

**ARBORICULTURAL IMPACT ASSESSMENT
FOR PROPOSED DEVELOPMENT**

At

35 Greenes Road, Whiston
Knowsley L35 3RE

For Submission to
Knowsley Council

On the Instructions of:
David Belcher of The Built Group Ltd

Date of Site Visit:
12 August 2021

Report Ref:
DTCL.267.AIA.2019

Report Date:
01 September 2021



DEALGA'S TREE CONSULTANCY LTD
Suite 9 St Andrews Business Centre
91 St Mary's Road, Garston, Liverpool L19 2NL
T: (0151) 494-5606: M: (07595) 530720
E: Dealga@dealgas-treeconsultancy.co.uk
www.dealgas-treeconsultancy.co.uk



Contents

	Disclaimers	3
1.	Introduction	4
2.	The Site & Surroundings	4
3.	The Trees & Impacts	5
	3.6 Tree Protection	7
	3.7 Temporary Ground Protection	7
	3.8 Foundations	7
	3.9 Car Parking	8
	3,10 Services	8
	3.11 New Tree Planting	9
4.	Arboricultural Method Statement	10
	4.1 Scope of Works	10
	4.2 Control Measures & Supervision	12
	4.3 Sequencing	12
	4.4 Workflow Chart	13
	4.5 Tree Protection Details	14
	4.6 Temporary Ground Protection	15
	4.7 Compressed Air Root Exposure	16
	4.8 Cellular Confinement Systems	18
	4.9 Tree Planting Green Blue Urban System	19
5.	Conclusions	20

Disclaimers

General - Trees

Unless otherwise stated tree inspections have been undertaken from ground level and using non-invasive techniques only. Comments on the condition and safety of any tree relate to the condition of the tree at the time of survey. It should be recognised that tree condition is subject to change due to, for example, the effects of disease, wind or nearby development works. Changes in land use are also significant in respect of risk assessment. Trees should therefore be inspected at intervals relative to identified site risks.

Unless otherwise specified, no checks have been carried out in respect of statutory controls that may apply, e.g. ,Tree Preservation Orders, Conservation Areas or planning conditions. In addition, prior to undertaking any tree works, it is necessary to ensure due diligence is followed in respect of protected species and habitats.

Copyright & Non - Disclosure Notice

The content and layout of this report are subject to copyright owned by Dealga's Tree Consultancy Ltd (DTC Ltd) save to the extent that copyright has been legally assigned to us by another party or is used by Dealga's Tree Consultancy Ltd under license. This report may not be copied or used without our prior written agreement for any purpose other than the purpose indicated in this report.

Third Party Disclaimer

Any disclosure of this report to a third party is subject to this disclaimer. The report was prepared by DTC Ltd at the instruction of, and for the use by, our clients named within the report. This report does not in any way constitute advice to any third party who is able to access it by any means. DTC Ltd excludes to the fullest extent lawfully permitted, all liability whatsoever for any loss or damage arising from reliance on the content of this report.

1 Introduction & Background

- 1.1 An application for consent to build 22 No. Apartments, 22 parking spaces and means of access off Paradise Lane at 35 Greenes Road, Whiston (the site) is to be submitted to Knowsley Council, (the Council). A previous scheme that proposed 47 dwelling units on the site was the subject of a pre-application response from the Council a section of which addressed the arboricultural aspects of the proposal. Essentially, the Council requires that the application is supported by an Arboricultural Impact Assessment (AIA), and an Arboricultural Method Statement (AMS). The text of the pre-application response is reproduced below.

Trees and Ecology	Authority. As a tree survey has not been submitted at this stage, it is difficult to determine whether the layout would have a direct detrimental impact upon existing trees on and adjacent to the site. To ensure the application is correctly assessed, the proposal would need to be supported by an impact assessment in accordance with BS5837:2012. An arboricultural method statement would also be required to outline the tree protection measures which will be implemented.	Existing trees must be retained where possible and the design and layout of the proposal should reflect this requirement. A tree survey and an impact assessment are required. If tree loss is proposed as part of the proposal, replacement tree planting on a 2:1 basis is required (species and size to be discussed). A landscaping scheme is required to be submitted.

- 1.2 DTC Ltd is instructed to prepare the required AIA & AMS reports to address the issues raised in the pre-application response. This document is both an AIA and an AMS and is prepared in line with the guidance contained within BS5837: 2012 'Trees in relation to design, demolition and construction – Recommendations'.

