

Our Ref: 2017/436/TI

11th January 2018

Allan Platt
102 Northgate
South Hiendley
S72 9AQ



Dear Mr Platt,

Structural Conditional Report for 319-323 Barnsley Road & 2 Haigh Lane, Hoylandswaine, S36 7HA

Following the verbal instruction received from yourself we have carried out an inspection of 319-323 Barnsley Road and 2 Haigh Lane, Hoylandswaine, S36 7HA on 19 December 2017, in order to assess and comment on defects present in the structure.

The inspection was carried out during fine dry weather.

No inspection has been carried out to non-structural items such as window frames, doors, fixtures and fittings etc. No inspection has been made to plumbing or electrical installations. No inspection has been carried out to the existing drainage.

The inspection was limited to immediately visible and accessible areas only. No high level access has been carried out, only inspection from internal floor levels and external ground levels.

No intrusive exploratory work was carried out during the inspection. No trial holes to inspect ground conditions or foundations were carried out as part of this investigation.

This report does not provide a comprehensive list of all structural or potential structural defects.

No materials testing has been carried out unless specifically stated.

No inspection or testing has been carried out on any defective woodwork, exposed or hidden. Advice should be taken from suitably qualified timber treatment and preservative specialist contractors.

No damp testing has been undertaken, again advice should be obtained from suitable qualified specialists.

No enquiries have been made with Statutory Authorities with regard to Planning or Building Regulations.

No enquiries have been made with the Coal Authority.

The Report of the Inspection is for the sole use of the Client and the Client's professional advisers and should not be reproduced in whole or in part or relied upon by any third parties for any use without the express written approval of SGM Structural Design Ltd.

The findings of this report are based on information supplied by the client. The information has been accepted and used in good faith and unless otherwise stated no accepted and used in good faith and unless otherwise stated no attempt has been made to verify the information provided.

The findings and recommendations are considered to be valid and appropriate at the time of preparation.

This report should be read in conjunction with Appendix 'A' (Photos).

Reference Position

For the purposes of this report all references to left, right, front and rear are as viewed from Barnsley Road.

Topography

The site is effectively flat, with a nominal fall away from Barnsley Road.

General Description and Form of Construction

The buildings inspected are a block of three properties with No. 319 at the far left hand side (as viewed from Barnsley Road), with a fourth property on Haigh Lane attached to and behind No. 319. No. 321 is the centre property which takes up approximately 40% of the width of the block. This was formerly the Post Office building. No. 323 is to the far right hand side of the block. Several outbuildings are present behind No.2 Haigh Lane.

The front elevation of the whole block of three buildings was built in the 1850's. The houses have two pitched roofs with a valley running parallel to Barnsley Road. No.2 Haigh Lane was likely constructed at the same time as the rest of the properties. No. 2 Haigh Lane has a mono pitch roof continuing the slope of the rear of No. 319 Barnsley Road. The outbuildings to the rear of No.2 Haigh Lane are in a different masonry, likely at a later date.

The outer leaf of the four properties consists of natural stone. The remaining masonry elements are a mix of imperial brickwork and stone. Suspended floors have been constructed in timber. The roof consists of blue slates, laid on timber battens, rafters and purlins.

No. 2 Haigh Lane and No.321 Barnsley Road have cellars present. These cellars are small on plan.

History

The houses were constructed circa 1850 with the outbuildings constructed afterward (likely circa 1900). No.321 was previously a post office.

This building has suffered historical impact damage from a lorry at the front elevation right hand side. At this point was a doorway which was relocated in 1967 to the right hand elevation. The left hand side gable front half has been historically rebuilt in similar stone to the garage to the rear, after also suffering impact damage from a lorry.

External Observations

Front Elevation

The front wall has an outward bow towards Barnsley Road. At First Floor of the Post Office (Number 321) this can be seen on a photograph showing that it is kicked out at mid portion of the wall and has gone in at roof level for part of the length, but has moved out towards Barnsley Road for the majority of its length.

A vertical crack was observed running down to No.319 second window to the left hand side on the right hand side of the lintel. Refer to Appendix A for a full suite of photos, showing defects.

An infill section of brickwork to No.321 has lost part of the render applied to it including parts of a faux cill.

Vertical cracking was observed over the right hand side of the central lintels.

There is vertical cracking from the Ground Floor lintel to First Floor window cill. Adjacent to this crack, the lintel to the left hand side has dropped on its right hand end. This effect is more pronounced on the lintel adjacent the gable end. This lintel was previously over a historic doorway. This was blocked up during the works to the gable in 1967.

Right Hand Side Gables

The right hand gable of No. 323 has outward displacement in the order of 75mm. When the door was relocated in 1967 the reveals were built out forming a 120mm wide reveal which is plumb. The outward bowing between the wall and the reveals shows an outward bow in the order of 40mm in this position.

Vertical cracking was observed to the front end of the gable. At the rear end, another crack is present, more severe, between the first floor window and door jamb. The crack continues down the side of the jamb.

A vertical crack is present between the reveal of the gable at the rear and the second gable on the right hand side.

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Rear Elevation

The majority of this elevation is in a good condition with no major cracking visible. A porch historically constructed to No. 321 is in a particularly bad condition. Timber framing to the glazing has rotted, with missing panels. The brickwork dado wall is showing signs of spawling.

Left Hand Side Gables

At the left hand twin gable wall of No 319, there is a pronounced crack running down from the valley gutter to the gable wall. In the position of the small window.

Masonry to the rebuilt section of the gable has honeycomb weathering. In some places this has begun to cause an alveoli effect.

Cracking was observed between the masonry to the front wall and this gable.

There are no lintels to the openings on this elevation. The masonry seems to bear onto window frames or is completely unsupported.

Outbuildings

The outbuildings to the property are finished in asbestos cement on a poor quality timber roof structure. The stone is in poor condition and there is cracking to the very weathered rear end wall. The stone to both outbuildings inspected is severely weathered in a similar fashion to the left hand side rebuilt gable.

Overall these buildings are in severe distress including cracking and weathering to masonry and rotting to timber elements. Vegetation is growing from one of the walls and is present on the roof.

Roof

Externally the roof appears to be in relatively adequate condition. There is no visible excessive bowing of purlins. It should be noted however that the roofs to No.319 & 321 have been covered in a sealant tar, likely due to previous water ingress. Internally, holes are clearly present in several positions. The valley gutter has caused water damage, meaning it has not been maintained, failed in some way or a combination of the two. Roof timber generally, appear to be in an acceptable condition.

Internal Observations

There are internal raking cracks above the lintel bearings between the front part and the rear part of No. 323. The door lintel has settled on the right hand bearing as the building has settled.

Internally the photograph shows the crack as the wall is kicked out between the internal wall and the external perimeter wall.

On the right hand gable of No. 323 has outward displacement in the order of 75mm, reflective cracking is seen inside by the chimney.

There was noted to be severe water ingress on the valley gutter lines and loss of ceilings of lath and plaster.

Severe water ingress is noted to the rear left of No.2 Haigh Lane at roof level. This has occurred over many years, resulting in loss of ceiling finishes, First Floor plaster finishes and wall finishes in the corner.

The lintel above the Ground Floor door has undertaken severe rot and has collapsed.

The majority of the walls internally is suffering from either water ingress or damp.

Where cellars were encountered in the properties, they were particularly damp with water ingress.

