ST DOMINIC'S
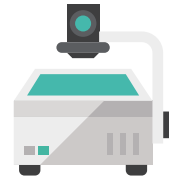
A Case Study on the renewal of the IT infrastructure for...
St Dominic's School for Girls

AN INTRODUCTION TO THE SCHOOL

St Dominic's Catholic School for Girls, Boksburg, was established in 1923. It is an independent academic institution with roots in the teachings of St Dominic, the founding father of the Dominican Order. All religious denominations and races are welcomed to the school, where caring, understanding and tolerance are of utmost importance. There are 3 divisions in the school: a Pre-School (Grades 000-0), a Junior School (Grades 1-7) and a Senior School (Grades 8 -12).

On 31 July 1923, St Dominic's was officially opened with an enrolment of twenty-eight boarders and thirty-two day students. Many exciting and innovative building projects were undertaken over the years to accommodate the growing number of students. The following are some of the highlights:

- In 1965, a School hall and new wing were built.

- In 1990, Marian House, a retirement village for retired Sisters, was built on St Dominic's grounds.

- In 1991, St Dominic's Pre-Grade School was opened with 48 children in Grade 0.

- In 1999 the state-of the art, all-purpose Jubilee Centre was officially opened.

- In 2000 and 2008 the Pre-Grade school was expanded. It now accommodates 150 children from Grade 000 to Grade 0.

- In 2010: Construction of accredited pool.

- In November 2013, a project was undertaken to renew the Media and Computer centres with Dial a Nerd as a partner. The entire IT infrastructure of this long standing institution was re-examined and brought in line with a modern vision and the latest technology available in the Education field.

- In March 2014, this project was completed successfully.

THE VISION

In line with its long-standing tradition of innovation and growth, St Dominic's vision for the future was to implement modern technology throughout the school, establishing an environment which would be conducive to learning anywhere, anytime, offering both students and teachers up-to- date educational resources for all levels throughout the school.

To begin with, St Dominic's CIO (Chief Information Officer) Harry van der Burg attended a Technology Open Day at Brescia house where he met Senior ICT Consultant at Dial a Nerd, Sidney McGeer and shared the intention of the school to facilitate the use of modern technology in a safe, respectful environment. Both staff and students would be able to have access to modern equipment throughout all grades, relevant to their age and requirements.

St Dominic's message was strong and clear. Having started on the path of change, several other IT support companies were considered, but after two rounds of tendering and multiple workshops over the space of a year, Dial a Nerd was the successful contender.

THE MAIN OBJECTIVES WERE THE FOLLOWING:

Internet availability to be made accessible throughout the entire school grounds with wired and wireless options

Teachers and admin to be issued a new laptop for work use, purchased by the school.

Learners to be given access to varied learning resources according to grades, for example:

1   2 computers and 6 IPads in Grade 0 classes

2   School owned laptops in conjunction with Kindles for Grade 6-7

3   Grade 8-12 all students would have a personally owned laptop with a photo ID printed on the back for security purposes.

An ICT Helpdesk would be set up to manage all laptops for staff and students.

Every classroom would have to be equipped with a standard configuration: 4 x CAT 5 Network Points, Wireless Access to Internet via a Wireless Access Point, a Laptop with a Docking Station and an Interactive Projector and White Board.

User-friendly printers were to be added to the new network and made available throughout the school premises, allowing teachers and admin staff access to print from a central Printing Hub with their unique staff member identifier.

HOW THE PROGRAMME WAS IMPLEMENTED

Dial a Nerd had to establish a robust infrastructure, which would enable 200 staff and 1200 students to connect simultaneously with a variety of devices including printers, switches, projectors, cameras and VoIP phones.

There also had to be allowances for additional guests who might need temporary access.

In the original plan, the St Dominic's premises would have access to the internet via a fibre optic connection. However, a decision was made to use ADSL lines instead and fibre optic will be considered as an option in the near future.

