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Swimming Complex Spartak in Sofia, Bulgaria

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The project solves a problem for covering the two existing swimming pools 12,50/25 m and 25/50 m as well as the adjoining building supplied with sittings for 500 spectators (Fig. 1).

The main bearing structure consists of five single-storeyed steel frames with span of 63,80 m. The distance between them is 18,80 m. The calculations are done for a biconstruction which consists of two plane solid frames integrated with rod lattice. The solid frames bear all vertical loads and the horizontal loads, acting in the planes of the frames. The rod lattice bears the loads, acting out of the planes of the frames. The frames are clamped into foundations in two directions by means of four anchor devices for every foundation. Every anchor device consists of eight anchor bolts M42x1500 mm.

The secondary bearing structure is the roof construction which consists of trusses, purlins and bracings. The trusses are with a span of 16,00 m; a step of 5,60 m and a height of 1,60 m. The roof purlins are with a span of 5,60 m and a step of 2,00 m. The statical scheme of the trusses and purlins is a simple beam.

The columns from the transverse facades are with variable height and step of 4,00; 4,20 and 6,00 m. The columns from the



longitudinal facades are with broken axis and variable height.

The main bearing frames are fabricated in a workshop and transported as space blocks with length of about 18 m and weight of 150 kN. At first are assembled two main bearing frames and the secondary bearing roof construction between them. The assembling part with weight of about 5500 kN is pulled in a design position by means of hydraulic cranes. The rest part of the construction is erected by the same way (Fig. 2).

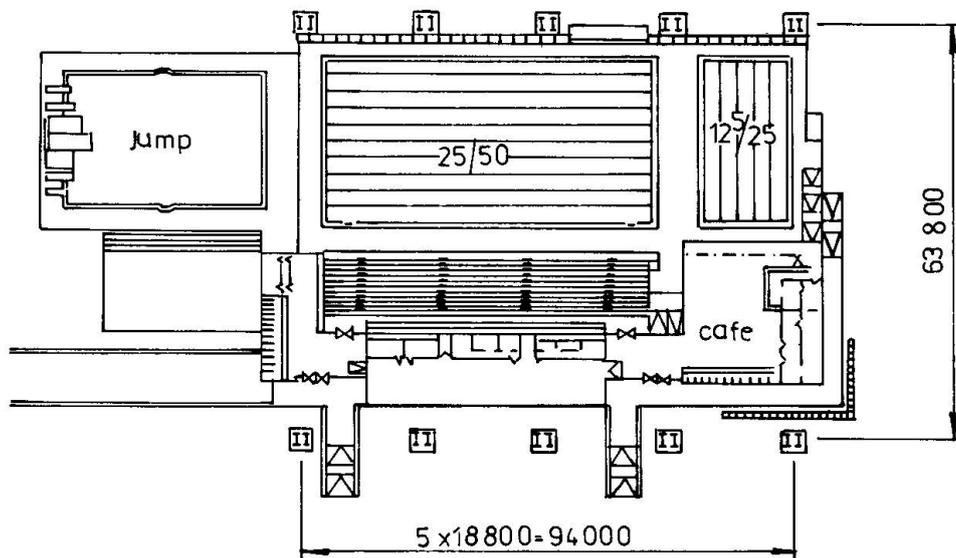


Fig. 1 Plan of the swimming complex

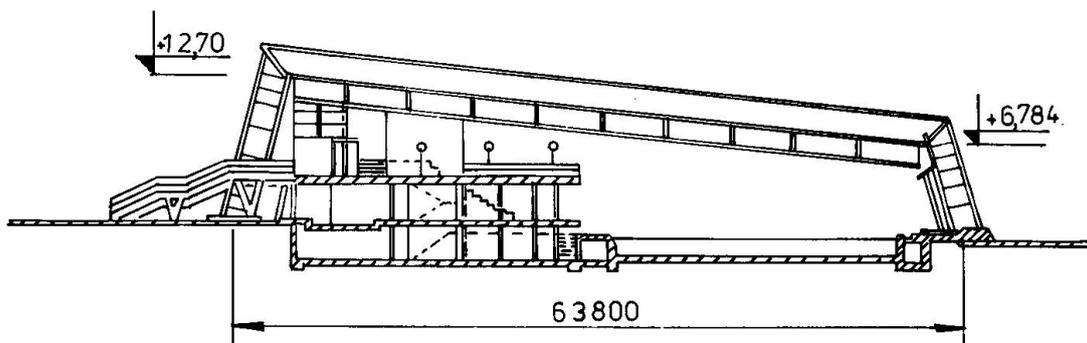


Fig. 2 Cross section