Conclusion

1. The front wall is bowing outward due to a lack of tie action to the rest of the structure. This problem is common in buildings of this age due to a lack of understanding of construction at the time of construction. No cavity ties were used at this time, and the cavity is most likely rubble fill. Further movement of this wall cannot be ruled out.
2. The cracking to the front elevation on the right hand side is indicative of settlement of the right hand side gable. This is further supported by the fact that the lintels to the right hand side have dropped. Further settlement of this end and cracking cannot be ruled out.
3. Cracking to the front elevation on the left hand side could be in relation to a lack of movement joints in this masonry panel. These joints would allow the masonry to shrink and expand during changes in temperature without causing cracking.
4. The right hand side gable is bowing due to a lack of tie action similar to the problem in (1). This may only be a contributory factor however since this wall is settling. The cause of this settlement may be linked to the proximity of the nearby mature trees. If the ground has a clay content, this may be causing shrinkage or heave. Further settlement of the gable and cracking cannot be ruled out.

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The majority of the walls internally is suffering from either water ingress or damp.

Where cellars were encountered in the properties, they were particularly damp with water ingress.

Conclusion

1. The front wall is bowing outward due to a lack of tie action to the rear of the structure. This problem is common in buildings of this age due to a lack of understanding of construction at the time of construction. No cavity ties were used at this time, and the cavity is most likely rubble fill. Further movement of this wall cannot be ruled out.

2. The cracking to the front elevation on the right hand side is indicative of settlement of the right hand side gable. This is further supported by the fact that the lintels to the right hand side have dropped. Further settlement of this end and cracking cannot be ruled out.

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5. The rear conservatories and outbuildings are in a poor state. This is due to the lack of maintenance in the past decades. The nature of their construction limited the life span of these structures to begin with however.
6. Cracking to the left hand side gable is possibly being caused by differential settlement between the front and rear. A contributory factor maybe the length of the masonry panel and the lack of movement joints as described in (3). Further cracking cannot be ruled out.
7. The weathering to the left hand side gable is quite severe. This 'Honeycomb' effect could be a result of depositions of salt on the surface of the stone. The porosity of stone will also have an impact on the susceptibility to this effect as well. The salt depositions may have come from the type of mortar used. Salt deposits from water on the surface of the stone in pores forcing them apart. The chemical process causing the initial damage to the stone may have ceased, but it is still susceptible to other forms of weathering.
8. Internally, cracking typically matches positions of cracking or movement on the exterior. Some cracking is particularly severe and considered structural. Other cracks could be considered cosmetic.
9. The water damage internally is a result of the valley gutter overflowing or leaking. This has caused damage to some areas.
10. The cellars are wet and damp with water ingress due to the lack of tanking.

Recommendations

The recommendations below have been categorised into classifications of cost for the remedial works. The following should be considered:

Moderate – Approximate cost would be measure in the £1000s.

High – Approximate cost would be measured in the £10,000s.

Very High – Approximate cost would be in excess of £100,000.

1. The front wall should be stabilised by introducing a robust strapping system incorporating concrete anchor blocks and plydecking the floor and roof structure. The preparation of details is beyond the scope of this report. Due to the settlement, most of this front wall will require underpinning. The cost of undertaking this is considered 'High'.
2. The front wall right hand side and gable should be taken down and rebuilt plumb off new foundations designed to cater for the trees and any other ground conditions encountered. Determination of suitable foundations is beyond the scope of this report. The cost of undertaking this is considered 'Very High'.

3. Cracking to the left hand side of the front wall should be made good with a weak mix mortar, although underpinning cannot be ruled out until intrusive investigation into ground conditions has been undertaken which is outside the scope of this report. The cost of undertaking this is considered '**High**'.
4. The conservatories and outbuildings to the rear should be demolished as it will not be possible to salvage them and comply with the relevant documents of Building Regulations. The buildings should then be rebuilt if required. The cost of undertaking this is considered '**High to Very High**'.
5. Cracking to the left hand gable wall should be made good with a weak mix mortar. Underpinning cannot be ruled out. The cost of undertaking this is considered '**Moderate to High**'.
6. The majority of the left gable wall to No 319, where the Honeycomb weathering is most severe should be rebuilt. The cost of undertaking this is considered '**High**'.
7. All internal cracking should be repaired, this may include strapping systems as necessary to various areas. The cost of undertaking this is considered '**Moderate to High**'.
8. The valley gutter should be completely re-laid to ensure no further leaks. The cost of undertaking this is considered '**Moderate**'.
9. It would be prudent to remove and relay the roof as necessary. Insulations should be provided to the ceilings to comply with Building Regulations. The cost of undertaking this is considered '**High**'.
10. The cellars should be reviewed to determine if needed. Should it be required to convert them into habitable spaces, insulation and damp proofing will be required. The cost of undertaking this is considered '**High**' (but potentially unnecessary).
11. The failed lintel over the door to No.2 Haigh Lane should be replaced. The damage to the surrounding area should be made good. The cost of undertaking this is considered '**Moderate**'.

Executive Summary

On consideration of the degree of the repairs necessary to all aspects of the settling and outwardly moving wall, a judgement decision needs to be made on whether, it is not more cost effective to demolish these group of buildings, and start a fresh. However, as Structural Engineers, it is outside the scope of our services and expertise to make this judgement.

I trust the above meets your present requirements. Should you have any queries with regard to the above, please do not hesitate to contact me.

Yours sincerely,



Stuart McCormick
B Eng (Hons) C Eng MStructE
Director
SGM Structural Design Ltd

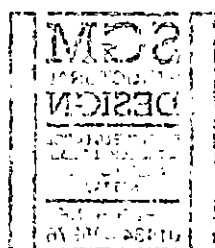
SGM Structural Design Ltd. Registered in England. Company No: 5465970
S. G. McCormick *BEng (Hons) CEng MStructE* Director
Registered Office at: Springfield Lodge, 4 Thornhill Road Edgerton Huddersfield HD3 3AU

APPENDIX A

PHOTOGRAPHS



PHOTOGRAPHS APPENDIX A



LIMITED **STRUCTURAL REPORT**

11 January 2018

Prepared for Allan Platt
102 Northgate
South Hiendley
S72 9AQ



Project	319-323 Barnsley Road & 2 Haigh Lane, Hoylandswaine, S36 7HA
Project Number	2017/436
Date	11 January 2018

