

3rd April 2023

Our Ref: 9901.001/TW

Tom West is dealing with this matter
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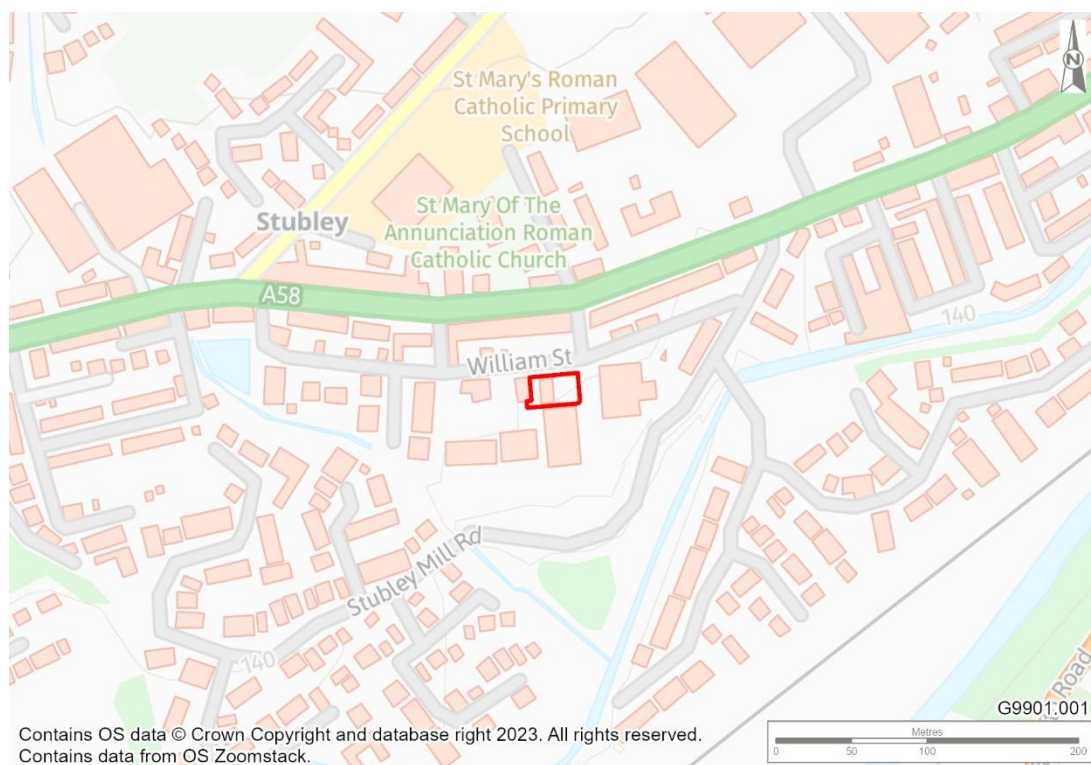
PLANNING | DESIGN | ENVIRONMENT

SENT BY E-MAIL ONLY

Dear John,

LITTLEBOROUGH SUBSTATION (Asset 8) – Preliminary Roost Assessment

This letter describes the findings of a Preliminary Roost Assessment (PRA) of the Littleborough Substation (Asset 8), William Street, Littleborough (central grid ref. SD 93233 16112) (see *Figure 1*).



It is our understanding that the existing switch house on site is to be demolished and a new substation building is to be constructed within the eastern portion of site. In addition, there is to be a relocation of transformers to the area previously occupied by the switch house. As the existing building is to be demolished, a consideration of roosting bats is required.

Methods

An external assessment of the building was carried out on 27th March 2023. The weather conditions during the survey were overcast, with sunny spells, a light breeze and temperature of 8°C. The assessment was undertaken by Tom West of TEP. Tom is a senior ecologist, with over six years' experience and is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). Tom holds a level four bat licence in England (licence number: 2022-10876-CL20-BAT).

The building was surveyed for characteristics that may be used by roosting bats, externally only (see limitations below). Potential access points into internal voids were noted as well as any crevices that would provide any roosting opportunities. The building was assessed according to the following factors that influence the likelihood of bats roosting:

- Surrounding habitat: whether there are potential flight-lines and foraging areas for bats nearby.
- Construction detail: the type and construction of architectural features such as attics, soffit boxes, lead flashing and hanging tiles that could be used by roosting bats.
- Building condition: whether disrepair has opened potential bat-access points (especially around roofs).
- Potential bat-access points: whether there is flight and crawl access.
- Potential roosting locations: description of all bat-accessible voids, cracks and crevices.

