



A Network for All Seasons Australian National Baha'i Centre

CASE STUDY

CHALLENGE

The Australian National Baha'i Centre is approaching 50 years old, and with an aging and unreliable communications network, the time was ripe for a makeover. The client expects to use the new infrastructure for many years to come, so they required a network that would be reliable and robust both now and well into the future.

STRATEGY

The team chose ADC KRONE's Category 6 structured cabling solution for the Baha'i Centre. In accordance with the initial project goals, the network has been designed with complete redundancy in mind. It comprises backbone cabling, horizontal cabling in the site's various buildings, and active equipment provided by D Link.

RESULTS

National Baha'i Centre now has reliable, robust, high speed network based on ADC KRONE TrueNet® Category 6 and fibre cabling. The new network cabling has replaced an aging and unreliable cabling system. It is proving to be a good investment and it is already providing far better network performance. The client has moved its telephony system to VoIP using the new fibre network, mitigating lightning problems. The client has also deployed a new high speed network that will be able to accommodate future applications. The cabling is standards-compliant and its logical structure makes administration much simpler.



CUSTOMER PROFILE

NATIONAL SPIRITUAL ASSEMBLY OF BAHÁ'IS AUSTRALIA

- The Baha'i Faith is the youngest of the world's independent religions and came to Australia in 1920.
- Worldwide, the Baha'i faith is one of the fastest growing religions with an estimated following of about 5 million.
- The Baha'i House of Worship took more than four years to complete. As with all Baha'i temples, it has nine sides and nine entrances symbolically representing the Baha'i belief in the unity of the human race under the one God, and the essential unity of the world religions.
- The Temple grounds cover approximately nine hectares. The site is the highest point in the area and the Temple is often used by aircraft and ships for navigational purposes. Other buildings include a visitors centre, bookshop, picnic area, hostel, caretaker's cottage, and the administrative offices of the Australian Baha'i community.



Craig Pendleton, Stowe and Khosrow Lalehzari, Baha'i examine the new cabinet.

Aging infrastructure ready for makeover

The Australian National Baha'i Centre is a place of prayer and meditation open to people of all faiths. The nine-sided building, located in Mona Vale, NSW, is a well-known landmark attracting thousands of visitors each year. The site also contains the national offices for the Baha'i faith in Australia. With construction commencing in 1957, the time was now ripe to upgrade the site's communications infrastructure.

"We needed to create a state of the art communications network comprising voice, video and data," explains Craig Pendleton, Contract Manager of Stowe Australia, the project's electrical and communications contractors. "The time was right for a general infrastructure upgrade, but we also knew that the Baha'i Centre would expect to be able to use the new infrastructure for many years to come. Our challenge was to create a network that would be reliable and robust both now and well into the future – no matter what applications the client may throw at it."

The centre's aging and sometimes unreliable infrastructure was further impeded by the site's location, which is in an area of high lightning activity. This created ongoing costs associated with fixing network problems resulting from the frequent storm activity in the area. Additionally, normal staff operations were invariably affected by these network outages, incurring further costs.

Reliable, flexible network required

It was essential to create a network that would be less susceptible to outages caused by storms and lightning so as to reduce the cost of maintaining the network. The Baha'i organisation required a future-proof communications network with redundant pathways, resulting in a more reliable network with the best long term flexibility.

The Centre turned to voice and data experts Stowe Australia to help them find the best solution. Together with consulting engineers Wallis & Sprat, the team chose a solution from ADC KRONE.

“We have worked with ADC KRONE many times in the past,” explains Craig Pendleton. “This was to be a reasonably high-profile project and, given the likely lifespan of the network, we felt very comfortable recommending ADC KRONE in this case. In particular, the 20-year warranty was very attractive for the Baha’is.”

Unique circumstances create opportunity

The team chose ADC KRONE’s Category 6 structured cabling solution for the National Baha’i Centre. In accordance with the initial project goals, the network has been designed with complete redundancy in mind. It comprises backbone cabling, horizontal cabling in the site’s various buildings, and active equipment provided by D Link.