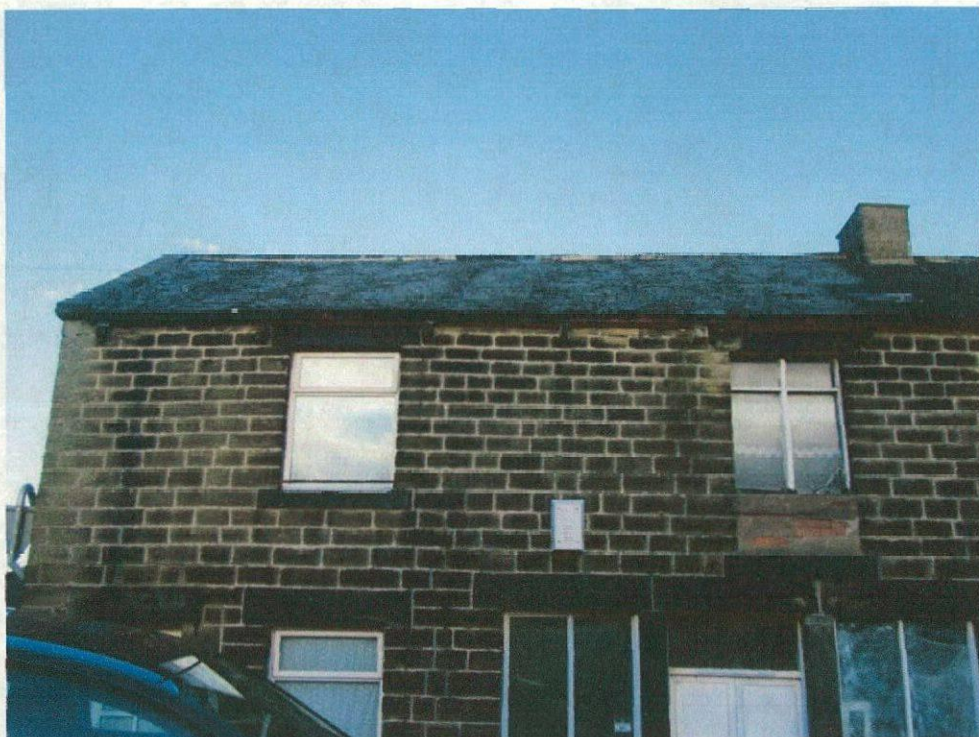


Photo 1 – Extensive weathering of slats to No's 3 on left and 321 in the centre. Bricked up first floor window above old Post Office frontage.



Photo 2 – High level movement to front wall above No 321.



Photo 3 – Vertical cracking between ground floor lintels and first floor sill.



Photo 4 – At junction of No 319 and 321.



Photo 5 – Right hand gable and end of front wall has severe settlement to No 323. Note – 50mm settlement of old lintel over walled up original doorway and severe crack between lintel and first floor sill stone.

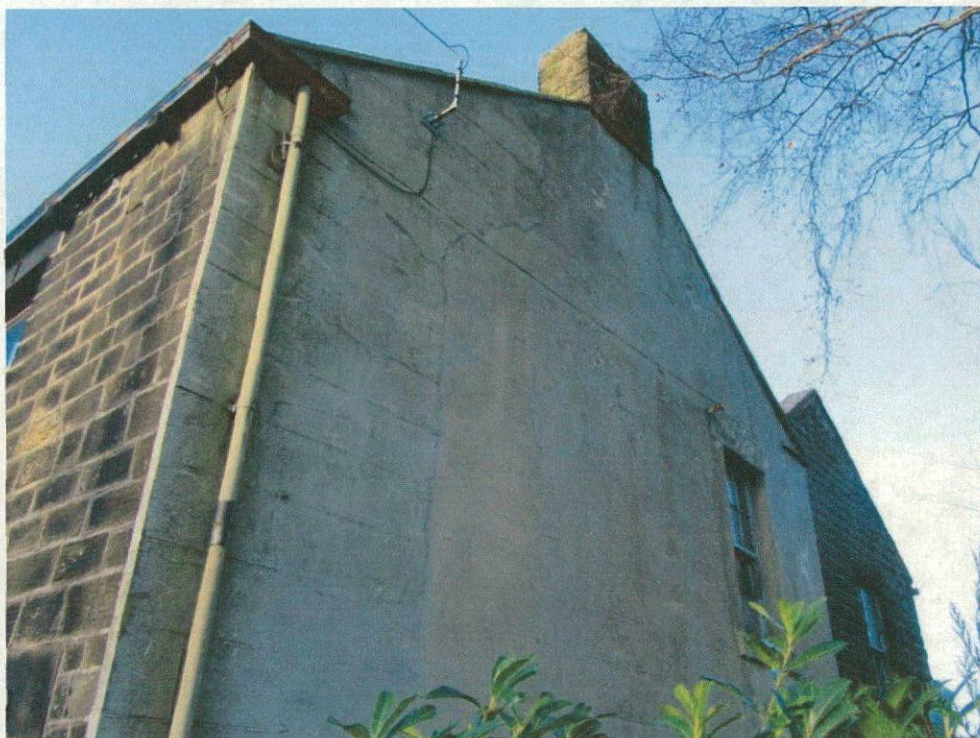


Photo 6 – General view of rendered right hand gable towards the front and stone gable towards rear of No 323.

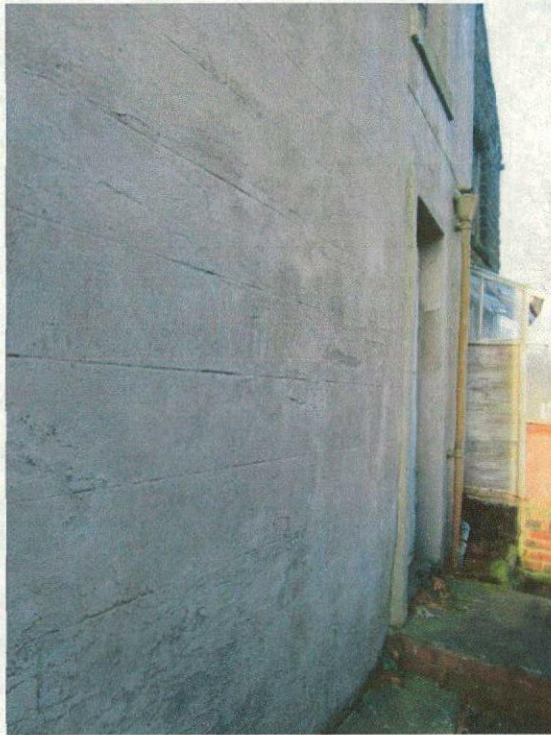


Photo 7 – General outward bowing of right hand gable wall to No 323 and relocated side door, where jambs were installed vertical. These have now moved out of plumb at the head.

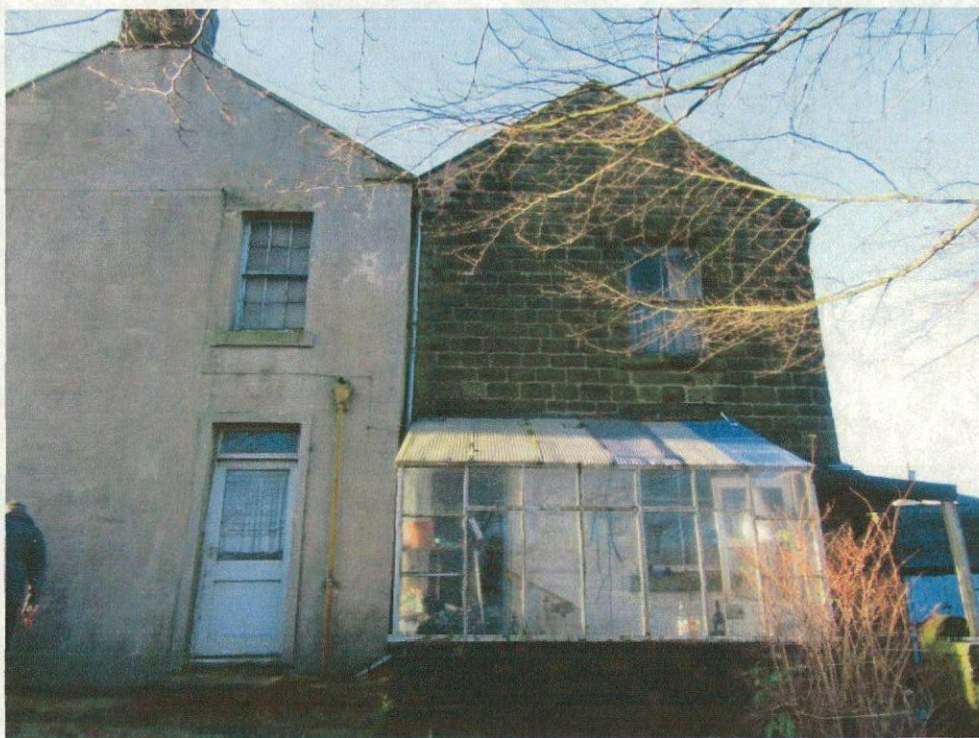


Photo 8 – Dilapidated timber frame and glass porch to right hand gable.



