

## General structural appraisal report on

Former milking parlour barn

Higher Crackington

Bude

Cornwall

EX23 0LD



Report reference: 12392\_TF\_23

30.03.23

For:

Mr & Mrs Swann

## Introduction

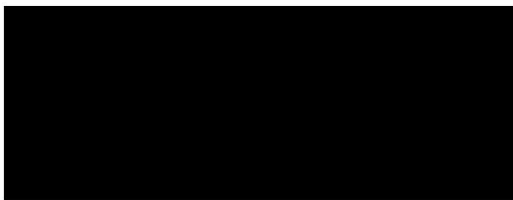
Property: Former milking parlour barn  
Higher Crackington  
Bude  
Cornwall  
EX23 0LD

Listings: None

Brief: To inspect and report on the structural condition of the barn.

Weather: Wet and overcast, following a period of generally wet weather.

Inspection: The building was inspected by T L Fewings MEng (Hons) OBO  
Foulkes Jackson Fewings Ltd on Wednesday 29<sup>th</sup> March, 2023.



Memberships: Chartered Building Engineer, member of the Chartered Association of  
Building Engineers (CABE)  
(Membership No. 68384153)

Member of the Institution of Civil Engineers (ICE)  
(Membership No. 62913327)

Associate of the Royal Institution of Chartered Surveyors (RICS)  
(Membership No. 6622074)

Member of the Society for the Protection of Ancient Buildings (SPAB)

## Foreword

The building subject to survey lies in a rural setting. It is understood to have once formed a small milking parlour, for which cast concrete stalls and a gulley drain are still present and set in the ground floor. Herein the building surveyed will be referred to singularly as 'the barn'. An annotated site and location plan is contained on the following page for clarity and immediate reference.

The barn is single storey and rectangular on plan. For the benefit of this report the frontage is considered to be the gable wall that faces almost due north. The barn almost certainly once served the principal farmhouse, which is understood to lie quite some distance to the west of the setting.

It is understood a proposal exists to convert the barn 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 barn is considered to be typically well-built. Its structure is considered robust enough to be a viable proposition for conversion such that it may continue to be a valuable asset to the context in which it is set.

## Location

For the benefit of this report, the barn is considered to face north. The barn is identified in the below Figures 1.0 and 2.0.



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



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

## 1.0 Walls

1.1 The four walls of the barn are formed from a mixture of 100mm and 150mm single skin concrete blockwork. The walls present in good general order throughout. There is a small vertical crack in the east wall panel. The crack is not considered to be of significant structural concern. It is suggested the crack may be attributable to historic defects in the roof structure and further movement is considered unlikely. It is suggested upon conversion the crack is stitched up its height using stainless steel helical tie bars as made by Helifix or similar. Further details of such repairs are contained in Appendix A of this report for reference.



Photograph 1.0 –Eastern flank wall elevation.



Photograph 2.0 – Small crack in blockwork on the inside face of the eastern flank wall.

1.2 Due to the ground levels surrounding the barn, the lower extents of the wall panel on the western flank retain ground. No movement was recorded as might be attributable to lateral pressure from the ground in this area. Upon conversion it will naturally be necessary to suitably tank the wall to prevent the ingress of water; unless external levels can be suitably reduced.



Photograph 3.0 –Southern gable wall, with increased ground levels to west end.

## 2.0 Floors

2.1 The ground floor throughout consists of cast concrete. The depth and specification of which is unknown. There is shallow gulley drain cast in the lower slab. There is a step of some 150mm in the slab level within the barn. Against the western flank wall there is also a cast concrete feeding trough present across the width of the building. Upon conversion it is assumed the floor will be leveled and as such it is suggested the at least part of the existing concrete will require breaking up and re-laying. It is likely any new sections of floor may consist of a simple insulated ground bearing concrete slab.



Photograph 4.0 –Internal concrete floor slab, with step (foreground) and trough beyond.

### 3.0 Roof

3.1 The roof of the barn has been replaced in the not to distant past. It consists of a 250mm by 50mm timber ridge beam which spans between the front and rear gable walls, and a series of 150mm by 50mm common rafters. The roof is insulated internally and clad with a membrane externally. The rafters are truss clipped to a wall plate which is strapped down to the masonry using proprietary wall plate straps set at 1.2m centers. The roof structure appears robust and is free of structural distress. Upon conversion the size of the timbers forming the roof should be qualified by formal calculation but it is suggested the existing structure is very likely to be suitable to be retained.



