Arboricultural Impact Assessment

Deal Ground and May Gurney, Norwich

Serruys Property Company Ltd

June 2023

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Arboricultural Impact Assessment

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Appendices

1 Introduction

1.1 Appointment

1.1.1 Lanpro Services Ltd. was appointed by Serruys Property Company Ltd to undertake a tree survey in accordance with British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations'. Existing trees, groups of trees and woodlands at May Gurney and Deal Ground to the north of Bracondale, Norwich, NR1 2EG, National Grid reference: TG 2454 0723 (Figure 1 below) were surveyed. This report presents the findings of the tree survey and includes an Arboricultural Impact Assessment of the proposed development ('the Development') on the application site (the 'Site').

1.1.2 The Site consists of two areas of land, the southern part located to the south of the River Yare is referred to in this report as the May Gurney site and the land to the north of the River Yare is referred to as the Deal Ground site.

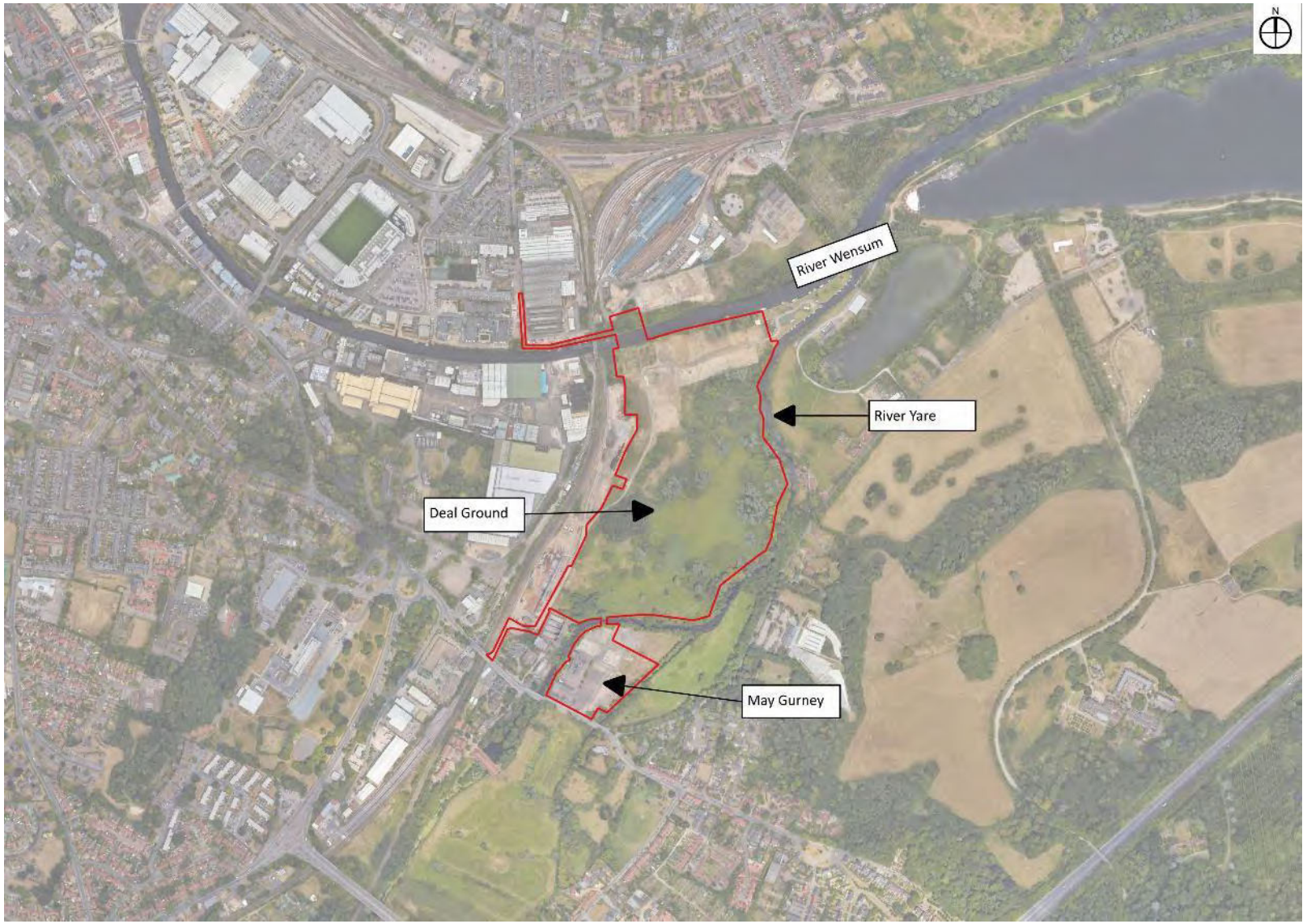
1.1.3 Outline planning permission for a maximum of 670 new dwellings, a local centre comprising commercial uses and a restaurant/dining quarter, demolition of buildings on the May Gurney site, an access bridge over the River Yare as well as a new access road and landscaping was granted on 12th July 2013.

1.1.4 Planning conditions 7 and 10 of the outline consent require an Arboricultural Impact Assessment, Tree Protection Plan and an Arboricultural Method Statement to be submitted with the reserved matters. This report as well as the separate Arboricultural Method Statement and Tree Protection Plans seek to fulfill these conditions.

1.1.5 The following schedule and drawings are to be read in conjunction within this report and are included as appendices:

- Tree Survey Schedule (Appendix 1) provides guidance as to the nature and quality of the existing tree stock within and adjacent to the Site;
- Site Photography (Appendix 2) illustrating examples of trees assessed on the Site;
- Definitions for Tree Survey Schedule (Appendix 3);
- Tree Preservation Order Map (Appendix 4);
- Tree Constraints Plan (Appendix 5) illustrates the location of the surveyed trees, the assigned tree retention category (A, B, C and U), the canopy spread at the four cardinal points (north, south, east and west) and the extent of Root Protection Areas (RPA); and
- Tree Impact Plans x 3 (Appendix 6) illustrates the anticipated tree removals and other arboricultural impacts that will result from the Development.

Figure 1. Site Location – outlined red



2 Relevant Legislation and Policy

2.1 Town and Country Planning Act 1990

2.1.1 Paragraph 197 of the Town and Country Planning Act 1990 requires local planning authorities, when determining a development application, to have due regard for the protection and planting of trees. As such, trees are a material consideration in the planning process.

2.2 Tree Preservation Order (TPO)

2.2.1 A Tree Preservation Order (TPO) is a legal Order applied to an individual tree, group of trees, area or woodland. It makes it a legal offence to cut down, top, lop, uproot, wilfully damage or destroy a tree (including roots) specified in the Order.

2.2.2 All species of tree can be protected by a TPO. Woodland TPOs cover all trees within the defined woodland area including canopy trees, understorey trees, saplings and seedlings. Prior to undertaking works to a tree protected by a TPO, consent must first be gained from the local planning authority through a tree works application. Exceptions to the need to apply for consent do apply, advice from an Arboriculturist must be sought on the extent and relevance of any exceptions.

2.3 Felling Licence

2.3.1 Under the Forestry Act 1967, felling licences must be granted by the Forestry Commission to permit the felling of more than five cubic metres of growing trees in a calendar quarter. There are some exemptions from the felling licence requirement, exemption details can be found on the Forestry Commission's website[1].

2.4 Birds and Bats

2.4.1 Birds often nest in trees and can be affected by tree removal or pruning works. All bird species are protected under the Wildlife and Countryside Act 1981 (as amended). This legislation prevents the killing or injuring of any bird or damaging or destroying nests and eggs. Some species (including barn owl *Tyto alba*) are also listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). For Schedule 1 species, the intentional or reckless disturbance of the species on or near an active nest is prohibited.

2.4.2 Bats roost in trees and must be considered when undertaking tree work. All bat species are listed under Schedule 2 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Bats and their roosts also receive protection from disturbance from by the Wildlife and Countryside Act 1981 (as amended). This protection extends to both the species and roost sites. It is an offence to kill, injure, capture, possess or otherwise disturb bats. Bat roosts are protected at all times of the year (making it an offence to damage, destroy or obstruct access to bat roosts), regardless of whether bats are present at the time.

