Arboricultural Impact Assessment Report

Prepared for:

Exeter Ireland Property IV B Limited

Proposed site:

Browns Barn, City West Co. Dublin

Prepared by:

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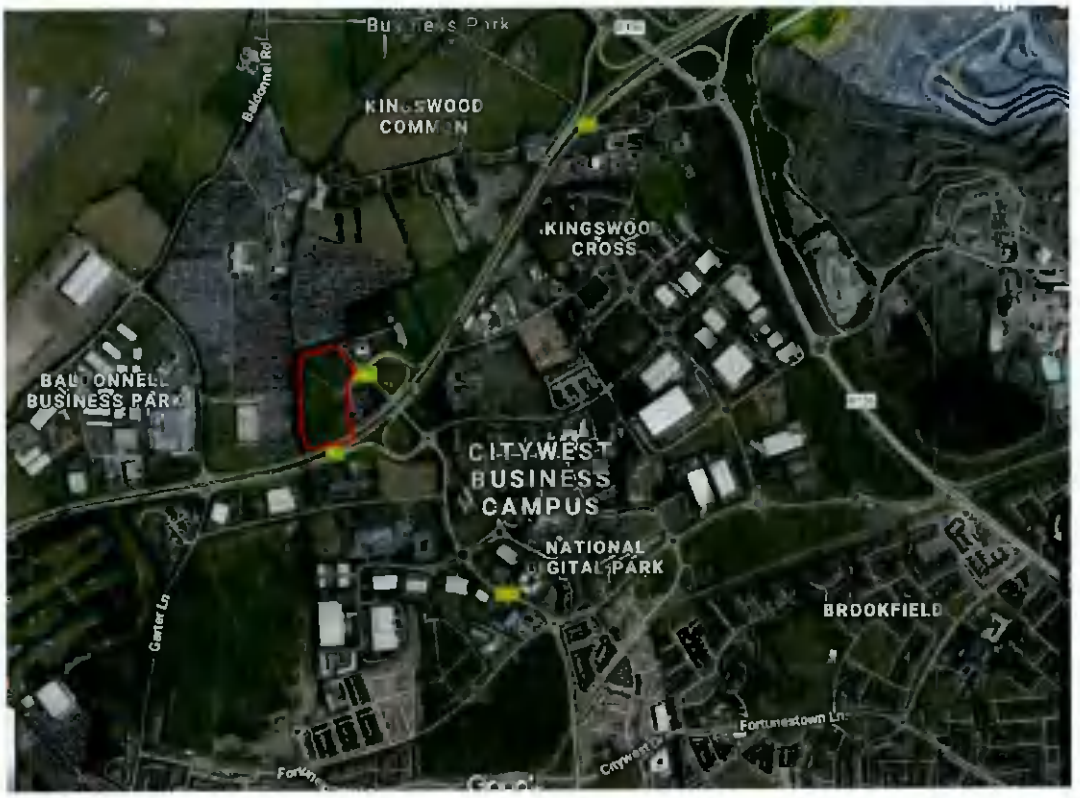
1.0 Executive Summary.

Arbor-Care Ltd (Professional Consulting Tree Service) was retained by Exeter Ireland Property IV B Limited, to undertake, a Tree and hedgerow survey, an Arboricultural Impact Assessment, and a Tree Protection Plan for a proposed development at the above location. The surveyed site consists of a large green field site.

The tree survey and inventory 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 tree survey report will be accompanied by an inventory of trees on site and tree protection plan (Appendix 2) highlighting which trees are to be retained and or removed.

Figure 1. The proposed site highlighted in red.



The Proposed Development

Exeter Ireland Property IV B Limited intend to apply for permission for development at this 3.92 Ha site at Brownsbarn, Citywest Campus, Dublin 24. The lands are bounded to the south by the N7 Naas Road, to the north and west by the National Distribution Centre and to the east by Brownsbarn Drive and the Royal Garter Stables, a Protected Structure (RPS Ref. 261).

