



## Slabstress

Great Marlborough Street, Manchester

### Client

Student Castle

### Principal Contractor

Shepherd Construction

### Structural Engineer

WSP

### Frame Contractor

Heyrod

### Post-tensioning Contractor

Freyssinet Ltd

### Contract Duration

11 months

### Works Completed

November 2011



Student Castle in Manchester offers high quality student accommodation in a great city centre location, just a few minutes walk from the main University of Manchester and Manchester Metropolitan University.

The new studios and flats are completely self-contained with excellent study, storage and social space and are equipped with ultra-fast new generation 30mbps broadband and free wi-fi.

The structure consists of 35 levels, all formed from post-tensioned concrete. The thinness of the slabs allows extra storeys to be squeezed in for a set building height, which can really make a difference to the financial viability of tall buildings.

The 11,000m<sup>2</sup> job comprises mainly 200mm deep slabs with one corner of each floor plate increasing to 250mm to cater for the 3.2m cantilever. Elsewhere the spans are 6.8 by 6.4m.

Numerous penetrations have been accommodated in the design – from temporary openings for hoists, 4.6m long slots for risers and edge fixings for climbing edge-protection screens.

Freyssinet used the 3B13 and 5B13 anchorage for the bonded tendons. This anchorage system fully complies with the requirements of ETAG 013 “Post-tensioning kit for prestressing of structures”.

The bonded tendons comprise a flattened galvanised steel sheath which is 43mm wide for the 3-strand tendon and 70mm wide for the 5-strand version. After the tendons have been stressed, cement grout is injected under pressure into every sheath to completely fill the void. This provides corrosion protection to the strands as well as establishing bond between the structure and the tendons.

Freyssinet Ltd, Innovation House, Euston Way, Town Centre, Telford, Shropshire, TF3 4LT  
Phone +44 (0) 1952 201901 Fax +44 (0) 1952 201753 Email [info@freyssinet.co.uk](mailto:info@freyssinet.co.uk)