Pre-development Arboricultural Survey and Report

Land at 1 Dunollie Road, London NW5 2XN

A report to: Francis Birch Architect

Date: 10TH October 2019

Report No: WAS 131 /2019

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Report Verification

This study has been undertaken in accordance with British Standard 5837:2012 "Trees in relation to design, demolition and construction - Recommendations".

Disclaimer

The contents of this report are the responsibility of Wassells Arboricultural Services Ltd. It should be noted that, whilst every effort is made to meet the client's brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Wassells Arboricultural Services Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

Validity of Data

The findings of this study are valid for a period of 12 months from the date of survey. If works have not commenced by this date, an updated site visit should be carried out by a suitably qualified and experienced arboriculturist to assess any changes to the trees and groups on site and to inform a review of the conclusions and recommendations made.

It should be noted that trees are dynamic living organisms that are subject to natural changes as they age or are influenced by changes in their environment. As such following any significant meteorological event or changes in the growing environment of the trees they should be re-assessed by a suitably qualified and experienced arboriculturist.

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Introduction and Scope of Report

This document has been produced to provide a detailed survey of trees that are within, surrounding and nearby to the land described within the report and that may be impacted by the proposed development.

The scope of this report follows the recommendations and guidance described within ***BS 5837: 2012 Trees in Relation to Design, Demolition and Construction – Recommendations*** which sets out the principles and procedures to be applied to achieve a harmonious and sustainable relationship between trees and structures.

The report will assess the quality, amenity and landscape value of all surveyed trees as described by the tree category system within BS 5837 (see section below).

The protection of all trees to be retained and where they are likely to be affected by the proposed development construction activities are described as provisional tree protection measures for information purposes only and shall require a site specific AMS once final plan is agreed and consent is given.

The report will also indicate, where necessary, the likely impact the proposals may have on those trees in the future.

The report will also recommend any required tree works to enable access and also to mitigate potential damage from construction activity and for the future well-being of the trees concerned.

This is intended to support the planning application for development of this site.

The tree survey for the site can be found in Addendum 3 below

Abbreviations:

RPA = root protection area

CEZ = construction exclusion zone

CWA = construction working area (including materials storage)

AMS = arboricultural method statement

AS = Arboricultural supervision

TPO = Tree Preservation Order

CA = Conservation Area

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Arboricultural Impact Assessment

Proximity of Proposed Development to existing Trees

Ref: Addendum 1 -Table 1, Addendum 3, Addendum 4 & Picture Gallery in Addendum 5

The proposed development is to build a side extension with basement to number 1 Dunollie Road and to occupy the existing footprint of an old single storey double garage.

There is a single tree potentially impacted by this proposal, which is a semi-mature Silver Birch T1 given tree quality grading category B. This tree is situated nearby but within the rear garden of 22d Lady Margaret Road.

The proposed basement shall encroach into the typical RPA of this tree by 14.3% of its total RPA. This potential loss of rooting for the tree is considered of marginal significance to its future health, given that there is and existing building where the basement is going, the tree species and age of the tree. It is considered there is ample open ground available within the garden it is growing in to compensate and mitigate for any root loss that shall be incurred.

The resultant proximity of the Silver Birch to the proposed building may have potential for future conflict. The nature of Silver Birch trees is that they have light foliaged crowns that provide a dappled shade with minimal light loss to nearby buildings and do not have a wide spreading dense branch system. Pressure for future tree pruning work has the potential to occur because of the proximity to the building but can be easily managed by appropriate Aboricultural practice.

Provided the tree and root system is carefully protected from unnecessary damage during construction of the basement and superstructure, then it can be retained and should not be a material constraint on the proposed development.

Tree Protection Measures

- Informatives on tree protection measures are described in addendum 1 and 2 below
- A site-specific Arboricultural method statement (AMS) and Tree Protection Plan shall be required once a planning decision is reached and is normally conditioned as part of that. This needs to be done in conjunction with the Construction Management Plan in order to reflect the final plans and the demolition and construction phasing of the project in order to properly protect retained trees

Arboricultural Supervision (AS)

- The AS must include a pre-construction commencement site visit, to be arranged by the Site Manager under instruction from Architects, and thereafter at specific events that affect the retained trees on site to enable sign-off by the AS.
- AS shall be required during work within and adjacent to the RPA of retained trees. It must be undertaken at regular intervals with a written record of the meetings maintained with suitable photographic record in support.
- These are typically as follows:

1. Erection of tree protection fencing
2. Installation of ground protection to retained trees whose RPA are affected by the CWA
3. Start of demolition works on site
4. Start of Excavation/piling of foundations within the RPA of retained trees
5. Tree pruning requirements to prevent crown damage from construction activity
6. Start of Excavation/installation of paths, roads and car parking within RPA of retained trees
7. Installation of underground services within the RPA of retained trees
8. Tree condition survey on completion of construction work

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Tree Grading Categories

Ref: Grading Category as per BS 5837:2012 Section 4.5 Table 1 & Table 2
Tree Survey Schedule in Addendum3 below for description of trees categorized

****The grading categories are based on the following criteria:**

A= those trees of high quality and value suitable for retention for longer than 10years and worthy of being a material constraint to development

B= those trees of moderate quality and value suitable for retention for longer than 10years and worthy of being a material constraint to development

C= those trees of low quality and not worthy of being a material constraint to development

U=trees of such a condition that they cannot realistically be retained as living trees in the context of the current land use

NG = not graded. Those trees not considered to be in any of the above categories

***Acknowledged source: Barrell Tree Consultancy – www.TreeAZ.com**

Categories A, B and C have further sub-categories (not qualified in BS and not utilized in this report) with regards to the reasons for tree retention as follows:

1: Mainly arboricultural qualities.
2: Mainly landscape qualities.
3: Mainly cultural values, including conservation.