2 The Site & Surroundings

- 2.1 The site is in an established residential area of Whiston. The northern boundary is Greenes Road; the eastern boundary is Paradise Lane; to the south is the Stadt Moers Car Park; and to the west there are residential properties, (Photograph 1).
- 2.2 The site has been cleared of previous buildings and is relatively level with old hard standings in parts, (Photograph 1). Google Street View™ reveals that the site was cleared as far back as 2009.
- 2.3 There is only one tree on the site, a cedar, but there are three trees adjacent to the southern boundary in Stadt Moers Car Park.

2 The Site & Surroundings (Continued)



Photo 1: An aerial view of the site dated August 2019 taken from Google Maps™.

3 The Trees - Impacts

- 3.1 As stated above, the site contains a single semi-mature Deodar cedar, (*Cedrus deodara*) labelled **T1**. Immediately adjacent to the southern boundary of the site there are three other trees, **T2** a Norway maple (*Acer platanoides*); **T3** a willow (*Salix* spp); and **T4** a whitebeam, (*Sorbus* spp). The details of the trees are set out in the attached tree survey schedule and the locations are shown on the Tree Survey Drawing, DTCL.267.AIA.AMS.TS.01.
- 3.2 The trees are categorised using the Cascade Chart for Tree Quality Assessment that is Table 1 in BS5837: 2012, and have been classified as **A2**, i.e., '*Trees, groups of trees or woodlands of particular visual importance as arboricultural and/or landscape features*
- 3.3 At the time of the site visit, 12 August 2021 the trees were in good health with no obvious signs of dysfunction, disease, dieback, or decay.
- 3.4 The proposed development, i.e., the erection of 22 no. apartments and 22 car parking spaces would impact the trees to some degree. The Cedar, **T1** is close to apartment block B in the southwest corner of the site, (Photograph 2). Trees **T3** & **T4** are right on the boundary of the site and would be impacted by the construction of apartment block C, the two car parking spaces in the southeast corner of the site, and the installation of drainage at this location.



Photo 2: A view of the cedar, **T1**, from inside the site looking west.

3 The Trees – Impacts (Continued)

3.6 Tree Protection

- 3.6.1 During construction, **T1** would be protected within a construction exclusion zone (CEZ) defined by protective fencing. The fencing would be in accordance with that specified in BS5837: 2012 which is shown at **Figure 2** in the AMS at Section 4 of this document, and the location of the fencing is shown on the attached tree protection plan, DTCL.267.AIA.AMS.TS.02. Trees **T2**, **T3** & **T4** are already protected by the existing 2m high metal palisade fence on the boundary of the site, (Photograph 3).

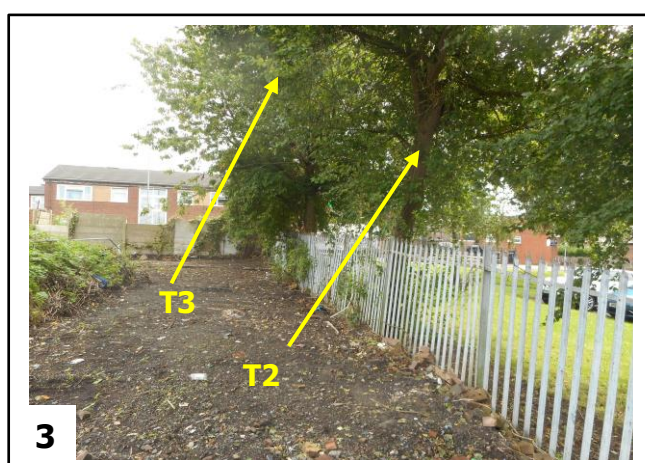


Photo 3: A view of trees **T3** & **T4** against the metal railing fence between the site and the Stadt Moers car park.

3.7 Temporary Ground Protection

- 3.7.1 To prevent damage to the root zones of the trees, temporary ground protection will be installed between the southern boundary with Stadt Moers car park and the foundation trenches for apartment blocks B & C. This will comprise a geotextile membrane such as Terram™ or equivalent over which a layer of sharp sand 25mm deep will be laid. On top of the sand wood planking such as old scaffold boards, decking etc will be installed. In the alternative a cellular confinement system such as ProtectaWeb™ or Cellweb™ can be used as temporary ground protection, see **Figure 3** in the AMS at Section 4 of this document.

3.8 Foundations

- 3.8.1 The line of the rear foundations of apartment blocks B & C will be excavated using compressed air displacement to establish if roots are present at this point, (**Figure 4A, B, & C** in the AMS at Section 4 of this document). If, as is suspected, there are no, or only minor roots less than 25 mm diameter present, then these can be cut cleanly, and a foundation trench excavated.

3 The Trees – Impacts (Continued)

3.8 Foundations (Continued)

- 3.8.2 Once the foundation trenches have been excavated, the side of the rear trenches closest to the trees, will be lined with heavy duty plastic sheeting to prevent concrete leaching into the root zone of **T2**, **T3** & **T4**. (**Figure 4D** in the AMS at Section 4 of this document).

