Independent Tree Surveys Ltd

Tree Survey Report

LIT-City Centre Cycle Scheme
Limerick City
Co. Limerick

June 2022

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Contents

1.0 Introduction

Limerick City and County Council are planning to develop a new and improved cycle route from the Limerick Institute of Technology (LIT) campus into the city centre. The new cycle scheme includes numerous street trees and trees that are growing in some of the private gardens along its proposed route that may or may not be impacted by the works required to deliver the project.

This report has been commissioned to provide an arboricultural assessment of the trees along the proposed route to input into the design and planning of the new development.

2.0 Report Limitations

- The inspection has been carried out from ground level using visual observation methods only.
- Trees are living organisms whose health and condition can change rapidly. Trees should be checked on a regular basis, preferably once a year. The conclusions and recommendations of this report are valid for one year.
- The fruiting bodies of some important species of decay fungi only emerge at certain times of the year and may not have been visible during this inspection.
- There is no such thing as a 100% safe tree in all conditions, since even perfectly healthy trees may fall or suffer branch break.
- The locations of some the trees along the route of the proposed greenway were plotted in their *approximate* locations based using a handheld GPS and their positions on the survey drawing should be regarded as indicative.

Report Prepared by

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M Abor A (Membership number PR407)

June 21st 2022

3.0 Survey Methodology

The trees alongside the proposed route of the cycle scheme were assessed from ground level using Visual Tree Assessment (VTA) techniques and relevant observations and findings were recorded in compliance with the industry standard document BS5837: *Trees in relation to design, demolition and construction (2012)*. Groups of trees were assessed collectively. Trees on private property alongside the route were not directly accessed; these trees were assessed based on what parts of the trees were visible from the public domain and should be regarded as preliminary.

3.1 Survey Key

Tree Numbers

Individual trees and tree groups along the route of the proposed cycle scheme were allocated numbers. These numbers identify the trees and tree groups in the survey schedule and on the supporting survey drawings.

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. Where tree stems could not be directly accessed; the stem diameters were estimated.

Tree age classes

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	Full maturity now declining through natural causes
Vet	Veteran	Notable due to large size, old age, ecological importance

Tree Physiological and Structural condition

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 conditions.

3.2 Tree Retention Category (Cat) (BS5837: 2012 Trees in relation to design, demolition and construction – Recommendations)

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 younger 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.

Sub Categories
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.

3.3 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.

a) For trees with two to five stems, the combined stem diameter should be calculated as follows:
√ ((stem diameter 1)2 + (stem diameter 2)2 ... + (stem diameter 5)2)
b) For trees with more than five stems, the combined stem diameter should be calculated as follows:
√ ((mean stem diameter)2 × number of stems)

4.0 Findings

The trees were assessed during site visits in May 2022; the field data for the trees is contained in the accompanying Tree Survey Schedule. Approximate tree location, BS5837 category, RPA and approximate crown shape are shown on the Tree Survey/Constraints Drawings 22027_TS sheets 1-10.

The survey included 90 individual trees comprised of 1 category A (high value) tree, 35 category B (moderate value) trees, 47 category C (low value) trees and 7 category U (<10 years useful life) trees. Four tree groups were included in the schedule, all of which were graded category C.

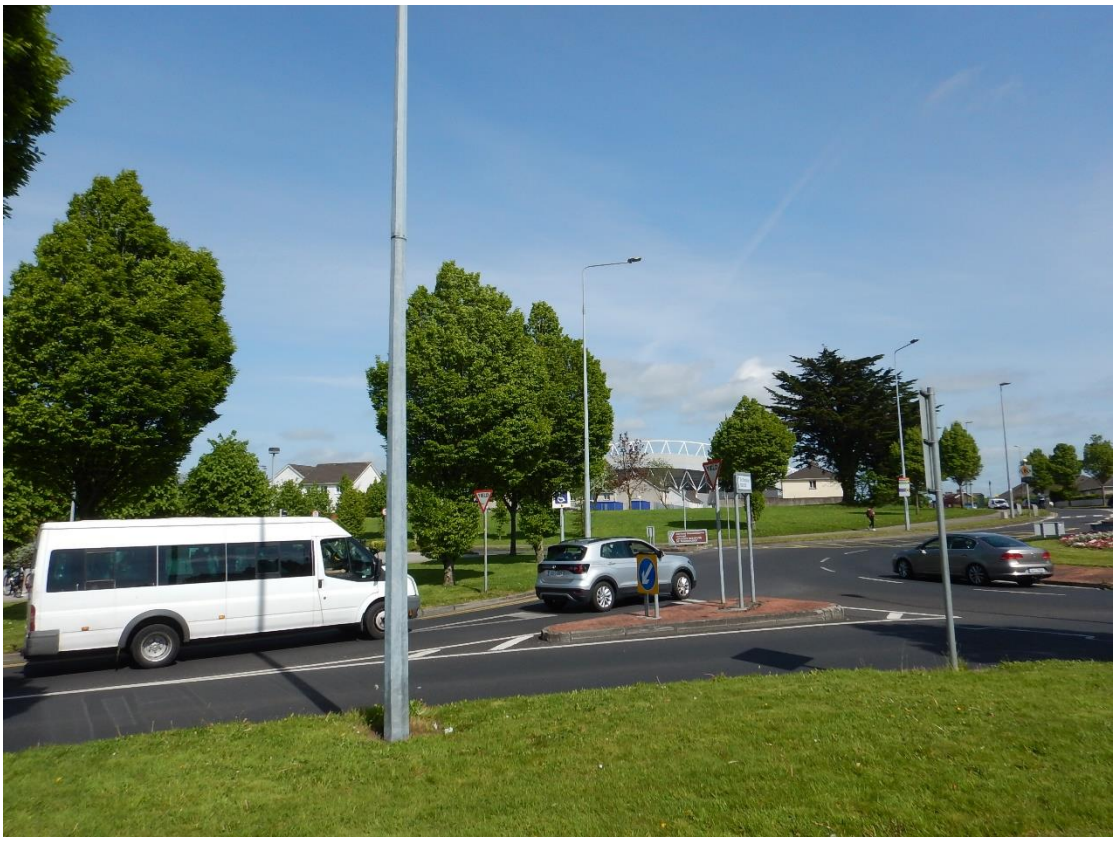
74 of the individual trees were growing in roadside verges or public open green spaces, 16 were in private grounds (mostly front gardens of private houses) and 2 were growing in the grounds of the maternity hospital.

The dominant tree species present were Hornbeam (*Carpinus betulus*), Lime (*Tilia* spp.) and Maple (*Acer* spp.). The 29 Hornbeam trees were very prominent in the streetscape, with their distinctive fastigiate form and linear group planting along the roadsides. The Hornbeam trees are in mostly good physiological condition, however, almost every tree has sustained some bark damage to the lower stem and root flair from grass maintenance machinery. The 20 Lime trees recorded in the schedule are mostly smaller trees of comparatively low value, however, the single category A tree recorded in the survey area is the mature Lime tree (T83) in the small public open space on Bellefield Gardens. The Acer trees are mostly fair or good condition, despite most having been severely reduced or 'topped' in the recent or more distant past.

