

# SYDNEY COVE PASSENGER TERMINAL

## CONSTRUCTION OF SOUTHERN BASEMENT



**Clients:** APP Projects Pty Ltd  
Bovis Lend Lease Pty Ltd

**Structural Consultant:** Taylor Thompson Whitting Pty Ltd  
**Specialist Contractor:** Menard Bachy Pty Ltd

### THE PROJECT

As part of the overall redevelopment of the International Passenger Terminal at West Circular Quay, a prestige restaurant on the waterfront at the terminal's southern end was required. The site is located between the Rocks and Sydney Cove, only 6m from the waters edge, adjacent to the City's premier berthing facility for the world's great ocean liners, with views across Circular Quay to the Opera House and the Sydney Harbour Bridge.

The development and environmental restrictions on the site, combined with the limited floor area available, resulted in the need for the client to provide a below ground basement with kitchen, toilets and storage areas to service the restaurant.

The 30m x 12m x 4.5m deep, "Southern Basement", was required to be constructed under a variety of extreme site conditions and restrictions including a tidal water table, a 6.0m limited headroom inside an existing structural frame, random fill materials and alluvial deposits that included old convict structures, services, piles and foundations, timber, boulders and "unknown" obstructions used in reclaiming the harbour foreshore over the past 200 years.

### THE SOLUTION

Due to extreme difficulties on a previous stage of the works carried out by others, Menard Bachy proposed an alternative method for the construction of the Southern Basement. The proposal entailed installing perimeter, soil mixed piles, excavating

the material from below water level, precasting the basement above the water-filled excavation, and then followed by lowering the 850 tonne structure into its final position. Once lowered the perimeter gap was grouted to provide the permanent engagement to the piles.

### MENARD BACHY'S ROLE

Menard Bachy was approached by Bovis Lend Lease to look at alternative solutions to the construction of the Southern Basement. From this developed the unique proposal, described above, which was ultimately built.

In August 2000 Menard Bachy was awarded a design and construct contract for the complete structure. The scope of works included structural design and detailing, piling using soil mixed piles, excavation, construction of the precast, post-tensioned concrete basement, lowering into place, grouting and then construction of slab on ground and internal columns and stairs.

The structure was successfully completed in June 2001.