3.9 Car Parking Spaces

- 3.9.1 It is proposed to install two of the 22 car parking spaces in the southeast corner of the site behind apartment block C. These would be within the RPAs of **T3** & **T4**. BS5837: 2012 allows for construction within the RPA at **Section 7.4** '*Permanent hard surfacing within the RPA*'. In this instance the permanent hard surface of the car parking spaces will involve minimum digging and a cellular confinement system such as Cellweb™ or ProtectaWeb™. The products provide a cellular structure that provide reinforcement to infill materials and perform like a semi-rigid slab which distributes compression forces laterally and significantly reduces downward pressure to the root zone. See **Figure 5** of the AMS at Section 4 of this document.

3.10 Services

- 3.10.1 Most of the services, i.e., gas, electricity, water, and communications will be located under the new access road and connect to those existing in Paradise Lane. However, the main drain is proposed to run from Stadt Moers Car Park, under the southeast corner of the site close to the two car parking bays to connect with the drainage system in Paradise Lane. This means it will be within the RPA of **T4** and possibly **T3**. This can be installed without damaging the trees by following the guidance contained in the National Joint Utilities Group (NJUG) '*Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees*', Issue 2 November 2007, (NJUG 4).
- 3.10.2 The drainage trench will be excavated using compressed air displacement to expose roots to a depth of between 600 mm and 750mm. Roots larger than 25 mm in diameter must be left in situ. Once the root zone area has been exposed, excavation below it would be undertaken by hand. If the operation is to be completed over a number of days, the exposed roots would be protected with damp hessian sacking at the end of each working day

3 The Trees – Impacts (Continued)

- 3.10.3 Once the drain has been installed the trench would be backfilled to 600 mm with appropriate backfill that would be compacted. A geotextile membrane would be installed at this depth, to prevent root ingress into the area of the drain. From a depth of 600mm the backfill would be comprised of good quality topsoil amended with 5% by volume of biochar. This would enhance the health and vitality of the trees.

3.11 New Tree Planting

- 3.11.1 Although no trees would be removed to facilitate the proposed development, new trees would be planted to enhance to landscape of the site. Four new trees are proposed as follows:

One in front of the northeast corner of apartment block A, and one to the east of the car parking space at the rear of apartment block A.

One tree to the west and in front of Apartment Block B, and

One tree to the east side of apartment block C.

- 3.11.2 Proposed new trees are 2 No. rowan/mountain ash, *Sorbus aucuparia*; 1 No. Himalayan birch, *Betula utilis* 'Jacquemontii'; and 1 No. willow oak, *Quercus robur* 'fastigiata'.
- 3.11.3 Because the new trees would be planted into or adjacent to hard surfaces, they would be planted using the Green Blue Urban Strata Cell Arborsystem™, which is specifically designed for tree planting in hard landscapes and is nationally accepted, **Figure 6** in the method statement at section 4 of this document.
- 3.11.4 The trees would be 12/14 cm girth at 1m above ground level, container grown, planted, and supported in accordance with best arboricultural practice and in line with the guidance in BS8545: 2014 'Trees: from the nursery to independence in the landscape'.
- 3.11.5 All trees would be sourced from a reputable nursery that has an implemented and auditable nationally recognised **Biosecurity Policy**.

4 Arboricultural Method Statement

4.1 Scope of Works

General

- Construction works would impact the four trees to varying degrees.
- This Arboricultural Method Statement supplies the required methodology for the protection of the trees.
- The work-flow chart governing this method statement is at **Figure 1** below.

1) **Tree Protection**

- The location of the fencing is as detailed on the attached tree protection plan, DTCL.267.AIA.AMS.TS.02.
- The construction of the fencing is as specified at Section 6.2 of BS5837: 2012. See also **Figure 2**.
- **Protective Fencing** shall be erected prior to the commencement of any on-site construction activities and will be signed off by the project arborist who will notify the Council's Tree Officer.
- The work areas outside but adjacent to the protective fencing shall be protected from compaction etc using temporary ground protection as shown in **Figure 3**.

2) **Foundations**

- The area of the rear foundations of apartment blocks B & C will be excavated using compressed air displacement using an air spade or equivalent to expose the roots, **Figure 4A, B & C**.
- Any roots exposed shall be pruned using secateurs or pruning shears.
- Once the foundation trench has been excavated, the side of the trench nearest to **T1** shall be lined with heavy duty plastic sheeting to prevent concrete leachate entering the root zone, (**Figure 4D**).

