

murray & associates
landscape architecture

ARBORICULTURAL REPORT
ARBORICULTURAL INVENTORY
AND IMPACT ASSESSMENT

Incorporating a
TREE PROTECTION STRATEGY

At

PARK WEST SHD

FOR

GREENSEED LTD.

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Issue Sheet

Rev. No.	Issue Status	Date	Prepared By	Checked By
1	For Issue	15/12/21	HM/JW	JW

Introduction & Terms of reference

The trees and hedgerows were surveyed on the 13th December 2021 by the undersigned. The findings of this survey and assessment have been summarised and recorded in the following report. A number of trees on the development site area were surveyed and assessed. The trees on site will be removed to accommodate the development, but the quality of trees to be removed is low, and the effects of their removal will be mitigated by additional tree planting as part of the development. In total there are 11 trees on site, all are to be removed.

Scope

The site is the subject of a current planning application. The proposed development comprises 753 residential units in 2-14 residential blocks buildings (blocks A-G), with 240 sq. m of retail/commercial units, and 440 sq. m for a creche.

The site is currently brownfield, having been previously cleared for a development that never occurred. The site is bounded by the Dublin to Limerick/Waterford rail line to the north, with the Park West and Cherry Orchard rail station 100m northwest of the site. Park West Avenue runs along the western edge of the site, intersecting with Park West Road, the southern boundary. The eastern edge is bounded by 4 large box industrial units. An existing hotel, entrance, and car park are the only element within the site.

The site contains a large number of trees, this report assesses the 11 trees on site as of 13th December 2021. This report has been commissioned to provide an arboricultural assessment of the site to assist the design team as they prepare detailed plans for the new development. The purpose of this assessment is to provide an analysis of any potential impact of the planning applications proposed development on the existing trees and hedgerows. The report will provide recommendations for the preservation and or removal of trees and hedgerows. It will present a written report on the inspection of the trees. The report will provide a tree protection plan highlighting which trees are to be removed and/or retained.

This report should be read in conjunction with the following drawings:

Landscape Plan (REF:1757_PL_3_00);

Tree Inventory Plan: (REF.1757_TS_P_01);

Arboriculture Impact Plan: (REF.1757_TS_P_02);

Proposed Development

The proposed development comprises 753 residential units in 2-14 residential blocks buildings (blocks A-G), with 240 sq. m of retail/ commercial units, and 440 sq. m for a creche



Figure 1 – Site location and context plan

Methodology Employed

An initial tree survey and visual condition assessment was on the 13th December 2021. Using the information gathered on site the data was input into GIS software Tree Plotter where they can accurately be located in ITM coordinates. For the purpose of this report the trees were assessed in accordance with BS 5837: 2012 “Trees in relation to design, demolition and construction”. Only trees with diameters of 75mm or greater were surveyed, and those smaller than this were noted in the survey. 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.

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.

Tree Survey Methodology

Tree Species

Common and botanical names of the tree species were recorded.

Tree Crown Dimensions

Tree height (Ht), crown clearance (Cl) and crown-spread (NESW cardinal points) measurements are in metres and are estimated.

Stem Diameter (Dbh)

Measurements are in millimetres and taken at 1.5m from ground level, multiple stems (St) are recorded as a function of the BS:5837 RPA formulae described below.

Tree age classes were recorded as:

Y	Young	Recently planted (with 5 years or so)
SM	Semi-Mature	Well established young tree
EM	Early Mature	Established tree not yet fully grown
M	Mature	Full or near full grown tree
LM	Late Mature	Older specimen in full maturity
OM	Over Mature	Reached full maturity now declining through natural causes
Vet	Veteran	Notable due to large size, old age, ecological importance

Tree Physiological and Structural condition was graded as:

Good:	No obvious defects visible, vigour and form of tree good.
Fair:	Tree in average condition for its age and the environment.
Poor:	Tree shows signs of ill health/structural defect
Bad:	Tree in seriously bad health/major structural problem

Work Recommendations

Preliminary management recommendations are made where necessary and pertain to current site conditions unless otherwise stated.

Estimated Remaining Contribution (ERC)

The approximate number of years that a tree should continue to live and contribute amenity, conservation or landscape value to the site under current site condition.