2.5 National Planning Policy Framework 2021

2.5.1 Paragraph 131 of the National Planning Policy Framework states that local planning authorities have a statutory duty to ensure existing trees are retained wherever possible and opportunities are taken elsewhere in the development to incorporate new tree planting.

2.5.2 With regard to ancient and veteran trees, paragraph 180c) states that *'Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or*

[1] Forestry Commission (2020) Tree Felling – Getting Permission. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/876641/Tree_Felling_-_Getting_Permission_-_office_print_version.pdf

veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists'. Exceptional reasons are limited to Nationally Significant Infrastructure Projects and other exceptional circumstances.

2.6 Norwich City Council Policies

2.6.1 The Deal Ground part of the Site to the north of the River Yare (see Figure 1) is within the jurisdiction of Norwich City Council.

2.6.2 Norwich City Council's Norwich Development Management Policies Local Plan[2] (Adopted December 2014) contains policy DM7 which specifically regards the protection of trees. It states:

"Trees and significant hedge and shrub masses should be retained as an integral part of the design of development except where their long-term survival would be compromised by their age or physical condition or there are exceptional and overriding benefits in accepting their loss.

Development requiring the loss of a protected tree or hedgerow (including preserved trees, protected hedgerows, trees in Conservation Areas, ancient trees, aged and veteran trees and trees classified as being of Category A or B in value), will only be permitted where:

The removal of a tree or hedgerow will enhance the survival or growth of other protected trees or hedgerows; or

It would allow for a substantially improved overall approach to the design and landscaping of the development that would outweigh the loss of any tree or hedgerow.

Where the loss of trees is accepted in these circumstances, developers will be required to provide at least equivalent replacement in terms of biomass. This should be provided on-site unless the developer can show exceptional circumstances which would justify replacement provision elsewhere."

2.7 South Norfolk District Council Policies

2.7.1 The May Gurney part of the Site to the south of the River Yare (see Figure 1) is within the jurisdiction of South Norfolk District Council.

2.7.2 South Norfolk District Council's Development Management Policies Document[3] contains policy DM 4.8 'Protection of Trees and Hedgerows' which states:

"The Council will promote the retention and conservation of significant trees, woodlands and traditional orchards and will serve Tree Preservation Orders where necessary.

The Council will presume in favour of the retention of 'important' hedgerows as defined in the Hedgerow Regulations 1997.

The Council will safeguard and promote the appropriate management of protected and other significant trees and hedgerows, unless the need for, and benefits of, a development clearly outweigh their loss."

2.7.3 The Policy document also contains policy DM 4.9 'Incorporating Landscape into Design' which promotes the incorporation of new trees into development proposals:

"The provision for new planted features (such as tree belts, hedgerows, wild flowers and specimen trees) is expected to form part of development proposals from their outset and should provide an appropriate landscape setting for the scheme."

[2] Norwich City Council (December 2014). Norwich Development Management Policies Local Plan.
[3] South Norfolk Council. (October 2015). South Norfolk Local Plan – Development Management Policies Document.

3 Methodology

3.1 Desk Study

3.1.1 Norwich City Council's and South Norfolk District Council's websites were reviewed on 14th June 2023 to check for the presence of any protected trees. These include trees protected by a Tree Preservation Order or a Conservation Area designation. Other online resources were referred to where appropriate including historical mapping, Ordnance Survey maps, The Woodland Trust's Ancient Tree Inventory[4] and aerial maps.

3.2 Site Survey

3.2.1 The Site was first surveyed by Lanpro in September 2022 by Alastair Gavin.

3.2.2 This Site was then revisited by Alexander Lowe BSc MArborA on 1st February 2023 and the tree survey updated.

3.2.3 The survey was undertaken using an existing topographical survey and recorded all trees, group of trees and woodlands with a stem diameter greater than 75mm at a height of 1.5m in accordance with British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations'.

3.2.4 Tree height was measured with a Forestry Pro laser, canopy spreads were measured with a Distometer D110 laser and stem diameter was measured with a Diameter at Breast Height tape.

3.2.5 Tree groups and woodlands have been identified where trees form cohesive arboricultural features and where recorded as groups by the topographical survey. Principal trees within a group may be plotted individually. Maximum stem diameters, tree heights and canopy spreads of the groups and woodlands are recorded. The locations of significant shrub masses and species composition are noted. Insignificant trees (those with a stem diameter of less than 75mm at 1.5m height) are omitted from the survey.

3.2.6 Any additional off-site trees that could impact upon development on site have been included in the tree survey where it has been possible to identify or access them.

3.2.7 The Site was revisited on 7th June 2023 and the locations of removed trees were noted on the existing tree survey. Where large numbers of trees had been felled on the Deal Ground site, an estimate of the area removed was made using the topographical survey.

3.3 Survey Constraints

3.3.1 Trees within the fen to the east of the Site were not accessed or surveyed due to prohibitive ground conditions. Tree quality as well as stem diameters and canopy spreads are therefore estimated.

3.3.2 Estimates were made of relevant canopy spread dimensions and stem diameters where required, these are marked clearly in the Tree Survey Schedule. If a significant part of the tree's stem and base was obscured from view, then an assessment of structural condition was not made.

3.3.3 This is a ground level visual assessment only. The assessment is for the purposes of planning and development. No internal decay detection tools have been used in this assessment; therefore, this is not a full health and safety assessment.

[4] The Woodland Trust. The Ancient Tree Inventory. Accessed via: https://ati.woodlandtrust.org.uk.

3.3.4 The findings and recommendations contained within this report are valid for a period of twenty-four months from the date of survey.

3.4 Assessment of Impacts

3.4.1 The arboricultural impacts of the Development have been assessed by overlaying the following plans onto the tree constraints:

- Wensum Edge Block Plan by Stolon Studio (Drawing Number: 055-S3-(W.ZZ)-A001-Rev. B) dated 2nd June 2023;
- The Views Block Plan by Stolon Studio (Drawing Number: 055-S3-(V.ZZ)-A001-Rev.E) dated 5th June 2023;
- The Yare Edge Block Plan by Stolon Studio (Drawing Number: 055-S3-(Y E.ZZ)-A001 Rev. E) dated 19th June 2023;
- Nature Conservation Management Plan by Aspect Ecology dated 2nd May 2023; and
- Illustrative Landscape Masterplan by IDP (Job Number: LA599, Drawing Number: 001) dated 9th June 2023; and

3.4.2 The anticipated arboricultural impacts included in this report therefore only relate to the above plans. Should the above plans be changed, an update to this report may be necessary.

3.4.3 No details of proposed ground level changes or underground services were provided for this assessment.

4 Site Description and Tree Survey Results

4.1 Site Description

4.1.1 The Site is just over approximately 19 hectares. It is located approximately 2km south-east of Norwich city centre and approximately 350m north-west of the centre of Trowse village.

4.1.2 The Site is bordered by two rivers. The River Yare divides the Site into the May Gurney side to the south and the Deal Ground to the north, and then follows the Site's eastern boundary. The River Wensum borders the northern boundary of Deal Ground.

4.1.3 The May Gurney site is accessed from Bracondale Road on the southern boundary. The Deal Ground site is accessed from a slip road off Bracondale Road, however, this is not proposed as an access for the Development.

4.1.4 The May Gurney site is largely comprised of hard standing and office buildings. It is bordered by watercourses on its north, east and west boundaries. Trees (prior to felling in early 2023), border the boundaries and there are some formally planted trees at the entrance gate and within the car parking areas. The May Gurney site is mostly level.

4.1.5 The Deal Ground site has an existing surfaced track along its western boundary leading northwards into the Site. Adjacent to the River Wensum is a large area of disturbed ground from when the Site was in use. Adjacent to the disturbed ground is a large area of raised ground upon which a woodland stands (prior to tree felling in 2023).

4.1.6 Remaining land to the east of the access track is comprised of smaller patches of woodland interspersed amongst scrub and grassland with scattered self-seeded trees. Further east, the ground level drops and fen vegetation dominates as well as wet woodland.