The development will comprise the construction of 2 No. warehouses with ancillary office and staff facilities and associated development as follows: Unit 1 will have a maximum height of 16.45 metres with a gross floor area of 8,156 sq m including a warehouse area (7,397 sq m), ancillary office areas (362 sq m) and staff facilities (397 sq m); and Unit 2 will have a maximum height of 15.45 metres with a gross floor area of 5,990 sq m including a warehouse area (5,031 sq m), ancillary office areas (523 sq m) and staff facilities (403 sq m).

The development will also include: vehicular access/egress routes to the subject site via the existing roundabout and access road; pedestrian access; 111 No. car parking spaces; bicycle parking; HGV Parking; HGV yards; level access goods doors; dock levellers; access gates; signage; hard and soft landscaping; lighting; boundary treatments; ESB substations; sprinkler tanks; pump houses; and all associated site development works above and below ground.
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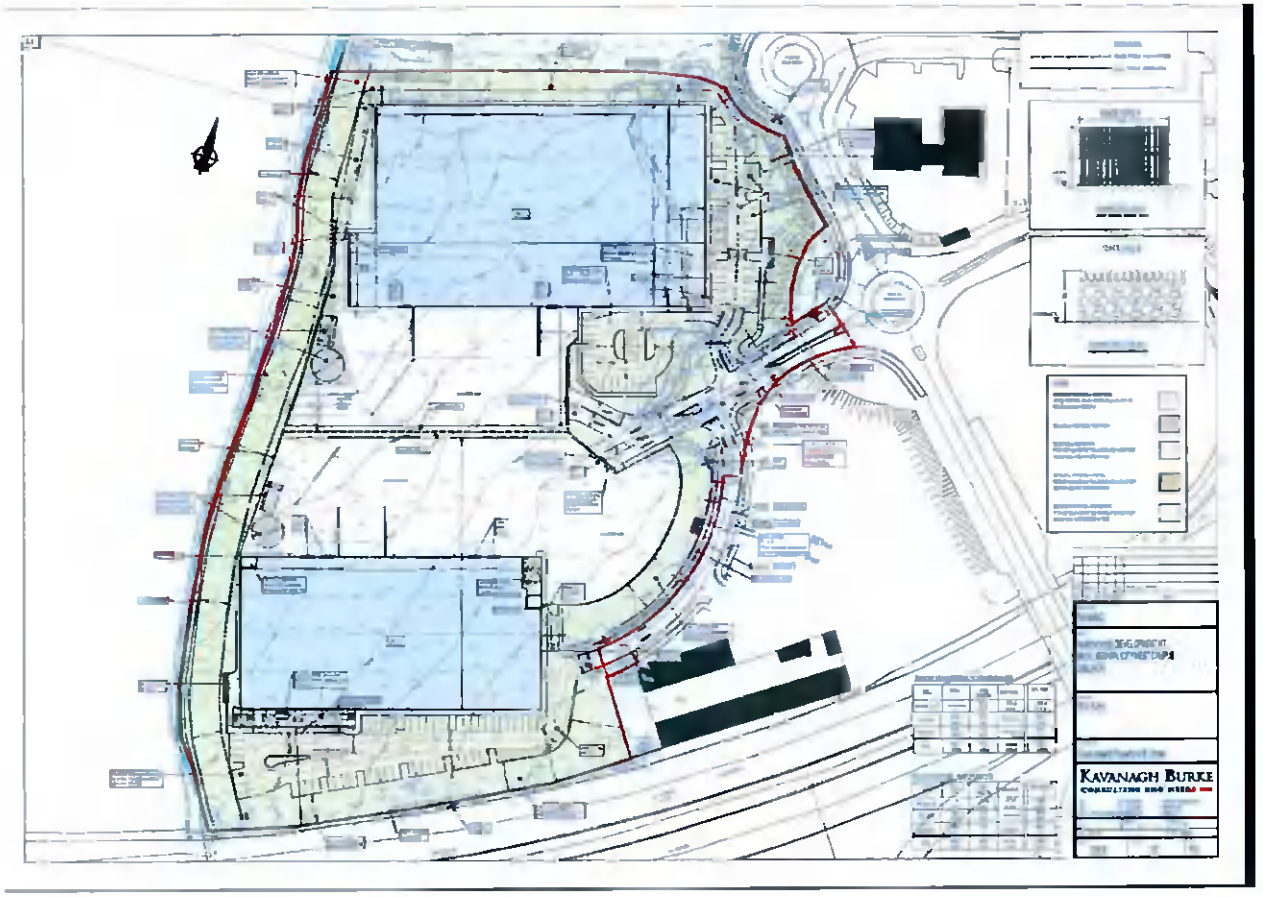
Figure 2. The proposed development



