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B1185
6/3/12
FAO Paul Duckett

320120318P

Dear Sirs

Proposed extensions- Holden Clough House

We refer to the proposed extensions. The existing house floor level is 7 metres above Mear Gill and is in flood zone 1 as the extensions will be. We have visited the site and attach a 1/ 5000 map extract showing the hillside stream catchments. Catchment A is the western stream and catchment B is the eastern stream. The eastern stream cannot affect the house, the western stream will not affect the house provided its bed and channel are tidied up and maintained as will happen when the building and the estate are renovated and extended. The proposal is to provide extensions and the Council may need a statement with regard to flood risk issues which is as follows:-

1. The hillside stream catchments are as per the attached drawing B1185/01 and the house is not at risk from them provided they are maintained as part of the estate maintenance programme. Catchment B drains to an existing channel to the north side of the existing higher grass footpath- see photo. There is also a spring here which flows into a brick chamber which is the house water supply and also the supply to other nearby properties via 3 Blakes Hydram units and the Hydram units overflow to the existing north side channel which joins the eastern stream.
2. The proposed extensions are classed as 'more vulnerable' in Table D2 of PPS 25 and this use is 'appropriate' in floodzone 1 as per Table D3.
3. Annex C forms of flooding are as follows.
4. C4- rivers- Mear Gill is 7m below the buildings
5. C5- sea- no tidal influence
6. C6- land- land slopes towards the rear of the house but is drained as above.
7. C7-groundwater- there is a spring above the house which provides water and overflows away from the house to the eastern stream.
8. C8-sewers- no public or private sewers nearby
9. C9- reservoirs, canals- none nearby

Continued

CONSULTING CIVIL ENGINEERS

Workcentres at Winsford & Waterfoot

VAT reg 674 6275 04 Emails- floodriskengineer@gmail.com

sudsengineers@sky.com

Roads/rivers/river modelling/sustainable drainage/attenuation/ wetlands/ development infrastructure/feasibility

Client-Inspector Gimbard

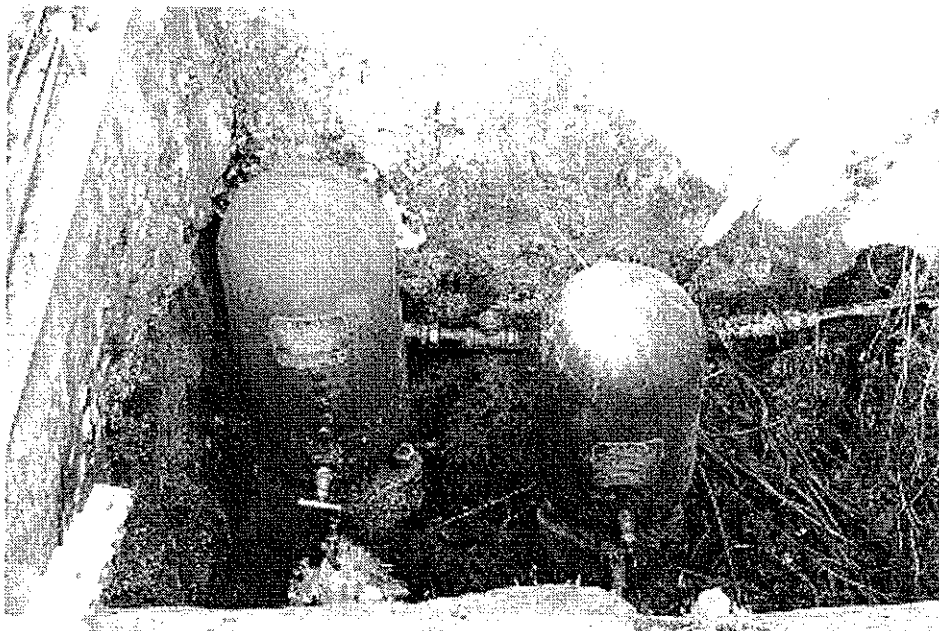
Drawing no	Rev	Scale	Drawn	Checked	Approved
B1185/01					
Date					
5/3/12	approx 1/5000	met		phb	met

45100714





Catchment B existing overflow channel



Blakes Hydram units

Denotes existing tree
recorded and deleted
in the tree float

Consult Report Arboriculturist Tree Report by Yew Tree and Gardens.



Unit: Page:

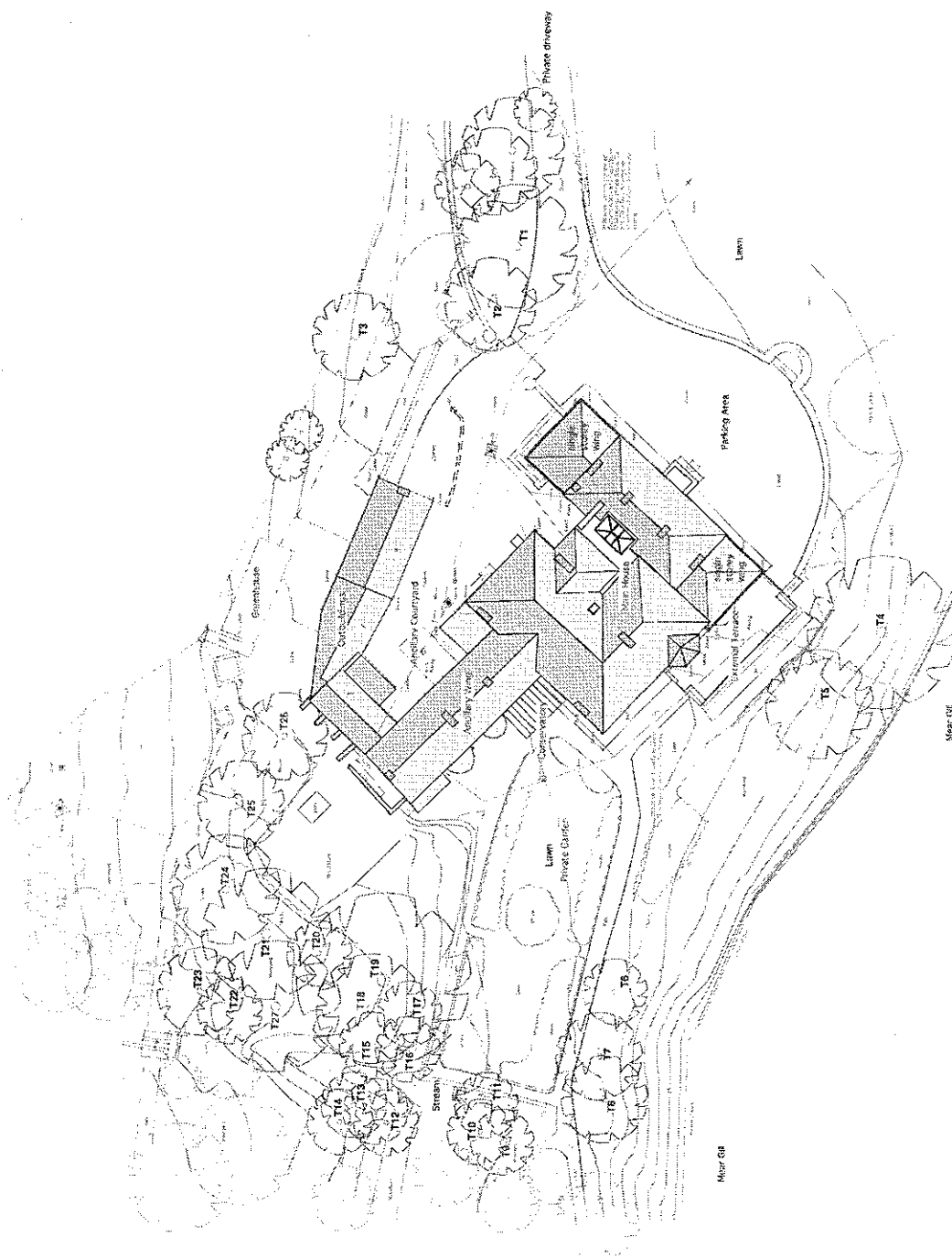
Holden Clough.

Bula Plan in Exile

939/E/1.1

2006-07 02 17

DATE	DESCRIPTION	DEBIT	CREDIT	BALANCE
	MASON GILL BRAND			
	A A R C H I : F C :			
	16 WILLOW HILL CATIONS LANDSCAPE LAB			
	COLLATION: @MISSTRIFFPACKAGES: MISSTRIFFPAC			



Denotes existing tree
to be retained, as
detailed in the Tree
Report

Denotes existing tree to be retained, as detailed in the Tree Report

Denotes existing tree to be removed, as indicated in the Tree Report

Consult Report Arboriculturist Tree
Report by Yew Tree and Gardens.

Demolition



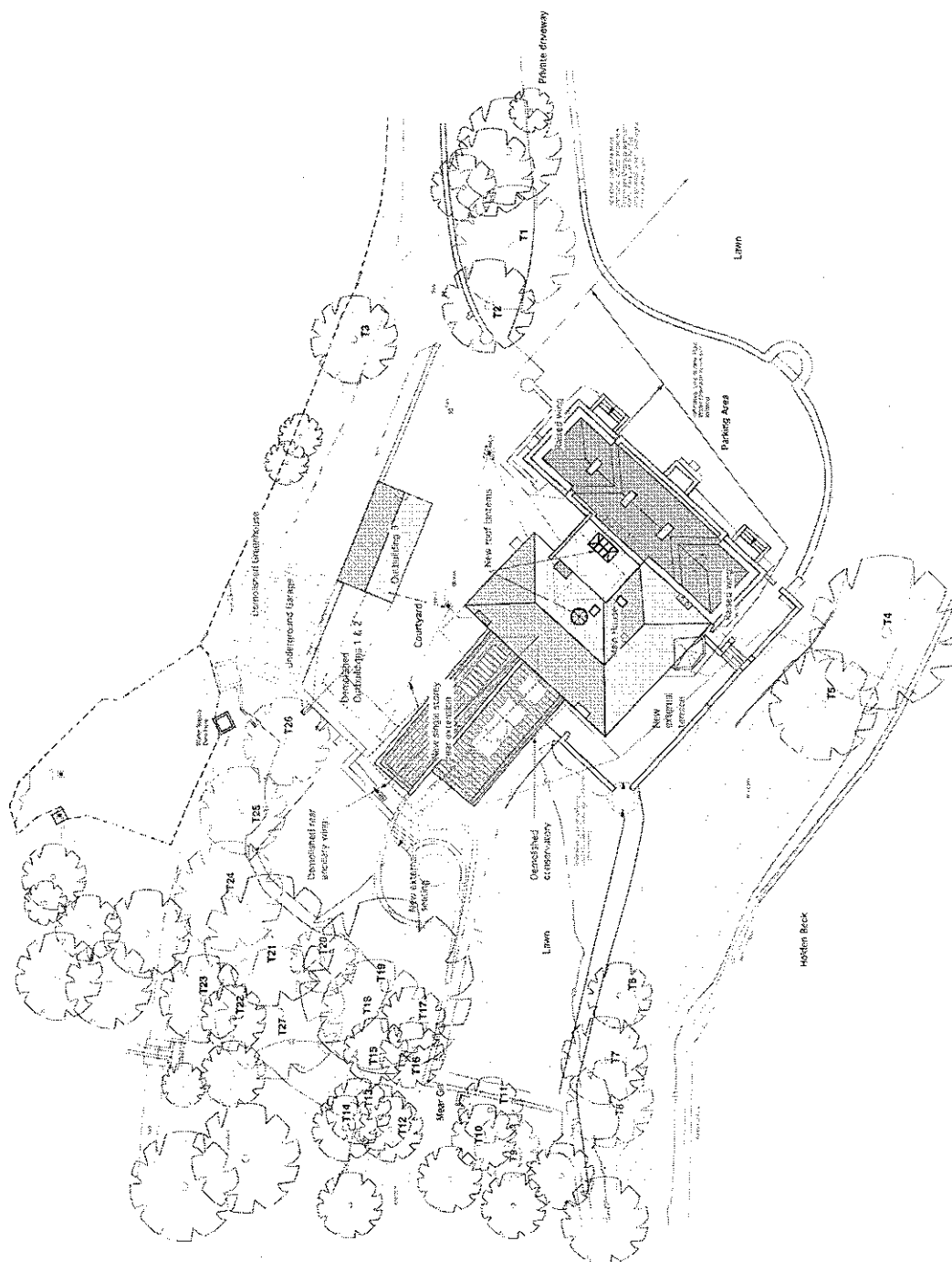
Footnote 10 See *United States v. Bestfoods*, 502 U.S. 281, 290 (1992).

Holden Clough.

Salt Flies as Bioindicators

60347P

DATE	5/20/2012	02-12	10
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A R C H I T E C T			
16 VICTORY HILL CIRCLE, LANSING, MI 48206			
TEL: (313) 977-7777 FAX: (313) 977-7777			



Design and Access Statement - Holden Clough, Holden, Lancashire.

By Mason Gillibrand Architects, 16 Willow Mill, Caton, Lancaster, LA29RA.
Tel. 01524 771377, Email Paul@masongillibrand.co.uk

This document is a written statement of the aims and intentions of our client with regards to 'Holden Clough' and the following proposals:-

- The demolition of a two storey ancillary wing and a two storey outbuilding. The demolition of a single storey rear porch, conservatory, outbuilding and derelict greenhouse.
- The construction of a single storey extension.
- The raising of the single storey wings, at the front of the house, to two storey wings and the general re-roofing of the front of the house.
- The construction of a new 3 car garage.

This Design and Access Statement is to be read in conjunction with the associated drawings, reports and completed planning application form.

1.0 Site Address:

Holden Clough,
Holden,
Nr Bolton by Bowland,
Lancashire,
BB7 4PE.

320120318P

2.0 Location:

Refer to drawing number 4939/E/0.0 Location Plan

Holden Clough lies to the northwest of the centre of Holden. The property is reached via a long private driveway (approximately 600m), which joins Barret Hill Brow in the center of the village. The property stands in approximately 18 Hectares of private land. The geography of the land and the existing trees is such that the property is completely screened from view and cannot be seen from any, highway, public right of way or neighbouring houses/farm. There are no public footpaths within the grounds of the house or the estate.

The house is accessed via a long wooded private driveway, which leads up to the east side of the house. As the house is approached the driveway sweeps around an extensive private front lawn, all of which is bounded by trees and woodland. The prospects of the house are bounded on the south side by the Mear Gill set in a deep belt of trees and Clough Wood, on the west side by Clough Wood (with Alder House Wood beyond) and on the north side by a high sloping hillside topped with a belt of trees.