In addition to the above, the PRA also involved searching for direct signs of bats, such as actual sightings, droppings, urine stains, odour, scratch marks, grease stains and feeding remains.

The survey was carried out in line with BCT best practice guidelines¹. The criteria shown in Table 1 were used to categorise the building according to its suitability for roosting bats.

Table 1: Categorisation of buildings for bat roost suitability

Suitability	Characteristics		Potential Roost Features
High	<i>Several of the following features:</i>	Pre – 20th century buildings. Agricultural buildings of traditional brick, stone or timber construction. Large unobstructed flying spaces. Roof warmed by sun, in particular south facing roofs without shade. Large roof timbers with gaps at joints (e.g. mortise joints), cracks and holes.	PRF that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time (e.g. maternity/hibernation) due to their size, shelter, protection, conditions and surrounding habitat.
Moderate	<i>Some of the following features:</i>	Numerous access points for bats to fly into. Buildings near woodland and/or water. Low levels of disturbance. Buildings may be poorly maintained or aged, providing access points for bats into roof structures or crevices in bridges, but at the same time not too draughty, wet or cool.	One or more PRF 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 (maternity/hibernation).

¹ Collins, J. (eds) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)*. The Bat Conservation Trust, London.

Suitability	Characteristics	Potential Roost Features
Low	Modern/intact buildings with few potential access points for bats. Brick buildings often with pitched slate or tile roofs but may have small or cluttered roof space. Flat roofed buildings with weatherboards or similar feature at the eaves with potential bat access behind or into building. Cooler, shaded, light or draughty voids. Buildings often lacking connectivity to woodland or areas of water.	One or more PRF that could be used by individual bats opportunistically, however, these PRFs 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.
Negligible	Flat roof structures lacking weatherboards, hanging slates or cladding. Modern/intact buildings with no bat access points. Lacking connectivity to any woodland or areas of water. High levels of regular disturbance. High levels of internal/external lighting. Buildings in very poor condition such that internal spaces are not weatherproof, being exposed to high levels of light, wind and/or rain.	Negligible habitat features on site likely to be used by roosting bats.

Limitations

Internal access to the building was not possible as the switchgear is unsafe and risk to surveyor safety was deemed too high. However, a full external inspection was carried out and given the simplistic nature of the building was sufficient in assessing the roosting suitability overall.

It is acknowledged that the survey was undertaken outside of active season (considered to be April – October inclusive) and therefore direct evidence of roosting bats may not be present externally due to being washed away via rainfall. However, assessment of feature suitability was still possible.

According to CIEEM advice², survey data are valid for a period of 12 to 18 months from the date of the survey. Therefore, a re-assessment of the building may be required if works are delayed and do not commence prior to 27 March 2024.

Results

The Littleborough Substation comprises of a switchgear house and two transformers which are each separated by walls extending easternly from the switchgear house. The switchgear house is a single-storey brick building, with a lead flat roof, which overhangs on each aspect. The walls extending outwards from the building are also of brick construction, with concrete coping stones. Potential roosting features and references are provided in Table 2. Locations of these features are shown in Drawing G9901.002, appended to this report.

² CIEEM (2019) *Advice Note on the Lifespan of Ecological Reports & Surveys*. CIEEM, Winchester.

Table 2: Potential Roosting Features (PRF) recorded during PRA survey.

PRF Reference	Description (roost suitability)	Photograph
1	Vent brick with numerous holes – offers limited suitability for bats, and exposure to elements. Only likely to be used by individuals bats on an opportunistic basis, exposed to elements. (Low)	
2	Mortar gaps which vary in depth, at most these gaps would give opportunistic roosting opportunities during summer months due to variability in weather and exposed nature of feature. (Low)	

PRF Reference	Description (roost suitability)	Photograph
3	Led roofing overhang, providing a small crevice of limited depth around all aspects of the building. These would likely be used on an opportunistic basis by individual bats in summer months (Low)	
4	Mortar gaps around door lintel on eastern aspect. Egress appeared deep and may provide access to cavity wall. This provides roosting opportunities to smaller groups of bats during summer months, but unlikely to support a larger colony (Moderate).	

PRF Reference	Description (roost suitability)	Photograph
5	Large gap in brickwork, which may provide access to cavity wall. Similarly, to feature four this may provide roosting opportunities for smaller groups of bats (Moderate).	
6	Gap in led flashing around downpipe, likely to be wet during rainfall and therefore providing opportunistic roosting opportunities for individual bats in summer months (Low).	

