

**Commercial Buildings****Reference Details:**

**Owner** TransCanada Pipeline, Calgary, AB, Canada +++ **General Contractor** JV PCL Maxam, Calgary, AB, Canada +++ **Engineer** Yolles Partnership Inc., Toronto, ON, Canada

**DSI Services** Supply of 370 t of DYWIDAG Bonded Multistrand Tendons; Detailing of shop drawings; Technical assistance and site supervision of post-tensioning operations.



## Innovative concept for the construction of an office building in Calgary, Canada

### TransCanada Pipeline Building, Calgary, Alberta, Canada

A new 38 story tall office building was erected for TransCanada Pipeline in the heart of Calgary. The typical floors are 2,000 m<sup>2</sup> without intermediate support and their construction was carried out in an impressive 5-day cycle. For the construction of the TransCanada Pipeline Building 370 t of bonded multistrand tendons were used. Each typical floor included a total of 34 tendons ranging in size from 9/0.6" strands to 24/0.6" strands with tendon lengths varying from 15 m to 40 m. The contract included the supply of anchorage components and tendons prefabricated in the DSI fabrication plant as well as technical support during the construction works.

The extreme cold of the Canadian winter during the structural work presented a particular challenge: The normal grouting operation would have required the complete slab to be heated for an additional 3 days, before the forms could have been moved to the next level. In addition, this construction method would have considerably delayed completion and would have incurred high cost. For this reason the contractor decided to grout the tendons after the outer curtain wall had been erected. However, this meant the strands would have to be in place for up to five months before the tendons were grouted.

To protect the tendons and anchorages until grouting could take place, DSI developed a special plastic grout cap that was permanently left in place after grouting. In addition, a corrosion inhibitor was applied to the DYWIDAG Bonded Multistrand Tendons during the period when the tendons remained ungrouted. As a result of the use of innovative ideas and a commitment to high quality standards the building was completed on schedule and on budget to the full satisfaction of the owner.