Trees categorized within this report:

1 Category A trees = none

2 Category B trees = T1

3 Category C trees = none

4 Category U trees = stump re-growth behind garage

5 NG = none

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Age Categories and Distribution

Those trees assessed as being young (Y) in age can generally be considered to have significant growth potential. Whilst these specimens are not likely to make a substantial contribution to the landscape character of the site at present they will, if retained, provide succession for the eventual removal of mature or over- mature trees because of declining physiological or structural condition.

Semi mature trees (SM) will generally make a significant contribution to the landscape character and appearance of the site and their retention will provide more immediate succession. These trees will also have significant growth potential.

Mature trees (M) are not considered to have significant future growth potential and have generally reached their maximum expected size for the location. These trees will generally make the highest contribution to the landscape contribution of the site however a tree stock over dominated by mature trees will require careful management to ensure that continuation of canopy cover can be achieved.

Over-mature trees (OM) do not have the potential to increase in size and may in fact reduce in size as their crowns begin to break up. These trees will often make a significant contribution to the landscape character of the site and are likely to have ecological value. However, the retention of these trees within new development must be carefully planned as they are approaching the end of their useful life expectancy and they will often have structural defects. Where over-mature trees are to be retained in new development it is essential that access is available for their eventual removal.

Veteran trees (V) are those that show features of biological, cultural or aesthetic value that are characteristic of an individual surviving beyond the typical age range for the species. These trees have negligible potential to increase in size. Veteran trees are usually of a high ecological value and they will require sensitive management where they are to be retained in new development. As such it is again essential that they are in areas where access is available to undertake management operations and where there is a reduced risk of harm occurring from failure of the trees.

References

1. BS 5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations
2. Barrell Tree Consultancy – BS5837 – Advanced Tree Assessment for Planning
3. BS3998:2010 Tree Work – Recommendations
4. NJUG Volume 4 Issue2 2007 – Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees.
5. NHBC Standards – Section 4.2 Building Near Trees
6. British Geological Survey – London & the Thames Valley
7. Principles of Tree Hazard Assessment – Lonsdale 2001
8. Diagnosis of Ill Health in Trees – Stouts & Winter 2004
9. Tree Roots in the Built Environment: Chapter 9 – Roberts, Jackson & Smith 2006
10. The Body Language of Trees – Mattheck 2015
11. Tree Survey Plan – Addendum 4 below
12. Existing and proposed plans –

Declaration

This Tree Survey, Impact Assessment and provisional tree protection measures have been written and checked by Richard Wassell of Wassells Arboricultural Services Ltd. and are provided without prejudice as an objective and professional assessment of the trees described.

Signed: R.J. Wassell Date: 08.10. MMXIX

Richard Wassell. Director

CHort MCIHort MArborA NDArb (RFS) Kew Diploma NEBOSHlevel3

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Addendum 1 – Tree Protection

Ref: BS 5837:2012 in Tables C.1 & D.1of annex C & D

Table 1 -Tree protection measurements

Tree Number As per tree survey plan & schedule	Stem Diameter @ 1.5 metres agl. Millimetres	Root Protection Area (RPA) - Radius *measured from centre of stem* Metres	Tree/Root Protection Area (RPA) Sq. Metres	Impact of building proposal on the total RPA
T1	325	3.9	48	Basement construction will encroach into the typical RPA by 14.3% of its total area. This loss shall be in the NW quadrant only, which is currently occupied by a single storey garage building. It is quite possible that this structure has been an obstruction to root development for the tree during establishment and that it has compensated by root growth in open areas of the garden. This is a semi-mature tree in good condition and providing appropriate care is taken when excavating the basement within the RPA of this tree then impact on future health can be mitigated and should not be a material constraint on the proposed development.

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Addendum 2 - Informatives

Protecting Root Zone of Trees - BS 5837:2012 section 6.2 Figs. 2 & 3

The Root Protection Area (RPA)

This is the area surrounding a tree that is deemed to contain enough roots and rooting volume to maintain the trees viability in the future. The root system is typically concentrated in the uppermost 600 – 1200mm of the soil and is not necessarily symmetrical around the tree, being dependent on several factors such as water, nutrients, oxygen, soil penetrability and physical obstructions such as existing foundations or changes in level (terracing).

