

General structural appraisal report on

Building at
Canaglaze,
Altarnun,
Launceston,
PL15 7SW



Report reference: 12431_TS_23

08.11.23

For:

Mr S Ritchie

Introduction

Property: Redundant building at
Canaglaze,
Altarnun,
Launceston,
PL15 7SW

Listings: None known.
Site is located in a Site of Special Scientific Interest (SSSI) due to local archaeological remains to North West of Site.

Brief: To inspect and report on the structural condition of the building

Weather: Dry and bright

Inspection: The building was inspected by T M Spence MEng (Hons) OBO
Foulkes Jackson Fewings Ltd on Friday 21st April, 2023.

Foreword

The building subject to survey lies in a rural setting, set between the Bray Down and Carne Down grasslands at the edge of Bodmin moor. Within close proximity, is a two storey building which may have served as the principal dwelling.

The building subject to survey is single storey and is 'U' shaped on plan. However it may have in part been two storey in its history. For the benefit of this report the frontage is considered to be the south eastern elevation. The original purpose of the building is unknown, however, it is clear the site is of historical interest and as such the barn should be carefully and sensitively preserved. Suggestions for structural repairs provided herein are given with due regard to the heritage of the building. In doing so, reference where applicable has been made with this firm's general conservation philosophy; refer to Appendix A for further details.

The building is patently suffering from a lack of general maintenance and repair. It is understood a proposal exists to restore the building for domestic use. The intention of this report is to identify the current structural condition of the building in order to advise on any likely structural repairs required during such conversion work.

The building is considered to be typically well-built. It has however suffered from structural and weathering problems, which has caused deterioration in its fabric. Left unchecked the building will inevitably decay further and fall into greater disrepair. This report concludes that the building is structurally capable of rebuilding as is proposed such that it may be conserved and continue to be a valuable asset to the historic context in which it is set.

Location

The building is identified in the below Figures 1.0 and 2.0.



Figure 1.0 –Building as surveyed identified on a site plan . Note does not define legal boundaries.

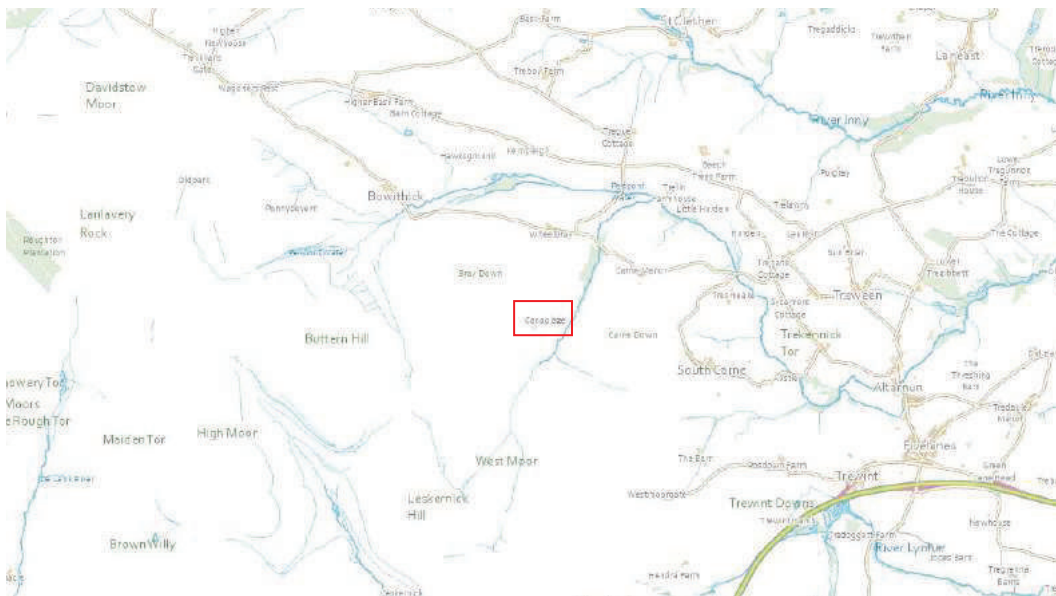


Figure 2.0 –Wider location plan of Canaglade in the context of the area.

