



New Zealand's First Green Building

HighBand® 25 system offers flexible, strong, converged network with ease of management and room for growth

CASE STUDY

CHALLENGE

When Meridian Energy decided to move to a brand new building, it needed to create a structured cabling solution from scratch. The solution needed to be able to handle not only today's technology requirements, but also those of the future. A key strategy was to merge the voice (telephone) and data across one converged Internet Protocol (IP) network. The network needed to be extremely robust to satisfy the quality of service requirements of IP telephony.

STRATEGY

Meridian Energy chose ADC KRONE TrueNet® Category 6 HighBand 25 structured cabling solution to underpin its entire communications infrastructure. The system is easy to manage, maximises available space and can handle tomorrow's high speed network requirements today.

RESULTS

After a smooth installation and seamless transition, Meridian Energy has achieved a faultless system that is: "flexible; space saving; cost effective; easy to manage; and allows for the emerging technologies of tomorrow", according to ISYS director Steve Natoli.



CUSTOMER PROFILE

MERIDIAN ENERGY

- Meridian Energy was formed on 31 March 1999, when the NZ government split the Electricity Corporation of New Zealand.
- Meridian has offices in Christchurch, Twizel and Wellington.
- NZ's largest state-owned electricity generator, Meridian supplies more than 200,000 residential and business customers.
- Meridian is NZ's only energy provider generating certified carbon-neutral electricity. It generates electricity using only renewable resources (e.g. wind, water).
- Meridian's new building in Wellington is NZ's first purpose-built "green" building. It is designed to use 60 per cent less energy and 70 per cent less water than comparable office buildings.

ECO DESIGN FEATURES

- Automatic blinds are housed within the double skin façade. The blinds are controlled by the building management system adjust to external temperature.
- The Double Skinned Façade has a cavity through which air is allowed to circulate. This reduces the overall energy needed to keep the building at an optimal temperature.
- Concrete floors are used as thermal mass to reduce the amount of mechanical air conditioning required. During the day, heat is absorbed through gaps in the ceiling, and is released back into the environment at night.
- Daylight is maximised wherever possible for lighting and sensors ensure that only occupied areas are lit.
- Water is harvested from the roof and is used for approximately 80% of all the toilet flushing in the building.

A green building and a greenfield installation

Meridian Energy recently relocated its Wellington office to a brand new building, allowing Meridian Energy to design and build a communications network from scratch.

Underpinning the new communications network is a structured cabling system that handles not only today's technology requirements, but also those of the future.

A key strategy was to merge the voice (telephone) and data across one converged Internet Protocol (IP) network. The network had to be extremely robust to satisfy the quality of service requirements of IP telephony.

In order to create the best possible network, Meridian Energy and its advisors Beca selected ISYS, one of New Zealand's leading cabling and equipment installation companies, following a competitive tender. Steve Natoli, director, ISYS, explains the importance of getting it right:

"ISYS is an accomplished nationwide Structured Cabling specialist with many successful Government and Corporate projects under our belt. Meridian Energy chose us for this project

because it was important to get it right the first time. We needed to deliver a robust network cabling solution, otherwise the company's business operations could be severely affected," he said.

ISYS set about finding a structured cabling provider that could deliver a robust yet flexible infrastructure.

Meridian's Project Manager, Murray Pugh comments: "For Meridian, the cabling solution provides an essential backbone for supporting a new way of working collaboratively in a connected world. By enabling such technologies as follow-me print, wireless access points, IP based video conferencing as well as desktop data and voice



Above: Hydraulic louvres and automatic blinds within the building facade that adjust to the sun.



Steve Natoli, ISYS, Murray Pugh, Meridian Energy and Tim Davidson, ADC KRONE

connectivity, the ISYS team have been a critical contributor to the success of our Working Environment Strategy," he said.

Clear project goals and a clear choice

The ISYS team, on contract to Fletcher Construction, defined clear project goals at the outset:

- To design and install a Category 6 structured cabling system.
- To deliver a solution that minimises cost of ownership while maximising effectiveness.
- To deliver a solution that not only meets but also exceeds current industry standards.
- To achieve the effective use of the limited space available within the communications closets.

