DYWIDAG

Seismic Stability Secured: DYWIDAG Anchors the Sydney Fish Market

Case study

The new Sydney Fish Market project faced the challenge of preventing seismic uplift in its foundation. DYWIDAG provided advanced multistrand anchors, ensuring the market's stability and longevity even in the event of seismic activity.

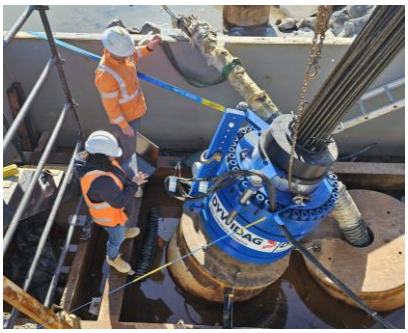
LOCATION
Sydney, New South Wales, Australia

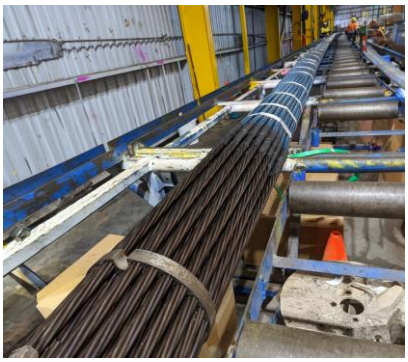
TIMELINE
2019–2025

CLIENT
Placemaking NSW (owner), Sydney Fish Market (tenant)

PRODUCTS
DYWIDAG multistrand anchors with 61 strands, 2200kN hydraulic stressing jack, coiling and uncoiling equipment, and technical supervision

PARTNERS
Contractors: Multiplex (Stage 2 main works contractor), Hansen-Yuncken (Stage 1 early works contractor); Design: 3XN, BVN, and Aspect Studios





Problem

The construction of the new Sydney Fish Market, a landmark project located at Blackwattle Bay, Sydney, required a robust foundation capable of withstanding seismic activity.

The challenge was to prevent seismic uplift of the foundation piles, which are crucial for maintaining structural integrity in the event of an earthquake. With over 6000 square meters of new public open space, the market is set to become one of Australia's leading tourist destinations, meaning that safety and long-term stability were of utmost importance.

The project demanded innovative solutions to meet both seismic protection and longevity requirements.

Solution

DYWIDAG provided a comprehensive solution through the design, manufacturing, and installation of advanced multistrand anchors.

These 61-strand anchors, reaching lengths of up to 40 meters, were installed within large steel foundation piles, which were driven at an angle into the seabed rock. The bond length of the anchors extended through these piles into the deeper rock bed, securing a strong connection between the subsea rock and the market's foundation.

This was a pioneering effort in Australia, marking the first time that 61-strand anchors were coiled onto drums with a diameter of less than 2.2 meters. DYWIDAG's expertise, supported by knowledge from its dam strengthening projects in the USA, was instrumental in achieving this engineering feat. In addition, a 2200kN hydraulic stressing jack was specially commissioned to handle the demanding load requirements, ensuring precise installation and tensioning.

Collaboration with the geotechnical drilling team was crucial, as the equipment and methods were developed together to guarantee safe and efficient coiling, uncoiling, and stressing operations.