3) **Car Parking Spaces to the rear of Apartment Block C**

- The hard surface of the two car parking bays shall utilise a cellular confinement system.
- The final surface shall be a porous medium such as porous tarmac, (**Figure 5**)

4 Arboricultural Method Statement (AMS) (Continued)

4.1 Scope of Works (Continued)

4) **Underground Services (Main Drain)**

- The drain will be installed to the rear of apartment block C within the RPAs of trees **T3 & T4**.
- The excavations for and installation of the new services shall be in accordance with the guidance contained within the National Joint Utilities Group (NJUG) publication 'Volume 4: *Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees* (Issue 2, November 2007) – Operatives Handbook'.
- The roots of the trees shall be exposed at the proposed location of the services using compressed air using an Air Spade to a depth of 600mm to 750mm.
- Once the roots have been exposed to a depth of between 600mm and 750mm all further excavations to achieve the required depths for the various services shall be undertaken by hand excavation.
- If the installation of the services spreads over a number of days, the exposed roots shall be covered with damp hessian sacking at the end of each day's work to protect them from exposure to wind and/or frost.
- Once the drain is installed the trench shall be backfilled with the excavated arisings to a depth 600 mm to 700mm, compacted and a geotextile membrane installed over this.
- The exposed roots shall be backfilled with good quality topsoil amended with 5% by volume of biochar.

5) **Temporary Ground Protection**

- To prevent the compaction of any roots that may be present between the boundary with the Stadt Moers Car Park and the rear foundations of apartment blocks B & C, temporary ground protection will be installed for the duration of the construction works.
- The construction of the temporary ground protection is shown in **Figure 3**.

6) **New Tree Planting**

- Four new trees will be planted on site as 12/14 cm girth at 1 m above ground level.
- The trees will be container grown, planted, and supported in accordance with best arboricultural practice and in line with the guidance in BS8545: 2014 'Trees: from the nursery to independence in the landscape', and using the Green Blue Urban Strata Cell Arborsystem™.
- The trees will be sourced from a reputable nursery that has an implemented, auditable, and nationally recognised 'Biosecurity Policy'.

4 Arboricultural Method Statement (AMS) (Continued)

4.2 *Control Measures & Supervision*

- Appropriate control measures to keep unauthorised people away from the work areas shall be implemented.
- Each operation will be assessed prior to the commencement of any on-site works and appropriate barriers / warning signs erected.
- A Project Arborist* will be appointed to liaise at all times with the Site Manager and with the Knowsley Council Tree Officer.
- The Project Arborist will be on site at all times relevant to the task being undertaken, i.e., when the fencing is being erected; when the temporary ground protection is being installed, when the foundation trenches are being excavated, when the drain is being installed, when the cellular confinement system is being installed, and on a regular basis to ensure protective fencing is being maintained as it should be throughout the construction phase.

4.3 *Sequencing*

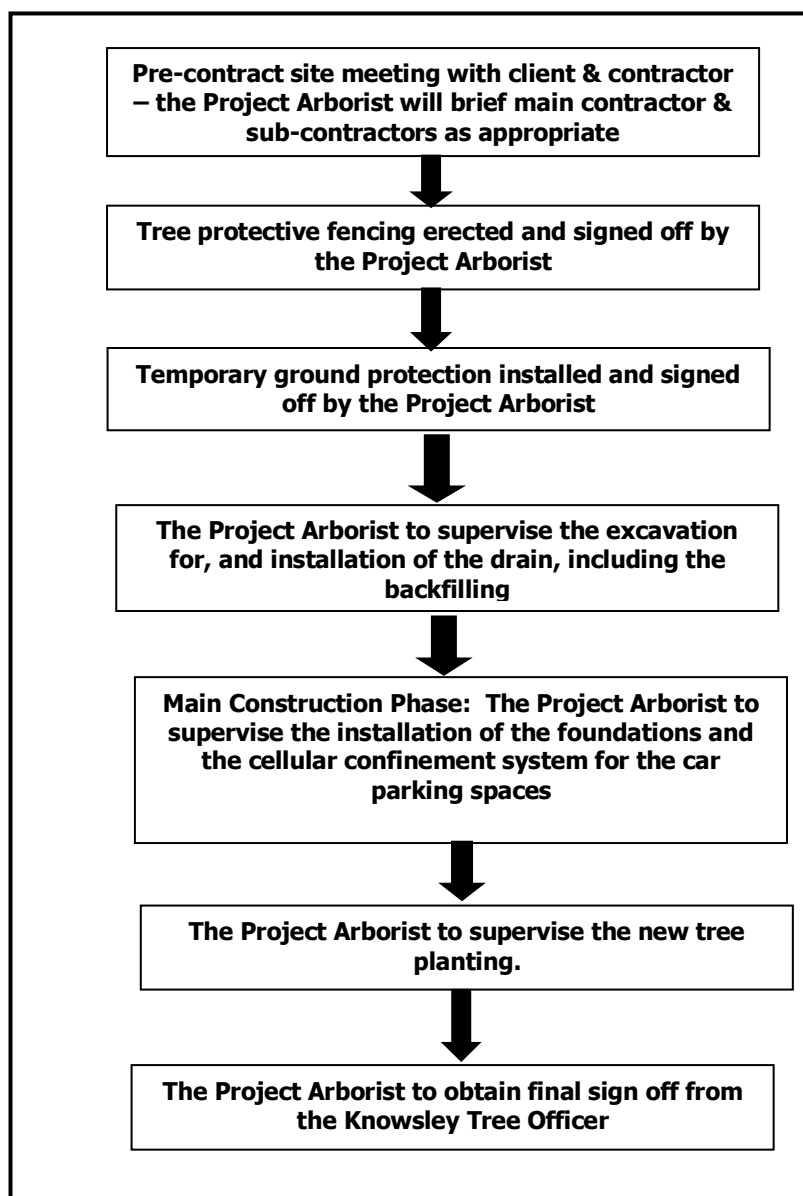
- The Knowsley Council Tree Officer will be advised prior to the commencement of work on site.
- All sub-contractors, site managers and relevant operatives will be briefed of proposed works prior to commencement.
- Contractor/Site Manager will ensure delivery/availability of all relevant materials prior to the commencement of onsite works.
- All materials delivered shall be stored outside the tree protection/construction exclusion zones.