The RPA is a design layout tool that is deemed to be a minimum area around a tree where the protection of roots and soil structure are treated as a priority. This area is envisaged as and portrayed with a circle around each tree but where there appears to be restrictions to root growth the circle is reshaped to reflect more accurately the likely distribution of the rooting area of the tree concerned.

Key Points

1. AVOID building works within the RPA if possible but if not then carefully consider the following: where the RPA is likely to be severely affected because of site design constraints then felling and planting replacement(s) trees in a more suitable location on the site will need to be considered.
2. Where possible do not use strip foundations within the RPA, if necessary, consider using a trenching saw or excavate by hand to avoid 'shatter damage' to the root system.
3. Consider using piling techniques for foundations @ maximum 350 mm diameter with ground beams on or above the surface of the root zone.
4. Unless unavoidable, do not exceed entering the root zone by more than one fifth of RPA radius.
5. Do not trench tangentially across the root zone for footings and services unless it cannot be avoided.
6. Consider 'no dig' techniques for services installation, with radial service lines being preferable to tangential across the root zone. Where this is undertaken then boring must be carried out below 600mm deep.
7. Any hard surfacing, paths and roads need to have the same considerations for the RPA and as in the above points. Where possible paths and hard surfacing (patios etc.) need to be surface constructed (cellular) and semi-porous to allow water penetration and gaseous exchange into the root system of trees.

Excavation within Root Protection Area of trees

Where trees are to be retained then any proposed foundation, underground services work and hard surfacing such as roads/paths falling within the RPA of trees that are to be retained shall

be kept as far away from tree stems as possible (SEE NOTE 1 ABOVE). Where any such works are necessary within the RPA there will be a requirement to dig carefully by hand and ensure any roots encountered of maximum 25mm in diameter shall be exposed and correctly pruned back by a competent Arborist. Where larger roots are encountered of above 25mm in diameter then advice from the Arboricultural Supervisor (AS) for the site must be sought prior to any work being undertaken.

Any roots exposed/ pruned back as part of the above operation shall NOT be left exposed to drying out. All roots exposed/pruned shall be either covered with damp Hessian sacking prior to backfill or backfilled/covered immediately with a suitable open and free draining compost/loam.

Site Hoarding

Site hoarding shall be no closer than 1.5 metres away from the stem of retained trees and consist of 20mm plywood sheets supported by minimum 100mm square posts and 100 x 50mm rails with posts at 2.5 metre centres.

Post holes for site hoarding that are required within the RPA of nearby trees shall be dug by hand and are to be a maximum of 300 x 300mm and 450mm deep

Ground Protection System Specification

- Level area of RPA concerned by blinding with sharp sand at maximum depth of 50mm
- Lay geo-textile membrane such as 'Terram' to cover area concerned
- Cover geo-textile with maximum of 100mm MOT Type 1 sub-base
- Retain MOT type 1 with edge restraint such as 30 x 100mm edging board pegged every 2 metres to prevent migration of the sub-base

Acts of parliament

Wildlife and Countryside Act 1981, the Countryside and Rights of Way Act 2000, the Conservation (Natural Habitats etc.) Regulations 1994 or any Acts offering protection to wildlife and trees/hedges (TPO, TCA)

All birds (except those listed in schedule 2 of the Wildlife and Countryside Act 1981), their nests and eggs are protected by law. It is an offence to intentionally or recklessly kill, injure or take any wild bird, or damage, destroy or intentionally disturb the nest of any wild bird whilst it is in use or being built. For this reason, tree work should not be undertaken during the nesting season (broadly March to August) unless a survey for nesting birds confirms their absence. Should you require any further information on nesting birds, please contact Natural England.

You are advised that trees have the potential to support roosting bats. Bats and their roosts are legally protected. It is an offence to disturb or harm a bat, or damage, destroy or obstruct any

place used by bats for shelter, whether they are present or not. Trees should be inspected before any works commence and if the presence of bats is suspected works must cease and advice sought from The Bat Conservation Trust.

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Addendum 2 – Tree Works

Ref: Addendum 3

Schedule of Tree Works

1. All proposed tree removal and tree pruning works are described in the management recommendations of the tree survey in addendum 3

2. Tree work to be carried out to the following standards and guidelines:

   - BS 3998:2010 Recommendations for Tree Work

   - Tree pruning cuts will be carried out using the 'Natural Target Pruning' technique as defined by: *BS 3998:2010 section 7.2.5 and Fig. 2 The Pruning of Trees, Shrubs and Conifers: George E. Brown & Tony Kirkham – 2nd edition revised & enlarged 2004 and Section 3.1.27 of The Arboricultural Association Specification for Tree Works June 2008.*

   - Crown clean involves removal of dead, diseased & dying wood from tree crown, thinning of overcrowded crown, and removal of Ivy and all epicormic growth within crown including stem & basal epicormic growth.

