

Alan Court, 13 Mill Lane

Structural inspection report
following car impact

Job No. 1906



Introduction / inspection:

Centrespace design llp were asked by our client, Mr Peyton Davies to visit and advise on the apparent distress to the bay window and adjoining structure of the building following a car impact into the bay.

We confirm that we visited the property on Thursday 7th January 2020 and carried out an inspection of the visible external structural elements of the building from ground level and internally at ground and first floor.

Our report is for your and your professional advisers benefit only and we accept no liability to any third parties for its contents without written approval from ourselves. We did not inspect for the presence of dampness, wet or dry rot other fungal decay or insect infestation. Similarly we did not inspect the finishes, joinery, mechanical and electrical services, drainage etc. Some of the structure remains concealed behind coverings, the removal of which was not feasible at this stage, however there thus remains the possibility of defects hidden by such coverings.

The property predates 1899 as shown on the OS County series 1:2500

The building is constructed from solid loadbearing stone walls with timber internal beams and timber rafters on purlins onto timber trusses. The roof is covered in natural hand made slate tiles. The bay is like wise covered in similar slate tiles. The bay is framed in stone mullions and lintels around the steel casement single pane windows.

There have been some alterations to the building over time around the location of the impact:

- There appears to be a steel beam over the bay, possibly to minimise deflection of the main timber beam supporting the bedroom floor above.
- There is a steel beam at the far end of the play room possibly installed to allow opening up of the walls which supports the central timber beam to the bedroom above.

The car impact was apparently at approximately 5am in the morning. The car appears to have impacted the curb on the corner of Mill Lane deflected towards the house, hitting the curb in-front of the bay and bouncing up through the hedge into the corner of the bay. The car was apparently reversed back from the bay by the driver.

It appears the impact was not completely head on. The car would have slowed some from impacts on both curbs and the hedge. The speed of the impact is not known. The angle of the impact appears to have caused cracks in the bay stonework. At the time of the inspection the cracks had been repointed by a contractor. Cracks were visible between the mullion stonework around the windows.

There were cracks visible above and all around the windows. An acrow prop had been installed externally to lateral brace the bay wall.



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Internally the cracks to the bay had already been repointed. However cracks were still visible in the joints around the windows and stone mullions. The repointing of the cracks was also visible from the inside. The cracks clearly show a diagonally aimed contact with the corner of the bay causing lateral movement in the side and end bay walls.

At the time of the investigation the bay ceiling was propped with acrow props.

Props were also located under the ends of the main timber beam across the room supporting the bedroom floor joists above. This is an original timber hardwood beam supported on steel shoe hanger off the steel beam at the bay. There was anecdotal evidence given for cracks opening up in the beam. There were shakes (cracks along the grain, typically due to shrinkage of the timber) all along the beam common of a beam of this age and location internally within a property.

Discussion:

The impact from the car has caused significant damage to the bay. Sufficient to require a complete rebuild of the bay to ensure the stone mullions and lintels are set properly with thin <5mm joints. That windows are properly set within the mullions so as to avoid air leakage into and out of the property. It was also not clear the extent of the movement of the rafters and timber ceiling joists over the bay. There is a strong likelihood that the impact has caused the movement of the timber above the bay. The wall plate above the bay and the wall plate above the windows will all require resetting.

If the bay is left in current condition there is a strong chance that despite the temporary repairs the cracks will open up and further movement could occur around the windows causing more damage and possible air and water ingress and egress.

In terms of the effect on the surrounding structure it appears that the level of the impact was reduced by the movement in the bay. There was no noticeable damage around the walls where the steel beam over the bay or at the other end of the room bear on the walls. Though there may have possibly been some load transfer between the bay and the header beam over the bay any load transfer into the timber is likely to be negated by the tolerance at the steel shoe support.

We are satisfied that the cross sectional capacity of the beam has not been effected and as such the temporary props can be removed.

In summary we believe that a complete careful demolition of the bay should be undertaken. Carefully storing all the slate tiles, and stonework for reuse. The stone should be numbered and replaced in the same order with cracked stones pinned back together tight as per the original bay.

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