Arboricultural Impact Assessment

Prepared for:

ESTUARY VIEW ENTERPRISES 2020 LTD

Proposed site:

THE MEADOWS - BESSBOROUGH

Prepared by:

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1 Summary

1.1 This arboricultural report has been commissioned by ESTUARY VIEW ENTERPRISES 2020 LTD to provide information to assist with the planning process in relation to the planning application the Meadows Bessborough

1.2 This report includes:

- an assessment of the trees, their quality and value in accordance with BS 5837:2012 - Trees in relation to design, demolition and construction;
- the site context and observations on the trees;
- local planning policies relevant to the consideration of trees on the site;
- the impact of the proposed development upon the tree population in and around the site;
- methods of reducing impacts on trees; and
- measures to be taken to protect trees during the proposed works.

2.0 Introduction

2.1 Instructions

Arbor-Care Ltd (Professional Consulting Tree Service) was retained by ESTUARY VIEW ENTERPRISES 2020 LTD to undertake an on-site inspection and visual condition assessment of all trees could be potentially impacted by the development works within the site extents (Figure 1), the findings of the report will be used to inform design of development works and support a SHD planning application for same.
The objective of the impact assessment was to identify the areas that contained trees, groups of trees, and to ensure where possible that these areas would be retained and to identify the trees that are to be removed to facilitate the development.

The survey commenced on the 20th October 2021. The survey concentrated on the area within development area.

The below impact assessment report is based on the British standard *BS 5837:2012 Trees in relation to design, demolition and construction recommendations*, this standard gives recommendations and guidance on the principles to be applied to achieve a satisfactory juxtaposition of trees, including shrubs, hedges and hedgerows, with structures. It sets out to assist those concerned with trees in relation to construction to form balanced judgements. This impact assessment report will be accompanied by an inventory of trees and hedgerows on site and a tree protection plan. The Arboricultural Impact Assessment and a tree protection plan was prepared for the site identifying trees that may be impacted on by the proposed development based on the proposed design.

2.2 Methodology

An initial tree survey and visual condition assessment was on the 20th October 2021. The purpose of this report and in accordance with *BS 5837: 2012 Trees in relation to design, demolition and construction*. *Recommendations* only trees with diameters of 75mm or greater were surveyed. Also in accordance with section 4.4.2.3 of the British standard document where trees formed obvious groups these were assessed and recorded as groups. All trees were individually tagged with a metal disc. This was placed on the northern side of the tree where practical.

Section 4.4.2.3 of BS 5837: 2012 states:

Trees growing as groups or woodland should be identified and assessed as such where the arboriculturist determines that this is appropriate. However, an assessment of individuals within any group should still be undertaken if there is a need to differentiate between them, e.g. in order to highlight significant variation in attributes (including physiological or structural condition).

NOTE: The term "group" is intended to identify trees that form cohesive arboricultural features either aerodynamically (e.g. trees that provide companion shelter), visually (e.g. avenues or screens) or culturally, including for biodiversity (e.g. parkland or wood pasture), in respect of each of the three subcategories.

The survey concentrated primarily on the significant trees/ groups located within and adjacent to the proposed development area and has been based on the topographical survey plan provided. The objective of this survey was to gather information regarding the trees within or adjacent to the development area and the impact the proposed scheme may have on the trees. **Please refer to Appendix A for the tree inventory**.

Significant trees can be equated as those trees whose visual importance to the surrounding area are sufficient to justify special efforts to protect/preserve and whose loss would have an irremediable adverse impact on the local environment. Significance can also be placed depending on the trees age, another variable to imply significance can be the aesthetic merit of the tree based on its unusual size, intrinsic physical features or outstanding appearance or occurring in a unique location or context, and thus provides a special contribution as a landmark or landscape feature.