1.0 Assignment.

Following discussions with we agreed that my assignment was to:

1. To undertake a visual tree survey to, identify any potential impact the new development would have on the trees and hedgerows and vice versa.
2. To provide recommendations for their preservation and or removal.
3. Present a written report on the inspection of the trees
4. To provide a tree constraints plan highlighting which trees are to be removed, retained.

1.1 Limits of the Assignment.

Unless otherwise stated tree inspections have been undertaken from ground level and using non-invasive techniques only. Comments on the condition and safety of any tree relates to the condition of that tree at the time of the survey. It should be recognised that tree condition is subject to change due to, for example the effects of disease, wind or nearby development works. Changes in land use are also significant in respect of risk and condition assessment. Trees should therefore be inspected at 12 month intervals.

2.0 Methodology Employed

The tree survey and visual condition assessment was undertaken on the 7th of October 2020.

For 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. The trees for this site were surveyed as a group. There were no internal trees within the site. The site consisted of a row of large mixed deciduous trees along the western boundary, these tree are located along the east and west bank of a stream. A 10m riparian buffer zone will ensure that these trees are not impacted on by the development. The remaining site consists of self-seed scrub willow, poplar and bramble.

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 located within the proposed working areas. The objective of this survey was to gather information regarding the trees location on the proposed works site and the impact the proposed works may have on the trees. (**Please refer to Appendix 1 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 five tier rating scale with the following descriptors:

Specimen condition 5-tier rating system

1. Very poor-1-20%
2. Poor- 21-40%
3. Fair- 41-60%
4. Good- 61-80%
5. Very good 81-100%

4.0 Trees surveyed

The survey commenced on the 7th of October 2020. The impact of the development on the trees surveyed will be assessed in the Arboricultural Impact Assessment. The trees for this site were surveyed as a group. There were no internal trees within the site. The site consisted of a row of large mixed deciduous trees along the western boundary, these tree are located along the east and west bank of a stream. A 10m riparian buffer zone will ensure that these trees are not impacted on by the development. The remaining site consists of self-seed scrub willow, poplar and bramble.

5.0 Predicted Impact of The Proposed Development.

5.1 Trees to be removed on site

The arboricultural impact of the proposed development on the site will be low. No trees will require removal to accommodate the development. The scrub self-seeded poplar and willow will require removal. However these are young self-seed trees that have no amenity value for the site. It is recommended that protective fencing is put in place pre construction works and to remain in situ for the duration of the project to ensure the trees along the western boundary are retained and protected

5.0 Tree Removal

No trees require removal or remedial works.

6.0 Tree Protection

Prior to any construction or clearance works on this site all trees destined for retention need to be protected by the use of protective barriers and or ground protection, fit for the purpose of ensuring the successful long-term preservation of the trees. In order for the retained trees to be adequately protected on the site a construction exclusion zone needs to be identified. This zone is calculated based on the root protection area (RPA), which is the minimum area in m^2 which should be left undisturbed around each retained tree. The RPA should be calculated as an area equivalent to a circle with a radius 12 times the stem diameter for a single stem tree and 10 times basal diameter measured immediately above the root flare for trees with more than one stem arising below 1.5m above ground level.

