



Duration
6 weeks

Completed
2020

CCUK PROJECT INSIDER

CLAYTON HOTEL

STRENGTHENING OF A REINFORCED CONCRETE SLABS, BEAMS,
COLUMNS AND SHEAR WALLS

www.fibrwrap-ccuk.com

Client
C Field
Construction



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01

Introduction

Working closely with the structural team CCUK designed and installed an exact and complexed combination of both CFRP, Shear Bolting and steel, providing a Hybrid Solution for a multi-faceted strengthening solution.



02

The Challenge

There was a significant increase of imposed loads on the existing structure due to an extension adding additional stories and bedrooms to the Hotel. Strengthening was required to existing columns, shear walls, beams for hogging and sagging in addition to slabs for punching shear. The hotel remained live during the strengthening works which included working in closed rooms, corridors, restaurants and service kitchens.



The Solution

This was a complexed structural refurbishment project, requiring close working with the designer and main contractor C-Field Construction.

Columns in the existing restaurant were strengthened for additional axial load by adding hoop layers of Fibrwrap carbon fibre strengthening system, the final application had a 2hr fire protection system before decorative finishes.

Shear walls were strengthened with CFRP within the fire exit stairs and existing restaurant for additional vertical loadings and a new opening through.

The Solution Part 2

Beams within bedrooms and live corridors were strengthened using the carbon fibrewrap system, works were carried out in the live hotel with control measures in place.

Punching Shear strengthening was attempted using stainless steel shear rods but due to the congestion of the reinforcement within the slab CCUK specifically designed a carbon fibre solution in conjunction with WSP Consulting Engineers. CCUK also manufactured and installed the shear brackets to column/slabs in several bedroom areas.

CCUK, used the analysis done by the engineer to design a Fibrwrap CFRP and steel 'Hybrid' strengthening system. The subsequent 'design strategy' enabled the successful application of our solution in all affected areas, whilst the hotel remained fully functional.



04

The Results

CCUK delivered another quality project for two of our top clients, on time and to budget. We would like to thank Graham Construction and HTS for their continued, ongoing support.



05

Why choose CCUK?

Working throughout the UK and the Humber region, CCUK provide design & build specialist construction services. We pride ourselves on being innovators in construction services and thrive by taking on the biggest of challenges. As certified installers for major material suppliers like **WEBER, SIKA, Fosroc and Fyfe** we are approved by the biggest and best in the business:

Established in 2010 we have built a reputation with our customers for a high quality of service and our innovative engineering solutions underpinned by our commitment to safety and sustainability. We are flexible and work collaboratively with our clients which has helped to secure a high percentage of repeat business across all industry sectors direct with clients as a specialist contractor.

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ISO
9001 : 2015
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ISO
14001 : 2015
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OHSAS
18001 : 2007
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