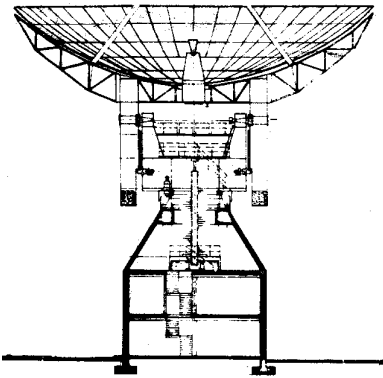
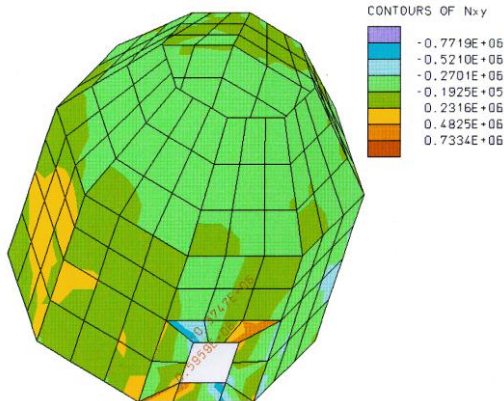
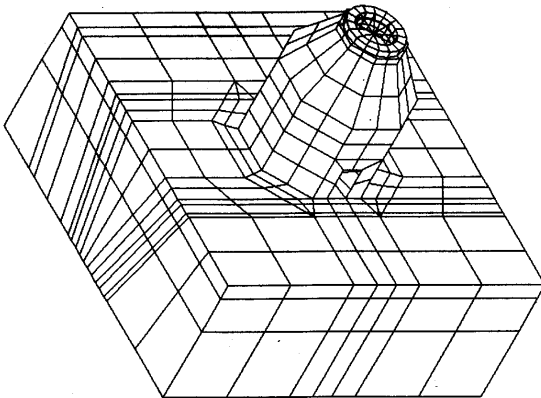

Antenna Tower



Main Contractor (Design & Build) : The Dew Group

MSJ Commission : Analysis, design and detailing of reinforced concrete support structure and foundations including finite element analysis.



The client specified strict limitations on the elastic deformations of the support structure under operational loadings due to the critical targeting accuracy of the antenna dish. This necessitated a finite element analysis on the whole of the structure, the foundation and the ground beneath the foundations. The ground conditions were complex in that there was a fault zone running beneath the structure. The finite element analysis was verified by hand calculations which closely matched the computer predictions.

The tower consisted of an octagonal main shell, with 2 internal suspended floors, and a conical top section for the dish mountings. The top section was heavily reinforced to transfer the loads from the fixing bolts to the shell of the tower. The external faces of the tower were designed for a 0.1 mm crack width due to the exposed nature of the site and the required durability.