1.0 Roof

1.1 The building throughout has no roof structure. A new suitably designed roof structure will be required throughout. It would be prudent to suggest a suitably designed concrete ring beam is adopted to cap the head of the existing masonry walls. Typically this would be circa 300 - 400mm wide x 300mm deep with 2No. H12 steel bars to its base and 600x600mm H12 'L' bars to corners (providing it does not need to act as a lintel). The ring-beam would provide additional lateral restraint to the head of the masonry and provide a level bearing for a new roof structure and wall plate.



Photograph 1.0 – Lack of roof structure to building

2.0 Walls

2.1 The walls throughout are formed from mass rubble stone in the order of 450 - 500mm. Traditionally this would have been built from an outer and inner skin of facing stone with a random rubble and lime earthen mortar core. The quoins, doors and window jambs are formed from larger granite stones.



Photograph 2.0 – Granite quins, jambs and lintels

2.2 In general the masonry appears to remain in good condition. However, due to the lack of roof structure the head of the masonry throughout is exposed to water ingress to the central rubble core. Over time this can lead to de-lamination of the external and internal stone skins. It is considered that the head of the masonry throughout the building should be closely checked for condition and stability. Where concerns arise, the top courses of masonry can be locally rebuilt, or remedially tied with 'Cem' ties by Helfix. The gable walls to the front elevation have a minor outward list. These could be retained with extensive strapping to the new roof structure. However, it would be prudent to consider their removal down to eaves level. This will allow a new ring beam to be continuous around the structure. The gable walls can then be re-built like for like.

2.3 The masonry to the front and rear flank wall is in poor condition and appears to be unstable. Close inspection due to this was not made. The masonry here should be taken down to a level where the masonry is stable, anticipated to be approximately 1.5m above existing ground levels. The masonry should then be rebuilt up its height locally. Ensure any new masonry is well tied into the existing.



Photograph 3.0 – De-lamination of masonry to flank walls



Photograph 4.0 – Exposed head of masonry throughout building

2.4 The masonry to the south western quoin is in poor condition. The head of the masonry has de-laminated and the mortar is very damp and easily friable when raked. Areas of the mortar internally have visible moss and foliage growing from the majority of the mortar joints. It is considered the head of the masonry will require re-building. The stability of the wall should be closely assessed once safe access is available to ensure de-lamination of the masonry is not occurring.



Photograph 5.0 - Outward collapsed masonry near south western quoin

2.5 Generally the mortar throughout the building is poor. In some areas such as the rear flank wall the mortar appears to be a later cementitious mortar. Cement based mortars are unbreathable and should not be applied to a stone substrate. It is suggested all wall panels will need to be raged over and the majority of all bedding joints of the stonework raked out and re-pointed using a suitable natural hydraulic lime (NHL) mortar. Further advice in respect to any re-pointing work should be sought from a suitably experienced stone mason or lime mortar specialist such as the Cornish Lime Company (01208 79779).



Photograph 6.0 - Cementitious mortar and flashing

2.6 The base of the walls should be inspected throughout to ensure that the walls are not undermined or exposed. The external ground level should not be below the base of the wall. Locally to the front elevation, voiding and low ground levels are present which will likely require infilling and the external ground level locally raised.



Photograph 7.0 – Voids to base of wall at front elevation

2.7 Throughout the building is a large build up of foliage internally and externally. This includes the growth of small trees inside the building. The foliage and trees are almost certainly undermining the building and require complete and careful removal. It is considered likely that where roots undermine the external walls, remedial local underpinning may be required to maintain the stability of the wall's base.



Photograph 8.0 – Tree and foliage visible internally

2.8 The level of the external ground throughout the site varies. The rear flank wall and northern walls in particular retain ground. However it is unclear if these levels are original or a result of fill material and ruin that has been grown over. In any case considerations for drainage and tanking of any wall that retains ground should be given. It may be prudent to consider removing all retained ground against the building and adopting new separate external retaining walls.



Photograph 9.0 - Build up of ground to external face with original levels unclear

2.9 Some areas of localised cracking are noted primarily to the front facing gable walls. These are likely to require stitching up their height with stainless steel helical bar by 'Helifix' or similar lain into the mortar up its height at a maximum of 450mm vertical centres.