4.2 Desk Study

4.2.1 Tree Preservation Order 423, made by Norwich City Council, applies to a number of trees on the Deal Ground site. This is an Area Order made in 2008. It therefore protects all trees of whatever species present within the defined area that were present in 2008. These trees are marked with an * symbol in the Tree Constraints Plan, Tree Impacts Plans and when referenced within this report. The protected trees are primarily located in woodlands and within the fen in the south and east of the Deal Ground side (see map in Appendix 4). All trees of whatever species are protected by the TPO.

4.2.2 The Trowse Millgate Conservation Area lies adjacent to the western boundary of the May Gurney site.

4.2.3 No records of ancient or veteran trees or ancient woodlands were found to apply to the Site.

4.2.4 Historic mapping of the Site shows that many of the trees currently present were also present in 1988 aerial imagery. However, 1946-1960s dated maps show many current trees were absent on the May Gurney site and far fewer trees were present on the Deal Ground when compared with the present day. Trees on the first Ordnance Survey map (surveyed 1851, published 1854) show trees on the Site at that time were restricted to the river banks and along the ditches within the fen.

4.3 Tree Survey Results

4.3.1 The tree survey recorded a total of 33 individual trees, 16 groups of trees and four woodlands. Trees protected by a Tree Preservation Order have an asterix * symbol on all plans and whenever referred to within this report.

4.3.2 The full results of the tree survey can be found in the Tree Survey Schedule in Appendix 1. Tree photos are located in Appendix 2. A map of the tree survey results can be seen in the Tree Constraints Plan in Appendix 5.

4.3.3 The surveyed trees and their assessed quality and value are indicated in the summary of tree classification in Table 1 below.

4.3.4 The northern boundary of the Site contains a row of mature riverside trees including white willow *Salix alba*, Lombardy poplar *Populus nigra* 'Italica' and weeping willow *Salix babylonica*.

4.3.5 Self-seeded individual sycamores *Acer pseudoplatanus* are present around the Site.

4.3.6 The majority of trees are located in groups or woodland features. On the Deal Ground site W1* is dominated by semi to early mature silver birch *Betula pendula* with some mature white willows in the northern part of W1* and occasional sycamore.

4.3.7 W2* is an area of wet woodland not accessible during the survey. The woodland is dominated by white willow, goat willow *Salix caprea*, and alder *Alnus glutinosa*. Sycamore and silver birch are infrequently present.

4.3.8 W3* contains mature white willows on its eastern edge but otherwise is largely comprised of semi-mature sycamores and ash *Fraxinus excelsior* with scrubby edges of elder *Sambucus nigra*. There are occasional non-native false acacia *Robinia pseudoacacia* present.

4.3.9 W4 is a woodland dominated by early mature and mature aspen *Populus tremula*. There is varied topography within this woodland with some wetter areas with goat willow and ash. Semi and early mature sycamores are also present.

4.3.10 Groups of trees exist around the Site, these comprise either semi mature self-seeded trees or formal plantings within hard landscaping on the May Gurney site.

4.3.11 No category A trees were identifiedNo veteran or ancient trees were identified on the Site, however, it should be noted that not all of W2* was accessible.

Table 2: Summary of Tree Classification

BS5837 Quality Category	Number		
	Individual Trees	Groups	Woodlands
A (high quality)	0	0	0
B (moderate quality)	26	10	4
C (low quality or young)	7	6	0
U (very low quality)	0	0	0

5 Arboricultural Impact Assessment

5.1 Trees Removed in 2023

5.1.1 Tree felling took place on the site in early 2023. Lanpro was not made aware of the tree removal works prior to their occurrence nor was any advice requested by the client or given on the matter by Lanpro.

5.1.2 Consequently, some of the trees identified within the original tree survey are now absent. The Tree Constraints Plan shown in Appendix 5 identifies the areas of tree felling with red hatching. The following trees were removed:

- Category B trees: W1* (approximately 75% removed), W2* (approximately 10% removed), W4 (less than 2% removed), G1 (leaving one silver birch), G8, G9, G10, T27 beech
- Category C trees: T26 beech, G6, G7
- Other small areas of unsurveyed dense scrub and trees as shown on the Tree Constraints Plan.

5.1.3 Photos 17-22 in Appendix 2 show the tree removals.

5.2 Trees Requiring Removal for Development

5.2.1 The following trees require removal for the Development and are shown and on the Tree Impact Plans in Appendix 6 with red dashed canopy outlines and red crosses for the stems of individual trees:

- Category B trees: W1* (removal of a further 2,065m^2), W2* (removal of a further 4,250m^2), W3* (removal of 798m^2), W4, G1 (one remaining silver birch to be felled), G2, G11, G12* (partial removal), G13* (partial removal), G14, G15, T9 white willow, T16 sycamore, T18* sycamore, T19 sycamore, T22* goat willow, T23 beech, T24 purple beech, T25 beech, T28 goat willow, T29 silver birch, T32* white willow, T33* sycamore,
- Category C trees: G5, T8 white willow, T21 goat willow

5.2.2 Some young self-set trees within grass and scrub areas will also need to be removed.

5.2.3 All tree removals are required due to the overlap of proposed elements of the Development with existing trees.

5.2.4 Compensatory planting is required for tree removals in 2023 and proposed tree removals to facilitate the Development.

5.3 Trees Requiring Work for Ecological Management of the Fen

5.3.1 To the east of the Deal Ground site is an area of fen, scrub and trees, much of which is part of the Carrow Abbey Marsh Country Wildlife Site (CWS). As part of the Development proposal, this area will be maintained and enhanced for biodiversity in accordance with the Nature Conservation Management Plan prepared by Aspect Ecology[5].

5.3.2 For the ecological enhancement and long-term conservation of the fen, trees currently growing within the fen (W2*) will need to be managed to prevent the spread of trees and the consequent drying of the fen and encroachment of wet woodland habitat into the fen.

[5] Aspect Ecology (May 2023). Land at Deal Ground and May Gurney, Norwich – Nature Conservation Management Plan.

5.3.3 Section 4.3 of the Nature Conservation Management Plan states that management of the woodland within the fen will be achieved by coppicing on a 10 year rotational cycle. Coppicing will focus on younger trees and mature specimens will be left in situ to preserve their wildlife value. No more than 30% of any one woodland area (within W2*) will be coppiced during any one cycle to ensure that coppiced blocks are scattered across W2* and some tree cover is maintained.

5.3.4 Section 4.2 of the Nature Conservation Management Plan also states that existing ditch network will be restored. There will be selective clearance of vegetation and re-profiling which may involve some limited tree removal and/or pruning within W2*.

5.4 Trees Advised for Removal on Arboricultural Grounds

5.4.1 No trees are advised for removal on arboricultural grounds.

5.5 Impacts to Retained Trees

5.5.1 The following paragraphs detail the anticipated impacts to retained trees from the Development.

Ground Levels

5.5.2 No details of proposed ground levels have been provided at this stage. This is a limitation of the assessment. Ground levels must not be raised or lowered within Root Protection Areas (RPAs) of retained trees in order to prevent negative impacts to roots and the physiological health of trees.

Construction of Footpaths – Root Impacts

5.5.3 The proposed footpath in the north of the Site alongside the River Wensum will go through the RPAs of the following retained trees. For each tree the percentage of the total RPA impacted is shown in brackets.

- Category B trees: T2 white willow (<1%), T7 Lombardy poplar (9%), T10 weeping willow (9%), T11 Lombardy poplar (9%), T12 Lombardy poplar (11%), T13 Lombardy poplar (1%), T14 weeping willow (5%).
- Category C trees: T3 white willow (<1%), T6 Lombardy poplar (9%)

5.5.4 A different proposed footpath in the south-west corner the Site will also be within the RPA of Category B tree T31 false acacia, encroaching into 14% of its total RPA as well as trees within W2*. A footpath in the east of the Site may encroach into the RPA of trees within W1* which are mostly situated on the riverbank.