*The Project Arborist is to be confirmed.

4 Arboricultural Method Statement (AMS) (Continued)

4.4

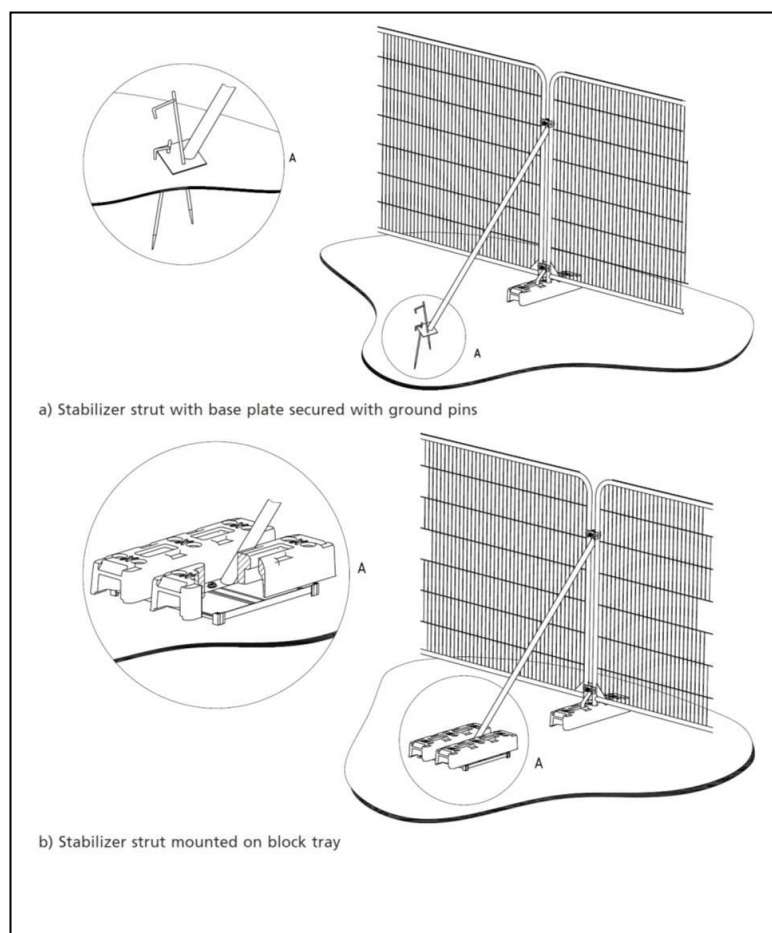
Figure 1: Workflow Chart



4 Arboricultural Method Statement (Continued)

4.5 Tree Protective Fencing Details – The exact location of the fencing is shown on the Tree Protection Plan (DTCL.267.AIA.TS.02.)

