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IVa

Free discussion

Freie Diskussion

Discussion libre

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Following Prof. Branko Žeželj's paper on the proposed 320m arch bridge for Dubrovnik I would like to show some details of the construction of a very similar arch bridge already constructed and open to traffic 4 years ago in 1964 at Parammatta, Sydney, Australia. It has a span of 1000 ft. or 305m and had at that time the largest span so far constructed in the world (Fig. 1 & 2) and my company assisted Messrs. G. Maunsell & Partners with special reference to the design and construction of the arch.

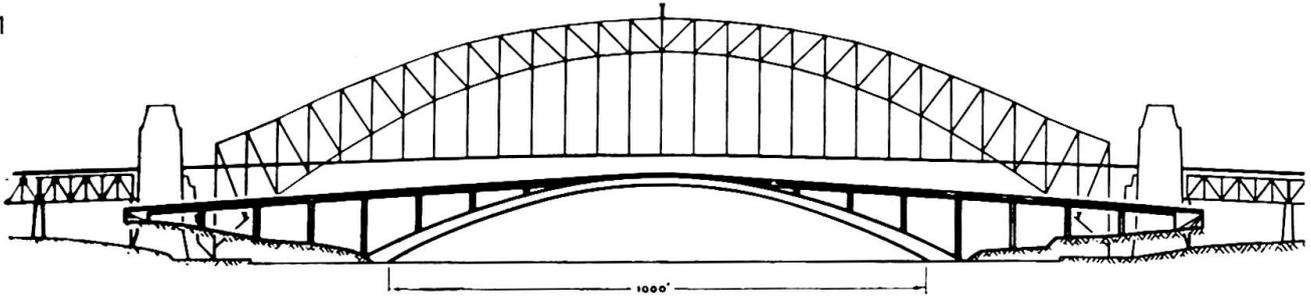
This arch consists of 4 parallel individual arches constructed one by one and then stressed together laterally to form a monolithic structure with sufficient strength to withstand the lateral wind pressure.

Like the proposed Dubrovnik bridge, Parammatta is made up of precast box-units, but instead of the cable hangings they were placed on a steel structure wide enough to take one of the four arches at a time (Fig. 5)

On completion of each separate arch, Fressinet Jacks were inserted top and bottom at the crown and expanded so as to produce a predetermined moment in the arch and to lift the arch off the supporting steel structure which could then be moved side ways to the next arch.

On completion of the arch structure (Fig. 7) a simple viaduct was continued out over the arch and consisting of 100 ft. precast prestressed deck beams (Fig.8) supported on tall columns, very slender in the direction of the bridge to allow for temperature movements.

Fig. 1



The new bridge compared with Sydney Harbour Bridge

Fig. 2



Fig. 5



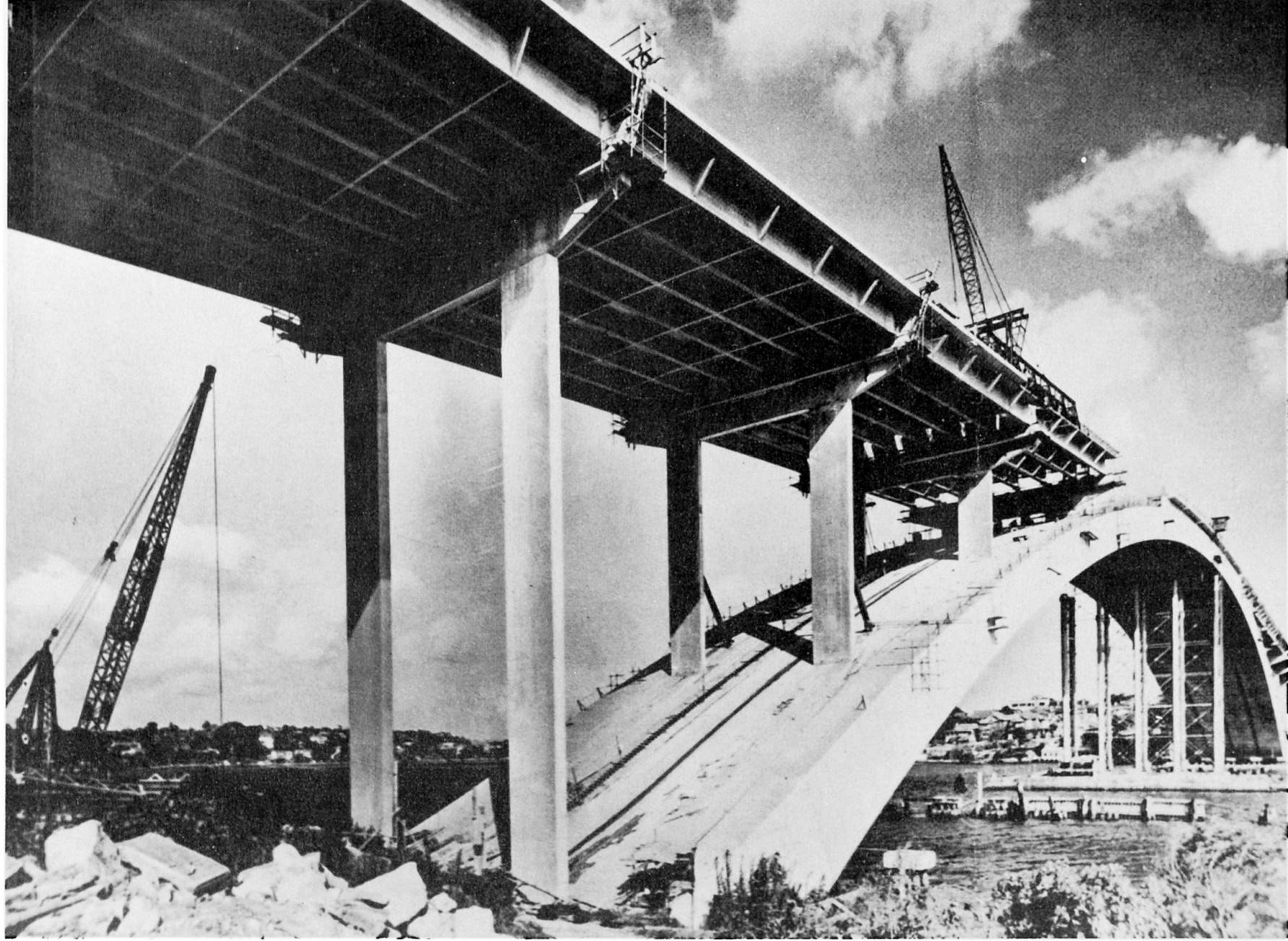


Fig. 7: Sydney Harbour and Distant Pacific — 2 ribs completed



Fig. 8: Sydney Harbour and Distant Pacific – 2 ribs completed