



Plume of Feathers, Crondall, Hampshire GU10 5NT

**Initial Bat Survey
& Preliminary Roost Assessment**

January 2023

on behalf of Blackdog Design

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1 Executive Summary

Site Details	The Plume of Feathers is a detached public house located to the south side of The Borough (a road) within the southern area of the village of Crondall in Hampshire GU10 5NT. The Ordnance Survey grid reference for the building is SU 79466 48813.
Proposals	<p>The proposals include:</p> <ul style="list-style-type: none"> • Repair of the lower section of a disused chimney stack located in the rear cat slide section of the roof, above the kitchen. • Stripping and re-battening of the western area of roof. • Minor roof repairs including the spot repairing of slipped tiles.
Methodology	An initial bat survey and preliminary roost assessment was undertaken on the 6 th December 2022.
Evaluation	<ul style="list-style-type: none"> • No bats or evidence of bats were found during the survey and roosting bats are considered to be absent from the entire loft space. • There is no evidence that bats are using the chimney stack as an access route into the loft space. • The area focused on the chimney stack within the southern section of the loft that will be affected by the proposed repair works is assessed as having ‘negligible’ potential (Collins, 2016) to provide shelter to roosting bats. • The areas for roof repairs, including the western roof, proposed to be stripped and re-battened, are assessed as having ‘low’ potential (Collins, 2016) to offer shelter to roosting bats. • No evidence of nesting birds was noted.
Impact Assessment	<ul style="list-style-type: none"> • No significant impacts on bats or their habitats are predicted under The Conservation of Habitats & Species Regulations 2017. • A European Protected Species (Bat) Licence is not considered to be necessary for proposals to proceed. • It is not necessary to consider the ‘three tests’ of The Conservation of Habitats & Species Regulations 2017 in this instance.
Recommendations	<p>No further surveys are considered necessary.</p> <p>Recommendations are made with regard to careful work practices and timing as well as mitigation/enhancement for bats.</p>

2 Introduction

2.1 Site Description & Context

The Plume of Feathers public house is a detached building located to the south side of The Borough (a road) within the village of Crondall in Hampshire GU10 5NT. The approximate Ordnance Survey grid reference for the building is SU 79466 48813.

The public house is a grade II listed building with brick and timber walls and a series of pitched roofs with a covering of clay tiles. There is a loft space that covers the entire footprint of the western half of the building, with three chimney stacks being found within this loft space. The building is surrounded by hard-standing that makes up the outside seating/amenity areas and the car park.

The property is located within the southern area of the village of Crondall, being surrounded in all directions by dwellings, gardens, roads and areas of car park. The wider landscape being the village boundary is characterised by arable land and improved pasture, interspersed by pockets of woodland, hedgerows and roads.

2.2 Proposed Works

The proposals include:

- Repair of the lower section of a disused chimney stack located in the rear cat slide section of the roof, above the kitchen.
- Stripping and re-battening of the western area of roof (see Figure 1).
- Minor roof repairs including the spot repairing of slipped tiles.



Figure 1. Area of roof proposed to be stripped and re-battened, indicated in red.

2.3 Aims of Study

The aims of this study are to survey the building for bats and/or evidence of bats, and other protected species including nesting birds. The study assesses the overall potential of the building to support roosting bats and other protected species. The report discusses the potential impacts of the proposed works on bats, protected species and their habitats.

The report makes recommendations for appropriate mitigation, compensation and enhancement measures, and the potential impacts are assessed in accordance with the legal protection afforded to bats under The Conservation of Habitats & Species Regulations 2017. European Protected Species (Bat) licences are also discussed in light of the impact assessment.

2.4 Bat Ecology

Bats are the only mammals to have developed the ability of true flight. At present, over 1,100 species of bat are recognised worldwide, making bats the second largest mammal group after rodents. As well as flight, bats have evolved a system of navigation and orientation using echolocation which has allowed many species to become nocturnal. There are 18 species of bat that occur within the British Isles, of which 17 are known to breed here. More species occur in the south and west of the country, with species numbers declining towards the north and into Scotland.

All bat species in the UK are nocturnal and feed exclusively on insects (they are insectivorous) which they catch in flight during their night-time activity, using echolocation to locate and home-in on their prey. Bats will roost during the daytime and seek out dark, enclosed and undisturbed places in which to do so, often using a variety of roosting sites within their home range. Different roost sites are used for different purposes (such as mating, giving birth and hibernation) and at different periods of a bat's life cycle.