Figure 2 – Protective Fencing Construction – As per BS5837: 2012



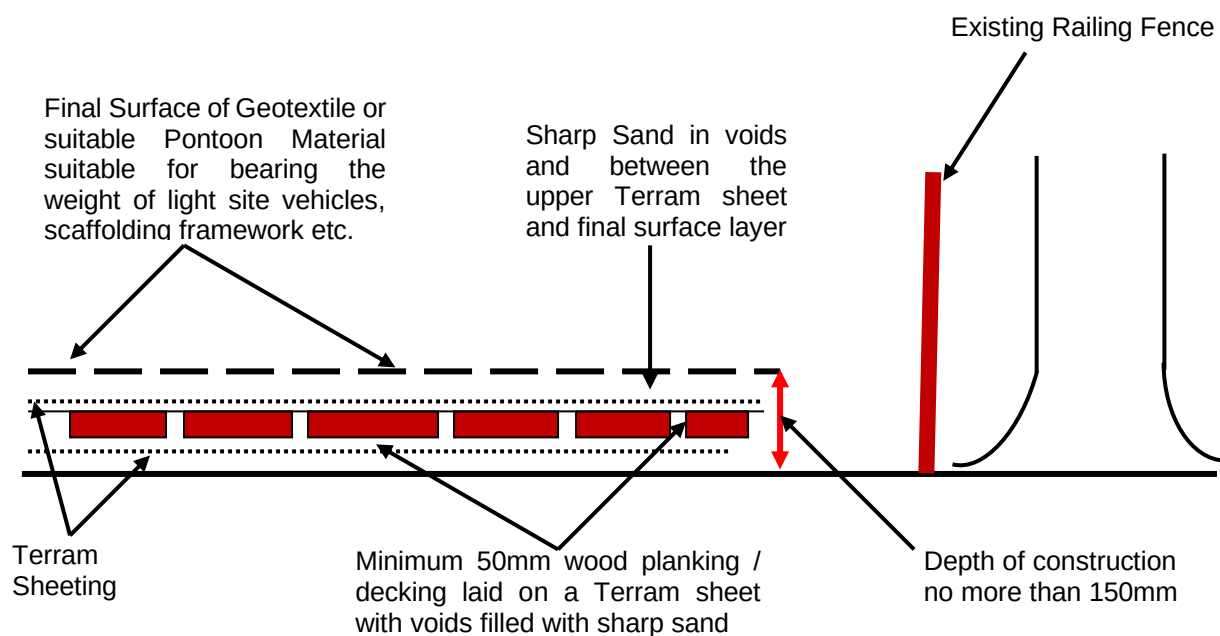
Specifications: Fence shall be 2m high x 3m long.

As Heras® type fencing can be easily moved, it must be mounted on rubber or concrete base plates and secured, in order to provide semi-permanent protection using stabilizing struts and base plates and the Heras sections secured by 'U-Bolts' or Scaffold Clamps.

The fencing will be further identified by 'Tree Protection' warning signs.

4 Arboricultural Method Statement (Continued)

4.6 Figure 3 Temporary Ground Protection



Not to Scale, for illustrative purposes only
Refer to Drawing DTCL.270. AIA. AMS.TPP. 2021 for location

Cellweb™/ProtectaWeb™ – Alternative to the above



4 Arboricultural Method Statement (Continued)

4.7 Root Exposure using Compressed Air Soil Displacement

Figure 4A: Air Spade for use in the Compressed Air Soil Displacement Process



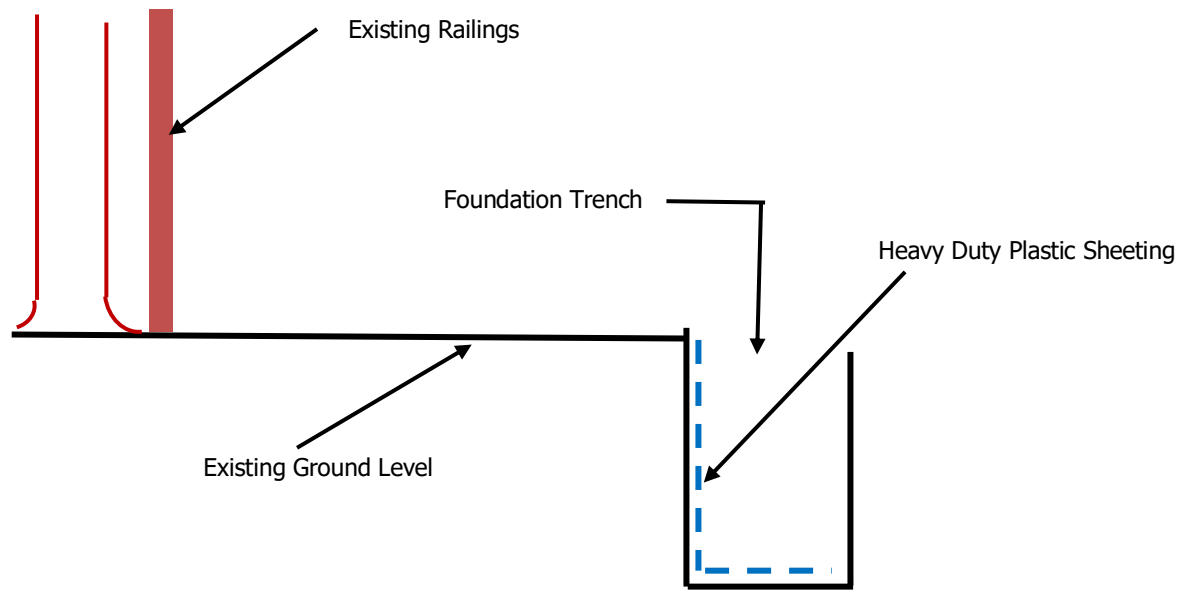
4B: Roots being exposed by compressed air soil displacement excavation using an Air Spade.



