

Treestyle CONSULTANCY

BS 5837:2012
Arboricultural Impact Assessment
Arboricultural Method Statement
and
Tree Protection Plan

This should be read in conjunction with the Tree Planting Scheme

Date of Report

24th October 2018

Site

345 Upper Parliament Street
Liverpool

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Instructed By

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Executive Summary

Treestyle Consultancy was commissioned to complete a survey to specifications set out in British Standard 5837:2012 *Trees in relation to design, demolition & construction - Recommendations*. This document is an Arboricultural Impact Assessment (AIA) which explains the Arboricultural Method Statement (AMS) and Tree Protection Plan (TPP).

A planning application has been submitted to Liverpool City Council (LCC) for permission to develop the eastern part of a site on Upper Parliament Street in Liverpool for residential housing and sufficient parking for residents and visitors.

It is part of a tree line which screens this busy urban area from the residential area to the south. However, this area has seen only reactive management which has resulted in trees with poor form/condition resulting in a mechanically unstable green infrastructure. Many of the trees roots are exposed and damaged with potential soil compaction. Due to previous tree failure there are now areas void of vegetation. Areas within the site are now unsightly and there are waste and rubbish issues.

This report includes the additional retention and protection of T60 and T61 London Plane. Additional trees to be planted with comprehensive tree planting scheme will help the creation of an open access green space between the proposed developments. This most recent planning application has reduced the size of the proposed developments, has resulted in increased greening with pedestrian access and recreation. The tree planting and landscaping scheme can be read as a separate document.

At the western end of the site 59 trees have been highlighted for removal a high percentage of which are of low quality and value due to their size and limited longevity. 41 of these are to be removed to allow the proposed development to take place with 15 for health and safety reasons, 3 of these are stumps.

The proposed development of the land would initially have a high impact on the visual green infrastructure, however, a comprehensive tree replacement scheme would see their replacement over a period of time. This would reinstate the tree line along Parliament Street and create screening and privacy for residents living nearby. A total of 59 trees are proposed for planting, 44 within the new proposed development and a further 15 in the existing wooded area to the west. Their size has been chosen as large as practically possible for instant screening. Newly planted trees will increase the potential longevity providing minimal maintenance, good all year round screening and privacy which greatly increases the visual greening of the area.

The Arboricultural Impact of the development has been revised to accommodate as many of the trees as possible. However, this is not practical because of the bund being on a raised profile where the trees are situated. Therefore, their removal must be mitigated by a comprehensive tree planting scheme, their replacement is fundamental to the continuation of the green infrastructure in this area if trees and people are to coexist. The protection of the remaining trees to the west will require Heras fencing to be installed for the duration of the development which can be read in the Arboricultural Method Statement which is listed at the rear of this document.

A total of eight seven trees and four tree stumps were recorded for the purpose of this report.

It is also important that the caveats and limitations of this report are understood, these can be read in Section 11.0 of this document.

1.0 Introductions

- 1.1 Under instruction from Wroot Design Ltd an arboricultural report has been prepared to accompany a planning application for proposed developments on land adjacent to Liverpool's Women's Hospital. This report details the arboricultural impact of developing the site, subsequent mitigation recommendations and protective measures. The latter part of the report explains how the development will take place with regards to the retention of the trees.
- 1.2 The assessment was carried out on the 24th November 2018 by Andrew Mcloughlin of Treestyle Consultancy. Trees were assessed from the ground in accordance with BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*. The categorisation method identifies the quality and value of the existing green infrastructure.
- 1.3 Previous arboricultural documentation has been carried out by Dealgas Tree Consultancy Ltd who also supplied previous plans with updates being provided by Wroot design. An appropriate Tree Protection Plan (TPP) has been drafted and revised as necessary from this Arboricultural Impact Assessment.
- 1.4 It should be noted that neither soil samples or soil maps have been used to make decisions on this report. Therefore there is the possibility of minor soil movement due to tree root activity. Prior to the undertaking of foundation depths calculations of any estimated tree locations should be resolved. If there are any discrepancies with trees locations or queries relating to their location, species within groups, then Treestyle Consultancy should be contacted prior to planning submission.
- 1.5 A total of eight seven trees and four tree stumps were recorded for the purpose of this report. These trees have been listed in [Appendix A – Tree Schedule](#) and mapping has been divided into east and west, [Drawings 1 - Tree Numbering and Categorisation](#) and [Drawing 2 - Tree Planting, Protective Fencing around the Proposed Development](#).
- 1.6 This report provides the results of the survey and includes the following;
- A schedule of all tree and hedges located on or within influencing distance of the proposed development site ([Appendix A – Tree Schedule](#)).
 - An assessment based on BS 5837:2012 of trees in terms of their potential value within any future development. On the basis of this assessment trees have been categorised into one of four categories: High, medium, low or not worthy of retention (A, B, C or U). See Appendix D - BS 5837:2012 Cascade Chart for Tree Quality Assessment.
 - Advice on removal, retention and management of these trees and hedges can be read in Sections 5 & 7 of this report.
 - A Tree Constraints Plan detailing tree quality categories, canopy spread (N, E, S & W), Root Protection Areas (RPA's), life span, Diameter at Brest Height (DBH), RPA m2, tree height, condition for all of the trees surveyed.
 - A Tree Removal and Protection Plan detailing the development proposals alongside trees to be retained and removed and any temporary protection measures.

