

**Newton Dee, Aberdeen
Tree Survey and Arboricultural Impact
Assessment**



October 2023

CONTROL SHEET

Client: Ramsay & Chalmers
 Project Title: Newton Dee, Aberdeen
 Report Title: Tree Survey and Arboricultural Impact Assessment
 Document number: 13388
 Project number: 3/78078

Issue Record

Issue	Status	Author	Reviewer	Approver	Issue Date
1	FINAL	SF	GN	DB	03/07/23
2	UPDATE	EHD/SF	PD	PD	17/10/23

EnviroCentre Limited Office Locations:

Glasgow

Edinburgh

Inverness

Banchory

Registered Office: Craighall Business Park 8 Eagle Street Glasgow G4 9XA
 Tel 0141 341 5040 info@envirocentre.co.uk www.envirocentre.co.uk

This report has been prepared by EnviroCentre Limited with all reasonable skill and care, within the terms of the Contract with Ramsay & Chalmers ("the Client"). EnviroCentre Limited accepts no responsibility of whatever nature to third parties to whom this report may be made known.

No part of this document may be altered without the prior written approval of EnviroCentre Limited.

EnviroCentre Limited is registered in Scotland under no. SC161777.

VAT no. GB 348 6770 57.



EXECUTIVE SUMMARY

EnviroCentre Ltd were commissioned by Ramsay & Chalmers to conduct a tree survey on the site known as Newton Dee, at Bielside, Aberdeen. The focus of the tree survey was to determine the constraints placed on future development by the tree stock on and bordering the site.

The site is situated 180m south of Cults, Aberdeen centred at NJ 88049 02197, at an elevation of 38m above sea level. The site comprises a mixed farmland field, with boundaries flanked by a hedgerow to the east, Old Ferry Road to the south and west, and woodland to the north. An area of abandoned asphalt is used for carparking in the northwest corner of the field.

The survey was conducted by applying the standards and methods outlined in:

- BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations
- BS 5837 – Advanced: Tree Assessment for Planning
- Guidance Note 7: Tree Surveys - A Guide to Good Practice
- Aberdeen City Council – Supplementary Guidance: Trees & Woodlands

A desk study was completed to determine the presence of any policy or management constraints on the site such as Statutory Designated Sites or Ancient Woodlands.

Long-established (of plantation origin) woodland borders the site to southwest and west. Two tree preservation orders are also present for tree groups that neighbour the site to the south and southwest.

Only minor trees of low arboricultural interest are present within the site. The mature woodland to the north and west of the site and hedgerow east of the boundary are of arboricultural interest and offer woodland habitat connectivity to the larger landscape.

The impacts on the tree stock on site are minimal and have been limited by the proposed design. In addition to the proposed design, and by following the recommendations and mitigation outlined within this report, the arboricultural impact of this development will be positive.

This document includes the survey scope, methods, results, recommendations for further work, and mitigation and enhancement measures. General good practice guidance has been provided including tree protection meeting British Standards and broad methods for working within the Root Protection Area (RPA).

Contents

Executive Summary i

1 Introduction 1

 1.1 Terms of Reference 1

 1.2 Aims and Objectives 1

 1.3 Site Description 1

 1.4 Project Description 2

 1.5 Author Qualifications 2

 1.6 Report Usage 2

2 Methods 3

 2.1 Guidance Documents 3

 2.2 Desk Study 3

 2.3 Tree Survey 3

 2.4 Tree Reference Plans 6

 2.5 Disclaimers 6

3 Results 7

 3.1 Desk Study 7

 3.2 Site Survey Details 8

 3.3 Current Tree Stock 9

 3.4 Impact Assessment 10

 3.5 Recommendations 11

4 Mitigation and Enhancement Recommendations 12

 4.1 Tree and Woodland Protection 12

 4.2 Working within the RPA 13

 4.3 Monitoring and Further Survey 14

 4.4 Arboricultural Management and Enhancement Opportunities 14

Appendices

- A Proposed Development Design
- B Tree Quality Assessment Criteria
- C Tree Schedule
- D Tree Reference Plans

Figures

Figure 4-1: Default Specification Vertical Tree Protection Barrier 13

Tables

Table 2.1: Tree Age Classes 4

Table 2.2: Tree Condition Classes 5

Table 2.3: Tree Group Condition Classes 5

Table 3.1: Desk Study Results 7

Table 3.2: Tree Species Recorded on Site 9

Table 3.3: Individually Surveyed Trees by Category 9

1 INTRODUCTION

1.1 Terms of Reference

EnviroCentre Ltd were commissioned by Ramsay & Chalmers to conduct a tree survey on the Newton Dee, Aberdeen development site. The focus of the tree survey was to determine the constraints placed on future development by the tree stock on and adjacent to the site.

1.2 Aims and Objectives

The aim of this study was to present the potential constraints posed by existing trees and vegetation in relation to the design for future development of the site. The objectives of the study were as follows:

- Undertake a desk study to ascertain and statutory/non-statutory designations pertaining to the site, including tree preservation orders (TPOs) in addition to any pertinent guidance from the Aberdeen City Council Local Development Plan¹
- Utilise tree survey data in reference to BS5857:2012 *Trees in relation to design, demolition and construction –Recommendations* to depict the influence that tree constraints pose to the design
- Identify trees which would be removed as part of sound arboricultural management (i.e., dead/unviable trees)
- Describe how trees should be protected during construction
- Provide management recommendations to encourage the persistence of any high-quality trees and tree groups on or adjacent to the site
- Consider the mitigation, compensation, and enhancement opportunities provided by the proposal.
- Assess the Arboricultural Impact of the finalised design proposal, accounting for all the above points.

1.3 Site Description

The site is situated 180m south of Cults, Aberdeen approximately centred at NJ 88049 02197, at an elevation of 38m above sea level.

The site comprises a mixed farmland field enclosed by a hedgerow to the east, Old Ferry Road to the south and west, and woodland associated with the Old Dee Railway to the north. An area of abandoned asphalt is used for carparking in the northwest corner of the field.