5.5.5 The construction of the footpaths within RPAs has the potential to cause root severance and loss to the above listed trees during excavation and installation of the footpath's subbase. For T6 Lombardy poplar and T7 Lombardy poplar, the footpath will be within 1.5-2m of the stem. At this proximity it is possible that large structural roots important for these trees' stability will be severed or lost, potentially shortening their normal lifespan.

5.5.6 For the remaining trees impacted by the footpaths, some fibrous roots may be lost however given the relatively minor percentages of RPAs being lost this is not likely to have a significant impact on these trees' abilities to absorb water and nutrients which are required for survival.

5.5.7 For all trees, the loss of roots will create wounds susceptible to infection by decay pathogens.

5.5.8 British Standard 5837:2012 states in section 7.4.2 that in the first instance new hard surfacing should avoid RPAs. If this is not possible, as in this case, it then goes on to state that 'new permanent hard surfacing should not exceed 20% of any existing unsurfaced ground within the

RPA'. New hard surfacing within RPAs 'should not require excavation into the soil' and a permeable surface should be used to allow roots underneath the hard surface to access air and water.

5.5.9 All trees identified above will have less than 20% of their RPAs impacted by new footpaths. Mitigation in the form of a no-dig, permeable footpath in accordance with BS5837:2012, such as an appropriate cellular confinement system, will be required to reduce impacts to roots adjacent to the River Wensum. The type of footpath and method of installation will need to be specified in an Arboricultural Method Statement and Tree Protection Plan.

5.5.10 Root pruning will be used to partially mitigate for potential root impacts to T31 false acacia, W1* and W2*.

Construction of Footpaths – Canopy Impacts

5.5.11 It is anticipated that the canopies of the following trees will require lifting over the new footpath to a height of 2.5m from ground level:

- Category B trees: T10 weeping willow, T14 weeping willow

5.5.12 These trees have been identified as requiring pruning due to their current ground clearance height of less than 2.5m. The required pruning will target small diameter tertiary branches drooping below 2.5m height. Modest pruning of such branches will have a negligible impact on tree health and visual amenity so long as it is carried out in accordance with British Standard 3998:2010 Tree Work – Recommendations.

Drainage

5.5.13 No details of underground service runs or Sustainable Urban Drainage Systems (SUDS) have been provided to date, this is a limitation of this assessment. SUDS and foul and potable water services must be routed outside of RPAs to avoid impacts to roots from excavation.

Play Areas

5.5.14 Play equipment is proposed within the RPAs of the following trees:

- Category B trees: T4 Lombardy poplar, T5 weeping willow, W2*
- Category C trees: T6 Lombardy poplar

5.5.15 Any excavation required for the foundations of the play equipment has the potential to result in root severance and loss to the above identified trees. Sensitive installation methods that limit digging and avoid large roots are required to mitigate this impact. These methods must be secured in an Arboricultural Method Statement.

Fencing and Soft Landscaping

5.5.16 Fencing and garden areas are proposed within the RPAs of Category B trees T1 – T3 white willow. At its closest point, fencing will be within 7.5m of T3's stem.

5.5.17 Installation of fence posts will require digging within RPAs that may lead to the severance and loss of fibrous roots. Any top soil strip and fill in garden areas also has the potential to cause harm and loss of fibrous roots. Temporary minor negative impacts on these trees are possible. Sensitive fence post installation methods as well as no soil disturbance in these garden areas will be required to mitigate impacts. An Arboricultural Method Statement will be required to specify these details.

Construction Space and Activities

5.5.18 There is anticipated to be adequate space on both the May Gurney and Deal Ground parts of the Site for contractor parking, materials storage and construction activities.

5.5.19 Some works will need to take place close to retained trees such as W2*, trees along the River Wensum on the northern boundary and woodland W3*. Trees in these locations may be damaged in a number of ways:

- Trees may come into direct contact with machinery, materials or vehicles causing damage to stems, branches and structural roots.
- Soils within RPAs may become compacted by machinery, repeated pedestrian movements, materials storage or contractor parking. Compacted soils cause root asphyxiation and a reduction in water uptake capability leading to root death and decline in canopy health. A single pass of a heavy vehicle over an RPA in wet weather can cause soil compaction.

5.5.20 To mitigate the risk of surrounding trees being impacted by direct damage and soil compaction, temporary tree protection fencing and ground protection during construction will be required. These will create Construction Exclusion Zones around retained trees' RPAs where no machinery, materials or construction activities will take place.

5.5.21 Tree protection measures will need to be secured in a Tree Protection Plan and an Arboricultural Method Statement.

Shading and Future Pressure to Remove or Prune Trees

5.5.22 Shading to residential dwellings from retained trees is likely in a number of locations such as properties adjacent to W2*. Deciduous trees located to the south or east of these new properties will cause some seasonal shading of light. Given that these trees are part of the fen, and not within the curtilage of new dwellings, the risk of these trees coming under pressure for pruning or removal due to perceived seasonal nuisances such as shade and leaf fall is considered to be low and is unlikely to lead to additional tree impacts once the dwellings become occupied.

5.6 Tree Pruning for Retained Trees

5.6.1 The previous paragraphs have identified tree works that will be required to achieve canopy clearance over proposed new footpaths and play areas. All required works to retained trees that are necessary to facilitate the Development are provided below:

- Canopy lift over footpath to achieve a vertical clearance height of 2.5m: T10 weeping willow, T14 weeping willow
- Removal/reduction of deadwood for trees near River Wensum footpath: T1, T2, T3, T4, T5, T6, T7, T10, T11, T12, T13, T14 and T15

5.7 Tree Planting

5.7.1 The Illustrative Landscape Masterplan proposes a new 18m wide tree belt along the western edge of the Deal Ground. Replacement tree planting around the perimeter of the May Gurney area is also proposed. Street trees are proposed through the Site within the built-up areas. A total of 109 street trees, 208 woodland native trees, 335 ornamental trees and 98 feature native trees are proposed in total.

5.8 Summary of Arboricultural Impacts and Required Mitigation and Compensation

5.8.1 Table 2 below provides a summary of the assessed arboricultural impacts of the Development as well as how each impact will be mitigated and compensated for.

Table 2. Summary of Arboricultural Impacts

Construction Stage	Impact	Required Mitigation/Compensation	Residual Arboricultural Impact
2023 Tree Removals	Removal of parts of three woodlands, total removal of six groups of trees and two individual trees.	Compensatory planting of 750 new trees as per the Illustrative Landscape Masterplan.	Anticipated net loss of trees on the Site (see note below).
Pre-construction tree removals	Total or partial removal of four woodlands, eight groups of trees and removal of 15 individual trees.	Seek ecological advice regarding nesting birds and bats. Compensatory tree planting as per the Illustrative Landscape Masterplan.	
Construction of footpaths	Root and canopy impacts to trees.	No-dig, permeable hard surfacing, such as a cellular confinement system, installed under supervision from an Arboriculturist adjacent to the River Wensum. Root pruning for two other footpaths within RPAs.	Minor negative impacts to T31 false acacia, W1* and W3* from root pruning.
Play Areas	Minor root damage possible to two Category B trees and one Category B woodland as well as one Category C tree.	Root pruning under Arboriculturist supervision.	Minor negative impacts to affected trees.
Fencing and soft landscaping	Minor fibrous root loss to three Category B trees.	Best practice methods when installing fence posts required. Limited strip and fill of identified garden areas near T1-3.	Negligible
Construction Space	Damage to retained trees from heavy vehicles/machinery entering RPAs and compacting the soil. Direct damage between machinery and stems/branches causing wounding.	All retained trees must be protected with temporary tree protection fencing and ground protection for the duration of construction. Arboriculturist must undertake regular checks of protections during construction.	Negligible
Post Construction Fen Management	Coppicing of some trees in W2* on a rotational cycle and clearance of ditches.	N/A	Loss and regeneration of tree cover on 10 year cycles

5.8.2 NOTE: It has not been possible to quantify the total number of trees that have been lost on the Site in 2023 and proposed for removal from the Development therefore this statement is a visual judgement based on the approximate total area of tree planting compared with tree cover previously present on the Site prior to the 2023 removals.