Tree Retention Categories

The tree retention category system grades a tree's suitability for retention within a development:

- A** Indicates a tree of high quality and value. These are trees that are particularly good examples of their species, which also provide landscape value. These trees are in such a condition as to be able to make a substantial contribution. (A minimum of 40 years is suggested)
- B** Indicates a tree of moderate quality and value. Trees that might be included in the high category but are downgraded because of impaired condition. These trees are in such a condition as to make a significant contribution. (A minimum of 20 years is suggested)
- C** Indicates a tree of low quality and value - trees with an estimated remaining life expectancy of at least 10 years, or trees with a stem diameter of below 150mm and/or <10m in height.
- U** Trees that are 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.

Subcategories

Tree categories may be further categorised using the following sub-categories (e.g.C1, C2 or C3)

- 1** Mainly Arboricultural qualities,
- 2** Mainly landscape qualities,
- 3** Mainly cultural values.

Root Protection Area

The Root Protection Area (RPA) is the minimum area around individual trees to be protected from disturbance during construction works; RPA is recorded as a radius in metres measured from the tree stem and is shown on the tree survey/constraints drawing as a circle with the tree stem in the centre.

For single stem trees, the root protection area (RPA) should be calculated as an area equivalent to a circle with a radius 12 times the stem diameter.

For trees with more than one stem, one of the two calculation methods below should be used. The calculated RPA for each tree should be capped to 707 m².

For trees with two to five stems, the combined stem diameter should be calculated as follows:

$$\sqrt{((\text{stem diameter } 1)^2 + (\text{stem diameter } 2)^2 \dots + (\text{stem diameter } 5)^2)}$$

For trees with more than five stems, the combined stem diameter should be calculated as follows:

$$\sqrt{((\text{mean stem diameter})^2 \times \text{number of stems})}$$

The survey concentrated primarily on the significant trees located within the development area. The objective of this survey was to gather information regarding the tree's location on the proposed development site and the impact the proposed development 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 is enough 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.

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 digital clinometer. The trees were categorized in accordance with BS5837:2012.

Tree Survey Results

Category	Number of trees	Trees to be removed
A	0	0
B	0	0
C	11	11
U	0	0

Table 1. Category of the Trees surveyed (BS 5837:2012, Item 4.5 Tree categorisation method)

The trees within the site area are in fair to good condition. There are 11 Small Leaved lime Trees in Category C2 and C3 all of which are to be removed. Several of the trees have stunted growth due to lack of soil volume. The application includes the planting of additional trees on-site, it is recommended trees planted in an urban setting be planted in tree pits with a volume of 10-12 cu/m to allow unimpaired growth.



