

Tree Survey Report

Ettrick Plot

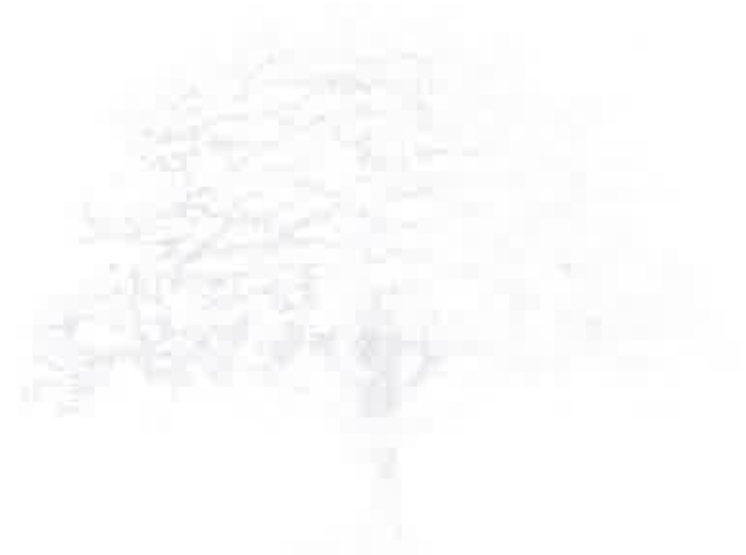
Client – Mr J McGrath
Agent – RM Architecture

Ballantynes' Project Number - 15696

Land north-east of Dundas Cottage
Ettrick, Scottish Borders



Date	Issue record	Originator	Details
05.01.2017	Issue One	Alex Ballantyne	Issue in support of planning application





1. INTRODUCTION

1.1 Appointment and report purpose

- 1.1.1 Ballantynes Tree Services have been appointed by Mr J McGrath in order to undertake a pre-development tree survey at the plot located to the north east of Dundas Cottage in Ettrick (with the proposed development shown in Figure 1). In accordance with BS 5837:2012, this tree survey will include all trees having a stem diameter of at least 75 mm where measured 1.5 m above ground level.
- 1.1.2 Following the collection of data via a site inspection, this report has been developed in order to provide Mr J McGrath with further information regarding constraints to development imposed by the existing trees. This information may be utilised in support of the planning submission, providing Scottish Borders Council with detail as to the present condition of trees located on the site.
- 1.1.3 This report is intended to address the comments of the Landscape Architect on behalf of the planning department at Scottish Borders Council (correspondence on 30th November, planning application reference 15 / 00301 / PPP).
- 1.1.4 This report has been developed via a visual inspection from ground level only. If further assessment of any trees should be required in order to support the proposed development, this is to be undertaken at the earliest opportunity by a suitably competent person.

1.2 Competence of surveyor

- 1.2.1 The author of this report, Alex Ballantyne, has 10 years' experience as an arborist working in the Scottish Borders. He has extensive knowledge of the tree types that commonly grow in this area, as well as being knowledgeable as to the expectations of the local authority with regard to the retention or removal of trees in the area.

1.3 Terms of reference

- 1.3.1 This report has been developed in reference to BS 5837:2012 'Trees in relation to Design, Demolition and Construction', which provides the current best practice guidance for the surveying of trees prior to commencement of construction works.
- 1.3.2 The data collected at the site (see Section 3) follows that set out by BS 5837:2012, with the findings of this report summarised in a Tree Constraints Plan, as recommended by Clause 5.2 of this British Standard.

1.4 Statutory Obligations

- 1.4.1 Where trees are covered by Tree Protection Orders (TPOs) or are located within a conservation area, any works to trees are subject to consent from the Planning Authority. This may be sought with respect to works to the relevant trees only, or as part of the wider planning application for a development.
- 1.4.2 Where trees provide a roosting site for bats or a habitat for nesting birds, the Habitats Regulations 1994 (including Scottish amendments) require that these be either preserved or additional mitigating measures be considered. Prior to the removal of trees, these should be examined for any signs of bird nesting or bat roosting that may be protected by these regulations.
- 1.4.3 At present, there are no known TPOs, conservation areas or protected wildlife habitats relevant to the trees at this location.