5.8.3 Overall, it is anticipated that the Development will result in a net loss of trees on the Site. Extensive replacement planting is proposed along the western edge of the Development, around the May Gurney area and within the Development which will partially compensate for the overall tree losses. Visually dominant trees along the River Wensum will be retained. Most identified impacts to retained trees can be mitigated by utilizing no-dig permeable hard surfacing, root pruning, sensitive working methods near trees and tree protection measures throughout construction. Minor negative impacts to some trees from root pruning can be anticipated.

5.8.4 An Arboricultural Method Statement and Tree Protection Plan is required to specify the locations and type of tree protection as well as best practice working methods to ensure retained trees are safeguarded.

6 Summary

6.1.1 Lanpro was commissioned to undertake a tree survey and Arboricultural Impact Assessment in accordance with British Standard 5837:2012 for a reserved matters application for a Development at May Gurney and Deal Ground, Norwich, NR1 2EG. The Development will involve the demolition of buildings at May Gurney, the construction of up to 670 new residential units, a commercial quarter, a bridge over the River Yare and associated hard and soft landscaping.

6.1.2 A tree survey was undertaken in September 2022 which was updated following further site surveys on 1st February 2023 and 7th June 2023. A total of 33 individual trees, 16 groups of trees and four woodlands were recorded. No Category A trees and no ancient or veteran trees were recorded, however not all trees within the fen were accessible. A Tree Preservation Order is present on the Deal Ground site.

6.1.3 The proposed site plans, soft landscaping plans and ecological management plan were assessed to determine the overall arboricultural impacts of the Development. Proposed service routes and any proposed ground level changes were not available for this assessment and constitute limitations to this report.

6.1.4 The Development would require the total or partial removal of four woodlands and eight groups of trees as well as the removal of 15 individual trees. This is in addition to tree felling that took place in the earlier part of 2023.

6.1.5 Retained trees on the Site will be impacted by two proposed new footpaths within Root Protection Areas (RPAs), the installation of play equipment in RPAs, fencing and soft landscaping works and general construction activities near trees. Younger trees within the fen will also be managed through coppicing as part of long-term fenland restoration works.

6.1.6 Impacts to retained trees can mostly be mitigated. Mitigation measures include the installation of no-dig, permeable footpaths within RPAs, root pruning, sensitive construction methods for play areas and fencing as well as the use of temporary tree protection fencing and ground protection throughout construction to protect all retained trees during construction works. Some minor negative impacts to retained trees from root pruning is anticipated.

6.1.7 A Tree Protection Plan and Arboricultural Method Statement will be provided demonstrating the location, type and specification for tree protection measures and sensitive working practices. Regular supervision from an Arboriculturist during construction will ensure that these methods are followed and retained trees safeguarded.

6.1.8 Compensatory tree planting is proposed throughout the Site including a new tree belt on the western edge of the Deal Ground, replacement trees around the May Gurney site and street trees within built-up areas. Proposed tree planting is anticipated to partially compensate for the overall tree losses on the Site.

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Appendix 1 Tree Survey Schedule

Tree Reference No.	Common Name	Scientific Name	Tree Height (m)	Stem Diameter (mm)	Canopy Spread (m)				Height (m) and Direction of Lowest Branch	Canopy Clearance Height (m)	Life Stage	Observations	Structural Condition	Physiological Condition	Estimated Remaining Contribution (Years)	Root Protection Area (RPA, m2)	Radius of RPA (m)	BS5837:2012 Quality Category
					North	East	South	West										
T1	White willow	*Salix alba*	12	1400	#3	#3	#7	#1	S1.5	1	Mature	Old willow pollard, significant decay in main stem, evidence of past lost limbs, good deadwood habitat in stem	Poor	Fair	20-40	887	16.8	B3
T2	White willow	*Salix alba*	29.5	1490	9	12	10	14	W1.5	1	Mature	Two large mature willows with twin stems arising at base. Good form, evidence of past limb loss, deadwood in canopy.	Fair	Good	20-40	1004	17.9	B2
T3	White willow	*Salix alba*	24.5	920	7.5	4.5	10	8.5	N1.2	4	Mature	Suppressed by T2, evidence of past branch loss, decay in stem.	Poor	Fair	10-20	383	11.0	C1
T4	Lombardy poplar	*Populus nigra 'Italica'*	30	700	2.5	2	1.5	2	S8	6	Mature		Good	Good	20-40	222	8.4	B2
T5	Weeping willow	*Salix babylonica*	15	800	#10	#5	3	10	N5	1	Mature	Well formed tree, evidence of past crown reduction with good regrowth present. Stem leaning north.	Fair	Good	20-40	290	9.6	B2
T6	Lombardy poplar	*Populus nigra 'Italica'*	28	850	2	4.5	2	1	W3	2	Mature	Twin stem tree at ground level, minor deadwood in crown	Fair	Good	10-20	327	10.2	C2
T7	Lombardy poplar	*Populus nigra 'Italica'*	28	780	2	2	2	2	W2.5	3	Mature	Minor deadwood in crown	Good	Good	20-40	275	9.4	B2
T8	White willow	*Salix alba*	19	700	5	9	9	2	S1.5	1	Mature	Canopy suppressed by neighbours, canopy supporting large branch from T9	Fair	Good	10-20	222	8.4	C2
T9	White willow	*Salix alba*	32	1500	16	10	13	14	W4	1.5	Mature	Large willow with multiple stems, one fallen to east onto T8, deadwood in canopy	Fair	Good	20-40	1018	18.0	B3
T10	Weeping willow	*Salix babylonica*	16	750	7	6	8	11	S3	1	Mature	Canopy slightly suppressed by T9, deadwood in canopy, tree potentially pollarded historically at 4m, good regrowth present	Good	Fair	20-40	254	9.0	B2
T11	Lombardy poplar	*Populus nigra 'Italica'*	32	1100	3	6	6	1	S2.5	1.5	Mature	Tree in good condition, pair with T12, minor deadwood in canopy	Good	Good	20-40	547	13.2	B2
T12	Lombardy poplar	*Populus nigra 'Italica'*	31	1100	3	1	5.5	4.5	S1.5	2	Mature	Tree in good condition, pair with T11, minor deadwood in canopy	Good	Good	20-40	547	13.2	B2
T13	Lombardy poplar	*Populus nigra 'Italica'*	25.5	900	#3	4	4	2	S1	1.8	Mature	Well formed tree in good condition, minor deadwood	Good	Good	20-40	366	10.8	B2
T14	Weeping willow	*Salix babylonica*	13	1010	#3	8	9.5	11	S2	0	Mature	Significant lost limb to north, deadwood in canopy	Good	Fair	20-40	461	12.1	B2
T15	Sycamore	*Acer pseudoplatanus*	12	#200	3	3	3	3	N2	1.7	Semi mature	No access to stem due to vegetation	N/A	Good	10-20	18	2.4	C1
T16	Sycamore	*Acer pseudoplatanus*	15	#300	#4	#4	#4	#4	0N	1	Semi mature	Twin stem, minor deadwood, no access to stem	N/A	Good	10-20	41	3.6	B2