2.0 Site and Surroundings

- 2.1 The land for the proposed development is located on the southern side of Upper Parliament Street, Toxteth in Liverpool. It is bounded by Mulgrave Street and Kimberly Close and to the north is Upper Parliament Street and beyond is the Liverpool Women's Hospital. To the south is residential accommodation along Kimberley Close, Verulam Close and Carlingford Close with Princess Primary School to the east.
- 2.2 This would be construed as a busy urban environment with the trees creating screening from the road and creating a living green space in an otherwise sterile concrete environment. These trees also make up part of a tree line which are mirrored on the opposite side of Upper Parliament Street and the Liverpool Women's Hospital. They have good visual amenity value.
- 2.3 The topography of the proposed development is only level where the land backs onto a row of properties to the south. This area houses trees of lesser quality and value and the area of land is unused, littered with rubbish seeing only reactive tree management, this area has low visual amenity value. The remaining land is predominately on a raised bund where most of the green infrastructure is located, this has good amenity value.

3.0 Statutory Protection and Guidance

National Planning Policy Framework (NPPF)

- 3.1 The NPPF assumes protection of all ancient woodland and veteran trees unless it can be clearly demonstrated that the need for, or benefits of, development outweigh the loss. In this respect ancient woodland is defined as an area which has been wooded continuously since at least 1600 AD and a veteran as a tree of exceptional value for wildlife, in the landscape, or culturally because of its great age, size or condition.
- 3.2 On this site there are no ancient woodland or veteran trees.

Tree Preservation Orders & Conservation Area Designations

- 3.3 Local authorities reserve the right to create Tree Preservation Orders (TPO) to protect the amenity value conferred to a location by a tree or group of trees. Where a TPO is in place the lopping, topping, felling, uprooting or wilful damage is prohibited. Failure to comply may lead to prosecution or large fines. Work on a TPO'd tree requires permission from the local authority.
- 3.4 Section 211 of The Town and Country Planning Act 1990 (TCPA) relates to the preservation of trees in Conservation Areas. Under Section 211 anyone proposing to remove, uproot or destroy any tree within a Conservation Area is required to give the local planning authority six weeks' prior notice (a "section 211 notice"). During this period the Council may consider serving a Tree Preservation Order to prevent the proposed work from being undertaken.
- 3.5 Exceptions from the requirement to give a Section 211 notice are set out in The Town and Country Planning (Tree Preservation) (England) Regulations 2012. A person does not have to give the local planning authority six weeks' prior notice for, amongst other reasons, work to trees so far as such work is necessary to implement a planning permission (other than an outline planning permission).

Bats as a Protected Species

- 3.5 It is not uncommon for a mature tree with cavities or hollows to be a habitat for roosting bats. Bats are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), as well as under Schedule 2 of the Conservation of Species and Habitats Regulations 2010 and it is therefore an offence to cause damage to a bat roost.

