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31 October, 2018

Mr ###############

Dear Sir:

Defects report in connection with masonry cracking at No ## #### #####

PRELIMINARIES

Please note that this Report is solely for your use and your professional advisers, and no liability to anyone else is accepted

INTRODUCTION

Mr and Mrs ######### have been observing cracking for some time in their first floor bathroom, slight cracking first being observed over twelve months ago. More recently, as this cracking appeared to them to be getting larger / more extensive they commissioned this survey.

SYNOPSIS

This survey is a non-intrusive survey the purpose of which is to observe and consider the visible defects local to the bathroom, comment on the likely causes, and assist matters to be taken forward with the appropriate parties who have an interest in the property.

As agreed, I provide here a brief description with photographs of the defects observed and the likely mechanisms causing them.

It is noted that this property exhibits many minor decorative cracks that one would normally associate with a property of this age (circa early 19th Century). This report however will focus on cracks that are considered structural and therefore important to the integrity of the property.

The descriptions used in this report to describe the severity of the cracking will be the standard descriptions provided by Tomlinson, Driscoll and Burland (Ref Appendix A). It is further noted that the crack width is only a part measure of the degree and significance of any damage and this will be elaborated on as required.

Many photographs were taken during the survey; these will all be shared with you for future reference in addition to those contained within this report.

The survey took place on the evening of October 25th 2018, conditions were dry and temperatures normal for the time of year circa 12C.

OBSERVATIONS

1.0 Bathroom - The survey commenced here, where Ref Plate 1.1 - slight cracking was observed radiating up from behind the sink. The cracking behind the sink propagating through tiled finishes which may have distorted its actual form. However as the cracking continued up beyond the tiled splash back above the sink it appears to widen as it approached the ceiling. Damp meter readings were taken at multiple locations across the wall but no evidence of damp was found here.

2.0 Roof Space - The cracking was followed up into the roof space, as access is limited by a very small hatch, remote observations were made with adequate illumination. Observations here Ref Plate 2.1 showed both cracking and distortion with the fire/party wall appearing to lean forward slightly to the eaves side of the purlin bearing. It is noted that the roof has been modified at some earlier time and that there has previously been an additional purlin closer to the ridge. It is further noted that bed joints are not as well filled as they would be in more visible masonry, but this is normal. Therefore neither of these matters are considered detrimental as the load arriving at what is a relatively small purlin should be insignificant for a wall of this construction. be of no consequence to a masonry wall such as found here.

3.0 Covered side access between properties 24 and 26. Observations made here are as follows;

- Ref plate 3.1 – a stop / start non coursed construction joint halfway down the gable / party wall of no 26
- Ref plates 3.2-3.4 respectively, crack propagating and width increasing as it travels up towards the bath room of no 24 over.
- Ref plate 3.5 – evidence of significant damp patches within / across large areas of the wall of No26 that faces the side access at ground level

SUMMARY AND CONCLUSIONS

POSSIBLE IDENTIFIED ACTIONS / CAUSES OF DEFECTS

It is noted that the cracking in the bathroom and roof space is immediately above the cracking observed within the side access corridor.

It is also noted that there has been a earlier mortar repair here the width of which suggest moderate >5mm to severe up to 25mm cracking. More recent cracking post repair (understood to have happened several years ago), shows new slight 2mm to moderate 7mm cracking suggesting that the processes causing this are still on going.

Damp meter readings show high levels of moisture locally around the cracking, leading one to believe a leaking drain may be present below or some other form of escaping water from within the adjacent property. A soil vent pipe was observed over the party fence of No 26 and this should be investigated further.

From the observations made it appears likely that subsidence is occurring towards the back of the properties, probably caused by excessive ground moisture from a leaking drain or other source. Excessive ground water can lead to softening / loss of substrate which could in turn lead to the rotational cracking observed at the masonry butt joint seen propagating and widening right up through the property.

DEDUCTIONS AND RECOMENDATIONS

This report and the issues discussed should be brought to the attention of your buildings insurer. As the wall affected is a party wall, and as these defects where first noticed by you post completion of building works at No 26 approximately 3 years ago you should also make the adjoining owner aware of these

findings. Searches that I have made at Cheltenham Borough Councils Building Control Portal show no declared or notifiable work after 2014 – as image below.

2 Windows
26 York Street Cheltenham Gloucestershire GL52 2JT
Ref. No: C15/10119/FENSA | Deposited: Wed 26 Mar 2014 | Decided: |
Status: Building Work Complete

Window application - 1no replacement window
26 York Street Cheltenham Gloucestershire GL52 2JT
Ref. No: C13/00291/OTHRG | Deposited: Wed 17 Apr 2013 | Decided: |
Status: Building Work Complete

Install a replacement consumer unit House Dwelling
26 York Street Cheltenham Gloucestershire GL52 2JT
Ref. No: C13/11697/NAPIT | Deposited: Thu 28 Mar 2013 | Decided: |
Status: Building Work Complete

Recommendations to address matters that may require attention follow;

1. Identify the mechanism by which excessive damp is manifesting at the primary site of the defect and remedy it.
2. Having addressed point 1, place the cracking under observation by way of tell-tale-tags or similar to determine if the matter is addressed.
3. Should item 1 not have addressed these matters – look to masonry stitch the butt joint to ensure a more uniform load spread from the beam end within No 26. This could be done with the Ancon Helifix System, link to Anderton Structural follows who are approved installers for this product, please refer to www.ancon.co.uk for product details and other approved installers.

http://www.asrs.co.uk/services/helifix/

I trust the above clearly explains the assessment processes in addition to the recommendations to address the currently observable defects. As discussed please circulate this report to all interested parties to demonstrate that you have taken professional advise and to assist in taking this matter forwards.