4C: A close up view of the of roots exposed by compressed air soil displacement.

4 Arboricultural Method Statement (Continued)

4.6 Figure 4D Foundation Trench Root Protection



Not to Scale, for illustrative purposes only
Refer to Drawing DTCL.267. AIA. AMS.TS.02 for the location

4 Arboricultural Method Statement (Continued)

4.8 Figure 5 Cellular Confinement System for Car Park Spaces

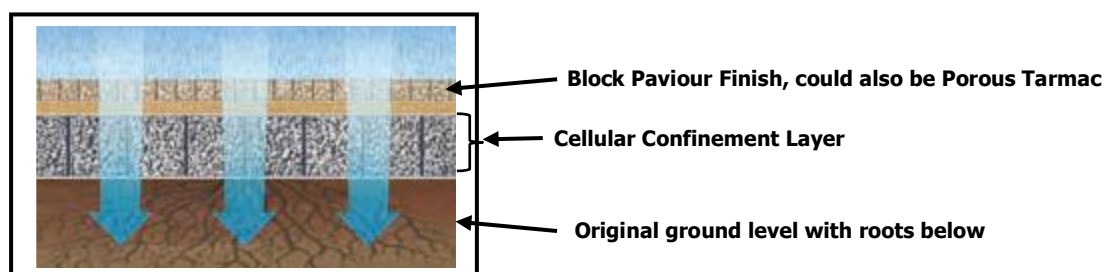
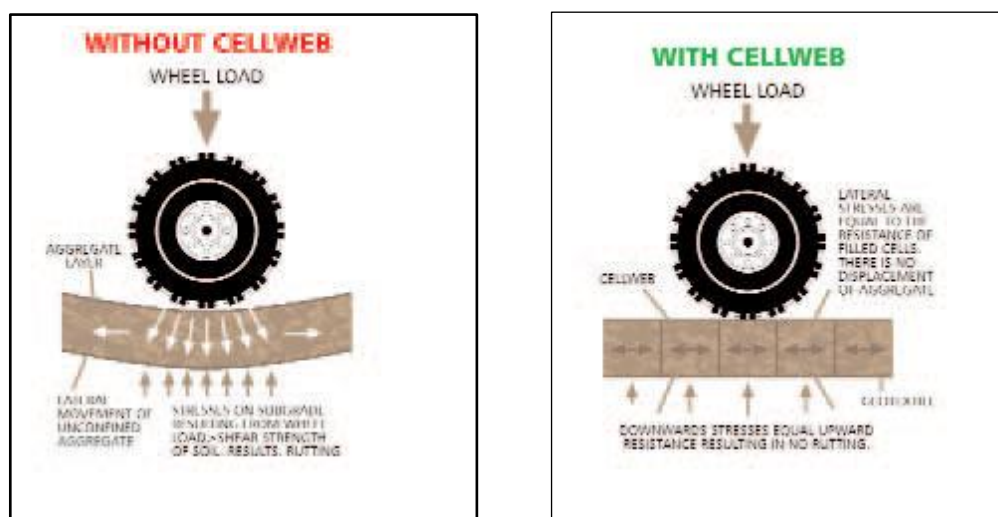


