

# CALEDON TREE SURVEYS



# BS5837:2012 Tree Survey

Proposed Development Site at Friarshaugh Farm Gattonside

December 2020

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## Abstract

**Site:** Proposed Development Site at Friarshaugh Farm, Gattonside

Grid Reference: NT 54816 35020

Client: Aidan Hume Design Ltd

Date: December 2020

Survey Reference: BS\_011220

**Document Reference**: BS\_011220-SR Revision 00



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# **Section A - Report Overview**

## 1. Structure of report

The report comprises the following sections:

- This **Overview:** a guide to navigating the Report and a summary of the survey findings
- **Preliminaries**: background information about our commission and how we approached the project
- **Tree Survey:** the essential data about the trees and some more detailed interpretation of our findings; also a note of any works which might need done to make the trees safe
- **Arboricultural Impact Assessment**: What the developer's proposals might mean for the trees and how that might be mitigated
- Appendices: Photographs, maps and keys to the survey terminology

## 2. Executive Summary

- 2.1 The canopy assessed in this field study comprises a small number of individually recorded broadleaf trees on a greenfield site adjacent to the alluvial plain of the River Tweed, near the Scottish Borders village of Gattonside.
- 2.2 The principal feature of the canopy is a loose copse of mature specimen trees, three of which are veteran Ash in poor overall condition, with two smaller Hawthorns adjacent.
- 2.3 Trees assessed as homogeneous groupings in the survey include two young native plantation areas, both well-structured and in reasonably good overall condition, which have significant development potential. Other recorded groups are of lesser arboricultural significance.
- 2.4 Chalara Ash Dieback is present within the survey area, and is likely to result in the loss of all three veteran Ash specimens, as well as a proportion of the plantation stock.



# **Section B - Preliminaries**

### 3. Terms of Reference

#### 3.1 Title

BS5837 Tree Survey: Proposed Development Site at Friarshaugh Farm, Gattonside.

#### 3.2 Definition of survey area

As indicated on your Site location Plan ref AH129 PP01 A dated 07 09 2020. Application area outlined in red.

#### 3.3 Authority

The survey was instructed Mr Moray McLaren on behalf of Aidan Hume Design Ltd, 113 Channel Street, Galashiels TD1 1BN.

Instruction issued 12 11 2020.

#### 3.4 Survey team

David Gallacher, Ewan Batty.

David Gallacher is a Lantra qualified Professional Tree Surveyor and Inspector and is a professional member of The Consulting Arborists Society. Caledon Tree Consultants was established in 1995.

#### 3.5 Date(s) of inspection

08 December 2020.

#### 3.6 Purpose of survey

The objective of the survey is to provide an assessment of and report on the nature, condition and essential characteristics of the tree canopy on land which is being considered for development.

#### 3.7 Scope of survey

The scope of the survey is defined as a *Stage 1 Visual Tree Assessment* (Mattheck & Breloer, 1995) and the report is compliant with *British Standard Specification No 5837*:2012. All comments on specimen condition are made with reference only to the status-quo position of the site. Unless specified, the survey excludes any reference to underground services.

#### 3.8 Limitations

This report is the property of and for the sole use of the clients cited above and should under no circumstances be relied upon by third parties. The findings contained herein are strictly related to the condition of trees and the pattern of usage of surrounding land evident at the time of the inspection.

#### 3.9 Note on hazard and risk in relation to trees

Trees are complex living organisms subject to biotic and abiotic influences and the unpredictable forces of nature. In addition, latent defects both above and below ground which may impinge on the health and structural stability of a tree can be present without physical evidence being available to the naked eye. As noted by the Hon Mr Justice Mackay in a recent landmark ruling relating to the issue of tree safety: *"Both experts in the case agree...that there is no such thing as an entirely safe tree"* <sup>1</sup>.

The issue of safety surrounding a tree comprises a balance between **Hazard** (defined as the potential to cause harm) and **Risk** (the level of likelihood that a hazardous tree will cause damage). It is part of the purpose of this document, within the specified limitations, to note defects and other conditions within and surrounding the trees which constitute a hazard.