During the summer, female bats will gather together in a maternity or breeding roost. In the UK, this starts to occur towards the end of May and the females will seek out a warm and undisturbed site in which to give birth. Because maternity roosts require a particular set of environmental attributes (such as location, temperature, orientation and size), breeding bats tend to return to roost and breed in the same locations year after year. Given that bats live a relatively long time (anywhere from 10-20 years), and only give birth to one pup a year, maternity colonies are crucial to the reproduction and survival of the local population and can be very sensitive to environmental change.

Relatively little is known about hibernation roosts, as tracking and locating hibernating bats is very difficult. However, many species (particularly those within the genera *Myotis* and *Rhinolophus*) have been found within underground sites such as caves, mines and cellars, where the temperature remains constant and low throughout the winter allowing the bats to remain in a state of torpor. The spring and autumn are periods of transition and bats can use a number of different locations on a temporary basis, often moving between roosts as environmental conditions change and temperatures fluctuate. In the autumn, bats will mate, and it has been shown that male and female bats will gather at particular locations (such as a building, cave or tree) to meet, socialise and copulate.

Bats choose to roost in a number of different locations, depending on the species, their activity pattern and the period of their lifecycle. Certain species, such as the pipistrelles, favour crevices and small cavities for roosting and will use features such as cracks, crevices and small rot holes in the boughs and trunks of trees and within certain features of buildings such as boxed eaves, gaps under roof tiles, hanging tiles and soffit boards. Other species favour large, uncluttered roof spaces and lofts within buildings where they can hang up on the

underside of the roof and use the interior space for flying prior to emergence. Hollow trees, cellars, caves, barns, churches and cavity walls can also all be used for roosting, given suitable access. Certain species, such as the noctule, favour roosting sites within trees whilst others tend to favour buildings. Roost sites may be used by only a very small number of bats, such as solitary males, or may offer shelter to tens or hundreds of bats within maternity and hibernation roost sites.

The suitability of roosting sites is also highly influenced by the location or context of a tree, building or cave. Roost sites are most often favoured when they are within close proximity to foraging habitats and where those habitats are connected to one another within the landscape by features such as hedgerows, woodlands, rivers or sunken lanes along which bats disperse and 'commute' from place to place. Suitable foraging habitats are any places where insect prey is diverse and abundant such as woodlands, ponds, lakes, rivers, scrub, hedgerows and unimproved grassland or pasture. Thus, the ecological context of a site is very important for determining if bats may be present within a roost and the potential for a roost to be present tends to be much higher within rural or village locations.

3 Methodology

3.1 Limitations on Survey Data

As with any survey undertaken on a certain date, the data presented within this report provide information at a particular point in time and present a 'snap-shot' of the ecological status of the site. Ecosystems and species behaviour/activity are dynamic and can change over time.

Whilst this report presents a characterisation and evaluation of habitat and species status at the time of the study, it should not be taken as an exhaustive representation of the ecological status of the site either at present or into the future.

3.2 Field Survey

3.2.1 Initial Bat Survey & Preliminary Roost Assessment (PRA)

An Initial Bat Survey and Preliminary Bat Roost Assessment (PRA) were undertaken on the 6th December 2022 by Reuben Hayden *MSc*. Mr Hayden holds a licence from Natural England to survey for bats within all counties of England (Licence No. Level 1 2021-54302-CLS-CLS) and has over two years of experience in undertaking bat surveys.

A detailed internal and external survey of the building was undertaken using a 1 million candle-power torch and close-focusing binoculars in order to look for bats and/or evidence of bats and to assess the potential of the building to support roosting bats.

The building was inspected for evidence of bats including, bat droppings, urine stains, feeding remains (such as moth wings) and characteristic fur staining around access points.

Notes were made on the relative freshness, shape and size of bat droppings and the location and quantity of any feeding remains. 'Clean' gaps and crevices within the structure of the building were looked for as this can indicate where bats may have gained access to the interior spaces and the fabric of the walls.

The bat survey was undertaken according to best practice guidelines published by the Bat Conservation Trust (Collins, 2016).

