

# Arboricultural Impact Assessment (AIA)

Version 4 – Updated to include off site trees

All Saints' Roman Catholic High School  
Prepared for: Tilbury Douglas

Prepared by Simon Brain *Chartered arboriculturist*

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## **1.0 Introduction**

### **1.1 Instruction, Scope, Methodology, Mitigation & Limitations**

- 1.2 My name is Simon Brain, I am a chartered arboriculturist, with 25 years' experience holding the LANTRA Professional Tree Inspection certificate. I have been instructed by the client to prepare the following Arboricultural Impact Assessment for land at All Saints' Roman Catholic High School. AIA version 4 has been specifically updated to include the off site trees which has been included as a separate report in Appendix 3.
- 1.3 This Arboricultural Implications Assessment (AIA) is based on the proposed developments as shown on the Proposed Site plan and incorporated into the Tree Protection Plans (TPP) in Appendix 1 of this report.
- 1.4 The assessment will be carried out in line with the recommendations in BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* and will evaluate the direct and indirect impacts of the proposed design and where necessary recommend mitigation.
- 1.5 The AIA considers constraints posed above and below ground and where appropriate makes recommendations to mitigate impacts associated with development sites and retained trees.
- 1.6 Where specialist design, construction techniques or in areas where supervision of the works is required a Special Measure Area (SMA) has been shown on the TPP for the study areas.
- 1.7 Below ground constraints are influenced by the root protection area and are determined in line with the recommendations set out in BS 5837:2012. These recommendations quantify the root protection area based on a measured stem diameter in accordance with Annex C, and the root protection area determined from Annex D.

- 1.8 It is important to understand that when considering the Root Protection Area (RPA) with regards to the circular plot as delineated on the TPP that a number of site factors can influence root morphology and disposition of tree roots.
- 1.9 Above ground constraints are considered above and below ground and in line with the recommendations in BS 5837:2012 to include; shade, dominance, current and future crown spread as well as the ultimate height of those retained trees.
- 1.10 Impacts associated with development sites and retained trees can be associated with single or multiple site operations that can subject trees to multiple impacts (*root severance, compaction, loss of photosynthetic material*), where this is applicable it will be highlighted in the AIA.
- 1.11 The mitigation measures proposed in this report are essential to ensure that trees marked for retention are adequately protected during the period of post/preconstruction.

## **2.0 Arboricultural Impact Assessment**

### **2.1 Area for proposed development**

2.2 The proposed development has been embedded within the Tree Constraints Plan which indicates the following developments associated with this site to have an arboricultural impact:

- New surfacing (including existing surface removal) in the vicinity of retained trees
- Installation of proposed development infrastructure requiring tree removal

2.3 The arboricultural impacts of these items have been identified below.

2.3.1 New surfacing (including existing surface removal) in the vicinity of retained trees.

New surfacing in the RPA of T22 is within a designated Special Measure Area (SMA) and construction of this can only be proposed as 'no dig' construction if the following items can be achieved:

- A cross section of the existing and proposed ground levels is submitted for arboriculture review.
- A detailed engineer-based drawing specification of the no dig driveway is produced for arboriculture review
- The California Bearing Ratio and soil structure are acquired and have undergone arboriculture review.
- Future maintenance, water interception, pollution potential and deformation potential of the new surface is assessed.
- No walls of any kind will be acceptable in the RPA.
- A full AMS is needed when these matters have been managed to support a planning application which will detail sequencing, methods,

materials, tree protections, personnel and a detailed supervisory timetable with the provision of compliance reporting at regular intervals.

These items are required as the trees are due to be retained and the information is needed to demonstrate the acceptability of the proposal.

Typical no dig construction can consist of:

- Establishment of the California Bearing Ratio of the land in question order to inform engineers of type and capacity of load bearing cellular confinement system to be used.
- Appoint and confirm engineer for design and supply of a suitable load bearing geo cellular confinement system requiring no more than 25cm of excavation for top soil preparation only.
- Driveway is constructed and finished to the agreed specifications before any other general building activity commences on site.
- The cellular confinement system shall be guaranteed by the supplier so as not to cause subsequent compaction for a period of ten years.
- Typically, a 'no dig' approach (based on APN12 Driveways close to trees) will be taken with the confinement system being laid directly onto the existing ground level; where local cuts and fills are required this shall be no more than 75-100mm in depth.
- Typically, a confinement system of 150mm in depth is used.
- Edge restraints shall be required, and they shall be secured by means of small metal ties approximately 50cm+ long at appropriate intervals.

- The cellular confinement system shall be laid by pedestrian means under the consultant's on-site supervision. Small excavators can be used on the surface when it is newly laid and when ground boarding is provided.
- The system shall be filled with granular material that retains porosity and maintain a porous finished wearing surface such as pea gravel or resin bonded gravel. Proprietary surface coverings that may be suitable for some surfaces include Flexipave and Permadrive.
- All surface construction when complete shall be covered in on ground boarding throughout the SMA for the remainder of the build period.
- All surface construction if acceptable will be located with Special Measure Areas (SMA) which is designated on the Tree Protections Plan (TPP). All construction shall be supervised on site by a qualified arboricultural consultant whom shall record all progress and oversee all new surface installations in the RPA's affected and document the installation in the event of any future third party claims.

NOTE: The chronological order of events shall be as follows.

Following installation of the CEZ access is installed under supervision to no dig specification provided and all new surfacing's are protected by on ground boarding such as scaffold boards prior to any other construction activity commencing in the vicinity. It is however critical that ground boarding is proportionate to the load anticipated to be exerted on the surface. Therefore, in areas of proposed driveway where vehicular (car) and pedestrian traffic is anticipated during / post construction scaffold boarding is enough above the newly laid surface. However, heavier construction related deliveries may be required and ground boarding shall be upgraded to bog mat or similar which must bear the anticipated

load. Both types of on ground boarding are required for the construction duration.

An existing hard standing in the RPA of T22, 1-5,13,18,39 and 40 is present. The removal of the existing surface within the RPA/SMA shall be conducted under arborist supervision using hand tools and air spade excavation. No CEZ relocation can occur without arborist sign off. The arborist shall direct the surface extraction. The excavated area shall be backfilled with clean and certified topsoil's and re seeded. The area may require de compaction which will be confirmed during the surface removal. Following works the arborist shall sign off the position of the CEZ as per the location provided within the TPP. All new surfacing shall be no dig.

2.3.2 Installation of proposed development access requires the removal of the following tree references:

- T3,T6,T7,T8,T9,T10,T11,T12 and 4no. trees in G3. Note some tree removals may be needed in G3 (currently area in abeyance).