The objectives were quite ambitious. While St. Dominic had established an adequate budget for the project, the risk of escalating expenditure had to be regularly monitored and this was successfully achieved by keeping a regular and constructive flow of information between the school CIO and the Dial a Nerd team. Multiple workshops and brainstorming sessions led to implementation of creative solutions in order to achieve the desired objectives within the budget constraints without compromising the quality of the installations.

Other partners were brought in to provide additional services and products:

• Compute: supplied projectors and interactive whiteboards

• BL Services: provided electrical installations
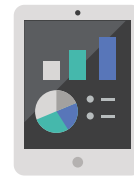
WHAT WAS SUPPLIED AND INSTALLED

Dial a Nerd identified the need for 77 laptops that were distributed between teachers and administrative staff. 18 Network Cabinets were supplied and installed in 14 buildings on the school grounds. 24 high-end Power over Ethernet switches were supplied to provide network infrastructure. Over 500 network points were installed, with a minimum standard of four per classroom and 2 in each office.

The Server room was re-built and a high-end Dell SonicWALL firewall was installed, as well as interactive white boards in the classrooms, which were supplied by Compute.

Investing in a firewall with user-management and a good content filter, made it possible to control data usage on the network from a central management console. The firewall can examine data moving to and from devices and manage it based on the configuration. The configuration instructions were discussed and ratified by the schools ICT board members.

This was essential in order to provide safe access to internet connectivity for the learners and weed out undesired content.

THE CHALLENGES WE ENCOUNTERED

The Dial a Nerd building team had to be involved as trenching was required to lay all the necessary cable to connect several buildings throughout the school grounds; this required accurate planning as most of the work was done without interfering in the normal school operating schedule. Often it became necessary to work during public holidays for the portions that would impact the most on accessibility to school services. Dial a Nerd's dedicated cabling division had the expertise and experience to deal with these situations. The classroom layout of new technology required constant consultation with the teachers; each one had to be involved and provide feedback on what would work best for them. The challenge was to plan interaction with the teachers in a way that would prevent disruption to their teaching schedule and at the same time allow the project to progress speedily within the expected timelines.

I can plan my lessons more effectively!

I can do my homework anywhere!

Dial a Nerd

Network

Over 500 network points were installed, with a minimum standard of four per classroom and 2 in each office. A powerful and largely scalable wireless network was implemented to ensure space for future growth.

Server

A top level server with enough power and scalability was installed to ensure the school's network would be able to grow as needed.