- 3.6 A preliminary ground level appraisal of the wildlife habitat value of each tree was undertaken as part of the arboricultural survey and no trees were observed as having feature to support roosting bats.
- 3.7 Should the presence of a bat roost be suspected whilst undertaking works on site then all operations must cease until a licensed bat handler or ecologist can provide advice.

Birds as a Protected Species

- 3.8 Nesting birds frequently use trees for nesting. They are protected under the Wildlife and Countryside act 1981 (as amended). This makes it an offence to intentionally or recklessly damage or destroy an active birds nest.
- 3.9 It is recommended that all tree work is carried out outside the bird nesting season which is March to August. If this is not possible then a detailed inspection of each tree should be undertaken by a suitably qualified ecologist prior to any tree work. Should an active nest be found then any work likely to affect the nest must be halted until the nest becomes inactive.

National House Building Council

- 3.10 This report has been written in accordance with BS 5837:2012
- 3.11 The soils on site were not recorded or assessed for the purpose of this survey. There could be however a possibility of movement due to trees being present on site.
- 3.12 It is quite common that not all trees are recorded on the original topographical survey. Therefore Treestyle Consultancy will estimate the approximate location of some trees for mapping purposes. Any discrepancies in a trees location or a missing tree will require further discussion with a suitably qualified Arboricultural Consultant.

4.0 Tree Population

- 4.1 The tree and hedge population varies greatly in this category recognition under BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*. All of the trees have been planted with visual amenity value in mind as they collectively create screening from the road and residential housing. Individually these trees have great variety in their quality due to the lack of management over the years. This has now left many of these trees with poor form, suppressed, damaged roots with compaction and with limited longevity. However, there are individuals that could provide some longevity.

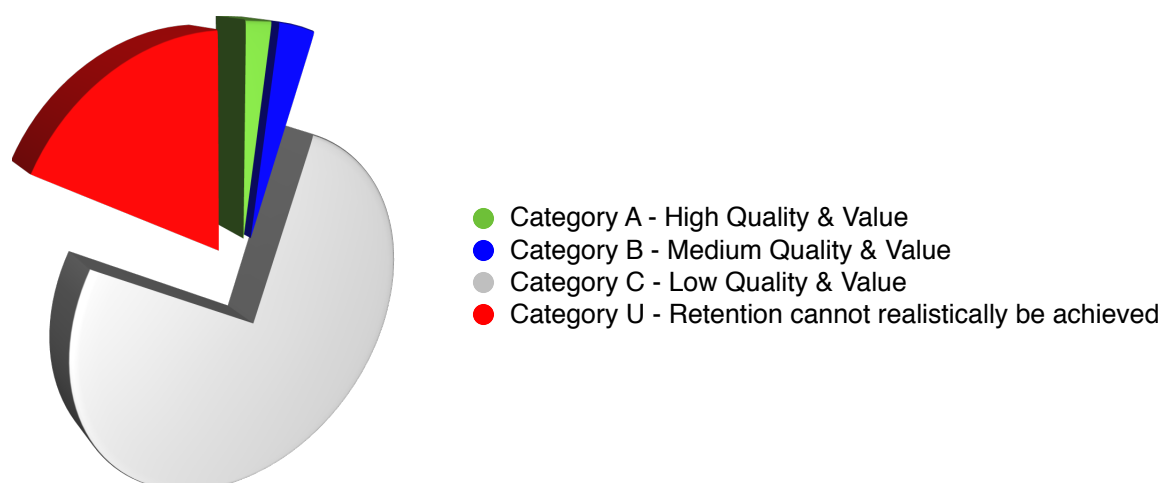


Figure 1. Breakdown of BS 5837 categorisation of all trees surveyed.

