

Kuala Lumpur Commonwealth Games Athletics Stadium Roof Lift

Client: Pfeifer Seil - und Hebetchnik GmbH & Co.



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CIVIL 25



Right: The jack anchor positions on the compression ring.

Below: The slackened radial cables connected to the upper and lower tension rings laying on the ground before lifting.



The design of the Kuala Lumpur Athletics Stadium, built to host the 1998 Commonwealth Games, required the installation of a cable and fabric roof to cover all 70,000 seats.

Fagioli PSC were awarded the contract to apply pulling forces to the 72 No. radial cables, 36 No. upper and 36 No. lower, that would in effect 'push up' the ring cables that form the central core of the roof structure.

Each set of 36 No. radial cables, anchored in the same position at the outer compression ring, led to an upper and lower ring cable laid out in the centre of the stadium and tied together with lateral columns, which would eventually form the tension ring.

Working with the simultaneous operation of 52 No. L180 and 20 No. L100 jacks, two jacks at each of the 36 No. upper radial cable anchor positions were stressed to a point where the upper ring cable raised from the ground, which then began to lift the lower ring suspended from the lateral columns, whilst allowing the lower radial cables to go slack. At a predetermined position, the upper radial cables were locked and pinned off, and the 72 No. jacks arranged in pairs on the 36 No. lower radial cables.

Using the same technique for stressing the lower cables, the tension ring was 'forced up' until reaching approximately 30m height, at which time the lower radial cables were pinned off, leaving a cable roof structure ready for covering with fabric.