

Barking High Rise - Gas Explosion Protection

The dangers of a gas explosion in high blocks are appreciated far more now than when many of the buildings were originally constructed. In acknowledging this inherent danger, Barking Council decided to reinforce the concrete end panels on an number of its highrise properties.

Gas meters located on the end panels on a number of its high rise properties. Gas meters located on the inside of the external end walls were cause for concern as a gas leak is more likely at one of their pipe connections. In the worst case , an explosion could cause a 'house of cards' effect from a progressive collapse.

Cintec anchors provide a solution which fixed the external panels to one another and also to an inner wall via the insulation cavity of the hollow concrete flooring. Extensive insitu load testing on the 33.4 mm diameter, 7000mm Long stainless steel tube anchors proved a loading of 240Kn was possible, more than double the 105Kn required strength.

The smaller external load transfer anchors also performed well beyond their required parameter. The anchor ensemble was held together by a 250mm diameter plate welded to the external end of the tubular anchor. The inner end of the anchor was locked to the internal wall by means of a 1400mm long grout filled sock that expanded into the floor cavity beyond the diameter of the drill hole on both sides of the wall in order to provide the strong mechanical bond achieved in testing (see diagram below for full anchor ensemble). In a several hundred Cintec anchors were installed by WT Specialists Ltd and the project was completed in 1996.