The study also takes into account the structure and ecological context of the building, including the following factors which may increase the likelihood of roosting bats being present:

- Age of the building (pre-20th Century or early 20th Century construction)
- Nature of construction; traditional brick, stone or timber construction
- Large and complicated roof void with unobstructed flying spaces
- Large (>20 cm) roof timbers with mortice/tenon joints, cracks and holes
- Entrances and gaps for bats to fly and crawl through
- Poorly maintained fabric providing ready access points for bats into roofs, walls; but at the same time not being too draughty and cool.
- Roof warmed by the sun, south-facing roofs in particular
- Weatherboarding and/or hanging tiles with gaps
- Undisturbed roof voids
- Buildings and built structures in proximity to each other providing a variety of roosting opportunities throughout the year
- Buildings or built structures close to good foraging habitat, in particular mature trees, parkland, woodland or wetland, especially in a rural setting.

The following criteria are used as guidelines for assessing the potential suitability of buildings for bats (Collins, 2016):

Suitability	Description of Roosting Habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after the presence is confirmed).
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitats.

Confirmed presence of roosting bats is where evidence indicates that a building or other structure is used by bats, this includes:

- bats seen roosting or observed flying from a roost or freely in the habitat;
- droppings, carcasses, feeding remains etc. found and/or
- bats heard ‘chattering’ inside a roost on a warm day or at dusk.

Where the possibility that bats are present cannot be eliminated or evidence of bats is found during the building inspection survey, then further surveys (such as winter hibernation, presence/absence and/or roost characterisation) are likely to be necessary if impacts on the roosting habitat (or the bats using it) are predicted.

In addition to the bat survey, the building was checked for evidence of nesting birds including old birds’ nests, bird droppings, feathers and eggs. Specific observations were made with

regard to species such as the house sparrow and house martin; species that are often associated with buildings.

4 Results

Please refer to Appendix 1 for photographs of the building. Location plans can be found within Appendix 2.

4.1 Description of Building

The Plume of Feathers public house is a two-storey, grade II listed building. Within this study, the areas of focus for the survey are concentrated around the chimney stack within the southern section of the loft and the western area of roof, which are to be repaired.

The building's walls are constructed from brick and timber with a series of hipped roofs of clay tiles. Where there are eaves on the building, they are constructed from wood and comprise an open structure covered with mesh sheeting. The roof has a mix of bitumen felt underlay and exposed tiles with no underlay. The building has doors and windows on multiple elevations, which provide illumination to the interior spaces.

The western area of roof, proposed to be stripped and re-battened, has no roofing underlay, however does have multiple gaps between tiles created by the naturally occurring placement of the clay tiles. The gaps between the tiles are considered exposed and draughty, likely discouraging bats from utilising them.

The eastern half of the building comprises vaulted ceilings and no loft spaces are present. Within the western half of the building, there is a loft space which is found above the commercial kitchen. The loft space is separated into four sections, all being connected. The floor to ridge heights range from 1.5m to 3m. No windows or skylights were noted on the roof of this section, however, gaps in the bitumen felt underlay and exposed tiles provide inlets of natural light into the space. Extensive cobwebs were noted along the ridge beams within this loft space.

Bats will choose to roost within different locations within the summer and winter periods (see Figure 2), favouring dark, enclosed, humid and cool locations for hibernation such as caves and cellars. These locations must maintain a constant low temperature (2-8°C), but temperatures must also not go below freezing. In addition, bats favour places that are undisturbed and retain relatively high humidity during the winter period.

The building, including the loft space, is not considered to be suitable for hibernation due to the fact that the internal spaces are unsuitable and exhibits no features that could be used by hibernating bats and are unlikely to maintain the constantly cool and humid conditions which are required by overwintering bats. The majority of the loft has a lack of roofing underlay, leaving the tiles exposed and creating a cold and draughty environment which is considered unsuitable for hibernating bats.

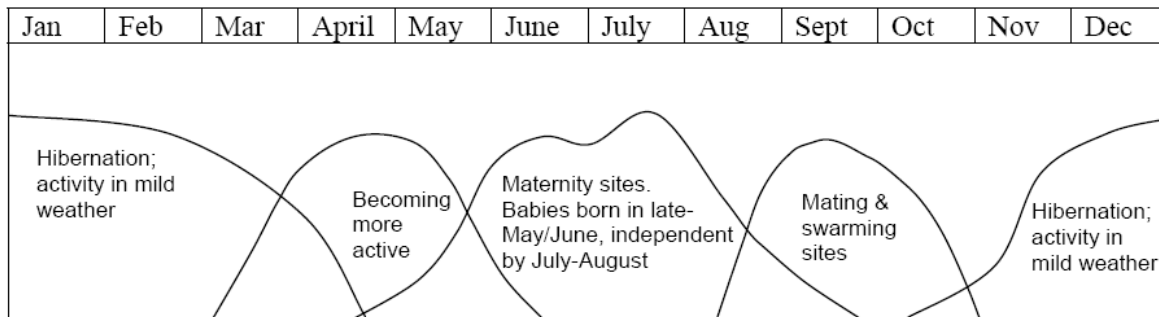


Figure 2. Diagram showing the yearly life cycle of a bat. Taken from the Bat Mitigation Guidelines by Mitchell-Jones (2004).

