good crown structure.	No works presently required.	20+	B1/2	5.2	84.8
G001	Mixed species group	8	100 250 250	1.5	1.5	1.5	1.5	1.5	n/a	SM	Fair	Third-party. Limited access. Prevents full inspection. All measurements estimated. Species include birch, hawthorn, hornbeam and buddleia. Self-sewn trees. Not on topographical plan. Heights range between 5-8m.	No works presently required.	10+	C2	4.4	61.1
T003	Goat willow	12	280 250	4.5	7.5	2.0	3.0	2.0	n/a	M	Fair	Third-party. Limited access. Prevents full inspection. All measurements estimated. Multiple stems form at ground level. Light ivy encroachment on main stems. Crown historically reduced to the south to provide clearance from site.	No works presently required.	20+	C1/2	4.5	63.7
T004	Goat willow	11	300	2.0	2.5	2.0	2.0	5.0	n/a	EM	Fair	Third-party. Limited access. Prevents full inspection. All measurements estimated.	No works presently required.	10+	C1/2	3.6	40.7

Tree no.	Species	Height (m)	Stem dia. (mm)	Crown spread (m)				Ht of crown clear. (m)	Ht to first major limb (m)	Age	Phys condition	Observations and structural condition of tree(s)	Recommendation of works	Est remaining con.	Cat	RPA radius (m)	RPA (m^2)
				N	E	S	W										
T005	Plum	5.5	180	0.5	0.5	2.0	0.5	3.0	n/a	SM	Fair	Third-party. Limited access. Prevents full inspection. All measurements estimated. Self-sewn.	No works presently required.	10+	C1/2	2.2	15.2
T006	*Acer* sp.	2	90	1.0	1.0	1.0	1.0	0	n/a	SM	Dead	Dead standing tree. No live foliage visible. Suspected species *Acer* sp.	No works presently required.	<10	U	1.1	3.8
G002	Mixed species group	15	300	3.0	3.0	3.0	3.0	2.0	n/a	EM	Fair	Third-party. Limited access. Prevents full inspection. All measurements estimated. Species include birch and goat willow. Self-sewn trees. Heights range between 9-15m. Individually low quality specimens. Provide screening value.	No works presently required.	20+	C2	3.6	40.7
T007	Norway maple	6	340	3.0	3.0	3.0	3.0	1.5	2 all	EM	Fair	Third-party. Limited access. Prevents full inspection. All measurements estimated. Apical dieback present throughout crown.	No works presently required.	10+	C1	4.1	52.8
T008	Silver birch	8	130	2.5	3.5	2.5	2.5	2.0	2 all	SM	Fair to good	Self-sewn. Main stem has an approx. 45° lean to the southeast at approx. 1m above ground level. Limited scope for future development due to location.	No works presently required.	10+	C1	1.6	8.0
T009	Honey locust	7	150	3.5	4.0	3.5	4.0	1.0	2 all	SM	Fair to good	Codominant stems form at approx. 2m above ground level. Union appears currently stable. Crown encroaching adjacent street column.	No works presently required.	10+	C1	1.8	10.2