PRF Reference	Description (roost suitability)	Photograph
7	Missing endcap on roofing overhand, providing access to led flashing overhang, with similar depth to PRF 3. These would like be used on an opportunistic basis by individual bats in summer months. (Low)	
8	Gap behind alarm housing providing a degree of shelter, however likely to become waterlogged in periods of rainfall. Feature may be used on an opportunistic basis by individual bats in summer months. (Low)	

PRF Reference	Description (roost suitability)	Photograph
9	Service holes, providing access to internal areas. Features are relatively small in diameter and unlikely to be used beyond opportunistic access by individual bats. (Low)	
10	Portion of brickwork and mortar missing in wall. Relatively deep but would not enter a cavity wall (wall is single skinned). Therefore, as the feature is relatively exposed to the elements, it is likely to be used by individuals opportunistically during summer months (Low)	

Evaluation

The Littleborough Substation is located within urban settlement of Littleborough, and is surrounded immediately by a mixture of both residential and commercial properties. However, the site is located within c. 60m of open greenspace, which itself connects to green landscape featuring a mosaic of grasslands, woodland, waterbodies (including Hollingworth Lake) and network of interconnecting hedgerows. All of these would be within the core sustenance zone (CSZ³) of UK bat species that may use the substation for roosting purposes.

The substation itself offers various features suitable for crevice dwelling species of bat (e.g., common pipistrelle (*Pipistrellus pipistrellus*)), including those that may offer opportunities for small groups of bats independently. However, it is important to note that the transformers on site produce a significant amount of noise and vibration (through magnetostriction effect). This reduces the overall suitability of the structure for roosting bats, particularly on the eastern aspect.

Overall, the substation is considered to offer **moderate suitability** for summer roosting bats as it offers multiple roosting opportunities for individual and smaller groups of bats. The features are unlikely to be suitable for maternity colonies due to the high level of disturbance produced by the transformers and features offering sub-optimal size / shelter for larger colonies. The presence of more suitable potential roost sites in the wider landscape also contributes to this rating. Similar applies to hibernation roosts, which require stable environmental conditions and a lack of disturbance. The building maintenance and housing of switchgears (which themselves are in poor condition) is likely to cause significant temperature fluctuations during winter months.

Recommendations

The building has been assessed to offer moderate suitability for summer-roosting bats and is to be demolished. This will mean the destruction of features that may be used by roosting bats. Further surveys will be required to ascertain the presence or likely-absence of a roost, prior to any demolition taking place. In line with BCT guidance⁴ this would take the form of:

- A minimum of two dusk emergence / dawn re-entry surveys, carried out during the active season for bats (May – September inclusive)
- Survey visits should be spaced by a minimum of two weeks, preferably more.
- Any droppings found during these surveys should be submitted for DNA analysis as this would confirm species.
- An additional dusk or dawn survey would be required if roosting bats were identified during the first two surveys to allow classification of any roosts identified.

Should a roost be discovered, the above surveys would inform a Natural England European Protected Species Mitigation Licence (EPSML), which would allow demolition works to proceed lawfully. The licence may place restrictions on working methods and timings, dependent on what is found during surveys.

³ CSZ is defined as 'the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost.