Figure 1 – Proposed site arrangement

2. TREE SURVEY

2.1 Site overview

- 2.1.1 The site green field rural plot of approximately 3,200 m² (0.8 acres), located to the north of the B709 near to Dundas Cottage in Ettrick. The site is triangular in shape, and contains an existing shelterbelt of mature trees along the southern site boundary, adjacent to the B709.
- 2.1.2 Access will be provided at the north-west corner of the site via the minor road that runs down the western boundary of the site (which connects to the B709). A number of trees are currently proposed to be removed from this area in order facilitate this access route.
- 2.1.3 The trees on this site are generally considered to be unremarkable, with no individual trees having significant arboricultural or historical value.

2.2 Survey methodology

- 2.2.1 This survey records all trees on the site with a stem diameter of at least 75 mm (measured at 1.5 m above ground level) and all trees having an estimated stem diameter of at least 75 mm with are located within less than 12 times the stem diameter of the site boundary, in accordance with Clause 4.2.4 of BS 5837:2012.
- 2.2.2 The site contains approximately 75 trees having a stem with a diameter greater than 75 mm. These are primarily located within 3 distinct groups, being the shelterbelt of trees on the southern boundary of the site and two smaller clusters – one at the north west and one at the south west corner of the site.
- 2.2.3 BS 5837:2012 allows groups of trees to be considered as a whole. However, for the purposes of determining a suitable root protection area for the clusters, a number of the larger individual trees within the clusters (those having a stem diameter of at least 300 mm) will be identified on the Tree Survey Plan. There is one tree not located within one of the clusters, with this being situated at the approximate midpoint on the western site boundary.
- 2.2.4 For individual trees, the extent of the crown spread is measured at four cardinal points. For woodlands and tree groups, the overall extent of the canopy is measured.

2.3 Tree data

- 2.3.1 The tree data collected is in accordance with that recommended by Clause 4.4.2.5 of BS 5837:2012, as summarised by the following paragraphs.

Height

- 2.3.2 The height of each tree has been estimated via a visual inspection. This has been undertaken by estimating the height to the nearest 5 ft, then converting to metres.

Crown spread and clearance

- 2.3.3 The crown spread for individual trees is measure along four cardinal points. For groups of trees, the typical canopy spread from the edge of the tree line at each side has been measured approximately. Only one individual tree requires is crown spread measured (No. 68 in Section 3.2). The remained of the trees are all part of groups.

Stem count and diameter

- 2.3.4 Primarily, each tree has a single stem, although the two willow trees have multiple stems and one of the scots pine trees has two stems.
- 2.3.5 The diameter of each stem is measured in accordance with Figure C.1 of BS 5837:2012, generally at a height of 1.5 m above ground level. The diameter of the stem has been rounded to the nearest 50 mm (though BS 5837:2012 recommends these be to the nearest 10 mm)..

Root Protection Area

- 2.3.6 The root protection area (RPA) is the area of ground around the tree which is anticipated to contain the bulk of the roots of the tree. The size of this area is estimated in relation to the diameter of the stem of the tree.
- 2.3.7 For single stem trees, the RPA may be read directly from Table 1. Where the tree consists of a number of stems, the combined stem diameter for use with Table 1 is calculated via either Equation 1, where 2 to 5 stems are present, or Equation 2 where more than 5 stems are present.

Equation 1 – Combined stem diameter calculation (2-5 stems)

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

Equation 2 – Combined stem diameter calculation (6+ stems)

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

Table 1 – Calculation of the Root Protection Area (from Annex D of BS 5837:2012)

Table D.1 Root protection areas

Single stem diameter mm	Radius of nominal circle m	RPA m ²	Single stem diameter mm	Radius of nominal circle m	RPA m ²
75	0.90	3	675	8.10	206
100	1.20	5	700	8.40	222
125	1.50	7	725	8.70	238
150	1.80	10	750	9.00	255
175	2.10	14	775	9.30	272
200	2.40	18	800	9.60	290
225	2.70	23	825	9.90	308
250	3.00	28	850	10.20	327
275	3.30	34	875	10.50	346
300	3.60	41	900	10.80	366
325	3.90	48	925	11.10	387
350	4.20	55	950	11.40	408
375	4.50	64	975	11.70	430
400	4.80	72	1 000	12.00	452
425	5.10	81	1 025	12.30	475
450	5.40	92	1 050	12.60	499
475	5.70	102	1 075	12.90	519
500	6.00	113	1 100	13.20	547
525	6.30	124	1 125	13.50	573
550	6.60	137	1 150	13.80	598
575	6.90	150	1 175	14.10	625
600	7.20	163	1 200	14.40	652
625	7.50	177	1 225	14.70	679
650	7.80	191	1 250+	15.00	707

NOTE These figures are derived from the calculations described in 4.6.



