



Fibre master class for Uni

ADC KRONE fibre management solution enables easy cabling relocation for Murdoch University's fibre network.

CASE STUDY

CHALLENGE

Murdoch's communications network was rapidly running out of space in its existing location and needed to be moved to the main data centre in the Science and Computing Building at the Murdoch campus. None of the existing 48 optical fibre cables leaving the building was long enough to reach the new location within the data centre. This meant that every cable would have to be either replaced or spliced and extended into the new rack location.

STRATEGY

Murdoch University chose the ADC KRONE Fibre Entrance Cabinet (FEC) to house the existing cables and new pre-terminated fibre cables extending to the data centre. All the splicing was completed within the FEC on easy to use slide out splice trays. The University also chose ADC KRONE's FL2000 flexible, modular and economical series of fibre products, plus FiberGuide® raceways, to complement the FEC.

RESULTS

No existing cable needed to be replaced, which meant substantial cost savings for the University.

"Our aim for this project was to relocate our fibre backbone cabling, and we certainly achieved it," concludes Christopher. "Importantly, we were able to achieve this aim cost effectively and with a solution that strengthens our network. We're very pleased with the results."



CUSTOMER PROFILE MURDOCH UNIVERSITY

- Murdoch University's mission is to extend knowledge, stimulate learning, and promote understanding, for the benefit of the wider community.
- Murdoch University is located in Perth, Western Australia and has three campuses at Murdoch, Rockingham and Peel.
- With a student population of over 15,000 including 3,000 international students Murdoch is a dynamic, modern university with a national reputation for excellence in teaching, research and student satisfaction.
- Murdoch is also one of the leading research universities in Australia.
- Murdoch University is the only university to achieve a 5-star rating for Graduate Satisfaction for 13 out of the last 14 years.

(Source: Good Universities Guide 2009.)

Lack of room leads to cabling relocation

As a dynamic, modern university, Murdoch is always growing. This is also true of Murdoch's communications network, which was rapidly running out of space in its existing location and needed to be moved to the main data centre in the Science and Computing Building at the Murdoch campus. The other prime consideration was to migrate the primary communications core equipment to a controlled environment. The data centre is strictly temperature and humidity controlled, dust-free and fire-protected.

The existing location of the termination rack for the backbone cabling needed to be removed as it was near a doorway and there was no room left for expansion. However, there was an additional problem. None of the existing 48 optical fibre cables leaving the building was long enough to reach the new location within the data centre. This meant that every cable would have to be either replaced or spliced and extended into the new rack location.

These fibres connect the other campus buildings to the data centre, so they are critical to the campus communications network. Murdoch University had to find a solution.

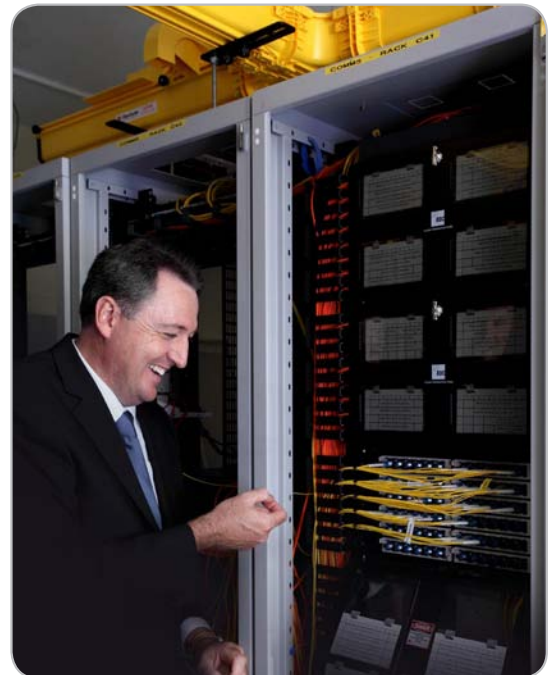
ADC KRONE made sense

Having used ADC KRONE products for many years throughout the University, with most buildings having ADC KRONE structured cabling products in them, it made sense for Murdoch to choose ADC KRONE again for this project.