- 4.2 A total of eight seven trees and four tree stumps were recorded for the purpose of this report. The breakdown of quantities for each retention category are also shown below in [Figure 1](#). A cascade chart explaining the process used to reach these categorisations can be found in [Appendix D – Tree Categorisation Chart](#). Effort and resources to accommodate the trees into the design proposal should be allocated proportionately based on their retention category.
- 4.3 The trees have been planted possibly 30 years or more ago to create visual amenity for commuters along Upper Parliament Street and additionally screening from the residential housing to the south. The species type is generally fast growing in order to create quick screening, such as Horse Chestnut, Ash, Willow, Alder, Aspen and Sycamore. There is also a mixture of understory and high canopy tree species.
- 4.4 It can be seen in Figure 1 that 70% of the tree population has been categorised as low quality and value according to BS5837 2012. Most of these are found in the proposed area for development. The low quality and value of these trees is partly due to the lack of management over the years with many of the trees being suppressed with poor form and having mechanical weakness. Many trees have exposed roots with potential soil compaction from pedestrianisation.
- 4.5 A summary of the trees in each of the four categories is given below in [Table 1](#), for ease of reference.

Table 1. Summary of trees according to BS 5837 retention categorisation.

Tree Category	Tree Number
A	T60
B	T15, T54, T61,
C	T1, T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T17, T18, T19, T20, T21, T23, T24, T25, T27, T30, T31, T33, T34, T35, T36, T37, T38, T40, T43, T44, T45, T46, T47, T48, T52, T55, T57, T58, T62, T63, T64, T65, T67, T68, T69, T70, T71, T72, T73, T74, T75, T76, T77, T78, T79, T80, T81, T82 T83, T84, T85, T86, T87, T88, T89, T90
U	T16, T22, T26, T28, T29, T32, T39, T41, T42, T49, T50, T51, T53, T56, T59, T66, T91

- 4.6 Generally speaking, the local planning authority is likely to accept the removal of trees in a poor condition or those with minimal safe useful life expectancy. It is proposed that the area to the east have an extensive tree planting scheme and the area to the west have additional tree planting within the existing. Trees that have been identified as category 'U' have been given this categorisation due to their poor structural & physiological condition. It is estimated that trees with this categorisation have a limited life expectancy as their condition will deteriorate with time.

5.0 Impacts of the Proposed Development

5.1 This section describes the number and quality of trees and hedges that would be removed in order to facilitate the development proposal, including any that could be retained. This is the result of an assessment based on the proposed site plan and discussions with the client regarding their strategy.

5.2 Table 1 shows the effects of the proposal on the trees of the BS 5837 quality categorisation.

Table 1. Summary of trees to be retained and removed.

Tree Category	Trees to be retained	Trees & Hedges to be removed
A	T60	-
B	T61,	T15, T54
C	T62, T63, T64, T65, T67, T68, T69, T70, T71, T72, T73, T74, T75, T76, T77, T78, T79, T80, T81, T82 T83, T84, T85, T86, T87, T88, T89, T90	T1, T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T17, T18, T19, T20, T21, T23, T24, T25, T27, T30, T31, T33, T34, T35, T36, T37, T38, T40, T43, T44, T45, T46, T47, T48, T52, T55, T57, T58,
U	-	T16, T22, T26, T28, T29, T32, T39, T41, T42, T49, T50, T51, T53, T56, T59, T66, T91

5.3 Consideration to retaining the row of trees lining Upper Parliament Street has been taken into account, however, a high percentage of these trees are located on the raised bund. This has resulted in their retention being near impossible due the high concentration of tree roots in this raised area. Therefore it is proposed that the trees to the west and one tree located to the far east be retained. This would result in the removal of 41 trees of various quality and value due to the proposed development, with the removal of 15 due to arboricultural reasons. The remaining 3 are stumps.

5.4 The trees with the highest retention value are the T60 and T61 London Plane which overhangs Parliament Street. Several Pines and Cherry trees located all along the bund would be required for removal to accommodate the proposed developments.

6.0 Tree Protection Requirements

- 6.1 The following information sets out the primary consideration for determining the requirement for tree protective measures and in the assessment of development impact. Due to the mass removal of the trees to the east only one tree is required for protection in this area. The trees to the west will only require protection with Heras fencing to prevent any of the construction from entering the area.

Root Protection Areas

- 6.2 The BS5837:2012 RPA is calculated using the trees Diameter at Breast Height (DBH) at 1.5 m and represents the minimum area around each tree that must be left undisturbed to ensure its longevity. Tree roots can be found twice the width of the crown and beyond depending on the tree species and its environment. Most tree roots are found in the top 600mm of soil and most fine roots that absorb water and nutrients are located at the top horizon of soil profile. These near surface tree roots allow the tree to breath and oxygenate. The tree roots can extend well beyond the recommend distances within BS5837:2012 and they may not follow the typical circular area centred from the trees stem.