Photo 9 – Crack at junction of rendered front and rear stone work behind rainwater pipe, as the front is moving out more than the rear. Note – poor valley gutter outlet.



Photo 10 – General view of the rear of No 321 (centre) and No 323 (left of view) and No 2 Haigh Lane. Monopitch to the right of view includes ancillary buildings. Porch to the rear of No 321 is severely dilapidated.

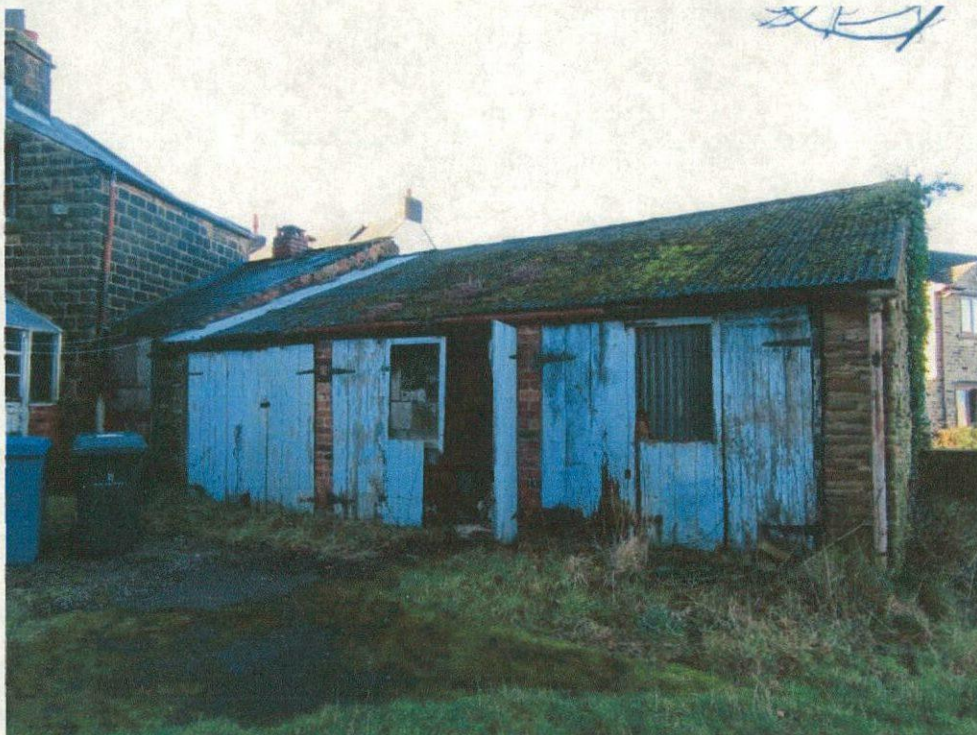


Photo 11 – Outbuildings off 2 Haigh Lane – predominantly asbestos cement roof panels, rotten timber doors and screens and highly weathered stonework.

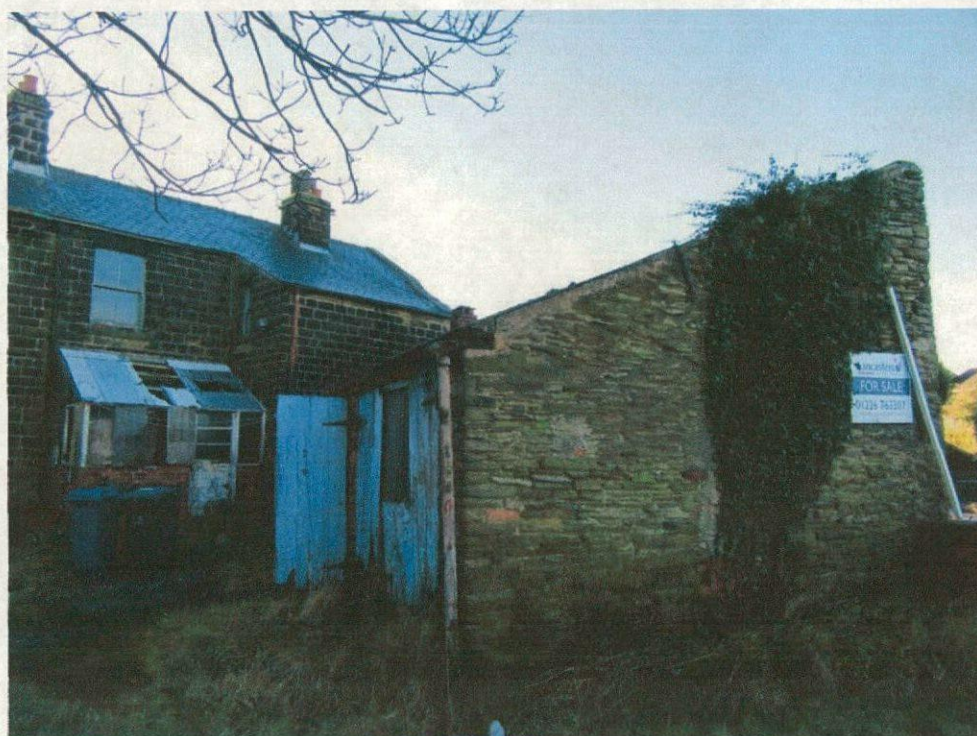


Photo 12 – High weathered stonework to gable of outbuilding.



Photo 13 – Movement cracks to gable of outbuilding.



Photo 14 – Left hand twin gable of No 319.



Photo 15 – Cracking between two gable ends below first floor window. Note
– lack of lintel over window.



Photo 16 – Vertical crack above same window.

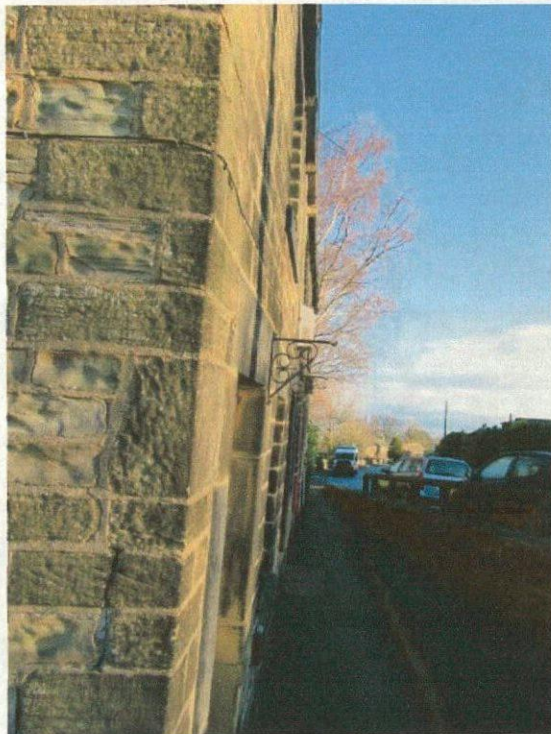


Photo 17 – Front wall along the full length, towards the road is out of plumb.