### **3.0 Tree Preservation Orders**

3.1 I have checked with the LPA over Conservation Area or Tree Preservation Order and if they apply to this site. A TPO is located off site to the west.

### **4.0 Trees to be removed and retained**

4.1 The following trees have been identified for removal due to their condition (Category U): None.

4.2 A total of twelve individual trees are identified to be removed for the direct impact of development as listed in section 2.3.2.



4.3 The remaining trees are due to be retained and protected as outlined on the TPP by methodology needed in an AMS.

## **5.0 Root Protection Areas (RPA)-modifications**

5.1 Root Protection Areas have been plotted in line with the guidance given in BS 5837: 2012 where ground constraints have had or are likely to effect the root morphology of trees e.g. where underground utilities or building foundations have obstructed root growth this shall require formal confirmation by excavation to establish presence or absence of significant rooting material. No RPA modifications have been shown for this scheme.

## **6.0 Post construction considerations**

6.1 Not applicable due to nature of development.

## **7.0 Tree pruning to facilitate development and future pruning**

7.1 There are no requirements for minor levels of tree pruning to facilitate the proposed development.

## **8.0 New surfacing and ground level modifications**

8.1 New surfacing is required in RPA of retained tree number T22.

## **9.0 Construction Exclusion Zones and Special Measure Areas**

9.1 The Construction Exclusion Zone has been shown as a black fenced polyline on the TPP in Appendix 1 and shall be constructed using heras panels and rubber feet securely staked to the ground.

9.2 The CEZ is purposefully located within proposed new surfacing near TPO trees in order to prompt site supervision and wider protective measures when new surfacing is installed.

- 9.3 The CEZ must be installed as signed off as fit for purpose before any other works commence on site.

## **10.0 Site supervision and monitoring**

- 10.1 Where a tree has been delineated on the TPP as requiring retention there will be a requirement to oversee construction operations in these areas in order to ensure that no damage occurs to the retained tree.
- 10.2 To ensure that there is an auditable system of site monitoring, reports will be compiled by an appointed arborist and following site visits they issued to the site manager and design team, copies of which will be available on site at all times for inspection by a Council planning/Tree officer.

## **11.0 Installation of below ground infrastructure**

- 11.1 No detailed plans have been provided specifying the location of site utilities
- 11.2 Specialist advice with regards to the position of utilities will need to be sought from engineers and must be reviewed by the consulting arboriculturist prior to commencement on site.
- 11.3 The usual construction techniques for installing site utilities within an RPA will be unacceptable due to the level of root severance that would occur. The impact of root severance will have a detrimental effect on tree health as trees require a healthy root system in order to maintain water and mineral uptake from the soil. Trees need to maintain a balance between shoot and root growth to ensure that the resources supplied by each can meet the demand of the other. Severance of tree roots caused by trenching can lead to reduced water uptake which in turn impacts on the trees ability to supply water to the canopy, resulting

in desiccation. A further complication associated with root severance can be problems associated with tree stability. The tree relies on an intact root system in order to maintain stability; this stability will be compromised by root severance.

- 11.4 The use of trenchless techniques can be acceptable provided the depth of service run that is excavated is below the anticipated root depth.

## **12.0 Design change requirements**

- 12.1 Design change requirements have not been necessary.

## **13.0 Amenity Value**

The retention of significant arboricultural assets has been achieved on the road frontage so as to retain the provision of visual amenity.

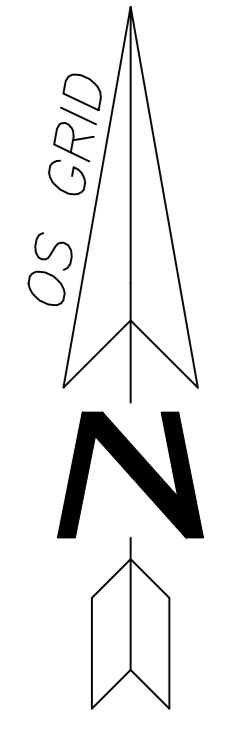
It is considered that the successful establishment of replacement trees could mean an improvement in the long term wider visual public amenity associated with the trees on these sites, particularly if planting can be proposed to the west of T33 and replace T40,39,T1-5.

## **14.0 Concluding statement**

- 14.1 The proposed scheme was assessed in line with guidance provided in BS 5837:2012 *Trees in relation to design demolition and construction – Recommendations* with the aim to achieve a harmonious relationship between trees and structures that can be sustained in the long term.
- 14.2 It is my professional opinion as an arboriculturist that a harmonious balance of retained and removed trees that would be considered acceptable by the LPA has been achieved.
- 14.3 An AMS is required for air spade and surface removals.

14.4 Further individual tree surveying has been completed in reference to G2 to determine the extent of RPA/canopy overhang in G2 and impact of these factors on the proposals to construct a MUGA and is contained in Appendix 3.

## Appendix 1 Tree Protection Plan

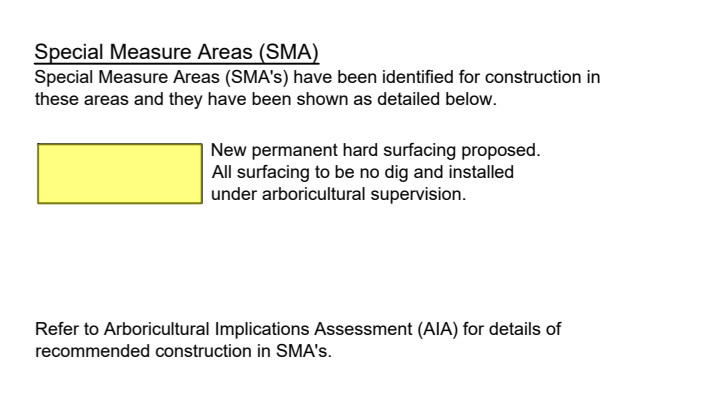
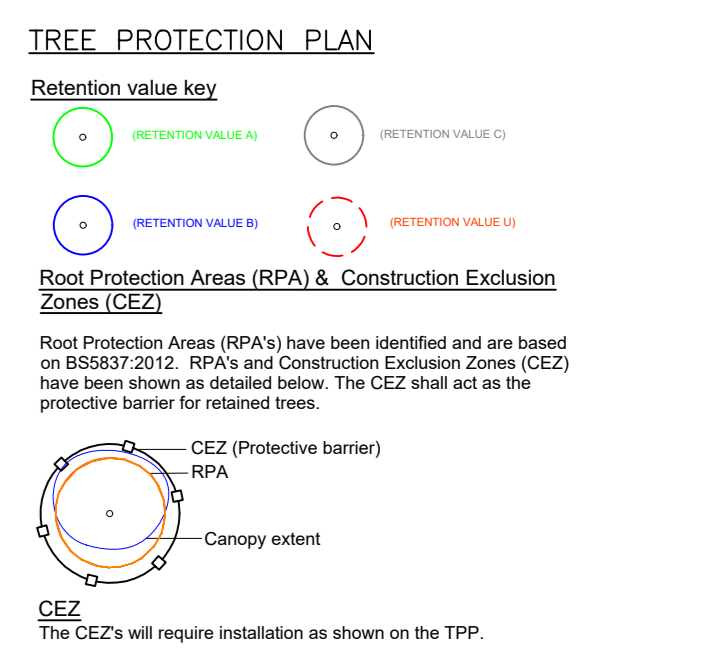