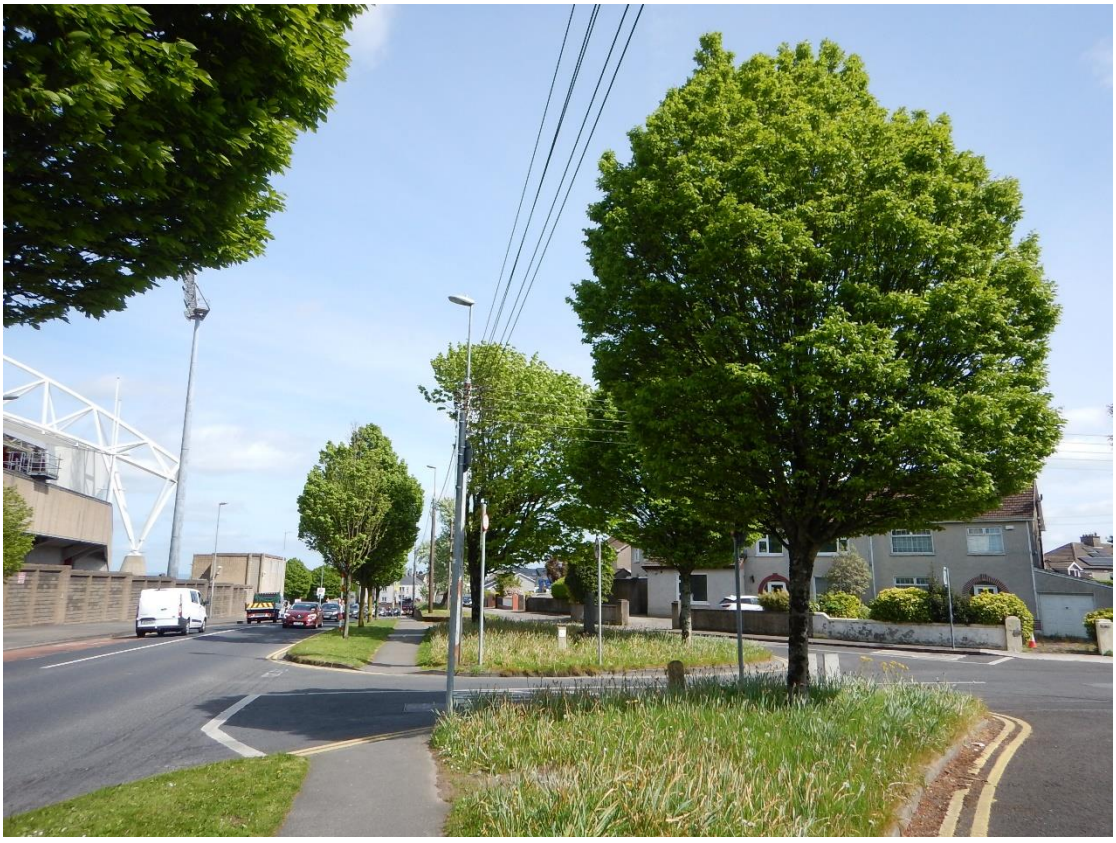
5.0 Preliminary Management Recommendations

Preliminary management recommendations for the trees and hedges assessed are listed in the tree survey schedule in the appendices; these pertain to *current* site conditions unless otherwise stated. All tree work should be carried out by qualified and experienced tree surgeons working to *BS3998 (2010) Tree Work – Recommendations.*

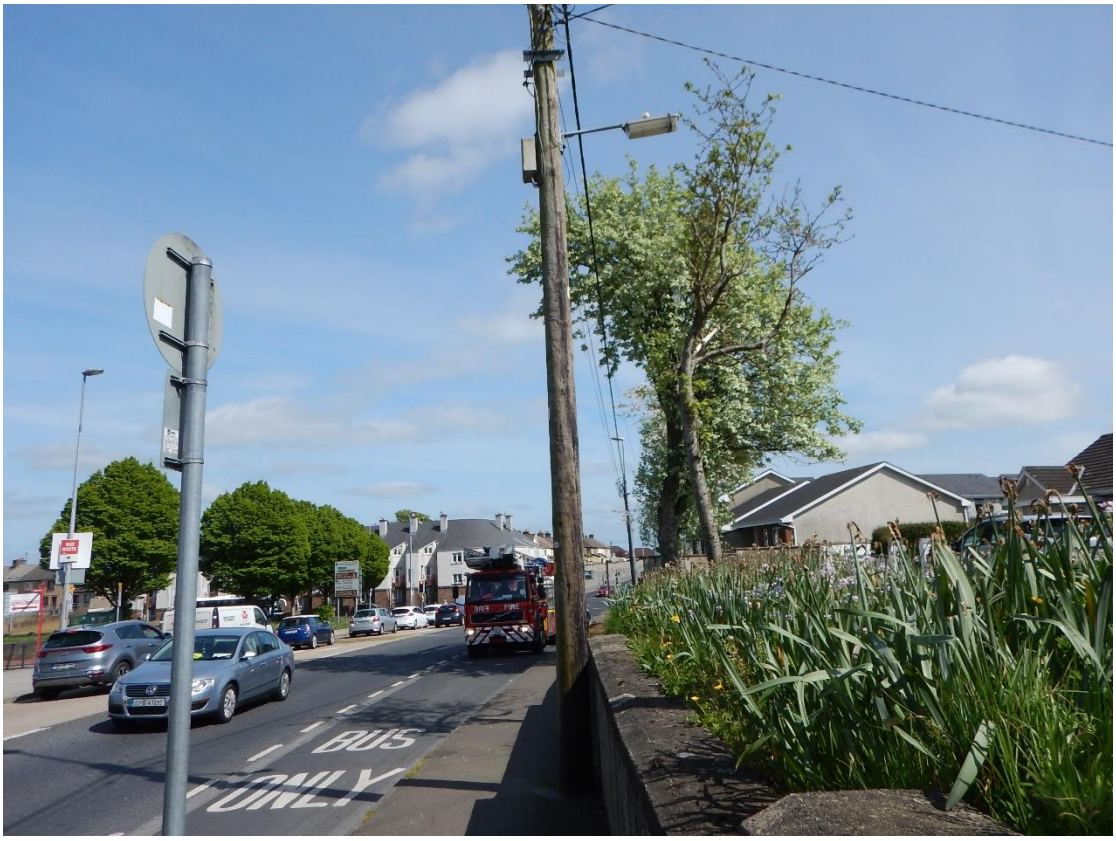
6.0 Site Photographs



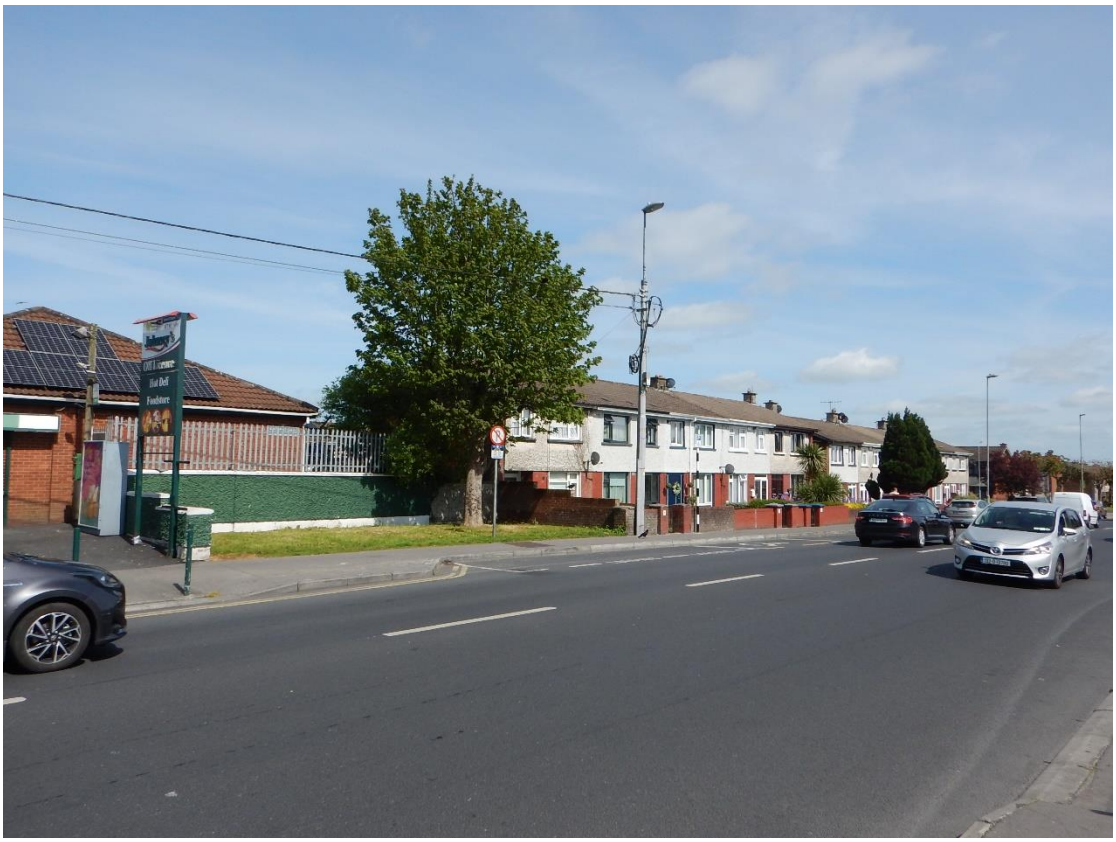
1. Trees (T1-12, 19-21, 89-90) in verges and green open space close to LIT and the Cratloe Road roundabout



