

## Guisborough Hall Hotel

Guisborough Hall is being renovated to provide high-class apartments; Balast Construction is carrying out the renovation with some care, as it is a listed building.



Glyn Robinson Associates were retained to provide structural design elements and their main problem was the wind loading on the 2.6 & 3.1 Mt. high chimneys. Only seven of these 18th century octagonal chimneys out of the total of 44 would be used. Cintec proposed a specially designed anchor to create a reinforced concrete column inside the chimney, bonded to the pot liner (where there was one). This anchor consisted of 4-12 mm stainless steel rebar anchors in a 250 mm dia. sock for the 300 mm flues.



Partially missing ceramic liner ->



Chimney's capped with a stainless plate ->

For the chimneys that were to be used, a different solution was proposed, this involved drilling four 3.1 meters long 40 dia. holes down through the capstones and into the chimney corbel where it passed through the roof. Four 12mm stainless steel rebar anchors were then inserted, it had been calculated by the engineer that these would provide sufficient tensile stabilisation against wind loadings and allow the open fires in these apartments to be used.



HCL of Durham carried out the work from conception to completion in 9 weeks in the autumn of 2001.

# STIFFENING TO HEXAGONAL CHIMNEYS

Stainless steel front plate 349 mm dia. x 5 mm with 12 mm dia x 10 mm grout fill tube.

12 mm grade 304 stainless high yield rebar, length to suit with a 24 mm dia. by 2.5 mm backplate welded to the lower portion.

Injection tube 8 mm dia. inside the sock all inserted in a 32 mm or 40 mm diamond drilled hole.

4 No M12 grade 304 stainless steel threaded bar in large sock to suit chimneys attached to a 200 - 220mm dia. x 5 mm stainless steel back plate, M12 stud bolted and welded.

