UDCS Consulting was engaged by the DoD via the construction contractor to review a proposed design and offer alternatives and improvements for one of two intake substations at the Enoggera Barracks in Brisbane. UDCS Consulting undertook field testing and detailed design of substation ISS-1.

The study included:
- The collection of detailed ground resistivity data at the site using a Fluke 1625 Geo Earth Ground Tester
- Development of a computer based soil and grid model using CymGrd™.
- Development of an amended design, enabling simplified construction practices.
- Computer based model were developed and reviewed for step and touch induced voltage conditions under the proposed conditions.

Design Method

Earth grids are designed on the basis of static operational design limits under fault conditions. In this case these limits were dictated by Energex and the construction program which required the partial installation of the grid and energisation of the 11kV switch room prior to the completion of the remaining portions of the 33/11kV substation.


Project Achievements

- Reduction in installation cost
- Reduction in metal pipe hazard zone from 1.3km down to 320m.
- Reduction in telecommunications hazard zone from 120m down to 30m.