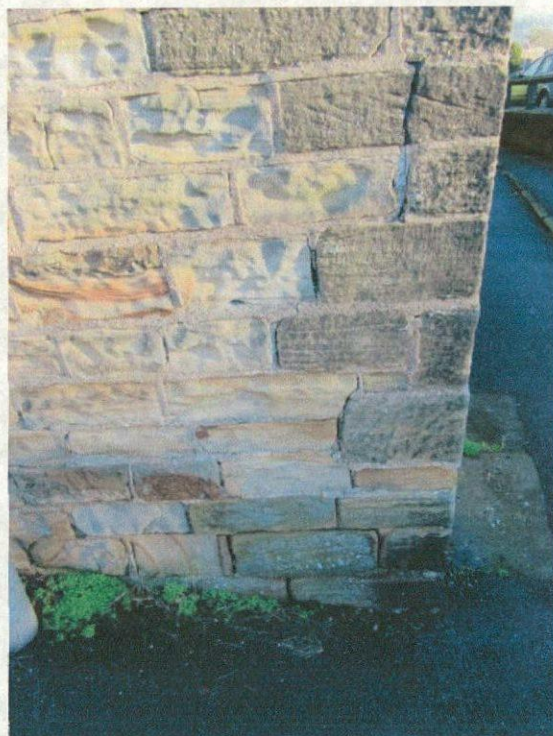


Photo 18 – Crack between front stonework and gable, as the front stone moves away from the gable.

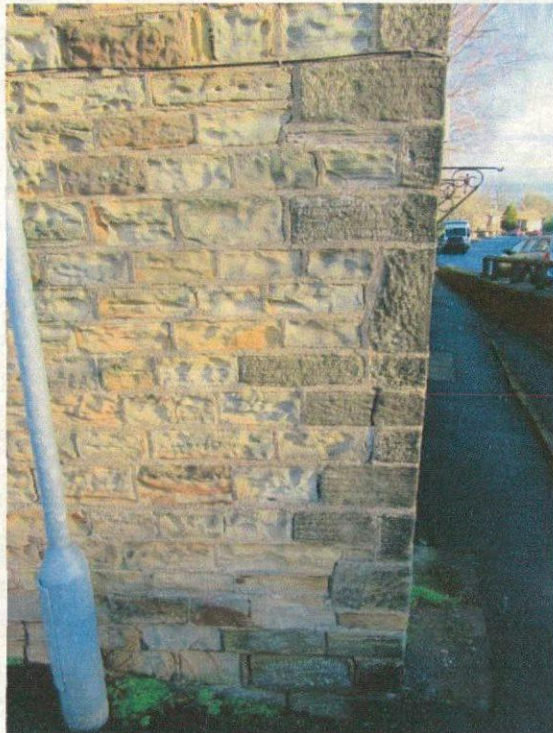


Photo 19 – Cracking extending full height.



Photo 20 – Cracking to gable of No 319.



Photo 21 – Left hand gable wall of 2 Haigh Lane (outbuildings start to the left of the front door)



Photo 22 – Failure of lintel bearing.

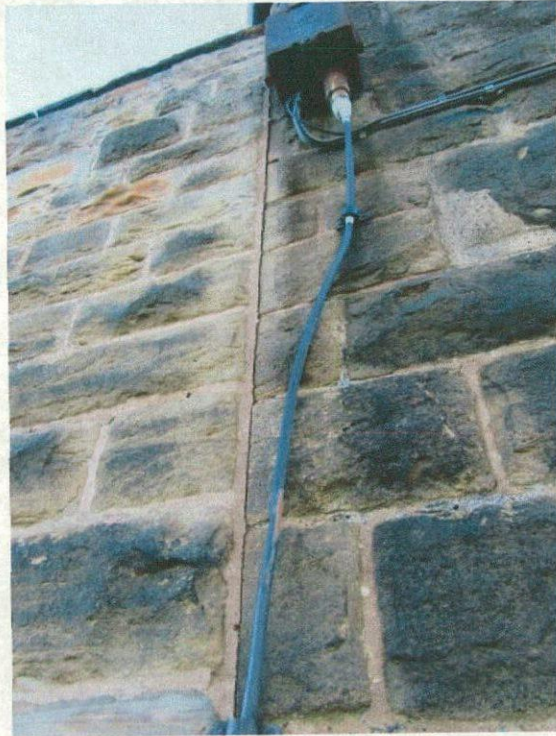


Photo 23 – Cracking at junction of 2 Haigh Lane and outbuildings.

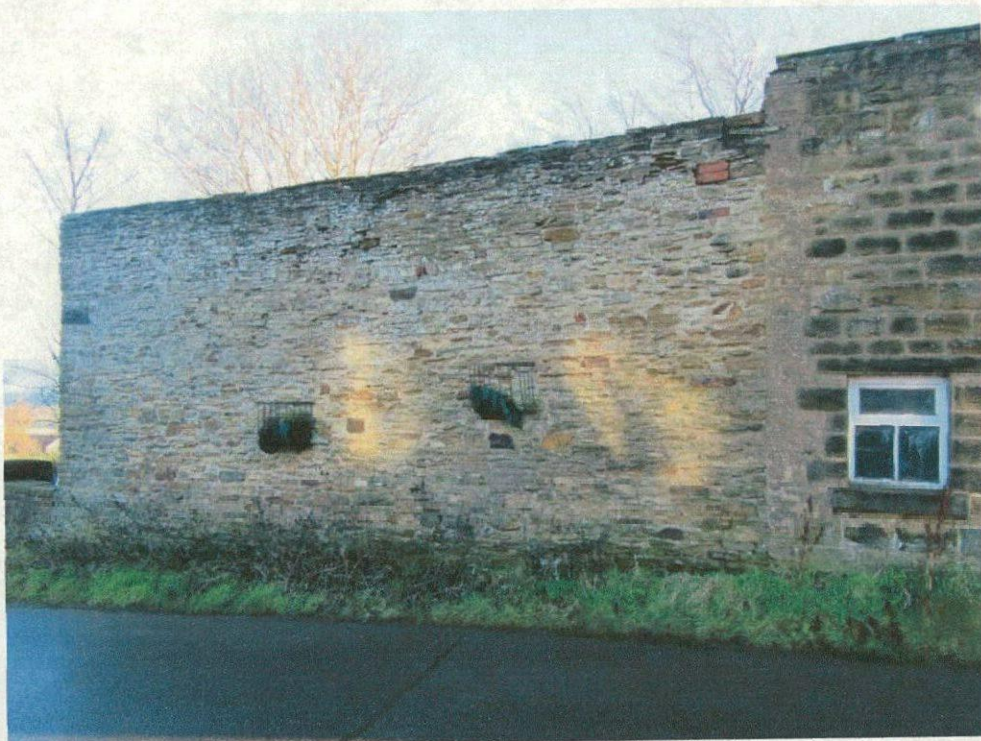


Photo 24 – Left hand wall of garage and outbuildings off 2 Haigh Lane.



Photo 25 – Enlarged view. Note– severe weathering of poor quality stone.