Tree no.	Species	Height (m)	Stem dia. (mm)	Crown spread (m)				Ht of crown clear. (m)	Ht to first major limb (m)	Age	Phys condition	Observations and structural condition of tree(s)	Recommendation of works	Est remaining con.	Cat	RPA radius (m)	RPA (m^2)
				N	E	S	W										
T010	Common elder	5	250	2.0	2.0	2.0	2.0	1.5	2 all	M	Fair	Third-party. Limited access. Prevents full inspection. All measurements estimated. Crown historically topped at approx. 2m above ground level.	No works presently required.	10+	C1	3.0	28.3
G003	Mixed species group	5	80 80 80	1.5	1.5	1.5	1.5	0	n/a	SM	Fair	Limited access. Prevents full inspection. All measurements estimated. Species include hawthorn and pyracantha. Unmaintained.	No works presently required.	10+	C2	1.7	8.7
T011	Myrobalan plum	5.5	200	3.5	3.5	3.5	3.0	2.0	1.5 all	EM	Fair	Crown breaks at approx. 1.5m above ground level. Evidence of historic pruning in crown.	No works presently required.	10+	C1	2.4	18.1
T012	Crab apple	5	120	2.0	3.0	3.0	3.0	1.0	1.5 all	EM	Fair	Growing in close proximity to boundary fence. Sub-lateral rubbing against fence resulting in abrasive damage to branch.	No works presently required.	10+	C1	1.4	6.2
T013	Norway maple	5	120	2.0	3.0	2.5	2.0	1.0	1all	SM	Fair	Growing in close proximity to boundary fence. Crown predominates to the east.	No works presently required.	10+	C1	1.4	6.2
T014	Wild cherry	6	200	2.0	4.0	3.0	4.0	1.0	1.5all	EM	Fair	Growing in close proximity to boundary fence. Wide spreading canopy.	No works presently required.	20+	C1	2.4	18.1

Appendix 4: Protective Barrier Specifications



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 2. Example diagram of suitable protective barriers taken from BS5837:2012.

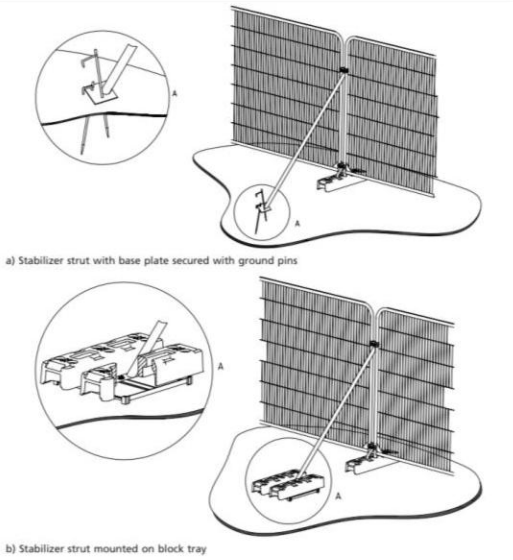


Figure 3. Example diagram of suitable protective barriers taken from BS5837:2012.

Figure 4. Example of suitable signage to be attached to protective fencing to create 'Construction Exclusion Zone'.

Figure 5. Example of suitable signage to be attached to protective fencing to create 'Construction Exclusion Zone'.

Barriers used should be fit for purpose in the creation of 'Construction Exclusions Zones'.

For this site, it is deemed suitable that 2m tall weld mesh fencing be used. The 2m tall weld mesh panels may be secured on rubber or concrete feet to provide an adequate level of protection from vehicles, pedestrians and manually operated plant. The 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 1m and be uniform throughout the fence. The panels should be supported on the inner side by stabiliser struts, which would normally be attached to a base plate and secured with ground pins.

If on a hard surface area and ground pins are unfeasible, then they should be secured on block mounts.

Appendix 5: Ground Protection Specifications

Temporary ground protection should be capable of supporting any traffic entering or being used in the site without becoming distorted or causing compaction of underlying soil.

A range of ground protection can be used on development sites depending on the weight of traffic and machinery proposed to be used.

