

CASE STUDY

K-12 Education



Raroa School Gets "A" for Delivering Better Wi-Fi Coverage and Performance with Smarter WLAN

Students were frustrated at Raroa (Ra-Roe-Ah) School in New Zealand. They couldn't connect to the wireless network, and even when they could, the Wi-Fi signal was weak, performance was poor and staying connected was nearly impossible.

A large and bustling intermediate public school in Wellington, New Zealand with over 500 students and 30 staff, Raroa consumes a multi-acre campus with six multi-story buildings, two prefabricated buildings, outdoor common areas, gymnasium and fields. The school has also taken a leading position with respect to technology - having implemented a robust wired network, fiber gigabit backbone and computer carts equipped with laptops.

"There's an increasing expectation that wireless connectivity should be available everywhere at school," said Simon Kenny, ICT Resource at Raroa School. "We've always used technology to improve the educational experience. But with traditional Wi-Fi technology, we were going backwards."

Raroa's initial venture into Wi-Fi consisted of sprinkling Linksys access points (APs) throughout their three, two-story classroom buildings and around campus. While inexpensive, Raroa found the Wi-Fi APs just couldn't provide the stability, signal coverage or performance required. "Teachers and students began to lose confidence and get extremely frustrated," said Kenny. "Client devices would cling to an AP or drop their connection altogether. We wasted a year trying to fix the problem. It was simply a disaster."



Raroa School consumes a large multi-acre campus that includes four multi-story, concrete and steel buildings, two pre-fab facilities and large common areas and fields.

Computer trolleys equipped with 20 wireless laptops were frequently left unused because the Wi-Fi system couldn't handle the density of users simultaneously requesting Wi-Fi service. "Most of the time students just couldn't login," said Kenny. "This was causing us all kinds of headaches. So we decided to look for a proper, managed wireless LAN system."

Raroa wanted to implement a completely coordinated and robust WLAN system that could be administered from a central point. Moreover, Raroa needed a feature-rich system that could provide better range was adaptable to a dynamic environment. And because IT staff and budgets were limited, the Wi-Fi system had to be cost-effective. Raroa was also interested in using the WLAN to ultimately stream video, such as Sky TV, to classrooms.

Kenny noted that Raroa's environment was a particular challenge for conventional Wi-Fi systems because buildings were constructed of steel and brick, the physical area was so large, and interference caused dropped packets and poor performance.

So Raroa went looking for better Wi-Fi.

COMPANY OVERVIEW

Located 20 miles north of Wellington, New Zealand, Raroa is an intermediate school with over 540 students and 30 staff founded in 1971. Occupying a multi-acre campus, Raroa facilities include eight buildings for classrooms and office space, pre-fabricated facilities and outdoor quads and fields.

REQUIREMENTS

- Stable connectivity for clients
- High user density per AP
- Ubiquitous Wi-Fi coverage
- Centralized WLAN management
- Seamless network integration
- Support for streaming video
- Ability to support simple guest access
- Easy administration and management

SOLUTION

- Four Ruckus ZoneFlex 2925 Smart Wi-Fi 802.11g desktop access points
- Six Ruckus ZoneFlex 2942 Smart Wi-Fi 802.11g enterprise access points
- 802.11g Smart Wi-Fi access points
- One ZoneDirector 1012 Smart Wireless LAN controller

BENEFITS

- Better signal quality
- Fewer dropped connections
- Complete Wi-Fi coverage for entire campus
- Simple management of entire WLAN from a single point
- Streamlined deployment allowed entire WLAN to be installed and operational in under six hours
- Improved user experience
- Adaptable Wi-Fi signals allow reliable coverage within hostile RF environment



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"Before deploying the Ruckus ZoneFlex system, our wireless environment was a disaster. Students couldn't reliably login, and when they could their connections were constantly lost. We wasted a year trying to fix it.

With the Ruckus ZoneFlex system we were able to solve client density, signal stability and coverage issues at a price that was thousands less than any comparative wireless LAN systems."

Simon Kenny

ICT Resource
Raroo Intermediate School

"What we found was just more of the same nasty Wi-Fi technology that really did nothing to adapt to the changing Wi-Fi environment," said Kenny. Kenny was then introduced to Ruckus Wireless by Connector Systems and its solutions partner New Era IT.

"The Ruckus technology was unlike any we'd seen, completely tailored to our requirements for longer range signals, better reliability and simpler management," said Kenny. "But the devil's in the details. We needed to put this kit to the test."

So they did. Raroo and New Era IT began testing the Ruckus ZoneFlex Smart WLAN system on campus and found their coverage and signal stability problems quickly disappeared.

Because of the extended coverage delivered by a long-range smart antenna array integrated within each Ruckus AP, Raroo needed to deploy only 10 ZoneFlex Smart Wi-Fi 802.11g APs (a combination of ZoneFlex 2925s and ZoneFlex 2942 APs), to achieve complete coverage across the campus. "Raroo would have needed at least one AP per classroom (18 classrooms) with any other WLAN system and still wouldn't get the reliability they needed," said Barry Moore, Systems Engineer at New Era IT. "On top of that, the Ruckus

ZoneFlex system was literally thousands of dollars less than comparable Cisco or Trapeze wireless solutions."

Raroo deployed two ZoneFlex APs in each of the three classroom blocks, one in the office block, one in the Performing Arts classroom and one in each of the prefab buildings. For central AP and RF management, Raroo installed the ZoneDirector 1012 controller.

Within four hours, New Era IT was able to configure and deploy the entire ZoneFlex Smart WLAN system. "The best thing about this system was how simple it was to configure, deploy and administer" said Moore.

Raroo now monitors and administers the campus WLAN from a single point without dispatching technicians.

The Ruckus ZoneFlex system was also able to provide Raroo with future-proofed options as the school considers streaming SkyTV to classrooms and using the Wi-Fi network to access stored video content on a ClickView video server system.

"We are now able to focus on providing a better educational experience and more efficient school process, instead of constantly having to put out Wi-Fi fires," concluded Kenny.

Right:

The Ruckus ZoneDirector gave Raroo School a single view of their entire wireless environment along with centralized controls for changing and managing all aspects of the smart wireless LAN.