3.0 Existing Building:

Refer to Existing Site Plan - drawing number 4939/E/1.1; Existing plans - drawing numbers 4939/E/2.1, 2.2, 2.3 and 2.4 and Existing Elevations - drawing numbers 4939/E/3.1 and 3.2.

Holden Clough can be broadly broken down in to three distinct elements.

Main House
Ancillary Wing
Outbuildings

3.1 Main House

The house is a traditional two storey stone built property with slate roofs.

The original front section of the house consists of a central two storey element, with portico entrance and two single storey wings. Behind this stands the rear section of the house, a later remodelling of the house from the Victorian era. This part of the house is two storey throughout and taller and larger in scale, than the earlier front section.

Accommodation *Ground Floor*

At ground floor level, the house accommodates several reception rooms plus porch, hall with stairwell, kitchen, wc, pantry, store, utility and rear porch. A central hallway offers a thoroughfare through the centre of the house, from which a second back staircase also leads to the first floor.

First Floor

At first floor level, the house accommodates six bedrooms, three bathrooms, a wc, a store, a central hallway (linking the front and rear sections of the house) and a rear landing with a link on to the adjoining ancillary wing.

Cellar

A cellar is also provided to the front section of the house. This is accessed via a staircase off the hallway and also accessed via an external door from the courtyard. The cellar has five rooms alongside the front elevation, and a passageway also extends towards the rear part of the property, beneath the wc / kitchen area.

3.2 Ancillary Wing

The wing is located on the northwest side of the house and separates the ancillary courtyard space from the private garden space. The wing also incorporates a lean to glass conservatory that addresses the private garden. The building is two storey and constructed in traditional materials, similar to the house.

Accommodation

The ground floor rooms are currently used as storage / utility rooms. The first floor rooms consist of a further 4 bedrooms, which are accessed off the first floor of the main house.

3.3 Outbuildings

Located to the north side of the property are three linked outbuildings, which join the ancillary wing, so as to form two sides of the ancillary courtyard. The courtyard is open to the east (i.e. front of the house) and is accessed directly off the driveway. These buildings are generally constructed with stone walls and slate roofs. Although, certain later minor alterations incorporate brick walls and concrete flat roofs.

Outbuildings 1 and 3 have been crudely altered in the past, such that each offers garage space to accommodate one car.

Outbuilding 2 is effectively a single storey lean-to that links the other two outbuildings together and offers space for additional covered storage.

4.0 Proposed Alterations

Refer to Proposed Site Plan - drawing number 4939/P/0.1; Existing plans - drawing numbers 4939/P/1A, 2B and 3 and Existing Elevations - drawing numbers 49399/P/4.1 and 4.2.

The proposals can also be broken down into three distinct elements:-

Main House
Ancillary Wing
Outbuildings

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4.1 Main House.

It is the client's intention to refurbish the main house into their family home. The majority of changes involve internal alterations, so as to rationalize the plan into a more sensible layout, which suits their family needs.

Ground Floor

The ground floor accommodation has been reorganised, so that the family may enjoy and experience all aspects of the house. The hub of the house (the sitting room/informal dining room/kitchen) addresses the south-west private garden and has been changed into an exciting free flowing open plan space. The unlit thoroughfare of the former back corridor/stair has gone and a new grand hall incorporating a new staircase (with staircase window) has been created.

The cellar is to be refurbished and a new internal staircase offers convenient practical access to the wine cellar and utility room, located in the basement.

The original vast drawing room has been reconfigured to form both a light and airy formal dining room (which links the new sitting room with the drawing room) and a family cinema room.

The front section of the house suffers from having four very small cellular rooms. Therefore, the internal dividing walls have been removed to make the smaller rooms more practical. They have been remodelled so as to create a larger new drawing room and a study/library, either side of the entrance porch.

First Floor

The first floor plan of the house has also been reconfigured. The six bedrooms have been recreated, but they are all now large sensibly proportioned rooms with good views and ensuites (bedroom 4 has a separate dedicated bathroom).

The front section of the house has been reconfigured to form the master bedroom suite consisting of a master bedroom, dressing room and bathroom. This in part has been achieved by raising the ground floor single storey wings, in to two storey wings.

External Alterations

The language of the existing buildings has been reflected in the proposed external alterations, ensuring that any changes are sympathetic to the house.

External alterations to the house include the following:-

- The demolition of the rear porch located off the ancillary courtyard. This is a relatively recent flat roof extension with walls finished in a cut coursed stone (which does not match the house) and the structure obstructs valuable manoeuvre space within the courtyard.
 - The replacement of all the external windows and doors (as per the elevations). Additional windows (see plans) have been added to :-
 - The west elevation, (to cater for the reconfigured bedrooms that overlook the private garden).
 - The north elevation (new landing window to cater for the hall and staircase landing).
 - The south elevation (existing window cills dropped to the floor to create French doors on to the raised terrace).
 - The front section of the house has been altered. The single storey wings have been raised into two storey wings. New windows have been incorporated, which match the existing.
- The roof level of the two wings remains lower than central section of the elevation. This ensures that the wing features remain a legible feature and thereby avoids a large single expanse of roof across the front elevation. The change makes the east elevation more imposing and retains a scale appropriate to the size of house. The proportions of the front elevation have

been further improved by the introduction of a stone cornice and parapet. The affect as a whole is to balance the front lower section of the house with the taller rear section, such that the house now appears unified.

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4.2 Ancillary Wing

The two storey rear wing and single storey conservatory are proposed to be demolished and replaced with a new single storey building consisting of the following accommodation:-

- Rear Hall/Bootroom – accessed directly off the courtyard
- Conservatory – incorporates a dining / sitting room space
- Gym – incorporates a gym, sauna and changing rooms

The ground floor footprint of the original ancillary wing and conservatory was 130sqm and had a total gross area (incl first floor) of approximately 235sqm. The new single storey extension stands ostensibly in the same position as the demolished two storey wing/conservatory and has the same ground floor gross area of 130sqm.

The extension is designed with a central spine wall, which continues on to form a garden wall, which eventually merges with the existing garden wall.

On the north side of the spine wall, the extension addresses the ancillary courtyard. It is designed as a traditional lean-to, constructed of stone walls and slate roof (salvaged from the demolished wing). The elevation is understated and reflects the style of the former courtyard buildings and ancillary wing. The two existing arched openings will be salvaged and reinstated within the new elevation, so as to form the entrance off the courtyard.

On the south side of the spine wall, the a new conservatory addresses the private garden space. This building is a modern interpretation of an orangery and conservatory. It is of a clearly contemporary style, so as to contrast with the existing house. The design reflects the building's different character and purpose as a garden room.

The conservatory's contemporary feel is emphasized by clean lines, a simple form and the use of modern materials within the envelope. The elevations consist of full height glazing using aluminium sliding doors (with minimal frame). The sliding doors allow the conservatory space to fully open up on to the garden. The roof is almost flat and finished with a metal standing seam system and features two large flat glazed rooflights.

4.3 Outbuildings within the ancillary courtyard.

Outbuilding 3 – This building is to be refurbished.

The flat roof extension on the prominent east gable was previously added in order that the ground floor of the building could offer sufficient length to accommodate a car. The extension is to be demolished and the opening into the existing gable is to be closed up in matching stone.

The reduced ground floor area will form storage for garden equipment (note - the existing door on the south elevation will offer access for the lawn mower).

The first floor is to be refurbished and will form an artist studio for the family to use. To create adequate levels of natural daylight for a practical studio space additional openings have been added to the first floor (a window has been added to the east (gable) elevation, a window has been added to the north elevation and a north facing rooflight has been incorporated within the slate roof).

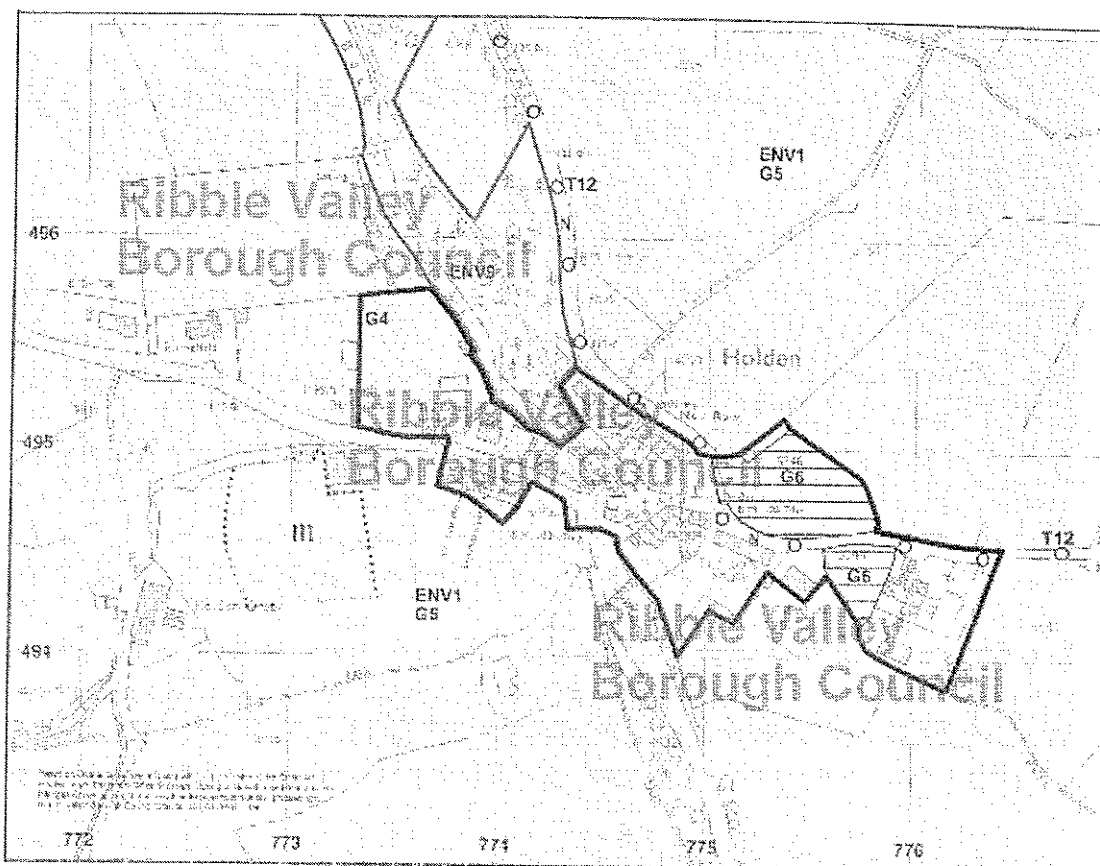
Outbuildings 1 & 2 - The two storey (outbuilding n° 1) and the single storey (outbuilding n°2) outbuildings are to be demolished.

The removal of these two structures will increase the clear floor area within the courtyard, so as to provide a practical space, which caters for the access of modern cars.

A new garage is proposed within the courtyard and will accommodate space for three cars. The garage is effectively underground, taking advantage of the natural contours of the site and the retaining wall of the courtyard. Only the front elevation of the garage will be visible and this will be constructed in matching stone with timber garage doors, sympathetic to the courtyard buildings. It should be noted that this elevation is only visible from within the courtyard and is further hidden by the retained outbuilding n° 3. The garage roof structure will be hidden beneath a finish of top soil and grass. The grass roof finish will merge with the natural contours of the existing banking.

5.0 Planning Policy

- The property is not listed and is not located within the the Holden conservation area (see attached copy of RVBC Inset 14).



Inset 14. Holden 1:2,500

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- Flood Risk – Michael Lambert Associates were appointed to carry out a Flood Risk Assessment. Attached is a copy of their report, which concludes that the property and extension are not at risk of flooding and the proposed works will not increase surface water runoff rates and volumes to Mear Gill and no increase in flood risk to others.

- There are no SSSI within the ownership curtilage of the property or within the immediate proximity.

- County Biological Heritage Site

Much of the ownership curtilage (see blue edge of the location plan) of the property stands within a County Biological Heritage Site. However the proposed site area (see red edge on the location plan), which encompasses the house and the immediate private garden, lies outside the edge of the CBHS (see attached map from the Local Districtwide Plan). Dialogue with the Nik Bruce of LCC confirmed that by definition a CBHS will not incorporate or extend into a private garden.

	Blackbody Radiation
	Atmospheric Physics 64
	Electrostatics, Electrodynamics, Electricity and Magnetism 65
	Electromagnetic Optics 66
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1. 2018年12月31日，甲公司“应付账款”科目所属各明细科目期末贷方余额如下表所示：



We are not aware of any trees carrying Tree Preservation Orders. The Trees that are proposed for removal (see the arboriculturist report) lie within the immediate private garden area, close to the house and are outside the edge of the CBHS.

Note - none of the trees proposed for removal lie within the adjacent Ancient Woodland (see attached map from the Local Districtwide Plan). It is worth noting that this Ancient Woodland, which is not part of this application, has not

been managed for many years and the client has commissioned an on going report, from the arboricultist 'Yew Tree and Gardens', for a future woodland management scheme.

- Area of Outstanding National Beauty - The house lies within the AONB.

The proposed extensions/alterations stand ostensibly in the same position as the demolished wing/conservatory/outbuildings/greenhouse (i.e. within the footprint of the existing property).

The proposed demolition works to the house, ancillary wing and the outbuildings result in a significant reduction in the size and volume of the property. The net result is an improvement on the openness character and appearance of the countryside.

The private gardens, associated landscaping, trees and the topography ensure that the house is totally obscured from the west, south and east boundaries. The topography (grass banking) topped by trees on the northern boundary also ensure that the northern aspect of the house is not visible. In summary, the house cannot be seen from outside the domestic curtilage and the alterations and extensions do not affect the character and appearance of the countryside on the AONB.

Furthermore, the alterations to north side of the house (demolition of the outbuildings 1 & 2, the greenhouse and the replacement of the two storey ancillary wing with a single storey extension) all mean that proposed changes improve the openness due to the net reduction in both the footprint and volume of the house.

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6.0 Materials

The materials have been carefully considered to compliment the existing house and outbuildings.