Life stage and remaining life-span

2.3.8 The life stage of the tree is categorised by visual inspection, in accordance with the stages as set out in Table 2 below. The remaining life span of the tree is judged utilising both the age and physiological condition of the tree, and is stated as one of the following: <10 years, 10+ years, 20+ years or 40+ years.

Table 2 – Life stage key

Life stage	Description
Young (Y)	Young trees anticipated to have been planted within the last 3 years
Semi-mature (SM)	Recently planted trees yet to achieve mature status, usually up to around 25% of the anticipated lifespan in age
Early mature (EM)	Trees which are almost full height, where the crown is still developing and seed bearing. Up to approximately 50% of the anticipated lifespan in age.
Mature (M)	A full height tree with a fully developed, seed bearing crown. Over 50% through the lifespan of the tree.
Over-mature (OM)	A fully grown tree with poor growth extension, die-back and small leaf sizes.

Physiological condition

2.3.9 The physiological condition of the tree relates to the vascular condition of the plant rather than the structural condition of the tree. This is assessed visually using the scale set out in Table 3 below.

Table 3 – Physiological condition key

Physiological condition	Description
Good (G)	The vascular system of the tree appears to be in a healthy condition, with strong growth of shoots and leaves.
Fair (F)	The tree shows a reasonably good level of vitality, however, this is not as good as would be expected in a healthy tree and some areas may show signs diminished vitality.
Poor (P)	The tree presents signs of life and growth within the stems and leaves, however, this is limited and the vitality of the tree is much diminished.
Dead (D)	The tree presents no signs of life or growth.

Grade categorisation

2.3.10 Utilising the data gathered with regard to the age, condition and anticipated remaining life-span of the tree, a grade may be assigned to each tree in accordance with the categories summarised in Table 4.

2.3.11 The category of tree has been recorded and is indicated on the Tree Survey Plan contained in Section 3.3. A colour coding system is utilised in accordance with BS 5837:2012 as follows:

- Grade A – Shown with green centres on the plan;
- Grade B – Shown with blue centres on the plan;
- Grade C – Shown with grey centres on the plan; and
- Grade U – Shown with red centres on the plan.

Table 4 – Summary of BS 5837:2012 Categories

Category	Sub-category	Description
A – high quality trees with a life expectancy of over 40 years	1 – Mainly arboricultural qualities	Trees that are particularly good examples of their species, especially where rare
	2 – Mainly landscape qualities	Trees, groups or woodlands of significant visual importance
	3 – Mainly cultural / conservational qualities	Trees, groups or woodlands of significant conservation, historical or commemorative value
B – moderate quality trees with a life expectancy of at least 20 years	1 – Mainly arboricultural qualities	Trees that might be included in Category A, however, are downgraded due to impaired condition or the presence of significant defects
	2 – Mainly landscape qualities	Trees growing in collectives that attract a higher rating than they would otherwise as individuals
	3 – Mainly cultural / conservational qualities	Trees with material conservation or cultural value
C – low quality trees with a life expectancy of at least 10 years, or with a stem having a diameter of less than 150 mm	1 – Mainly arboricultural qualities	Unremarkable trees of very limited merit or a significantly impaired condition
	2 – Mainly landscape qualities	Trees occurring in groups or woodlands which have little value for the landscape
	3 – Mainly cultural / conservational qualities	Trees with no material conservation or other cultural value
U – trees with a life expectancy of less than 10 years	N/A – though Category U trees having existing or potential conservation value may be assigned a sub-category	Trees with senous, irredeemable structural defects where early loss is likely due to collapse Trees that are dead, or showing signs of significant, irredeemable, irreversible overall decline Trees infected with pathogens of significance to the health or safety of adjacent trees, or low quality trees suppressing adjacent trees of a better quality



