

ZyXEL



ZyXEL enhances Greenhill School's learning
with secure wireless Internet access



The IT Block

“The main appeal of the Wireless Channel Blanket technology is that it can manage a large density of users accessing the network at the same time. The fact it was also easy to deploy and will be relatively pain-free to manage, makes it even more useful.”

Roger Shorter, ICT Network Manager at Greenhill School

Overview

Challenges:

- Deliver secure wireless Internet access to the sixth form block at one of the largest schools in Pembrokeshire
- Ensure the wireless network was capable of handling large volumes of students accessing the Internet at the same time
- Re-use existing network technology, where possible
- Ensure the system was easy to deploy

Benefits:

- Year 12 and 13 students can now spend free periods and break times more productively accessing the resources they need online, rather than waiting for a computer to become available or a web page to load

- The wireless Internet experience is the same wherever a student is in the sixth form building and however many people are accessing the network at the same time
- The network is protected from unauthorised users and devices; and students are restricted from accessing unauthorised sites
- The ZyXEL solution can easily scale upwards should the school want to extend wireless Internet access to the remainder of pupils and staff
- The ZyXEL solution was easy to deploy and can be managed through one simple interface

Solution:

- NXC-8160 ZyXEL Wireless Channel Blanket Controller
- Four NWA-8500 ZyXEL ultra-thin dual access points

Greenhill School

Greenhill School in Tenby is one of the largest and most successful schools in south west Wales. There are about 1,300 pupils – just over two hundred of which are in Years 12 and 13 – and more than 150 staff.

Pupils in the sixth form have access to a wide range of courses from A-levels and AS-levels to a BTEC First Certificate in Travel & Tourism. Greenhill School also believes in supporting its sixth formers with a modern ICT learning environment. For such a large school, it has shown a flexible and innovative approach to updating its ICT equipment regularly and also welcomes the trend for more sixth form students wanting to bring in their own laptops to use in lessons and during free periods.



No more wires for sixth form students

The problem for Greenhill was that although it had a dozen PCs in its sixth form block that students could use, there weren't enough to satisfy demand and the school wasn't able to offer wireless network access as an alternative. There are some IT classrooms with PCs that pupils can use, but again access to these was limited to outside lesson time and the rooms being available to use in the first place.

"Consequently, our first goal was to install some wireless access, as we had none in the sixth form building whatsoever," says Roger Shorter, ICT Network Manager at Greenhill School. *"That was our immediate requirement, but we were also aware that in the future we might want to upgrade our network and extend wireless access beyond the sixth form block to encompass the whole school, which covers a large area."*

Although the sixth form block is a new purpose-built building and, therefore, doesn't suffer the problems common in many old Victorian buildings of black spots that wireless can't reach, the school realised there was going to be a potential issue with so many students trying to access the network wirelessly at the same time. There are a number of classrooms in the block, but also several break-out areas where 20 to 30 people could be working on their own laptops.



The school wanted a way of ensuring that students could access the Internet quickly – with no lengthy waiting or download times – and securely. Given the fixed school timetable and budgetary constraints, it was also important that the deployment wasn't too intrusive and that as much of the legacy cabling and technology already in place was re-used to maximise existing investments.



Modern facilities at Greenhill School

ZyXEL provides blanket wireless coverage

Greenhill School has worked closely with staff at Gaia Technologies for several years. They have a trusted relationship, so it was inevitable that they would turn to a trusted partner when deciding how best to address the school's network concerns. Gaia Technologies solution was the Wireless Channel Blanket Controller and four dual access points from ZyXEL.

It's not uncommon for large numbers of users to overload a wireless access point if everyone is accessing the network at the same time. The Wireless Channel Blanket Controller eliminates these problems by providing consistently fast and secure Internet browsing to students, wherever they may be in the sixth form block. As its name suggests, the Wireless Channel Blanket Controller provides blanket wireless coverage across all access points, acting as if there were one big wireless access point in place. Had the school chosen to rely solely on legacy access points instead, they would need to have been configured to use exactly the same wireless channel, increasing the chance of conflict.