Tree Reference No.	Common Name	Scientific Name	Tree Height (m)	Stem Diameter (mm)	Canopy Spread (m)				Height (m) and Direction of Lowest Branch	Canopy Clearance Height (m)	Life Stage	Observations	Structural Condition	Physiological Condition	Estimated Remaining Contribution (Years)	Root Protection Area (RPA, m2)	Radius of RPA (m)	BS5837:2012 Quality Category
					North	East	South	West										
T17	Sycamore	*Acer pseudoplatanus*	11.5	460	#6	6	6.5	#6	N1.5	1.5	Semi mature	No access to stem due to vegetation	Good	Good	40+	96	5.5	B2
T18*	Sycamore	*Acer pseudoplatanus*	14.5	500	8	7	8	7.5	SE1.8	1.2	Semi mature	Good form, minor deadwood, suckering at base	Good	Good	40+	113	6.0	B2
T19	Sycamore	*Acer pseudoplatanus*	14	#300	#4	#4	#4	#4	N1.5	1	Semi mature	No access to stem due to vegetation	Good	Good	40+	41	3.6	B2
T20	Sycamore	*Acer pseudoplatanus*	10	300	6	6	5	6	W2	1.5	Semi mature	Growing from earth bank	Fair	Good	20-40	41	3.6	C2
T21	Goat willow	*Salix caprea*	4	#80	#2	#2	#2	#2	0	0	Young	Young tree in good condition, multistem	Good	Good	40+	3	1.0	C1
T22*	Goat willow	*Salix caprea*	13	700	6	6	6	6	N1.5	1.5	Mature	Large mature tree, deadwood in canopy	Good	Good	20-40	222	8.4	B3
T23	Beech	*Fagus sylvatica*	6	140	3	2	2	2	E2	1.5	Young	Young tree planted in hard standing, good form, tree guard present. Thin crown	Good	Fair	40+	9	1.7	B2
T24	Purple beech	*Fagus sylvatica 'Purpurea'*	6	120	3	2	2	2	N1.8	0.5	Young	Young tree planted in hard standing, good form, tree guard present	Good	Good	40+	7	1.4	B2
T25	Beech	*Fagus sylvatica*	6	140	2	1.5	1	2.5	E1.8	1	Young	Young tree planted in hard standing, good form, no guard but small unattached stake	Good	Good	40+	9	1.7	B2
T26	Beech	*Fagus sylvatica*	8.5	190	3	3.5	2.5	3	S3	2	Semi mature	Girdling roots, some basal decay on south side, twin stemmed tree with tight union.	Fair	Good	10-20	16	2.3	C2
T27	Beech	*Fagus sylvatica*	9.5	330	3	4	3.5	4	N3	2	Semi mature	Average tree, evidence of past pruning	Good	Good	20-40	49	4.0	B2
T28	Goat willow	*Salix caprea*	10	#500	7	#6	5	4.5	-	1.5	Mature	Multistem at 1.5m, overhanging footpath	Fair	Good	20-40	113	6.0	B3
T29	Silver birch	*Betula pendula*	11	#300	#3	#3	#3	#3	-	-	Early mature	No access to stem due to vegetation	N/A	Good	40+	41	3.6	B2
T30	Goat willow	*Salix caprea*	13.5	#630	7	6.5	#7	7	-	0	Mature	Minor ivy, pruned to south, multistem	Fair	Good	40+	180	7.6	B3
T31	False acacia	*Robinia pseudoacacia*	22	780	4	6	8	5.5	S2	1.5	Mature		Good	Good	20-40	275	9.4	B2
T32*	White willow	*Salix alba*	15	1030	#10	#10	#10	#10	-	0	Mature	Triple stem, low old limb breakout	Fair	Good	40+	480	12.4	B3
T33*	Sycamore	*Acer pseudoplatanus*	19.5	850	8.5	8	#8	8.5	S2	1	Mature	Triple stem at base with tight forks	Fair	Good	40+	327	10.2	B2
W1*	Silver birch, sycamore, white willow	*Betula pendula, Acer pseudoplatanus, Salix alba, Quercus robur*	24 max	#500	-	-	-	-	-	-	Mostly semi and early mature. Mature	Drier woodland on raised ground. Dominated by semi- to early-mature silver birch with some larger mature white willows on the northern boundary. Occasional sycamore and only one oak south of old brick structure	Mix	Mostly Good	40+	-	6.0	B3

Tree Reference No.	Common Name	Scientific Name	Tree Height (m)	Stem Diameter (mm)	Canopy Spread (m)				Height (m) and Direction of Lowest Branch	Canopy Clearance Height (m)	Life Stage	Observations	Structural Condition	Physiological Condition	Estimated Remaining Contribution (Years)	Root Protection Area (RPA, m2)	Radius of RPA (m)	BS5837:2012 Quality Category
					North	East	South	West										
											willows to north							
W2*	Alder, silver birch, goat willow, sycamore, white willow	*Alnus glutinosa, Betula pendula, Salix caprea, Acer pseudoplatanus, Salix alba*	24 max	#500	-	-	-	-	-	-	Mostly mature	Large significant group of trees on lower ground dominated by willows and alder. Majority of trees not accessible due to inundated ground.	Mix	Good	40+	-	6.0	B3
W3*	Sycamore, white willow, goat willow, crack willow, blackthorn, ash, false acacia, elder	*Acer pseudoplatanus, Salix alba, Salix caprea, Salix fragilis, Fraxinus excelsior, Robinia pseudoacacia, Sambucus nigra*	15	#700	-	-	-	-	-	-	Mostly Semi Mature with a couple of Mature Willow to east	Woodland with a couple of mature willow on eastern edge. Otherwise made up of semi mature sycamore and ash with scrubby edges. Grades into bramble scrub to north.	Mostly Good	Mostly Good	40+	-	8.4	B3
W4	Aspen, sycamore, goat willow, ash	*Populus tremula, Acer pseudoplatanus, Salix caprea, Fraxinus excelsior*	23.5	#500	-	-	-	-	-	-	Mostly Mature	Large group of mature trees dominated by aspen. Two fallen in the west, ivy on some trees, phone wire present in south-west corner of group. Semi mature sycamore trees.	Fair	Good	40+	-	6.0	B3
G1	Silver birch, elder, sycamore, goat willow	*Betula pendula, Sambucus nigra, Acer pseudoplatanus and Salix caprea*	18.5	#400	-	-	-	-	1	0	Semi mature with one mature silver birch	Average to well formed group of trees, self-set. Six sycamores, one silver birch and 1 goat willow with scattered elder. Silver birch is mature, rest are semi mature.	Good	Good	40+	-	4.8	B3
G2	Sycamore, goat willow	*Acer pseudoplatanus, Salix caprea*	11	400	-	-	-	-	0	0	Mature and Young	Two mature goat willow surrounded by young goat willow and rarely sycamore	Good	Good	40+	-	4.8	B3
G3	Sycamore, hawthorn	*Acer pseudoplatanus, Crataegus monogyna*	9	#250	-	-	-	-	1.5	1.8	Semi mature	Five sycamore and one hawthorn, self-set	Fair	Good	40+	-	3.0	C2
G4*	White willow, downy birch	*Salix alba, Betula pubescens*	14	#450	-	-	-	-	0	0	Mature	Group of trees set in marsh with multistem form. No access to stems	N/A	Good	20-40	-	5.4	C2
G5	Sycamore	*Acer pseudoplatanus*	8	#150	-	-	-	-	3	0	Semi mature	Group of seven trees with multiple stems arising from	Good		40+	-	1.8	C2