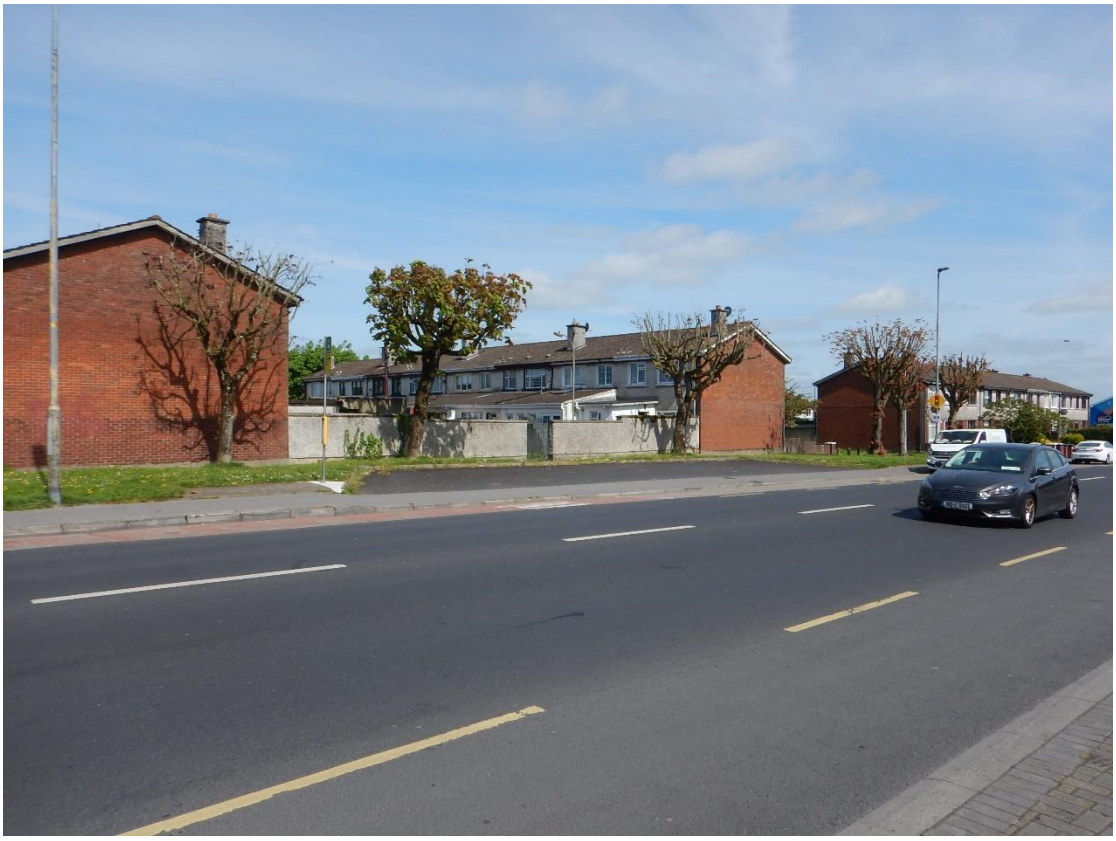
2. Street trees (Hornbeam, Sorbus and Maple (T23-31) opposite Thomond Park stadium



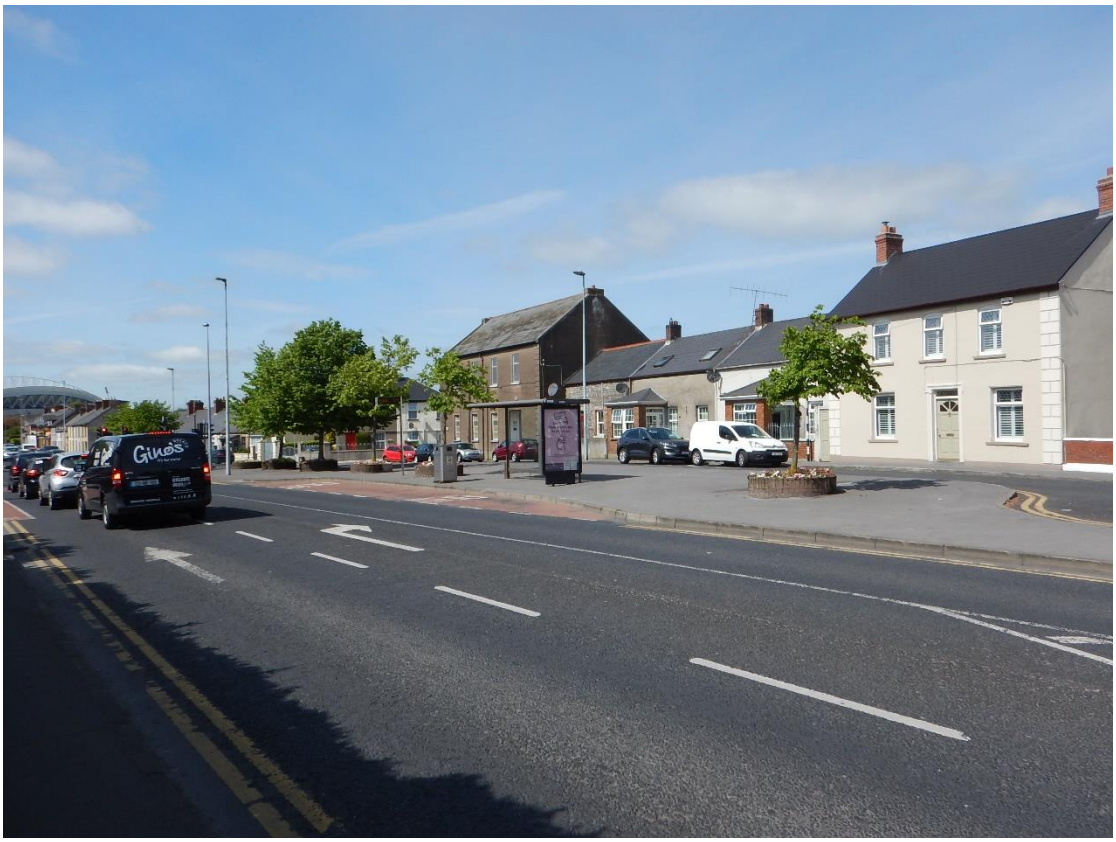
3. Trees (Hornbeam T37-42 and Sorbus spp T33-36.) at the eastern end of Cratloe Road, just west of the Shelbourne Road junction



4. Sycamore tree T44 outside convenience store on Sexton Street North, with other trees(T45-50) along the street to the east