Assessment of the level of risk associated with any recorded hazard has been made on the basis of current manifest evidence (*eg* proximity of roads, footpaths etc) but it is the responsibility of the client to take account of any alterations to surrounding conditions or pattern of land-use.

<sup>1</sup> Bowen (A Child) & Ors v The National Trust [2011] EWHC 1992 (QB) (27 July 2011)



### 4. Site Characteristics

#### 4.1 Location

The survey area comprises a defined area of land to the south of the B6360 carriageway on the eastern periphery of the Scottish Borders town of Gattonside.

The assessed trees stand to the north of open, agricultural land, with the River Tweed approximately 350m to the south.

#### 4.2 Elevation

90m above sea level.

#### 4.3 Topography

The survey area features a southerly aspect with a variety of embankments.

#### 4.4 Surrounding landscape

Generally elevated from south to north.

#### 4.5 Wind exposure

Moderate-substantial. The site is locally exposed to prevailing south-westerly winds.

#### 4.6 Environment

Soil analysis was not carried out but soil quality is taken to provide an adequate growing medium for the trees. Drainage as it affects the trees appears at the time of the survey to be generally effective.

Notwithstanding the presence of Chalara Ash Dieback which has been identified in all trees of that species on site, the physiological condition of the canopy is generally good, reflecting a favourable biotic environment.

## 5. Survey Methodology

#### 5.1 Inclusion criteria

In line with our briefing the assessed canopy features:

- Trees No 3493-3498: individually recorded trees which meet the inclusion criteria as defined by BS5837:2012
- Tree groups G1-G3 and external tree group EG4: broadly homogeneous collections of relatively young trees within and adjacent to the survey area.

#### 5.2 Tree Diseases

A number of serious pathological conditions affecting trees have become widespread in the area and will have implications for specimens on this site.

In particular, the recent period has seen increasing evidence of Chalara Ash Dieback, *Hymenoscyphus fraxineus* in that species, and this has now reached epidemic proportions in some localities.

Whilst the pathology of this disease is not yet fully defined, it is to be expected that that a substantial proportion of smaller/younger trees will be lost in the present timeframe, and that there will ultimately be a high mortality rate among all specimens. There are no practical remediation measures available.

Specimens killed by the disease will fairly quickly be subject to structural failure and it is essential that the canopy is inspected at regular intervals to monitor the impact and issue recommendations for appropriate action.

For the purpose of the present study specimens are assessed and categorised with reference to the likely impact of the Chalara Ash Dieback on the anticipated lifespan of the tree where symptoms of the disease are manifest.



## 6. Statutory Framework

#### 6.1 Tree protections

Our briefing indicates that there are currently no statutory protections on trees within the survey area in terms of Tree Preservation Orders or designated Conservation Areas.

However development works are proposed at the time of the survey and it is likely that trees on site will be the subject of condtion(s) on any planning consents issued by the local planning authority (LPA).

Under the terms of such conditions it may be prohibited to cause or permit interference, damage or destruction to any tree, group of trees or woodland specified in the condition without the express permission of the relevant local authority department.



# **Section C - Tree Survey**

## 7. Commentary

#### 7.1 Overview

**7.1.1** The survey area occupies land on and surrounding an alluvial plain on the north bank of the River Tweed in Roxburghshire.

**7.1.2** The assessed canopy comprises a small number of individually recorded trees on a spur of land extending southwards from the B6360 carriageway, as well as tree groupings occupying that and adjacent areas of land.

**7.1.3** The principal feature of the canopy is three veteran Ash specimens, two of which are in an advanced state of structural decline, and all presenting symptoms of serious disease. Two mature Hawthorns adjacent to the Ash are in reasonably good overall condition.

**7.1.4** Below and surrounding the Ash and Hawthorns, a well-structured young plantation of (mainly) native trees and shrubs is reasonably well-established, though somewhat lacking in active management.

**7.1.5** A further plantation area to the north of the proposed development plot is slightly older and is in good overall condition.