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Addendum 3 - Schedule of Tree Survey Information – BS5837:2012 section 4.4

SITE: 1 Dunollie Road, NW5 2XN DATE OF SURVEY: 11th September 2019 **Please see survey key below**

Tree Number	**Species**	**Diameter Class** mm	**RPA radius** metres	**Height** metres	**Crown Spread** metres	**Crown height**	**Age Class**	**Grading Category**	**Structure**	**Observations on Physiology, Condition & other factors**	**Management recommendation**
T1	Silver Birch **NDG**	325	3.9	14	N=3 S=3 E=3 W=3	L	SM	B	G	G Slight lean. Causing damage to boundary wall along pavement side and located in rear garden of 22d Lady Margaret Road Good specimen Within Kentish Town CA	RETAIN Access facilitation pruning required to crown overhang on side nearest proposed development. LC 4 metres RC 1.5 metres
T2	Sycamore stump							U	P	Stump re-growth at rear of garages	REMOVE

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TREE SURVEY KEY:

Tree Number and Species = number of tree on plan and Common Name as per reference book: A Field Guide to the Trees of Britain and Northern Europe by Alan Mitchell 1974 ISBN: 0 00 219213 6

Height = estimated height of tree from surrounding ground level +/- 3 metres

Diameter Class = diameter of main stem @ 1.5 metres above ground level to nearest 25mm – as per table D.1 of BS 5837:2012 page 40

Crown Spread = maximum extent of branches measured radially from the base of the tree, trees with asymmetrical crowns are shown with distances in relation to compass points. N = north etc.

Crown Height = height of canopy and/or first major branch above ground level. Low (L) = below 3 metres | Medium (M) = 3 to 6 metres | High (H) = above 6 metres

Age Class = Young(Y): age less than 1/3rd life expectancy | Semi-mature(SM): 1/3rd to 2/3rd life expectancy | Mature (M): Over 2/3rd life expectancy | Over mature (OM): mature and in state of decline | Veteran (V): Surviving beyond typical age range for species – using Alan Mitchell System = Estimate of tree age based on open grown tree with full crown. Age in years = Girth (circumference) in centimetres measured at 1.5 metres above ground level and divided by 2.5 i.e. Tree of girth 250 cm = 100years old

Grading Category: As per BS 5837:2012 Table 1 – Tree quality assessment, which refers to tree quality and landscape/amenity value; A=high, B=moderate, C=low, U = not suitable for retention, NG= not graded

Structure = structural condition of the tree based on roots, trunk, and major stems/branches along with the presence of any structural defects and decay organisms. Categories are: Very Good (VG); Good (G); Moderate (M); Poor (P); Hazardous (H)

Physiology/Condition = Overall health, condition and function of the tree in comparison to a 'normal' specimen of its species and age. Categories are: Good (G); Average (A); Declining (D)

Other factors = any other physical/environmental factors that could influence the tree now/in the future. B = bat roost potential

Management Recommendations: N = no work required**. CC** = removal of dead, diseased & dying wood from tree crown, thinning of overcrowded crown, removal of Ivy from crown & stem and removal of all epicormic growth within crown including stem & basal epicormic growth on Lime trees.**LC** = lift crown. **TC** = thin crown. **RC** = reduce crown. **P** = pollard. **SP** = scaffold pollard. **RE** = remove epicormic and basal growth. **FP** = Formative prune **F** = fell to ground level. **FG** = fell and grind out stump. **R** = carry out replacement planting. **AI** = 3 yearly Arboricultural inspection

RPA radius = radius of typical root protection area, described as a circle and measured around centre of the tree – as per table D.1 of BS 5837:2012 page 40

N/K = not known

 # = estimated data

NDG = Next door garden

g.l. = ground level

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Addendum 4 – Tree Survey Plan & Site Plans

