



WLAN-based Lesson? Just turn on the laptop and start teaching!

John Willmott School (JWS) of Birmingham in the West Midlands, UK was built in 1958. Today it is a specialist technology college for 11-18 year olds with 1300 pupils and 500 staff.

Using Technology to Teach Technology

The school doesn't just teach technology, it uses it to the full in bringing education to its students in the most efficient and modern way it can, and in providing the staff with a networked infrastructure to maximize their time, productivity and deliverance of teaching and learning.

Connectivity Problems

The existing wireless network suffered from two major problems: The first was that only parts of the school were covered by wireless and the second was the enormous time and energy spent on connectivity problems. Situated right in the heart of a dense neighbourhood with around 50 wireless APs from nearby homes and hundreds of Smart phones in the hands of pupils and teachers adding to the traffic, the school had quite simply outgrown the capabilities of its traditional wireless network.

Cabled Infrastructure

Extension of the cabled networking infrastructure was not feasible. There was a physical lack of room for desktops in the classrooms and the 50 year old building with its newer satellite buildings positioned some way off would make cabling to every corner of the campus both expensive and complex.

First Class Technologies

Hence the move to a campus-wide network just had to be WLAN. Once the decision was made, the school's ICT Operations Manager, Mr Mushfiq Rahman tendered the project out to a number of top ICT companies of which First Class Technologies was successful and was duly appointed to head the project. First Class Technologies has been around since 1997 and is a well

known network infrastructure consultancy in the Midlands, specializing in educational establishments and has implemented many wireless networks for other schools in the Greater Midlands region.

The Options

Jamie Cook, Director of First Class Technologies, introduced Mr Rahman to a number of solutions including offerings by HP, Ruckus, Aruba, 3Com and Extricom. Cost was an important consideration, but not the only one on the school management's agenda. Reliability was of the essence as connectivity problems were costing an extensive amount of support time and worse still, in wasted teaching time. Knowing already what an overhead system management can be, ease of network management was high on the list too, as was a built-in capability to support 802.11n, an important part of the school's future infrastructure strategy. Extricom's solution provided all the requirements in an affordable package including a simple web-based management system, independence of the supplier's engineers for changes in the future, and above all, reliability of performance. Mr Rahman was invited to see the system in action at another Birmingham school, Washwood Heath; which was a similar project deployed by First Class Technologies.

“Nearly every teacher at JWS will tell you of the pressure felt at the start of the lesson until everyone had successfully logged in to the network. No more. All of a sudden the staff are beaming. No matter what class or room they're in, they just switch on and they're connected to the wireless network”.

Mr Mushfiq Rahman,
Operations Manager, JWS

Project Scope

To replace the existing WLAN with a modern 802.11n-compatible WLAN that will allow laptops to instantly connect in every one of its 70 classrooms the moment they are switched on.

Deal with the challenge of a 50 year old horseshoe – shaped school building with very thick walls.

Solution

1 x Extricom EXSW-1632
1 x EXSW-1600
2 x EXSW-800G switches.
56 x EXRP-30n AP's.

Results

Vastly improved efficiency in teaching due to campus-wide, instant WLAN availability, virtually no connection problems or network access complaints.

Thorough Planning

Together with First Class Technologies, Mr Rahman spent time on the planning stage. Aware of the complexity of the task at hand, they wanted to be sure of the project's success. The planning paid off. First Class Technologies did the configuration off-site and the deployment took only a matter of days. That was then followed by a validation testing period to ensure that no dead spots, connectivity, or other issues existed. Extricom supplied a support engineer on site to oversee the operation and assist First Class Technologies during the deployment.



First Class Technologies's Jamie Cook described the deployment process. "We were flexible; we said that we would work 4 days a week from 4 pm after school until midnight, for 6 weeks, to accommodate minimum disruption for the school. During half-term we decommissioned the old system, installed the core network and then deployed the Extricom system. It took one day for the wireless to be configured and operational and come Monday when everyone came back to school, everything was working".

The old horseshoe-shaped main building had no network cabling in its wings at all, something that made wireless particularly important in this section of the school. Due to the thickness of the walls they needed to add a couple of APs more than initially planned to ensure a perfect connection every time.

Low Stress Lessons

"Nearly every teacher at JWS will tell you of the pressure felt at the start of the lesson until everyone had successfully logged in to the network and of the known problem regions – classes where it was always a headache to get everyone up and running. No more. All of a sudden the

staff are beaming. No matter what class or room they're in, they just switch on and they're connected to the wireless network".

Mr Rahman confirmed that now the infrastructure is no longer an issue, the school can forge ahead with development of its educational programs. Now more classes and more subjects can utilise a computer and network based teaching approach. The WLAN has been used in teaching until now only by the ICT department, but now there's a demand from other departments for access to computers too including the multimedia, maths and science departments. "That could never have happened before, even if we had a cabled network everywhere, due to the size of desktops and limitations of positioning the machines". He commented "Cabling to the extent we're now covered with wireless would have meant spending an enormous amount of money. The wireless lets us give up to 30 laptops to a department so they can use them as they wish".

Productivity Gains

Since implementing the Extricom WLAN the staff are enjoying greatly increased efficiency. This comes firstly through standardisation of teaching, as everyone has access to the same material, and also from the reduction of transferring information from one format to another, for example less printing out and inputting of form data to the system, as it can now be entered directly into the system at source.

Administrator Praise

Whilst the teaching staff are spending more time actually teaching and less getting their network-based lessons off the ground, Mr Rahman's routine has also taken a turn for the better. "I like it because it's a nice simple interface and I can see where the wireless connections are taking place", he says. "Staff are not complaining at all about speed and that's definitely where I want to be. I'm pretty confident that I don't need to consider expanding the wireless or upgrading it; it incorporates 'n' already. I can sit tight on this wireless for years to come."