**7.1.6** Both of the plantations feature a minor proportion of Ash, all being symptomatic of Chalara Ash Dieback.

**7.1.7** The survey also includes a mature shrub grouping on a south-facing embankment and young trees on the edge of the present access track from the B6360, both of which are of minor arboricultural significance.

These areas are featured in the survey in reflection of their being proximate to the proposed access route to the development plot.

#### 7.2 Analysis

#### 7.2.1 Ash Nos 3494, 3495 & 3497

Substantial veteran specimens, two of which are already in an advanced state of decline, and all now symptomatic of Chalara Ash Dieback (see s5.2, above for further information on this disease).

In this condition these trees offer a very high ecological/habitat value and in the present circumstances would appear to present no practical hazard (se s3.9, above in this connection). However their retention may not be consistent with the safe development of the adjacent land.

#### 7.2.2 Hawthorn Nos 3496 & 3498

Reasonably good mature specimens, fairly modest in stature but offering a substantial Safe Useful Life Expectancy (SULE).

Both trees feature a range of structural defects characteristic of specimens of this species, age and location, but are in adequate condition and in the extant circumstances and have a high ecological/habitat value.

#### 7.2.3 Tree Group G1

Sporadic self-seeded young broadleaves on the edge of a surfaced access track.

The group features a high proportion of Ash, all of which are symptomatic of Chalara Ash Dieback.

Tree No 3494 is a slightly larger Wild Cherry in early maturity standing at the entrance to the track from the B6360 carriageway. It has been rather severely lopped and is of limited arboricultural value.

#### 7.2.4 Shrub Group G2

Well-established shrub scrubland on a south-facing aspect, comprising Gorse and Elder.

The group is in adequate condition with a good ecological/habitat value, but offers limited visual amenity .



#### 7.2.5 Tree Group G3

A young plantation featuring a diverse range of (mainly) Scottish native species.

Most specimens are reasonably well-established although there are occasional instances of anchorage failure and some poorly-structured crowns.

All Ash specimens within the group are symptomatic of Chalara Ash Dieback.

The group offers good development potential in terms of visual amenity and ecological value, but would benefit from a more active management regime.

#### 7.2.6 External Tree Group EG4

This group stands immediately to the north of the proposed development plot and, like G3, is a well-structured canopy area featuring a high proportion of Scottish native species.

The group is slightly older and better-established than G3, and appears to be effectively managed. Notwithstanding the presence of Chalara Ash Dieback, it is in good overall condition and offers a substantial SULE.

In refection of the age, species and location of trees within this group, it would appear that the impact on the trees of a development on land outwith the perimeter fence to the south would currently be negligible.

This view is based on the assumption that any development on the site would be appropriately managed in in accordance with the provisions of *BS5837:2012 Trees in Relation to Design, Demolition and Construction -Recommendations*.

#### 7.3 BS5837:2012 Tree Retention Categories

7.3.1 Category A

N/A

#### 7.3.2 Category B

The two Mature Hawthorns No 3496 & 3498 are graded at Category B in particular reflection of their age and ecological value, as well as some visual amenity when viewed from the adjacent B6360.

The young plantations G3 and EG4, whilst comprised of trees of modest proportions, are graded at Category B in reflection of their development potential.

#### 7.3.3 Category C

Veteran Ash specimens 3494, 3495 & 3497 are graded at Category C in reflection of their severely limited SULE (see 5.2, above). However, these trees have an extremely high ecological value and, whilst their retention remains consistent with safe management of the land, may be retained.

Tree Groups G1 & G2 are of modest arboricultural significance and are graded at Category C.

### 8. Summary of Recommendations

#### 8.1 Current Interventions

The survey has revealed no current requirement for interventions with respect to trees in reflection of the owner's (or occupier's) Duty of Care in law to users of the property.

#### 8.2 Re-Inspection of Canopy

To maintain the validity of the BS5837 survey, the canopy should be re-inspected and this report updated within a period of two years of the date of issue by a qualified arboricultural consultant.



