

## Post Tensioning – Paddington Basin Office Development, London



View on one wing of the building



Slab detail showing long and short beams



Dead end anchorage detail



Unbonded tendons splay at the live end



Anchorage pockets ready for filling

Major London building project demonstrates the speed and simplicity that post tensioning brings to large span multi-storey structures.

Consultant	Ove Arup
Principal Contractor	Carillion
Frame Contractor	Byrne Brothers
Post Tensioning Specialist	Balvac
Sub-Contract Value	£85,000
Completion Due	July 2002

This prestigious headquarters of a major UK retail company, features post tensioned floor slabs throughout the 12-storey structure. Post tensioning was chosen primarily to minimise weight for the large primary spans, but reduced floor depths, and rapid strike times were important secondary benefits.

Each of the 12 floors is designed as a ribbed slab, the rib beam running across two spans: 12.6 m and 4.2 m long respectively. Traditional in-situ reinforced concrete flooring spans 3.0 m between the ribs. Each rib is a modest 550 mm deep, with the top 150 mm deep slab cast integrally. The post tensioned rib design provides a minimum weight solution for the frame.

Each rib contains six unbonded tendons. The designer has benefited from the inherent flexibility of unbonded tendons by deviating them in plan at the anchorage zones away from rebar congestion at the column / beam junctions. The tendons are also profiled vertically along the length of each rib to gain maximum structural performance, being near the top rebar over the columns and the bottom rebar at mid-span.

Stressing was a quick operation, carried out one strand at a time, as soon as the concrete cube strength exceeded 25 N/mm<sup>2</sup>. Balvac worked closely with the frame contractor to achieve 13 day casting cycles, post tensioning made striking possible after 72 hours on the congested, awkward shaped site.

- Primary PT spans 12.6 & 4.2 m
- Secondary RC span 3 m
- Rib / slab depths 550 / 150 mm
- Rib quantities 250 No.

## Balvac

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