Generally :-

- Windows and doors - hardwood timber with glazing bars as per the elevations.
- New stonework to match existing (note - the proposed demolition of the ancillary wing and outbuildings will offer a sustainable source of stone).
- New roofs to be finished in slate to match existing (note - the proposed demolition of the ancillary wing and outbuildings will offer a sustainable source of slate).
- Rainwater goods are to be replaced with cast aluminium, styled to match the existing.
- The hidden flat roof (i.e. above the main hall and stair) will be a membrane type finished in a dark grey lead colour.

Conservatory:-

The materials on the proposed conservatory extension are vitally important, so as to reflect the building's different character and purpose with respect to the main house.

- The elevations will consist of full height glazing. These glazed wall areas will be finished in a modern metal framed glazing system with minimal frame section and in a powder coat finish.
- The structural exposed frame work will be steel, painted to match the glazing frames
- Rainwater goods will be aluminium and finished in a powder coat paint.
- The roof will be finished in a metal standing seam system.
- The rooflights will be a modern metal framed glazing system with minimal frame section, in a powder coat finish.

7.0 Sustainability

- The existing log burning heating system is to be replaced with a new efficient bio mass boiler and central heating controls that will offer much greater zonal control and flexibility throughout the building. The boiler will run on both pellets and or logs. (note – an investigation from the arboriculturist has confirmed that, through proper woodland management, the existing woodland will offer the potential for an adequate sustainable fuel source and this is something our client intends to pursue).
- New solid floors are to be insulated
- Improved insulation to existing roof voids.
- The single glazed sash windows are to be replaced with new sash windows, but with doubled glazed units.
- The proposed demolition of the ancillary wing and outbuildings will offer a sustainable source of stone and slate, which is intended to be re-used on the extension and alterations.

8.0 Services

Existing services are readily available on site :-

Water – As Existing - private supply via an existing spring.

Electricity – As Existing - existing feed, via an overhead cable.

Drainage :-

Foul Drainage – As Existing - The property is connected to an existing septic tank & filter bed arrangement, which discharges to the water course (Mear Gill).

(note - the alterations will change the house from a 10 bedroom property to a six bedroom property, which reduce the load on the existing system).

Surface Water – As Existing - Part of the system discharges direct to the water course (Mear Gill) and part of the system is a combined system, which discharges to the water course (Mear Gill) via the existing septic tank and filter bed arrangement.

9.0 Trees and landscaping

Trees - The property stands in an area of extensive woodland.

The Arboriculturist Antony Wood of 'Yew Tree Gardens' was appointed to carry out a tree survey of those trees located in the rear private garden area and those trees in close proximity of the house to which the development may have an impact on the trees.

Please refer to the arboricultural report 'Tree Report for Proposed Residential Renovation', which covers a survey of the existing trees and the mitigation measures, which are to be included in the proposal. It also covers the procedures that are proposed to ensure that the construction will not be to detriment of the retained trees.

Note – Where the report recommends the removal of existing trees, these have been identified on the proposed site plan (*Proposed Site Plan - drawing number 4939/P/0.1*).

Landscaping – The south side of the property has an external terrace that runs from the front of the house, for approximately two thirds of this elevation. We propose to reposition the terrace to the south west corner of this elevation, so that it links with the rear private garden.

The finished floor level of the new area of terrace will be higher than the adjacent existing terrace so that it :-

- links with the higher level of the rear private garden and the rear extension.
- matches the internal ground floor level of the room on the south west corner of the house and thereby allows this family room to have direct access out on to the terrace.

Note - although the terrace area to the rear garden has been altered, there will be no increase in surface water runoff rates and volumes to the Mear Gill and no increase in flood risk to others (see flood risk report).

10.0 Bats

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The proposed scope of work involves alterations/refurbishment of existing roofs and the demolition of the ancillary wing and two outbuildings. The Ecologist consultant, Mr Andrew Gardner of Envirotech was appointed to carry out a bat survey on all the existing buildings.

Please find attached his survey report 'Background and Supporting Information' together with his second report 'Delivery Information', which outlines the proposed mitigation measures that will be carried out.

11.0 Access and Parking

The proposed work has no impact on access.

The application retains the existing access and the existing hardstanding for car parking to the house. The garage has been reconfigured but this remains within the private ancillary courtyard and is completely obscured from view.

12.0 Highways and footpaths

The proposed work has no impact on highways.

There are no proposed alterations to the existing vehicle highway.

There are no existing pedestrian routes or footpaths within the site area, the estate or the close proximity.

13.0 Summary

In summary, the proposed extensions and alterations are much smaller in area and volume than the existing buildings that are proposed for demolition, such that there will be net reduction in the size of the property.

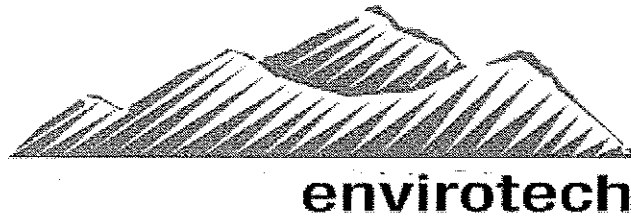
The majority of the work proposed to the main house involves the internal reconfiguration of the house, which has been reorganised, so that the client may enjoy and experience all aspects of the house to suit his family needs.

The external alterations to the front of the house have been carefully designed, so as to compliment the character of the house and will enhance the approach and vista considerably, whilst offering practical changes and improvements to the interior accommodation.

The proposed rear extension is single storey and significantly smaller than the existing two storey ancillary wing, which it replaces. It stands in a similar position as the ancillary wing and has been thoughtfully designed to enhance the character of the property, whilst enjoying the visual amenity of both the adjoining private garden space and the ancillary courtyard.

The alterations and extensions will provide meaningful improvements to this home, which suit the family's needs and we therefore respectfully request that this application be approved.

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Sedgwick
Kendal
Cumbria
LA8 0JP



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Background and Supporting Information

Holden Clough, Holden

BY

Mr Andrew Gardner BSc (Hons) MSc MIEEM MRICS CEnv Dip NDEA

BAT/11/1211
BS

Envirotech NW Ltd
Director: A Gardner BSc (Hons), MSc, MIEEM, MRICS, CEnv Dip NDEA
Registered Office: Stone Lea, Sedgwick, Kendal, Cumbria, LA8 0JP
Registered in England. Company Registration Number 5028111



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BACKGROUND AND SUPPORTING INFORMATION

Instructions

Investigate for the presence or absence of bat species as part of a planning application for the partial demolition, extension and refurbishment of Holden Clough.

Professional responsibility

This report has been commissioned and the actions of the surveyor have been made in accordance with the Code of Professional Conduct for the Institute of Ecology and Environmental Management (www.ieem.org.uk) and the Royal Institution of Chartered Surveyors (www.rics.org.uk)

Accuracy of report

This report has been compiled based on the methodology as detailed and the professional experience of the surveyor. Whilst the report reflects the situation found as accurately as possible, bats are wild and can move freely from site to site. Their presence or absence detailed in this report does not entirely preclude the possibility of a different past, current or future use of the site surveyed.

We would ask all clients acting upon the contents of this report to show due diligence when undertaking work on their site and or in their interaction with bat species. If bats are found during a work programme and continuing the work programme could result in their disturbance, injury or death either directly or indirectly an offence may be committed.

Bats may only be disturbed, injured or killed under license.

If in doubt, stop work and seek further professional advice.

Quality and Environmental Assurance

This report has been printed on recycled paper as part of our commitment to achieving both the ISO 9001 Quality Assurance and ISO 14001 Environmental Assurance standards. Envirotech have been awarded the Gold standard by the Cumbria Business Environmental Network for its Environmental management systems.

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A Executive Summary

A planning application is being submitted for the partial demolition, extension and refurbishment of Holden Clough.

A bat survey was requested following guidance under Regulation 39 of the Conservation (Natural Habitats, &c.) Regulations 1994, the Wildlife and Countryside Act 1981 (as amended), the Countryside and Rights of Way Act 2000 and Planning Policy Statement 9 (PPS9) Biodiversity and Geological Conservation.

A survey was led by a licensed surveyor following a methodology which would be likely to identify past or current use of the site by bat species.

The site survey on the 26th August, 1st and 7th September 2011 found what was believed to be a transitional roost for Soprano Pipistrelle (*Pipistrellus pygmaeus*) and Common Pipistrelle (*Pipistrellus pipistrellus*) bats. There is also a small roost for Whiskered (*Myotis mystacinus*) or Brandt's (*Myotis brandtii*) bats which was found to be empty.

As bats were identified as roosting at the site in 2011 and these parts of the site will be subject to demolition, a Natural England license will be required to cover work on the building.

This report details the survey methods and impact evaluations

B Introduction

B1 Background to activity/ developments

Planning permission is being sought for partial demolition, extension and refurbishment of Holden Clough.

The existing building has been successively extended and in recent years has fallen into disrepair. Substantial renovation and repair along with demolition of sub-standard past extensions on the site will be undertaken.

A bat survey was requested by the local authority following guidance under Regulation 39 of the Conservation (Natural Habitats, &c.) Regulations 1994, the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000.

B2 Full details of proposed works on site

Several parts of the main roof of the house will be stripped and replaced in order to secure them from further degradation.

A previous, poor quality, two story extension to the rear of the house will be demolished and replaced with a single story structure.

A store and garage will be converted into habitable space.

An EPS license is to cover work on the two story extension to be demolished. Methods to prevent a significant disturbance to bats in other parts of the site and retain the roosts sites will be implemented.

C Survey and Site Assessment

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C1 Pre- existing information of species at survey site

There are records of Whiskered (*Myotis mystacinus*) or Brandt's (*Myotis brandtii*) bats at the development site from 1987. The species, numbers and location of the roost were also made available to the surveyors by the site owner when questioned.

C2 Status of species in the local/ regional area

There are numerous records of seven bat species within 5km of the site on the Envirotech and Lancashire Bat Group datasets.

It is judged that they provide a reasonable picture of bat species found in the local area, which provides optimum conditions for bats for roosting and foraging.

C3 Objective(s) of survey

To ensure that the proposed development does not affect any bat species which is listed under the Conservation (Natural Habitats, &c) Regulations 1994 which implements the EC Directive 92/43/EEC in the United Kingdom the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000 as it is an offence, with certain exceptions, to:

1. Deliberately capture or kill any wild animal of a European protected species;
2. Deliberately disturb any such animal;
3. In respect of bat species, damage or destroy a breeding site or resting place of such a wild animal;

The survey will identify the likely past and or current use of the site by bat species.

Assess the likely impact of the proposed development on these species.

Provide a basis upon which to propose mitigation (if required) for bat species affected by the development.

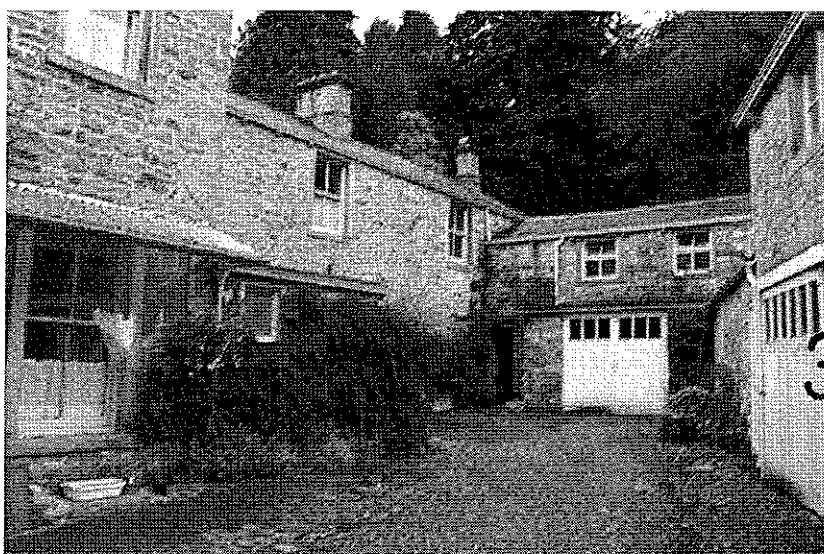
C4 Survey area

The site lies in a rural location on a small private road above Holden.

The building surveyed consists of an historic house which has been extended to the rear and ancillary stores. See figure 1.



Figure 1



Courtyard with main house
to the left and store to the
right, garage to the rear

Very well sealed walls

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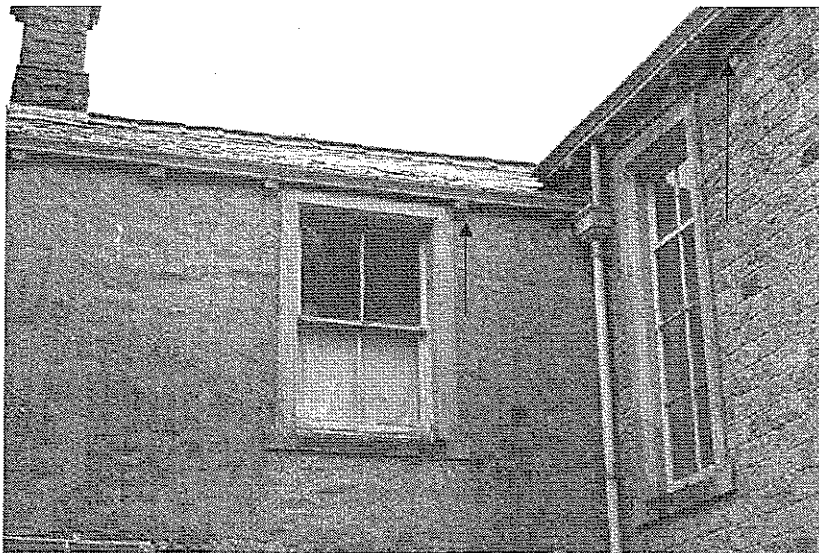
Store with bat roost under
ridge tile to the side of the
chimney

Very well sealed walls



North-east elevation of
main house

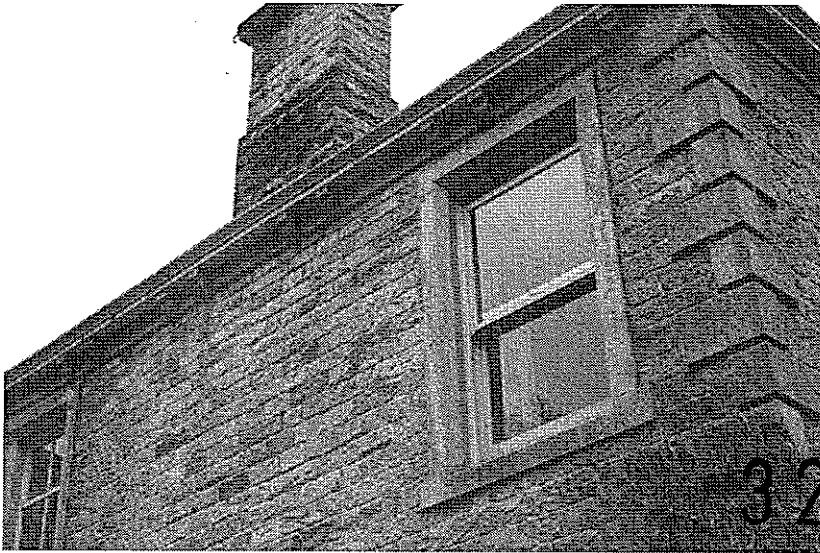
Very well sealed walls



Low numbers of Common and Soprano Pipistrelle bats emerged from the eaves line in two locations on the South-West and North-west elevation here

Arrows show location of two roosts from different angles





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The external walls of the buildings are of dressed stone and very well sealed.