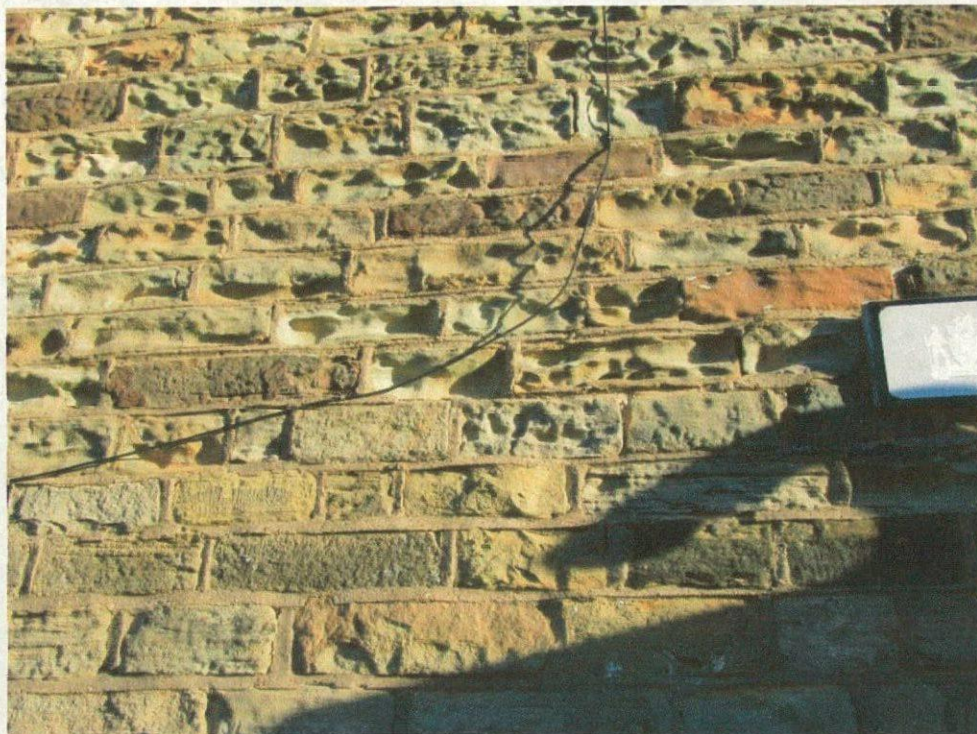


Photo 26 – Severe weathering to whole of gable stonework to No 319.

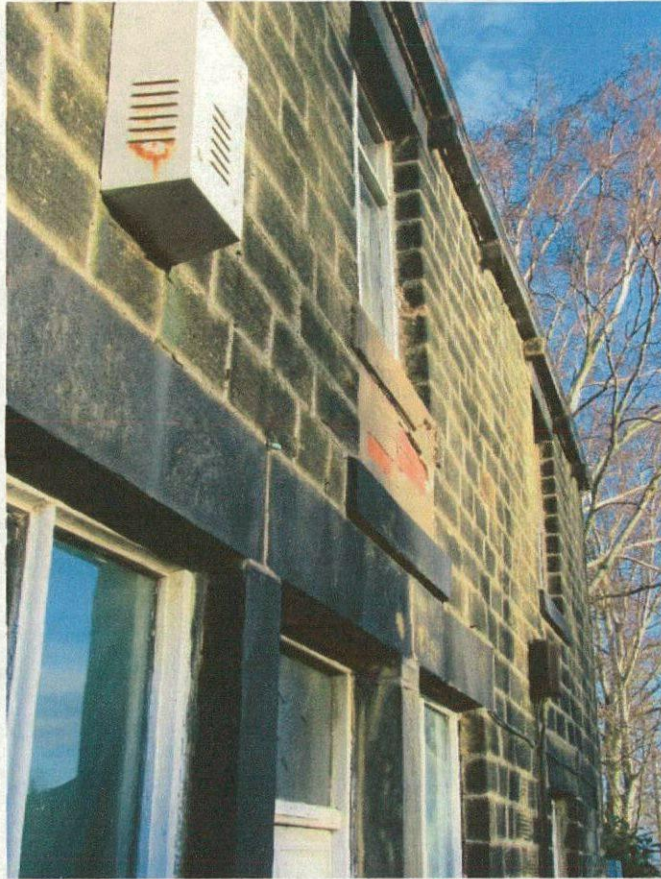


Photo 27 – Excessive outward bowing to first floor stonework to panel between No 321 and 323.



Photo 28 – Internal view of first floor front wall to No 323. Severe water ingress from gutters.



Photo 29 – Settlement cracking to upper right corner, as the gable panel settles.

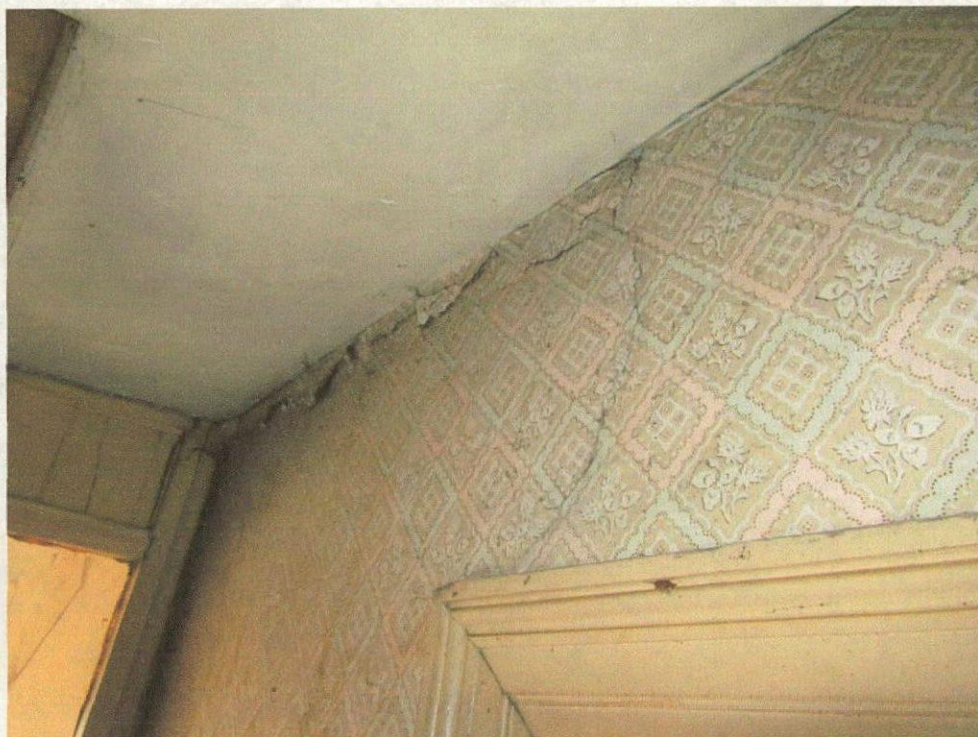


Photo 30 – Cracking at head of internal masonry panel due to settlement.



Photo 31 – Further internal settlement to No 323.

