

CASE STUDY - DEVONPORT NAVAL BASE



Abbey Systems supplied and installed an Energy Monitoring System for the Royal New Zealand Navy, Devonport Naval Base (HMNZS Philomel) located in Auckland.

Devonport is a part of North Shore City, Auckland which is New Zealand's largest city, located near the top of the North Island. The base is located in a natural deepwater area just 20 minutes by boat from the Auckland CBD. Over the years it has been expanded and today, in addition to the New Zealand Navy, has many outside users, including Bristol Babcock and the Australian Navy.

The Powerlink SCADA system monitors the energy consumption of the various users located within the base. In addition it monitors and controls the power distribution network to these customers, including the dockyard itself, stores group, base hospital and HMNZS Philomel.

The energy metering information is collected from 30 points around the base. The SCADA system provides a secure way to return this information to the Master in realtime, where it is passed through an alarm system, archived and sent on to a billing and analysis program.

A number of different types of energy meter are used; those with pulse outputs and those with serial Modbus interfaces.

Key Benefits

- Manage the Energy Distribution System
- Accurately account for energy usage on base
- Pass on actual monthly energy costs direct to customers
- Monitor trends in power usage to assist future capacity planning
- Respond quickly to unusual circumstances e.g. very high power usage



Both connect to Remote Terminal Units scattered around the base which communicate by way of 2 wire land line or fibre optics with the Powerlink SCADA Master. All information is backed up at the metering site and the Alarm system notifies plant Engineers should metering information fail to reach the SCADA Master when expected.

Implementing the Powerlink system enabled the Royal New Zealand Navy to:

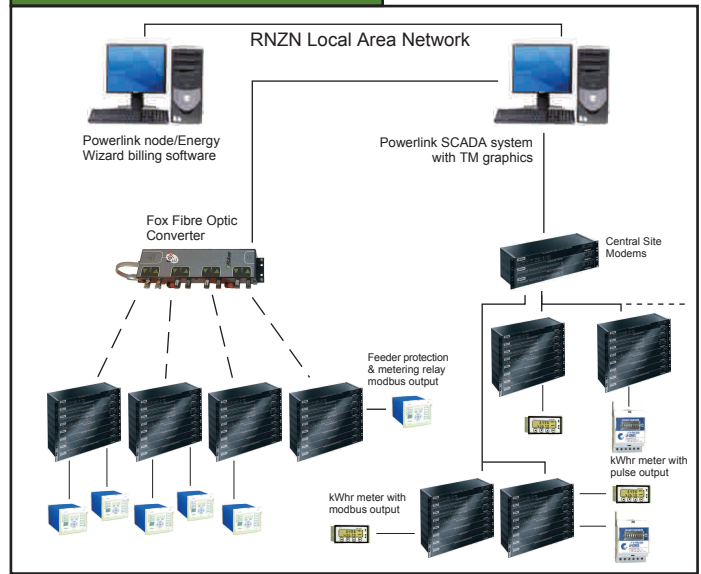
- Manage the Energy Distribution System
- Accurately account for energy usage on base
- Pass on actual monthly energy costs direct to customers
- Monitor trends in power usage to assist future capacity planning
- Respond quickly to unusual circumstances e.g. very high power usage.

The SCADA system uses Powerlink and Modulink RTU hardware components which are installed in eight substations that form the base distribution network and also at various power consumption metering points.

A Powerlink SCADA Master with Telemetry Mimic graphics is located in the Calliope Wharf substation control room and displays and logs all data transmitted from the various remote units. If a circuit breaker status changes, causing a loss of power, then an alarm will be automatically sent via the paging network to the Base duty electrician. Performance of the 50/60 Hz inverters for ship supplies is also monitored by the Remote Terminal Units. Metering pulses are supplied from the two points of supply substations with Vector Networks. In addition, instantaneous display of metering data from the various Base users (including ships in dock) is displayed at the Master. Monthly computations for cost allocation require the recording of 30 minute peak kW and kVA figures from all the metering points.

Mr Greg Ellison, Devonport's Energy Services Officer maintains the system and says "We have found the Powerlink system extremely stable for this job and are now expanding it to several new sites connected by fibre optics".

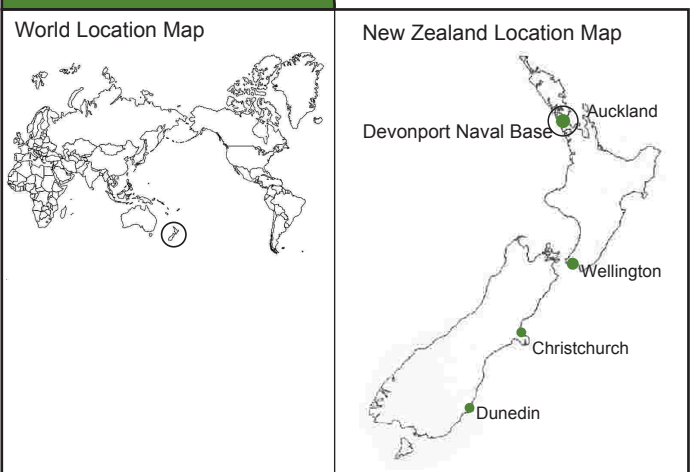
Site Network Diagram



Project Snapshot

Case Study	Devonport Naval Base
Client	Royal New Zealand Navy
Job Description	Energy Metering
Installation date	1989/1996/2004
Number of I/O	1200
Number of RTUs	18
Communication Methods	2 wire land line and fibre optics

Location information



New Zealand

Abbey Systems Ltd
L4, 220 Willis Street
PO Box 27 497
Wellington, New Zealand
Ph +64 4 385 6611
Fax +64 4 385 6848
www.abbey.co.nz

United States

Abbey Systems, Inc
3596 South 300 West, Unit 14
Salt Lake City, Utah 84115
USA
Ph +1 (801) 265 8911
Ph +1 (801) 265 0789
Mobile +1 (801) 699 3370

China

Abbey Systems (Shenyang) Co. Ltd
Room 1601, Set B, 31A Jinqiao Road
Dadong District
Shenyang PC 110042
China
Ph +86 (24) 2483 7488
Fax +86 (24) 2483 5788



CS-617-1.0-2004-Jul