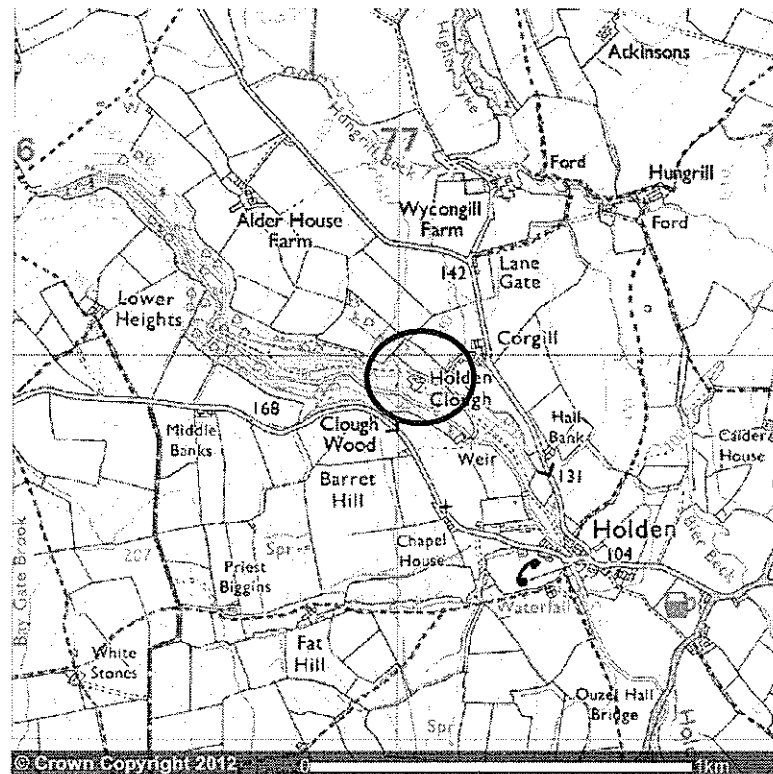
C5 Habitat description, including roost and surrounding area

The site is a detached house and external stores at Clough, Lancashire (SD 395 942) see figure 2. The site is bounded by pasture fields, garden mosaic and broadleaved woodland.

The habitats adjacent to the site comprise pasture fields bounded by low hedges.

It is judged that the most suitable commuting route for bats into and out of the site are the hedgerows and tree line to the North. The surrounding habitat is considered to be of high foraging potential.

An annotated satellite image of the surrounding habitat is shown on figure 3.



(SD 770 499)

Figure 2

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Satellite Image of surrounding area

The site lies to the North-west of Holden.

Pasture fields provide poor quality foraging opportunities for bats adjacent to the site

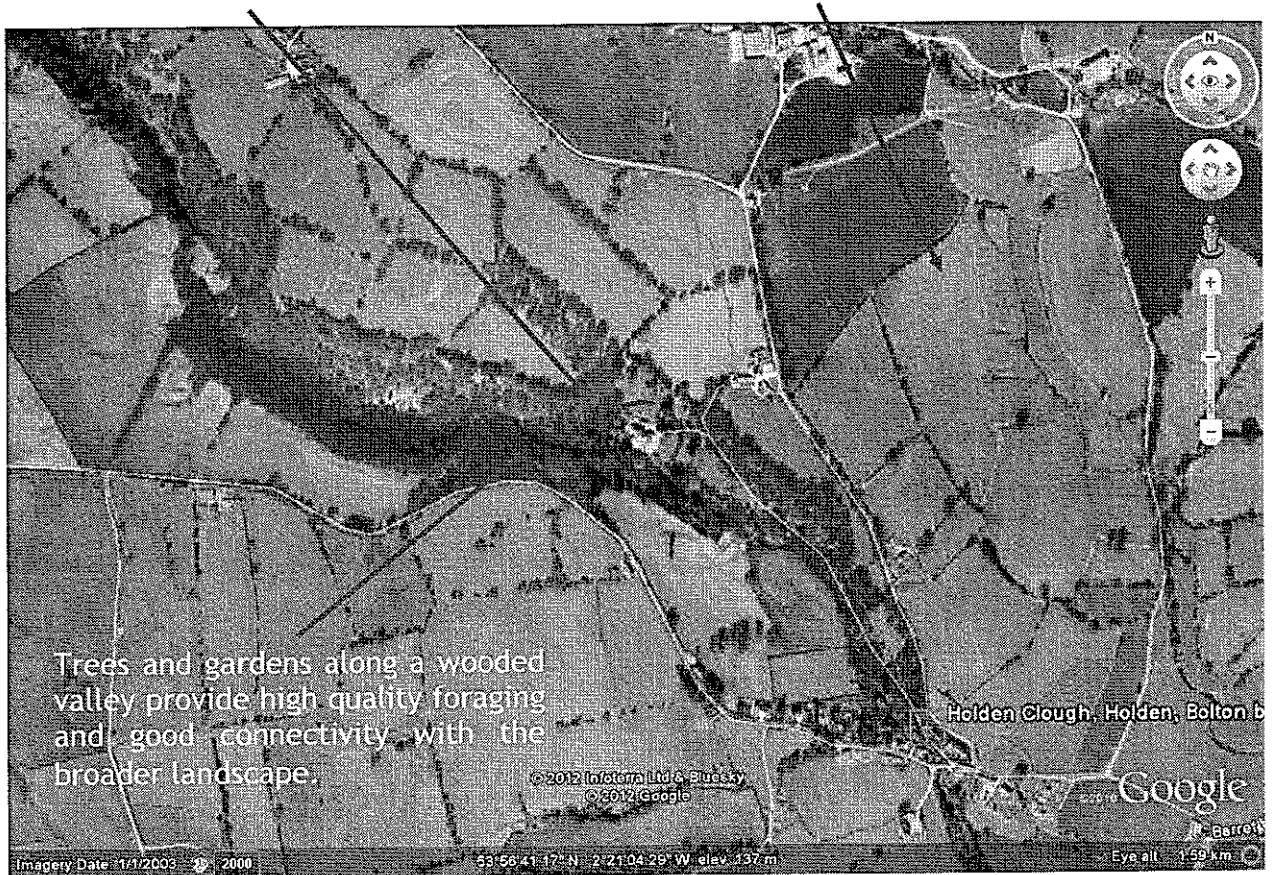


Figure 3

C6 Field survey

C6.1 Methods

- ⇒ Field assessment of adjacent bat feeding and roosting sites made following a review of aerial photography:- This allows us to cross check our interpretation of aerial photography with actual habitat on the ground.
- ⇒ Thorough inspection of the walls and eaves using a torch and 10x40 binoculars to locate potential bat roosts:- Gaps and cracks in the walls or under the eaves may provide access to the building by bats. Where possible all gaps and cracks judged to be of a suitable size for bats to take entry to the building were inspected either from the ground or the top of a ladder. Where appropriate an endoscope was used to fully inspect these gaps internally.
- ⇒ Thorough inspection of the roof using a torch and 10x40 binoculars to locate potential bat roosts:- Gaps under the tiles, ridge lines and flashing may provide suitable roosts for bats. All gaps and cracks judged to be of a suitable size for bats to take entry to the building were inspected either from the ground or the top of a ladder. Using binoculars and a torch to illuminate the gaps underneath the tiles and ridge lines it is often possible to see residual evidence of bats such as droppings, scratch marks or bats themselves.
- ⇒ Thorough inspection of interior and exterior of building to look for signs of bats such as grease or scratch marks, bat droppings and feeding detritus.
- ⇒ Thorough search for detritus associated with bat feeding perches and roosts:- These roosts are usually associated with Brown Long-eared (*Plecotus auritus*) bats in roof voids and under eaves.
- ⇒ Search for detritus associated with bat feeding perches and roosts:- These roosts are usually associated with Brown Long-eared (*Plecotus auritus*) bats in roof voids and under eaves.
- ⇒ Dusk emergence survey- Bat commuting routes and activity in and around the buildings were observed and noted.
 - Passive pre-emergence scan of building made with Bat Box III, Bat Box Duet and Bat Box Griffin detectors set at 17 KHz below potential roost sites. This would detect pre-emergence social chatter from bats.
 - Active scan with bat detectors set at 40KHz made post emergence. The surveyors then move around the site adjusting the frequency of the detector in response to bat sightings.

C6.2 Timing

Date of Visit	Site/ Local area Inspection	Emergence Survey	Surveyors	Weather
26 th August 2011	14:00- 17:00	-	AG	Dry, Sunny, Warm
1 st September 2011	19:00 -19:50	19:50- 21:05	All	Dry, overcast, no wind, warm (14 Degrees Celsius)
7 th September 2011	19:00- 19:40	19:40- 21:00	All	Dry, overcast, no wind, warm (14 Degrees Celsius)

C6.3 Personnel

The survey was carried out by

Mr Andrew Gardner BSc (Hons), MSc, MIEEM, MRICS, CEnv Dip NDEA
Natural England Bat license- All species, All counties

Mr Jack Sykes BSc (Hons), AIEEM
Natural England Bat license- All species, All counties

Mr Raymond Gardner
Unlicensed observer

Mr Tom Sykes
Unlicensed observer

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C7 Results

Background

There are records of seven bat species on the datasets within 5km of the site. There are records of Whiskered (*Myotis mystacinus*) or Brandt's (*Myotis brandtii*) bats from the site but these are more than 24 years prior to the most recent survey.

Having visited the area we are of the opinion that the records on the Envirotech dataset are likely to be under representative of the species of bats in the local area.

From the pre-existing records, a review of aerial photography, a field assessment of the area adjacent to the site and the experience of the surveyor, bat species which may occur adjacent to the site are:-

- Common Pipistrelle (*Pipistrellus pipistrellus*)
- Soprano Pipistrelle (*Pipistrellus pygmaeus*)
- Whiskered (*Myotis mystacinus*)

- Brandt's (*Myotis brandtii*)
- Noctule (*Nyctalus noctula*)
- Daubenton's (*Myotis daubentonii*)
- Natterer's (*Myotis nattereri*)
- Brown Long-Eared (*Plecotus auritus*)

This assessment has been made on the following basis:

Landscapes can be divided into four categories for use by bats; open, closed, edge and water. Each type of landscape category is suitable for use by a different combination of bat species. We would classify the landscape immediately adjacent to the site as "edge", within 1km of the site the landscape could also be described as "edge", "closed", "open" and "water".

Gardens and a woodland belt to the North and South of the site were judged to be the primary commuting routes for bats into and off the site. The local area was judged to be a **high quality foraging area** for bats.

There is a stream through woodland to the West and a large river to the South which would be favourable for bats which feed in "water" landscapes such as Soprano Pipistrelle (*Pipistrellus pygmaeus*) and Daubenton's (*Myotis daubentonii*).

Both Natterer's (*Myotis nattereri*) and Brown Long-eared (*Plecotus auritus*) bats prefer to roost or fly inside enclosed spaces before emerging. There are accessible roof voids in the buildings surveyed and we judge the adjacent environs are sufficiently "closed" to support these species.

Noctule (*Nyctalus noctula*) are rarely found roosting in buildings but have been known to do so. These species of bat disperse widely from their roosts, which tend to be in trees, to feed. We would judge it unlikely they would roost in buildings such as those surveyed but are likely to be found in the wider area.

Whiskered (*Myotis mystacinus*), Brandt's (*Myotis brandtii*) and Common Pipistrelle (*Pipistrellus pipistrellus*) are likely to make use of the fields and hedge lines in the local area to forage although the site is not considered to offer optimal foraging potential.

Site survey

The buildings comprise a series of traditional and more modern buildings with natural stone walls under slate roofs. The buildings are connected to one another but are described separately.

Main House

This is a two story structure under a slate roof which is only partly lined. The walls on all elevations are of fine cut dressed limestone blocks, there is a very fine line of mortar between each block, no gaps or crevices were apparent in any of the external walls. They

are very well sealed on all elevations.

The roof is made of slate and is only partly lined with traditional bitumen roof felt. The entire roof and eaves line could be easily inspected from the ground with close focus binoculars and a 1,000,000 candle power torch. There were no raised slates or gaps visible beneath the ridge line which are of lead flashing. No indication of intensive use of the roof by bats such as lichen staining, grease or scratch marks could be found. The roof line under the eaves was fully sealed other than a small section on the North elevation where a more modern extension ties into the building. Here a narrow gap along the roof line occurs which would not be large enough for anything other than small numbers 1-10 bats. One or two Pipistrelle Sp. droppings were located on the walls around this area.

Internally the roof voids are open, the main roof void is lit by glass roof lights which allow light into the interior space. The small roof voids at the eaves are enclosed and dark but cluttered. No indications of extensive or intensive use by bats could be found in any location. There was no indication of current use of the voids for roosting.

House Extension

This is a two story extension to the North-west of the main house. The walls on all elevations are of dressed limestone, there is a larger amount of mortar between each stone than the main house but all areas of the walls are in good condition. No crevices were apparent in any of the external walls. They are very well sealed on all elevations.

The roof is made of slate and is unlined. The entire roof and eaves line could be easily inspected from the ground with close focus binoculars and a 1,000,000 candle power torch. There were no raised slates or gaps visible beneath the ridge tiles. No indication of intensive use of the roof by bats such as lichen staining, grease or scratch marks could be found. The roof line under the eaves was fully sealed other than a small section on the West elevation where it ties into the Main House. Here a narrow gap along the roof line occurs which would not be large enough for anything other than small numbers 1-10 bats. One or two Pipistrelle Sp. droppings were located on the walls around this area.