**NOTES**

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Rev	Date	Notes	By	CHK
01	20.02.23	For Issue	SB	SB
02	16.02.23	Rev 3 Issues	SB	SB
03	09.02.23	For Issue - include existing areas in Willow covered in soil	SB	SB
04	09.02.23	with Client Review	SB	SB

- KEY**
- Vehicle grade Asphalt Concrete to Engineers spec with 150mm R2 road beds
  - Concrete block paving on top of 80mm R2 road beds. 750mm x 750mm x 40, over gill first over MOT type 3 sub base
  - Pedestrian grade roadways to Engineers spec with 100mm R2 road beds
  - M&J Use Green Area retention / Tennis Courts to Engineers spec with 100mm R2 road beds
  - Existing trees to be removed (Dashed lines to be removed)
  - Existing trees with root protection area shown in orange. Retained and protected during construction in accordance with Tree Protection Plan
  - New tree planting, 14 - 18cm girth. 50mm new trees to replace 10cm trees to be removed.
  - Medium / no retention amenity areas shown. New grass areas to be seeded over 100mm depth of topsoil
  - Wildflower meadow seeded over 100mm depth of topsoil. 50% Flowering Meadow seed mix from Central Avenue sown at 5g/m<sup>2</sup>
  - Park Grasses. Species to include: *Vilumium ovatum*, *Cornus sanguinea*, *Indigofera tinctoria*, *Scilla maritima*, *Vincetoxicum*, *Bergenia* spp. *Impatiens*, *Hyssopus*, *Thalictrum*, *Artemisia*, *Chamaecrista*, *Coronilla varia*, *Crataegus* spp., *Quercus* spp., *Asplenium* spp., *Epipactis atrorubens*, *Campanula medium*.
  - Complement shrub planting over 400mm depth topsoil to complement shrub planting over 100mm depth topsoil. Planting depth to be 1.8m. 100mm depth topsoil to be 100mm depth topsoil.
  - Hedge shrub planting into 400mm depth topsoil & compost. 10cm shrubs per m<sup>2</sup> in 3 line sets. 100mm depth topsoil to be 100mm depth topsoil. 100mm depth topsoil to be 100mm depth topsoil. 100mm depth topsoil to be 100mm depth topsoil.
  - Levels, see Engineers drawing for detailed levels
  - EV charging (see unit for 2no. cars)
  - Door Hinge - 8no.
  - Low Level Cycle Rack
  - Wardens Door Barrier MDR003
  - Cycle Shelter
  - Bin Store
  - Aluminium Store
  - Park Bench 5no.
  - Seating Furniture
  - Seating Furniture
  - Bin Store
  - Teacher Planter Box
  - Barrier fencing
  - Storage
  - Dropoff/Collection
  - Fire Hydrant
  - External Tap
  - External Drinking Fountain
  - Existing Legal Easement Line (Fencing to remain as existing)
  - Existing internal fencing to remain
  - New 1.8m high wood mesh fence
  - New 3m High M&JSA / Tennis Court Sports fence
  - Existing brick retaining wall (existing)
  - Proposed retaining structure (above TPO)
  - New 1.8m high Block H& and metal fencing
  - No works to be undertaken within this area



**Refer to Arboricultural Implications Assessment (AIA) for details of recommended construction in SMA's.**

**NOTES**

This drawing shall not be reproduced in black and white. This drawing is produced for Planning and Construction.

**elliswilliams**

Project Number: 2872  
 Project Name: All Saints RC Secondary School  
 Drawing Number: SRP1051-EWA-ZZ-ZZ-D-A-9002  
 Drawing Name: Site Plan  
 Scale: 1:500 @ A1 Rev: P2

The Annexe, Willow Hill Cottages, School Lane, Burwadsley, Chester, CH3 9NX Tel: 01829 770075

Client:	Tilbury Douglas
Project:	All Saints
Drawn By:	SB
Date:	22.02.23
Scale:	1:500 - A1
Dwg No:	TR-01-Sheet 1
Revision:	V2

## Appendix 2 survey sheets

Tree No.	Common Name	Latin name	Life Stage	Diameter(mm)	Stems	Height(m)	Crown Height(m)	North(m)	South(m)	East(m)	West(m)	Category	Remaining Life Expectancy	Comments	Recommendations following AIA	RPR(m)	RPA(m)
T1	Norway Maple	Acer platanoides	M	680	1	12	4	7	7	7	7	B2	40+		Proposed road further from tree stem and existing road likely to act as root barrier therefore tree retained subject to SMA. Requires supervised air spade excavation in SMA. AMS needed.	8.2	209
T2	Norway Maple	Acer platanoides	M	590	1	12	4	6	6	6	6	B2	40+		Proposed road further from tree stem and existing road likely to act as root barrier therefore tree retained subject to SMA. Requires supervised air spade excavation in SMA. AMS needed.	7.1	157
T3	Common Alder	Alnus glutinosa	M	410	1	12	4	4	4	4	4	B2	40+		Remove for development and replace within landscape planning	4.9	76
T4	Norway Maple	Acer platanoides	M	570	1	12	4	6	6	6	6	B2	40+		Proposed road further from tree stem and existing road likely to act as root barrier therefore tree retained subject to SMA. Requires supervised air spade excavation in SMA. AMS needed.	6.8	147
T5	Norway Maple	Acer platanoides	M	620	1	12	4	6	6	6	6	B2	40+		Proposed road further from tree stem and existing road likely to act as root barrier therefore tree retained subject to SMA. Requires supervised air spade excavation in SMA. AMS needed.	7.4	174
T6	Norway Maple	Acer platanoides	M	470	1	12	4	6	6	6	6	B2	40+		Remove for development and replace within landscape planning	5.6	100
T7	Norway Maple	Acer platanoides	M	470	1	10	4	6	6	6	6	B2	40+		Remove for development and replace within landscape planning	5.6	100
T8	Common Alder	Alnus glutinosa	M	325	1	10	4	3	3	3	3	B2	40+		Remove for development and replace within landscape planning	3.9	48
T9	Common Alder	Alnus glutinosa	M	480	1	11	4	5	5	5	5	B2	40+		Remove for development and replace within landscape planning	5.8	104
T10	Common Alder	Alnus glutinosa	M	375	1	11	4	5	5	5	5	B2	40+		Remove for development and replace within landscape planning	4.5	64
T11	Common Alder	Alnus glutinosa	M	375	1	11	4	3	3	3	3	B2	40+		Remove for development and replace within landscape planning	4.5	64
T12	Common Alder	Alnus glutinosa	M	430	1	11	4	4	4	4	4	B2	40+		Remove for development and replace within landscape planning	5.2	84