3. SUMMARY OF FINDINGS

3.1 Tree group survey data

I.D.	Trees	Description	Height range (m)	Approx. canopy spread (m)				Typical crown clearance (m)	Condition and observations	General recommendations
				NW	NE	SE	SW			
G1	1 - 60	The shelterbelt tree, predominantly formed of mixed scots pine and silver birch trees.	3 - 20	5	5	5	5	4	Trees are generally in good health though a number have areas of dead wood to be removed.	Trees with branches weighted toward the road are to have their crowns lifted. Two dying trees and three leaning trees are recommended to be removed.
G2	61 - 67	A small group of silver birch trees at the north west corner of the site	4.5 - 11	3	3	3	3	1.5	All trees are of good health, although a number will need to be removed in order to facilitate access under the proposed landscape design.	Trees to be removed only where required by the proposed access arrangement.
G3	69 - 75	A small group of silver birch and willow trees at the south west corner of the site	4.5 - 11	2.5	2.5	2.5	2.5	1	All trees are in good health, with no further recommendations at this time.	None

3.2 Individual tree survey data

I.D.	Species (common name)	Height (m)	Crown spread (m)				Crown clearance (m)	Stem count	Stem diameter (mm)	RPA radius (m)	RPA area (m ²)	Life stage	Physiological condition	Condition, observations and recommendations	Remaining life-span	Grade
			N	E	S	W										
1	Pinus Sylvestris (Scots Pine)	18	As per Group G1				4	1	550	6.6	137	M	G	Trees in good health, minor areas of dead wood. Slightly weighted towards the road. Recommended that dead wood is removed and the crowns are lifted.	20+	B2 -- Prominent landscape feature
2		21					4	1	650	7.8	191	M	G		20+	
3		18					3	1	650	7.8	191	M	G		20+	
4	Betula Pendula (Silver Birch)	20					4	1	450	5.4	92	M	G	Good health	20+	
5	Pinus Sylvestris (Scots Pine)	9					2	1	200	2.4	18	EM	G	Minor dead wood	40+	
6		17					4	1	600	7.2	163	M	G	Minor dead wood and braches weighted over the road. Dead wood to be removed and crown lifted.	20+	
7	Betula Pendula (Silver Birch)	15					4	1	450	5.4	92	M	G	Good health	20+	
8	Pinus Sylvestris (Scots Pine)	14					4	1	550	6.6	137	M	G	Minor dead wood and braches weighted over the road. Dead wood to be removed and crown lifted.	20+	
9	Betula Pendula (Silver Birch)	14					4.5	1	350	4.2	55	M	G	Good health	20+	
10		11					4	1	400	4.8	72	M	G		20+	
11		9					3	1	200	2.4	18	EM	G		40+	
12		12					4	1	350	4.2	55	EM	G		40+	
13	Pinus Sylvestris (Scots Pine)	7.5					3	1	200	2.4	18	EM	G	40+		



