

## Bridges D and E, Zaandam

**Client:** Zaanstad Council  
**Design:** Hexa Consult  
**Construction:** BAM Civiel bv  
**Contract value:** € 5,378.200  
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# BAM Civiel

Construction of the road that crosses side canals D and E of the North Sea Canal called for two bridges. Bridge E is a fixed bridge with seven spans of 31 metres. Bridge D has six spans and a lift bridge. Both bridges were built on cast in-situ concrete piers on pile foundations, with a deck of precast, prestressed concrete beams. Bridge D has an outside edging of plexiglass.

Five of the 11 piers are in the water. After the foundation piles were driven in from pontoons, steel auxiliary piles were put in around the base of the piers. These piles supported a steel frame to which precast concrete aprons were attached which acted as exterior formwork. The aprons had a thickened section on the inside, on which the permanent timber formwork sheeting was placed.

The aprons were the same height as the pour height for the first part of the pier base. The tapered connecting piece was then poured, followed by the straight top piece with the supporting beam for the precast beams, which were fitted in the construction. The space between them was filled with permanent formwork for the compression layer. New Jersey edge sections were poured on it. The lift bridge has a single bascule support next to the bridge. The forked balance arm is perpendicular to the canal axis. The bridge flooring is diamond-shaped. The contract also covered the hydraulic movement systems, the electrotechnical installations and ten years of maintenance.