



Project Profile :: Specialist Projects

Baku Chandelier

Client: Total Solutions

Scott White and Hookins' Role:

-  Structural Engineering
-  Event Engineering

SWH were appointed by Total Solutions Ltd (TSL) to analyse and prepare calculations for the Chandelier centrepiece for the closing ceremony at Baku 2015 games.

The brief required a discrete structure supporting 260 Chinese lanterns, with a high factor of safety against adverse load combinations from wind and movement.

The 8.5m diameter sphere shaped structure was formed from 9 horizontal rings each supported by 6 to 8 spokes of the adjacent ring above. The whole structure was flown from 2 bridled points across the stadium.

This complex structure was precisely modelled 3-dimensionally in our analysis software using CAD drawings provided by TSL. Mis-noding of the spokes caused localised high stress points and made the transfer and balancing of loads to the bridled points more complicated. An iterative design process with TSL allowed the final solution to have greater stability without compromising its appearance.

Our analysis showed that the structure gained full stability once fully erected. Trial erection at the fabrication workshop confirmed this so that a construction sequence could be developed before delivery to site. A truss based ground support dolly was modelled and analysed for use at the venue to store and dismantle the chandelier on the field of play.