The wider landscape contains Cults (a suburb of the city of Aberdeen), a woodland to the north, a golf course to the east, and woodland and mixed farmland to the south and west.

The River Dee is located approximately 760m to the south of the site.

¹ Available at <https://www.aberdeencity.gov.uk/services/planning-and-building-standards/local-development-plan/aberdeen-local-development-plan> (Accessed April 2023)

1.4 Project Description

The proposed development is for a residential home and bakery with associated infrastructure including roads, parking, utilities, and green landscaping.

1.5 Author Qualifications

I, Scott Fraser, am a Consultant Ecologist with EnviroCentre. I am trained in gathering accurate tree data and quantifying tree constraints data regarding BS5837:2012 with GIS software packages for matters relating to tree and woodland management. I hold an honours degree in Conservation Biology and Management, a Higher National Certificate in Applied Sciences and I am a qualifying member of the Chartered Institute of Ecology and Environmental Management.

1.6 Report Usage

The information and recommendations contained within this report have been prepared in the specific context stated above and should not be utilised in any other context without prior written permission from EnviroCentre.

If this report is to be submitted for regulatory approval more than 12 months following the report date, it is recommended that it is referred to EnviroCentre for review to ensure that any relevant changes in data, best practice, guidance, or legislation in the intervening period are integrated into an updated version of the report.

Whilst the Client has a right to use the information as appropriate, EnviroCentre Ltd retains ownership of the copyright and intellectual content of this report. EnviroCentre does not accept liability to any third party for the contents of this report unless written agreement is secured in advance, stating the intended use of the information.

EnviroCentre accepts no liability for use of the report for purposes other than those for which it was originally provided, or where EnviroCentre has confirmed it is appropriate for the new context.

2 METHODS

2.1 Guidance Documents

The survey was conducted applying the standards and methods outlined in:

- BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations²
- BS 5837 – Advanced: Tree Assessment for Planning³
- Guidance Note 7: Tree Surveys - A Guide to Good Practice⁴
- Aberdeen City Council – Supplementary Guidance: Trees & Woodland⁵

2.2 Desk Study

A desk study was undertaken prior to the initial field survey which included a review of:

- Available aerial imagery
- Tree Preservation Orders (TPOs), and statutory and non-statutory designated sites⁶
- The Ancient Woodland Inventory⁷
- The Native Woodland Survey of Scotland (NWSS), National Forest Inventory (NFI), Scottish Forestry Grants and Regulations (SFGR) and, where applicable, Scottish Government policy⁸
- Relevant species and habitats listed on the Aberdeen City Local Development Plan (LDP)⁹
- North East Scotland Biodiversity Partnership (NESBiP) for locally and nationally important species and habitats¹⁰
- Soil conditions on site¹¹

2.3 Tree Survey

Trees and groups of vegetation were visually assessed from ground level. No invasive instruments were used in assessing the trees' condition. The following information was recorded:

- Unique identification number
- Species
- Height measured using a Haglofs digital clinometer to the nearest 0.5m
- Diameter at 1.5m above ground level measured with a diameter tape to the nearest 5mm
- Crown dimensions estimated or measured to the nearest meter
- Life stage (age profile)

² Available at: <https://shop.bsigroup.com/products/trees-in-relation-to-design-demolition-and-construction-recommendations/standard> (Accessed April 2023)

³ Barrell, J. (2016) BS 5837 – Advanced: Tree Assessment for Planning (1st ed.). Arboricultural Association.

⁴ Available at: <https://www.trees.org.uk/Book-Shop/Products/Guidance-Note-7-Tree-Surveys-%e2%80%93-A-Guide-to-Good-Practice> (Accessed April 2023)

⁵ <https://www.aberdeencity.gov.uk/sites/default/files/6.2.PolicySG.TreesWoodlands.pdf> (Accessed June 2023)

⁶ Available at: <https://ren.maps.arcgis.com/apps/webappviewer/index.html?id=0a9b5a52c308446c84af19c484126072> (Accessed April 2023)

⁷ Available at: <https://map.environment.gov.scot/sewebmap/> (Accessed April 2023)

⁸ Native Woodland Survey for Scotland (NWSS), Available from: https://open-data-scottishforestry.hub.arcgis.com/datasets/6d27b064fcb471da50c8772ad0162d7_0/explore?location=55.891977%2C-4.419160%2C13.99 (Accessed April 2023)

⁹ Available at: <https://www.aberdeencity.gov.uk/services/planning-and-building-standards/local-development-plan/aberdeen-local-development-plan> (Accessed April 2023)

¹⁰ Available at <https://www.nesbiodiversity.org.uk/> (Accessed April 2023)

¹¹ Available at: <https://map.environment.gov.scot/sewebmap/> (Accessed April 2023)

- Condition
- General observations including preliminary management recommendations
- Tree quality categorisation

For multi-stemmed trees and those on sloping ground, variance to the measurement method was made according to BS5837: 2012. Where trees stems were inaccessible, e.g., obscured by vegetation, the DBH has been estimated.

2.3.1 Tree Numbering and Identification

Individually surveyed trees were tagged with unique ID numbers or, where present, existing tree tag ID numbers were recorded. All tags were attached on the main stem, approximately 1.5m above ground level.

Tree groups have been assigned an identification code in the format: *TG#*.

2.3.2 Life Stage

Table 2.1: Tree Age Classes

Abbreviation	Category	Description
Y	Young	A juvenile tree newly planted or recently established.
EM	Early mature	A tree that is becoming established increasing in height and landscape significance.
SM	Semi-mature	An established tree but not showing any species-specific mature characteristics such as ridged bark.
M	Mature	A tree which has reached maturity and contains features such as anticipated climax height, and species-specific mature characteristics.
LM	Late mature	A tree which is exhibiting physiological and biomechanical changes associated with aging and has the potential to become veteran or ancient.
V	Veteran	A tree usually in the mature stage of its life and has important wildlife and habitat features including hollowing or associated decay fungi; holes; wounds and large dead branches.
A	Ancient	A tree with one or more of the following characteristics: <ul style="list-style-type: none"> • Biological, aesthetic or cultural interest because of its great age • A growth stage that is described as ancient or post-mature • A chronological age that is old relative to others of the same species.