Secure Internet access

As a school, Greenhill has to ensure that its students aren't accessing any inappropriate content, but also that people in the vicinity aren't able to take advantage of 'free' wireless coverage. As the school already has filtering and a firewall in place, this means they have secured access and can segregate traffic via SSIDs, so the central school network cannot be accessed at any time.

In addition, the school has put in place some specific security measures relating to its wireless deployment. First, students' laptops have to be configured by the school before they can access the network for the first time; each student also has his or her own user name and log-in so the school can identify traffic travelling over the network and see what sites students are visiting or what activities they're doing online. It also means that students who might have been barred from using their laptop cannot gain access, nor can students use devices such as games consoles to play games online.

The second level of security is the restriction of wireless access to the sixth form block. *"One of the key benefits of the ZyXEL product was that it let us indirectly limit the range of wireless without reducing the quality of the network experience for users,"* explains Shorter. *"This means that anyone not close enough to the network access point to achieve a certain quality of network isn't able to join."*

Another of the benefits of the ZyXEL solution is that it didn't require any new cabling and could re-use the school's existing network investment, thereby saving money and avoiding disruption to students and staff. *"It really helped not having to get in additional contractors to re-cable the building and it also meant we could deploy the solution straightaway without having to worry that it was during term time, as Gaia Technologies were simply able to deploy access points near the network points."*



Enhancing the school environment

ZyXEL delivers an enhanced learning environment today - and into the future

The provision of fast and secure wireless access to Years 12 and 13 also helps ensure Greenhill School is an attractive choice for sixth form study. Although wireless access is becoming more common in secondary schools, Greenhill School has gone one step further in letting students connect their own laptops to the network; many schools still prefer to control what equipment uses the school's network. But Greenhill School clearly recognises the benefits in giving students the opportunity to work wirelessly and the increasingly important role technology plays in education.

"The wireless equipment from ZyXEL simply connects into our network to provide wireless access for Years 12 and 13 in the sixth form block," says Shorter. *"It improves their learning environment as it means they can spend their free periods more productively researching or working on coursework, rather than waiting for a spare computer to become available or a web page to load."*

Greenhill also recognises that wireless access is useless if the connection is slow or unstable. *"The main appeal of the Wireless Channel Blanket Controller is that it can manage a large density of users accessing the network at the same time,"* says Shorter. *"The fact it was also easy to deploy and will be relatively pain-free to manage as well, makes it even more useful."*

As the ZyXEL solution takes advantage of existing network equipment, all it will require to extend wireless access to the rest of the school in the future are some additional switches – and the school's IT team will still be able to manage the system from the same interface and ensure the same high level of security.

"It is likely that further down the road, we will want to extend the school's own internal network, so laptops in other parts of building will also be able to access the Internet and central network wirelessly," anticipates Shorter. *"This will benefit staff and pupils in other years who also need to use online resources."* The flexibility of ZyXEL's technology means that Greenhill School has a wireless solution that meets its needs, and those of its pupils, today and into the future.



About ZyXEL Communications

ZyXEL Communications Corp. (TSE: 2391), headquartered in Hsinchu, Taiwan, is the world's leading residential gateway provider and was recently ranked as Taiwan's First "Green Enterprise," and the second best "Green" Company in Asia (2007 CG watch, Asian Corporate Governance Association). ZyXEL's comprehensive Internet Protocol-based (IP) networking solutions include access multiplexers, customer premise equipment, Internet security and Wireless LAN equipment, enabling high-performance network services for SOHO, small to mid-sized businesses and service providers. ZyXEL works closely with worldwide network equipment vendors, telecommunications companies, ISPs, and other major businesses. For more information, visit the company's website at <http://www.zyxel.com>