Tree No.	Common Name	Latin name	Life Stage	Diameter(mm)	Stems	Height(m)	Crown Height(m)	North(m)	South(m)	East(m)	West(m)	Category	Remaining Life Expectancy	Comments	Recommendations following AIA	RPR(m)	RPA(m)
T13	Norway Maple	Acer platanoides	M	520	1	12	4	5	5	5	5	B2	40+		Proposed road further from tree stem and existing road likely to act as root barrier therefore tree retained subject to SMA. Requires supervised air spade excavation in SMA. AMS needed.	6.2	122
T14	Whitebeam	Sorbus aria	M	325	1	6	4	3	3	3	3	B2	40+		Retained within CEZ	3.9	48
T15	Lawson Cypress	Chamaecyparis lawsoniana	M	325	1	10	4	3	3	3	3	B2	40+		Retained within CEZ	3.9	48
T16	Ash	Fraxinus excelsior	M	590	1	12	4	7	7	7	7	B2	40+		Retained within CEZ	7.1	157
T17	Ash	Fraxinus excelsior	M	530	1	12	4	7	7	7	7	B2	40+		Retained within CEZ	6.4	127
T18	Norway Maple	Acer platanoides	M	548	2	12	4	6	6	6	6	B2	40+		Proposed road further from tree stem and existing road likely to act as root barrier therefore tree retained subject to SMA. Requires supervised air spade excavation in SMA. AMS needed.	6.6	136
T19	Norway Maple	Acer platanoides	M	460	2	12	4	3	3	3	3	B2	40+		Retained within CEZ	5.5	96
T20	Whitebeam	Sorbus aria	M	375	1	6	4	3.5	3.5	3.5	3.5	B2	40+		Retained within CEZ	4.5	64
T21	Common Alder	Alnus glutinosa	M	270	1	8	4	4	4	4	4	B2	40+		Retained within CEZ	3.2	33
T22	Norway Maple	Acer platanoides	M	590	1	12	4	6	6	6	6	B2	40+		Minor loss of RPA for proposed adoptable road (excavation greater than 500mm). SMA applies for existing surface removal and new surface installation. Air spade required throughout. No dig requirement for new surfacing. Refer to AMS. AcOW required on site to compliance all measures taken	7.1	157
T23	Norway Maple	Acer platanoides	M	382	2	9	4	4	4	4	4	B2	40+		Retained within CEZ	4.6	66
T24	Norway Maple	Acer platanoides	M	300	1	9	4	4	4	4	4	B2	40+		Retained within CEZ	3.6	41
T25	Common Alder	Alnus glutinosa	M	300	1	9	4	4	4	4	4	B2	40+		Retained within CEZ	3.6	41
T26	Apple	Malus	M	330	1	9	4	5.5	5.5	5.5	5.5	B2	40+		Retained within CEZ	4	49
T27	Cherry Plum	Prunus cerasifera	M	240	1	9	4	3	3	3	3	B2	40+		Retained within CEZ	2.9	26
T28	Japanese Larch	Larix kaempferi	M	440	1	16	4	4	4	4	4	B2	40+		Retained within CEZ	5.3	88
T29	Japanese Larch	Larix kaempferi	M	520	1	16	4	2	4.5	2	2	B2	40+		Retained within CEZ	6.2	122
T30	Japanese Larch	Larix kaempferi	M	375	1	16	4	2	2	2	2	C2	40+		Retained within CEZ	4.5	64
T31	Ash	Fraxinus excelsior	M	400	1	16	4	5	2	4	4	B2	40+		Retained within CEZ	4.8	72
T32	Field Maple	Acer campestre	M	410	1	12	4	4	3	4	4	B2	40+		Retained within CEZ	4.9	76
T33	Ash	Fraxinus excelsior	M	470	1	16	4	4	5	5	5	B2	40+		Retained within CEZ	5.6	100
T34	Common Alder	Alnus glutinosa	M	375	1	14	4	4	2	2	2	B2	40+		Retained within CEZ	4.5	64
T35	Leyland Cypress	X Cupressocyparis leylandii	M	600	1	18	4	5	5	5	5	B2	40+		Retained within CEZ	7.2	163
T36	Sycamore	Acer pseudoplatanus	M	620	1	18	4	2	5	4	4	B2	40+		Retained within CEZ	7.4	174
T37	Sycamore	Acer pseudoplatanus	M	375	1	12	4	3	3	3	3	C2	40+	Major bark wounding on stem.	Retained within CEZ	4.5	64
T38	Leyland Cypress	X Cupressocyparis leylandii	M	1050	1	18	4	6	6	6	6	B2	40+		Retained within CEZ	12.6	499

