

One Hyde Park, one of the most luxurious residential apartments is a high profile residential development consisting mainly of apartments & few commercial and leisure facilities within four pavilions of between ten and fourteen storeys above a four level basement. The feature elements of structural steelwork and architectural quality precast concrete make this project stand out as a rare development. Multiple post-tensioning (PT) applications were utilised to achieve an efficiency of design, materials & labour.

Location	Knightsbridge, London
Year of completion	2009
Use of structure	Residential
Project Cost	£500 million (approx.)
No of apartments	86

Developers	Candy & Candy
Architect	Rogers Stirk Harbours & Partners
Consultants	Ove ARUP & Partners
Main Contractor	Laing O'Rourke
Frame Contractor	Expanded Limited



PT Contractor	STRONGFORCE
PT Designer	Connell Mott McDonald
Ground – PT Transfer Beams	17multi strand beams each 2 x 19strand tendon (15.7mm)
Superstructure	Bonded Flat Duct 3-4-5 MonoStrand system (12.9mm)
PT tonnage	235 Metric Tonnes
Project Duration	56 weeks
First Runner-up at 2009 Post-Tensioning Association awards	



OUTSTANDING PROJECT FEATURES: -

- 1.2m deep x 2.4m wide Transfer beams at ground level with multi-strand PT reduced excavation works.
 - A minimum slab thickness of 280mm for roof slabs and 250mm for other superstructure levels were selected to provide the most efficient solution when evaluated in relation to vibration (from Piccadilly line below the basement, HGV Lift structure etc), acoustics, punching shear, & service penetrations.
- An innovation on this project was incorporation of the steel transfer truss with the PT slab. The slab was designed as post tensioned which required the tendons to pass through the steel truss. The setting out for the PT and reinforcement were co-ordinated with the truss fabricator and voids were then formed in the truss for the PT ducts to pass through.
 - Feature steelwork was also used to help provide stability to the pavilions. The stability system relies on the coupling of steel frames with the internal reinforced concrete shear walls braced with the PT slabs.