

## SockFix grouted anchors provide lateral restraint

**Client:** Private homeowners

**Location:** South Wales

**Consultants:** Helifix

**Approved Installers:** Profix Property Preservation

This Grade II listed, semi-detached, period cottage has some original elements dating back to the 16<sup>th</sup> century. With 450mm thick rubble-filled stone walls, it was suffering from outward movement of the gable end wall causing internal cracking along the ceiling lines at first and second floor levels as well as cracking in the front elevation over the front door entrance.

The wall, which had suffered from historic substance, had a lack of lateral restraint as there was no internal cross wall to supply a tie in, parallel joists at first and second floor levels gave no restraint and an 'archway' link to the neighbouring property, that provided buttress support, had previously been removed.

Sympathetic non-disruptive repairs were needed that would provide the gable wall with lateral restraint and restore structural integrity to the damaged masonry.

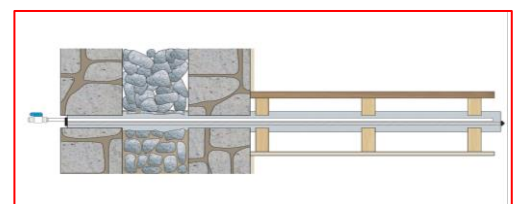
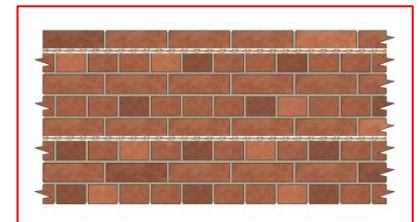


### The Helifix solution

Helifix engineers designed repairs using 80m of stainless steel HeliBars and 16 x 1.5m SockFix grouted anchors. Installation had to be carried out from a mobile platform so that the access remained open.

- Deep masonry beams were created across the full width of the gable wall by bonding pairs of stainless steel HeliBars into slots cut above and below the first and second floor joists. These stabilised and reinforced the masonry and the one at first floor level was continued around the front of the house to address the cracking over the door.
- Individual HeliBars were installed, between the Helibeams, around the front elevation gable wall corner, to stitch cracks.
- SockFix stainless steel anchors were inserted into clearance holes drilled into both the Helibeams, through the rubble-filled wall and the first two parallel floor joists. They were then filled with HeliBond cementitious grout, filling any voids, expanding between the joists and forming a strong chemical /mechanical bond.

The concealed repairs were completed quickly, securing and restraining the gable wall while causing minimal disturbance to the property fabric or to the neighbours, for which the owner was "pleasantly surprised."



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