Number of Stems	Calculation
Single Stem Tree	RPA (m^2) = $\frac{\{\text{stem diameter (mm) @ 1.5m x 12}\}^2 \times 3.142}{1000}$
Tree with more than one Stem arising below 1.5m above Ground level	RPA (m^2) = $\frac{\{\text{Basal Dia. (mm) x 10}\}^2 \times 3.142}{1000}$

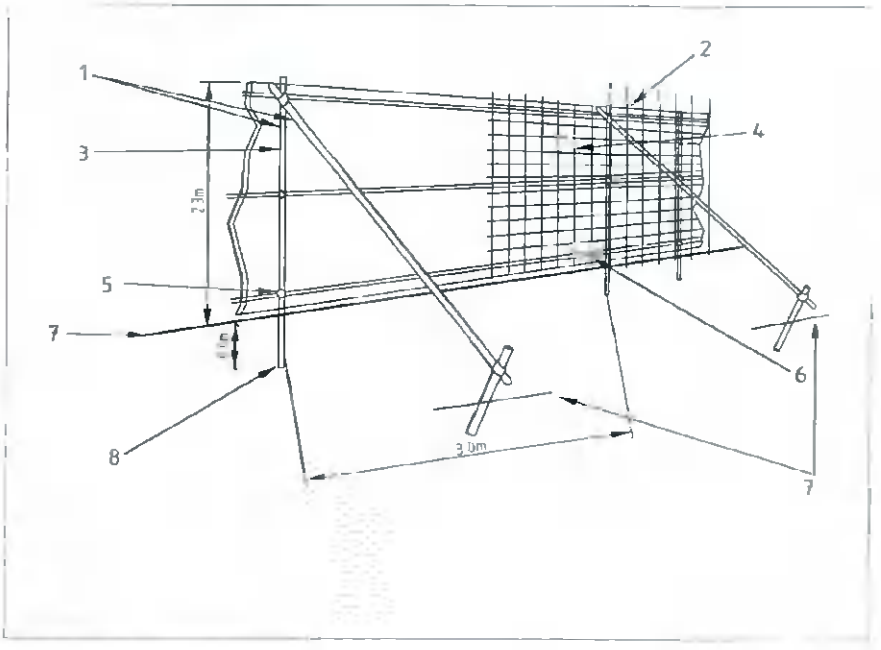
Note: The Calculated RPA should be capped to 707m^2 e.g. which is the equivalent to a circle with a radius of 15m or a square with approximately 26 m sides.

6.1 *Protective Barriers*

Trees that are destined to be retained must be protected by barriers, signage and/or ground protection prior to any materials or machinery being brought on site and prior to any development, demolition or soil stripping takes place. Areas that are designated for new plantings should be similarly protected. Barriers should be fit for the purpose of excluding construction activity. In most cases barriers should consist of a scaffold framework (Refer to Figure. 2 below) comprising a vertical and horizontal framework, well braced to resist impacts. Protective fencing is to be installed under the supervision of the appointed arborist and that no alterations are to be made without prior consultation with the arborist. To ensure the protective barriers are respected, clear concise signage must be affixed to the barrier in an unrestricted easily viewed location.

The protective barriers shall remain in an undisturbed condition and only removed on completion of all construction activity finished grading and sodding. Any breech of the protective fence shall be reported to the consulting arborist.

Figure 2. Protective Barrier



1. Standard scaffold poles
2. Uprights to be driven into the ground
3. Panels secured to uprights with wire ties and where necessary standard scaffold poles
4. Weld mesh wired to the uprights and horizontals
5. Standard clamps
6. Wire twisted and secured on the inside of fencing to avoid easy dismantling
7. Ground level
8. Approx. 0 6m driven into the ground

The above displays an example of a suitable protective barrier as recommended by *BS. 5837 2012 Trees in Relation to Construction. Recommendations.*

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Figure. 3 Signage to be placed on all protective fencing

The signage must state the following;

- No construction activity is to take place within the R.P.A. (unless pre-agreed by the Environmental clerk of works and the arborist)
- No materials of any kind are to be stored within the R.P.A.
- No "Spilling out" of materials shall take place within the R.P.A.
- No fires are to be lit within the R.P.A.