Ground Contamination

- 6.3 Storage areas for liquids such as fuels, oil or paint should not be located within 10m of any tree due to the risk of soil contamination caused by accidental spillage. Particular care must be taken when working on or close sloping ground to avoid unintentional runoff into the RPA of trees to be retained.

Underground Utilities

- 6.4 No detailed drawing have been provided and therefore no assessment has been made of the position of tree roots and the likely location of new services. Where the installation of services within the RPA of retained trees is unavoidable, appropriate methods will be required to ensure the safe long term longevity of the trees. This process will require additional consultation with a suitably qualified and experienced Arboricultural Consultant

Ground Level Changes

- 6.5 A rise or reduction in soil level can have major implications on the longevity and health of the trees. Minor changes (up to 100mm) can be tolerated in some cases but is heavily dependent on tree species, condition and growing environment.
- 6.6 Existing ground levels within the Root Protection Area should be maintained. The advice of a qualified Arboricultural Consultant should be sought if level changes are required.

Drainage & Storm Water Run-off Issues

- 6.7 Drainage and storm water run-off requires due consideration to prevent excessive and/or polluted run-off into the rooting area of trees to be retained.

Soil Compaction

- 6.8 It is imperative the surface of the soil be protected from compaction from plant machinery and/or machinery. This can create a capping effect on the surface which can stop the tree root from oxygenating and preventing any precipitation.

7.0 Recommendations

- 7.1 The loss of visual amenity with potentially numerous trees being removed to accommodate the proposed developments would initially see significant change. However, there are several fundamental issues with the current tree population in this area. Firstly, because of the lack of management these trees have now grown disfigured displaying poor form and condition. These trees have brittle natured species has been allowed to dominate resulting in an area of high probability of mechanical failure. This has also reduced their potential longevity as a group with many trees being highlighted for removal and/or having a limited life span of approximately 10 years. This whole area is in desperate need of management. With or without the development many trees would need to be removed on the grounds of health and safety and a comprehensive tree planting and management plan over a 10 year period.
- 7.2 There are mostly trees of low quality and value within the proposed area for development with a number of medium quality and value. This can be seen in [Drawing 2 - Tree Planting, Protective Fencing around the Proposed Development](#).
- 7.3 With the loss of these trees it is imperative they are replaced in order to re-establish the continuation of the tree line that currently overhangs Parliament Street. Additionally the screening and privacy of residential housing to the south from the proposed development is fundamental for their coexistence. The tree planting scheme will see the largest trees practically possible planted in modern day planting pits that ensure tree survival and encouraging growth. This will involve a tree planting and management plan for a ten year period which will further require regular maintenance.
- 7.4 Should excavation work or the installation of utilities be required, work should be completed in a sympathetic manner with guidance from BS5837 & NJUG 'Guidelines for the Planning, Installation & Maintenance of Utility Apparatus in Proximity to Trees' in order to minimise any root damage/severance. Please see [Appendix B - njug_v4_trees_issue2.pdf](#) for details and/or visit <https://www.barrelltreecare.co.uk/resources/technical-guidance/> for additional guidance.

8.0 Tree Protection Plan

- 8.1 Firstly the tree works as recommended in [Appendix A – Tree Schedule](#) which would see the removal of all trees within the proposed development. The protection trees can be seen in [Drawing 2 - Tree Planting, Protective Fencing around the Proposed Development](#). The area of trees to the west will see protective fencing installed along the boundary to prevent any part of the construction entering the permeable surfaces of the trees and hedges to be retained.
- 8.2 Additional protection would be from potential building materials, specifically cement. This leaches through the soil profile potentially contaminating the growing medium for existing, future plantings and pollution the waterways. The trees to be retained will require protection from the storage of cement and other such pollutants, this also applies to any water courses. If pesticides are to be used in the clearing of vegetation from the soil profile, then these must be species specific as not to damage the trees to be retained. The RPA's of the trees should be marked out prior to the commencement of any of the above.
- 8.3 If pesticides are to be used in the clearing of vegetation from the soil profile, then these must be species specific as not to damage the trees to be retained. The RPA's of the trees should be marked out prior to the commencement of any of the above.