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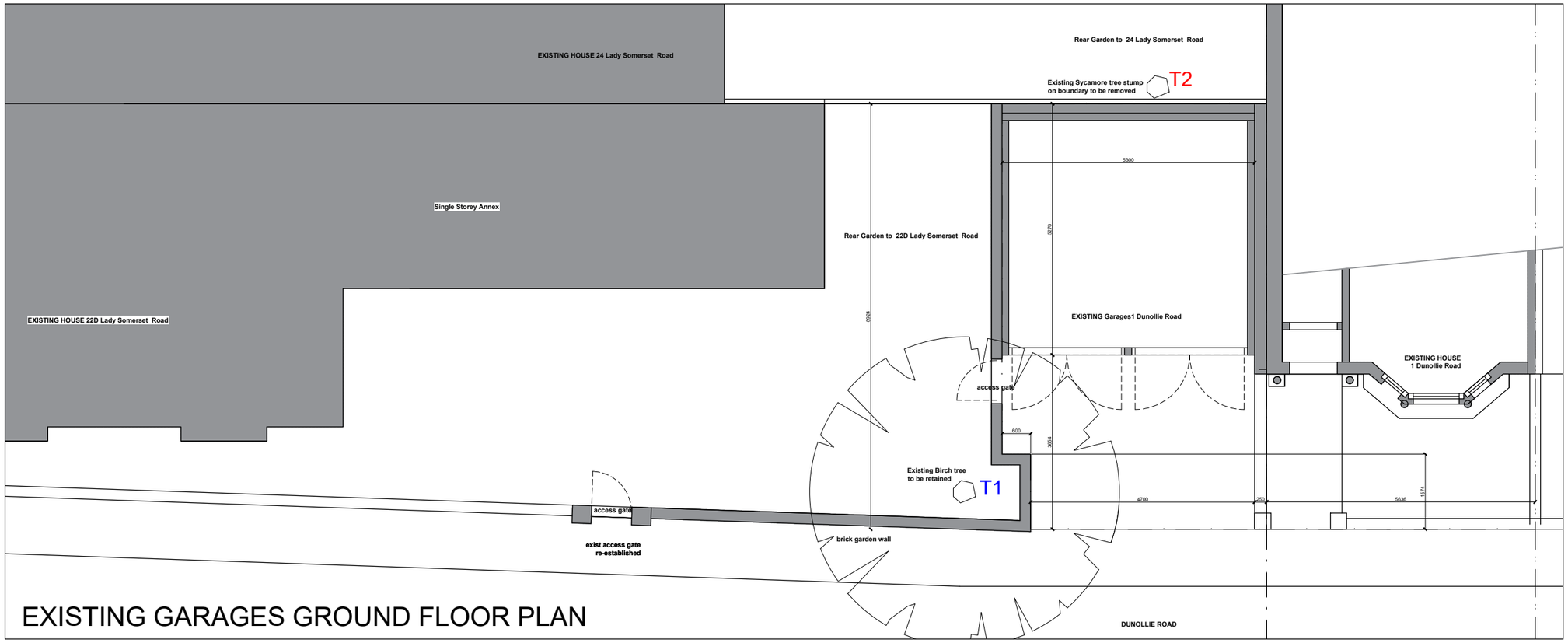
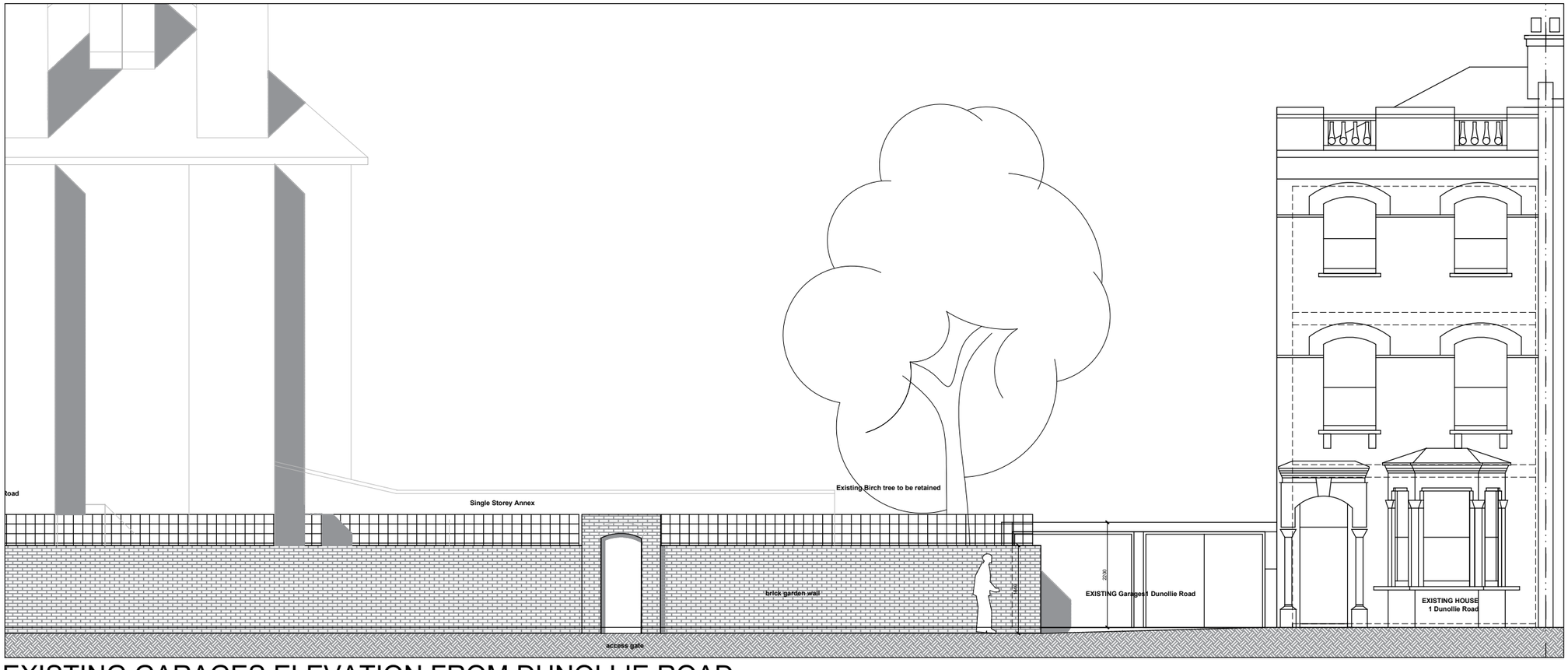


EXISTING GARAGES GROUND FLOOR PLAN



EXISTING GARAGES ELEVATION FROM DUNOLLIE ROAD

Scale Bar
0 1000 2000 3000 4000 [mm]

N

Do not scale from this drawing
All dimensions are to be checked on site
Any discrepancies are to be reported immediately to the Architect or Main Contractor

Notes.