Fig.1 T1 Tilia cordata



Fig 2. T4 Showing Stunted Growth

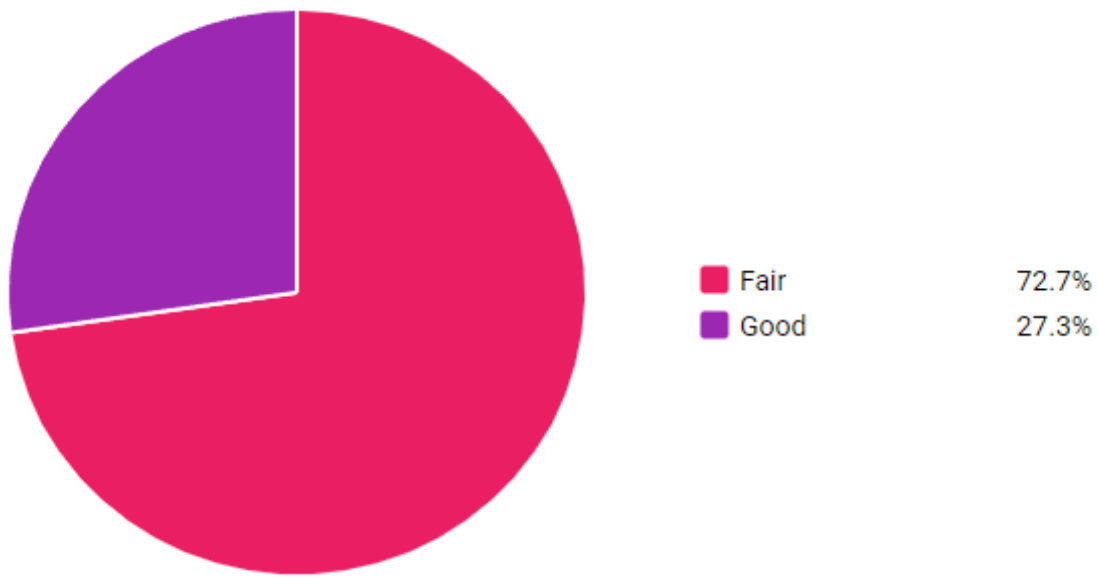


Fig.3 Tree conditions on-site by percentage

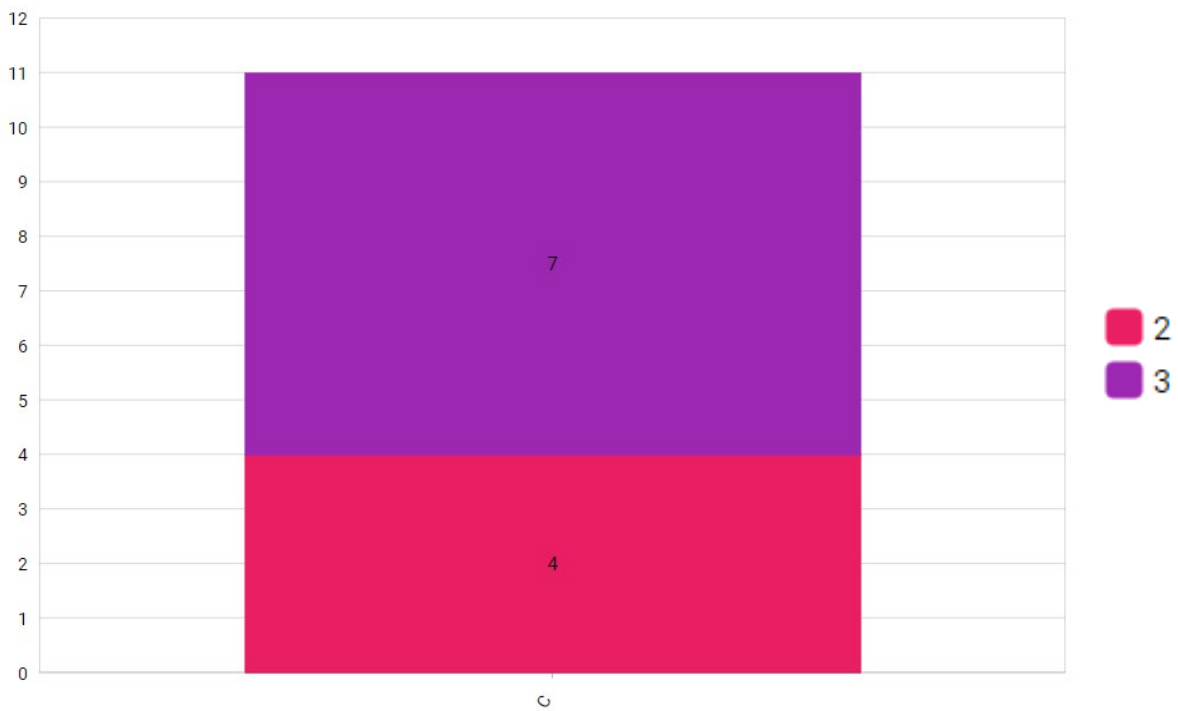






Figure 4. Tree Sub-Category Breakdown

Conclusions

The only trees on this predominantly brownfield site are 11no. Lime trees, which are semi-mature and were planted at the same time as the hotel was constructed, in the late 2000s. All of these trees will be removed due to the proposed development. The proposed planting will work to mitigate any loss of trees as a result of the development and there will be a net positive to the tree cover in this particular location. The proposed landscape plan details the planting of c.400no. new native broadleaf and non-native parkland trees..

Cascade chart for tree quality assessment- BS5837:2012				
Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (See Note)				
Category U 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"> 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) Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline 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 <p><i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see [BS5837:2012] 4.5.7.</i></p>			
Trees to be considered for retention				
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Category A Trees of high quality 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)	
Category B Trees of moderate quality 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	
Category C 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 benefit	Trees with no material conservation or other cultural value	

