

CASE HISTORY

FULLER'S BREWERY, LONDON U.K.

TRIAL BY FIRE



Cintec anchors were put to the test at the Fuller's Brewery in London. First anchors were used in major structural repairs to the Brewery. However, the unique qualities of those anchors were clearly demonstrated in the second test - when the Brewery was gutted by fire.



Remedial anchors installed prior to the fire. The anchors are still functioning. The grout cover protected the main steel body of the anchor.



Even though the brickwork had been subjected to extreme temperatures, the anchors survived well; pull out tests revealed that they still performed to their original design specification.



CASE HISTORY

FULLER'S BREWERY, LONDON U.K.

The Anchor System had been used extensively to repair and restore the terrace of the listed Georgian building when the premises were vandalised. A fierce fire followed, destroying large sections of the buildings.

Despite being subjected to extremely high temperatures, tests revealed that the cementitious Cintec anchors did not fail. They retained their integrity and could be reused for the repair work. Had a resin alternative been specified they could have melted. In point of fact, where anchors were installed there were no cracks in the structure. However, where there were no anchors there were distinctive signs of distress due to the intensity of the fire.

Robert McAlpine undertook the original project to restore the property. An investigation by the project engineers, the Brunel Partnership, identified a need to stabilise the front wall which had become debonded from the party walls and repair brickwork that was delaminating.

Structural repairs prior to the fire were designed by John Wardle and carried out by WT Specialist Contracts. Restoration included using 15 x 15 square hollow section anchors to tie the front wall back to the party walls. To tie the brick piers on the facade into the floor, anchors were also installed at each storey level. Remedial anchors were used to repair the delamination of the brickwork.

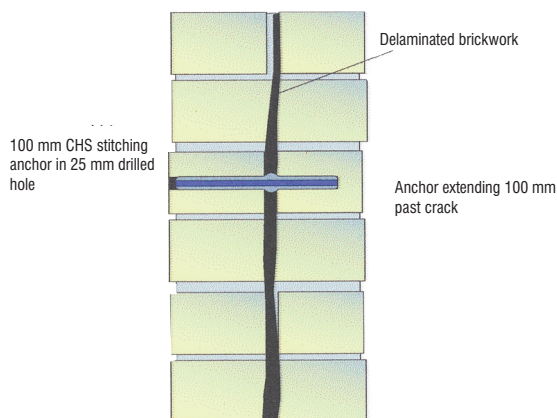


fig. 1

Even though the floors had been destroyed by the fire and the brickwork had been subjected to extreme temperatures, the ties had survived the fire well even in the walls worst affected.

At the time of the fire 95% of the ties were in place with only a small number of RAC wall ties still needing to be fixed to repair the brickwork. The immediate concern to the Brunel Partnership following the fire was to stabilise the remaining building fabric with temporary propping. Having

15 x 15 mm SHS stitching anchor 1500 long installed in a 32 mm drilled hole

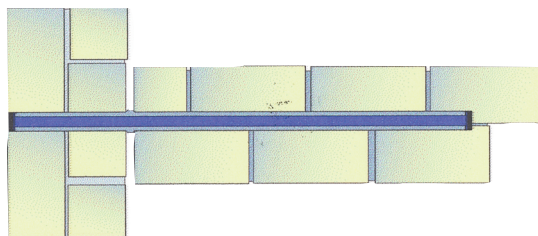


fig. 2

completed that, the original anchors were examined to determine if they could still function and achieve their designed performance. Pull-out tests on the 15 x 15 square hollow section anchors were undertaken to 9KN. Further loading was not applied as a failure of the brickwork could occur while the building was unstable.

After the fire the proposal was to consolidate all delaminated brickwork (*fig. 1*) using Cintec RAC anchors, allowing repairs of the internal delaminated skin to be undertaken without risk of further failure to the masonry. At the same time the major cracks were stabilised using Cintec SHS anchors (*fig. 2*).

The final remedial work included stabilising the brick arches and providing new seating for floors.

However, it is the 'real' fire test which will be of great interest to engineers and organisations using Cintec anchors. It has proved that the anchors have outstanding resistance to the effects of fire.



Text: John Wardle BSc. Eng./Construction Repair