Given the above discussion, the building (focused on the chimney stack within the southern section of the loft) is assessed as having 'negligible' potential (Collins, 2016) to offer shelter to roosting bats. The areas for roof repairs, including the western roof, proposed to be stripped and re-battened, are assessed as having 'low' potential (Collins, 2016) to offer shelter to roosting bats.

4.2 Evidence of Bats

No bats or evidence of bats was found during the survey.

In particular, no bat droppings were found within the loft space of the building, or in association with the chimney stack within the southern section of the loft. There was also no evidence of bats within the entire loft space or evidence that bats are accessing the loft in any way, including via the chimney stacks.

4.3 Other Species

No evidence of nesting birds was noted in association to the building. It is of note that bird droppings were found at the eaves of the north-western elevation of the building, however, no nesting materials were observed.

5 Discussion

5.1 Status of Bats

It is considered that roosting bats are absent from the internal areas of the building, including the entirety of the loft space.

No bats or evidence of bats was noted during the survey and the area focused on the chimney stack within the southern section of the loft that will be affected by the proposed repair works is assessed as having 'negligible' potential (Collins, 2016) to provide shelter to roosting bats.

The area of western roof, proposed to be stripped and re-battened is assessed as having 'low' potential (Collins, 2016) to offer shelter to roosting bats. It is of note, that no evidence of bats including droppings was found beneath this section of roof within the loft space. It is considered likely that with the lack of underlay, if bats were utilising the gaps between tiles, evidence within the loft and under this section of roof would be evident.

5.2 Legislative Guidance

5.2.1 Bats

As with many animal species within the UK, declines in the abundance and distribution of many bat species have been documented through recent decades. The reasons for these declines are various and complex but it is considered that the major factors are changes in land use and agriculture, the loss of woodlands and hedgerows and the loss of suitable roosting sites.

Bats are particularly sensitive to human activity due to the fact that they roost within buildings, trees and underground structures such as mines, and the availability of suitable roost sites is considered to be a key factor in the conservation of bats within the UK. As a consequence, all species of bat and their roost sites are protected under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000) and under The Conservation of Habitats and Species Regulations 2017. Taken together, these make it an offence to:

- (a) Deliberately capture or intentionally take a bat
- (b) Deliberately or intentionally kill or injure a bat
- (c) To be in possession or control of any live or dead wild bat or any part of, or anything derived from a wild bat
- (d) Damage or destroy a breeding site or resting place of such an animal or intentionally or recklessly damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection
- (e) Intentionally or recklessly disturb any wild bat while it is occupying a structure or place that it uses for shelter or protection
- (f) Deliberately disturb any bat, in particular any disturbance which is likely
 - to impair their ability;
 - (i) to survive, breed, reproduce or to rear or nurture their young; or
 - (ii) in the case of hibernating or migratory species, to hibernate or migrate; or
 - to affect significantly the local distribution or abundance of the species to which they belong

A bat roost may be any structure a bat uses for breeding, resting, shelter or protection. It is important to note that since bats tend to re-use the same roost sites, current legal opinion is that a bat roost is protected whether or not the bats are present at the time.

Although the law provides strict protection to bats, it also allows this protection to be set aside (derogation) under The Conservation of Habitats and Species Regulations 2017 through the issuing of licences. Where a lawful operation is required to be carried out, but which is likely to result in one of the above offences, a licence may be obtained from Natural England (the statutory body in England with responsibility for nature conservation) to allow the operation to proceed. However, in accordance with the requirements of The Conservation of Habitats and Species Regulations 2017, a licence can only be issued where the following requirements are satisfied:

- The proposal is necessary 'to preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment';
- 'There is no satisfactory alternative';
- The proposals 'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range'.

5.2.2 *Nesting Birds*

Nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. The nesting season for most species is between March and August inclusive.