# Section D - Arboricultural Impact Assessment

## 9. Purpose of Arboricultural Impact Assessment

The objective of the Arboricultural Impact Assessment and Tree Constraints Plans is to provide supporting information on the evaluation and management of trees on a site which is being considered for development.

## 10. Current development proposals

#### 10.1 Overview

Our client is currently considering a potential development on the site which may impinge on the welfare of the tree canopy.

Whist no proposed design detail is presently available, it is the purpose of this provisional document to outline the potential constraints on development options arising from existing tree specimens.

#### 10.2 Impact on canopy

The potential constraints to development are illustrated in the Tree Constraints Plan (TCP) figures in Appendix 2 (below), which depict the survey data overlaid onto the topographical survey/existing site layout.

The TCP figures have been provisionally prepared on instruction from the client on the basis of available information and should be amended and re-issued to reflect any refinement in the specification for the proposed development.

The Below Ground Constraints Plan (Figures 2.3 & 2.4) plot the Root Protection Area (RPA) around all trees within the survey area. This illustrates the potential constraints to the proposed development presented by trees and their rooting systems.

The appended Above Ground Constraints Plan (Figures 2.5 & 2.6) indicates that the shading profile of all trees within the survey area and should inform design detail.

# 11. Evaluation of Trees Impacted by the Development Proposal

**11.1** [To be informed by the development specification]

# 12. Conflicts Between Development Proposals and Trees

**12.1** Below Ground [To be informed by the development specification]

**12.2** Above Ground [To be informed by the development specification]

# 13. Recommended Actions to Mitigate the Impact of the Proposed Development on Trees

#### 13.1

[To be informed by the development specification]



# BS-0112120-SR **Section E - Appendices**

#### Appendix 1. Site Photographs







BS\_021220 Land at Friarshaugh Farm, Gattonside Image No 02 Tree group G1 viewed from north (roadside)



BS\_021220 Land at Friarshaugh Farm, Gattonside Image No 03

Shrub group G2 viewed from west



BS\_021220 Land at Friarshaugh Farm, Gattonside Image No 04

Tree group G3 (interior)