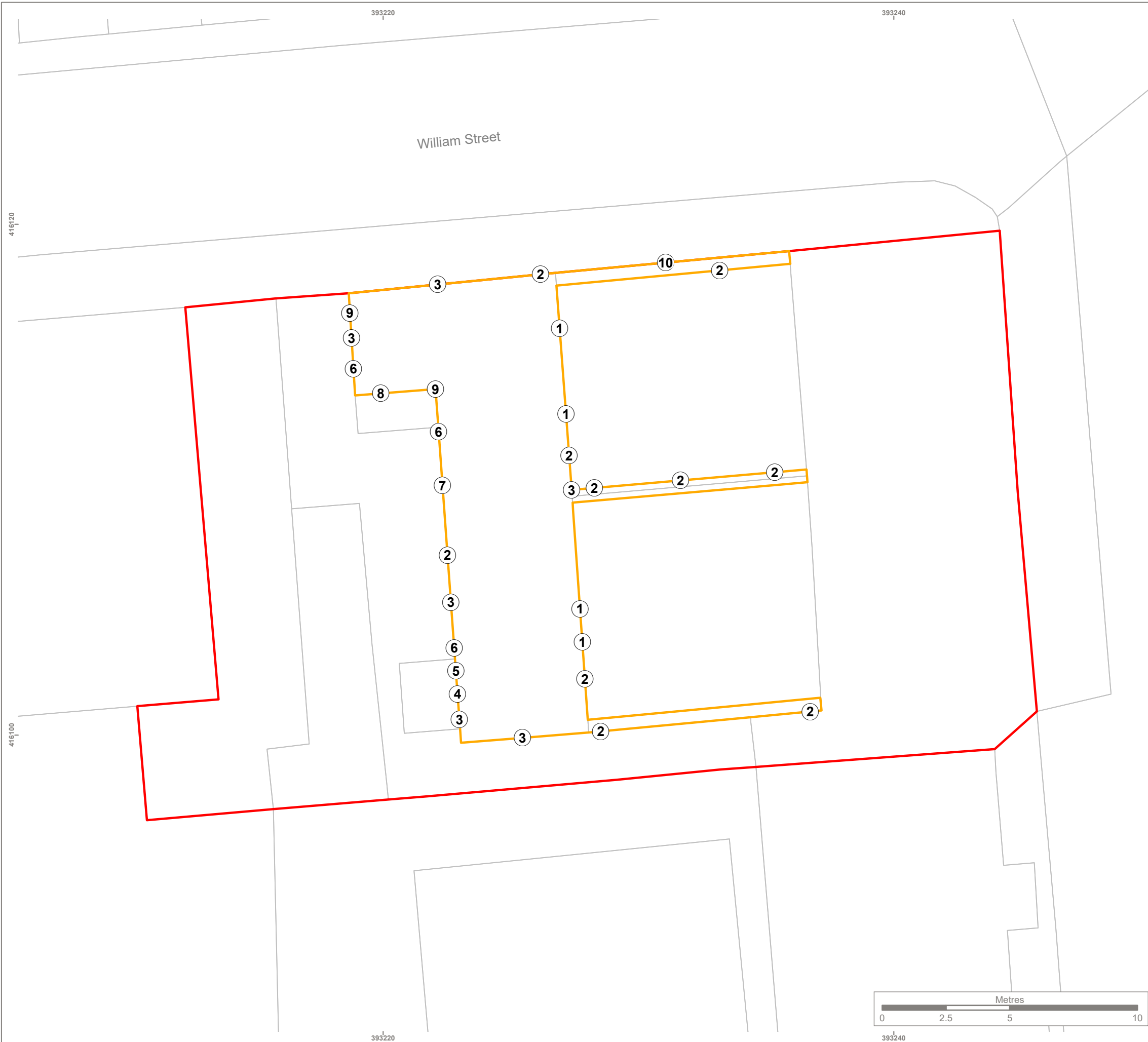
⁴ Collins, J. (eds) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). The Bat Conservation Trust, London.

I hope that you find these results useful, and should you have any further questions please contact me directly.

Yours sincerely,

A handwritten signature in dark ink, appearing to read 'T. West', with a stylized flourish at the end.

Tom West
Senior Ecologist
TEP



KEY

Site boundary

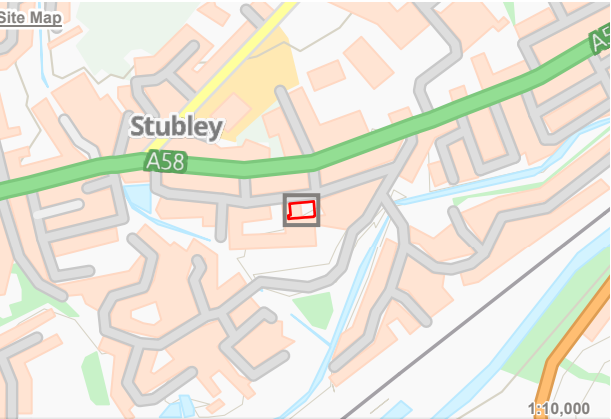
Existing site layout

Roost Assessment Features

- ① Vent Brick x 4
- ② Mortar gaps in brickwork x 10
- ③ Lifted led flashing/overhang x 6
- ④ Gap in mortar around doorway lintel x 1
- ⑤ Large gap in brickwork x 1
- ⑥ Gap in led fleashing around downpipe and bickwork x 3
- ⑦ Missing end cap on roof overhang x 1
- ⑧ Gap behind alarm housing x 1
- ⑨ Service holes x 2
- ⑩ Portion of brick and mortar missing x 1



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Rev	Description	Drawn	Approved	Date



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Project
Littleborough Substation

Title
Preliminary Roost Assessment

Drawing Number
G9901.002

Drawn	Checked	Approved	Scale	Date
ET	CW	TW	1:150 @ A3	03/04/2023