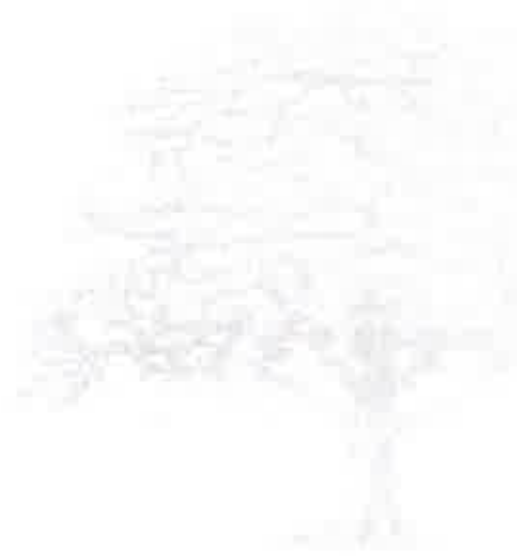
14	Betula Pendula (Silver Birch)	12	As per Group G1	5	1	400	4.8	72	M	G	Good health	20+	B2 – Prominent Landscape feature
15		12		5	1	350	4.2	55	M	G		20+	
16	Pinus Sylvestris (Scots Pine)	4.5		2.5	1	150	1.8	10	EM	G		40+	
17		9		3	1	250	3.0	28	EM	G	40+		
18		7.5		3	1	250	3.0	28	EM	G	Weighted towards road. Crown to be lifted.	20+	
19	Betula Pendula (Silver Birch)	7.5		3.5	1	300	3.6	41	M	G	Good health	20+	
20		11		4	1	400	4.8	72	M	G		20+	
21	Quercus robur (Common Oak)	3		1	1	150	1.8	10	EM	G		40+	
22	Betula Pendula (Silver Birch)	6		2.5	1	150	1.8	10	EM	G		40+	
23	Pinus Sylvestris (Scots Pine)	14		4	2	800	9.6	290	M	G	Dead wood and weighted towards road. Dead wood to be removed and crown lifted.	20+	
24		15		4	1	550	6.6	137	M	G	Minor dead wood, though may be left as is.	20+	
25		4.5		1.5	1	200	2.4	18	EM	G	Good health	40+	
26	Betula Pendula (Silver Birch)	11		4	1	400	4.8	72	M	G		20+	
27	Pinus Sylvestris (Scots Pine)	6		2	1	150	1.8	10	EM	G		40+	
28	Betula Pendula (Silver Birch)	12		4	1	300	3.6	41	M	G	20+		
29	Pinus Sylvestris (Scots Pine)	6		2	1	150	1.8	10	EM	G	40+		
30		7.5		2.5	1	250	3.0	28	EM	G	40+		
31	Betula Pendula (Silver Birch)	17		4.5	1	400	4.8	72	M	G	20+		
32	Pinus Sylvestris (Scots Pine)	4.5		1.5	1	150	1.8	10	EM	G	40+		
33		7.5		3	1	200	2.4	18	EM	G	40+		
34		17		5	1	600	7.2	163	M	G	Dead wood and weighted towards road. Dead wood to be removed and crown lifted.	20+	
35		20		5	1	500	6.0	113	M	G		20+	
36	Betula Pendula (Silver Birch)	14		4	1	300	3.6	41	M	P	Top of tree is dead. Tree to be removed	<10 years	
37	Pinus Sylvestris (Scots Pine)	14		4	1	550	6.6	137	M	G	Dead wood and weighted towards road. Dead wood to be removed and crown lifted.	20+	
38	Betula Pendula (Silver Birch)	15		4.5	1	400	4.8	72	M	G	Good health	20+	