Tree No.	Common Name	Latin name	Life Stage	Diameter(mm)	Stems	Height(m)	Crown Height(m)	North(m)	South(m)	East(m)	West(m)	Category	Remaining Life Expectancy	Comments	Recommendations following AIA	RPR(m)	RPA(m)
T39	Bird Cherry	Prunus padus	Y	150	1	7	4	2	2	2	2	C2	40+		Proposed road further from tree stem and existing road likely to act as root barrier therefore tree retained subject to SMA. Requires supervised air spade excavation in SMA. AMS needed.	1.8	10
T40	Bird Cherry	Prunus padus	OM	560	1	7	4	4	4	4	4	B2	40+		Proposed road further from tree stem and existing road likely to act as root barrier therefore tree retained subject to SMA. Requires supervised air spade excavation in SMA. AMS needed.	6.7	142
T41	Cypress	Cuppressus spp	M	250	1	10	4	2	2	2	2	C2	20+		Retained within CEZ	3	28
T42	Sycamore	Acer pseudoplatanus	M	750	1	17	4	7	7	7	7	A2	20+		Retained within CEZ	9	254
G1	Ash Cherry Plum Crataegus spp.	Fraxinus excelsior, Prunus cerasifera, Crataegus spp.	M	150	1	5	4	2	2	2	2	C2	40+	Scrub regeneration.	Retained within CEZ	1.8	10
G2	Sycamore Ash	Acer pseudoplatanus, Fraxinus excelsior	M	300	1	7	4	2	2	2	2	C2	40+	Not found on plan. Plotted by eye on plan. In neighbouring property.	A group of trees growing in an area of abeyance. Notable overlap of canopy and root into site. No topographical detail present. Undertake individual tree survey to determine RPA extents and update AIA OR remove tennis court proposal from within canopy.	3.6	45
G3	Silver Birch	Betula pendula Youngii	Y	212	2	7	4	2	2	2	2	C2	20+		Remove for development and replace within landscape planning	2.5	20
G4	Sycamore Common Alder	Acer pseudoplatanus, Alnus glutinosa	M	325	1	10	4	5	5	5	5	B2	20+	Landscape buffer plantings off site overhanging into site.	Retained within CEZ	3.9	48
G5	Silver Birch	Betula pendula	M	300	1	13	4	4	4	4	4	B2	20+		Retained within CEZ	3.6	41
G6	Silver Birch Field Maple Sycamore Large-leaved Lime English Elm Beech	Betula pendula, Acer campestre, Acer pseudoplatanus, Tilia platyphyllos, Ulmus procera, Fagus sylvatica	M	500	1	17	4	5	5	5	5	A2	20+		Retained within CEZ	6	113
G7	Sycamore Large-leaved Lime English Elm Beech Scots Pine	Acer pseudoplatanus, Tilia platyphyllos, Ulmus procera, Fagus sylvatica, Pinus sylvestris	M	450	1	17	4	5	5	5	5	A2	20+	Not found on plan. Plotted by eye on plan.	Retained within CEZ	5.4	92
G8	Sycamore Common Alder	Acer pseudoplatanus, Alnus glutinosa	M	325	1	10	4	5	5	5	5	C2	20+	Landscape regeneration off site overhanging into site.	Retained within CEZ	3.9	48

**Appendix 3 Off site trees Tree Constraints Report and Tree Protection Plan**

# AMENITYTREE

ENVIRONMENTAL PLANNING CONSULTANTS

## Tree Survey and Constraints Report

All Saints Rossendale – Off site trees

Report prepared for Tilbury Douglas

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## **1.0 Instruction**

- 1.1 Amenity Tree Care has been instructed by Tilbury Douglas to prepare the following Tree Constraints Report for land at All Saints High School (off site trees).
- 1.2 The survey was conducted using the client supplied topographical data.
- 1.3 The tree constraints report was carried out in line with the recommendations in BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* and evaluates the direct and indirect impacts of the current tree population.
- 1.4 The constraints assessment considers constraints posed above and below ground and should be used to inform any future design layout.
- 1.5 Further consideration will be required at the design stage in the form of an impact assessment that evaluates the direct and indirect effects of any proposed design and where necessary will recommend mitigation.
- 1.6 Below ground constraints are influenced by the root protection area and are determined in line with the recommendations set out in BS 5837:2012. These recommendations quantify the root protection area based on a measured stem diameter in accordance with Annex C, and the root protection area determined from Annex D of BS 5837:2012.
- 1.7 It is important to understand that when considering the root protection area with regards to the circular plot as delineated on the tree protection plan that a number of site factors can influence root morphology and disposition of tree roots. Root morphology is considered when determining the impacts of the proposed development on existing woody vegetation.
- 1.8 Above ground constraints are considered in line with the recommendations in BS 5837:2012 and include shade dominance, current and future crown spread as well as the ultimate height of those retained trees.

## **2.0 Report Limitations**

- 2.1 The inspection has been carried out from ground level only, using visual observation. Where a more detailed inspection is required, this is highlighted in the recommendations.
- 2.2 Trees are living organisms whose health and condition can change rapidly. The health, condition and safety of trees should be checked on a regular basis, preferably at least once a year. The conclusions and recommendations in this report are only valid for a period of six months from the date of this report. This period of validity may be reduced in the case of any change in conditions to or in proximity to the tree.
- 2.3 No check has been undertaken for the presence of a Tree Preservation Order / Conservation Area.
- 2.4 Any legal descriptions or information given to the consultant are understood to be accurate.
- 2.5 No responsibility is assumed by Amenity Tree Care Ltd for legal matters that may arise from this report and the consultant shall not be required to give testimony or to attend court unless subsequent contractual arrangements are made.
- 2.6 Any alteration or deletion from this report will invalidate it as a whole and the conclusions of this report will remain valid for six months from the date of the inspection.
- 2.7 The responsibility for any tree work(s) undertaken on the surveyed trees rests with the land managers.

### **3.0 Methodology and data collection**

- 3.1 The site was visited as indicated above and the trees were assessed visually utilising the Visual Tree Assessment methodology (Matteck, C., et al.).
- 3.2 Each individual tree has been assessed with general regard to condition, health and structural suitability and commented upon in the report.
- 3.3 An individual and group schedule is appended to this report and includes detailed information relating to tree height *both current and future*, stem diameters, crown dimensions and estimated remaining contribution.
- 3.4 Where dimensions have been recorded the following measurement conventions have been observed
  - a) Height, crown spread and crown clearance have been recorded to the nearest half metre (crown spread has been rounded up) for dimensions up to 10m and the nearest whole meter for dimensions over 10m.
  - b) Stem diameters have been recorded in millimetres and rounded to the nearest 10mm
  - c) Where dimensions have been estimated (*e.g. for those trees located off site or where access is restricted, and accurate data cannot be recorded*) these trees will be suffixed with #.
- 3.5 Where necessary recommendations for remedial tree works (Preliminary Management Recommendations) are provided on the basis of the tree(s) current condition.
- 3.6 Trees growing as groups or woodland have been identified and assessed by the arboriculturist. An assessment has been undertaken of the individual trees within the group/woodland in order to determine the category score and aid future management plans.
- 3.7 Trees that have not been identified on the topographical survey have been plotted by eye on site and identified as such on the tree survey schedule (#).