Internally the roof voids are open and in darkness. There are partition walls through the roof void separating it into compartments. Access to each compartment is possible via a narrow gap in each wall at the eaves line. There were no bat droppings found in these roof voids. There was no indication of current use of the voids for roosting.

Garage

This is a two story extension to the North-east of the main house extension. The walls on all elevations are of dressed limestone, there is mortar between each stone which is in good condition. No crevices were apparent in any of the external walls. They are very well sealed on all elevations.

The roof is made of slate and is unlined. The entire roof and eaves line could be easily inspected from the ground with close focus binoculars and a 1,000,000 candle power torch. There were no raised slates or gaps visible beneath the ridge tiles. No indication of intensive use of the roof by bats such as lichen staining, grease or scratch marks could be found. The roof line under the eaves was fully sealed. This part of the site is in heavy

shade and built into a bank which would make it suboptimal for use by bats.

Store

This is a two story extension to the East of the main house. The walls on all elevations are of dressed limestone, there is a mortar between each stone which is in good condition. No crevices were apparent in any of the external walls. They are very well sealed on all elevations.

The roof is made of slate and is unlined. The entire roof and eaves line could be easily inspected from the ground with close focus binoculars and a 1,000,000 candle power torch. There is a gap visible beneath the ridge tile on the Southern end of the roof at the apex of the roof. No indication of intensive use of the roof by bats such as lichen staining, grease or scratch marks could be found. There were droppings visible beneath the ridge tile externally.

Integrally a small roof void was found on the South side of the store, below the raised ridge tile. Droppings were also visible within the roof void where they had dropped through from the ridge tile above. No bats were found within the ridge tile gap or roof void. Droppings numbered approximately 200-300 and were consistent with Whiskered or Brandt's bats being larger than Pipistrelle Sp, and not twisted such as Brown Long-Eared.

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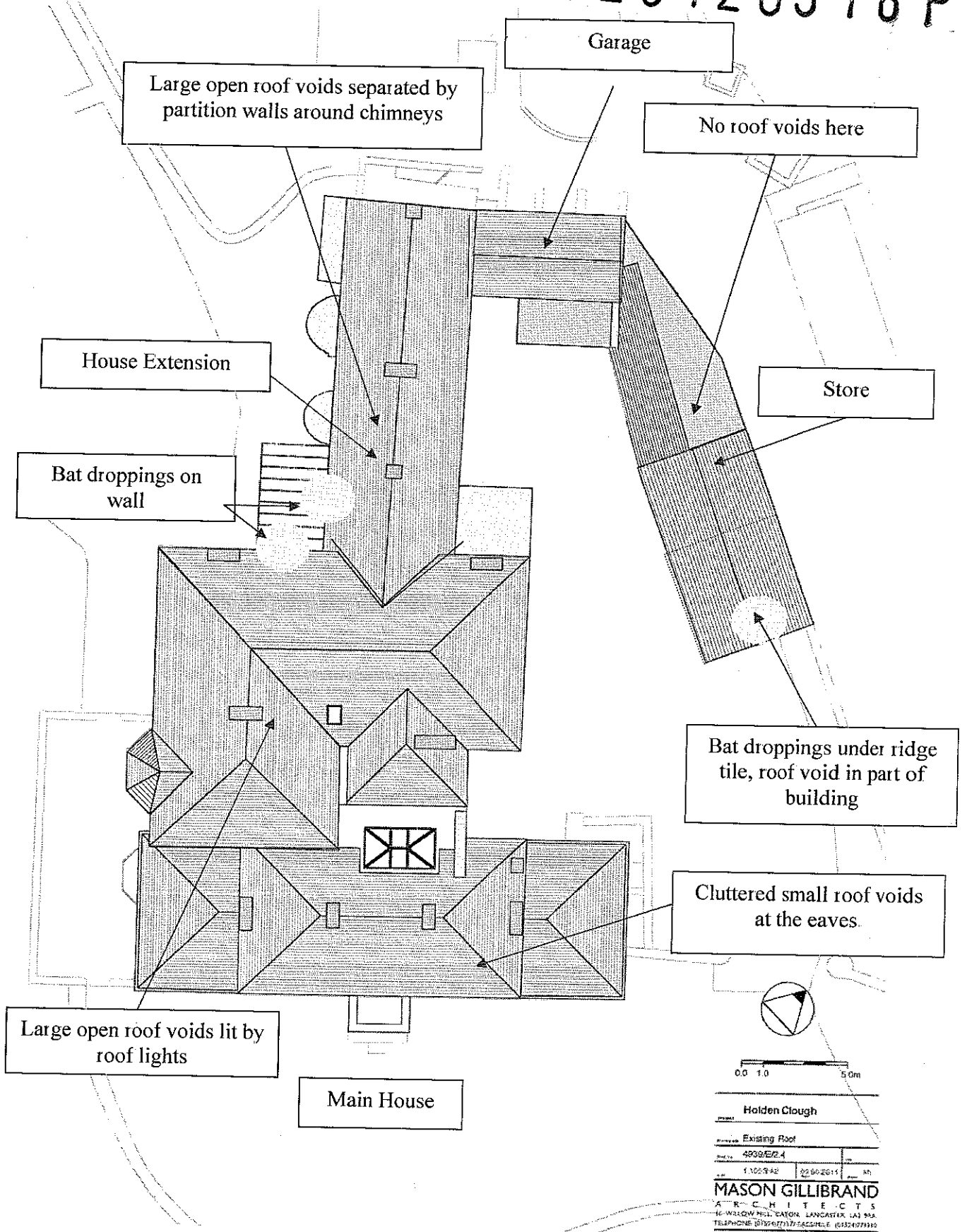


Figure 4

Emergence surveys

1st September 2011

Conditions for an emergence survey on the 1st September 2011 were judged to be good, with a starting temperature of 14 degrees centigrade and no wind.

The survey commenced 5mins before sunset (19:50), with light levels at 400+ Lux. Light levels were monitored throughout the survey period to gauge likely bat emergence times.

Surveyors were positioned around the site where all possible roost locations could be monitored and bat flight lines into and out of the site could be monitored. Surveyors were in contact with each other by 2-way radio and would communicate bat activity to each other. Bats could therefore not enter or leave the site without being recorded and their presence made known to all members of the survey team.

At 20:10 two Common Pipistrelle bats emerged from the main house below the eaves on the North-west elevation and then were observed foraging amongst the trees along the North boundary of the garden. The roost entrance/ exit point and species of bat were consistent with the evidence found during the daytime inspections. Light conditions at this time were around 40lux.

At 20:15 two Soprano Pipistrelle commuted into the site from the South up the stream along the woodland and were foraging to the West of the house.

At 20:25 One Whiskered or Brandt's bat commuted into the site from the South along the woodland to the West and foraged around trees to the North.

Foraging by no more than 4 Pipistrelle Sp. bats continued until the end of the survey period 21:05. Bat echolocation was in the 50Khz range. Differentiation between Common and Soprano Pipistrelle Sp. could not be made. It is possible and considered likely that both species could and do use this site. Catching bats for species identification, based on the low number of bats present was not considered practical or necessary for determining the mitigation necessary.

At this time light levels had dropped below 0.2lux and as there was no ambient or artificial light at the site, bat flight lines could not be observed. Late emerging species were judged unlikely to be present at the site based on the daytime inspections. It was also judged likely they would have emerged from the site if they were present based on light levels.

7th September 2011

Conditions for an emergence survey on the 7th September 2011 were judged to be good, with a starting temperature of 14 degrees centigrade and no wind.

The survey commenced 5mins before sunset (19:40), with light levels at 400+ Lux. Light levels were monitored throughout the survey period to gauge likely bat emergence times.

Surveyors were positioned around the site where all possible roost locations could be monitored and bat flight lines into and out of the site could be monitored. Surveyors were in contact by 2-way radio.

At 20:00 two Common Pipistrelle bats emerged from the house extension below the eaves on the South-West elevation and then were observed foraging amongst the trees along the North and West boundary of the garden. The roost entrance/ exit point and species of bat were consistent with the evidence found during the daytime inspections. Light conditions at this time were around 35lux.

At 20:10 two Soprano Pipistrelle and a Common Pipistrelle commuted into the site from the South up the drive to the house along the woodland and were foraging to the West and North of the house.

Foraging by no more than 3 Pipistrelle Sp. bats continued until the end of the survey period 21:00. Bat echolocation was in the 50Khz range. Differentiation between Common and Soprano Pipistrelle Sp. could not be made. It is possible and considered likely that both species could and do use this site. Catching bats for species identification, based on the low number of bats present was not considered practical or necessary for determining the mitigation necessary.

At this time light levels had dropped below 0.2lux and as there was no ambient or artificial light at the site, bat flight lines could not be observed. Late emerging species were judged unlikely to be present at the site based on the daytime inspections. It was also judged likely they would have emerged from the site if they were present based on light levels.

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Figure 5

C8 Interpretation and evaluation

C8.1 Presence/ absence

Evidence of current use of the site by bats was recorded during the survey. A small scattering of droppings were found internally beneath the ridge tile of the store. No bats were observed in this roost but there are records of Whiskered and Brandt's bats from the site in 1987 and the droppings found are indicative of these species.

Small numbers of Common and Soprano Pipistrelle bats were observed emerging from the eaves line on the North-west and South-west elevation of the Main House and House Extension. There was no evidence to suggest that the buildings are being used by a large number of bats or as a maternity roost.

Externally the roof and walls are well sealed. The roosting potential of the site is limited. In effect all those gaps which are suitable and accessible to bats are being used.

It is considered use of the Main House and House extension would at most opportunistic and transitory. Use of the ridge tile gap on the store may be more habitual, the number of droppings present and absence of bats in late August/ early September would not generally be indicative of a maternity roost. Whiskered/ Brandt's roosts are however smaller and so dispersal post breeding can occur faster than large Pipistrelle roosts.

C8.2 Population size class assessment

From a review of adjacent habitat the maximum number of bats that are likely to use the area around the site is of the magnitude 100-1000 (medium).

C8.3 Site status assessment

Whilst the site itself is unlikely to be used as a roost by a significant number of bats, there is use of the adjacent landscape which provides high quality foraging opportunities. The roosting potential of the site is low, hence bats are likely to rely on a number of roost sites in buildings and trees in the local area.

We consider this site is not a maternity roost for Pipistrelle Sp, and will be used by a low number of bats on an opportunistic or transitory basis, It is therefore likely that the site has a low significance for these species of bats.

Whiskered or Brandt's bats may use the site as a maternity colony but such use is unproven. It is certainly used in the summer by a small number of this species. The significance of roost for these species is higher due to their scarcity in the local area.

Using Natural England guidelines, Mitchell-Jones (2004) we would regard the disturbance and or loss of the roost to individual Pipistrelle species bats at the site to be low in respect of the national and regional significance and distribution of these species. We consider the disturbance of Whiskered or Brandt's bats at the site to be low-medium (Figure 6)

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Conservation significance	Roost status		Mitigation/compensation requirement (depending on impact)	
Low	Feeding perches of common/rarer species		Flexibility over provision of bat- boxes, access to new buildings etc. No conditions about timing or monitoring	
	Individual bats of common species			
	Small numbers of common species. Not a maternity site			
	Feeding perches of Annex II species		Provision of new roost facilities where possible. Need not be exactly like-for-like, but should be suitable, based on species' requirements. Minimal timing constraints or monitoring requirements	
	Small numbers of rarer species. Not a maternity site			
High	Hibernation sites for small numbers of common/rarer species		Timing constraints. More or less like-for-like replacement. Bats not to be left without a roost and must be given time to find the replacement. Monitoring for 2 years preferred	
	Maternity sites of common species			
	Maternity sites of rarer species			Timing constraints. Like-for-like replacement as a minimum. No destruction of former roost until replacement completed and usage demonstrated. Monitoring for at least 2 years.
	Significant hibernation sites for rarer/rarest species or all species assemblages			
	Sites meeting SSSI guidelines			
	Maternity sites of rarest species		Oppose interference with existing roosts or seek improved roost provision. Timing constraints. No destruction of former roost until replacement completed and significant usage demonstrated. Monitoring for as long as possible	

Pipistrelle Sp.

Whiskered' Brandts

Pipistrelle Sp.

Whiskered' Brandts

Figure 4. Guidelines for proportionate mitigation. The definition of common, rare and rarest species requires regional interpretation.

Figure 6

C8.4 Constraints

We judge that the site survey is sufficient to address the risk to bats at the site based on the species present in the local area, construction of the bungalow and nature of the proposed work. **The level of survey effort accords with the recommendations of BCT (2007).** It is considered that additional survey effort at this time is unlikely to provide additional useful information about the site.

D Impact Assessment Without Mitigation

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D1 Short term Impacts: Disturbance

We will consider a worst case scenario in addressing potential impacts at the site without mitigation.

A maternity or gathering roost was not found at the site during the survey. It is possible that such a roost occurs in the store where Whiskered or Brandt's bats are thought to occur. This building is isolated from the main development, being on the opposite side of the courtyard. Work to the main house and demolition of the garage will likely not lead to a significant disturbance. There is a requirement to re-roof and incorporate the roof void in this building into the living space below. This work would disturb the roost, potentially significantly, if it were in use at the time. Work over the winter September to March would not result in a significant disturbance.

Bats commuting over and around the site from roosts in the local area to feed may be disrupted if high powered artificial illumination were used at the site at night and directed upwards.

As demolition of the buildings will destroy bat roost sites on the South-west side of the House Extension and this is in close proximity to the roost on the West side of the Main House, there is the potential for disturbance to bats through the summer when these roosts could be used. This is unlikely to be significant based on the number and species of bats known to use the site. If work were to be undertaken in winter there would be no disturbance to bats. The disturbance of these roosts sites in the local and national context, using Natural England Guidelines, Mitchell-Jones, (2004) would be defined as low.

In summary, if work were undertaken over the summer to the store, there may be a significant short term disturbance impact to the roost under the ridge tile. Work in the Winter on the store would not disturb bats. If work were undertaken to the Main House and House Extension in the summer there is unlikely to be a significant disturbance.

D2 Long term Impacts: Roost Modification

There will be negligible impact to the roost identified at the site in the Main House. It is currently not in shade as a result of the House Extension, and the replacement building, being single story, will not block or alter flight lines into or out of it. Overall it is not expected that the continued ecological functionality (CEF) of this roost will be altered.