5.3 Potential Impacts

5.3.1 *Bats*

There is no evidence to indicate that the chimney stack within the southern section of the loft space is being used as a place of shelter or protection by roosting bats, and roosting bats are considered to be absent from the entire loft space. As there was also no evidence of bats within the loft space, it is considered that the chimney stack is not being used as a potential access point into the loft and this area within the loft is assessed as having 'negligible' roosting potential for bats (Collins, 2016).

There is also no evidence to indicate that the western area of roof, proposed to be stripped and re-battened, is being used as a place of shelter or protection by roosting bats. This area of roof has no underlay and the gaps between the tiles are considered exposed and draughty, likely discouraging bats from utilising them. Although this section of the roof is assessed as having 'low' roosting potential for bats (Collins, 2016), it is considered likely that roosting bats are absent from this area. With the presence of roosting bats being considered highly unlikely, there is therefore no foreseeable impact as a result of destruction or damage to a potential bat roosting location.

With appropriate mitigation and timing in place, it is considered that impacts such as killing, injury and significant disturbance can be avoided. The most likely scenario is that no bats will be encountered during the works. If a bat were to be found, disturbance is very unlikely to result in an inability for the bat to survive, breed, reproduce, hibernate or to rear or nurture its young. This is due to the fact that there is no evidence of a maternity colony and the fact that the building is considered to be unsuitable for hibernation.

As a result of this conclusion, the proposed repair works to the lower portion of the chimney stack, to the western area of roof and minor spot repairs will not result in any significant impacts on bats or the places that bats use for breeding, shelter and/or protection (roosts) and no specific compensation measures are considered necessary (Mitchell-Jones, 2004).

Since no significant impacts on bats are predicted under The Conservation of Habitats and Species Regulations 2017, a European Protected Species (bat) licence will not be required for the proposed works to proceed. Since there are no predicted impacts on bats or their habitats, it is not necessary to consider the 'three tests' of The Conservation of Habitats and Species Regulations 2017 in this instance.

5.3.2 *Birds*

There are no foreseeable impacts on nesting birds.

6 Recommendations

6.1 Further Surveys

6.1.1 *Southern Chimney Stack*

No further surveys are considered necessary.

6.1.2 *Western Roof Area/Minor Roof Repairs*

Best practice guidelines state that where a structure has been '*classified as having low suitability for bats, an ecologist should make a professional judgement on how to proceed based on all of the evidence available*'.

In this instance, regarding the western area of roof, the professional judgement is that no further bat surveys are considered to be necessary. This conclusion is based on the lack of underlay within this roof area and the lack of evidence found underneath this section of loft. Given the absence of an underlay, the western area of roof is considered to be exposed and draughty, likely discouraging bats to utilise the gaps present between tiles.

With a method of careful working in place, it is considered that significant impacts on bats can be avoided, and that the 'favourable conservation status' of bats will remain unaffected.

6.2 **Licencing**

It is considered that with appropriate mitigation measures in place, the need for a European Protected Species (bat) license can be avoided.

6.3 **Timing**

6.3.1 *Southern Chimney Stack*

There are no constraints with regard to the timing of works.

6.3.2 *Western Roof Area/Minor Roof Repairs*

It is recommended that repair works are undertaken during the autumn, winter and early spring months (October to April, inclusive) when bats are expected to be absent from the building. The building is not considered suitable for hibernating bats.

6.4 **Pre-commencement Check**

Prior to the commencement of works, the loft space of the building, will be checked for roosting bats by a suitably qualified ecologist.

If bats are encountered within the space, they will be rescued by the ecologist and moved to a pre-erected bat box on a nearby tree.

6.5 **Careful Work Practices**

6.5.1 *Southern Chimney Stack*

Works should proceed in a careful and controlled manner. Contractors should be briefed with regard to the fact that individual bats can often exploit very small crevices as roost sites and that bats can move between roost sites on a regular basis.

In the very unlikely event that bats or significant evidence of bats (for example large accumulations of fresh bat droppings) are encountered, works should stop immediately, and advice sought from a qualified ecologist.

6.5.2 *Western Roof Area/Minor Roof Repairs*

A suitably qualified ecologist will give a 'toolbox' talk to contractors regarding bats and their habitats, and where bats are likely to be found within the building. Contractors will be briefed with regard to the fact that individual bats can often exploit very small crevices as roost sites and that bats can move between roost sites on a regular basis.

The removal of tiles and repair works affecting the roof will be undertaken by hand under the direct supervision of a suitably qualified ecologist. The ecologist will remain on site, to supervise the roofing works, until such time as they are satisfied that the potential to encounter a bat is nil.