6.2 *Ground Protection*

Works within the R.P.A. are not recommended. Should essentials works be required within the R.P.A. the installation of ground protection in the form of a single thickness of scaffold boards on top of a compressible layer laid onto a geotextile may be acceptable. For wheeled or tracked movements within the R.P.A. the ground protection should be designed by an engineer to accommodate the likely loading. Any works within the R.P.A. must be undertaken with prior consultation with the arborist.

6.3 Tree Protection Plan

A site specific Tree Protection Plan has been included. See Appendix 2.

7.0 Arboricultural Method Statement/Tree Protection Strategy

The object of this arboricultural method statement/tree protection plan is to provide information for the building contractor/site manager on how the trees on the site need to be protected pre, during and post development works so that they can prepare their own site specific detailed method statement for their works

It is necessary for the protective fencing to be erected and all other mitigation measures required to be put in place prior to any development works commencing on site to ensure all retained trees and their critical rooting zone are protected for the duration of the works. Refer to tree protection plan (Appendix 2) for the position of protective fencing and additional mitigation measures.

The protection for trees and hedgerows shown for retention will occur in three stages known as pre, during and post development.

Table 1. Arboricultural Method Statement/Tree Protection Strategy – Management Stages

Arboricultural Method Statement/Tree Protection Strategy – Management Stages		
Stage 1 – Pre development works	**Stage 2 - The construction works stage**	**Stage 3-Post Development Works**
1 Consultation with Arborist(the arboreal consultant) and developer	1 Protective Fencing – management and maintenance	1 Site inspection by arborist to ensure plan adhered to and trees protected
2 Site meeting - consultation with the arborist developer, main contractor and sub-contractor	2. Excavations – works only commence when protective fencing in place	
3 Tree works – Appointment of professional tree surgeon *(The person who undertakes the tree remedial works)*	3. Working within the RPA – All works within the RPA to be discussed and agreed with the arborist	
4 Erection of protective fencing/Mitigation measures	4. Finished ground levels/Landscaping – All works to ensure the integrity of tree/s Protected	

7.1 Stage 1 - Pre development works

Prior to works commencing on site the following needs to be agreed and implemented:

1. The main contractor and or sub-contractors are to be briefed on the tree protection plan and ensure all measures are kept in place for the duration of the project
2. All personnel are to adhere to the recommendations of the appointed arborist
3. Any issues in relation to trees shown for retention must be discussed with the appointed arborist and the necessary mitigation measures put in place without delay and prior to the works taking place.

7.2 Site meeting

Prior to any works on site, if deemed necessary by the Local Authority that a meeting be arranged between, the project manager, site foreman, the project landscape architect. the project arborist, project ecologist and the local authority to identify and finalise the trees for removal and the line of protective fencing and any other mitigation measures.

7.3 Tree works

No tree works are required.

7.4 Erection of protective fencing/Mitigation measures

The erection of protective fencing is to be erected to the fence line shown in tree protection plan. The fencing must adhere with BS 5837: 2012 (Figure 2 and Figure 3 above). Signage must be placed on the fence to highlight its importance. Once the fencing is erected works can commence on-site.

8.0 Stage 2 - The construction works stage

8.1 Protective Fencing

During the course of the construction works the integrity of the fencing must be respected and remain in place at all times. No building materials or soil heaps are to be stored within this area. Should essential works need to take place with the root protection area the project arborist must be informed in advance and any mitigation measures are to be put in place. The protective fencing must remain in situ for the duration of the project and must only be removed upon completion of all works.

8.2 Excavations

Excavation works are only to commence once the protective fence line is in place. There will be no excavation works within the root protection areas.

8.3 Working within the RPA

No works will be undertaken within the root protection areas of the trees.

8.4 Finished ground levels/Landscaping

The existing ground levels within the RPA of the retained trees must be retained and incorporated into the finished landscaped development. Where changes in level occurs these are to be either graded into the finished levels starting outside the RPA or alternatively, retaining wall structures are to be used differentiating between the different levels.