The roost under the ridge tile will be partly modified in that it will need to be enclosed and boxed out under the rafters. The roost entrance/ exit point will remain the same, as the roof is currently unlined, the roost size will be increased and we consider improved even without mitigation. Care must be taken however in boxing the roost out in order that long term management issues in respect of possible urine penetration of the new ceiling do not occur. Overall it is not expected that the CEF of this roost will be altered.

D3 Long term Impacts: Roost Loss

There will be the loss of a transitional, bachelor or non breeding female roost sites under the eaves on the South-west elevation of the House Extension. The loss of these types of roost, due to the lack of other buildings in the local area, offering similar roosting opportunities, is low-medium.

Compensation for loss of this roosting site is difficult to achieve within the external walls and eaves line of the building due to the nature of their construction.

There is a very low possibility of loss of hibernation sites.

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House Extension demolished transitional, bachelor bale or non-breeding female roost **lost here**. Low- medium significance.

Disturbance unlikely to be significant at any time of the year

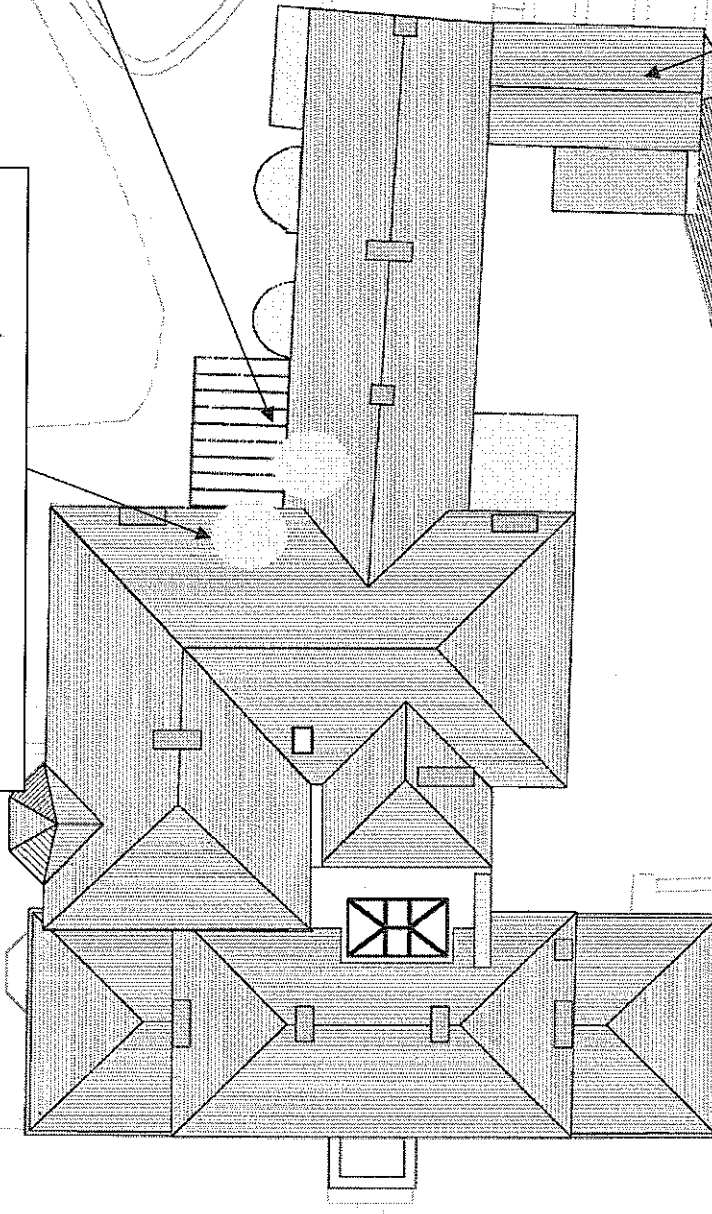
Work to demolish this section of the building unlikely to disturb the nearby roost at anytime of year

Main House roof to be replaced. Transitional, bachelor bale or non-breeding female roost **retained** here. Low- medium significance.

Disturbance unlikely to be significant at any time of the year. CEF not affected

Possible maternity roost **modified** here CEF not affected. Low- medium significance.

Disturbance unlikely to be significant if work to roof and chimney undertaken in winter



0.0 10 5.0m

Halden Clough

Existing Roof

4038/E2.1

1:100 R42

02/05/2011

30

MASON GILLIBRAND

ARCHITECTS

10, MILLER HILL, LANCASTER, LA1 9PQ

TELEPHONE 01524 671177 FAX 01524 671172

Figure 7

D4 Long Term Impacts: Fragmentation and isolation

There is unlikely to be a disruption to commuting routes or foraging areas at the site. The primary foraging and commuting route next to the site was judged to be the adjacent woodland. This will not be affected by the development. The profile of the building will not be altered in such a way as commuting routes are blocked by re-development. It is highly unlikely there would be habitat fragmentation/ isolation from the proposed work.

D5 Post activity interference impacts

An increase in artificial illumination at the site caused by increased occupation of the buildings is unlikely to result in post activity interference impacts at the site.

Feeding activity is likely to be concentrated over the fields and woodland adjacent to the site.

D6 Predicted Scale of impacts

There will not be loss of a gathering and or maternity roost at the site. Such a site will be modified but this is **not likely to alter its continued ecological functionality**.

There will be loss of a transitional, lek, bachelor male and or non breeding female roost at the eaves of the house extension. Such roost sites often serve several functions. This loss is considered to be of low-medium significance.

There will be disturbance to another transitional, lek, bachelor male and or non breeding female roost at the eaves of the main house. Such roost sites often serve several functions. This disturbance is not considered likely to be significant at any time of year.

There is unlikely to be a disruption to commuting routes or feeding areas at the site.

Using Natural England guidelines, Mitchell-Jones (2004) we would regard the disturbance and or loss of the roost to Pipistrelle Sp. bats at the site to be low in respect of the national and regional significance and distribution of these species.

Overall at the local level we would regard the proposed development as being low-medium impact.

E Land Ownership

E1 Mitigation site ownership

The site will be entirely within the management control and ownership of the client.

F References

Information from the following sources has been used in preparing the survey report.

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G Annexes

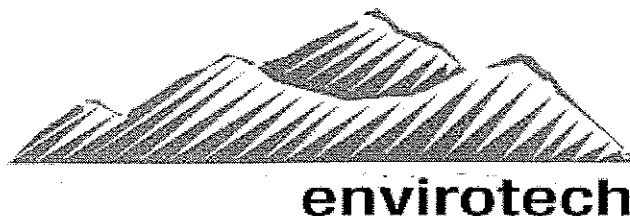
G1 Records

Daubentons (1 juv F) and Brandts ("several counted") at Holden Clough (SD770499) from 1987.

A grounded Pipistrelle from SD768441 in June 2005

A record for droppings at St Peter and St Paul Church (SD786494) from 1990.

Stone Lea
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Delivery Information

Holden Clough, Holden

BY

Mr Andrew Gardner BSc (Hons) MSc MIEEM MRICS CEnv Dip NDEA

320120318P

BAT/11/1211
DI

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Director: A Gardner BSc (Hons), MSc, MIEEM, MRICS, CEnv Dip NDEA
Registered Office: Stone Lea, Sedgwick, Kendal, Cumbria, LA8 0JP
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RICS

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A Mitigation and Compensation

A1 Summary and Compensation

Three surveys were led by a licensed surveyor following a methodology which would be likely to identify past or current use of the site by bat species.

The site survey found what was believed to be a transitional, non-breeding female or bachelor male roost for between one and three Pipistrelle Sp. bats under the eaves line of the Main House and House Extension.

There is also a likely roost for Whiskered or Brandts bats under a ridge tile of a store. This roost may be a maternity roost but no bats were present in it at the time of the survey.

As bats were identified as roosting at the site in 2011, and a roost will be lost, a Natural England license will be required to cover work on the building.

This report details the survey methods and impact evaluations.

Temporary replacement roosts will be created by erecting bat boxes in the surrounding trees prior to demolition commencing.

The bat boxes which are in ideal habitat will provide both short and medium (1-10 years) term roosting provision for bats.

In addition new roosting crevices will be created along the ridge line of the buildings when they are re-roofed which will provide long term roosting opportunities for all of the bat species found in the local area. Brown long-eared bats (not found at the site but known to use the local landscape) will be able to utilize both the bat boxes and crevices, which are in proximity to dense woodland/ vegetation where light sampling can take place.

The CEF of the Whiskered/ Brandts roost will be maintained and disturbance will not be significant via the appropriate timing of work. The CEF of the Pipistrelle roost in the main house will be maintained by retaining the roost. No timing restrictions are required in respect of this roost as a significant disturbance to small numbers of bats within it is unlikely to occur at any time of year.

A Natural England license will be required only for work to demolish the House Extension, where a bat roost will be lost. Methods statements in respect of working around the roosts to be retained are included here for completeness and to support a planning application. Consideration of the "three tests" in respect of obtaining a Natural England license should only be applied in respect of that work which is licensable (the Pipistrelle roost to be lost).

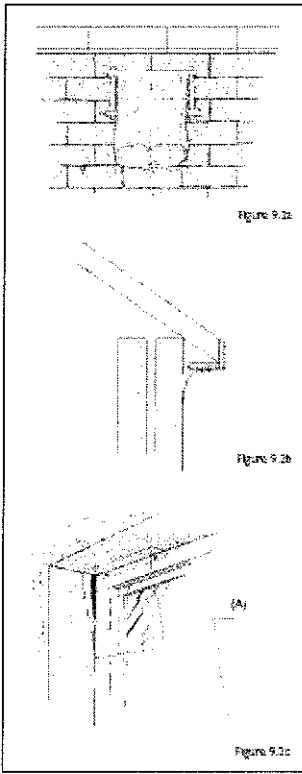
This report details the proposed working methodology and mitigation strategy.

B Works to be undertaken by the Ecologist or suitably qualified individual

B1 Capture and exclusion

Pipistrelle Roosts

1. No capture of bats is regarded as being necessary at this site. Once work on the building commences, when bats are already absent, bats will be dissuaded from using the identified roosts. We do not consider the buildings will offer hibernation sites for bat species.



2. A prestart emergence survey and or an intrusive inspection of the site using an endoscope will be undertaken prior to work commencing to confirm the absence of bats by the ecologist for this project. If bats are found, exclusion will be required.

If a small number of bats are present (<10), a suitably qualified individual will carry out a controlled exclusion using one way exclusion apparatus on the roost entrances until such time that all bats have left. This will comprise a standard plastic bag type exclusion device pinned over the roost entrance as detailed in the Bat Workers Manual Page 89 Shown opposite. A repeat emergence survey or endoscopic examination will confirm the absence of bats.

Exclusion apparatus will be left in situ for 7 days, work will then commence immediately in the presence of a licensed bat surveyor to remove the slates by hand.



Whiskered/ Brandts roost

3. No capture of bats is regarded as being necessary at this site. Once work on the building commences, when bats are already absent, bats will be dissuaded from using the identified roost. We do not consider the buildings will offer hibernation sites for bat species.
4. A prestart emergence survey and or intrusive inspection of the site using an endoscope will be undertaken prior to work commencing to confirm the absence of bats by the ecologist for this project. If bats are found, exclusion will be required. **This will not occur in the period April-August due to the potential for this to be a maternity roost.**
5. If a small number of bats are present (<10), a suitably qualified individual will carry out a controlled exclusion using one way exclusion apparatus on the roost entrances until such time that all bats have left. This will comprise a standard plastic bag type exclusion device pinned over the roost entrance as detailed in the Bat Workers Manual Page 89 Shown opposite. A repeat emergence survey or endoscopic examination will confirm the absence of bats. Exclusion apparatus will be left in situ for 7 days, work will then commence immediately in the presence of a licensed bat surveyor to remove the slates by hand.

C Works to be undertaken by the Developer/ Land Owner.

C1 Bat Roosts

The mitigation strategy is designed to meet the test of there being no adverse effect on the favourable conservation status of the bat population affected by the proposed work. The site survey has identified the loss of a transitional, bachelor male or non breeding female roosts at the site for Pipistrelle bat species. A second roost used for the same purpose and by the same species will be retained in the scheme.

A Whiskered or Brandts roost will be modified, but its CEF will be unaffected.

Mitchell-Jones (2004) indicates for the number and species of bats present, mitigation can be provided with flexibility over provision of batboxes, access to new buildings etc. No conditions about timing or monitoring are required.

General Provisions

General Provisions

6. Be aware that bats may be present around the site, advise contractors accordingly.
7. Be observant during demolition for bats and or droppings in wall cavities. Bat droppings are black or brown and the size of grains of rice. Unlike mouse droppings which are hard, bat droppings will crumble between the fingers if squeezed.
8. Be observant during demolition work for bats which may use the building if the new areas of the roof are exposed and left open over night. Bats are opportunistic and may make use of gaps opened up during work overnight.
9. If it is necessary to remove a bat to avoid it being harmed, gloves should be worn. It should be carefully caught in a cardboard box and kept in the dark in a quiet place until it can be released at dusk near to where it was found, or moved to a bat box by the ecologist for this project.