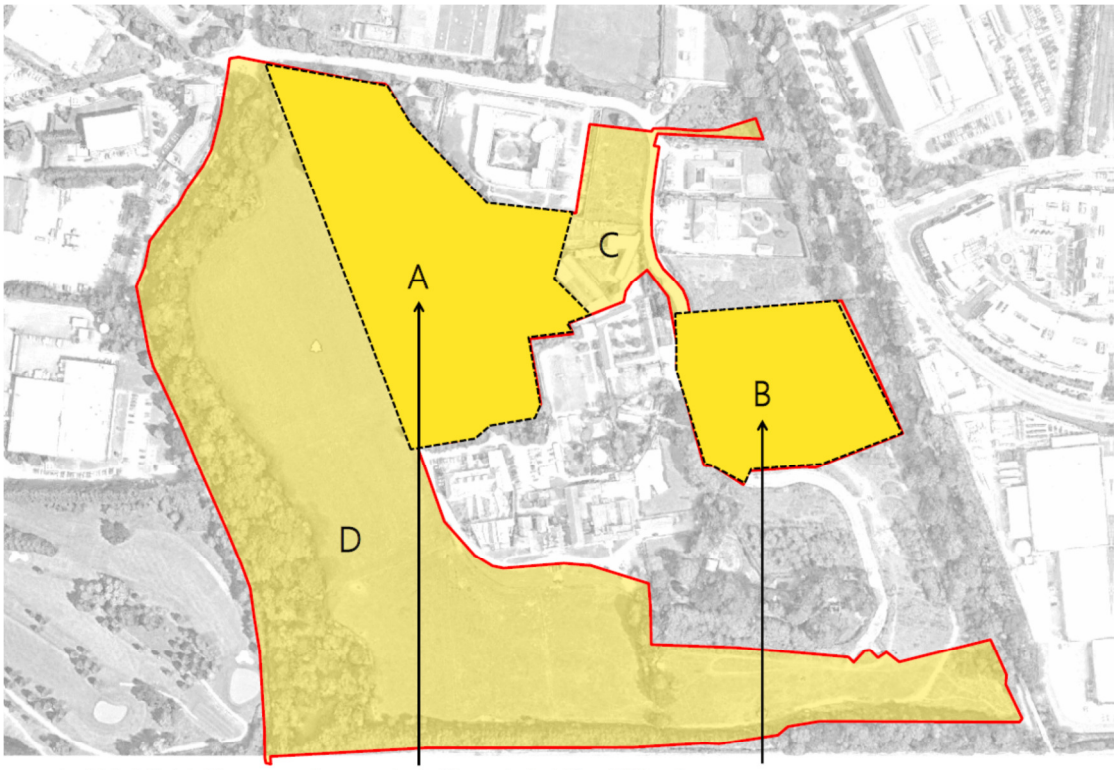
All above parts of the trees were visually examined. Tree diameters (DBH) were estimated at 1.5 meter above grade as per standard arboricultural practice. Tree height was measured with the use of a clinometer (Where practical). A generalised system was employed to describe the overall health of the trees. The system uses a three tier rating scale with the following descriptors:

Specimen condition 3-tier rating system

- Poor- 1-30%
- Fair- 31-60%
- Good- 61-100%

3. Initial Tree Survey Overview

Fig. 1 *Survey area for The Meadows highlighted as area B*



4.0 The Trees.

A total of 52 trees were individually surveyed, the majority of the trees are large individual mature trees.

A breakdown of the Tree Categories on site as per BS 5837 2012 is set out in the table below:

Category	Quantity	Category %
A-Tree of high quality	13	25%
B-trees of good quality	28	56%
C (Low quality or trees less than 75mm diameter)	7	15%
U (remove due to poor condition)	2	4
Total Trees surveyed	50	100%

5. Statutory and Non-Statutory Designations

The National Planning Framework (NPF) seeks to ensure that new development is sustainable and underlines the importance of Green Infrastructure, of which trees form an integral part. This encompasses recognition of the importance of trees in relation to the management of air, soil and water quality along with other associated ecosystem services and climate change adaption. The NPF also seeks to achieve the protection and enhancement of landscapes and a net gain in biodiversity.

The site is located within the jurisdiction of *Cork County Council*. The Local Planning Authorities have a statutory duty to consider both the protection and planting of trees when considering planning applications. The potential impact of development on all trees (including those not protected by a Tree Preservation Order or other statutory designation) is therefore a material consideration. I have reviewed *Cork County Council Development Plan 2022-2028 Tree Preservation Orders (TPO's).* There are no TPO's identified within the development site.

6. The Proposed Development (figure 2)

Brief Summary Development Description

The proposed development provides for the construction of 280 apartments over 4 blocks ranging in height from 1 to 10 storeys. The development will consist of 12 no. 3-bedroom apartments, 150 no. 2-bedroom apartments, 112 no. 1-bedroom apartments, and 6 no. studio apartments. Provision is made for a creche at ground floor level in Block A, a café at ground floor level in Block B and shared communal tenant facilities including a resident's gym, lounge, and home work areas, as well as building management facilities, plant and storage across Blocks A-D. The proposed development includes a new pedestrian/cycle bridge over the adjoining Passage West Greenway to the east, connecting into the existing down ramp from Mahon providing direct access to the greenway and wider areas. Ancillary site works include the provision of 2 no. substations, outdoor amenity areas, landscaping, 101 no. car parking spaces (98 under podium and 3 on street), 10 no. motorbike spaces, 604 no. bicycle parking spaces, bin stores, public lighting, and all supporting site development works. Vehicular access to the proposed development will be provided via the existing access road off the Bessborough Road.

7.0 Arboricultural Impact Assessment

This impact assessment sets out the likely principal direct and indirect impacts of the proposed development on the trees on or immediately adjacent to the site and suitable mitigation measures to allow for the successful retention of significant trees or to compensate for trees to be removed, where appropriate.

A brief summary of trees to be removed, related to the Proposed Scheme are detailed within the table below.

Table 1: Schedule of trees to be removed to accommodate the design

(To be read in conjunction with Appendix 1 and the Tree Protection Plan.