In the very unlikely event that a bat is encountered, and it is not in hibernation, it will be rescued by the ecologist by hand and moved to a pre-erected bat box on a nearby tree.

If a hibernating bat is encountered, or more than small numbers are encountered, works will stop until such time that a European Protected Species Licence can be secured for the works to proceed.

6.6 Mitigation & Enhancement

Prior to the commencement of works to the western area of roof, a Schwegler 2F bat box, or similar, will be erected on a nearby mature tree within the car park. This box will be used to house rescued bats, if necessary, and is to remain in perpetuity. This bat box should be installed as high as possible on the southerly aspect to provide a warmer microclimate within the box.

The erection of a bat box would be seen as an enhancement to the existing situation.

7 References

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8 Appendix 1. Photographs



Photograph 1. The northern elevation of the building.



Photograph 2. The western elevation of the building.



Photograph 3. The southern elevation of the building, showing the southern chimney stack.



Photograph 4. The building viewed from the south-east.



Photograph 5. The chimney stack found within the southern section of loft.



Photograph 6. The interior space within the southern chimney stack.



Photograph 7. The southern section of the loft space.



Photograph 8. The central section of the loft space.

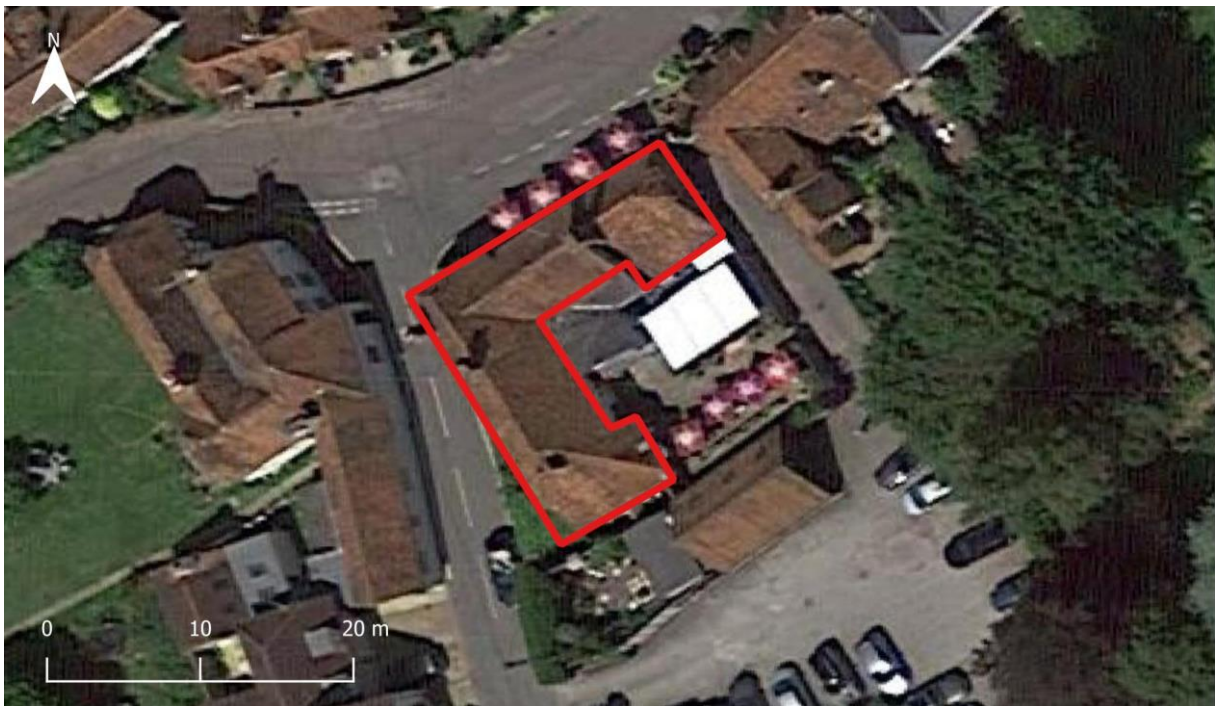


Photograph 9. The chimney stack within the central section of the loft.



Photograph 10. The northern section of the loft space.

9 Appendix 2. Site Location Plans



An aerial photograph showing the location of the Plume of Feathers (outlined in red). *Source: Google Satellite*



Map showing the approximate location of the Plume of Feathers (outlined in red) within the wider local area. *Source: OSM Standard*