2.3.3 General Observations and Management Recommendations

General (non-invasive) observations were made of individual trees regarding their structural and physiological condition (e.g., the presence of decay or physical defects shown by external bio-mechanical signs). Trees were classified in terms of their general condition using the categories outlined in Table 2.2.

Table 2.2: Tree Condition Classes

Abbreviation	Category	Description
G	Good	A tree not showing more mechanical defects than would be expected or that could be easily remedied.
F	Fair	A tree showing more defects than could be reasonably expected, or which could be remedied.
P	Poor	A tree in a poor structural condition with defects which could not be easily remedied.
D	Dead	A tree afflicted with a pathogen or having suffered a trauma which has resulted in death.

Tree groups were classified in terms of their general condition using the categories outlined in Table 2.3 below.

Table 2.3: Tree Group Condition Classes

Abbreviation	Category	Description
G	Good	Most trees did not show more mechanical defects and/or ill-health than would be expected and/or signs of ill-health.
F	Fair	Some of the trees show more defects and/or ill-health than could be reasonably expected.
P	Poor	Most trees show signs of in poor structural condition or health

2.3.4 Tree Quality Categorisation

Individual and groups of trees were afforded a general quality categorisation from **A/B/C** for retention or **'U'** for removal. The categorisation also reflects the future contribution that the tree may provide. Please refer to Appendix B: Tree Quality Assessment Criteria for further details of the categorisation.

2.3.5 Root Protection Areas (RPA)

The RPA was calculated as an area equivalent to a circle with a radius 12 times that of the stem DBH or the equivalent diameter for multi-stemmed trees.

For the tree groups where the dominant trees can be surveyed, these shall be presented on the tree plans as individual trees within a tree group. Edge trees within groups will also be prioritized for individual survey as they are expected to depict an accurate representation of the significant constraints to development. At a minimum, tree groups shall be afforded an RPA that extends to the dripline of the group. Where tree groups require additional RPA allowance beyond their dripline, a modified RPA will be added to the tree plans.

Where access was not possible for individual trees or tree groups, estimated dimensions will be identified with the suffix # (British Standard 5837:2012 section 4.4.2.6 – c) and aimed to be representative of the likely constraints plus allowance for future growth.

2.4 Tree Reference Plans

Individual trees and tree groups have been plotted on the Tree Constraints Plan following survey of the site using GPS field data collection equipment.

The Tree Constraints Plan shows the following information:

- The location of the surveyed trees and groups of trees on site
- The tree quality colour code of individual trees and tree groups
- The estimated extent of individual tree crowns and tree group canopies
- The calculated individual and representative tree group RPAs (where required)
- The measured height of trees to present a Zone of Influence buffer to tree stock.
- An overlay of the proposed development design
- Trees that are deemed physically incompatible with the current design or have RPA infringement because of development

The Tree Protection Plan shows the following:

- The location of retained trees and vegetation groups
- The suggested location of vertical tree protection barriers and areas that would require mitigated works within the RPA

2.5 Disclaimers

This survey does not specifically address or quantify the health and safety risks posed by tree groups, although where potential hazards have been recognised it is possible to recommend an appropriate strategy for management. Regular arboricultural assessment should be undertaken of trees, particularly those recognised as posing a risk to persons or property within the site.

The survey conclusions relate solely to the conditions recorded at the time of inspection. Trees can be affected by environmental changes such as weather events, topographical alterations, or changes in hydrological regime; therefore, such changes may necessitate further survey.

Individually surveyed trees within tree groups are representative of the dominant trees within the group and are not an exhaustive survey of all trees within the woodland.

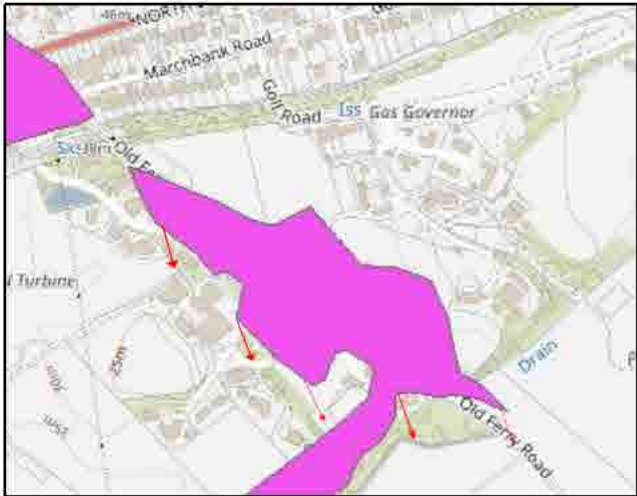
The Tree Schedule presented in this document includes preliminary management recommendations but is not a schedule of works and is not designed to be submitted to a contractor. Task specific Arboricultural Method Statements can be provided upon request.

3 RESULTS

3.1 Desk Study

Significant results from the desk study are displayed in Table 3.1 below.