All soft and hard landscaping within the RPAs must be carried out manually and the soil levels must not be lowered or raised resulting in root damage to the trees. All finished surfaces are to be porous to allow the free movement of water and gaseous exchange to the roots.

9.0 Stage 3-Post Development Works

The project is not to be considered complete until the arborist has inspected the site and is satisfied that all retained trees have been protected in accordance with the site specific Tree Protection Plan and there has been no negative impact on the retained trees on site as a result of the development.

10.0 Conclusion

The arboricultural impact will be low the large mature trees along the western boundary will be protected and retained for the duration of the development and will not suffer any negative impact as a result of the development.

There is an extensive proposed landscape plan that will ensure that the arboreal foot print of the site is enhanced with site appropriate trees. (Please refer to separate landscape plan).

I consider subject to implementing proposed landscape plan the above Arboricultural Method Statement/Tree Protection Strategy that there is unlikely to be significant long term detrimental impact as a consequence of the development proposal

Appendix 1-**Tree Categorization**.

Tree Categorization.

Category U

This category 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.

Category A.

Those 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

This category 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

This category 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), or young trees with a stem diameter below 150mm. Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation.

The above categories have sub-categories attached to the tree categorisation.

Sub-category 1- Mainly Arboricultural Values eg-A1

Sub-category 2- Mainly Landscape Values- B2

Sub-category 3- Mainly cultural values, including conservation C2

Appendix 1 – Tree Inventory

Tree Inventory Legend

Tree Dimensions - All dimensions are in meters.

Ht - Tree Height

Crown clearance - Lowest canopy height (distance from ground level to the first live branch)

Crown spread - Tree Canopy Spread measured by radii at north, east, south and west

Dia. -Stem diameter at approx. 1.50m from ground level.

RPA - Root Protection Area, as a radius measured from the tree's stem centre.

Physiological Condition

Good - A specimen of generally good form and health

Fair - A specimen with defects or ill health that can be either rectified or managed typically allowing for retention

Poor - A specimen whom through defect, disease attack or reduced vigour has a limited longevity or may be un-safe

Dead - A dead tree

Structural Condition - Information on structural form. defects, damage. injury or disease supported by the tree

PMR (Preliminary Management Recommendations) – refers to Arboricultural actions or works considered necessary at the time of the inspection and relating to the existing site context and tree condition. *Note is also made of works considered as urgent.*

Age Class - Young: *A tree, which has been planted in the last 10 years.*

Semi -mature *A tree that is less than 1/3 the expected height of the species in question.*

Early mature: *A tree, which is approximately 2/3's the expected height of the species in question.*

Mature: A tree that has reached the expected height of the species in question, but still increasing in size.

Over mature: *A tree at the end of its life cycle and the crown is starting to break up and decrease in size.*

Species Common name is given; botanical name is also given upon its first entry, in Italics.

Appendix 1.

Browns Barn

Tree #	Species Botanical Name	Age Class	DBH (mm)	HT (m)	Crown Sp.(M)	Crown Cl.(M)	Condition	Structural/Physiological Observations	Impact of development	PMR	Category	R.P.A. (M Radius)
Group 1	*Populus x italica* Lombardy Poplar *Fraxinus excelsior* Ash *Alnus glutinosa* Common alder	M	350	22	N=3 S=3 E=3 W=3	3	Good	A mature group of mixed deciduous trees located circa 10m from the proposed development They are in good condition and provide significant screening	No impact	Erect the appropriate protective fencing	B2	4.5m

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Appendix 2. Tree Protection Plan