Photograph 5.0 –Pitched and vaulted roof structure from ridge beam and common rafters.

#### 4.0 Lintels

4.1 There is a single door opening into the barn set on the front north gable elevation. The lintel over this opening appears to be an approximately 70mm by 100mm concrete member. The lintel is in good condition and clearly serviceable under its current loading condition.

4.2 There is a single window opening in the barn set on the rear south gable elevation. The lintel over this opening appears to be two 50mm by 100mm timbers. These timbers are in good condition and clearly serviceable under their current loading condition.



Photograph 6.0 –Timbers forming lintel over rear window opening.



## 5.0 Conclusion

The barn is considered to be typically well-built. It is our opinion that the barn is structurally capable of conversion as is proposed such that it may be conserved and continue to be a valuable asset to the context in which it is set.

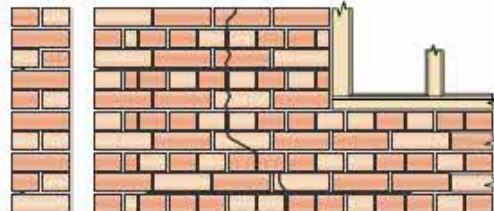
CS05

## Crack Stitching a Solid Wall using HeliBars

### METHOD STATEMENT

1. Using a twin-bladed, diamond-tipped wall chaser with vacuum attachment, cut slots into the horizontal mortar joints to the specified depth and at the required vertical spacing. Ensure that NO mortar is left attached to the exposed brick surfaces in order to provide a good masonry/grout bond.
2. Remove ALL dust and mortar from the slots and thoroughly flush with water. Where the substrate is very porous or flushing with water is inappropriate, use HeliPrimer WB. Ensure the slot is damp or primed prior to commencing step 5.
3. Mix HeliBond cementitious grout using a power mixer and load into the Helifix Pointing Gun CS.
4. Fit the appropriate mortar nozzle.
5. Inject a bead of HeliBond grout, approx. 15mm deep, into the back of the slot.
6. Push the 6mm HeliBar into the grout to obtain good coverage.
7. Inject a second bead of HeliBond grout over the exposed HeliBar and iron it into the slot using a finger trowel. Inject additional HeliBond as necessary, leaving 10-15mm for new pointing.
8. The crack within the wall should be weather-proofed using an appropriate Helifix bonding agent e.g. HeliBond or CrackBond, depending on the width of the crack and the surface made good or left ready for any decoration.
9. Clean tools with clean, fresh water.

*N.B. Pointing may be carried out as soon as is convenient after the HeliBond has started to gel.*



### RECOMMENDED TOOLING

For cutting slots up to 40mm deep .....	Twin bladed cutter with vacuum attachment
For mixing HeliBond .....	3-jaw-chuck drill with mixing paddle
For injection of HeliBond into slots .....	Helifix Pointing Gun CS with mortar nozzle
For smoothing pointing .....	Standard finger trowel

### Specification Notes

The following criteria are to be used unless specified otherwise:

- A. Depth of slot into the masonry to be 35mm to 40mm.
- B. Height of slot to be equal to full mortar joint height, with a minimum of 8mm. For thin mortar joint specifications refer to the Helifix Technical Dept.
- C. HeliBar to be long enough to extend a minimum of 500mm either side of the crack or 500mm beyond the outer cracks if two or more adjacent cracks are being stitched using one rod.
- D. Normal vertical spacing is 450mm (6 brick courses).
- E. Where a crack is less than 500mm from the end of a wall or an opening, the HeliBar is to be continued for at least 100mm around the corner and bonded into the adjoining wall or bent back and fixed into the reveal, avoiding any DPC.
- F. In hot conditions ensure the masonry is well wetted or primed to prevent premature curing of the HeliBond due to rapid de-watering. Ideally additional wetting of the slot, or priming with HeliPrimer WB, should be carried out just prior to injecting the HeliBond grout.
- G. Do not use HeliBond when the air temperature is +4°C and falling or apply over ice. In all instances the slot must be thoroughly damp or primed prior to injection of the HeliBond grout.

The above specification notes are for general guidance only and Helifix reserves the right to amend details/notes as necessary.

### GENERAL NOTES

If your application differs from this repair detail or you require specific advice on your particular project, call the Helifix Technical Sales Team on 020 8735 5222. Our Technical Department can provide you with a full support service including:

- Advice, assistance and recommendations on all structural repair matters
- Devising and preparing complete repair proposals for specific situations
- An insurance-backed warranty via our Approved Installers scheme

## 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.