Leaking drains leading to subsidence would be a matter for your insurer subject to cover under your policy.

Should further clarification be required on any matters discussed in this report then again please do come back to me.

Sincerely,

Steve Johnson MIstructE CEng

Managing Director

References

1 ANDERTON STRUCTURAL REPAIRS
2 ANCON UK

PHOTOGRAPHIC RECORDS

DEFECT LOCATION 1 – INTERNAL CRACKING OVER SINK 1ST FLOOR BATHROOM (PARTY WALL SIDE)

PLATE 1.1 – 1-2mm SLIGHT CRACKING THRU TILES RE-APPEARING AT 2-3MM ABOVE CUPBOARD

DEFECT LOCATION 2 – CRACKING AND BULGING ADJACENT TO ROOF PURLIN IMEDIATELY ABOVE BATHROOM

PLATE 2.1 – WIDE CRACKS EAVES / LHS OF PURLIN

DEFECT LOCATION 3 – EXTERNAL SLIGHT 2mm TO MODERATE 7mm CRACKING AT BUTT JOINT - SEE FOLLOWING PLATES.

PLATE 3.1 – STOP / START UN-COURSED BUTT JOINT WITH 1-2mm CRACKING AT MID HEIGHT

PLATE 3.2 – CRACKING MANIFESTING FROM PATH FLOOR – WIDENING AS IT CONTINUES UP. EVIDENCE OF A MORTAR REPAIR BELIEVED TO HAVE BEEN UNDERTAKEN SEVERAL YEARS AGO.

PLATE 3.3 – CRACKING AT MID HEIGHT SHOWING REPAIR FAILING ON RHS – THICKNESS OF EARLIER REPAIR CLEARLY WIDENING AS IT CONTINOUS UP – CURRENT CRACKING 2-3mm.

PLATE 3.4 – CRACKING AT 1ST FLOOR SOFFIT LEVEL – EVIDENCE OF FLOOR BEAM IN ADJOINING PROPERTY NO 26 LOADING LHS OF MASONRY JOINT. SEPERATION OF APPROX 7mm OBSERVED ABOVE BEAM TO THE UNLOADED RHS - (LADDER IN THE FOREGROUND)

PLATE 3.5 – SIGNIFICANT DAMP READINGS ACROSS WALL, ABOVE DARKER DENSER BRICKS PROBABLY USED IN THE 19TH CENTURY FOR DAMP RESISTING PROVISION

APPENDIX A – CLASSIFICATION OF VISIBLE DAMAGE

Table 2.3 Classification of visible damage to walls with particular reference to ease of repair of plaster and brickwork or masonry (after Tomlinson, Driscoll, and Burland[2.18])

Category of damage	*Degree of damage*	*Description of typical damage*[1] *(ease of repair is underlined)*	*Approximate crack width*[2] mm
		Hairline cracks of less than about 0.1 mm width are classed as negligible	$\not> 0.1$
1	Very slight	*Fine cracks which can easily be treated during normal decoration.* Perhaps isolated slight fracturing in building. Cracks rarely visible in external brickwork	$\not> 1.0$
2	Slight	*Cracks easily filled. Redecoration probably required. Recurrent cracks can be masked by suitable linings.* Cracks not necessarily visible externally; *some external repointing may be required to ensure weather-tightness.* Doors and windows may stick slightly	$\not> 5.0$
3	Moderate	*The cracks require some opening up and can be patched by a mason. Repointing of external brickwork and possibly a small amount of brickwork to be replaced.* Doors and windows sticking. Service pipes may fracture. Weathertightness often impaired	5 to 15 (or a number of cracks ≥ 3.0)
4	Severe	*Extensive repair work involving breaking-out and replacing sections of walls, especially over doors and windows.* Window and door frames distorted, floor sloping noticeably.[3] Walls leaning[3] or bulging noticeably, some loss of bearing in beams. Service pipes disrupted	15 to 25 but also depends on number of cracks
5	Very severe	*This requires a major repair job involving partial or complete rebuilding.* Beams lose bearings, walls lean badly and require shoring. Windows broken with distortion. Danger of instability	usually >25 but depends on number of cracks

1 It must be emphasized that in assessing the degree of damage account must be taken of the location in the building or structure where it occurs, and also of the function of the building or structure.
2 Crack width is one factor in assessing degree of damage and should not be used on its own as direct measure of it.
3 Local deviations of slope, from the horizontal or vertical, of more than 1/100 will normally be clearly visible. Overall deviations in excess of 1/150 are undesirable.

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