Table 3.1: Desk Study Results

Desk Study Area	Results within the Site Boundary
Native Woodland Survey of Scotland	None present within and neighbouring the site.
Ancient Woodland Inventory	<p>The AWI Polygon (indicated by the pink polygon) shows an area of long-established woodland (of plantation origin) present within the site boundary.</p> <p>However, it appears that this is inaccurate, being offset approximately 100m northeast. The image below shows that the polygon is offset to the ordinance survey shape of the woodlands consistently to the northeast (indicated by the red arrow symbols inserted).</p> <p>This adjustment would include trees along the southwest boundary.</p> 
Tree Preservation Orders (TPO)	<p>Two tree preservation orders present within woodland neighbouring the site to the west and southwest</p> <p>Ref No. 98 - Consists of trees contained within Tree Group 2 Ref No. 211 – Consists of trees contained within Tree Group 3</p>
Local Development Plan	<p>Within the Aberdeen City Council’s Trees and Woodland Policy (NE5)¹² states that:</p> <p><i>“There is a presumption against all activities and development that will result in the loss of, or damage to, trees and woodlands that contribute to nature conservation, landscape character, local amenity or climate change adaptation and mitigation.</i></p>

¹² Available at: https://www.aberdeencity.gov.uk/sites/default/files/LDP_WS_20170328.pdf

Desk Study Area	Results within the Site Boundary
	<p><i>Permanent and temporary buildings and services should be sited so as to minimise adverse impacts on existing and future trees. Appropriate measures should be taken for the protection and long-term management of existing trees and new planting both during and after construction.</i></p> <p><i>Where trees may be impacted by a proposed development, a Tree Protection and Mitigation Plan will need to be submitted and agreed with the Council before any development activity commences on site. This should include details of compensatory planting, temporary earth works and any site preparation.</i></p> <p><i>Where applicable, root protection areas should be established and protective barriers erected prior to any work commencing. See relevant Supplementary Guidance for more information. Where appropriate, the Council will seek to promote the creation of new woodland and the planting of native trees in association with development. The majority of development sites offer opportunities for the planting of trees and hedgerows. Details of tree and hedgerow planting should be submitted as part of the proposal's landscape strategy"</i></p>
<p>North East Scotland Biodiversity Partnership (NESBiP)</p>	<p>Woodland Habitat Statement, which considers woodland habitats of national (UK) importance and of particular local (North East Scotland) interest, can be accessed here: https://www.nesbiodiversity.org.uk/wp-content/uploads/2019/10/Woodlandsv1-1.pdf</p>
<p>Soil Structure and Profile¹³</p>	<p><u>Parent Material</u> Fluvioglacial and raised beach sands and gravels derived from acid rocks</p> <p><u>Texture</u> M1 & L3 Coarse, medium and fine textured soils with high to low water absorption capacity on almost level to moderately steep slopes</p> <p><u>Soil Moisture</u> Low. Soils can store large volumes of water or can allow water to quickly infiltrate and so surface runoff is limited</p> <p><u>Compaction Risk</u> Topsoil: Low/not assessed Subsoil: Extremely vulnerable</p>

3.2 Site Survey Details

The site survey was conducted on 27/04/2023. No inclement weather occurred that could have limited the survey quality. Trees were in typical spring condition with foliage present on all conifers and occasional deciduous trees; reproductive structures were present on some trees.

¹³ Available at: https://map.environment.gov.scot/Soil_maps/?layer=1 (Accessed April 2023)

3.3 Current Tree Stock

This section should be read in conjunction with:

- Appendix C: Tree Schedule
- Appendix D:
 - Tree Constraints Plan
 - Tree Protection Plan

Species recorded during the survey are detailed in Table 3.2.

Table 3.2: Tree Species Recorded on Site

Common Name	Scientific Name
Western Hemlock	<i>Tsuga heterophylla</i>
European Larch	<i>Larix decidua</i>
Beech	<i>Fagus sylvatica</i>
Scots Pine	<i>Pinus sylvestris</i>
Douglas Fir	<i>Pseudotsuga menziesii</i>
Wild Cherry	<i>Prunus avium</i>
Field Maple	<i>Acer ampestre</i>
Blackthorn	<i>Prunus spinosa</i>
Pedunculate Oak	<i>Quercus robur</i>
Ash	<i>Fraxinus excelsior</i>
Common Hawthorn	<i>Crataegus monogyna</i>
Silver Birch	<i>Betula pendula</i>

3.3.1 Individual Trees and Arboricultural Features

A total of 35 trees were individually surveyed during the site visits, almost all of which are contained within tree groups neighbouring the site.

Table 3.3: Individually Surveyed Trees by Category

Tree Category	Number of Trees
A	10
B	17
C	8
U	0

3.3.2 Tree Groups

The tree survey identified five unique tree groups within and bordering the site. The overall quality of the woodland within these tree groups is high and consisted predominantly of mixed mature conifer and broadleaved trees with numerous veteran trees present.

TG1 is located to the north of the site and is separated by a mortared wall; it contains a mixture of semi-mature to mature trees with a composition of abundant Scots pine, Douglas fir, birch and beech with occasional western hemlock, holly, field maple and cherry. This tree group also contained a high variety of under canopy shrub and scrub vegetation with Invasive non-native species (INNS) such as snowberry, cherry laurel, and rhododendron also present throughout.

TG2 and TG3 along the west boundary of the site consist of mature and late-mature coniferous and deciduous trees with a semi-mature and early-mature under canopy. This tree group consists of abundant beech and birch and frequent Douglas fir.

TG4 to the southwest of the site consists of late mature coniferous and deciduous trees, with an understory composed of a mixture of brash and shrub/scrub species. Abundant beech and birch, and occasional cherry, field maple, ash and larch.

TG5 to the east of the boundary consists of a hawthorn and blackthorn managed hedgerow containing early-mature and semi-mature deciduous trees. This group is composed of ash, oak, blackthorn, wild cherry, hawthorn, blackthorn and beech.

3.4 Impact Assessment

Generally, the site comprises a grassland field with tree groups outside of the site along the north and west boundaries.

At this stage, with the current site boundary and design, two minor trees (<150mm diameter) within the site will require removal. These trees are of minimal arboricultural interest and their removal will be easily compensated for by the proposed tree planting in the north and east of the site.

The current design indicates that most of the development footprint will be outwith the zone of influence of the boundary trees with some very minor intrusions along the north by non-residential driveway and parking area.

The design indicates the development will be outside of the root protection areas of the boundary trees, with a small risk of infringement at the site access; however, it should be noted that these trees are separated from the site by a stone wall and an existing road to the west that will have restricted the below ground rooting systems.