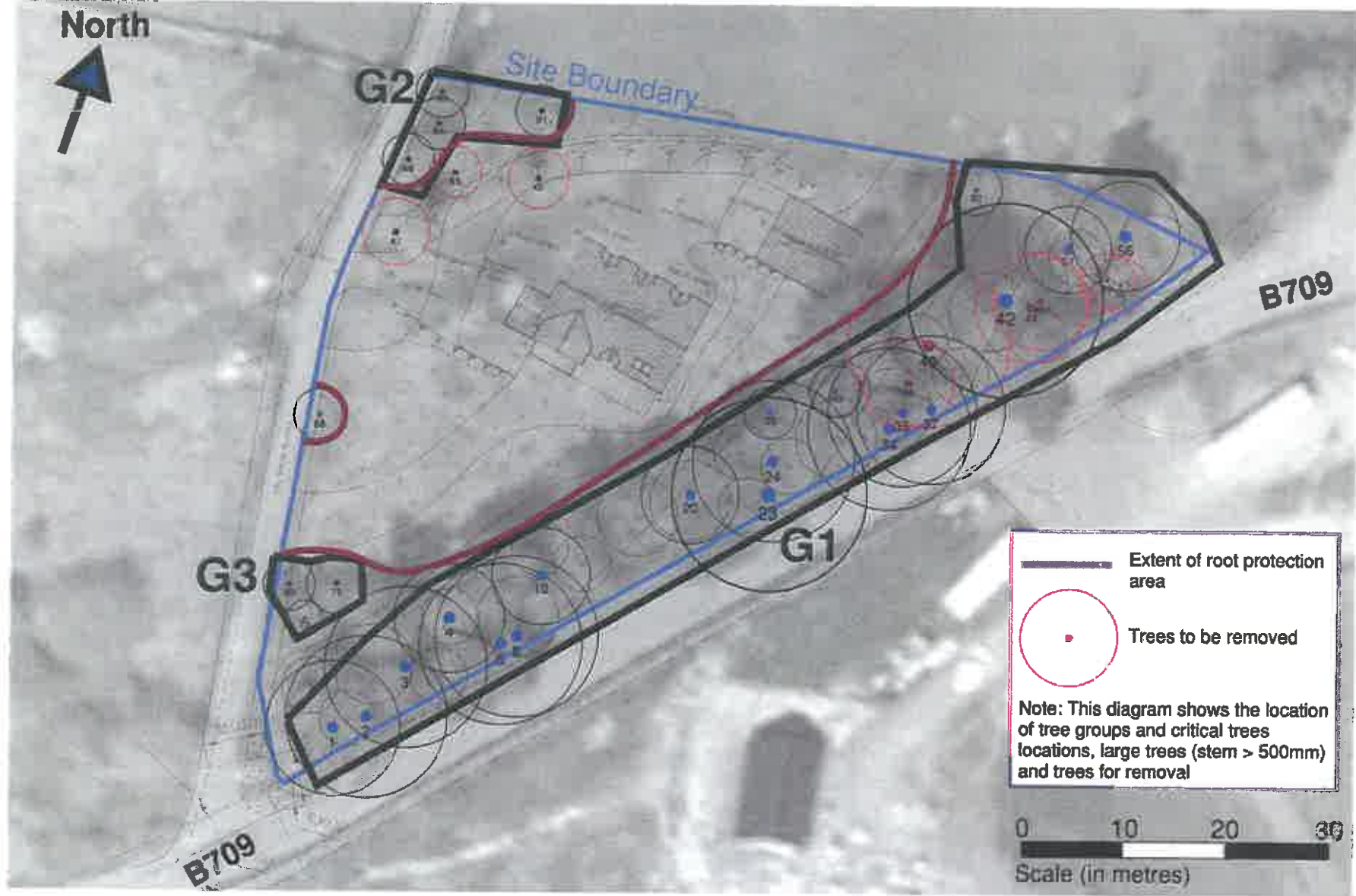


39	Pinus Sylvestris (Scots Pine)	4.5	As per Group G1	1	1	100	1.2	5	EM	G	Good health	40+	B2 – Prominent Landscape feature
40		12		4	1	600	7.2	163	M	F	Slight lean towards proposed building with a heavily weighted root. Tree to be removed.	20+	
41	Betula Pendula (Silver Birch)	11		4	1	300	3.6	41	M	G	Good health	20+	
42	Pinus Sylvestris (Scots Pine)	18		4	1	800	9.6	290	M	G	Minor dead wood, though may be left as is.	20+	
43	Betula Pendula (Silver Birch)	15		4	1	450	5.4	92	M	F	Heavily leaning towards road. Tree to be removed.	20+	
44	Pinus Sylvestris (Scots Pine)	14		4	1	400	4.8	72	M	F	Tree dying back and to be removed.	<10 years	
45		20		4.5	1	650	7.8	191	M	G	Dead wood and weighted towards road. Dead wood to be removed and crown lifted.	20+	
46	Sorbus aucuparia (Rowan)	3		1	1	100	1.2	5	EM	G	Good health	40+	
47	Betula Pendula (Silver Birch)	12		3	1	350	4.2	55	M	G		20+	
48	Pinus Sylvestris (Scots Pine)	15		4	1	600	7.2	163	M	G	Leaning to the road side and heavy loading on roots. The weight on the road side is to be reduced.	20+	
49	Betula Pendula (Silver Birch)	9		3	1	200	2.4	18	M	F	Leaning to the road side and to be removed.	20+	
50		7.5		3.5	1	300	3.6	41	M	F		20+	
51		6		2	1	150	1.8	10	M	G	Good health	40+	
52		4.5		1.5	1	150	1.8	10	M	G		40+	
53		3		1	1	150	1.8	10	M	G		40+	
54		14		5	1	300	3.6	41	M	G		20+	
55		9		3	1	250	3.0	28	M	G		20+	
56	Pinus Sylvestris (Scots Pine)	15		5	1	550	6.0	137	M	G	Dead wood to be removed.	20+	
57	Betula Pendula (Silver Birch)	4.5		2	1	200	2.4	18	M	G	Minor dead wood, though may be left as is.	40+	
58		11		4	1	250	3.0	28	M	G		20+	
59		7.5	3	1	200	2.4	18	M	G	20+			
60		6	2.5	1	200	2.4	18	M	G	40+			
61		4.5	1.5	1	150	1.8	10	EM	G	40+			
62		6	1.5	1	250	3.0	28	EM	G	Good health, though to be removed to provide access.		40+	
63	4.5	As per Group G2	1	1	200	2.4	18	EM	G	Good health	40+	C2	