Rev.	Date	Comment	By
P2	27.06.19	Adjacent existing trees shown	FB
P1	28.03.18	Pre-Planning Meeting	FB

Client
Karena Mond
1 Dunollie Road
London NW5 2XN

Project
Garage Site House
Garages 1 Dunollie Road London NW5 2XN

Drawing
Garages Ground Floor Plan
As Existing

Project No.	Drawing No.	Issue	Status
KM2017	SK 01	P2	P

Scale	Date	Drawn By	Checked By
1:100@A3	March 2018	FB	FB

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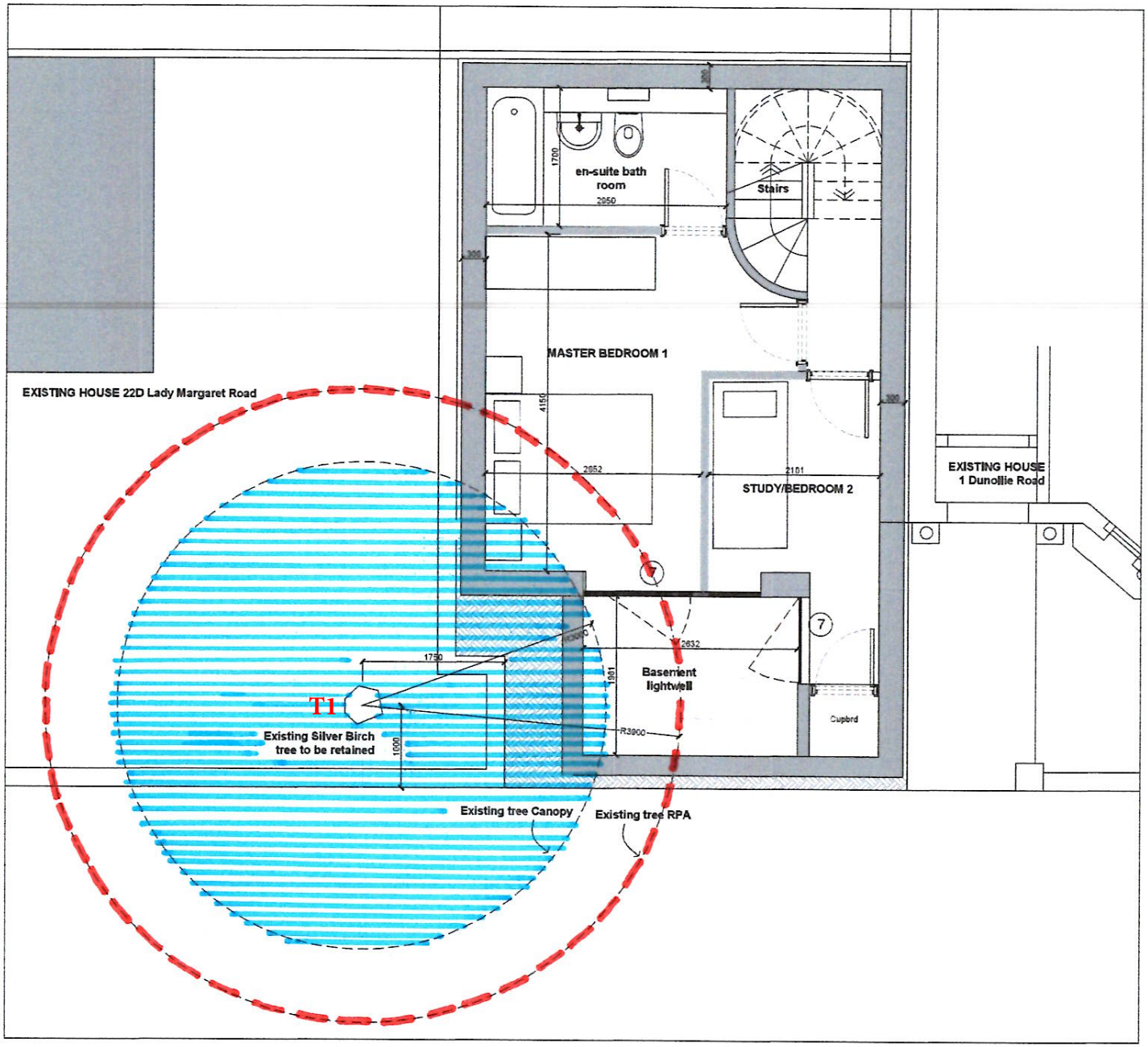
11 North Hill Avenue, Highgate, London N6 4RJ
T: 0208 342 8602
M: 07432 553861
E: f.birch123@gmail.com



NOTES

See Arboricultural Report by Wessells

Existing RPA

Existing tree canopy

N

Scale Bar

0 1000 2000 3000 4000 [mm]