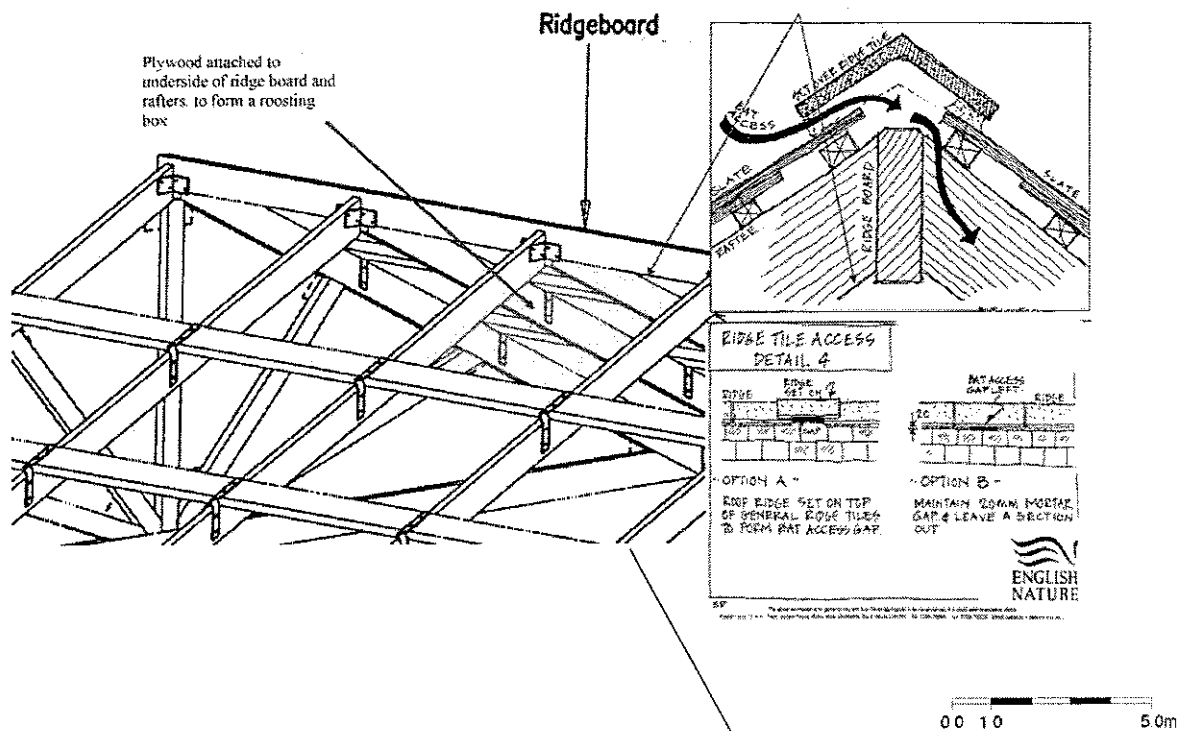
10. If bats are found, all work will stop and the ecological consultant for this project Andrew Gardner Tel: 0781 2081320 will be informed prior to work re-commencing.
11. New roosting provision will be created by erecting 4 bat boxes in the trees around the edge of the site. These will be sufficiently far from the ground (+2.5m) that post activity disturbance impacts and light spill are minimized. These bat boxes will be erected prior to the commencement of work and will act as receptor sites for any bats found during work.

Bat boxes in trees, away from the house, will also minimize light spill and disturbance from the residence. Only low numbers of bats are likely to have used the site in the past and consequently, the provision of bat boxes is considered a reasonable level of mitigation at the site and accords with the recommendations of Natural Englands publication "Bat Mitigation Guidelines" Mitchell-Jones (2004)

Whiskered/ Brandts

12. Work to remove the chimney adjacent to the roost will not occur in the period April-August inclusive. The roof around the removed chimney will need to be repaired and replaced. A new roost access point will be formed in the same style as that to be lost, this comprises a raised ridge tile. The underside of the rafters below the ridge tile will be boarded to create an enclosed roosting box. Part of the wall top, where the chimney is to be removed may also be incorporated into this area and or bats could be allowed access to the old, redundant chimney flue.

This will maintain the Continued Ecological Functionality of the roost. A significant disturbance to bats will not occur due to the timing of work.



Existing main house roof to be renewed. Existing slate to be retained and re-used wherever possible. New stone parapet to be installed.

New gable window with stone surround and central mullion to match existing main house window type.

Existing doors to be removed and the opening made good with matching stone reclaimed from the demolished outbuildings.

New 'underground' garages, with coursed stone facing and new stone coping.

Existing outbuilding to be taken down. Any suitable stone to be re-used.

Existing chimney stack to be taken down and the roof and walls made good.

New gable window opening to be formed.

Existing window opening to be enlarged to form door.

Concrete canopy to be removed.

West Elevation through courtyard

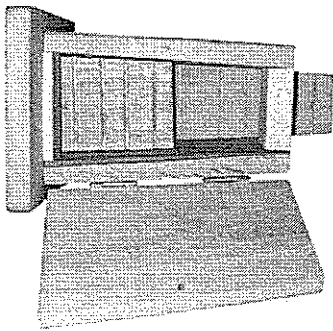


Pipistrelle species

13. In addition to the provision of bat boxes which will provide mitigation for the loss of the bat roosts during the demolition and construction phase of the project. Retain or create at least 2 gaps along the ridge line which allow access to the top of the ridge board of the buildings during re-roofing.

Void dwelling bats would also be able to utilize this gaps and light sample in the adjacent heavily vegetated woodland and garden areas. This will provide compensation for the single roost lost during demolition.

14. The existing gap along the roof line of the main house will be retained when the roof is stripped and replaced. This will maintain the Continued Ecological Functionality of the roost. A significant disturbance to bats will not occur due to the low number of bats present at any time of year.



Oak Double Chamber Bat Box

Bat boxes in trees

Roost lost during demolition

New ridge line roosts could be created here

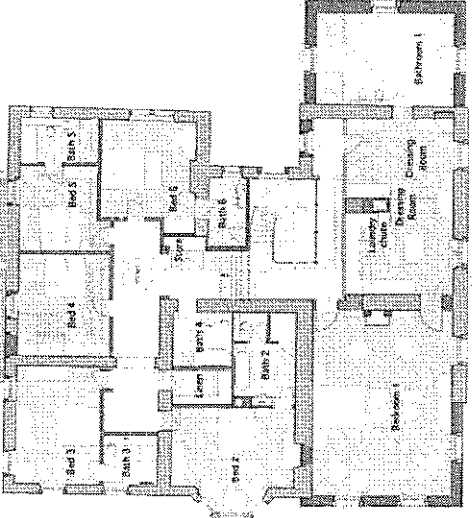
Roost retained during re-roofing

KEY

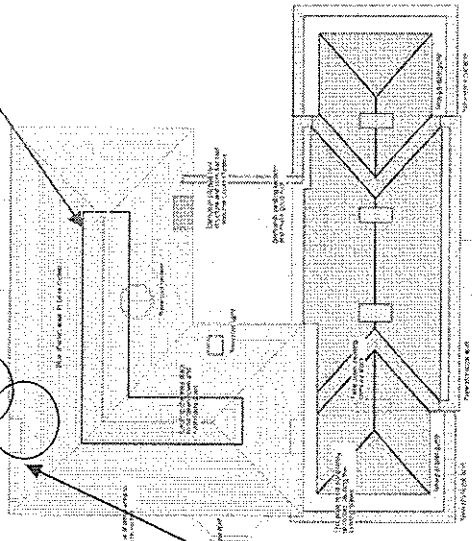
- Existing structure
- Proposed structure
- Proposed roofline
- Proposed roofline

Roost retained under ridge tile for Whiskered/ Brandt's

underground garage (basement)



FIRST FLOOR PLAN



1/4" = 1' - 0"



0' 0" 1' 0" 2' 0" 3' 0"

Hidden Clough

Proposed First Floor and Roof Plans

DATE: 10/1/14

PROJECT: 10/1/14

MASON GILLIBRAND

10/1/14

D Post Development Site Safeguard

D1 Habitat/ Site Management and Maintenance

The bat boxes and crevices under the ridge line shall not be altered or destroyed without the appropriate statutory mechanisms being followed.

The site will remain in the management control of the current owners who will be responsible for site management.

D2 Population monitoring

Passive monitoring of the permanent roosts and bat boxes shall be undertaken to ensure they remain in a suitable condition

D3 Mechanism for ensuring delivery

On the basis of survey information, specialist knowledge of the species concerned and understanding of the planning and legal system, we consider that there is no requirement for the use of a mechanism to ensure delivery of the recommendations of this report other than that which is already required by statute under a Natural England license.

E Timetable of works

Indicative timetable

Date	Work
July- August 2012	Emergence survey at site to reconfirm use. Erection of bat boxes.
September 2012	Site inspection, exclusion apparatus installed. Demolition of buildings.
September 2012- April 2013	Chimney near Whiskered/ Brandts roost removed, roost reformed
September 2012 – June 2013	Re-roofing of main house, new ridge line gaps created
July 2013	License return

Yew Tree and Gardens

Client: Mason Gillibrand Architects.

- Holden Clough, Bolton by Bowland, Clitheroe.

Tree Report for Proposed Residential Renovation

320120318P

Prepared by
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TREE SURVEY

1. Site

320120318P

a. Site Description

The survey area comprises the immediate surroundings of the property Holden Clough. This area consists of established gardens, un-maintained amenity tree plantings and semi-natural woodland. Holden Clough is a detached country house, the eastern aspect of the property is towards open maintained lawned areas, to the south a steep banking descends to the watercourse, this banking has mature tree cover of both native and non-native species. The gardens to the rear (west) of the property are bounded by an area of un-maintained woodland, tree stock in this area mainly comprises of mature non-native conifers with additional self seeded native broadleaf individuals.

The north of the property comprises of a group of semidetached outbuildings leading to the entrance driveway. This driveway is bounded by further plantings of non-native conifers. Many areas of the survey site and wider surrounding area would appear to have been planted with coniferous specimens during the 19th century, a large number of these trees are now showing significant defects or are in poor locations for their present size.

See Appendix1 and Appendix 2 for detailed tree list and site layout details. The site was surveyed on 27/03/12, tree heights were estimated via use of clinometer (Suunto PM-5) measurements of DBH taken at 1.5m height and crown spread was taken by ground measurements. All observations were ground based, where more detailed inspection is required it is noted in Appendix1; Tree Schedule. Positions of trees and crown extents taken from site survey and ground measurements. Weather conditions were bright with no wind.

2. Existing Structures and Proposed Development

a. Existing Structures

At the time of survey there are a number of permanent structures within the surveyed area. These structures comprise of the main house building of Holden Clough an attached two storey outrigger wing to the northeast of the property and a semi-detached group of out buildings to the north of the main house. These buildings sit within established gardens in the centre of the surveyed area and are surrounded by hard surfaced pathways and a vehicular access route which are mainly of gravel surfacing.

b. Proposed Development

To the best of our knowledge the current development proposal undergoing design consideration is for the renovation of the existing house and the replacement of the dilapidated two storey outrigger wing.

3. Tree Preservation Orders and Conservation Areas

a. Site Description

We understand that the site is not situated within a conservation area nor are we aware of any existing Tree Preservation Orders covering the site. The status of all the trees on the site would need to be confirmed and appropriate permissions obtained prior to any works being undertaken on the surveyed trees, as listed in Appendix 1: Tree Schedule.

4. Tree Constraints

a. Overview

The need to survey and report on the condition and useful life expectancy of existing trees has been requested by Ribble Valley Borough Council to accompany a planning application for the proposed development.

b. Proposed Development

As can be seen from Appendix 1; Tree Schedule, Appendix 2; Tree Location; trees on the site are located throughout the surveyed area but predominantly towards the edges of the surveyed areas or adjacent to the boundaries of the site.

With regards to trees located adjacent to the current entrance drive:

Tree references T1 and T2 are located adjacent to the gravel surfaced entrance drive and parking area. Tree reference T1 is not recommended for retention due to poor form, condition and previous significant failures. Tree reference T2 is a mature *Sequoia sempervirens*, this tree is multi-stemmed in form and has a Root Protection Radius (RPA) of 14.5m. Due to the open ground to north and east of T2, the existing driveway and the distance from the building footprint T2 should be unaffected by any proposed development.

Tree reference T3 should be unaffected by any proposed development due to its location.

With regards to trees located to the south of the existing building.

Tree reference T4 is located at a sufficient enough distance from the existing building so as to be unaffected by the proposed development. Due to the topography of this area it is also situated considerably lower than the existing building.

Tree reference T5 may be retained within any landscaping scheme but would benefit from remedial works; as detailed in Appendix 1, Tree Schedule.

Tree reference T6 and T7 are smaller specimens and will be unaffected by any proposed development.

Tree reference T8 is located at a significant distance from the proposed development; however, this tree is recommended for removal irrespective of any development due to its size, condition and location.

With regards to trees located to the east of the proposed development.

27/03/2012

4.b. Proposed Development (cont)

Tree references T9 to T14 are located at a sufficient enough distance from the proposed development so as to be unaffected by it.

Tree references G1 are located at a sufficient enough distance from the proposed development so as to be unaffected by it.

Tree references T15 to T27; a number of trees within this group have clearly identified defects (see Appendix 1 for details) and are therefore unsuitable for retention in any proposed development. For example, Tree reference T24 is located adjacent to the rear upper garden area of the existing site layout, this tree is the remaining stem of a failed co-dominant pair and has a large decay cavity and significant lean towards the existing property and the proposed development.

Trees marked for retention in this area e.g. T21 are located a significant distance from any proposed development and are situated on ground which is more than 4m higher than the level on which any proposed development would take place.

Details of all defects and work recommendations are contained in Appendix1, Tree Schedule.

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c. Existing structures

As previously noted there are existing structures within the surveyed areas. These structures comprise of the main house building of Holden Clough an attached two storey outrigger wing to the northeast of the property and a semi-detached group of out buildings to the north of the main house. As further noted in Section 4b. many of the trees in the immediate vicinity of the existing property have significant identified defects and are of considerable size. As such many of these trees are unsuitable for retention irrespective of any proposed development. We further note the condition, age and form of trees which are unaffected by the proposed development i.e. G1 and T12-T16 as many of these trees are located at a considerable distance from the existing structure and garden but due to their size (30m+), in the event of failure could have a direct impact upon the surroundings of the property.

Recommendations for works and monitoring are contained in Appendix 1: Tree Schedule.

5. Tree Constraints – Development

Due to the nature of the proposed development and the location of the surveyed trees it should be possible to retain all significant trees marked for retention and ensure protection of same during the construction process. Therefore no significant constraints should be placed upon the proposed development by the retention of suitable trees.

To protect the existing trees an indicated position for two Tree Protection Fences of the type specified in BS3857:2005.9.3 is shown on Appendix 2; Tree Location Plan. The purpose of this fencing is to prevent unnecessary root damage or stem damage in the case of Tree references T2 and T4-T5.

Any such fencing would merely be required to protect the crowns and stems of retained trees from above ground damage as it unlikely that any below ground works will be required near the rooting zones of retained trees

An indicative list of recommended practices during construction phase is listed below:

Once installed tree protection must remain in place and be observed at all times.

No fires within 10m of the crown of any retained trees.

No changes in soil levels will take place in tree protection zones without prior written consent from the local authority.

No cement mixing/washout to take place within 15m of any retained trees.

No chemicals, bitumen etc to be stored within 10m of any retained trees.

Any spillage of fuel, chemicals or contaminated water occurring within 2m of the root protection areas to be reported to project supervisor.