**4.0 Arboricultural Constraints**

- 4.1 Below ground constraints are influenced by the root protection area (RPA) and are determined in line with the recommendations set out in section 4.6 of BS 5837:2012. These recommendations quantify the RPA based on a measured stem diameter in accordance with Annex C, and the RPA determined from Annex D. The RPA for trees with two to five stems are assessed using the calculation in 4.6.1. It is important to understand that when considering the RPA with regards to the circular plot that a number of site factors can influence the root morphology and disposition of tree roots as stated in section 4.6.3 of BS 5837:2012. Trees that form the leading edge of groups/woodland are recorded at intervals along the woodland/group edge in order to accurately plot a root protection area. All these factors must be considered when contemplating the impacts of the potential development on existing woody vegetation.
- 4.2 Above ground constraints posed by existing trees can significantly affect the proposed land use and the subsequent condition will be considered by the planning officer should the development be allowed to proceed. Above ground, constraints are considered in line with the recommendations in section 5.2 of BS 5837:2012 and include shade dominance, current and future crown spread as well as the ultimate height of those retained trees.

**5.0 Summary**

Category A	Category B	Category C	Category U
	T1;T2;T7;T9;T10	T3;T4;T5;T6;T8;T12;T13; T14;T15;G1;G2;G3;G4	T11
<b>Summary:</b> A total of 19 tree records were surveyed across the site			

**Note:** Please refer to tree survey schedule for detailed dimensions and specific site comments

## Appendix 1

### Survey Key

**Tree No.** Sequential reference number e.g., T1, T2 for individual trees, where trees are determined to be a group they will be denoted as follows G1, G2 and W1, W2 for woodlands.

**Species:** Recorded and listed by both common name and scientific name

**Stem:** Principal above ground structural component(s) of a tree that supports its branches.

**Height:** Provides indication of the height of the tree and is measured in meters from ground level to the upper canopy edge and is recorded up to the nearest half meter for heights up to 10 meters and the nearest meter for heights over 10 meters.

**Stem diameter:** Measured at a height of 1.5 meters from ground level using a diameter tape and recorded in millimetres. Where the stem cannot be measured at 1.5 meters due to irregular swellings on the stem or low branching then the position of measurement will be taken in accordance with the specification in Annex C of BS 5837:2012

**Crown spread:** Measured at the four cardinal points of a compass (north, south, east, and west) from the centre of the stem and rounded up to the nearest meter in order to provide an accurate representation of the crown spread in order to show above ground constraints.

**Crown height:** Measured distance between the lowest points of the crown from ground level.

**Life stage:** A method of age estimation e.g. young - the first one third of the estimated life expectancy, middle mature- the second third of the estimated life expectancy, mature- The last third of the estimated life expectancy , over mature- trees showing obvious signs of senescence

**First significant branch (FSB):** The direction of growth of the first significant branch from the point of attachment.

**Comments:** A brief evaluation and description of the tree in order to inform on significant defects or characteristics relating to tree form. Where comments are not present it should be assumed that no relevant features were exhibited.

**Recommendations:** Arboricultural recommendations based on the current land use only and are provided where action is required in order to aid in the long term management of the tree or for reasons of site safety.

**Survey restrictions:** It may be necessary on occasion to estimate tree dimensions where access is not available or where structure(s) or vegetation is precluding the visual assessment. Where dimensions are estimated it will clearly be marked in the tree survey schedule and be suffixed with #.

**Root protection area (RPA)** Layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the trees viability. All stem diameters are calculated in line with the guidance given in BS 5837:2012 Annex D

**Tree categorisation:** a method of apportioning a value (non-fiscal) to trees in order to identify the quality and value of existing tree stocks, allowing for informed decisions to be made regarding which trees are to be retained or removed dependant on development occurring. Category U-Those in such a condition that cannot realistically be retained as living trees in the context of the current land use for longer than 10 years. Category A-Trees of a high quality with an estimated life expectancy of at least forty years. Category B-Trees of a moderate quality with an estimated remaining life expectancy of at least 20 years. Category C-Trees of a low quality with an estimated remaining life expectancy of at least 10 years.

*Please refer to Table 1 Cascade chart for tree quality assessment, including subcategories, reference BS 5837:2012*

**Estimated remaining contribution:** estimated remaining life expectancy e.g. <10, 10+, 20+, 40+

### **Statutory wildlife obligations: The Wildlife and Countryside Act 1981**

The Wildlife and Countryside Act 1981 as amended, the Countryside and rights of Way Act 2000 and the Conservation (Natural Habitats) Regulations 1994.

These regulations protect all wild birds and make it an offence to intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

Furthermore the Act makes it an offence (with exception to species listed in Schedule 2) to intentionally:

- kill, injure, or take any wild bird,
- take, damage or destroy the nest of any wild bird while that nest is in use or being built (also [take, damage or destroy the nest of a wild bird included in Schedule ZA1] under the Natural Environment and Rural Communities Act 2006), or
- take or destroy an egg of any wild bird

Bats are protected under Schedule 2 of the Conservation (Natural Habitats) Regulations 1994 making it an offence to damage or destroy a roost site even if the roost is not occupied at the time. The potential fines for each offence is £5000 and if more than one bat is involved in the incident then the fine can be extended to £5000 per bat. A prison sentence can be issued with offenders serving up to six months in prison.

## Appendix 2

**Table 1 cascade chart**

Category and definition	Criteria (including subcategories where appropriate)	Identification on plan		
Trees unsuitable for retention (see Note)				
<b>Category U</b>  Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	<ul style="list-style-type: none"> <li>• 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 category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)</li> <li>• Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline</li> <li>• Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality</li> </ul> <b>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7</b>			
		<b>1 Mainly arboricultural qualities</b>	<b>2 Mainly landscape qualities</b>	<b>3 Mainly cultural values, including conservation</b>
<b>Trees to be considered for retention</b>				
<b>Category A</b>  <b>Trees of high quality</b> with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	
<b>Category B</b>  <b>Trees of moderate quality</b> with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	
<b>Category C</b>  Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	

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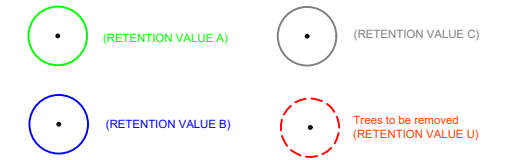
**Appendix 3 Survey schedule**