Trees within TG2 and TG3 are covered by a TPO. While these trees will not be directly impacted by the development, care should be taken on plant accessing the site to not damage the overhanging canopy.

The proposed site plan shows a row of planted individual trees along the north and east of the site. The specification of planting is not known at this time.

As the proposed development has been designed to avoid impacts to trees bordering the site, proposes the planting of trees within the site, and will implement the recommendations outlined in Section 3.5 and mitigation described in Section 4, the development's arboricultural impact will be positive.

3.5 Recommendations

The following measures are to minimise arboricultural impacts because of development:

- All compensatory planting to meet a minimum 1:1 ratio (2:1 preferable) of trees replanted to trees removed (or area for groups).
 - Select a diverse species mix that is native to the area, meets local authority approval, and has an appropriate hardiness for the climate
- New planting should be located to ensure adequate space is allowed for future growth (to maturity) of root systems, stems, and crown structure.
 - Due attention must be paid to potential direct conflict with structures, services, general access, views, and sunlight provisions throughout all seasons taking into account full leaf cover.
- Where possible, planting should be located to maintain and enhance connectivity for wildlife across the site and into the wider area.
- Tree protection barriers must be erected around areas identified for new planting to ensure the soil substrate is not degraded prior to planting new stock.
- Planted trees should be of high quality and planted in clean and fertile soils
- Employ tree guards to protect young trees from animal browsing
- Annually inspect the survival of the replacement stock for the first five years after planting
 - Replace dead stock discovered during the inspections
 - Repair or remove any damaged or obsolete tree guards discovered during the inspections
- One final inspection 10 years after planting targeting 100% survival of all stock planted
 - If 100% survival is not achieved in the 10th year, additional planting and monitoring will be required.

4 MITIGATION AND ENHANCEMENT RECOMMENDATIONS

The following suggestions have been extrapolated from the industry standards BS5837:2012 *Trees in relation to design, demolition, and construction – Recommendations* or on a site-specific basis.

The baseline data compiled to inform this document should be referred to and amended, if required, on receipt of a changed design. Updates may include but not be limited to utility and service drawings, road engineering details, and any amendments to the footprint of the proposed development.

4.1 Tree and Woodland Protection

To preserve retained trees and tree groups, the protection of their structure and health during construction will be required. The following methods should be adopted:

- Site operations should be planned to consider the location of the tree stem, crown, and root protection areas. Transit, traverse, and operation of machinery should be supervised by a banksman to ensure adequate clearance of the constraints. Pruning of trees may be required to facilitate access of such machinery. All pruning of this nature should be undertaken following consultation with a project arboriculturist and completed by a qualified tree surgeon.
- It is suggested that retained trees in proximity to development activities are afforded protection using the default barrier specification as described in Figure 4-1.
- Installation of tree protection barriers in accordance with the Tree Protection Plan in Appendix D and audited by a project arboriculturist (or Environmental Clerk of Works).
- All plant and vehicles, either stored or engaged in construction works, should operate outside the calculated RPA.
- Where construction works are required within the RPA or Vertical Tree Protection Barriers, works should be mitigated under the guidance of a project arboriculturist.
- Existing ground levels within the RPA should be maintained with the existing topsoil remaining in situ.
- Limited manual excavation, if required, may be justified using hand-held tools. Engineered level changes should be subject to specifically designed mitigation in conjunction with the project arboriculturist.
- In some cases, it is prudent to also protect the soil condition in areas identified for new planting. This precaution may reduce the need for costly soil conditioning and enhancement prior to the planting of new trees.
- Measures to control noise, dust, and other forms of water and airborne pollution should be adopted.

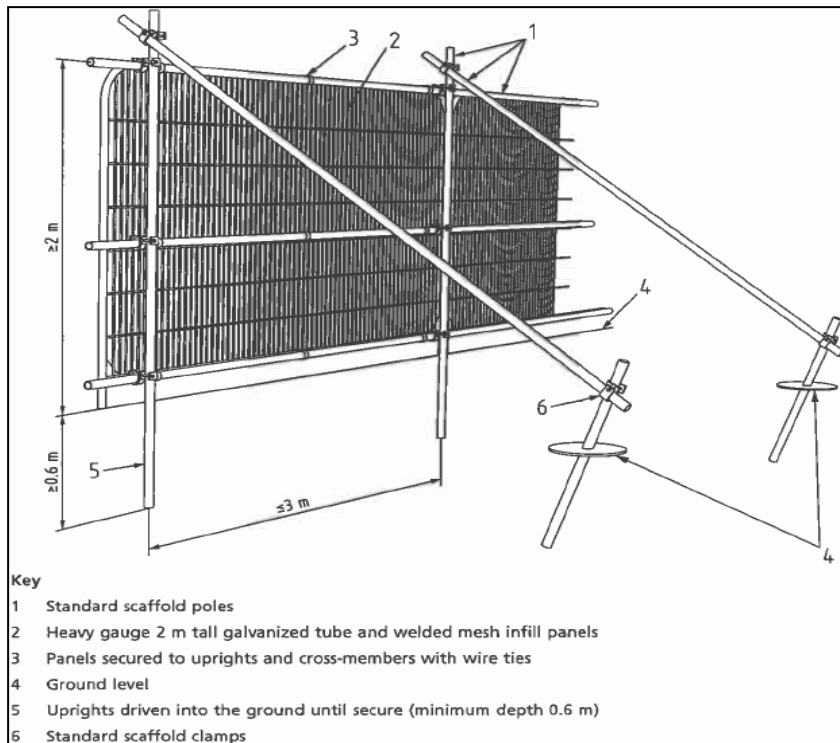


Figure 4-1: Default Specification Vertical Tree Protection Barrier

4.2 Working within the RPA

Where site operations may require the RPA of retained trees and woodland groups to be infringed, the following guidelines should be adopted:

- If required, activities within the RPA should follow the principle that the tree and soil structure take priority, ensuring adequate soil density to achieve root growth and function.
- The alteration of tree protection barriers and working within root protection areas should be guided by an appointed project arboriculturist who can produce a task specific method statement, supervise and document works, and report compliance to the local authority.
- Changes in ground levels should be avoided within calculated rooting areas. Changes in levels should not create localised ponding of water, burial of root collars, or limit gaseous exchange or the tree's root system access to water.
- Where ground levels and engineering specification allow, calculated rooting areas scoped for surface changes such as footpaths or car parking may be bridged with cellular confinement systems to spread loading, allow percolation of water, and allow gaseous exchange¹⁴.
- If required, surface material in calculated rooting areas should be dislodged with compressed air and hand tools with the aim of not damaging tree roots.
- Excavations within RPAs and pruning of roots <25mm using a sharp hand tool should be supervised by a project arboriculturist.
- Arboricultural/forestry operations and soil improvement strategies may be required for trees which have been subject to root pruning or alteration of soil conditions. This should be guided during works by a project arboriculturist.
- All trees subject to RPA infringement should be included in a regular regime of Visual Tree Assessment.

¹⁴ Information on Greenfix Geoweb available at: <http://greenfix.co.uk/geoweb/> (Accessed April 2023).

4.3 Monitoring and Further Survey

I recommend that trees scheduled for retention and protection are monitored regularly by a project arboriculturist during the development activity. Importantly, this monitoring should include supervision of any activity taking place within the calculated RPA of the tree-stock.

4.4 Arboricultural Management and Enhancement Opportunities

The finalised landscaping design could consider the following recommendations:

- Utilise new planting to augment existing tree stock in the developed area to offer biodiversity and amenity
- Utilise new planting to create linear features for wildlife corridors and “Nectar Networks”¹⁵.
- Analyse soil to confirm chemical and biological characteristics with the aim to aid planting selection and success
- Installation of bird and bat boxes to enhance habitat and increase nesting/roosting provisions¹⁶
- Use of tree shelters to reduce deer and rabbit browsing and increase the probability of successful establishment of newly planted trees
- Utilise urban tree systems within the development to aid long-term tree retention and surface water management¹⁷

¹⁵ Scottish Wildlife Trust (2017). 50 For the Future: Create new wildflower meadows. (available at: <https://scottishwildlifetrust.org.uk/2016/09/50-for-the-future-create-new-wildflower-meadows/>)

¹⁶ A good range of bat and bird boxes can be found here: <https://www.nestbox.co.uk/> (Accessed April 2023)

¹⁷ For example, <https://www.greenblue.com/gb/products/> (Accessed April 2023)