Tree Survey Tables

ID	Latin Name	Common Name	Stem Dia. [mm]	Tree Height [m]	Branch Spread [m]				Life Stage	Structural Condition	Physiological Condition	Quality Category	RPA [m]	Comments
					N	E	S	W						
					T1	Tilia cordata	Small-Leaved Lime	250						
T2	Tilia cordata	Small-Leaved Lime	220	7	3	2	1.5	1.5	Semi-mature	Fair	Good	C2	2.64	Minor damage to crown
T3	Tilia cordata	Small-Leaved Lime	260	6	3	2	2	3	Semi-mature	Good	Good	C2	3.12	Crown has been trimmed. Some witch broom present.
T4	Tilia cordata	Small-Leaved Lime	180	4	1.5	1.5	1.5	1.5	Semi-mature	Good	Fair	C3	2.16	Growth stunted
T5	Tilia cordata	Small-Leaved Lime	180	4	1.5	1.5	1.5	1.5	Semi-mature	Good	Fair	C3	2.16	Growth stunted
T6	Tilia cordata	Small-Leaved Lime	180	4	1.5	1.5	1.5	1.5	Semi-mature	Good	Fair	C3	2.16	Growth stunted
T7	Tilia cordata	Small-Leaved Lime	200	4	2	2	2	2	Semi-mature	Good	Fair	C2	2.4	Growth stunted
T8	Tilia cordata	Small-Leaved Lime	180	4	1.5	1.5	1.5	1.5	Semi-mature	Good	Fair	C3	2.16	Growth stunted
T9	Tilia cordata	Small-Leaved Lime	180	4	1.5	1.5	1.5	1.5	Semi-mature	Good	Fair	C3	2.16	Growth stunted
T10	Tilia cordata	Small-Leaved Lime	180	4	1.5	1.5	1.5	1.5	Semi-mature	Good	Fair	C3	2.16	Growth stunted
T11	Tilia cordata	Small-Leaved Lime	180	4	1.5	1.5	1.5	1.5	Semi-mature	Good	Fair	C3	2.16	Growth stunted

Tree Survey Plans



Figure 2 – Tree inventory on TreePotter



Figure 3 - Proposed landscape layout (REF:1757_PL_3_00)

