

**Location:** Portsmouth

**Client:** UNITE Group

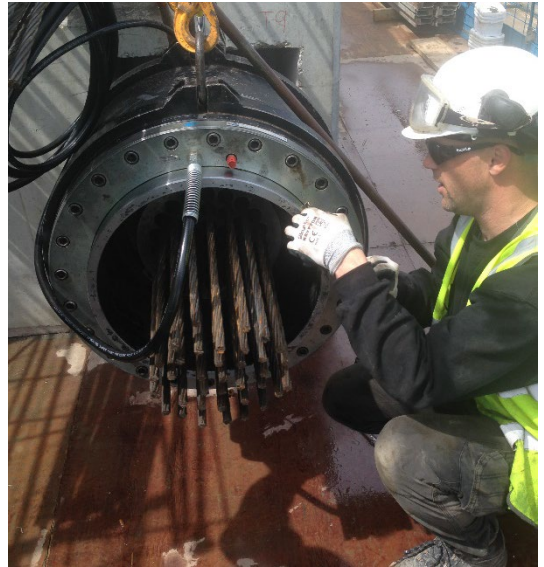
**Frame Contractor:** Stephenson

**Main Contractor:** RG Group

**Post-tensioning Design:** CCL

**Post-tensioning Installation:** CCL

**Year of Completion:** 2015



Greetham Street is a landmark project in Portsmouth city centre for UNITE Group, the UK's leading provider of purpose-built student accommodation. The accommodation is spread over a 24-, 18-, 8- and 7-storey arrangement. The 18-level section features three large transfer beams spanning across Dugald Drummond Street.

Due to the build spanning across the street, it is classified as a highway structure and, as such, carries an obligation to ensure an allowance for vehicle impact. CCL reviewed the original precast trough design which pointed to difficulties in installing the post-tensioned ducts and reinforcement within a fixed, closed precast shell. Safe access to install the beam reinforcement was highlighted under CDM 2015.

CCL proposed a fully in situ solution, removing both the need to use costly precast shells, and carry out works across a live carriageway – eliminating a large element of risk from the project.

Due to an amount of projecting slab reinforcement and limited space available next to the adjacent columns, it was necessary to create a temporary void in the slab at the end of each beam to gain access for stressing. A CCL MG Jack was attached to a mobile crane, moved into position and lowered through the slab-stressing access voids to enable the successful stressing of the transfer beams. The beams were stage stressed in order to prevent excessive deflection and balance the dead loads of the structure.

In total, three transfer beams, measuring up to 20 m each (approximately), were required to cross the carriageway. CCL's bonded XM system 37-strand 15.7 tendons were used to apply the prestress force.

Given the size of the transfer beams and the combined horizontal and vertical loads, CCL designed and supplied bearings to support the high loading, horizontal movements and structural rotations of the tower and transfer beams.