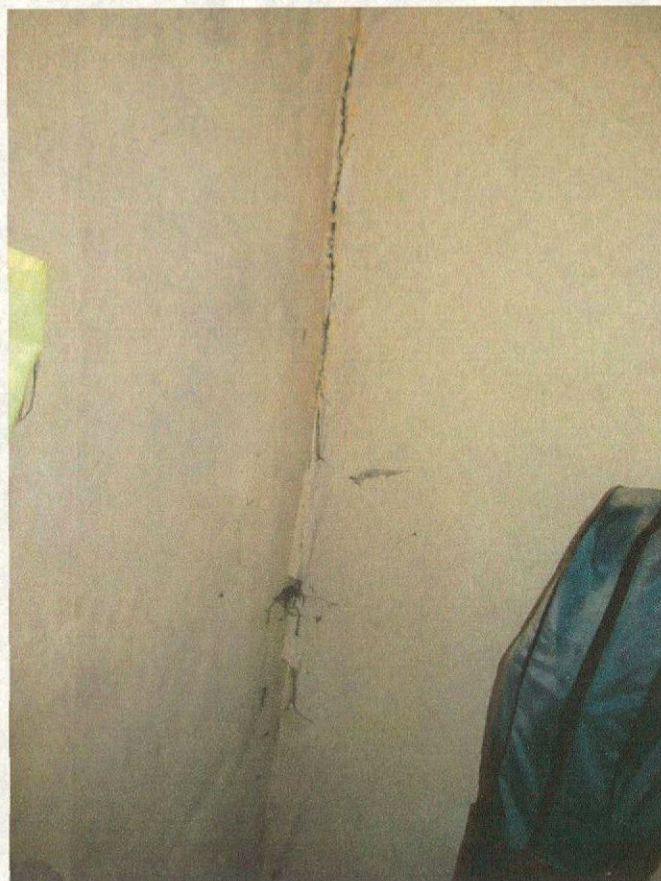


Photo 32 – First floor internal wall to No 321. External wall to the right of the shot is moving out.



Photo 33 – Water damage on valley line of No 321.

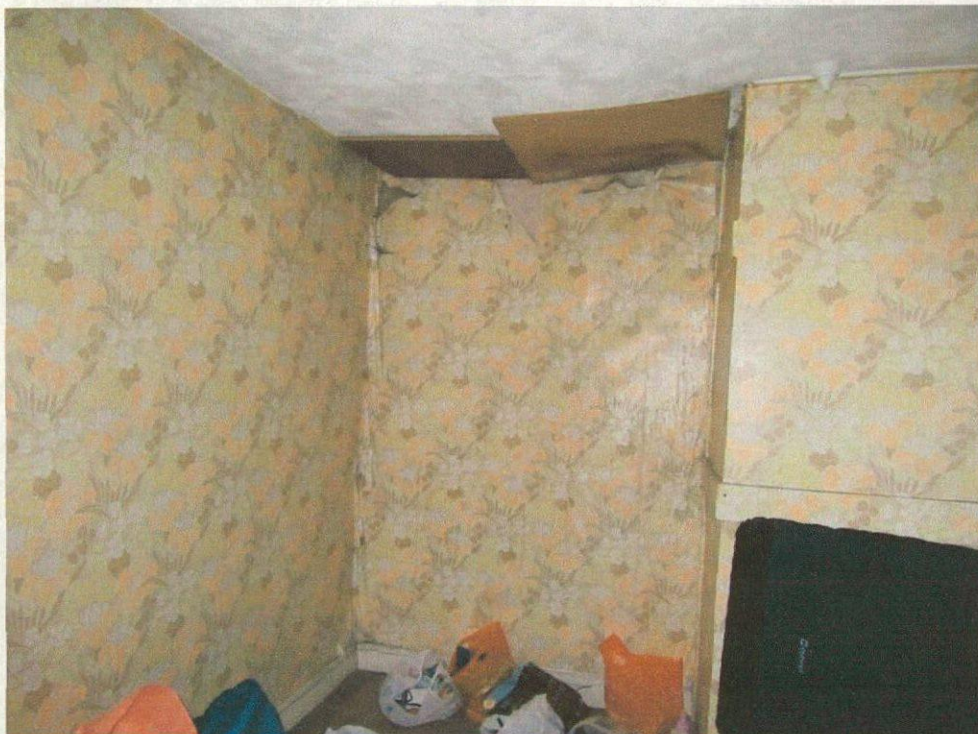


Photo 34 – Settlement of internal walls. Note – rucking of wallpaper at corner and boards over holes in the roof due to water ingress.



Photo 35 – Internal view looking from the front of No 323, through a doorway towards the rear. Note – severe settlement to right hand of the lintel members as the wall is settling.

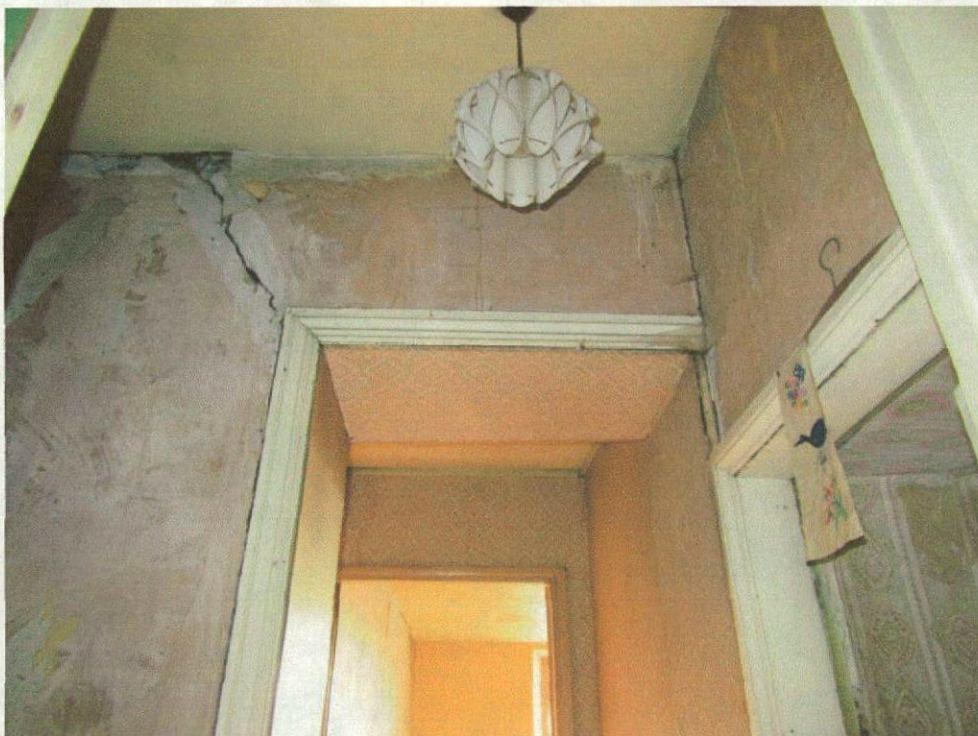


Photo 36 – Same door head looking from the rear towards the front of the property. All this movement is associated with the settlement of the right hand end of the building.



Photo 37 – Water ingress at valley line with rotten timbers present.