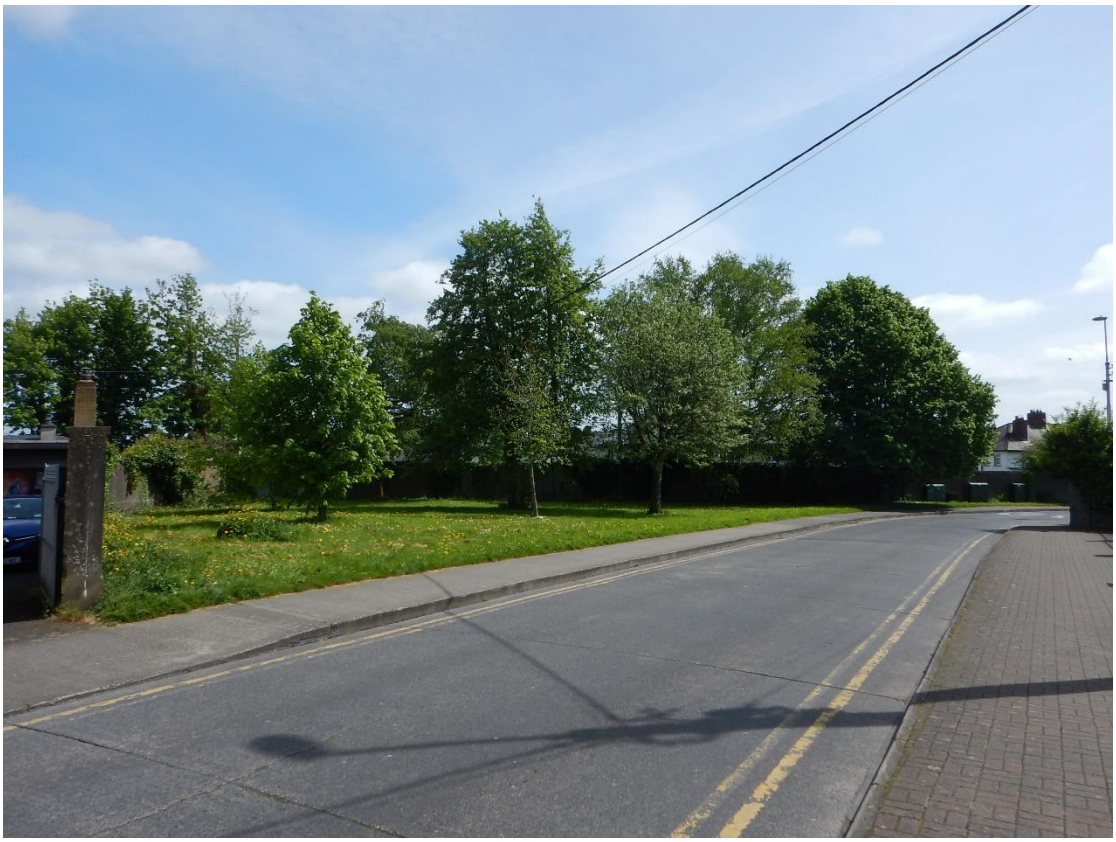


5. Recently topped Maple trees (T48-53) along Sexton Street North



6. Young Lime trees (T56-63) planted into a series of raised beds/planters along High Road

7. Birch and Lime trees(T67-69) in gardens along Belfield Court



8. Cluster of trees T76-83) in the small park area off Bellefield Gardens

7.0 Arboricultural Impact of the New Development

The cycle scheme project will require that some of the existing street trees will have to be removed to make space for the new road, footpath and cycle lane layout. A total of 25 trees identified in the survey schedule will be removed: comprising 5 category B trees, 18 category C, and 2 category U. The quality and value of the trees to be removed is relatively low, with 80% being of low value or poor quality. New tree planting is proposed within the new layout, which is intended to mitigate the loss of trees resulting from the project. All of the trees being removed are highlighted in red on the Tree Protection Plan drawing 22027_TPP.

The new hard surfacing (roads, kerbs, footpaths and cycle lanes) will run past some of the street trees being retained along the route, with some encroachment into the nominal root protection areas (RPAs) of several of these trees (T2, T8, T12, T14, T15, T17, T18 and T40). Trees T2, T8, T12 and T40 are located within wider open green space where roots can spread unimpeded, the extent of RPA encroachment is comparatively small and if contained to a minimum, any impact should be limited. It is considered worthwhile to attempt to retain these trees rather than to remove them in a pre-emptive fashion. Where project ground levels allow for the new surfacing to be constructed on top of the existing soil levels, the new surfacing can be built upon specialist engineering products (such as cellular confinement systems CCSs) designed to prevent soil excavation or compaction within the RPAs of retained trees. The areas of new and replacement surfacing near trees T14-T18 will be laid upon an engineered CCS layer such as *Cellweb*.

Where the existing hard surfacing within the RPAs of tree is being replaced with new materials, there is potential to damage the roots of the adjacent trees. In these instances, the existing sub-base should be left intact wherever possible. This may be an issue close to trees T18, T26, T44, T51, T53, and T83.

Some light branch pruning will likely be necessary to some of the trees along the route, this will be mostly crown lifting or branch shortening to improve clearances and will have no significant deleterious effect on the trees if carried out professionally.

The construction works will have to be well-planned and managed to ensure that no significant damage is inflicted on the trees being retained along the project route during the build; recommendations on tree protection are listed below.

8.0 Arboricultural Method Statement

8.1 Tree Work Operations

The 25 trees labelled T9-11, 13, 19-23, 27-30, 41-42, 56-64 and 70, will be felled/removed. The trees to be removed are indicated on the Tree Protection Plan drawing 22027_TPP. The stumps of trees T10, 11, 13, 23, 27, 28, 41 and 42 will be removed by stump grinder rather than digger/excavator.

Some of the trees along the route may need to be pruned to lightly crown raise the trees and to shorten any branching extending over the new paths and cycle lanes to increase the clearances from the routes and works area. The precise extent of the branch pruning will be determined by a site arborist and will depend on the level of clearance required to prevent any interference with the works and to ensure that no branches are damaged inadvertently by site activity. The pruning will be carried out by professional tree surgeons working to BS3998 (2010) and should have no significant deleterious effects on the trees.

All arisings (cordwood and brash) will be removed to a green waste facility or processed into mulch for recycling on the site.

8.2 Tree Protection Measures

The tree protection measures will be overseen and directed on-site by a dedicated site arborist. The arborist should also make regular visits to the site during the construction process to ensure compliance and be available to provide advice and guidance where necessary.

Tree protection fencing (see figure 1 below) or site hoarding will be erected along the lines shown on the Tree Protection Plan Drawing 22027_TPP to prevent demolition or construction work encroaching into the root protection areas of the trees being retained. The tree protection measures will be put in place *before* demolition or construction work commences and should remain in place until their removal or re-location is authorised by a qualified arborist.

The linear nature of the site and the need to accommodate pedestrians etc. for the duration of the project will likely mean that the tree protection fencing systems will need to be modified during the course of the project to reflect the various stages of the works; these modifications will be undertaken following consultation with the project arborist.

The new hard surfacing close to trees T14-18 should be constructed using a root friendly supporting base such as Cellular Confinement System (CCS) laid upon the existing soil surface as it passes through the RPAs of the trees. These areas of RPA that are to be underlain with a CCS will be protected by additional fencing or temporary ground protection mats until the CCS is installed. The CCS systems should be used where new hard surfacing is to be laid within the RPAs of other trees, however, where the use of such a system is not practical due to site levels, the ground

disturbance/digging towards the tree from the new kerb should be restricted to the absolute minimum. Any new kerb systems running through the RPAs of trees being retained should be of a type that require minimal soil excavation.

The areas recommended for the CCS are shown on the Tree Protection Plan Drawing 22027_TPP and should be installed in accordance with Arboricultural Association Guidance Note 12: *The Use of Cellular Confinement Systems Near Trees* (2020).

The work to expand the area of open soil around the street trees T87 and T88 will require that some of the existing hard surfacing be removed. This work should be carried out under arborist supervision and be done with care to ensure that no significant damage is done to any of the tree roots under the surface and the tree stems.