Tree number	Species	Age Class	Tree category
6826	Ash	Mature	B2
6827	Holly	Mature	B2
6828	Oak	Mature	U
2720	Ash	Mature	A2
2721	Monterey cypress	Mature	B2
2723	Holly	Early-Mature	C2

2724	Holly	Mature	C2
2725	Oak	Mature	B2
2726	Holly	Mature	C2
2727	Ash	Mature	B2
2728	Ash	Mature	B2
2729	Holly	Early-Mature	C2
2730	Ash	Early-Mature	C2
4636	Oak	Mature	B2

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Total trees to be removed =13 to facilitate the development plus 1 other U tree that is being removed for health and safety

7.1 The arboricultural impact of the proposed development on the site will be low. It is proposed to remove fourteen trees out of a total of 50 surveyed to facilitate the scheme. A new planting scheme of site appropriate trees will enhance the local arboreal footprint.

Of the trees to be removed to accommodate the proposed design, these consist of 1 no. category A trees, 7 no. category B plus 5 no. category C trees and 1 no. category U trees.

In accordance with *BS 5837: 2012 Trees in relation to design, demolition and construction*. *Recommendations.,* Category A represents trees of a high quality and value, "*in such a condition as to be able to make a substantial contribution. (A minimum of 40 years is suggested)."* Category B signifies those trees *of a "moderate value and in such a condition as to be able to make a substantial contribution (A minimum life expectancy of 20 yrs is suggested*)." Category C signifies those trees *of "a low quality and value that are currently in an adequate condition to remain until new planting could be established (A minimum life expectancy of 10yrs is suggested*).. Category U signifies those trees ''*that are in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management''.*

7.2 **Arboricultural works** – one tree 4639 a large mature category A oak tree will have the lowest limbs crown raised to facilitate the bridge.

7.3 Following the completion of the development, a tree condition assessment should be carried out on all retained trees for health and safety purposes.

7.4 Tree protection measures - All retained trees and hedgerows can be successfully protected during the proposed development by using robust fencing which complies with the recommendations outlined within BS5837:2012.

7.5 No materials or equipment other than those required to install tree protection will be delivered to the site until all fencing is in place.

7.6 For details of the tree protection measures required during construction, please refer to the Tree Protection Plan.

7.7 Compound area – The proposed site compound area has not yet been designed; however, there is sufficient space available throughout the site to avoid any unnecessary impacts to retained trees, provided the tree protection measures as detailed within this report are carried out.

7.8 Site access – The site is located on an existing road

7.9 Daylight and sunlight levels - Shading by trees has been assessed and is not considered a significant issue in relation to this proposal.

7.10 Drainage and services – All new service runs should be located outside the RPAs of retained trees to avoid impacting their condition. If it is found necessary to locate services within tree RPAs, it is recommended that these works are carried out under arboricultural supervision. Methods of work should follow the recommendations in the NJUG guidance. BS5837 (2012) recommends the NJUG guidance as a normative reference to be used in these circumstances.

7.11 Boundary treatments – None required

7.12 Any working operation within the RPAs of retained trees must be carried out manually using hand tools only. Fencing posts must be positioned at least 50 cm from the outer stems of each retained tree in order to allow for future incremental stem growth and to avoid structural roots during excavation works. The excavation for pits to install posts will be carried out using hand tools only. All roots above 25mm in diameter will be

retained within the pits or alternative locations which do not contain roots above 25mm will be found. All fence post pits will be lined with 1000-gauge polythene to prevent phytotoxic effects of cement products impacting trees. The final location of the fence should be agreed by the arboricultural consultant prior to works commencing.

7.13 Landscape operations - Landscaping operations will typically take place at the end of the construction period. These works will normally require the removal of protective fencing to facilitate access for works. There is a risk that plant and machinery may damage soil structure where tree roots are growing. These risks can be managed by maintaining good professional standards of work and working to a method statement. The principle of avoiding soil disturbance or changes in levels within the RPAs of retained trees should be followed unless arboricultural advice has been sought.

Arboricultural mitigation

7.14 A landscape plan may form part of the proposed works has been designed as part of the proposal and may include a number of new high-quality tree. The proposed planting will mitigate the loss of trees and hedgerows on site (if so determined) and will have a positive impact on local tree population. The number trees proposed to be planted will ensure that local canopy cover will gradually increase over the years and surpass the existing canopy cover within this area. A greater diversity of tree species has also been selected and will ensure that the tree population is less vulnerable to the risks posed by climate change and pests and diseases in the future.

Proposal in relation to local planning policy

8.2 The proposed development complies with local planning policy as it relates to trees. A tree survey has been carried out in accordance with best practice and where possible trees have been retained and can be successfully protected during construction.

8.3 A landscape plan which includes new high quality tree planting may form part of the proposal. New planting will mitigate the loss of trees and enhance the visual appearance of the site in the future. Please review the landscape plan for further information

Conclusion

8.4 The proposal has been assessed in accordance with BS5837:2012 and special working methods have been recommended to minimise tree impacts.

8.5 Retained trees have been assessed and can be successfully protected during development by following the information provided within this report and adhering to industry best practice.

8.6 Provided the recommendations and methods of work, as outlined within this report, are adhered to, the proposed development can be successfully carried out without having a negative impact on the character or appearance of the surrounding landscape.