PROPOSED BASEMENT PLAN
showing existing retained tree

P1 17.09.19 Tree data shown as Arboricultural Report FB

Client
Karena Mond
1 Dunollie Road
London NW5 2XN

Project
Garage Site House
Garages 1 Dunollie Road London NW5 2XN

Drawing
Basement Floor Plan
Proposed plan showing existing tree

Project No.	Drawing No.	Issue	Status
KM2017	SK 23	P1	P

Scale	Date	Drawn By	Checked By
1:50@A3	Sept 2019	FB	FB

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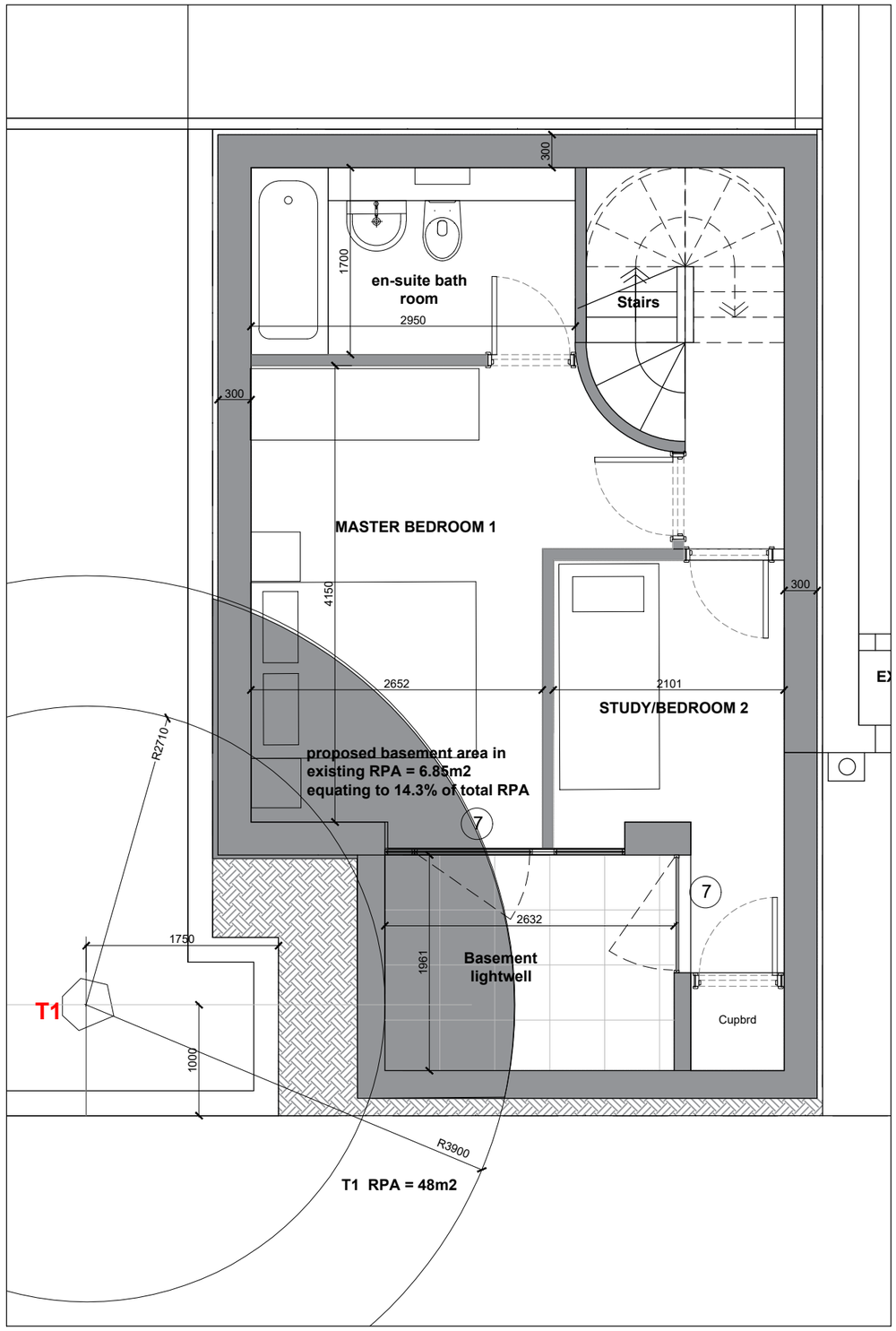
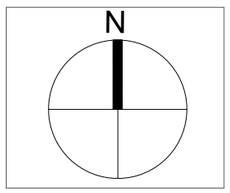
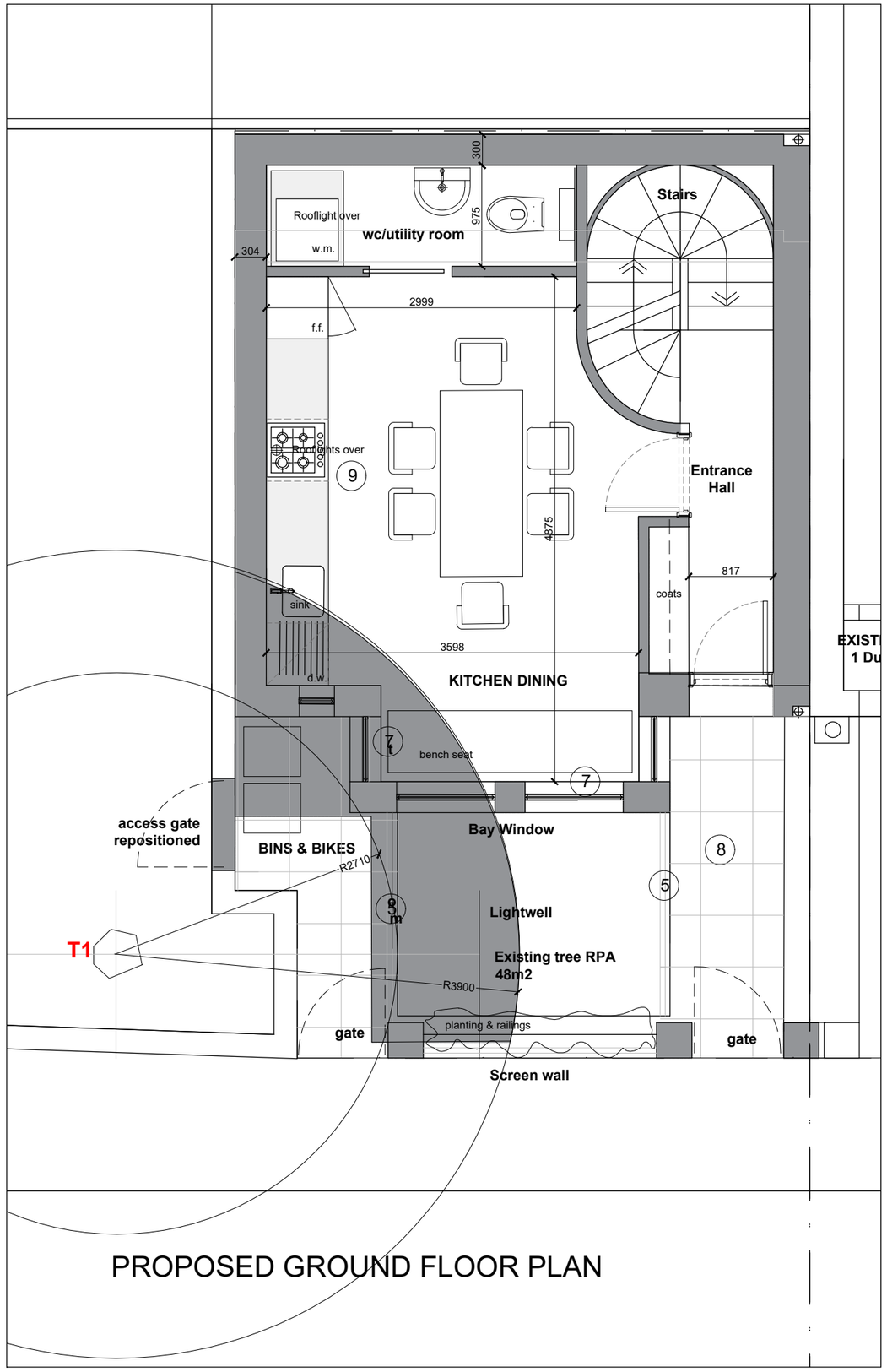