Any new underground services will be routed away from the RPAs of the trees being retained; where this is not practical for reasons unforeseen and unavoidable, the services will be installed under any significant tree roots into trenches excavated by compressed air lance (*Airspade*) or other approved tree root friendly system such as Air-Vacuum truck, Mole drilling etc.

All exposed roots and/or soil profiles containing roots of trees to be retained will be kept damp in dry conditions by regular watering and be covered with a double layer of hessian fabric to prevent desiccation. Backfill should be of good quality topsoil, structural soil or clean sand.

Where construction machinery *must* encroach the RPAs of the trees to be retained for reasons unforeseen and unavoidable; suitable ground protection will be put in place to prevent any significant soil compaction or root damage near the trees; this should take the form of suitable strength ground protection mats or cellular confinement system capable of supporting the appropriate weight.

All site offices, materials storage, staff parking etc. will located outside of the RPAs of the trees wherever practical; where this is not possible then the ground surface will be covered by an appropriate ground protection layer.

Temporary ground protection measures will be carefully lifted following completion of the works as authorised by a qualified arborist.

Any retained trees that had some limited excavation works within their nominal RPAs during the project should be subject to inspection by a qualified arborist annually (when in leaf) for 3 years following the completion of the works to check for any obvious signs of decline or stress.

9.0 Appendices

Useful Reference Documents

Tree Protection on Construction Sites – General Recommendations

Tree Survey Schedule

Tree Survey Drawing 22027_TS (Tree Constraints Plan)

Tree Protection Plan Drawing 22027_TPP

Useful Reference Documents

NATIONAL JOINT UTILITIES GROUP (NJUG). *Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees*. Volume 4, issue 2. London: NJUG, 2007.

BS5837 (2012) *Trees in relation to design, demolition and construction – Recommendations*
BSI Standards Limited 2012

Tree Protection on Construction Sites – General Recommendations

Trees being retained should be protected from unnecessary damage during the construction process by effective construction-proof barriers that will define the limits for machinery drivers and other construction staff. Ground protected by the fencing will be known as the Construction Exclusion Zone (CEZ). Sturdy protective fencing will be erected along the points identified in the Tree Protection Plan **prior** to any soil disturbance and excavation work starting; this is essential to prevent any root or branch damage to the retained trees. The British Standard BS5837: *Trees in relation to design, demolition and construction (2012)* specifies appropriate fencing; see figure 1 below.

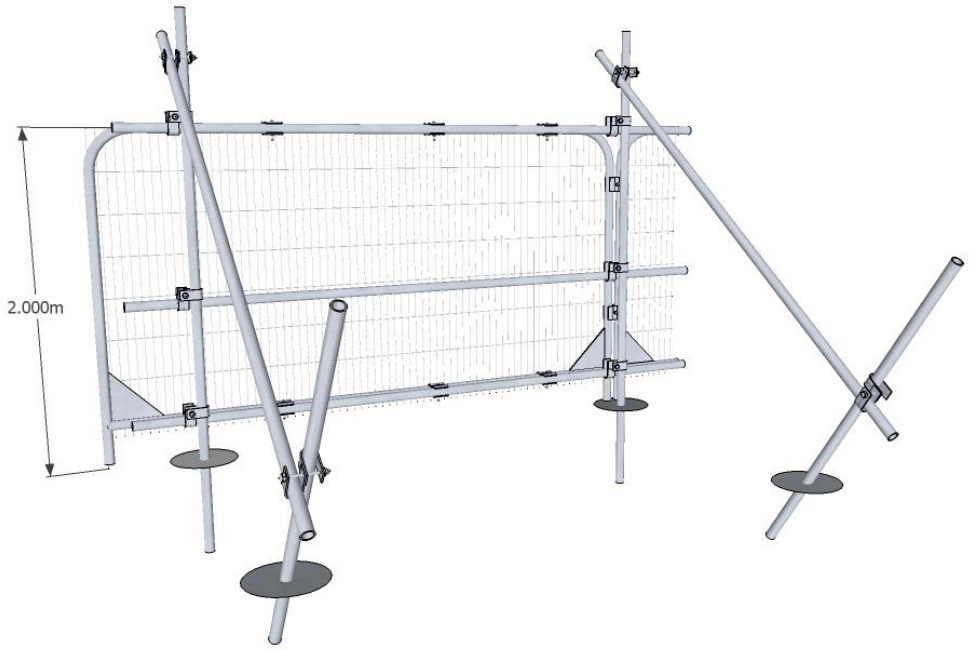


Figure 1. Protective fence specification

For light access works within the CEZ the installation of suitable ground protection in the form of scaffold boards, woodchip mulch or specialist ground protection mats/plates may be acceptable.
All weather notices will be erected on the fence with words such as: "Tree Protection Fence — Keep Out". When the fencing has been erected, the construction work can commence. The fencing will be inspected on a regular basis during the duration of the construction process and shall remain in place until heavy building and landscaping work has finished and its removal is authorised by a qualified arborist.

Trench digging or other excavation works for services etc. will not be permitted in the CEZ unless approved and supervised by a qualified arborist using methods outlined in BS5837: *Trees in relation to design, demolition and construction (2012)*.

Care will be taken when planning site operations to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Such contact can result in serious damage to them and might make their safe retention impossible.

Materials, which can contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings, will not be discharged within 10 m of a tree stem.

Fires will not be lit in a position where their flames can extend to within 5 m of foliage, branches or trunk. This will depend on the size of the fire and the wind direction.

Notice boards, wires and such like will not be attached to any trees. Site offices, materials storage and contractor parking will all be outside the CEZ.

Tree Survey Schedule
LIT to City Centre Cycle Scheme. Limerick
May 2022

Type	No.	Species	Age	Ht m	Dbh mm	St	Cr	N	S	E	W	ERC	Phys Cond	Structural Condition/Comments	Preliminary Recommendations	RPA m	Cat
T	1	Carpinus betulus (Hornbeam)	EM	10	300	1	0.5	2.5	3	2.5	2	20+	Good	Fair. Medium sized street tree. Typical upright form. Epicormic growth on stem. Some bark wounds to stem base.	No urgent works needed.	3.6	B2
T	2	Carpinus betulus (Hornbeam)	EM	9	250	1	2.5	2	3	2	2	20+	Good	Fair. Medium sized street tree. Typical upright form. Some bark wounds to stem base.	No urgent works needed.	3	B2
T	3	Tilia spp. (Lime)	Y	4.5	100	1	2	1	1.5	1	1	10+	Good	Fair. Smaller sized young street tree. Average shape/form.	Remove stake and tie.	1.2	C2
T	4	Carpinus betulus (Hornbeam)	Y	4.5	90	1	0.5	1	1	1	1	10+	Good	Fair. Smaller sized young street tree. Average shape/form.	No urgent works needed.	1.08	C2
T	5	Carpinus betulus (Hornbeam)	Y	4.5	75	1	0.5	1	1	1	1	10+	Fair	Fair. Smaller sized tree. Upright form. Some bark wounds to stem base.	No urgent works needed.	0.9	C2
T	6	Tilia spp. (Lime)	SM	5.5	150	1	0	1.5	1.5	1.5	1.5	10+	Good	Good. Smaller sized young tree. Average shape/form.	No urgent works needed.	1.8	C2
T	7	Carpinus betulus (Hornbeam)	Y	5	100	1	0	1	1	1	1	10+	Fair	Fair. Smaller sized tree. Upright form.	Remove stake.	1.2	C2
T	8	Carpinus betulus (Hornbeam)	EM	9	280	1	1	2.5	3	2	2	10+	Good	Fair. Slight lean to North-East. Medium sized tree. Some bark wounds to stem base. Larger bark wound on stem at 1-2m; perhaps from vehicle impact.	No urgent works needed.	3.36	C2
T	9	Carpinus betulus (Hornbeam)	SM	6.5	200	1	2	1.5	1.5	1.5	1.5	10+	Fair	Fair. Street tree. Upright form. Average shape/form. Some bark wounds to stem base.	No urgent works needed.	2.4	C2
T	10	Carpinus betulus (Hornbeam)	EM	7.5	200	1	2.5	2	1.5	1	1.5	10+	Good	Fair. Smaller sized tree. Upright form. Some bark wounds to stem base.	No urgent works needed.	2.4	C2
T	11	Carpinus betulus (Hornbeam)	EM	8	210	1	2	1.5	2	2	1	10+	Fair	Fair. Smaller sized tree. Slight lean to stem. Some bark wounds to stem base. Slower to leaf out than neighbouring trees.	No urgent works needed. Monitor tree condition.	2.52	C2
T	12	Cupressus macrocarpa (Monterey Cypress)	M	16	950	1	5	8	8	8	6	10+	Poor	Fair/Poor. Larger tree in green open space. Ivy restricts view of main branch unions. Some storm damaged branches hanging in crown. Minor deadwood in crown. Dieback in crown consistent with Coryneum canker.	Target prune broken/damaged branches. Monitor tree condition.	11.4	C2
G	1	Acer pseudoplatanus (Sycamore) Fraxinus excelsior (Ash)	SM	11	354	4	0	4	5	3	3	10+	Fair	Fair. Short linear group of multi-stemmed coppice stools along low bank. Thick Ivy growth on tree stems and undergrowth around stool bases.	Clear undergrowth and review stool bases. Monitor condition of Ash trees.	4.25	C2