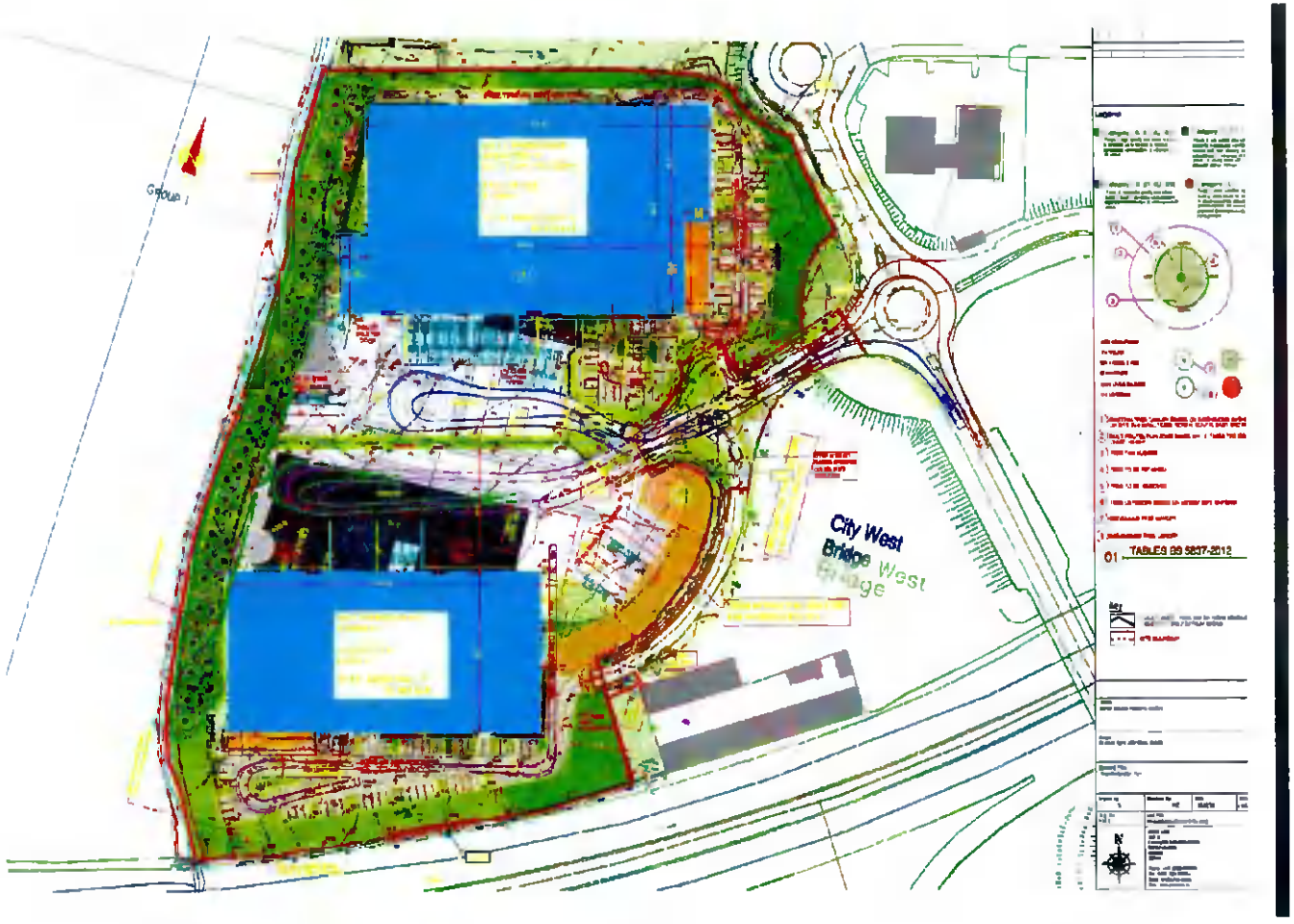

Figure 1 Site Photographs

Displays group 1, mixed deciduous trees along the western boundary. These trees will be naturally protected by the 10m no build riparian buffer zone

Displays the regeneration of willow, alder and poplar that will be required to be removed

Displays the small nature of the regeneration that will require removal.

This report was prepared by:

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Arbor-Care Ltd, Professional Consulting Tree Service

Yours in Conservation.

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