Recommendations

9.1 The proposal should be carried out in accordance with the recommendations outlined within this report.

9.2 The positioning of tree protective barriers should be installed as detailed within the Tree Protection Plan.

9.3 Site supervision should be carried out by an arboricultural consultant at key stages of the project to ensure that retained trees are successfully protected during the development. Details of supervision are included within the Arboricultural Method Statement at Section 2 of this report

Appendix A: Key to Abbreviations Used in the Survey

Ref No	Specific identification number given to each tree or group. T=Tree/H=Hedge/G=Group/W=Woodland/S=Shrub.	
Tag No.	Tree marked with individual tree tag of this reference number on site.	
Species	Common name followed by botanical name shown in *italics*	
RPA	Root Protection Area (As defined by BS5837)	
Stem diameter	Diameter of main stem, measured in millimetres at 1.5 m above ground level. (MS = Multi-stem tree measured in accordance with BS5837 Annexe C)	Av / Average: indicates an average representative measured dimension for the group or feature
Spread	The width and breadth of the crown. Estimated on the four compass points in metres.	
Crown clearance	The estimated height (in metres) above ground level of the lowest significant branch attachments.	
#	Estimated dimensions	
*	Indicates estimated position of tree (not indicated on topographical survey).	
P	Privately owned tree (e.g. tree not located in the public highway or adjacent public land).	
Category	Categorisation of the quality and benefits of trees on Site as per Table 1 and 2 of BS5837:2012. 1=Arboricultural quality/value 2=Landscape quality/value 3=Cultural quality/value (including conservation)	
	A=High quality/value 40yrs+ (light green). B=Moderate quality/value 20yrs+ (mid blue) C=Low quality/value min 10yrs/stem diameter less than 150mm (grey). U=Unsuitable for retention (dark red).	
Life stage	**Young (Y):** Newly planted tree 0-10 years. **Semi-Mature (SM):** Tree in the first third of its normal life expectancy for the species (significant potential for future growth in size). **Early Mature (EM):** Tree in the second third of its normal life expectancy for the species (some potential for future growth in size) **Mature (M):** Tree in the final third of its normal life expectancy for the species (having typically reached its approximate ultimate size). **Over Mature (OM):** Tree beyond the normal life expectancy for the species. **Veteran (V):** Tree which is of interest biologically, aesthetically or culturally because of its condition, size or age.	
Structural condition	**Good:** No significant structural defects **Fair:** Structural defects which can be resolved via remedial works. **Poor:** Structural defects which cannot be resolved via remedial works. **Dead:** Dead.	
Physiological condition	**Good:** Normal vitality including leaf size, bud growth, density of crown and wound wood development. **Fair:** Lower than normal vitality, reduced bud development, reduced crown density, reduced response to wounds. **Poor:** Low vitality, low development and distribution of buds, discoloured leaves, low crown density, little extension growth for the species. **Dead:** Dead **Fair/Good** = Indicates an intermediate condition **Fair – Good** = Indicates a range of conditions (e.g. within a group)	
Preliminary management recommendations	Works identified during the tree survey as part of sound arboricultural management, based on the current context of the Site (where relevant reference has been made to tree management based on the potential future context of the site).	
Works to facilitate the development	Tree works identified as necessary to facilitate the Proposed Development following a desk top analysis of the proposals in relation to tree constraints.	

Appendix A: Tree Survey Schedule

The Meadows **Bessborough House, Co. Cork**

Tree #	Species Botanical Name	Age class	Size (mm)	Height (M)	Crown Sp. (M)	Crown Cl.(M)	Condition	Structural/Physiological Observations	Impact of the development	PMR	Category	R.P.A. Meters
6814	Sweet Chestnut	M	800	20	N=2 S=2 E=2 W=2	2m	Poor	A large mature Sweet Chestnut displaying over all poor condition. This tree is in advanced decline which is indicated by the significant upper third of the tree which is dead. This tree has 10- years remaining.	No impact	Retain	U	9.0m
6815	Common Oak	M	900	24	N=6 S=6 E=6 W=6	2m	Good	A large mature Common Oak displaying over all good condition. This tree has 40+ years remaining	No impact	No works required	A2	10.0m
6816	*Quercus* Oak	EM	280	20	N=2 S=2 E=2 W=2	6m	Good	An early mature Oak displaying over all good condition. This tree has 40+ years remaining.	No impact	No works required	B2	3.8m
6817	Common Oak	M	1000	24	N=4 S=4 E=4 W=4	3m	Good	A large mature Common Oak displaying over all good condition. There are some broken limbs on the lower canopy which can be removed. This tree has 40+ years remaining.	No impact	Remove broken limbs	A2	11.0m

Tree #	Species Botanical Name	Age class	Size (mm)	Height (M)	Crown Sp. (M)	Crown Cl.(M)	Condition	Structural/Physiological Observations	Impact of the development	PMR	Category	R.P.A. Meters
6818	*Acer Pseudoplatanus* Sycamore	EM	280	16	N=3 S=3 E=3 W=3	1m	Good	An early mature Sycamore displaying over all good condition. This tree has 40+ years remaining.	No impact	No works required	B2	3.8m
6819	Oak	M	1200	26	N=8 S=8 E=6 W=6	2m	Good	A large mature Oak displaying over all good condition. This tree has a large lower limb to the south that has snapped off and can be removed. This tree has 40+ years remaining.	No impact	Remove broken limb	A2	12.0m
6820	*Ulmus Procera* English Elm	EM	200	6	N=1 S=1 E=1 W=1	2m	Good	An early mature English Elm displaying over all good condition. This tree has 40+ years remaining.	No impact	No works required	B2	3.0m
6821	Sweet Chestnut	M	500	18	N=8 S=8 E=8 W=8	1m	Good	A large mature multi-stemmed Sweet Chestnut displaying over all good condition. This tree has 40+ years remaining.	No impact	No works required	A2	6.0m
6822 x 3	Ash	M	350	24	N=4 S=4 E=4 W=4	4m	Good	Represents a cluster of 3 mature multi-stemmed Ash displaying over all good condition. These trees have 40+ years remaining.	No impact	No works required	B2	4.5m