No additional underground services have been indicated to us at this time but they may be safely routed along current access routes, if additional services require routing near the root zones of trees for retention then appropriate hand trenching methods should be used. See BS3857:2005.11.7

6. Tree Constraints - Proposed Development and Juxtaposition with Trees

Due to the nature of the proposed development and the location of trees within the site no significant above ground constraints e.g. overshadowing are likely to be exerted upon the development by any retained trees. The position and terminal sizes of additional trees is noted as per comments in Section 4c.

See Appendix1: Tree Schedule.

7. Proposed Tree Planting

At the time of this survey a specific requirement for additional planting has not been identified in direct relation to the proposed development. There is an opportunity for a wider scheme of management, replacement and replanting of tree stock throughout the property.

8. Scope of brief

Carry out a survey of trees within the site in accordance with BS5837:2005 and collect data in order to advise the development designer of key issues relating to trees, with options and strategies.

Prepare a Report with associated data, site plans and imagery, in order to facilitate consideration of the tree issues both for existing structures and proposed development.

9. Supporting Information

Site Plan: Mason Gillibrand Architects; Scale 1:200 @ A1 size

10. Conclusions

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It is concluded that

It is possible to retain suitable existing significant surveyed trees within the site boundary in relation to the proposed development. It is also possible to complete the construction phase without additional damage/stress being placed upon trees to be retained within the site if guidance detailed in this report and recommendations contained in BS58537:2005 are followed.

11. Recommendations

It is recommended that

The recommendations contained within this report both for the management of trees for retention and the protection of same during proposed development phase are taken into consideration. That the Local Authority Tree Officer be consulted for input and professional guidance through the planning process.

Tree Ref.	Species	Height (est) m	Spread (est) m NSEW	Age Class	Vigour	DBH (mm)	Condition/Comments	BS587 RetCat	Work Recommendations
1	<i>Chamaecyparis pisifera Plumosa Aurea</i>	15	6	m	n	320 430 410 340	Multi stem cypress, leaning 20deg towards S. Previous stem loss leaving exposed heartwood	R	Recommend removal
2	<i>Sequoia sempervirens</i>	20	5	m	n	690 670 1090	Multi stem Redwood. 1x stem pressing against wall. Large build up of leaf litter @ base	b3	regularly monitor condition, especially wall contact, remove leaf litter build up
3	<i>Betula pendula</i>	14	4	m	n	410	Single Stem Birch, crown 3m from electricity cable	c1	regularly monitor condition
4	<i>Tilia x europaea</i>	24	8	m	n	1210	Single stem Lime, previous crown reductions. Large epicormic growths @ base.	b3	regularly monitor condition -remove epicormic growth
5	<i>Taxus baccata fastigiata</i>	9	6	m	n	na	multi stem Irish Yew. Poor form, extensive moss cover, tops snapped out	C3	Reduce crown, consider removal
6	<i>Parrotia persica</i>	5	4	m	n	180	Single stem "Iron Tree" stem bifurcates @ 1.5m, 1x split branch	C1	regularly monitor condition - remedial pruning required
7	<i>Cephalotaxus harringtonia drupacea</i>	10	5	m	n	280 230	Co dominant stems, on banking leaning to SE	c1	regularly monitor condition - especially unions
8	<i>Chamaecyparis lawsonia</i>	28	4	m	n	700 400 450 680	Multi stem cypress, stem bifurcates @ 1.5m. 1x previous stem removal, 1x dead stem. On top of banking to river	R	Recommend removal - due to size, location and condition
9	<i>Taxus baccata</i>	12	4	m	n	350	Remaining stem of pair, poor taper and large cavity @ 1m	R	Recommend removal
10	<i>Chamaecyparis lawsonia</i>	30	4	m	n	740	Single stem Cypress, poor taper, growth towards SE	c3	regularly monitor condition - consider removal due to size and form
G1	<i>Thuja plicata</i>	30+	4+	m	n	na	Group of mature Red Cedar, many with included bark unions, previous failure in 1x codominant stem.	c1	regularly monitor condition - consider future removal due to size, proximity to structures and previous failures.
11	<i>Chamaecyparis lawsonia</i>	22	4	m	n	410	Single stem Cypress, poor taper, growth towards SE stem bifurcates @ 10m. Too close to T14, 15, 16	C3	regularly monitor condition - Strongly consider removal due to size and form
12	<i>Chamaecyparis lawsonia</i>	28	3	m	n	500	Single stem Cypress, poor taper, growth towards SE stem bifurcates @ 20m. Too close to T13, 15, 16	C3	regularly monitor condition - Strongly consider removal due to size and form
13	<i>Ilex aquifolium</i>	18	3	m	n	300	Single stem holly, leaning @ 45deg across stream	C3	regularly monitor condition - Strongly consider removal due to size and form

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	Species	Height (est)m	Sread (est) m NSEW	Age Class	Vigour	DBH (mm)	Condition/Comments	BS5837 RetCat	Work Recommendations
14	<i>Chamaecyparis lawsonia</i>	30+	4	m	n	650	Single stem Cypress, poor taper, growth towards SE stem bifurcates @ 12m included bark union. Too close to T14, 15,13	C3	regularly monitor condition - Strongly consider removal due to size and form
15	<i>Chamaecyparis lawsonia</i>	25	3	m	n	570	Single stem Cypress, poor taper, growth towards SE stem bifurcates @ 10m included bark union.	C3	regularly monitor condition - Strongly consider removal due to size and form
16	<i>Chamaecyparis lawsonia</i>	25	3	m	n	470	Single stem Cypress, poor taper, all growth towards SE, stem bifurcates @ 10 and 16m.	C3	regularly monitor condition - Strongly consider removal due to size and form
17	<i>Sciadopitys verticillata</i>	10	5	m	n	370	Single stem example, all growth towards SE, leaning @ 20 deg	C2	regularly monitor condition
18	<i>Fraxinus excelsior</i>	18	5	m	n	570	Single stem Ash, stem bifurcates @ 2m with included bark union, split in 1x stem. Decay in basal area, leaning 20deg towards S	R	Recommend removal
19	<i>Taxus baccata</i>	18	10+	m	n	850	Single stem Yew, bifurcates @ 2m. Deadwood in crown, lower branches touching ground and extending 10m. T20 growing through crown.	C3	Reduce crown, consider removal
20	<i>Cephalotaxus harringtonia drupacea</i>	10	5	m	n	270	Single stem, poor condition, leaning towards house	R	Recommend removal - due to size, form and proximity to existing structures
21	<i>Acer platanoides</i>	20	6	m	n	980 @ 1m	Single stem Maple, stem bifurcates @ 1.5m some ivy and minor deadwood	b3	regularly monitor condition -remove ivy and deadwood
22	<i>Chamaecyparis lawsonia</i>	20	4	m	n	530	Single stem Cypress, poor taper, growth towards SE	C3	regularly monitor condition - consider future removal due to size, proximity to structures and previous failures.
23	<i>Alnus glutinosa</i>	18	8	m	n	370	Single stem Alder, poor taper ratio	C2	regularly monitor condition
24	<i>Acer platanoides</i>	20	8	m	n	na	Remaining stem of co-dominant pair. Large decay cavity, leaning 15deg towards house	R	Recommend removal - tree at risk of sudden failure in stem
25	<i>Carpinus betulus</i>	20	6	m	n	430	Single stem hornbeam on banking leaning 15 deg towards house	R	Recommend removal
26	<i>Crataegus monogyna</i>	11	5	m	n	na	Multi stem Hawthorn, extensive decay in basal area, previous removal of stem	R	Recommend removal
27	<i>Prunus laurocerasus</i>	10	9	m	m	na	Multi stem Laurel, poor form, decay in base of main stem	R	Recommend removal



New Tree

Tree Survey Form: BS5837 Definitions

Age Class

M :

Mature

S/M :

Semi-Mature

Y :

Young

Vigour :

Observed vigour of tree based upon leaf/bud development, condition of bark and amount of deadwood in canopy.

DBH :

Diameter at Breast Height, stem diameter measured at 1.5m from base of stem

Condition :

Physical and biological condition, with any observed defects noted.

Recommendations: Recommended arboricultural works based upon observations at time of survey and current/proposed site use.

Retention category	Criteria			Identification on plan
Category R Trees recommended for removal. Trees in such a condition that any existing value would be lost within 10 years	• Dead, dying or dangerous trees • Trees with serious structural defects			Red
	1. Mainly arboricultural values	2. Mainly landscape values	3. Mainly cultural & conservation values	
Category A Tree of high quality and value. Trees able to make a substantial long – term contribution. A minimum of 40 years is suggested.	Trees that are particularly good examples of their species. Particularly of rare or unusual. Trees forming essential parts of a group	Trees, groups or woodlands of particular visual importance. Trees groups or woodlands which provide definite screening or softening if views into or out of the site.	Trees, groups or woodlands of significant cultural, historic or conservation values. (e.g. veteran trees, wood pasture or ancient woodland.)	Green
Category B Trees of moderate quality and value. Trees able to make a significant contribution. A minimum of 20 years is suggested.	Trees that might be categorised in the higher category but are downgraded because of impaired condition such as minor structural defects.	Trees present in numbers that form distinct landscape features. Trees attracting a higher collective rating than they would as individuals.	Trees with clearly identifiable cultural, historic or conservation values.	Blue
Category C Trees of low quality and value. Trees currently in adequate to remain until new plantings could be established. A minimum of 10 years is suggested. Young trees with a stem diameter below 15cms.	Trees not qualifying in higher categories	Trees present in groups or woodlands that do not possess significant landscape values. Trees offering poor or short term screening values	Trees with very limited cultural, historic or conservation values.	Grey

Appendix2 - Tree Location Plan - Holden Clough

Key

- Tree location Cat.A
- Tree location Cat.B
- Tree location Cat.C
- Tree location Cat.R

----- Root Protection Area

--- 20% Offset Area

— Suggested position
Tree Protection Screen

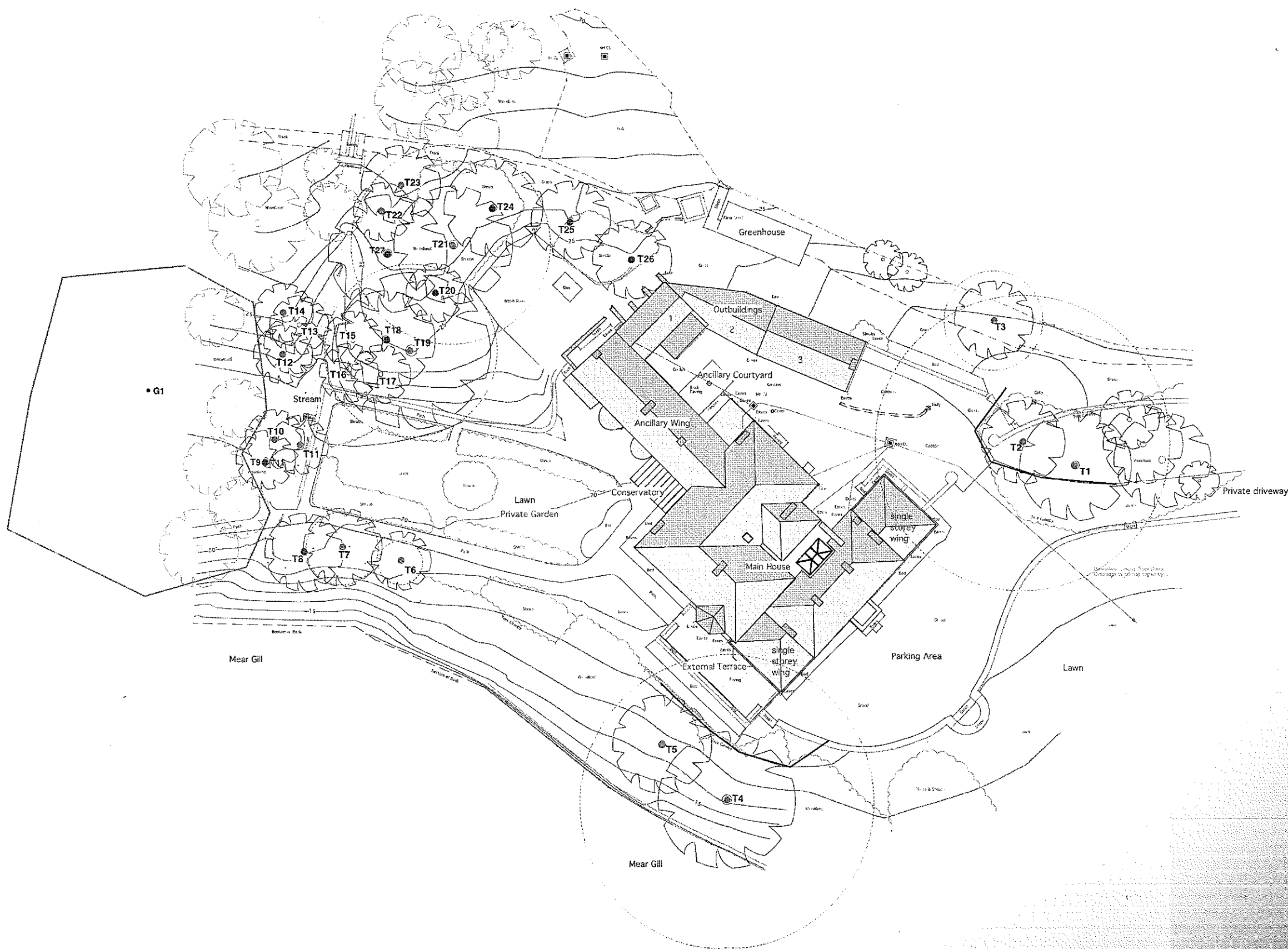
— Suggested position
Ground protection area

Scale 1:200 © A1
From Site Plan
Mason Gillbrand
Architects

Note:
RPA only indicated for significant trees. Small garden trees and semi-mature specimens not indicated.

Retention Categories:
As defined BS5837 4.31 Table1

RPA:
Plotted from individual RPA sheets. Where applicable 20% offset indicated



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27/03/2012

Appendix 3

Reference List

The Body Language of Trees by Claus Mattheck & Helge Breloer (1994) London:HMSO.
Diagnosis of ill-health in trees by R.G. Strouts and T.G. Winter. (2000) London:HMSO
Principles of Tree Hazard Assessment and Management by David Lonsdale (1999) HMSO
BS5837:2005 British Standards Institute
Trees Their Use, Management, Cultivation and Biology Robert Watson 2006