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T	13	Acer pseudoplatanus (Sycamore)	EM	8	240	1	3	3	1.5	3.5	4	10+	Fair	Fair. Part of linear group. Smaller sized tree. Some bark wounds to stem base. Recently crown lifted. Previously topped.	No urgent works needed.	2.88	C2
T	14	Acer pseudoplatanus (Sycamore)	EM	10	350	1	3	4	3	4	3	20+	Fair	Fair. Medium sized tree in linear group. Multiple stems above 1.5m. Minor deadwood in crown. Previously topped. Somewhat tight unions as stem forks at 2m.	No urgent works needed.	4.2	B2
T	15	Acer platanoides (Norway Maple)	EM	11	330	1	3	4	3	5	3	20+	Fair	Fair. Medium sized tree in linear group. Previously topped.	No urgent works needed.	3.96	B2
T	16	Acer platanoides (Norway Maple)	SM	11.5	250	1	3	4	2.5	4	2.5	20+	Fair	Fair. Part of linear group. Previously topped.	No urgent works needed.	3	B2
T	17	Acer platanoides (Norway Maple)	EM	11.5	350	1	3	5	4	5	3	20+	Fair	Fair. Part of linear group. Medium sized tree. Stem divides above 1.5m, however the for/union appears stable at present. Minor deadwood in crown. Previously topped. Some bark wounds to stem base.	No urgent works needed.	4.2	B2
T	18	Acer platanoides (Norway Maple)	EM	11	420	1	2.5	5.5	5.5	5.5	4	20+	Fair	Fair. Medium sized tree in linear group. Some damage to surface roots. Scattered minor deadwood. Previously topped.	No urgent works needed.	5.04	B2
T	19	Carpinus betulus (Hornbeam)	EM	7	200	1	2	1.5	2	1	1	10+	Fair	Fair. Smaller sized street tree. Typical upright form. Some bark wounds to stem base.	No urgent works needed.	2.4	C2
T	20	Carpinus betulus (Hornbeam)	EM	7.5	200	1	2	2	2	1.5	1.5	10+	Good	Fair. Street tree. Typical upright form.	No urgent works needed.	2.4	C2
T	21	Carpinus betulus (Hornbeam)	EM	7.5	200	1	2	2	2	2	1.5	10+	Good	Fair. Street tree. Typical upright form. Some bark wounds to stem base.	No urgent works needed.	2.4	C2
T	22	Carpinus betulus (Hornbeam)	EM	8	200	1	2	1.5	1.5	2	1.5	10+	Good	Fair. Poor. Street tree. Smaller sized tree. Upright form. Some bark wounds to stem base. Small decay pocket at stem base.	Monitor tree condition.	2.4	C2
T	23	Carpinus betulus (Hornbeam)	EM	8	200	1	2	2	2	2	1.5	10+	Good	Fair/Poor. Smaller sized tree. Upright form. Some bark wounds to stem base. Small decay pocket at stem base.	Monitor tree condition.	2.4	C2
T	24	Carpinus betulus (Hornbeam)	EM	9	300	1	2.5	3	3	3	2	20+	Good	Good. Medium sized tree. Average shape/form. Some bark wounds to stem base.	No urgent works needed.	3.6	B2
T	25	Carpinus betulus (Hornbeam)	EM	9.5	310	1	2.5	3.5	4	3.5	2	20+	Good	Fair. Medium sized street tree. Upright form. Some bark wounds to stem base.	No urgent works needed.	3.72	B2

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T	26	Acer platanoides (Norway Maple)	M	12	500	1	2.5	2	5.5	6	5	20+	Good	Fair. Larger street tree in landscape bed. Unbalanced crown shape as tree has been repeatedly side-pruned by ESB contractors.	No urgent works needed.	6	B2
T	27	Carpinus betulus (Hornbeam)	SM	6	200	1	2	2	1	1	1	<10	Poor	Fair/Poor. Smaller sized street tree. Dieback in crown. Some bark wounds to stem base. Limited potential.	Consider removal and replacement as part of good management.	2.4	U
T	28	Carpinus betulus (Hornbeam)	EM	9	250	1	2	2	3	2.5	2.5	20+	Good	Fair. Medium sized street tree. Upright form. Some bark wounds to stem base.	No urgent works needed.	3	B2
T	29	Carpinus betulus (Hornbeam)	EM	9	265	1	2	2.5	3	2.5	2	20+	Good	Fair. Medium sized street tree. Some bark wounds to stem base. Small decay pocket at stem base.	No urgent works needed.	3.18	B2
T	30	Carpinus betulus (Hornbeam)	EM	8.5	240	1	2	3	3	2.5	2	20+	Good	Fair. Medium sized street tree. Upright form. Some bark wounds to stem base.	No urgent works needed.	2.88	B2
T	31	Sorbus aria (Whitebeam)	M	9	390	1	2	2	4	5	4	10+	Good	Fair/Poor. Slight lean to South but self corrects to vertical. Unbalanced crown shape due to line clearance pruning.	Crown reduce/reshape.	4.68	C2
T	32	Sorbus aucuparia (Rowan)	M	7	230	1	2	1	3	4	3	<10	Fair	Poor. Smaller sized tree. Slight lean to stem. Some bark wounds to stem base. Wood decay in old wound at stem base. Unbalanced crown shape.	Consider removal and replacement as part of good management.	2.76	U
T	33	Sorbus aucuparia (Rowan)	M	5.5	200	1	2	1	3.5	2	1	<10	Poor	Fair/Poor. Smaller sized tree. Poor shape & form. Unbalanced crown shape. Dieback in crown. Epicormic shoots on branching throughout crown.	Consider removal and replacement as part of good management.	2.4	U
T	34	Sorbus aria (Whitebeam)	M	10	435	1	2	4	5	5	4	10+	Fair	Fair/Poor. Good vitality. Medium sized tree. Some pruning wounds on stem. Unbalanced crown shape due to line clearance pruning.	Crown reduce/reshape.	5.22	C2
T	35	Prunus spp (Flowering Cherry)	M	8	350	1	3	2	4	4	5	<10	Poor	Poor. Smaller sized tree. Poor shape & form. Unbalanced crown shape. Recent loss of major limb leaving large tear-out wound.	Consider removal and replacement as part of good management.	4.2	U
T	36	Sorbus aria (Whitebeam)	M	9	370	1	2	1.5	5	5	4	10+	Fair	Fair/Poor. Medium sized tree. Epicormic growth on stem. Some pruning wounds on stem. Unbalanced crown shape. Due to heavy side pruning by ESB contractors.	Crown reduce/reshape.	4.44	C2
T	37	Carpinus betulus (Hornbeam)	EM	9	350	1	3	4	3	3.5	3	20+	Good	Good. Medium sized street tree in green open space. Average shape/form. Some bark wounds to stem base.	No urgent works needed.	4.2	B2
T	38	Carpinus betulus (Hornbeam)	EM	9	305	1	2.5	3	3	3	3	20+	Good	Fair. Medium sized street tree in wide verge. Average shape/form. Some bark wounds to lower stem.	No urgent works needed.	3.66	B2
T	39	Carpinus betulus (Hornbeam)	EM	9	270	1	2.5	3	3	4	3	20+	Good	Fair. Medium sized street tree in wide verge. Average shape/form. Some bark wounds to lower stem.	No urgent works needed.	3.24	B2