Tree #	Species Botanical Name	Age class	Size (mm)	Height (M)	Crown Sp. (M)	Crown Cl.(M)	Condition	Structural/Physiological Observations	Impact of the development	PMR	Category	R.P.A. Meters
6823	Sycamore	M	350	14	N=3 S=3 E=2 W=2	1m	Good	A mature co-dominant Sycamore displaying over all good condition. This tree has 20+ years remaining.	No impact	No works required	B2	4.5m
6824	Common Oak	M	600	18	N=2 S=2 E=2 W=2	1m	Good	A mature Common Oak displaying over all good condition. This tree has 20+ years remaining	No impact	No works required	B2	7.0m
6825	*Quercus Petraea* Sessile Oak	M	750	20	N=8 S=8 E=8 W=8	2m	Good	A large mature co-dominant Sessile Oak displaying over all good condition. This tree has 40+ years remaining. This tree is a fantastic specimen	No impact	No works required	A2	8.5m
6826	Ash	M	380	22	N=3 S=3 E=3 W=3	4m	Good	A mature multi-stemmed Ash displaying over all good condition. This tree has 20+ years remaining	Remove to facilitate the bridge	No works required	B2	4.8m
6827	Holly	M	200	10	N=3 S=6 E=3 W=3	2m	Good	A mature multi-stemmed Holly displaying over all good condition. This tree has 20+ years remaining.	Remove to facilitate the bridge	No works required	B2	3.0m
6828	Oak	M	400	6	N=1 S=1 E=1 W=1	2m	Poor	A mature Oak displaying over all poor condition. This tree is partially blown over. This tree has 10- years remaining	Impacted by the proposed road	Remove	U	5.0m

Tree #	Species Botanical Name	Age class	Size (mm)	Height (M)	Crown Sp. (M)	Crown Cl.(M)	Condition	Structural/Physiological Observations	Impact of the development	PMR	Category	R.P.A. Meters
6829	Ash	M	300	18	N=2 S=2 E=2 W=2	1m	Good	A mature multi-stemmed Ash displaying over all good condition. This tree has 20+ years remaining.	No impact	No works required	B2	4.0m
6830	Ash	M	300	18	N=2 S=2 E=2 W=2	3m	Good	A mature co-dominant Ash displaying over all good condition. This tree has 20+ years remaining.	No impact	No works required	B2	4.0m
6831	Sycamore	M	450	20	N=6 S=8 E=3 W=3	2m	Good	A large mature multi-stemmed Sycamore displaying over all good condition. This tree has 20+ years remaining.	No impact	No works required	B2	5.5m
6832	Ash	M	400	22	N=4 S=4 E=4 W=4	5m	Good	A mature multi-stemmed Ash displaying over all good condition. This tree has 20+ years remaining	No impact	No works required	B2	5.0m
6833	*Aesculus Hippocastanum* Horse Chestnut	M	320	16	N=2 S=2 E=2 W=2	2m	Good	A mature Horse Chestnut displaying over all good condition. This tree has 20+ years remaining.	No impact	No works required	B2	4.2m

Tree #	Species Botanical Name	Age class	Size (mm)	Height (M)	Crown Sp. (M)	Crown Cl.(M)	Condition	Structural/Physiological Observations	Impact of the development	PMR	Category	R.P.A. Meters
6834	Common Oak	M	850	24	N=6 S=6 E=6 W=6	2m	Good	A large mature Common Oak displaying over all good condition. This tree has 40+ years remaining.	No impact	No works required	A2	9.5m
6835	Holly	EM	180	4	N=2 S=2 E=2 W=2	1m	Good	An early mature Holly displaying over all good condition. This tree has 40+ years remaining	No impact	No works required	B2	2.8m
6836	Oak	M	600	24	N=4 S=4 E=4 W=4	4m	Good	A large mature Oak displaying over all good condition. This tree has 40+ years remaining	No impact	No works required	A2	7.0m

Tree #	Species Botanical Name	Age class	Size (mm)	Height (M)	Crown Sp. (M)	Crown Cl.(M)	Condition	Structural/Physiological Observations	Impact of the development	PMR	Category	R.P.A. Meters
2720	Ash	M	900	24	N=8 S=8 E=8 W=8	3m	Good	A large mature ash in good condition	Remove to facilitate wayleave	Remove	A2	
2721	Monterey cypress	M	1000	22	N=4 S=4 E=4 W=4	4m	Good	A large mature Cypress displaying over all good condition.	Remove to facilitate wayleave	Remove	B2	
2722	holly	M	280	8	N=2 S=2 E=2 W=2	1m	Good	A mature holly	No impact	No works required	B2	3.8
2723	holly	EM	180	6	N=2 S=2 E=2 W=2	1m	Good	A mature holly	Remove to facilitate wayleave	Remove	C2	
2724	Holly	M	300	8	N=2 S=2 E=2 W=2	1m	Good	A mature multi-stemmed holly	Remove to facilitate wayleave	Remove	C2	