# Appendix 2. Mapping Figures

#### A2.1 Tree Survey Mapping





#### BS-0112120-SR A2.2 Tree Constraints Plan -Below Ground -





#### A2.3 Tree Constraints Plan - Above Ground





# Appendix 3.

# Survey Schedule

Tree Reference Number	Grid Reference	Species, Taxa	Age Class	Height (m)	Stem Diameter (mm)	Constituent Stem Diameter of Multistem	Crown Spread (m)	Height (m) & direction of Lowest	Crown Clearance (m)	Root Protection Area	Physiological Condition	Structural Condition	Condition Notes	Preliminary Management Recommendations	Timeframe for Recommended Works	Estimated Remaining Contribution	BS5837 Retention Category	Photo Reference
3493	NT 54643.18 35054.51	Wild Cherry, Prunus avium	Early Mature	6	260	, sps (mm) 	N:2 E:3 S:3 W:2	Branch 1(N)	0.5	Radius: 3.1m. Area: 30 sq m.	Good	Fair	Multiple wounds from historic tree surgery to raise clear canopy level	_	_	20+ Years	C2	_
3494	NT 54774.24 35025.39	European Ash Fraxinus excelsior	Overmature	14	1050	_	N:6 E:6 S:7 W:5	4(S)	2	Radius: 12.6m. Area: 499 sq m.	Poor	Poor	2 co-dominant stems from 4.0m via tension union NE co-leader fractured at 7.0m with descending decay column from stump Veteran specimen in poor condition symptomatic of Chalara Ash Dieback	_	_	<10 Years	C2	lmage No 01
3495	NT 54786.62 35007.39	European Ash Fraxinus excelsior	Overmature	15	1150	_	N:7 E:6 S:8 W:8	2(W)	1	Radius: 13.8m. Area: 598 sq m.	Poor	Fair to Poor	Veteran specimen symptomatic of Chalara Ash Dieback	_	_	<10 Years	C2	Image No 01
3496	NT 54788.50 34998.22	Common Hawthorn, Crataegus monogyna	Mature	6	390	_	N:4 E:3 S:4 W:3	1.5(E)	1	Radius: 4.7m. Area: 69 sq m.	Fair to Good	Fair	Multiple co-dominant stems from 1.8m via compression union Substantial fracture wound 1.8m with wound-wood developing Linear trunk wound from 0.0m to 1.2m S with wound-wood developing Minor deadwoods Sites of bark necrosis on lower bole Branch extensions roughly lopped in lower crown	_		20+ Years	В2	lmage No 01
3497	NT 54800.94 34983.14	European Ash Fraxinus excelsior	Overmature	9	930	_	N:3 E:3 S:5 W:1	4(S)	1	Radius: 11.2m. Area: 394 sq m.	Poor	Poor	3 co-dominant stems from 3.0m via compression union W co-leader fractured at bifurcation with extensive decay cavity and descending decay column into bole S co-leader fractured at 6.0m Veteran specimen in poor condition, symptomatic of Chalara Ash Dieback	_	_	<10 Years	C2	lmage No 01
3498	NT 54802.38 34973.06	Common Hawthorn, Crataegus monogyna	Mature	6.5	_	390, 350	N:3 E:4 S:3 W:3	1.5(NE)	1	Radius: 6.3m. Area: 125 sq m.	Good	Fair	2 co-dominant stems from 0.5m via compression union with adaptive rib Slightly congested crown structure Minor snags, deadwoods and decay cavities	_	_	20+ Years	В2	Image No 01
Tree and Shrub Groups																		
G1	NT 54659.48 35032.88	Common Hawthorn, Crataegus monogyna European Ash, Fraxinus excelsior	Semi Mature	<8	<200	_	N:0 E:0 S:0 W:0	0(N)	0	Area: 280.98 sq m.	Fair	Fair	Young broadleaf specimens on margins of access track All Ash specimens symptomatic if Chalara Ash Dieback	_	_	10+ Years	C2	lmage No 02
G2	NT 54703.06 35043.65	Gorse, Ulex europaeus Elder, Sambucus nigra	Mature	<5	<180	_	N:0 E:0 S:0 W:0	0(N)	0	Area: 2653.78 sq m.	Fair to Good	Fair	Naturally generated scrub area on S facing slope, locally dense	_	_	20+ Years	C2	Image No 03

#### Proposed Development Site at Friarshaugh Farm, Gattonside

#### BS-0112120-SR

Tree Reference Number	Grid Reference	Species, Taxa	Age Class	Height (m)	Stem Diameter (mm)	Constituent Stem Diameter of Multistem sps (mm)	Crown Spread (m)	Height (m) & direction of Lowest Branch	Crown Clearance (m)	Root Protection Area	Physiological Condition	Structural Condition	Condition Notes	Preliminary Management Recommendations	Timeframe for Recommended Works	Estimated Remaining Contribution	BS5837 Retention Category	Photo Reference
G3	NT 54792.04 35004.74	Blackthorn, Prunus spinosa Hazel, Corylus avellana Common Hawthorn, Crataegus monogyna Guelder Rose, Viburnum opulus Downy Birch, Betula pubescens Field Maple, Acer campestre European Ash, Fraxinus excelsior Whitebeam, Sorbus aria Rowan, Sorbus aucuparia Silver Birch, Betula pendula English Oak, Quercus robur Sycamore, Acer pseudoplatanus	Semi Mature	<9	<180		N:0 E:0 S:0 W:0	0(N)	0	Area: 906.64 sq m.	Good	Fair	Young plantation of predominantly native broadleaf species lacking active arboricultural management Most specimens reasonably well-established with occasional instances of anchorage instability All Ash specimens symptomatic of Chalara Ash Dieback			20+ Years	B2	Image No 04
External Tree Groups																		
EG4	NT 54820.20 35017.96	White Willow, Salix alba Hazel, Corylus avellana Sycamore, Acer pseudoplatanus Field Maple, Acer campestre Silver Birch, Betula pendula Wild Cherry, Prunus avium Elder, Sambucus nigra European Ash, Fraxinus excelsior	Early Mature	<12	<400		N:0 E:0 S:0 W:0	0(N)	0	Area: 269.95 sq m.	Good	Fair to Good	Reasonably well-established young plantation on adjacent land to north Rooting areas not significant to proposed development area due to size and location of constituent trees		_	20+ Years	B2	