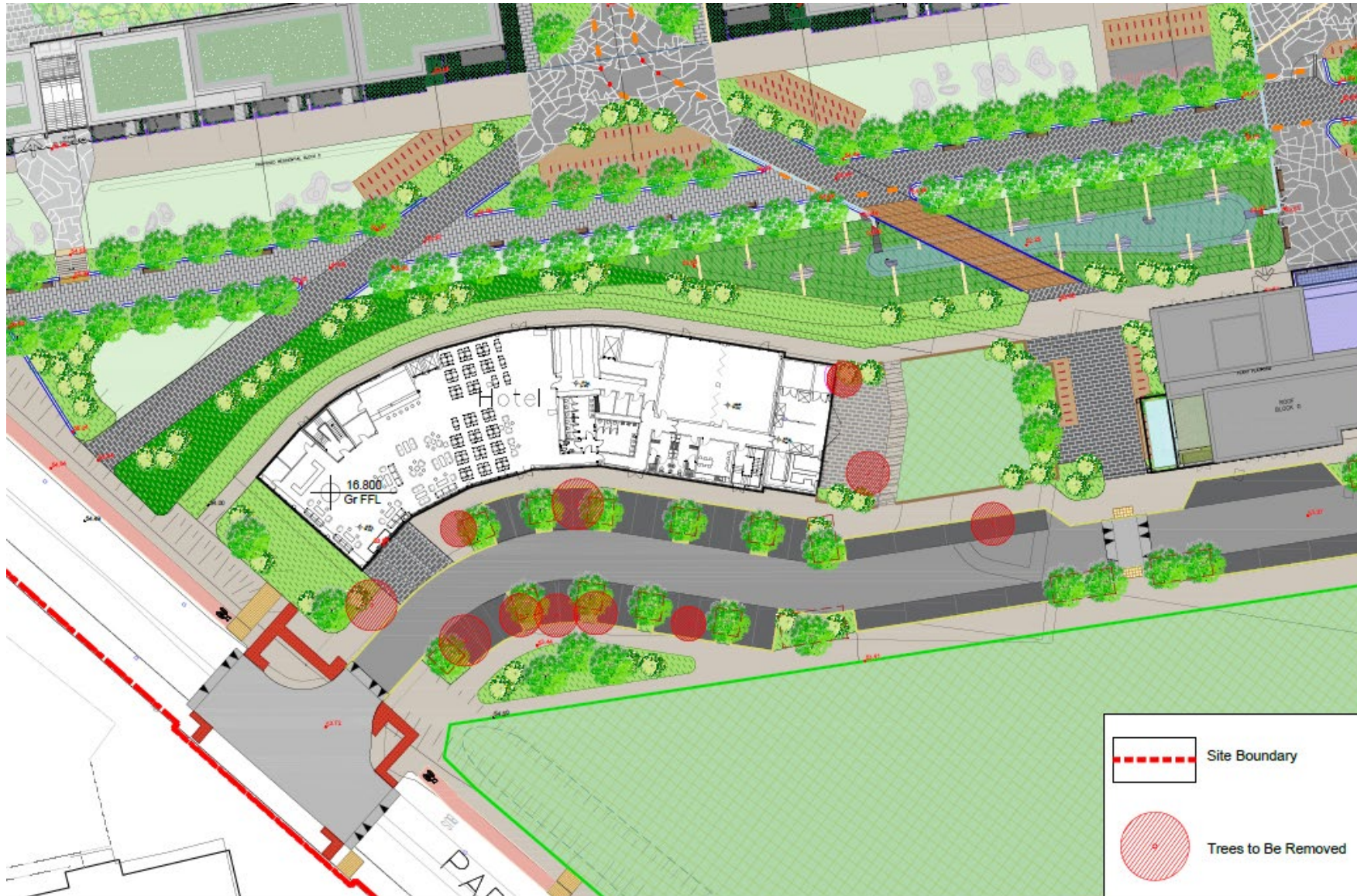


Figure 4 – Arboricultural Impact Plan (REF:1757_TS_P_02)

Disclaimers

This report is intended solely for the benefit of the parties to whom it is addressed, and no responsibility is extended to any third party for the whole or any part of its contents. The conclusions and recommendations in this report are only valid for a period of one year. This period of validity may be reduced in the case of any change in conditions to or in proximity to the tree. In the event of adverse weather conditions, there is the possibility of any tree despite good report surveys, falling over.

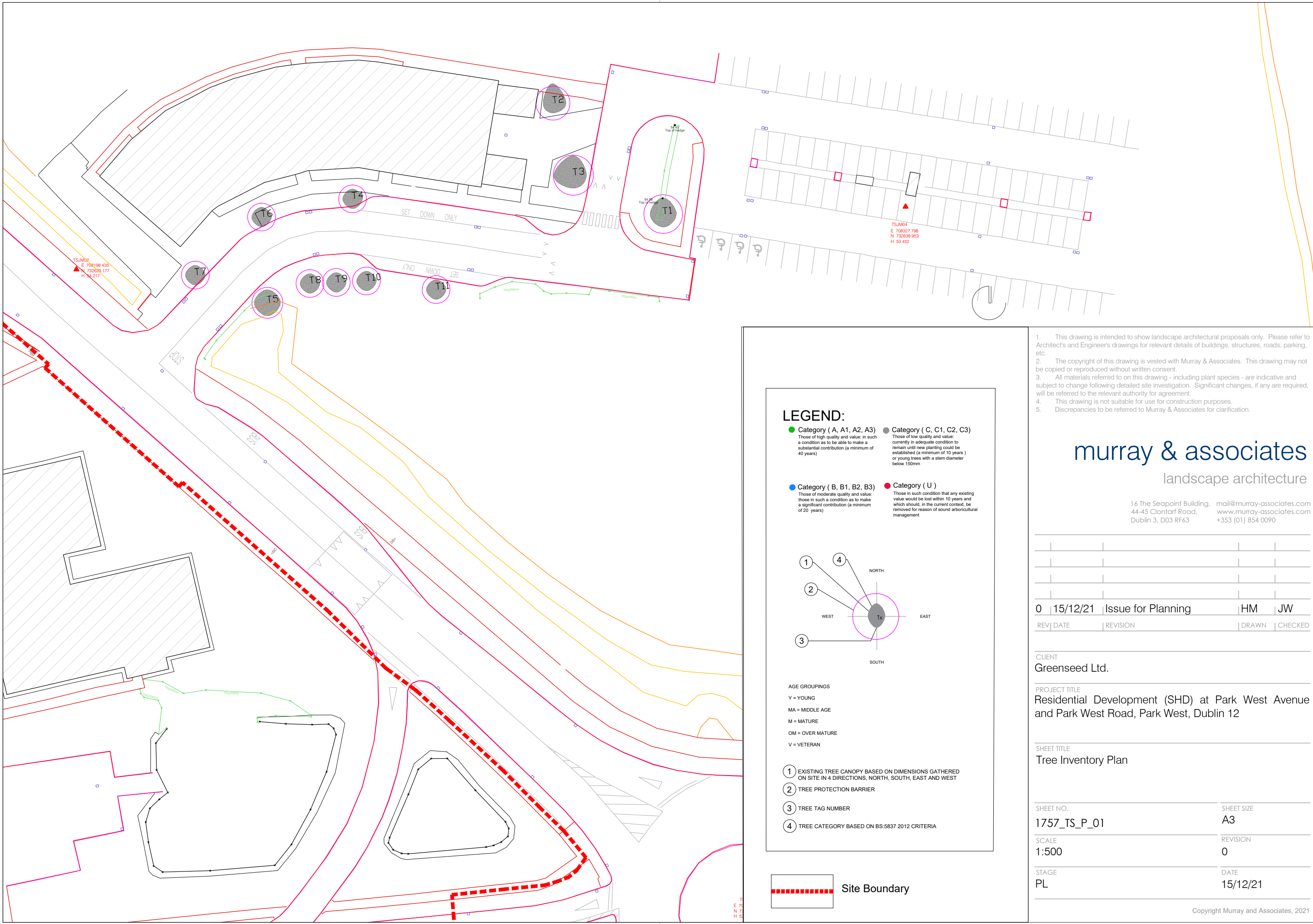
In the event of a falling tree causing damage to residential or non-residential buildings in their proximity, no liability will attach to this firm, in the event of damage by such trees, to any person, any building public or private, or any mechanical vehicle or otherwise. Recommendations made in this report are subject to the knowledge and expertise of the qualified Arborist that carried out the above inspections.