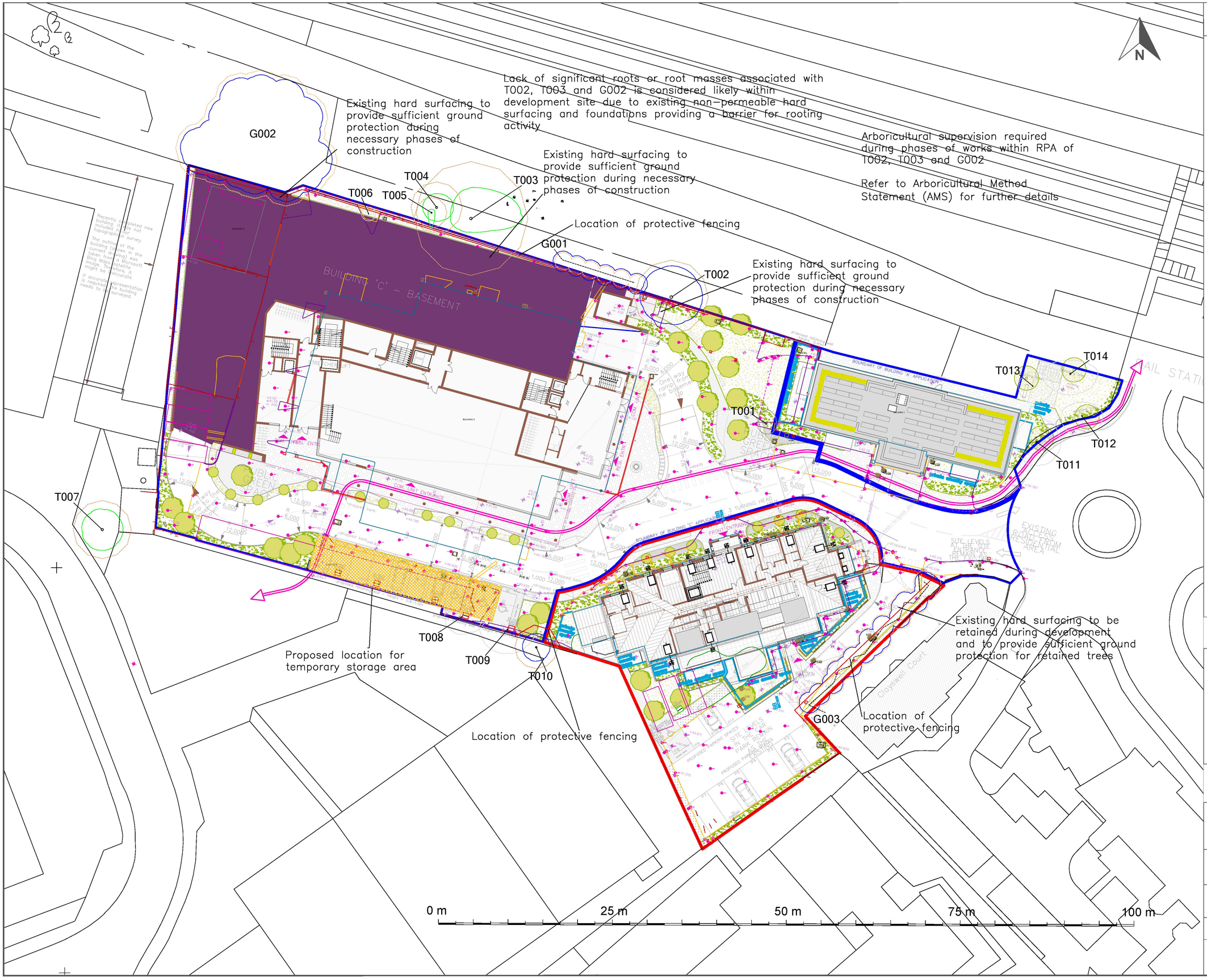
Appropriate ground protection may include one of the following specifications:

- 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.

- For pedestrian-operated plant up to a gross weight of 2t
  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.

  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.

Figure 6. Example of ground protection suitable for pedestrian operated plant up to a gross weight of 2t. Interlinked ground protection boards which are laid on top of a layer of woodchip with geotextile membrane below.



Key

T1	Tree Identifier/ Tag No.
	Trees to be retained
	Trees to be pruned
	Trees to be removed
	Root Protection Area (Individual)
	Root Protection Area (Group)
	Protective fencing
	Temporary storage area
	Ground protection
	Proposed development

Drawing to be viewed in colour only

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CLIENT: Govey Homes Ltd

SITE: The Foundry Business Park
Hockley, Essex, SS5 4HS

TITLE: Tree Protection Plan

SCALE AT A1:	DATE:	DRAWN:	CHECKED:
1:250	16.09.2024	CAJ	CAJ
PROJECT NO:	DRAWING NO:		REVISION:
08/202310	08/202310–TPP		C