Tree #	Species Botanical Name	Age class	Size (mm)	Height (M)	Crown Sp. (M)	Crown Cl.(M)	Condition	Structural/Physiological Observations	Impact of the development	PMR	Category	R.P.A. Meters
2725	Oak	M	380	14	N=4 S=4 E=2 W=2	3	Good	A mature oak in good condition	Remove to facilitate wayleave	Remove	B2	
2726	Holly	M	300	8	N=2 S=2 E=2 W=2	1m	Good	A mature multi-stemmed holly	Remove to facilitate wayleave	Remove	C2	
2727	Ash	M	300	10	N=2 S=2 E=2 W=2	1m	Good	A mature co-dominant ash	Remove to facilitate wayleave	Remove	B2	
2728	Ash	M	300	10	N=2 S=2 E=2 W=2	1m	Good	A mature co-dominant ash	Remove to facilitate wayleave	Remove	B2	
2729	holly	EM	180	6	N=2 S=2 E=2 W=2	1m	Good	A mature holly	Remove to facilitate wayleave	Remove	C2	
2730	Ash	EM	180	8	N=2 S=2 E=2 W=2	1m	Good	An early mature co-dominant ash	Remove to facilitate wayleave	Remove	C2	

Tree #	Species Botanical Name	Age class	Size (mm)	Height (M)	Crown Sp. (M)	Crown Cl.(M)	Condition	Structural/Physiological Observations	Impact of the development	PMR	Category	R.P.A. Meters
2570	oak	SM	150	10	N=2 S=2 E=2 W=2	2	Good	A semi-mature oak in good condition	No impact	Retain	B2	2.5m
2571	Hawthorn	EM	120	6	N=2 S=2 E=2 W=2	1m	Fair	A multi-stemmed hawthorn	No impact	Retain	C2	2.2m
2572	Ash	EM	250	16	N=2 S=2 E=2 W=2	1m	Good	An early mature ash	No impact	Retain	B2	3.5m
2573	Oak	M	450	20	N=4 S=4 E=4 W=4	6m	Good	A large mature oak displaying a good overall condition	No impact	Retain	A2	5.5m
2574	Oak	EM	200	12	N=2 S=2 E=3 W=3	1m	Good	An early mature oak in good condition	No impact	Retain	B2	3m
2575	Sycamore	SM	80	5	N=1 S=1 E=1 W=1	1m	Good	Semi-mature sycamore	No impact	Retain	C2	1.8m

Tree #	Species Botanical Name	Age class	Size (mm)	Height (M)	Crown Sp. (M)	Crown Cl.(M)	Condition	Structural/Physiological Observations	Impact of the development	PMR	Category	R.P.A. Meters
2576	Oak	M	460	18	N=4 S=2 E=2 W=2	6	Good	A mature oak in good condition	No impact	Retain	A2	5.6m
2577	Oak	M	300	12	N=4 S=2 E=2 W=2	4m	Good	A mature oak in good condition	No impact	Retain	A2	4m
2578	Ash	M	300	18	N=4 S=4 E=4 W=4	1m	Good	A mature ash	No impact	Retain	B2	4m
2579	Ash	M	400	20	N=4 S=4 E=4 W=4	6m	Good	A large mature ash displaying a good overall condition	No impact	Retain	B2	5m

Tree #	Species Botanical Name	Age class	Size (mm)	Height (M)	Crown Sp. (M)	Crown Cl.(M)	Condition	Structural/Physiological Observations	Impact of the development	PMR	Category	R.P.A. Meters
4636	Oak	M	340	14	320	3	Good	A mature oak in good condition	Remove to facilitate the bridge	Remove	B2	4.2m
4637	Oak	M	350	16	N=2 S=2 E=2 W=2	6	Good	A mature oak in good condition	No impact	Retain	B2	4.5m
4638	Oak	M	350	18	N=2 S=2 E=2 W=2	6	Good	A mature oak in good condition	No impact	Retain	A2	4.5m
4639	Oak	M	520	22	N=4 S=4 E=6 W=2	6	Good	A mature oak in good condition	No impact	Crown raise lowest limbs to accommodate the bridge	A2	6.2mm

Section 2: Arboricultural Method Statement

Introduction

This report has been prepared in accordance with British Standard 5837: Trees in relation to design,demolition and construction – Recommendations (2012) which provides a methodology for the assessment and protection of trees and other significant vegetation on development sites.

Sequence of Operations

- Proposed tree works.
- Installation of tree protection measures.
- Enabling works.
- Construction of proposal and the installation of drainage and services.
- Landscaping.

Alternative sequences can be discussed and agreed with the local authority and project manager if required.