## **Appendix 4 Tree Constraints Plan**

Tree No.	latin name	Life Stage	Diameter(mm)	Height(m) / Crown Height (m)	North(m)	South(m)	East(m)	West(m)	Category	Estimated Remaining Life Expectancy (yrs)	Comments	Recommendations	RPR(m)	RPA(m)
T1	Salix caprea (Goat Willow)	SM	571	13(2.5)	6	6	6	6	B1	20+	Unable to inspect stem due to undergrowth. Branches encroaching upon building.Off site tree		6.85	147.43
T2	Fraxinus excelsior (Ash)	SM	474	13(2)	3	3	3	3	B1	20+	Unable to inspect stem due to undergrowth. Stem divides below 1.5m. Major deadwood in crown.Off site tree		5.69	101.73
G1	Chamaecyparis lawsoniana (Lawson Cypress)	SM	160	2.5(0.5)	1	1	1	1	C2	40+	Off site tree		1.92	11.58
G2	Chamaecyparis lawsoniana (Lawson Cypress)	SM	255	8(0.5)	2	2	2	2	C2	40+	Off site tree		3.06	29.42
T3	Sambucus nigra (Elder)	SM	357	6(1)	2	2	4	2	C1	20+	Multiple stems at ground level. Included bark present in fork.Off site tree		4.28	57.56
T4	Fraxinus excelsior (Ash)	SM	523	13(2)	6	6	6	1	C1	20+	Poor shape & form. Part of linear group.Off site tree. Canopy overhanging boundary line into school grounds		6.28	123.92
G3	Fraxinus excelsior (Ash)	SM	255	13(2)	5	5	5	5	C2	20+	Off site tree. Canopy overhanging boundary line into school grounds		3.06	29.42
T5	Crataegus monogyna (Hawthorn)	SM	341	7(0.3)	3	3	3	3	C1	40+	Multiple stems below 1.5m. Included bark present in fork.Off site tree		4.09	52.56
T6	Quercus petraea (Sessile Oak)	SM	228	14(4)	2	2	2	2	C1	40+	Stem divides below 1.5m. Included bark present in fork.Off site tree		2.74	23.59
T7	Quercus petraea (Sessile Oak)	SM	280	14(2)	1	3	4	1	B1	40+	Off site tree		3.36	35.47
T8	Sequoia sempervirens (Coast Redwood)	SM	255	5(2)	1	4	3	2	C1	20+	Stem divides below 1.5m. Included bark present in fork.Off site tree		3.06	29.42
T9	Quercus petraea (Sessile Oak)	EM	390	14(2)	4	5	2	2	B1	40+	Off site tree		4.68	68.82
T10	Quercus petraea (Sessile Oak)	SM	280	14(1.6)	6	3	3	4	B1	40+	Off site tree		3.36	35.47
T11	Fraxinus excelsior (Ash)	SM	201	9(1.5)	3	2	3	2	U	<10	Off site tree		2.41	18.25
T12	Salix caprea (Goat Willow)	EM	355	7(2)	5	2	3	4	C1	20+	Off site tree. Canopy overhanging boundary line into school grounds		4.26	57.02
G4	Fraxinus excelsior (Ash)	SM	255	14(5)	3	3	3	3	C2	20+	Unable to inspect stem due to undergrowth. Major deadwood in crown.Off site tree		3.06	29.42
T13	Fraxinus excelsior (Ash)	SM	333	14(5)	2	4	3	3	C1	20+	Off site tree		4	50.27
T14	Sambucus nigra (Elder)	SM	367	7(2)	4	4	4	4	C1	20+	Unable to inspect stem due to undergrowth. Multiple stems at ground level.Off site tree		4.4	60.83
T15	Sambucus nigra (Elder)	EM	372	7(0.5)	4	3	2	3	C1	20+	Cavity on stem. Multiple stems at ground level.Off site tree		4.46	62.5

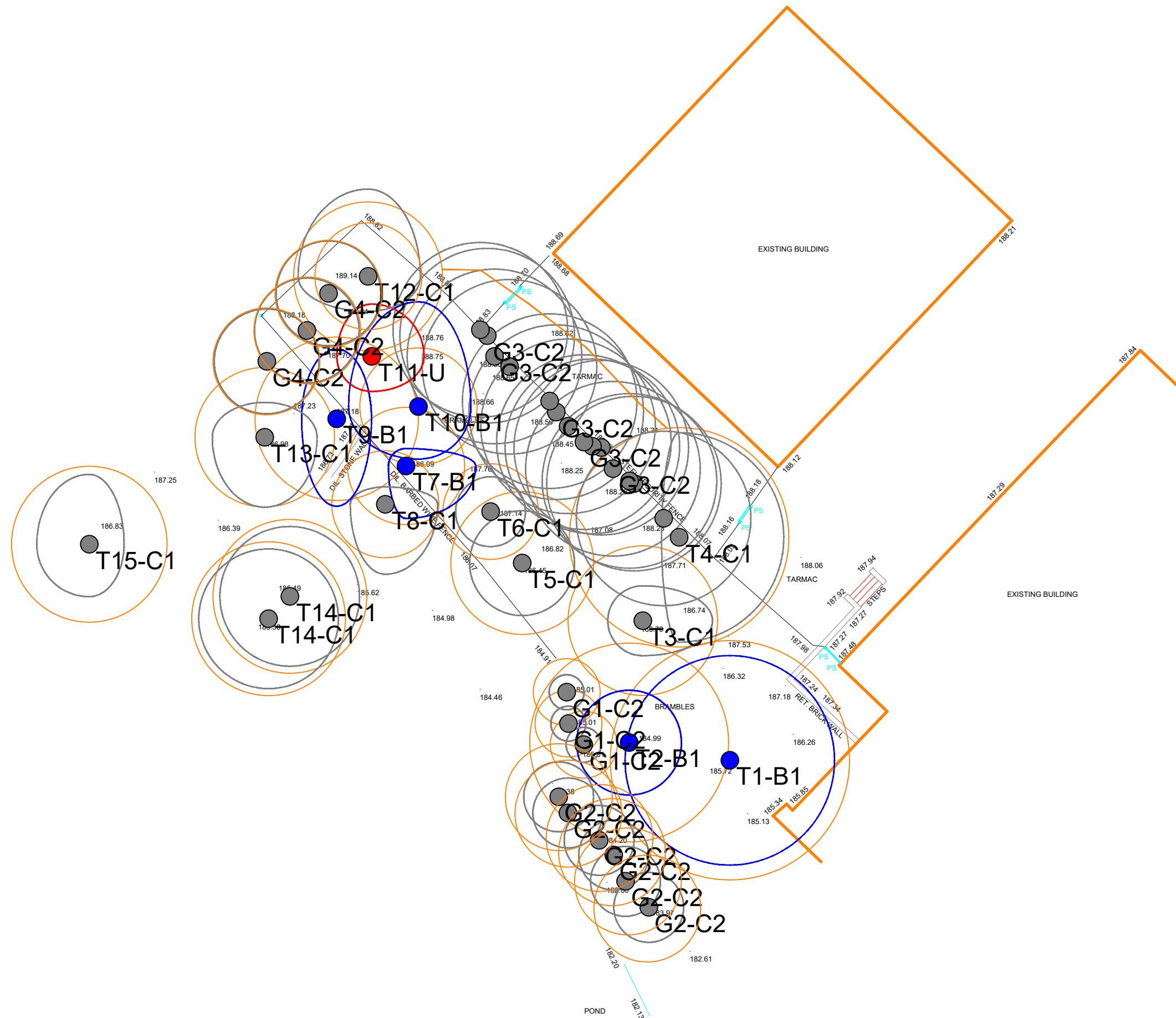
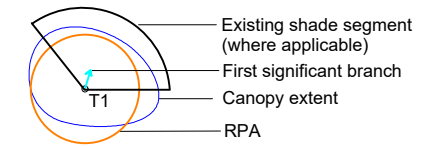
TREE CONSTRAINTS PLAN

Retention value key



Root Protection Areas (RPA)

Root Protection Areas (RPA's) have been identified and are based on BS5837:2012. RPA's have been shown as a red polyline.



