

UDCS Consulting Project Summary

The Company

UDCS Consulting provides

- survey and
- engineering consultancy

services to the

- electricity
- infrastructure
- mining
- commercial sectors

The primary works being undertaken are in reticulation, distribution and transmission of power, water and gas.

Our Clients

Domestic and foreign Utilities
Major construction companies
Government & Private asset owners.

Services Offered

Engineering Survey
Electrical Distribution Design
Sub-transmission OH Design
Sub-transmission UG Design
Substation Design
Preparation of environmental reviews
Developer initiated Design
Solar Power and Lighting Design
Road Lighting Design
HV Auditing (QLD ESO)

Contact Details

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Establish New 33kV UG Feeder Tail Brendale Substation

Project Scope

Energex commenced issuing 33kV underground transmission feeder replacement projects as D&C in late 2007. UDCS Consulting was engaged as part of the initial trial project as design consultant.

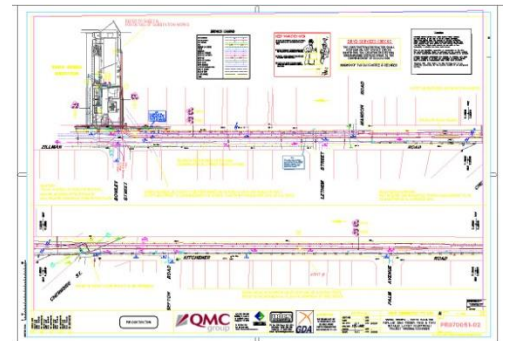
The Brendale Substation project required the installation of a single circuit feeder capable of delivering 40 MV.A.
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The client specifically required delivery of the following:

- Alignment selection
- Detailed survey
- Geotechnical investigation
- Geothermal investigation
- Cable rating
- EMF study
- EPR study
- Design of special earthing details

Key Staff

Surveyor: Tim Smyth
Design Engineer: Kerry Prickett



Rating Study Method

Traditionally cablese are rated based on static operational design limits. Limits are normally calculated for a maximum operating temperature for the cable type under consideration which can be converted to continuous and emergency limits in load current or power. In this case the current static limits were specified as:

- 90°C system normal
- 105°C for short term emergency

Ratings are controlled by a combination of factors:

- Heat generated from power transfer, sheath current transfer and external sources.
- Geothermal properties of in-situ soil and imported backfill.
- Cable construction and installation
- Earthing arrangement properties

The rating studies in this case were conducted in line with the recommendations of ISO 80287 utilising CymCap™ software.