Backbone cabling

Unusually, the infrastructure could not include any copper cabling for voice services because of the high prevalence of lightning strikes in the area. This created an opportunity to design a diverse fibre optic network using ADC KRONE Outdoor Highlight gel-filled loosetube cable installed underground between buildings. This ultra-high technology solution will ensure that the Baha’is can rely on the network well into the future. There is a hub in Building B5, which houses the main computer room. Six-core singlemode (OS1) and multimode (OM3) cable runs to each of the 12 remote buildings and the Temple from Building B5. Another set of six-core singlemode (OS1) and multimode (OM3) cable runs from the secondary hub in the Temple to each of the 12 remote buildings.



Left: One of the diverse backbone cable entries under the Temple Building

Stowe also installed ADC KRONE LKH series rack-mounted patch panels for ease of use. The fibre terminations were all fusion-spliced using the ADC KRONE LC pigtail assemblies.

Craig Pendleton explains the thinking behind this design: “Having each building fed from the main computer room as well as from a secondary communications hub was essential to the project goals. The design provides for both singlemode and multimode fibre to each location, which will give the client the best long term flexibility,” he says.

Horizontal cabling

Each building was cabled with dual ADC KRONE TrueNet® Category 6 UTP (Unshielded Twisted Pair) outlets in each location. The remote buildings include several different styles, from commercial office style to domestic cottages. In each remote building, wall-mounted 19-inch cabinets were provided to house the patching and active equipment. Free-standing 19-inch cabinets were used in the larger buildings.

Overcoming a tight schedule

“The entire project was implemented over a 16-week period,” says Craig Pendleton. “The finish date was critical as the system had to be completed in time for a visit by Baha’i representatives who were visiting from all over Australia. It was a really tight schedule, but thanks to the strong support we got from ADC KRONE, we got the project done on time and on budget.”

The implementation was undertaken over six stages:

- Stage 1:** Installation of campus backbone fibre from the main computer room to 12 buildings;
- Stage 2:** Installation of redundant backbone fibre from the Temple to 12 buildings;
- Stage 3:** Pre-cabling of all remote buildings with dual Category 6 outlets;
- Stage 4:** Pre-cabling main administration building with dual Category 6 outlets;
- Stage 5:** Customer training;
- Stage 6:** System cut over of PABX and servers to new cabling system.

“The implementation was complicated slightly by the sensitive nature of the site. It’s located in a prime bushland setting and is home to endangered plants and animals. Our staff had to be careful not to disturb the environment whilst on site, particularly when moving around or installing cables between buildings,” says Craig Pendleton. “A couple of our staff members encountered snakes during the project, but because we were aware of this risk and had procedures in place to deal with it, encounters with the local wildlife were not a problem.”

‘Good investment’ yields immediate results

“We knew that this customer would get the full life out of any warranty we offered, so we wanted to offer a product that would be reliable over the long term, as well as providing immediate benefits,” says Craig Pendleton. “The new network cabling has replaced an aging and unreliable cabling system. The new system is proving to be a good investment and it is already providing far better network performance.

“The Baha’is have been able to move their telephony system to a cheaper, more reliable Voice over IP (VoIP) solution using the new fibre network. This makes the telephone system more robust, because it is now less prone to lightning problems,” he said.

The new solution has also enabled the Baha’is to deploy a new high speed network based on the D Link suite of products. This has rationalised their PABX distribution and ensures that the site will be able to handle any future technologies the organisation wishes to deploy.

“The users on site now have a high level of redundancy for their voice and data applications.



Above: Secondary communications hub below B1 Temple Building

The cabling is standards-compliant and much more logically structured than the previous system, so administration is much simpler,” says Craig Pendleton.

“The final results were very pleasing for the client who is now enjoying a reliable, state of the art cabling system. It’s a huge improvement on the old system, it’s easy to follow and offers simplified administration. It’s a huge plus that the system can accommodate expansion that may come from any future building development on the site. Given the excellent results we achieved, we will recommend ADC KRONE be used on any future development,” he concludes.



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