Client:  
Tilbury Douglas

Project:  
All Saints

Detail:  
TREE CONSTRAINTS PLAN - Overview

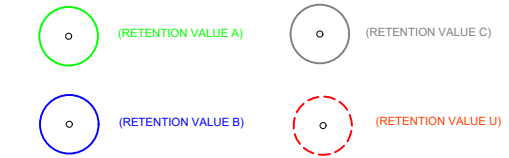
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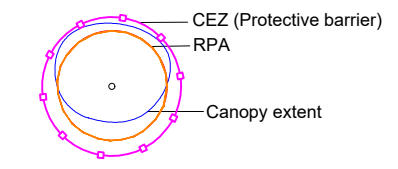
# TREE PROTECTION PLAN

## Retention value key



## Root Protection Areas (RPA) & Construction Exclusion Zones (CEZ)

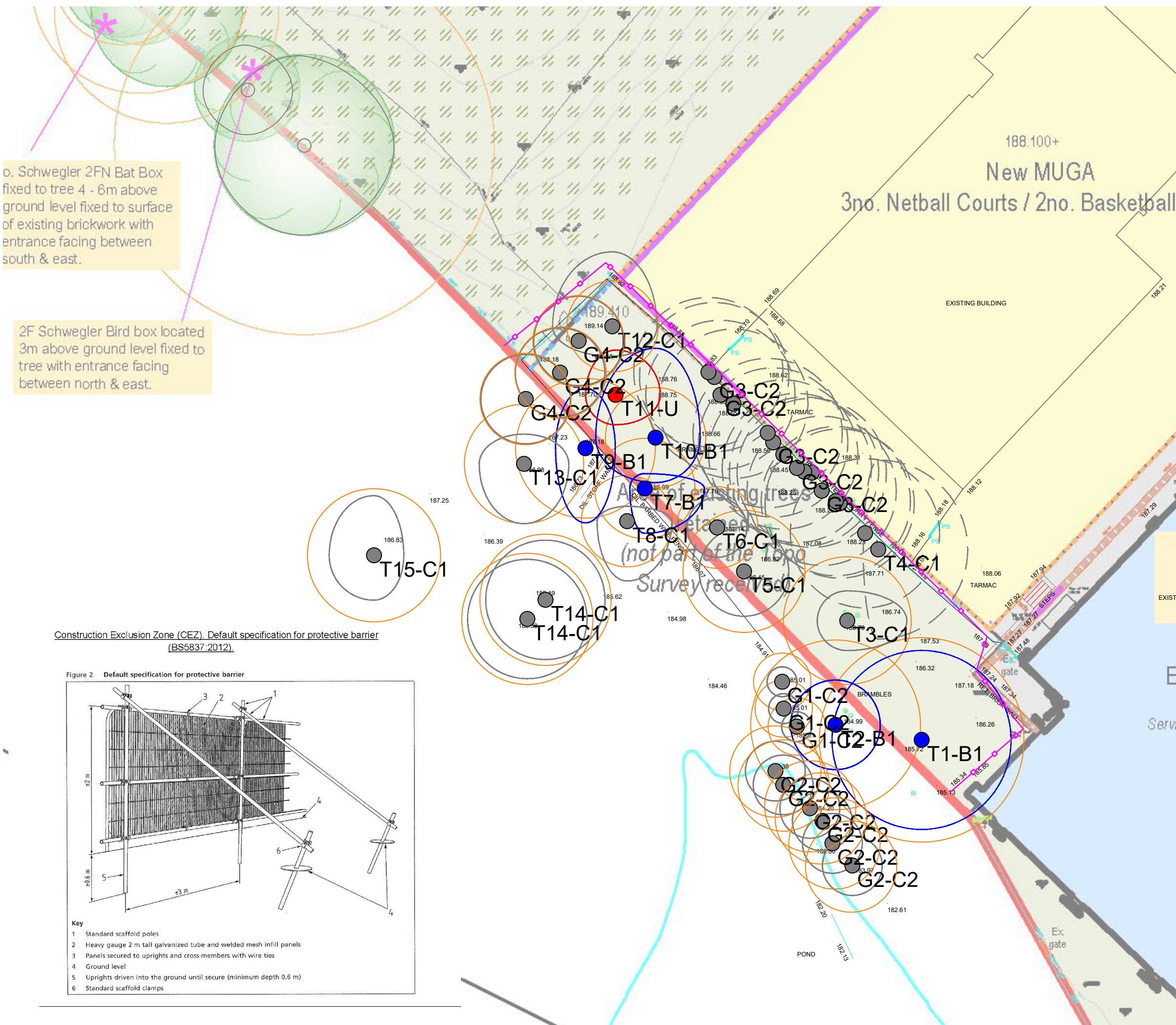
Root Protection Areas (RPA's) have been identified and are based on BS5837:2012. RPA's and Construction Exclusion Zones (CEZ) have been shown as detailed below. The CEZ shall act as the protective barrier for retained trees.



**CEZ**  
The CEZ's will require installation as shown on the TPP.

**NOTES**  
This drawing shall not be reproduced in black and white.  
This drawing is produced for Planning and Construction

Client:	Tilbury Douglas	
Project:	All Saints	
Detail:	TREE PROTECTION PLAN - Overview	
Drawn By:	Date:	Scale:
SB	21.11.2023	1:250@A3
Drg No:	Revision:	
TR-01	V1	



o. Schwegler 2FN Bat Box fixed to tree 4 - 6m above ground level fixed to surface of existing brickwork with entrance facing between south & east.

2F Schwegler Bird box located 3m above ground level fixed to tree with entrance facing between north & east.

Construction Exclusion Zone (CEZ). Default specification for protective barrier (BS5837:2012).