Supervision

All key / critical activities that will affect trees during construction will be inspected and monitored bythe approved arboricultural consultant.

- Pre-commencement meeting with site manager and local authority to confirm location of treeprotection measures.
- Inspection of all tree works and tree protection measures prior to the commencement ofworks.
- Monthly site visits to inspect tree protection measures are in place and reports issued to thelocal authority.
- Supervision during the excavation works within the RPAs of retained trees.
- Supervision during the installation of all services within tree RPAs.
- Supervision during any other works that may affect retained trees.
- Inspection upon completion.

Arboricultural Method Statement	
Scope	**Methodology**
Pre-commencement meeting	Prior to the commencement of works, a meeting between the arboricultural consultant, local authority and the site manager will be held in order to discuss the tree protection measures and proposed works required in closeproximity to trees. Contact details of all parties will be circulated to ensure all team membersare able to communicate correctly. The site manager will be responsible for the protection of all retained trees for the duration of the project. Whenever necessary, the site manager will engage the arboricultural consultant to ensure trees are adequately protected. The appointed arboricultural consultant will be available for verbal advice throughout site works.
Tree Works	Please refer to the Tree Work Schedule at Appendix A for a list of all proposed tree works. The location of trees to be removed are highlighted on the Tree Removals Plan at Appendix B. It is the responsibility of the Site Manager to ensure all tree works have been approved by the local planning authority. All tree works will be carried out by a reputable arboricultural contractor inaccordance with the recommendations given in BS 3998:2010 – Tree Work Recommendations. All tree works should be carried out in accordance with Section 40 of the Wildlife Act 1976 and Section 46 of the Wildlife (Amendment) Act 2000. It is the responsibility of the arboricultural contractor to ensure that no protected species are harmed whilst carrying out site clearance or tree surgery works.

Tree Protection	The position of protective fencing for construction is shown on the Tree Protection Plan at Appendix B. Protective fencing will be constructed and installed using fencing in accordance with BS5837:2012, please refer to the attached Tree Protection Plan for the specification. Alternatives to those shown must be agreed in advance by the client approved, arboricultural consultant.

	Any machinery / site operative within tree RPAs must operate on the appropriate ground protection at all times, this will include the installation and removal of ground protection. Ground protection measures must be installed in accordance with industry best practice guidance as stated within Section 6.2.3.3 of BS 5837:2012. They must be fit for purpose and capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil. No materials or equipment other than those required to erect protective fencing will be delivered to the site before the fencing is installed. Signs will be fixed to every third panel stating, *'Tree Protection Area Keep Out – Any incursion into the protected area must be with the agreement ofthe local authority or arboricultural consultant'*. The main contractor will inform the local authority and the arboricultural consultant that tree protection is in place before site clearance works commence. No alteration, removal or repositioning of the tree protection will take placeduring construction without the prior consent of the arboricultural consultant.
Compound Area	The proposed site compound area has not yet been designed; however, the considerations below must be followed: The site compound must be located outside the designated TPZs as highlighted on the Tree Protection Plan at Appendix B. No excavation works within tree RPAs are permitted to install temporary services for site cabins and facilities. Any temporary services within tree RPAs must be above ground and protected accordingly. No operating generators or toxic liquids will be stored within the RPAs of retained trees during construction. Overhanging tree canopies must be taken into consideration when transporting, installing and removing site cabins near tree crowns. A banksman will be present during this process to ensure that all operations are carried out in a controlled manner and no part of the

	cabin meets overhanging tree crowns.

Installation of cellular confinement system	The installation of the cellular confinement system will be carried out underarboricultural supervision using the following methodology: The existing vegetation in the location of the footpath will be sprayed using a suitable herbicide that is not detrimental to trees and the area left for theprescribed timescale (normally 14 days). Once vegetation has died off the area will be raked and if levelling is required this will be carried out through the spreading of lawn sand or a good quality topsoil. Once levelled the area will be covered by a permeable membrane onto which the cellular system will be laid. This will then be infilled with 20-40mm angular non-fine aggregate and edged with pressure treated pegged timber board or similar. Please refer to the manufactures guidelines for additionalinformation. The finishing surface layer will consist of a permeable hard surface material.
Installation of fencing within RPAs	The installation of fencing within the RPAs of retained trees will be carriedout using the following methodology: Post holes will be carefully positioned as far away from the stem of trees as possible (minimum 50 cm) to minimise contact with tree stems and significant tree roots. Holes will be manually excavated with the use of hand tools only and where roots greater than 25mm in diameter or large fibrous roots are present, theposition of the hole will be slightly altered to avoid potential root damage. If the position of the hole cannot be altered, roots greater than 25mm in diameter or large fibrous roots will be protected with flexible plastic pipes and retained within the pit. In some cases, individual roots less than 25mm in diameter may be pruned, making a clean cut with a suitable sharp sterile tool (e.g. secateurs or handsaw). Once the required depth has been excavated, the hole will be lined using

	1000-gauge polythene and filled with the appropriate concrete mix.
Landscape Operations	All landscape operations within the protected area will be carried out by hand, using hand tools only, unless otherwise agreed with by the arboricultural consultant.