#### Proposed Development Site at Friarshaugh Farm, Gattonside

# Appendix 4. BS5837:2012 Tree Retention Categories

### Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)											
Trees unsuitable for retention	(see Note)											
Category U	Trees that have a serious, irremediab	ole, structural defect, such that their early loss	is expected due to collapse,	See								
Those in such a condition that they cannot realistically	including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)											
be retained as living trees in	<ul> <li>Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline</li> </ul>											
the context of the current land use for longer than 10 years	<ul> <li>Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality</li> </ul>											
io years	NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.											
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation									
Trees to be considered for rete	ention											
Category A	Trees that are particularly good	Trees, groups or woodlands of particular	Trees, groups or woodlands	See								
Trees of high quality with an estimated remaining life expectancy of at least 40 years	examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	visual importance as arboricultural and/or landscape features	of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)									
Category B	Trees that might be included in	Trees present in numbers, usually growing Trees with material										
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	conservation or other cultural value									
Category C	Unremarkable trees of very limited	Trees present in groups or woodlands, but Trees with no material										
Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	they do not qualify in higher categories	without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	conservation or other cultural value									

ntification plan

Table 2



Table 2

Table 2

Table 2

BS 5837:2012

#### BS-0112120-SR Appendix 5. Key to Survey Spreadsheets

#### A5.1 Tree No

Represented on survey tags fixed to bole of tree at approximately 2.0m.

#### A5.2 Species

Both formal and common nomenclature is given, where appropriate. Where precise species identification is in doubt, genus is given, followed by suffix "spp".

Specimen Height, Crown Spread, Height of First Significant Branch and Height of Canopy Given in metres. These are measured accurate to a tolerance of 0.5m for values up to 10m and of 1m for values over 10m.

#### A5.3 Crown Spread

Given on each of the North, East, South and West axes respectively, measured in metres.

#### A5.4 Stem Diameter

Measured at 1.5m above ground level. Where this is impractical the measurement is taken at the closest appropriate point in line with the guidance outlined in BS5837 (2012). This is taken to be the Effective Stem Diameter for the purpose of calculating the Root Protection Radius.

In instances where more than one stem is present at 1.5m these are recorded as Constituent Stem Diameters. In such cases the Effective Stem Diameter is calculated using the formulae provided by BS5837 (2012). Where accurate measurement of stem diameter is impractical (for example due to the presence if Ivy or dense epicormic growths) the value is estimated and the figure recorded with the suffix *e*.

#### A5.5 RPA (Root protection Area)

BS 5837 (2012) provides for the identification of a Root Protection Area around trees to be maintained during and after construction works on site. This is calculated –principally as a function of the bole diameter of the specimen- and given in the survey schedule as the radius of a circle around each tree which should be secured and left undisturbed during site operations. The RPA may additionally be represented graphically on topographical drawings of the site, if available.

- J Juvenile
- SM Semi-Mature
- EM Early maturity
- M Mature
- OM Overmature

#### A5.7 Physiological and Structural Condition

- G Good
- F-G Fair-Good
- F Fair
- F-P Fair-Poor
- P Poor

#### A5.8 Preliminary Management Recommendations

Action required in the short term in reflection of health and safety considerations, or on any specific criteria outlined in the Terms of Reference (see s1 above). Note that this section is not intended to give comprehensive guidance as to the appropriate long-term management of each specimen.

#### A5.9 Life Expectancy Classification (Estimated Remaining Contribution)

<10 years 10+ years 20+ years 40+ years

A5.10 British Standard 5837 (2012) Tree Retention Categories

See specification at Appendix 4 (Above)





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