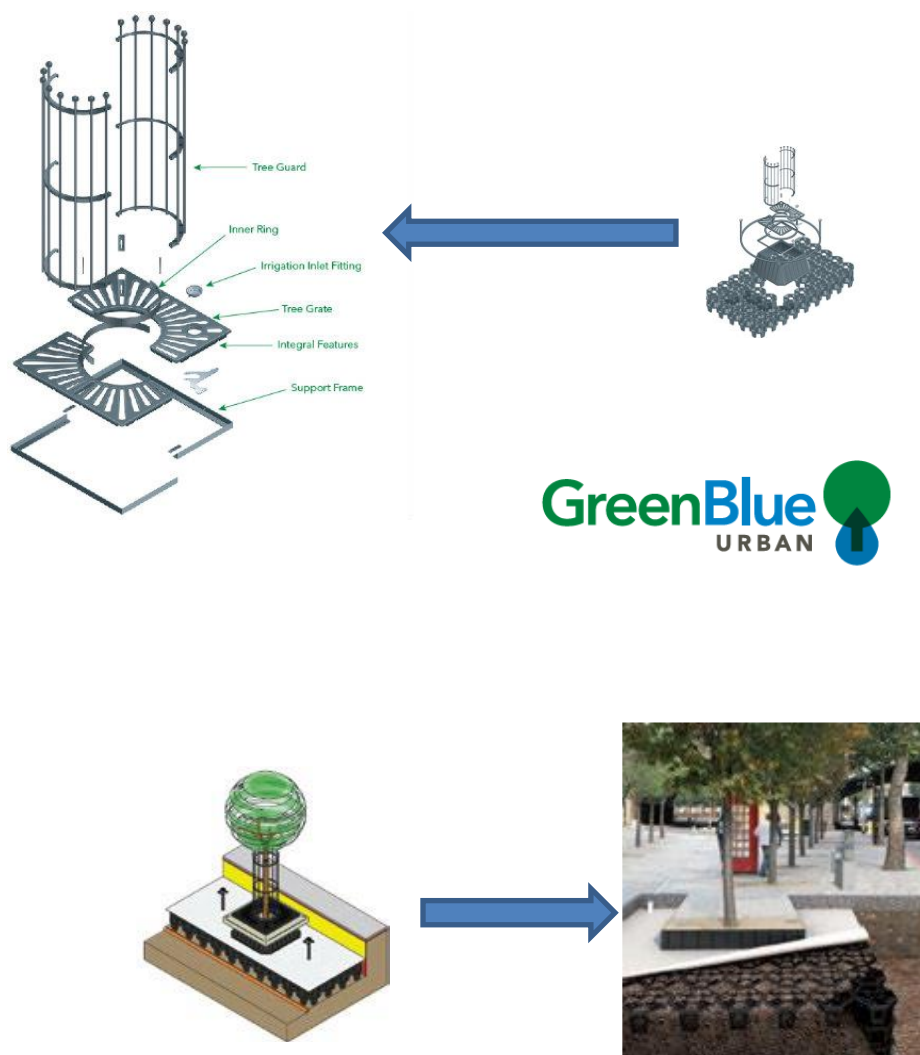
Figure 5: A schematic diagram showing how a cellular confinement system allows the percolation of air & water to the roots below.



4 Arboricultural Method Statement (AMS) (Continued)

4.9 Figure 6 Green Blue Strata Cell Arborsystem™

All new trees will be container grown large specimens at 12/14cm girth at 1m above ground level planted using the Green Blue Urban Strata Cell Arborsystem® as shown in below. This system utilises an underground guy support system. The guys are hessian straps which biodegrade over time such that there is no need to adjust or remove them.



5 Conclusions

- 5.1 The proposed development would have an impact on four trees to some degree, but the impacts can be mitigated.
- 5.2 The retained trees would be protected during construction through the use of tree protective fencing to define a construction exclusion zone (CEZ) as recommended in BS5837: 2012
- 5.3 The ground in the work areas outside the protective fencing but adjacent to it would be protected from compaction using temporary ground protection.
- 5.4 Proper application of the guidance in BS5837:2012 '*Trees in relation to design, demolition & construction – Recommendations*' will ensure that the four trees will not be damaged and will be retained in good health.
- 5.5 New trees can be planted on site in line with the guidance contained in BS8545:2014 '*Trees from the nursery to independence in the landscape – Recommendations*'.
- 5.6 All new trees would be sourced from a reputable nursery that has an implemented, auditable, and nationally recognised 'Biosecurity Policy'.
- 5.7 It is respectfully submitted that there are no arboricultural reasons to refuse consent for this application, and if the Council is minded to approve the proposed development it could be subject to a condition requiring arboricultural supervision of the construction.

Attachments: Tree Survey Schedule
 Tree Survey Plan – DTCL.267.AIA.AMS.TS.01
 Tree Protection Plan – DTCL.267.AIA.AMS.TS.02

Dr D P O'Callaghan, FICFor, F Arbor A, MISA
Chartered Arboricultural Consultant

01 September 2021





DEALGA'S TREE CONSULTANCY LTD

Suite 9 St Andrews Business Centre
91 St Mary's Road, Garston
Liverpool L19 2NL

T: (0151) 494-5606

M: (07595) 530720

E: Dealga@dealgas-treeconsultancy.co.uk

W: www.dealgas-treeconsultancy.co.uk