Photograph 10.0 - Vertical cracking to front elevation gable wall

3.0 Floors

3.1 The ground floor throughout appears to be a bare earthen floor although rubble and foliage may be concealing a formal floor beneath. It is suggested any existing ground floor make-up will require breaking up and re-laying level. It is likely any new floor may consist of a simple insulated ground bearing floor slab. Depending on proposed levels, consideration for underpinning may be required.



Photograph 11.0 - Internal floor concealed from rubble and foliage build up

3.2 It is unknown if a first floor was present to the building in its history based on the remains, however once entrance is raised and may have been at a former first floor level. If proposed, a new suitably designed timber first floor deck would be required.



Photograph 12.0 – Possible first floor opening to northern gable wall

4.0 Lintels

4.1 Where inspected, all remaining lintels are granite and appear to remain serviceable under their current use. Each lintel will need to be examined on a case-by-case basis upon conversion of the building, subjecting the anticipated new loading criteria to each as required. Whilst it is anticipated the majority of the existing lintels will be suitable to remain a number of replacements or repairs may be required if they are to support heavy loading or concentrated loads such as beam or truss bearings.



Photograph 13.0 – Granite lintels visible from underside [ground floor opening]



Photograph 14.0 – Granite lintels visible from underside [gable opening]

5.0 Conclusion

The building is considered to be typically well-built. It has however suffered from structural and weathering problems, which has caused deterioration in its fabric. Left unchecked the building will inevitably decay further and fall into greater disrepair. This report concludes that the building is structurally capable of rebuilding as is proposed such that it may be conserved and continue to be a valuable asset to the historic context in which it is set.

Appendix A

Conservation Philosophy

Before describing and structural repair work it is important to understand the approach taken to arrive at the works proposed. Our conservation philosophy is twofold and is used as a reference against which the building needs are measured. From most to least desirable;

Fabric repairs

- a. If structurally viable, conserve as found;
- b. If structurally viable, conserve and reinstate existing fabric where it survives but has been dislodged from its original location.
- c. Reinstatement should only take place where records can verify the original position.
- d. Minimise structural repairs without compromising the longevity of the fabric;
- e. Use like for like structural repairs, again using records where necessary;
- f. Finally use modern material as an honest structural repair or intervention, so long as this does not compromise the character of the listed building.

The character of the building.

- g. No change should take place to affect the character;
- h. Where a structural intervention takes place it is to maintain the character (reinstating lost features etc);
- i. If there is to be a structural intervention it is to be fully reversible;
- j. If the structural intervention is irreversible the design must be subservient to the character of the building. This could be using modern or traditional materials, depending on the circumstances.

No work should take place until permission has been sought and agreed by all statutory regulatory bodies.

Limitations of investigation

- This report is confidential to the client and without our express consent should not be used for any other purpose. Its contents should not, without our consent, be revealed to any third party other than the clients' professional advisers or published in a form without our express written consent. No responsibility is accepted by us toward unauthorised third parties acting upon information contained within this report.
- This report relates to the general structural condition of the building highlighted in the location section of this report only. The content of this report should be construed as a comment on the overall condition of the building and the quality of its construction and not as an inventory of every single defect. It restricts itself solely to the brief. We do not guarantee that all defects present, or that may occur in the future, will be discovered due to the limitations of this inspection.
- During our visit a condition survey was carried out and photographs taken. This report is based on notes taken from this visit without benefit of monitoring or previous knowledge of the building.
- All external observations were made from ground level unless noted otherwise. Parts of the structure, which were covered, unexposed or inaccessible, could not be visually inspected and therefore cannot be reported upon.
- Due to limited access, this report may not be an exhaustive list of all structural defects in the building.
- This inspection relates to the main structural elements, i.e. roofs, walls and floors.
- Dimensions, where given in the report, are estimated.
- Trial pit excavations were not carried out.
- Underground drains were not examined.

- There is evidence of damp in the building. Account of the full extent of this damp is beyond the scope of this report. It is recommended further investigation, including disruptive inspection behind wall linings, as required, is undertaken by a specialist contractor in order to establish the full scope of any remedial work needed in this respect.
- In a number of areas foliage was recorded as existing on, or in close proximity to, the walls of the building. Such growth can trap moisture against the wall fabric which can lead to degradation of the wall surface. Where it is recommended this foliage is removed, it should be cut off at its base and allowed to die back. Pulling such growth, particularly ivy, from the face of the walls can lead to surface damage.