

# WHITE PAPER DOCUMENT

## ***St Charles College Case Study***

*HD CCTV Installation – Phase One & Two successfully implemented by Red Alert KZN.*

**Location:** *St Charles College (Prestigious Private Boys Educational Institution) in Pietermaritzburg, KZN, South Africa.*

**Concept design consultant and proposer** : Rob Anderson  
**Installation deployed and coordinated** : Shawn Pieterse

*The original mandate from the client was to achieve as much professional HD CCTV Surveillance as possible within limited initial “first and second phase” budgets. The client had previously used an analogue solution with some success for many years, however, due to ageing infrastructure, and limitations in terms of expansion capabilities, an alternative had become necessary. Their forward thinking management team are focused on providing a safe and secure learning environment with the general welfare, safety and security, of staff and learners being of high priority.*

*They engaged Red Alert Security as their preferred supplier of professional security services to deploy their proposed Hikvision CCTV System as a fundamental element of their crime prevention strategy. Being an institution that has seen rapid growth and an influx of many more boarders, new boarding establishment accommodation needed to be constructed on the available land within the campus. The campus has grown to consists of numerous stand-alone buildings spread across an extensive footprint which presented a unique challenge in terms of camera deployment.*

*The use of Power Over Ethernet and Wireless Data Transmission to link each independent building and Network Video Recorder (NVR) to a dedicated control / server room were fundamental design elements. The wireless methodology paved the way for a seamless installation omitting the need for widespread underground sleeves and conduits. This would have otherwise resulted in significant disruption to the day to day activities of the campus during the installation process.*

*Red Alert Installers had no alternative other than to work around “business as usual” conditions considering that the institution could not suspend classes to make way for technical teams.*

*The Video Management Software (VMS), that makes it possible to marry all NVR’s into one centralised software display application, is provided free of charge, which reduced total cost of ownership considerably. The use of Power Over Ethernet (POE) across the range of Hikvision IP cameras further added to the reduced cost of camera deployment. Especially considering that independent power supply units were not required for every camera location. The absence of power cables and less hardware made it possible to power cameras from secure tamper free locations, which also translates into lower long-term maintenance and cost of ownership.*

*A modular design comprising of multiple Hikvision 16 channel Network Video Recorders (NVR’s), and Gigabit Switches, were deployed at strategic locations within the numerous buildings around the campus. A Layer 2 fully managed Gigabit backbone and Cat-6 cabling infrastructure were used to couple cameras to the NVR’s to create an extensive camera network topology, whilst also taking into account future expansion.*

*Due to the size of the College, a wireless topology was designed consisting of point to multi-point solutions between buildings. The use of the right equipment ensured that there would be capacity for future expansion within the network, not only with*

*wireless expansion but with multiple ports for fibre optic integration as and when it becomes necessary and available.*

*Each recorder streams video data from their independent locations to a primary viewing station which is housed in a secure environment. Management facilities for the NVR's, Wireless equipment and even the Network Switches are tied together for remote access and administration. The client has been provided with remote viewing capabilities from each of the recorders. Authorised user login's are possible from remote PC's, Smartphones and/or Tablets with an internet connection.*

*HD Dome Cameras with Varifocal Lenses were chosen for passageways around classroom entrances in order to achieve optimum viewing angles. Fixed Lens Dome cameras were chosen for all other internal areas of the facility. Vandal Proof Domes were used to eliminate potential tampering of the cameras field of view and focus. A Vari-Focal Bullet Camera was used at the schools main entrance gate. This camera produces HD quality imagery of pedestrian and vehicle details which include number plates. It also incorporates adequate infrared range at 30m to support and enhance camera images after dark and during the absence of any artificial lighting.*

*Although Red Alert have completed many other large Alarm, CCTV and Access Control Solutions, they regard this particular site as one of their flagships because of the prestigious nature and high profile of the institution. Red Alert are proud to associate their brand with St Charles College and they are looking forward to future expansion of the system to incorporate additional cameras as and when the need arises. The possibility exists for Pan-Tilt-Zoom (PTZ) and Thermal Imaging Cameras to cover the perimeter of the vast property that St Charles College occupies.*