PROPOSED BASEMENT PLAN





PROPOSED GROUND FLOOR PLAN

NOTES

1. Pre-patinated zinc vertical standing seam cladding light grey/bronze finish
2. Fairfaced Brickwork to match existing stock brickwork. Terca, stock, handmade, textured, creased, sandstock, hand made, classic, range, Bronsgroen
3. Fairfaced Relief Brickwork Terca, stock, as ite
4. Recon. white 'Portland' stone copings & windo cills & lintels.
5. Welded steel railings Bronze/grey ppc coated
6. Gutters, hoppers & downpipes - all to be Bronze/grey aluminium.
7. Aluminium framed double glazed window glazing system Bronze/grey ppc coated.
8. Natural stone paving.
9. Framless glass continuous rooflights

NEW WALLS

Do not scale from this drawing
All dimensions are to be checked on site
Any discrepancies are to be reported immediately to the Architect or Main Contractor

Notes.

Rev.	Date	Comment	By
P2	12.10.18	kitchen island omitted Bay Window revised	FB
P1	25.09.18	Revised Scheme as Pre-App Requirements	FB

Client
Karena Mond
1 Dunollie Road
London NW5 2XN

Project
Garage Site House
Garages 1 Dunollie Road London NW5 2XN

Drawing
Basement & Ground Floor Plans
General Arrangement
Proposed

Project No.	Drawing No.	Issue	Status
KM2017	SK 12	P2	P

Scale	Date	Drawn By	Checked By
1:50@A3	Oct 2017	FB	FB

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Addendum 5 – Picture Gallery

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T1
No. 1


T1
T2
rear access
to 22d
old garages