Tree Reference No.	Common Name	Scientific Name	Tree Height (m)	Stem Diameter (mm)	Canopy Spread (m)				Height (m) and Direction of Lowest Branch	Canopy Clearance Height (m)	Life Stage	Observations	Structural Condition	Physiological Condition	Estimated Remaining Contribution (Years)	Root Protection Area (RPA, m2)	Radius of RPA (m)	BS5837:2012 Quality Category
					North	East	South	West										
												ground level. Average form, some deer damage evident to stems						
G6	Beech	*Fagus sylvatica*	9	230	4.5	4	5	3	NE1.5	1.8	Semi mature	Group of four trees planted in a line in hard surfacing. Average to poor form, planted closely to some suppression of canopies. Two trees have tight unions and all trees show some top dieback possibly due to drought	Fair	Fair	20-40	-	2.8	C1
G7	Beech	*Fagus sylvatica*	9	300	3.5	4	3	3.5	S3	1.1	Semi mature	Nine trees planted in a line in hard surfacing, likely continuation of G6. Poor form, suppression from being planted too closely, decay present at base of trees at the northern end of the group. Top dieback likely due to drought, deadwood in canopies.	Fair	Fair	20-40	-	3.6	C1
G8	Sycamore, ash, crack willow, lime, hawthorn, holly, goat willow	*Acer pseudoplatanus, Fraxinus excelsior, Salix fragilis, Tilia sp., Crataegus monogyna, Ilex aquifolium and Salix caprea*	13.5	550 max	5	-	-	-	-	0	Early mature	Group of trees located around the edge of the site, likely self-sets. Good form and screening. Most trees in good condition, some with minor ivy or deadwood in crowns	Good	Good	20-40	-	6.6	B2
G9	Silver birch	*Betula pendula*	18	300	4.5	3	5	3	-	3	Mature and semi mature	Four silver birch (2 mature) and two mature goat willow, just inside the site	Good	Good	20-40	-	3.6	B2
G10	Aspen	*Populus tremula*	18.5	350	-	-	8	-	-	2	Semi mature	Self seeded, mix of young and semi mature aspen behind a fence	Good	Good	40+	-	4.2	B2
G11	Sycamore	*Acer pseudoplatanus*	11	#250	#4	#4	#4	#4	-	-	Semi mature	No access due to vegetation	Good	Good	40+	-	3	B2
G12*	Hawthorn and goat willow	*Crataegus monogyna and Salix caprea*	9	#400	-	-	-	-	-	-	Mature	Layered willow in marsh with some mature hawthorn	Fair	Good	40+	-	4.8	B3
G13*	White willow, sycamore, goat willow, ash	*Salix alba, Acer pseudoplatanus, Salix caprea, Fraxinus excelsior*	13	700	-	-	-	-	-	-	Mature	Group of mostly goat willow, one large white willow, young sycamore many in low lying inundated ground	Good	Good	40+	-	8.4	B3
G14	Sycamore	*Acer pseudoplatanus*	21.5	890	9.5	#8	#8	9.5	N3.5	1	Mature	Two sycamore as a pair. Both have tight forks with natural bracing, good physiological condition	Fair	Good	40+	-	10.68	B2
G15	Willow	*Salix sp.*	23	440	10.5	10	5.8	8	-	5	Mature	Minor deadwood throughout, ten stems	Fair	Good	40+	-	5.28	B3

Tree Reference No.	Common Name	Scientific Name	Tree Height (m)	Stem Diameter (mm)	Canopy Spread (m)				Height (m) and Direction of Lowest Branch	Canopy Clearance Height (m)	Life Stage	Observations	Structural Condition	Physiological Condition	Estimated Remaining Contribution (Years)	Root Protection Area (RPA, m2)	Radius of RPA (m)	BS5837:2012 Quality Category
					North	East	South	West										
G16	Sycamore	*Acer pseudoplatanus*	12	#400	-	-	5	-	-	1	Semi mature and young	Around six trees, only one is semi-mature, the rest are young	Good	Good	40+	-	4.8	C2

Appendix 2 Site Photographs

Photograph 1: T1 White willow

Photograph 2. T2 – T7 (right to left) along the River Wensum

Photograph 3. T10 -14 (right to left) along River Wensum

Photograph 4. View towards T19 sycamore and W2* in the background

Photograph 5. View east towards W3* and T31 Black locust (left)

Photograph 6. View south towards raised ground with W2*

Photograph 7. River Yare bank on north-east side of W1*

Photograph 8. W4 west side

Photograph 9. G14 Sycamores within W4

Photograph 10. Entrance to May Gurney site with T23-T25

Photograph 11. T28 goat willow and T29 silver birch

Photograph 12. East side of G8

Photograph 13. G8 and G10

Photograph 14. G9

Photograph 15. G6 beech and T26-27

Photograph 16. G7 beech

Photo 17. Removal of G8

Photo 18. Removal of G10 and G8 adjacent to River Yare

Photo 19. Removal of G6, G7, T26 and T27

Photo 20. Removal of G1 except for one silver birch

Photo 21. T33* sycamore with removed area of W1*

Photo 22. View north towards retained white willows on bank in W1*

Appendix 3 Definitions for Tree Survey Schedule

Term	Definition	
Ref No.	Unique identification number given to each tree or group. Corresponding number on plan – T = Tree / H = Hedge / G = Group / W = Woodland (*symbol indicates a tree thought to be protected by TPO)	
Common Name/*Scientific Name*	Common name followed by italicised scientific name using binomial nomenclature.	
Tree Height	Height of the tree, measured in metres and recorded to the nearest half metre dimensions up to 10 m and the nearest whole metre for dimensions over 10 m.	
Stem diameter	Diameter of stem measured in millimetres at 1.5 metres above ground level (MS = Multi-stem tree measured in accordance with BS5837)	
Canopy Spread	Extent of the tree canopy spread, measured in metres at the four compass points (north, east, south and west) and recorded to the nearest half metre for dimensions up to 10 m and the nearest whole metre for dimensions over 10 m.	
Height of First Significant Branch and Direction	The height of the first significant branch in metres and its direction of growth (north, south east or west).	
Canopy Clearance Height	The height to the lowest part of the crown, measured in metres and recorded to the nearest half metre for dimensions up to 10 m and the nearest whole metre for dimensions over 10 m.	
Life Stage	Classification given in relation to the life expectancy of the specific species.	
	Young (Y)	A recently planted or self seeded tree with a stem diameter less than 150mm at 1.5m height.
	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).
	Ancient (A)	Tree that has survived beyond the typical age range for the species and may have acquired rare qualities such as a large stem diameter, hollowing and significant habitat features.
Observations	General observations, particularly of structural and/or physiological condition. (E.g., the presence of any decay and physical defect).	
Physiological Condition	The condition of the canopy and photosynthetic parts of the tree. Good – good health and vitality with sufficient leaf cover and size appropriate to the species and age. Tree will likely have minor deadwood. Fair – tree showing some signs of stress such as minor thinning, dieback of branches, discolouration of leaves, smaller leaves than usual or typical leaf pests or diseases. Tree may recover in time or with remedial work.	