ICT BOARD

Firewall
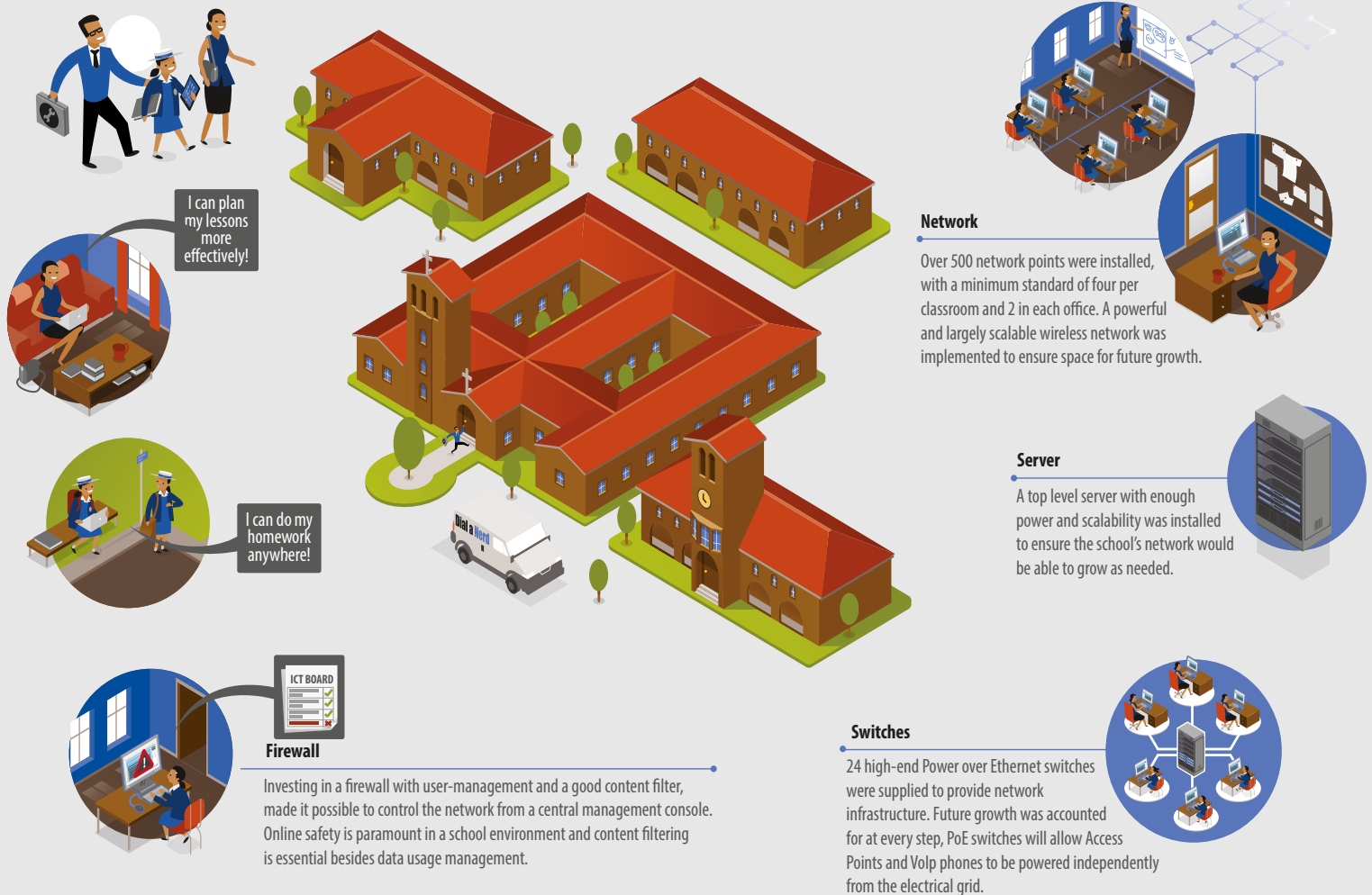
Investing in a firewall with user-management and a good content filter, made it possible to control the network from a central management console. Online safety is paramount in a school environment and content filtering is essential besides data usage management.

Switches

24 high-end Power over Ethernet switches were supplied to provide network infrastructure. Future growth was accounted for at every step, PoE switches will allow Access Points and VoIp phones to be powered independently from the electrical grid.

THE REALISATION OF THE DREAM

The ambitious project took approximately 4 months to complete and was delivered within the expected time frame; Harry Van der Burg comments:

"We met many times in a constructive atmosphere and confronted many ideas. One of the visions we had was for our teachers to be able to teach in any classroom and not have to spend time setting up their laptops or trying to figure out where to plug something in. We wanted every classroom to have the same technology and for any teacher to be able to use it with a minimum of effort. We eventually, with the approval of the school board, divided the vision into 6 major phases. The first phase included a robust network which will cover the school and allow for growth in all classrooms, facilities and offices for the foreseeable future. All phases were completed. We were very satisfied with the results provided by Dial a Nerd and the professional way in which the project was completed."

A word from the Dial a Nerd project manager Shane Gibbs:

"The project was completed successfully thanks to the time and effort St Dominic's put in on the planning and researching of the vision that they wanted. The School allowed for Vendors to be creative while applying correct IT Best Practices when solutions where implemented, thus the project did not sway or deviate from the original vision."