ADC KRONE's TrueNet® solution satisfies all requirements

ISYS chose ADC KRONE's TrueNet Category 6 HighBand 25 Patch-by-Exception solution to meet Meridian's requirements.

"With more than 1,000 telecommunications outlets, the project required a high-end solution

that could fit within limited space. The ADC KRONE TrueNet solution was perfect," says Steve Natoli.

When hardwired, the HighBand 25's centre patch port allows for 'look both ways' testing and the unique ability to re-direct circuits by simply inserting a patch cord. This process, called Patch-by-Exception, allows the user to quickly re-direct circuits without taking the circuit down or inhibiting performance. To return the circuit to its original status, the patch cord is simply removed. The end result is a neat, orderly and easy-to-maintain telecommunications closet. The tangled mess of patch cords is eliminated and maintenance and record keeping are simplified.

The cabling is Category 6 Class E, which is in accordance with the requirements of AS/NZS supporting Gigabit Ethernet.

A Voice/Data structured cabling Floor Distributor (FD) patch frame is located within the communications closet on each level of the building. A wall-mounted HighBand 25 frame is installed in each FD for the termination of the local Category 6 unshielded twisted pair (UTP) structured cabling. This frame is used to cross-connect the horizontal voice and data cabling structures.

At the FD patch frames, the Category 6 cables terminate onto HighBand 25 modules as appropriate. At the wall outlets, the Category 6 cables terminate onto ADC KRONE RJ45 outlets, which include PDL600 series faceplates with labelling clips and windows. These unique adapter clips and windows hold a computer-generated label (in any colour), which sits behind a clear plastic window.



Testing the HighBand 25 functionality

Fibre Vertical Tie Cabling consisting of eight core singlemode fibre cables are installed between the FD communications cabinets on each level. These fibre cables are terminated onto ADC KRONE fibre trays with ADC KRONE LC connectors.

Because ISYS is an ADC KRONE-certified TrueNet® Integrator, Meridian Energy received a 20/20 TrueNet System Warranty Certificate, covering the system for 20 years.

Smooth installation and strong results

15 months after first approaching ISYS about the project, the installation was complete. The process was smooth, with installation happening floor-by-floor as the building was completed.

“We provided Meridian Energy with a complete turn-key solution once the building was finished,” says Steve Natoli. “The ADC KRONE HighBand 25 solution has delivered to the project expectations. It has reliably allowed Meridian Energy to lower its cost of ownership of the computer/voice networks through integration, simpler system administration, simpler maintenance and efficient telecommunications.”

The solution’s Patch-by-Exception functionality guarantees a flexible system that is space saving, easy to manage, and will accommodate emerging technologies without requiring upgrades. The patch frame remains neat and tidy, allowing for more effective cable management. Less cable is required to make jumpered cross connects, further simplifying the system. Temporary patches are easily visible, so the network administrator has better control and record accuracy.

Using jumper cable instead of patch cords reduces costs significantly, as does the use of a wall mount frame system rather than expensive racks and cabinets. This also reduces the amount of cable bulk, which is important for large installations like Meridian Energy.

“The HighBand solution also involves wiring the port appearances of the data services to a



Photo supplied courtesy of Meridian Energy.

Central staircase to discourage use of lifts, reducing power consumption. The staircase assists with ventilation control by drawing hot air out from the floors, expelling it at the top.

dedicated appearance on the cross connect frame. The advantage of using the data side frame is that it is not co-located with the active equipment. Instead, it’s installed on a wall mount frame, saving the amount of floor space used. One of our key objectives was to maximise the use of available floor space, so we were pleased to be able to do this,” says Steve Natoli.

ADC KRONE’s HighBand 25 significantly reduces the amount of patching required, as most of the moves and changes are handled at the software level. When patching is required, it is done using latched patch plugs, and is achieved without any interruption to live circuits thanks to the “make before break” nature of HighBand 25.

“Overall, I would say the ADC KRONE TrueNet HighBand 25 solution has given Meridian Energy a system that is: flexible; space saving; cost effective; easy to manage; and allows for the emerging technologies of tomorrow,” summarises Steve Natoli.

“All the technical benefits we were anticipating were realised right from the start. At commissioning, the ADC KRONE structured cabling solution performed faultlessly, making the transition of the network operations and people seamless,” he concludes.



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