APPENDICES

A PROPOSED DEVELOPMENT DESIGN

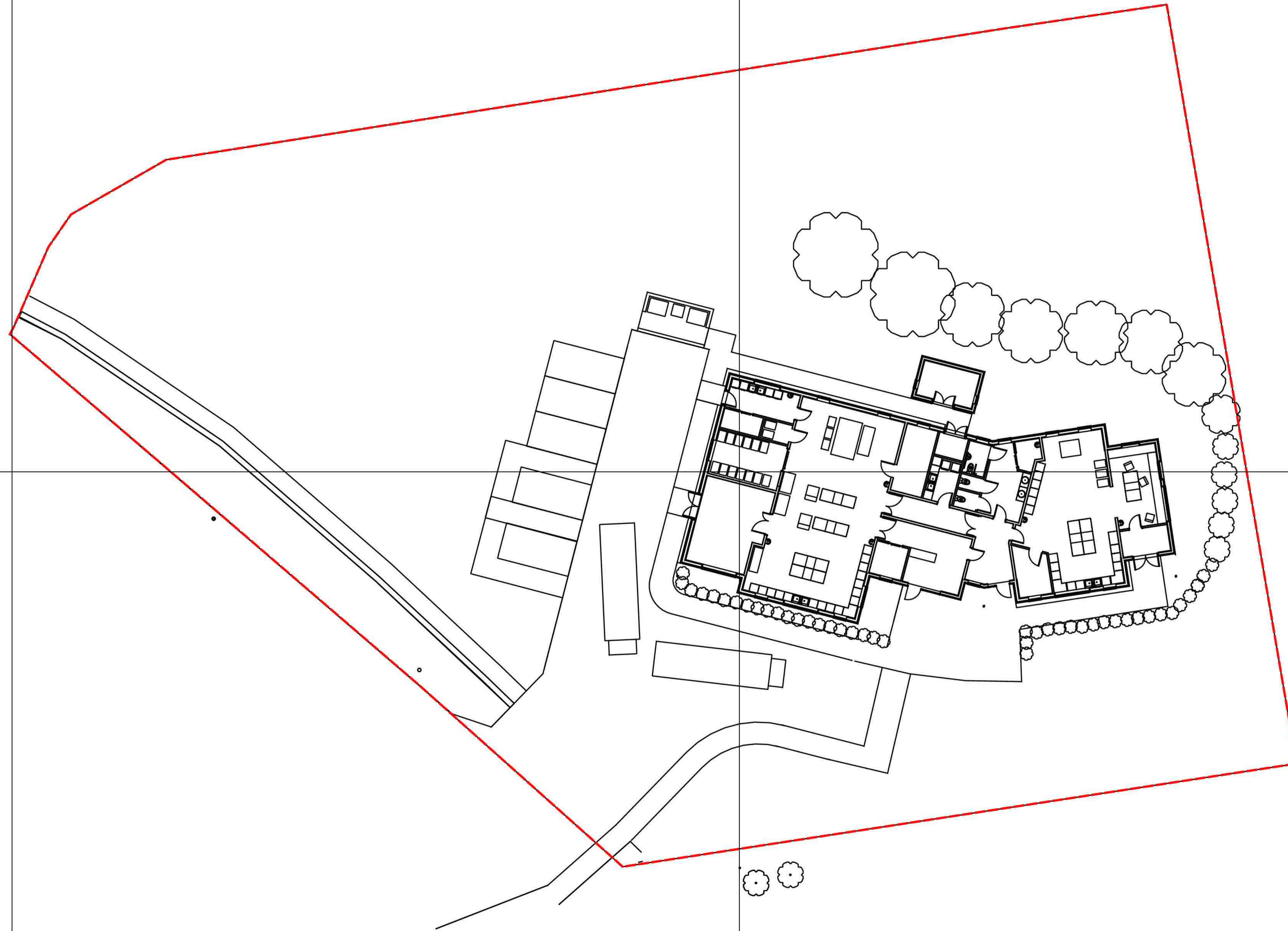
387950

388000



802200

802200



Legend

- ▭ Site Boundary
- Development Design

Do not scale this map

Client
Ramsay & Chalmers

Project
Newton Dee

Title
Proposed Development Design

Status
FINAL

Drawing 378078-QGIS007	Revision -	Date 17 Oct 2023
Drawn SF	Checked PD	Approved PD

Scale
1:150 @ A1

Rev	Date	Amendment	Initials



Craighall Business Park, Eagle Street, Glasgow, G4 9XA
T: 0141 341 5040 E: info@envirocentre.co.uk W: www.envirocentre.co.uk

0 10 20 m

387950

388000

B TREE QUALITY ASSESSMENT CRITERIA

Category and colour on TCP	Criteria		
<p>U - Removal</p> <p>Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.</p>	<ul style="list-style-type: none"> Trees that have a serious, irremediable structural defect such that early loss is expected through collapse or become unviable after removal of other category U trees. Trees that are dead or are showing signs of significant, immediate, or irreversible overall decline. Trees infected with pathogens of significance to the health and/or safety of other nearby trees or trees of very low quality, suppressing adjacent trees of better quality. 		
<p>A - Retain</p> <p>Trees of high quality with an estimated remaining life expectancy of at least 40 years.</p>	<p><u>Mainly arboricultural value</u></p>	<p><u>Mainly landscape value</u></p>	<p><u>Mainly cultural values including conservation</u></p>
	<p>1 Trees that are particularly good examples of their species, especially if rare or unusual. Essential components of groups or formal or semi-formal arboricultural features (i.e., dominant/principal trees in an avenue).</p>	<p>2 Trees, groups, or woodlands of particular visual importance as arboricultural and/or landscape features.</p>	<p>3 Trees, groups, or woodlands of significant conservation, historical, commemorative or other value (e.g., Veteran trees or wood-pasture).</p>
<p>B - Retain</p> <p>Those of moderate quality with an estimated remaining life expectancy of at least 20 years.</p>	<p>1 Trees that might be included in the high category, but are downgraded because of impaired condition (e.g., remediable defects or poor past management/storm damage) such that they are unlikely to be suitable for retention beyond 40 years.</p>	<p>2 Trees present in numbers usually as groups or woodlands, such that they form distinct landscape features thereby attracting a higher collective rating than they might as individuals, or trees occurring as collectives but situated to make little visual contribution to the wider locality.</p>	<p>3 Trees with measurable conservation or cultural value.</p>
<p>C - Retain</p> <p>Those of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.</p>	<p>1 Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.</p>	<p>2 Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value and/or trees offering low or only temporary/transient landscape benefits.</p>	<p>3 Trees with very limited conservation or cultural value.</p>

C TREE SCHEDULE

Tree ID	Species	Height (m)	DBH (mm)	Branch Spread (m)				Age Class	Physiological Condition (G/F/P/D)	General Observations	Retention Category
				N	E	S	W				
2747	Western hemlock	22.1	895	4	3	6	5	M	G		B
2748	Larch	18	495	0	5	3	2	M	F		B
2749	Beech	16	525	4	6	5	6	M	G		B
2750	Scots pine	27	900	7	6	6	6	LM	G		B
2751	Beech	18	635	6	5	6	5	M	G		B
2752	Scots pine	22	780	2	3	9	6	LM	G		A
2753	Douglas fir	20	735	5	5	4	6	LM	G		B
2754	Douglas fir	27	890	5	2	6	3	LM	G		B
2755	Cherry	16	960	7	2	4	4	LM	G		A
2756	Scot pine	20	480	2	5	5	4	M	F		B
2757	Field maple	14	380	2	2	3	1	SM	G		B
2758	Cherry	10	235	3	3	2	4	SM	F		C
2759	Field maple	12	235	2	3	3	3	SM	G		B
2760	Beech	19.6	235	5	6	7	6	LM	G		A
2761	Beech	18	750	5	5	6	3	LM	G		A
2762	Birch	18	730	3	5	6	7	LM	G		A
2763	Birch	17	575	6	3	1	6	LM	G		A
2764	Birch	17	365	5	4	1	2	M	G		A
2765	Birch	17	480	6	5	3	5	LM	G		A
2766	Douglas Fir	17	750	5	3	6	3	LM	D		A
2767	Beech	18	670	5	5	5	4	LM	G		A
1	Blackthorn	6.2	50	2	2	2	2	EM	F		C

Tree ID	Species	Height (m)	DBH (mm)	Branch Spread (m)				Age Class	Physiological Condition (G/F/P/D)	General Observations	Retention Category
				N	E	S	W				
2	Oak	9	130	6	5	4	4	EM	G		B
3	Ash	9	125	3	3	2	2	SM	G		B
4	Ash	9	130	3	3	4	2	SM	G		B
5	Beech	7	115	3	2	2	2	EM	F		B
6	Ash	7	125	2	2	2	2	SM	F		C
7	Oak	7	120	3	2	3	2	EM	F		C
8	Ash	7	120	4	3	3	2	EM	F		B
9	Ash	9	120	3	2	3	2	SM	F		C
10	Hawthorn	7	90	3	2	4	2	SM	F		B
11	Hawthorn	7	90	3	2	2	3	SM	G		C
12	Ash	9	130	4	3	4	3	SM	G		B
13	Hawthorn	6	70	1	2	3	1	EM	F		C
14	Blackthorn	6	60	3	2	3	2	EM	F		C