"We were familiar with ADC KRONE, we knew ADC KRONE products would work well with our existing network and we knew that they would be robust and reliable, so the choice was easy," said Christopher Hickman, Communications Administrator, Murdoch University.

Murdoch University chose the ADC KRONE Fibre Entrance Cabinet (FEC) to house the existing cables and new pre-terminated fibre cables extending to the data centre. All the splicing was completed within the FEC on easy to use slide out splice trays.

The FEC provides splicing, administration and storage for fibre cables. It is a cost effective, space saving alternative to splicing on the fibre frame, making it ideal for the University's needs. It offers a wide range of splice capabilities to meet a variety of applications and, importantly, it provides bend radius



protection to prevent attenuation and physical damage. Its external physical protection also guards against accidental damage, thus ensuring network reliability.

“Because the FEC is wall mounted, we were able to place it close enough for the existing cables to reach and yet keep it out of the way of the door way and off the floor,” said Christopher. “With space being so limited, this was critical for the success of the project.”

The 22 24-core pre-terminated cables of both single mode and multi mode types were made to length and terminated at one end only, leaving the tail to extend into the FEC to be spliced to existing cables. This reduced the number of cables required between the new rack location and the FEC.

FL2000 and FiberGuide® keeps it organised

The University also chose ADC KRONE’s FL2000 flexible, modular and economical series of fibre products to complement the FEC. The FL2000 provides termination, splicing and storage capabilities for in-building cables, outside plant cables and fibre optic terminal equipment patch cords.

The six FL2000 96-port Fibre Panels were used to house the pre-terminated cables within the data centre. These were chosen because they provided built-in fibre patch cord management and easy access for installing the pre-terminated connectors.

“The existing fibre-optic cabling rack was a legacy of 25 years of different fibre terminations and FOBOTs,” said Christopher. “While fibre termination technology has changed, the optical fibre in the ground already is a valuable resource with years of life yet. But keeping fibre patch cables in all the permutations of connectors and fibre types becomes onerous. Migrating to the FL2000 reduced the connector types from SMA, ST and SC to one standard LC type of termination. Using the FL2000 reduced the total rack space need for housing the fibres by about 70 per cent.”



After the cutover was complete, the data centre was fitted with 4 x 4 FiberGuide ducting, linking all data cabinets to the new fibre termination cabinet.

FiberGuide is a raceway system designed to protect and route fibre optic patch cords and multi-fibre cable assemblies to and from fibre splice enclosures, fibre distribution frames and fibre optic terminal devices. FiberGuide ensures that a two-inch minimum bend radius is maintained throughout the system.

Smooth installation

Because of the awkward location of the cables, there was little space in which to house a splicing enclosure. The cables were made up of various construction and core counts, with both single mode and multi mode fibre types with a total of more than 500 fibres. Each cable would need to be cut over separately and out of working hours so that the network would not be affected. This meant the contractor had to



complete the termination of one cable at a time and recommission the service before moving on to the next cable. This was time consuming, but essential to maintain the continuous operation of the network and minimal disruption to the customer.

“From our perspective the implementation process was smooth, and we didn’t experience any significant disruptions,” confirms Christopher.

Substantial cost savings

No existing cable needed to be replaced, which meant substantial cost savings for the University.

All cables were cutover successfully in a carefully planned and staged manner, so that network outages were minimised to one building at a time. No single building was down for longer than 4 hours, usually no more than 2 hours – carefully scheduled for weekends and out-of-hours, although for the University of today, no time is truly “out-of-hours”.

The pre-terminated cables meant no termination work needed to be done on site within the data centre – this reduced the cost of installation and meant the active equipment could be installed and made ready prior to the cutover. It also meant that during the various cutover stages the contractor did not have to work near the active equipment, thus reducing the chances of any mishaps.

The FEC benefited the customer in reducing the real estate required for splicing the cables and because of the complexity of the number of cables being cutover it enabled the contractor to gain easy access to these cables when required.

It was designed with redundancy built in so that future expansions have been catered for and will once again help reduce the installation time needed on site.

“Our aim for this project was to relocate our fibre backbone cabling, and we certainly achieved it,” concludes Christopher.

“Importantly, we were able to achieve this aim cost effectively and with a solution that strengthens our network. We’re very pleased with the results.”

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