Signed _____

Dated: 15th December 2021

John Ward

ISA Certified Arborist

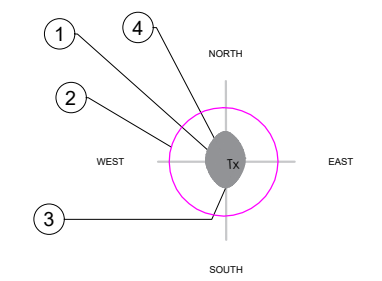


TSJM02
E 708198.435
N 732629.177
H 54.217

TSJM04
E 708327.798
N 732638.953
H 53.452

LEGEND:

- **Category (A, A1, A2, A3)**
Those of high quality and value: in such a condition as to be able to make a substantial contribution (a minimum of 40 years)
- **Category (C, C1, C2, C3)**
Those of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years) or young trees with a stem diameter below 150mm
- **Category (B, B1, B2, B3)**
Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years)
- **Category (U)**
Those in such condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reason of sound arboricultural management



- AGE GROUPINGS
- Y = YOUNG
 - MA = MIDDLE AGE
 - M = MATURE
 - OM = OVER MATURE
 - V = VETERAN

- ① EXISTING TREE CANOPY BASED ON DIMENSIONS GATHERED ON SITE IN 4 DIRECTIONS, NORTH, SOUTH, EAST AND WEST
- ② TREE PROTECTION BARRIER
- ③ TREE TAG NUMBER
- ④ TREE CATEGORY BASED ON BS:5837 2012 CRITERIA



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0	15/12/21	Issue for Planning	HM	JW
REV	DATE	REVISION	DRAWN	CHECKED

CLIENT
Greenseed Ltd.

PROJECT TITLE
Residential Development (SHD) at Park West Avenue and Park West Road, Park West, Dublin 12

SHEET TITLE
Tree Inventory Plan

SHEET NO.	SHEET SIZE
1757_TS_P_01	A3
SCALE	REVISION
1:500	0
STAGE	DATE
PL	15/12/21



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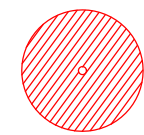
0	15/12/21	Issue for Planning	HM	JW
REV	DATE	REVISION	DRAWN	CHECKED

CLIENT
 Greenseed Ltd.

PROJECT TITLE
 Residential Development (SHD) at Park West Avenue and Park West Road, Park West, Dublin 12

SHEET TITLE
 Arboricultural Impact Plan

SHEET NO. 1757_TS_P_02	SHEET SIZE A3
SCALE 1:500	REVISION 0
STAGE PL	DATE 15/12/21

 Site Boundary
 Trees to Be Removed