D TREE REFERENCE PLANS



Legend

- Site Boundary
- Large Trees
- Retained Trees
- Small Trees
- Retained Trees
- Root Protection Areas (RPA)
- Tree Protection Barrier
- Zone of Influence
- Tree Crowns by Category
- A - High Quality
- B - Moderate Quality
- C - Low Quality
- Tree Groups by Category
- A - High Quality
- B - Moderate Quality

Do not scale this map

Client
Ramsay & Chalmers

Project
Newton Dee

Title
Tree Protection Plan

Status
FINAL

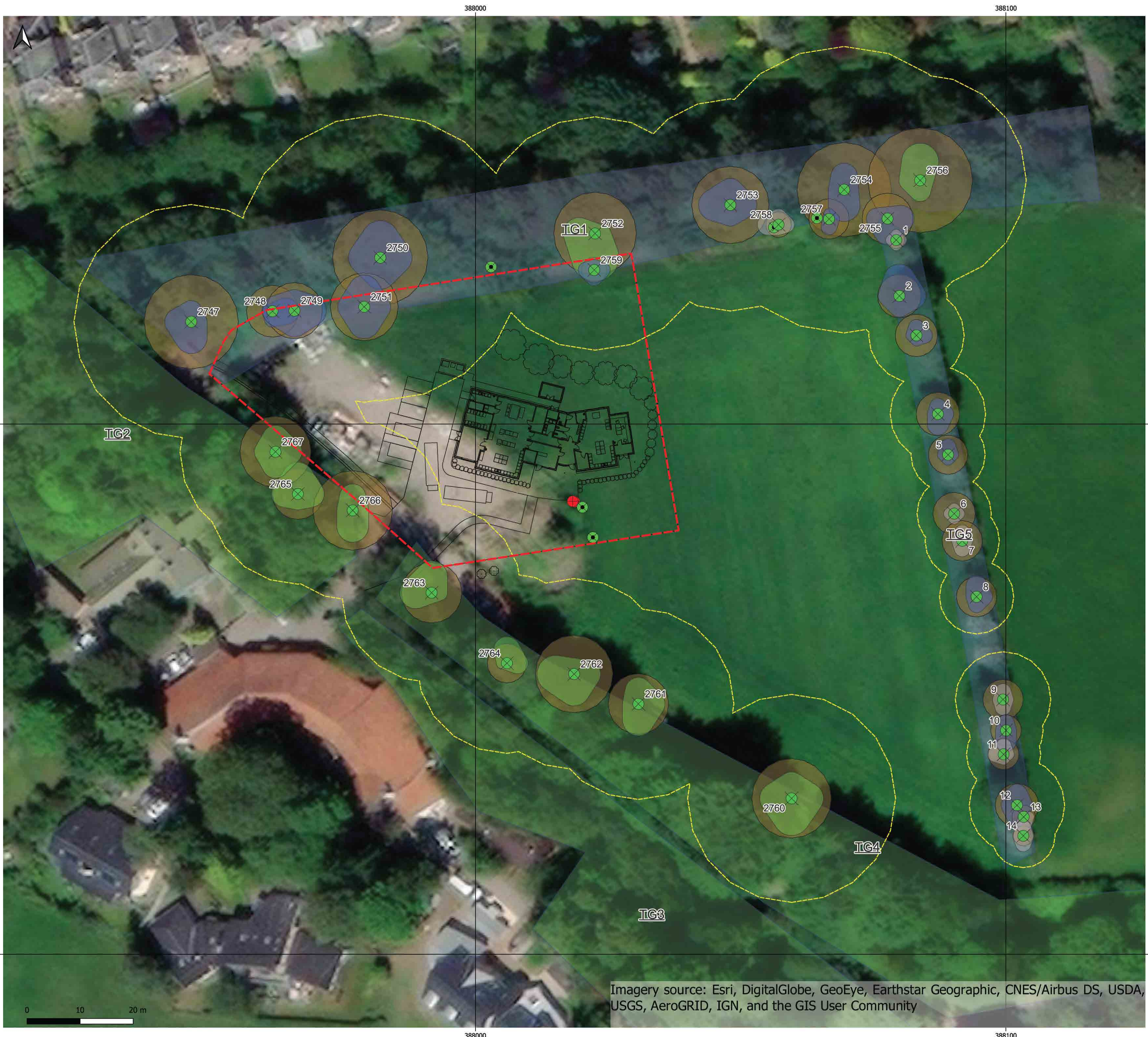
Drawing 378078-QGIS006	Revision A	Date 17 Oct 2023
Drawn SF	Checked PD	Approved PD

Scale 1:350 @ A1

Rev	Date	Amendment	Initials
A	17/10/23	Updated Design	SF

Craighall Business Park, Eagle Street, Glasgow, G4 9XA
T: 0141 341 5040 E: info@envirocentre.co.uk W: www.envirocentre.co.uk

Imagery source: Esri, DigitalGlobe, GeoEye, Earthstar Geographic, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Legend

- Site Boundary
- Large Trees
- Retained Trees
- Small Trees
- Trees to be Removed
- Retained Trees
- Root Protection Area (RPA)
- Zone of Influence

Tree Crowns by Category

- A - High Quality
- B - Moderate Quality
- C - Low Quality

Tree Groups by Category

- A - High Quality
- B - Moderate Quality

Do not scale this map

Client
Ramsay & Chalmers

Project
Newton Dee

Title
Tree Constraints Plan

Status
FINAL

Drawing 378078-QGIS005	Revision A	Date 17 Oct 2023
Drawn SF	Checked PD	Approved PD

Scale
1:350 @ A1

Rev	Date	Amendment	Initials
A	17/10/23	Updated Design	SF

Imagery source: Esri, DigitalGlobe, GeoEye, Earthstar Geographic, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Craighall Business Park, Eagle Street, Glasgow, G4 9XA
T: 0141 341 5040 E: info@envirocentre.co.uk W: www.envirocentre.co.uk