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# PROJECT: NEW TYNE CROSSING P4 & P6 BRIDGES

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VALUE: £2.5M  
ROLE: MAIN CONTRACTOR  
START DATE: MARCH 2009  
COMPLETION: DECEMBER 2009

CLIENT: BOUYGUES TRAVAUX PUBLICS  
HOWDON YARD  
WALLSEND  
NE28 6UL

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- 75no AZ37 sheet piles 25m long
  - 79no 18t precast beams 25m long
  - 120ln.m. 85mm dia. Macalloy tie bars
  - 1,500m<sup>3</sup> of in situ concrete
  - 300t of reinforcement
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Southbay Civils had already undertaken over £2m worth of heavy marine piling on the New Tyne Crossing and were then invited to tender for two bridges on the South Junction. The contract for these two bridges for Bouygues TP was won competing against major national contractors. Both bridges were concrete structures with in situ piers and abutments and proprietary pre-cast beams.



Both bridges were built to span over the A19 as it enters the existing Tyne Tunnel. The planning of every operation had to take into account both the safety and management of the traffic. The site was effectively split in two by the A19 as no access was permitted over the road.

Prior to the main bridge construction, a heavy-duty sheet pile shoring system was installed by Southbay to support the existing embankment. Sheet piles were installed on each side of an embankment then a series of horizontal holes drilled to enable a 150mm dia. steel to be fitted. Inside the casing 85mm dia. Macalloy ties bars were installed to clamp the two sides of sheet piles together. This enabled earthworks on the bridge abutments to commence.

Abutments and piers were up to 10m high and were specified as having a tieless formwork. Southbay used both its own designed and fabricated formwork for the biggest sections and proprietary systems for the slightly smaller pours. The wall pours were poured on one continuous lift. Correct selection of concrete mix, method of placement, on site testing of concrete and curing of concrete all had to be strictly planned and executed to ensure success on these structures.

Installation of high tolerance bridge bearings was carried out in house prior to installation of the pre-cast concrete beams. All lifting operations were planned and carried out by Southbay staff. Southbay have their own Appointed Persons and all general operatives are certified banksman/slingers. Mobile cranes varied from 250t to 500t for the different sections.

Installation of the deck involved installation falsework over the A19, again with careful planning of traffic management closures of the A19 were avoided.

## PROGRAMME

Initially Bouygues had booked a minimum of six closures of the A19/Tyne Tunnel to allow the bridges to be constructed. Southbay reviewed this and by meticulous planning and methods reduced this to one closure. 36 hrs was allowed and the work was successfully complete in 26hrs.

The contract was completed to budget and the final account was settled one month before completion.