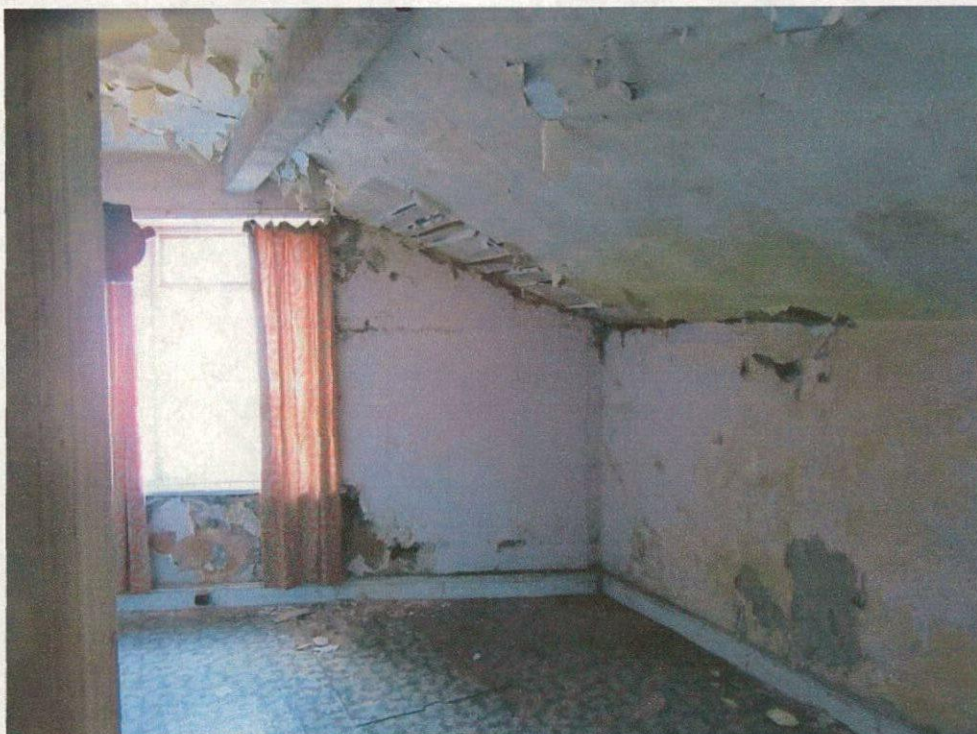


Photo 38 – Water ingress to roof of No 2 Haigh Lane.



Photo 39 – Settlement to right hand gable of No 2 Haigh Lane.



Photo 40 – Severe internal settlement of No 2 Haigh Lane/ No 319.



Photo 41 – Rear left hand gable of 2 Haigh Lane. Severe water ingress – rear left corner.



Photo 42 – Condensation from water in the cellars at No 319. It is believed there may be a well beneath the property.

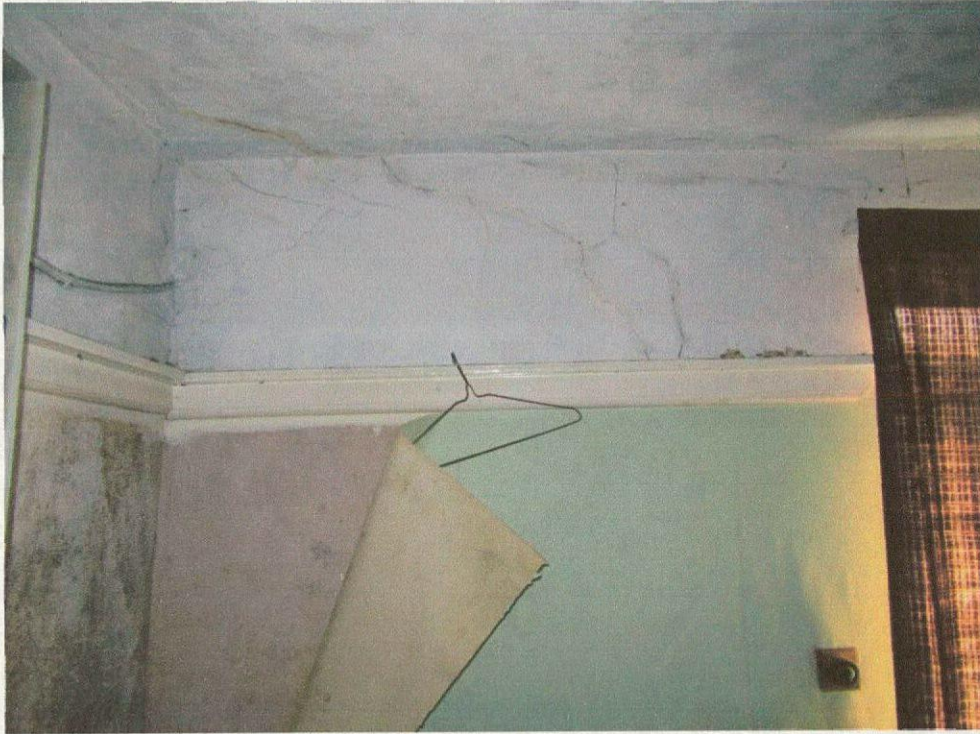


Photo 43 – Cracking to front wall in No 323 due to settlement of right hand gable.



Photo 44 – Internal cracking due to settlement of gable.



Photo 45 – Settlement of internal wall at No 323 and cracking of ceiling.

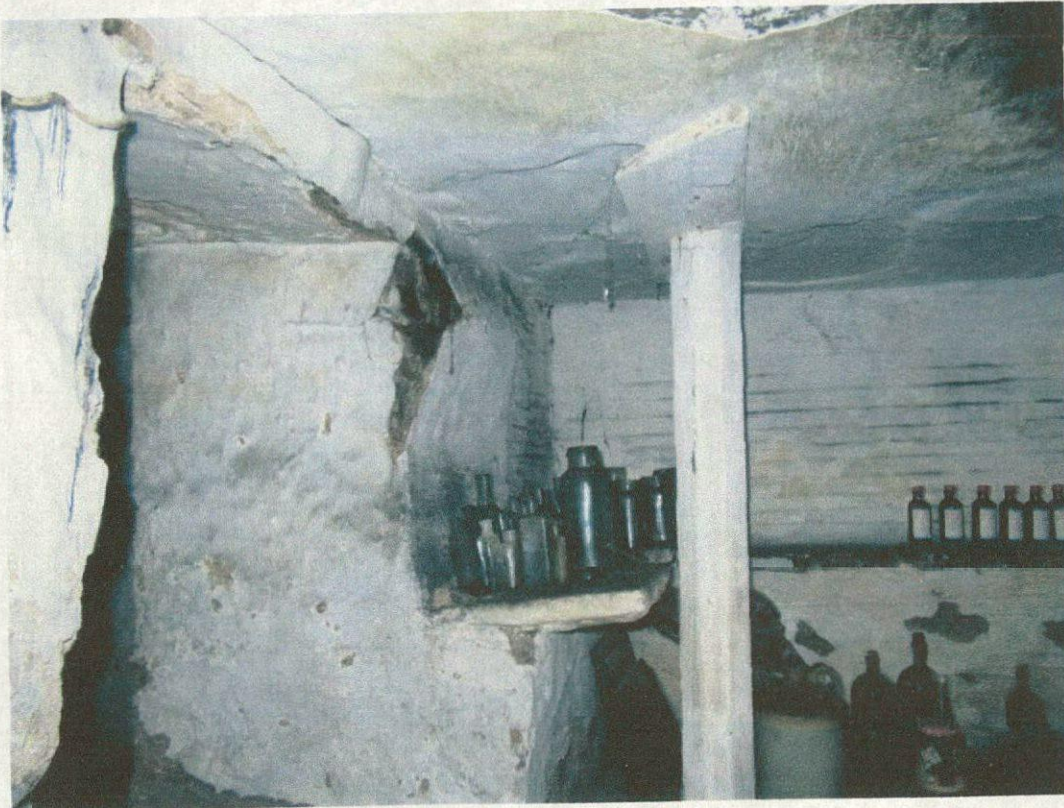


Photo 46 – Timber props in cellar.



Phot 47 – Cracking to stone wall and rotten floor joists.