Tree Survey Schedule
LIT to City Centre Cycle Scheme. Limerick
May 2022

Type	No.	Species	Age	Ht m	Dbh mm	St	Cr	N	S	E	W	ERC	Phys Cond	Structural Condition/Comments	Preliminary Recommendations	RPA m	Cat
T	40	Carpinus betulus (Hornbeam)	EM	9.5	300	1	2	3.5	3	3.5	3	20+	Good	Fair. Medium sized street tree in wide verge. Average shape/form. Some bark wounds to lower stem.	No urgent works needed.	3.6	B2
T	41	Carpinus betulus (Hornbeam)	EM	9.5	260	1	2.5	2.5	2.5	3	2.5	20+	Good	Fair. Medium sized street tree in wide verge. Average shape/form. Some bark wounds to lower stem.	No urgent works needed.	3.12	B2
T	42	Carpinus betulus (Hornbeam)	EM	9.5	295	1	2.5	4	3.5	4	3.5	20+	Good	Fair. Medium sized tree in green open space. Average shape/form. Some bark wounds to stem base.	No urgent works needed.	3.54	B2
T	43	Fraxinus excelsior (Ash)	SM	8	300	1	4	2.5	3	3.5	3	10	Poor	Fair. Smaller sized tree. Stem divides above 1.5m. Epicormic shoots on branching throughout crown indicative of infection by Ash dieback disease.	Monitor tree condition. Fell tree if significant crown dieback occurs.	3.6	C2
T	44	Acer pseudoplatanus (Sycamore)	M	9	470	1	2	5	4	3	4	10+	Good	Fair/Poor. Good vitality. Medium sized tree in small open green space. Large decay cavity on main stem. Previously topped.	Prune periodically to maintain as smaller tree.	5.64	C2
T	45	Chamaecyparis lawsoniana (Lawson Cypress)	EM	5.5	296	5	0	1.5	1.5	1.5	1.5	10+	Fair	Fair. Smaller sized tree just inside garden wall. Multiple stems below 1.5m.	No urgent works needed.	3.55	C2
T	46	Chamaecyparis lawsoniana (Lawson Cypress)	EM	5.5	245	6	1	1.5	1.5	1.5	1.5	10+	Fair	Fair. Smaller sized tree just inside garden wall. Multiple stems below 1.5m.	No urgent works needed.	2.94	C2
T	47	Prunus cerasifera (Cherry Plum)	M	5.5	180	1	2	3	3	3	2.5	10+	Fair	Fair. Small street tree surrounded by hard surfacing. Suckers around stem base.	No urgent works needed.	2.16	C2
T	48	Acer platanoides (Norway Maple)	EM	6	335	1	3	1.5	2	2	2	20+	Fair	Fair. Medium sized tree in wide grassed verge. Recently topped.	No urgent works needed.	4.02	B2
T	49	Acer platanoides (Norway Maple)	EM	6.5	470	1	3	3	3	3.5	2.5	20+	Fair	Fair. Medium sized tree in wide grassed verge. Small decay pocket at stem base. Recently topped.	No urgent works needed.	5.64	B2
T	50	Acer platanoides (Norway Maple)	M	6.5	530	1	4	3	3.5	4.5	3.5	20+	Fair	Fair. Medium sized tree in wide grassed verge. Recently topped.	No urgent works needed.	6.36	B2
T	51	Acer platanoides (Norway Maple)	M	7.5	420	1	3	3	3	2	3	20+	Fair	Fair. Medium sized tree in wide grassed verge. Epicormic growth on stem. Recently topped.	No urgent works needed.	5.04	B2
T	52	Acer platanoides (Norway Maple)	EM	6.5	350	1	3	2	2	2	2	10+	Fair	Fair. Street tree growing in restricted planting spot in centre of footpath. Recently topped.	No urgent works needed. Consider removing adjacent paving to increase growing space for tree.	4.2	C2

Tree Survey Schedule
LIT to City Centre Cycle Scheme. Limerick
May 2022

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T	53	Acer platanoides (Norway Maple)	EM	7	420	1	3.5	2	2	3	2	20+	Fair	Fair. Medium sized tree in grassed verge. Epicormic growth on stem. Recently topped.	No urgent works needed.	5.04	B2
T	54	Tilia spp. (Lime)	EM	9	424	2	1.5	5	4	4	4	20+	Fair	Fair. Medium sized tree in grounds of service station. Stem divides below 1.5m with a tight fork on the main stem, this union appears stable at present.	No urgent works needed.	5.09	B2
T	55	Corylus avellana (Hazel)	M	8	335	5	1	3.5	4	4	4	20+	Good	Good vitality. Multi-stemmed garden tree growing behind boundary wall.	No urgent works needed.	4.02	B2
T	56	Tilia spp. (Lime)	SM	5.5	150	1	2	3	2	3	2	10+	Fair	Fair. Smaller sized street tree growing within raised bed.	No urgent works needed.	1.8	C2
T	57	Tilia spp. (Lime)	SM	5.5	175	1	1	3	2	2	2	10+	Fair	Fair. Smaller sized street tree growing within raised bed.	No urgent works needed.	2.1	C2
T	58	Tilia spp. (Lime)	Y	3	90	1	2	1.5	1.5	0.5	0.5	10+	Fair	Fair. Smaller sized street tree growing within raised bed.	No urgent works needed.	1.08	C2
T	59	Tilia spp. (Lime)	SM	6	170	1	1.5	2.5	2	3.5	2	10+	Fair	Fair. Smaller sized street tree growing within raised bed.	No urgent works needed.	2.04	C2
T	60	Tilia spp. (Lime)	EM	7	270	1	2	3	3	3	3	10+	Good	Fair. Good vitality. Smaller sized street tree located within raised bed. Good shape/form.	No urgent works needed.	3.24	C2
T	61	Tilia spp. (Lime)	SM	5	150	1	2	2	2	2	2	10+	Fair	Fair. Smaller sized street tree growing within raised bed.	No urgent works needed.	1.8	C2
T	62	Tilia spp. (Lime)	SM	4	100	1	2	2	1.5	1	1	10+	Fair	Fair. Smaller sized street tree growing within raised bed. Major bark wounding on stem.	Monitor tree condition.	1.2	C2
T	63	Tilia spp. (Lime)	SM	3	100	1	2	1.5	1	1	1	10+	Fair	Fair. Smaller sized street tree growing within raised bed.	No urgent works needed.	1.2	C2
T	64	Tilia spp. (Lime)	SM	4	120	1	2	1.5	1.5	2.5	1.5	10+	Fair	Fair. Smaller sized street tree growing within raised bed.	No urgent works needed.	1.44	C2
G	2	Prunus laurocerasus (Cherry Laurel) X Cupressocyparis leylandii (Leyland Cypress) Griselinia litoralis	EM	6	250	1	0	2.5	2	2	2	10+	Fair	Fair. Mixed species group planting inside garden wall of private house. Previously topped. Forms dense landscape screen.	Cut periodically to control size and spread.	3	C2