9.0 Tree Constraints

- 9.1 T60 and T61 London Plane have roots that come close to the proposed developments. Their above and below ground constraints will not be compromised with their rooting areas protected throughout the development. The area of trees to the west will be adequately protected with the installation of Heras fencing. Their protection is listed in the Tree Protection Plan (TPP) and the Arboricultural Method Statement (AMS) listed in this document.
- 9.2 Both the area of trees to the west and the singular tree to the east will be protected by the Heras fencing.
- 9.3 The current site could possibly house construction parking or the storage of building materials within the proposed car parking area.
- 9.4 If electricity, water or other underground services are to pass through existing services or via above ground where possible. The installation must not breach any of the Root Protection Areas of the retained trees.

10.0 Arboricultural Method Statement (AMS)

- 10.1 The AMS has been written as guidance on how the construction has to be carried out with regards to the protection of the green infrastructure. It is imperative that this is carried out correctly.
- 10.2 Carryout all tree work as advised in **Appendix A – Tree Schedule**. Below lists the sequence of the work procedure that is required to be carried out with regards the protection of the trees. This should be read in conjunction with the Arboricultural Implications Assessment (AIS) and the Tree Protection Plan (TPP).
- 10.3 For this section the following methodology is to be applied:
- 1) *All Local Planning Authority fulfilment's have been passed.*
 - 2) *Carry out schedule of tree works confirming to BS3998 **Appendix A – Tree Schedule** or any other agreed work.*
 - 3) *RPA's of the retained trees to the west must be marked out and the Heras fencing installed prior to any work commencing. **Drawing 1 - Tree Mapping, Constraints and Root Protection Areas** with distances listed in **Appendix A - Tree Schedule**.*
 - 4) *Install protection barriers as detailed in **Appendix E** – and positioned as detailed in **Drawing 2 - Tree Planting, Protective Fencing around the Proposed Development** and then signed off by planning. Once installed then the plant machinery can enter the site and the construction can commence.*
 - 5) *Care with the storage of building materials throughout the operation. These must be located where washing away of buildings substances will not encroach onto the RPAs of the trees. For sensitive works within the RPAs of any retained trees, Treestyle Consultancy consultant is to be brought onto site and the necessary tree protection barriers are to be dismantled and sensitive works carried out under direct supervision from Treestyle Consultancy and with strict adherence to advice given regarding individual trees within this method statement.*

11.0 Caveats and Limitations

- 11.1 This survey was carried out from ground level. No aerial inspection was undertaken and, as such, this report can only identify defects clearly visible from the ground. A VTA (Visual Tree Assessment) is a level two arboricultural tree survey. This normally involves a full 360 degree visual of the buttress, stem and crown of the tree. While every attempt has been made to provide a realistic and accurate assessment of the trees' condition at the time of inspection, it may have not been appropriate, or possible, to view all parts or all sides of every tree to fulfil the assessment criteria of a risk assessment.
- 11.2 No tree is entirely safe given the possibility that exceptionally strong winds could damage or uproot even a mechanically 'perfect' specimen. It is therefore usually accepted that hazards are only recognisable from distinct defects or from other failure-prone characteristics of the tree or the site.
- 11.3 Underground services were not confirmed around any of the trees surveyed. The potential influences of trees upon building or other structures resulting from the effects of trees upon shrinkable load-bearing soils or the effect of incremental root growth are specifically excluded from this report.
- 11.4 The report reflects the tree stock as found on the day surveyed. Change of ground levels, soil conditions, surrounding tree cover or land use, or any ground works within the root zone of any tree may invalidate the content of this report. No root zone excavation was undertaken.
- 11.5 Change of circumstance as a result of unusual weather conditions may invalidate the content of this report. It is recommended that trees should be reassessed after strong gale, 39 – 46 mph wind Beaufort scale 8.
- 11.6 The content of this report is valid for 12 months from the cover date. Any works recommended for beyond this time period are based on expectations rather than in response to currently identified defects. Trees should have their condition re-inspected by a qualified arboricultural consultant within three years of this report being written.