64	Betula Pendula (Silver Birch)	7.5					1.5	1	200	2.4	18	EM	G	Good health	40+	
65		6					1	1	150	1.8	10	EM	G	Good health, though to be removed to provide access	40+	
66		9					1	1	350	4.2	55	EM	G	Good health	40+	
67		11					1.5	1	300	3.6	41	EM	G	Good health, though to be removed to provide access	40+	
68	Fraxinus excelsior (Ash)	4.5	2.5	1.5	2	2	2	1	150	1.8	10	EM	G	Good health	40+	B2
69	Betula Pendula (Silver Birch)	9	As per Group G3				1	1	200	2.4	18	EM	G	Good health	40+	C2
70		11					1	1	300	3.6	41	EM	G		40+	
71		9					1	1	250	3.0	28	EM	G		40+	
72		6					1	1	150	1.8	10	EM	G		40+	
73		4.5					1	1	150	1.8	10	EM	G		40+	
74		Salix family (Willow)					6	1.5	4	250	3.0	28	EM		G	
75	6		1.5	5	250	3.0	28	EM	G	40+						



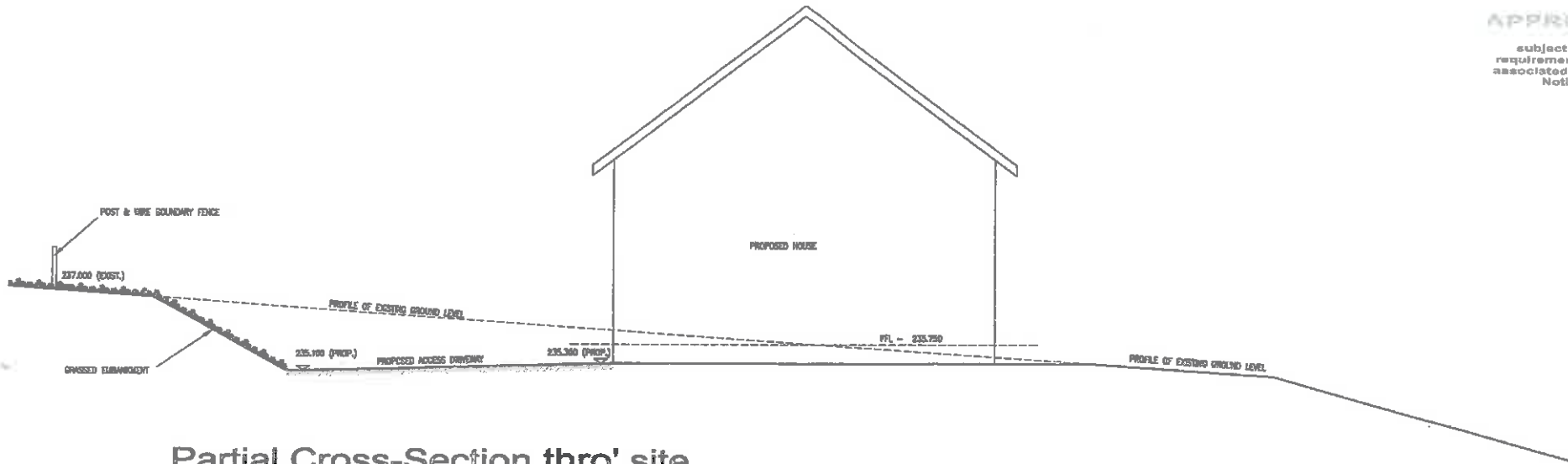


16/01467/AM0

Scottish Borders Council
Town And Country
Planning (Scotland) Act
1987

APPROVED

subject to the
requirements of the
associated Decision
Notice



Partial Cross-Section thro' site
Scale 1:100

rmarchitecture ltd
Bloomfield, Heatherik Park, Selkirk, TD7 5AL
tel: 01750 21709
email: rmarc@tiscali.co.uk

Client:
Mr & Mrs McGrath
Project:
Proposed House at land north-east
of Dundas Cottage
Ettrick
Title:
Partial Section thro' site

Scale:	Date:	Org No:	Revision:
1:100	Jan 2017	16-015/002	-