Tree Survey Schedule
LIT to City Centre Cycle Scheme. Limerick
May 2022

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G	3	Prunus laurocerasus (Cherry Laurel) X Cupressocyparis leylandii (Leyland Cypress)	EM	7	250	1	0	2	2	2	2	10+	Fair	Fair. Short section of mixed species planting inside garden wall.	Cut periodically to control size and spread.	3	C2
T	65	Chamaecyparis lawsoniana (Lawson Cypress)	EM	4	173	3	0	1.5	1.5	1.5	1.5	10+	Fair	Fair. Smaller sized garden tree along street frontage of house. Multiple stems below 1.5m.	No urgent works needed.	2.08	C2
T	66	Chamaecyparis lawsoniana (Lawson Cypress)	EM	4	173	3	0	1	1	1	1	10+	Fair	Fair. Smaller sized garden tree along street frontage of house. Multiple stems below 1.5m.	No urgent works needed.	2.08	C2
T	67	Betula utilis (Himalayan Birch)	EM	7	200	1	2	2	2	1	3	10+	Fair	Fair. Garden tree with poor shape & form. Unbalanced crown shape. Recently topped.	No urgent works needed.	2.4	C2
T	68	Tilia spp. (Lime)	EM	6	300	1	0	1.5	1.5	1.5	1.5	10+	Good	Good. Smaller sized Garden tree. Epicormic growth on stem and around stem base. Recently heavily cut back.	No urgent works needed.	3.6	C2
T	69	Tilia spp. (Lime)	EM	9	350	1	1.5	3	3	2.5	2.5	20+	Good	Good/Fair. Good vitality. Garden tree near to utility pole. Thick Ivy growth on tree stem. Previously topped.	Prune periodically to maintain as smaller tree.	4.2	B2
T	70	Prunus cerasifera (Cherry Plum)	M	7	361	2	1.5	2.5	3	3	2.5	<10	Fair	Poor. Smaller sized street tree in landscape bed. Stem divides below 1.5m. Significant basal decay evident, with fungal fruiting bodies on stem.	Consider removal as part of good management.	4.33	U
T	71	Pyrus spp. (Pear)	Y	3	40	1	0.5	0.5	0.5	0.5	0.5	10+	Fair	Fair. Recently planted young tree in landscape bed.	No urgent works needed.	0.48	C2
T	72	Acer platanoides (Norway Maple)	EM	9	300	1	2	3	3	3	3	10+	Fair	Fair. Smaller sized garden tree behind wall. Stem divides above 1.5m. Previously topped.	No urgent works needed.	3.6	C2
T	73	Chamaecyparis lawsoniana (Lawson Cypress)	M	9	300	1	0	2	2	2	2	10+	Fair	Fair. Garden tree. Upright form. Tree is growing up against the house, shading the windows etc.	No urgent works needed. Consider removal as part of good management.	3.6	C2
T	74	Chamaecyparis lawsoniana (Lawson Cypress)	M	10	350	1	0	2	2	2	3	10+	Fair	Fair. Private garden tree. Upright form.	No urgent works needed.	4.2	C2

Tree Survey Schedule
LIT to City Centre Cycle Scheme. Limerick
May 2022

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T	75	Laburnum anagyroides (Laburnum)	EM	7	224	5	0.5	2	2	2	2.5	10+	Poor	Fair. Low vitality. Small garden tree. Thick Ivy growth on tree stem. Dieback in crown.	Crown clean to remover weak deadwood. Review after cutting Ivy.	2.69	C2
G	4	Carpinus betulus (Hornbeam)	EM	7	200	1	1	1.5	1.5	1.5	1.5	10+	Fair/Good	Fair. Linear group of trees planted along property boundary. Recently topped. Trees are set behind wall.	Prune periodically to control tree size.	2.4	C2
T	76	Tilia spp. (Lime)	SM	5.5	150	1	0.5	2	2	2	2	10+	Good	Good. Good vitality. Recently established young tree in green open space. Good shape/form.	Remove stake and tie.	1.8	C2
T	77	Tilia spp. (Lime)	SM	6	150	1	0	2	2	2	2	10+	Good	Good. Good vitality. Recently established young tree in green open space. Good shape/form.	Remove stake and tie.	1.8	C2
T	78	Tilia spp. (Lime)	SM	6	130	1	2	1	1	1.5	1	10+	Fair	Good. Recently established young tree in green open space. Good shape/form.	Remove stake and tie.	1.56	C2
T	79	Sorbus intermedia (Swedish Whitebeam)	M	10	380	1	2	4	3	4	4	20+	Fair	Fair. Medium sized tree in green open space. Good vitality.	No urgent works needed.	4.56	B2
T	80	Alnus spp. (Alder)	M	12	475	1	1.5	5	5	4.5	5	20+	Good	Fair. Larger tree in green open space. Good vitality.	No urgent works needed.	5.7	B2
T	81	Betula pendula (Silver Birch)	M	9.5	400	1	2	2	5	5	5	20+	Fair	Fair. Medium sized tree in green open space. Slight lean to stem and unbalanced crown shape due to pruning works by ESB contractors.	Target prune branch stubs.	4.8	B2
T	82	Betula pendula (Silver Birch)	M	14.5	580	1	1	7	6.5	6.5	7	20+	Fair	Fair. Larger tree in green open space with slight lean to stem. Some bark wounds to stem base.	No urgent works needed.	6.96	B2
T	83	Tilia spp. (Lime)	M	13.5	620	1	1.5	6.5	5.5	6	5.5	40+	Good	Good. Good vitality. Large specimen tree of good shape/form in open green space. Previously topped many years ago.	No urgent works needed.	7.44	A2
T	84	Prunus cerasifera (Cherry Plum)	M	8	300	1	1.5	3	4	2.5	2.5	<10	Poor	Fair/Poor. Smaller sized tree inside hospital grounds. Dieback in crown.	Consider removal as part of good management.	3.6	U
T	85	Prunus spp (Flowering Cherry)	M	6	450	1	2	4	4	4	4.5	<10	Poor	Poor. Smaller sized tree inside hospital grounds. Some decay of structural roots. Dieback and deadwood in crown. Previously topped. Some branch stubs left from previous pruning works.	Consider removal as part of good management.	5.4	U
T	86	Betula pendula (Silver Birch)	M	12	500	1	1.5	5	6	5	5	20+	Good	Fair. Medium sized tree in traffic island. Previously topped, however tree has recovered with good regrowth and forms attractive feature in streetscape.	No urgent works needed.	6	B2
T	87	Tilia spp. (Lime)	SM	4.5	200	1	2	2.5	2	1.5	2	10+	Fair	Fair. Smaller sized street tree outside sports stadium. Compacted soil around stem base and surrounded by hard surfacing. Some old wounds on stem.	No urgent works needed. Improve rooting environment if practicable.	2.4	C2

Tree Survey Schedule
LIT to City Centre Cycle Scheme. Limerick
May 2022

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T	88	Tilia spp. (Lime)	EM	10	355	1	2	4	4	3.5	3.5	20+	Fair	Fair. Medium sized street tree located within hard surface area outside sports stadium. Average shape/form. Tree appears slow to leaf out.	Monitor tree condition. Improve rooting environment if practicable.	4.26	B2
T	89	Carpinus betulus (Hornbeam)	EM	9	300	1	0.5	2	3	2.5	2	20+	Good	Fair. Medium sized street tree in grassed verge close to LIT. Typical upright form. Epicormic growth on stem. Some bark wounds to stem base.	No urgent works needed.	3.6	B2
T	90	Carpinus betulus (Hornbeam)	EM	9.5	300	1	2	2	2	2.5	2	20+	Good	Fair. Medium sized street tree in grassed verge close to LIT. Typical upright form. Some bark wounds to stem base.	No urgent works needed.	3.6	B2