

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

Owner A.P.Møller Foundation (Maersk), Copenhagen, Denmark, as a gift to the city of Copenhagen +++

Designer Henning Larsen, Copenhagen, Denmark +++

General Contractor E.Pihl & Son A/S, Copenhagen, Denmark +++

Subcontractor Züblin Spezialtiefbau GmbH, Stuttgart, Germany +++

Engineering Rambøll A/S, Copenhagen, Denmark

DSI Services Supply of 820 Double Corrosion Protected Uplift Prevention Anchors dia.36 mm, ranging in length between 15-20 m; Technical support by DSI Licencee AAGE Christensen A/S, Copenhagen, Denmark.



DYWIDAG Anchors prevent uplift of new Copenhagen Opera

Construction of Opera House in Copenhagen, Denmark

The construction of the Opera House in Copenhagen, Denmark, was started in the autumn of 2001 and were completed in the summer of 2004. Located on the Dock-island right across Amalienborg - the residence of the Danish Queen Margrethe II - and adjacent to the Copenhagen inner harbour, the structure will be affected by an uplift water pressure of more than 15 meters. Before the opening of the opera, the pier for the ferries to Oslo must be moved from Kvaesthusbroen to Soendre Frihavn.

Züblin Spezialtiefbau installed and prestressed 700 DYWIDAG Anchors by July 2002. At a later date another 120 anchors will be installed as well as 23 anchors for testing purposes.

Having visited various construction sites and the assembly plant in Austria and after several meetings with the general contractor, with AAGE Christensen A/S and a geotechnical specialist from DSI Munich, the consulting engineer finally decided to use Ø36 mm DYWIDAG Double Corrosion Protected (DCP) Anchors. The anchors were produced completely by DSI Austria. To ensure the high quality, the engineers from AAGE Christensen A/S monitored the installation on site very carefully.

The new Copenhagen Opera will open in April 2005. We wish all participants in this challenging construction project much success and we look forward to the opening of the curtains on the first performance.