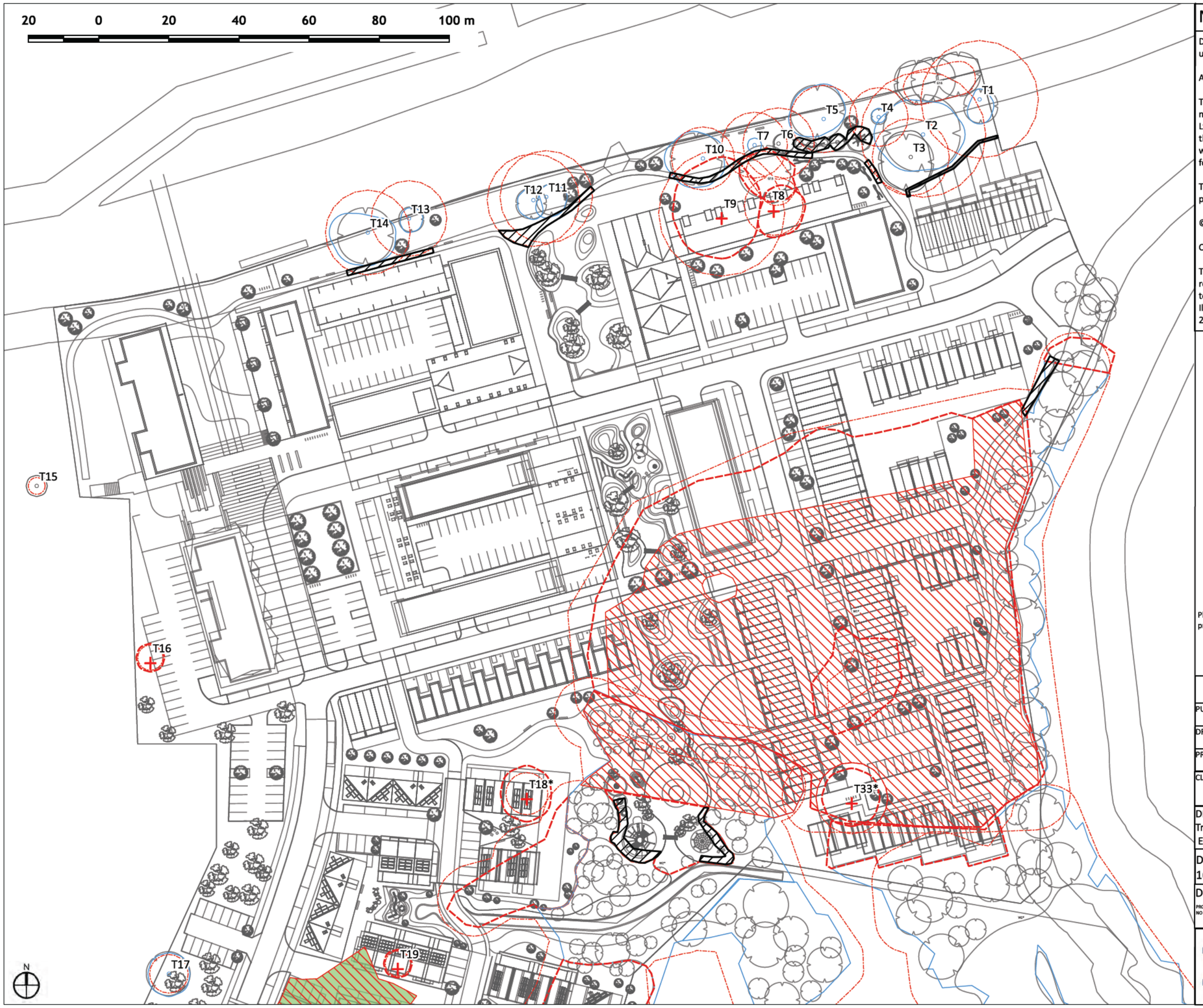
Term	Definition
	Poor – tree showing strong signs physiological stress. This can include extensive crown dieback, stag heading, sparse foliage and pest infestation. Tree is unlikely to recover.
Structural Condition	The biomechanical integrity of the stem and woody parts of the tree. Good = no or few minor defects of little significance or easily rectifiable such as damaged or suppressed branches. No adverse risk of failure. Fair = presence of one or more moderate defects. This could include large deadwood, bark included unions, weak branch attachments, storm damaged limbs, cavities and decay. Work may self-optimise over time or work may be required to remedy the defect. Poor = a tree with major structural defects such as advanced decay or root damage. Works to the tree can be expected.
Estimated remaining contribution	In years based on the condition and species of the tree. <10 years, 10-20 years, 20-40 years and 40+ years.
Root Protection Area (RPA)	An area which defines the theoretical minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability and where the protection of the roots and soil structure is treated as a priority. Measured as the radius of a circle in metres, and total area in square metres.
Root Protection Area radius	In metres, the radius of the circle around the tree defining the Root Protection Area.
BS5837:2012 Quality Category	As per Table 1 in BS5837:2012. Category A = trees of high quality with at least 40 years life expectancy Category B = trees of moderate quality with at least 20 years life expectancy Category C = trees of low quality with at least 10 years life expectancy OR young trees with a stem diameter of less than 150mm at 1.5 height. Category U = trees of very low quality with less than 10 years life expectancy. 1 = Mainly arboricultural qualities 2 = Mainly landscape qualities 3 = Mainly cultural values including conservation
#	Dimension estimated due to tree(s), hedgerow(s) etc. not being accessible and preventing accurate measuring.
Veteran tree	A tree that shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.

Appendix 4 Tree Preservation Order 423

All trees within the black dashed line are protected.

[6]

[6] Norwich City Council. Available at: https://maps.norwich.gov.uk/mynorwich/index.html



NOTES

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All dimensions are in millimetres unless stated otherwise.

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This plan was produced in colour and should not be reproduced in monochrome. All tree locations are based a topographical survey. The background plan is the Illustrative Landscape Masterplan by IDP dated 9th June 2023.

Canopy Spread and Retention Category

- **Category B tree as defined by BS5837:2012** : MODERATE Quality/ value
- **Category C tree as defined by BS5837:2012** : LOW Quality/ value
- **Category U tree as defined by BS5837:2012:** Dead, Defective or Infected
- **Existing Trees to be removed to Accommodate the Development**
- **RPA** (Root Protection Area)
- Approximate area of trees removed in 2023
- Root impacts anticipated
- Unsurveyed trees/scrub to be removed

Please note that trees marked with a * symbol (e.g. W1*) are protected by TPO 423.

-				
-	Revised by:	Date:	Checked by:	Date:

PURPOSE OF ISSUE
PL - PLANNING SUBMISSION

DRAWING STATUS
S2 - Fit For Information

PROJECT TITLE
Deal Ground, Norwich

CLIENT
SPC Ltd

DRAWING TITLE
Tree Impact Plan - Wensum Edge

SCALE
1:1000 at A3

DATE:	DRAWN BY:	CHECKED BY:	APPROVED BY:
16.06.2023	AL	RG	MT

DRAWING NUMBER

PROJECT NO	DRAWING FIELDS	REVISION
	3627-LAN-ZZ-XX-DR-Y-101-	-P01

Lanpro

30 0 30 60 90 120 150 m

T18*
T33*
T19
T17
G1
T21
T22*
T32*
T20
T31
T30
T35
T34
N

Coppicing proposed in W2* as well as selective clearance of ditches

NOTES

Do not scale from this drawing electronically or manually, use written dimensions only.

All dimensions are in millimetres unless stated otherwise.

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Ordnance Survey Licence Number 0100031673

This plan was produced in colour and should not be reproduced in monochrome. All tree locations are based a topographical survey. The background plan is the Illustrative Landscape Masterplan by IDP dated 9th June 2023.

Canopy Spread and Retention Category

- **Category B tree as defined by BS5837:2012** : MODERATE Quality/ value
- **Category C tree as defined by BS5837:2012** : LOW Quality/ value
- **Category U tree as defined by BS5837:2012:** Dead, Defective or Infected
- **Existing Trees to be removed to Accommodate the Development**
- **RPA** (Root Protection Area)
- Approximate area of trees removed in 2023
- Root impacts anticipated
- Unsurveyed trees/scrub to be removed
- Unsurveyed trees/scrub

Please note that trees marked with a * symbol (e.g. W1*) are protected by TPO 423.

-	Revised by:	Date:	Checked by:	Date:

PURPOSE OF ISSUE
PL - PLANNING SUBMISSION

DRAWING STATUS
S2 - Fit For Information

PROJECT TITLE
Deal Ground, Norwich

CLIENT
SPC Ltd

DRAWING TITLE
Tree Impact Plan - The Views

SCALE
1:1500 at A3

DATE:	DRAWN BY:	CHECKED BY:	APPROVED BY:
16.06.2023	AL	RG	MT

DRAWING NUMBER

PROJECT NO | DRAWING FIELDS | REVISION

3627-LAN-ZZ-XX-DR-Y-101- -P01

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NOTES

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- Root impacts anticipated
- Unsurveyed trees/scrub to be removed
- Unsurveyed trees/scrub

Please note that trees marked with a * symbol (e.g. W1*) are protected by TPO 423.

	Revised by:	Date:	Checked by:	Date:
-				

PURPOSE OF ISSUE
PL - PLANNING SUBMISSION

DRAWING STATUS
S2 - Fit For Information

PROJECT TITLE
Deal Ground, Norwich

CLIENT
SPC Ltd

DRAWING TITLE
Tree Impact Plan - Yare Edge

SCALE
1:1000 at A3

DATE:	DRAWN BY:	CHECKED BY:	APPROVED BY:
16.06.2023	AL	RG	MT

DRAWING NUMBER

PROJECT NO	DRAWING FIELDS	REVISION
	3627-LAN-ZZ-XX-DR-Y-101-	P01

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RTPI
Royal Town Planning Institute


RIBA
Chartered Practice


REGISTERED ORGANISATION
CIfA


HBF
HOME BUILDERS FEDERATION


Women in Property


IEMA
Transforming the world to sustainability


RIBA 2030
Climate
Challenge
Signatory


Bloom
Opening up procurement
Accredited Supplier


Landscape Institute Registered Practice


RSA


CONSTRUCTING EXCELLENCE
delivered with bre


LPDF


URBAN DESIGN GROUP
REGISTERED PRACTICE


smas
worksafe consultant
SSIP


QMS
ISO 9001 : 2015
REGISTERED


QMS
ISO 14001 : 2015
REGISTERED


QMS
ISO 45001 : 2018
REGISTERED


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