	No dumping of spoil or rubbish, parking of vehicles or plant, storage ofmaterials or temporary accommodation will be undertaken within the TPZs. All tree roots within the RPAs greater than 25mm diameter will be retainedand worked around. Soil levels will not be increased or reduced within the RPAs of trees without prior agreement from the arboricultural consultant.
General Principals to Avoid Damage to Trees	All tree works will be carried out in accordance with the recommendationsgiven in BS 3998 (2010). No fires will be permitted within 20m of the crown of any tree. No changes in soil levels will take place within the tree protection zones without prior written consent of the local authority. No materials, vehicles, plant or personnel will be permitted into the tree protection zones at any time without the prior consent of the arboriculturalconsultant. Any liquid materials spilled on site will be immediately cleared up and removed from the site. If liquid fuel or cement products are spilled within 2m of the tree protection zone, the contractor will report the incident to thearboricultural consultant immediately. The contractor will report any damage to trees or shrubs, whether caused by construction activities or from any other cause, to the arboricultural consultant immediately.

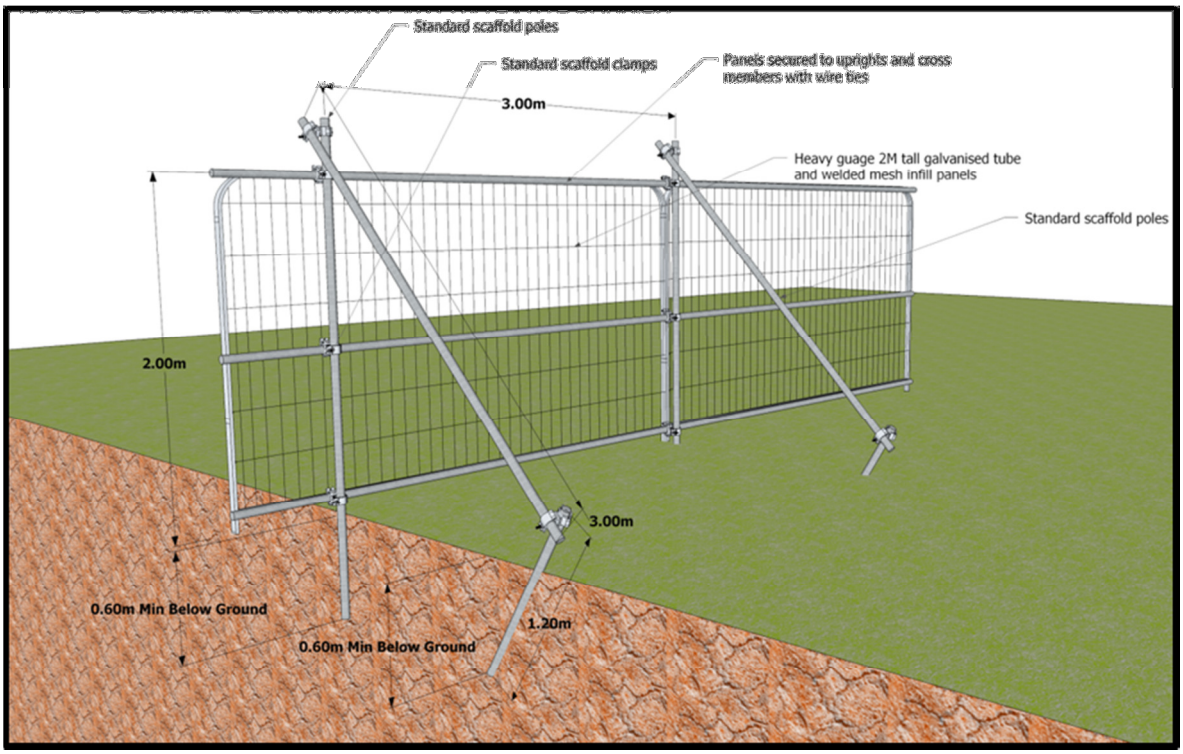
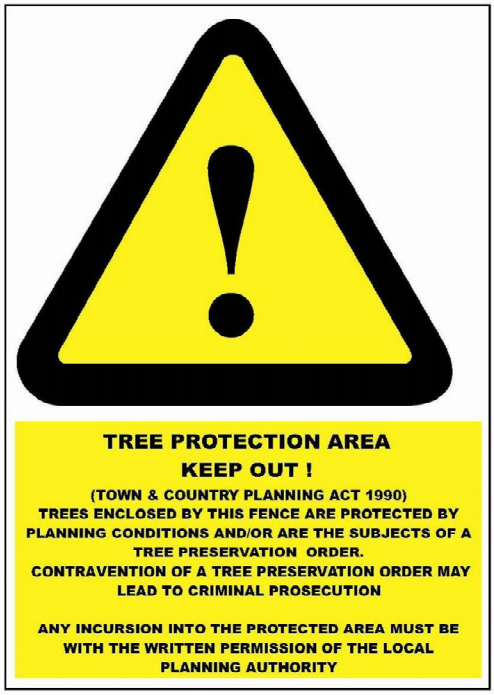


Figure 3 Default specification for tree protection barrier in accordance with BS5837:2012



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Yours in Conservation,
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