



Danes Hill School

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ICT Facilities at
Danes Hill School

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Introduction

ICT has become a part of our everyday lives and we expect our school community to have access to information and equipment across all subject areas. It is important to recognise that ICT should enhance learning and we have invested significantly in a wide range of equipment around the school to enable pupils to use modern technology in all of their subject areas.

The dependency on technological capabilities at Danes Hill is frequently demonstrated with 95% of lesson material being developed to incorporate some use of ICT, whether this is an interactive whiteboard, projector, e-learning resource or computer workstation.

The Danes Hill ICT Service Team provide the services, facilities, support, and training necessary to allow the effective and efficient use of technology to enhance the teaching, learning, and administrative activities of the school community. The team consists of three; Gary Bates (Head of ICT Services), Sue Lane (Data Manager) and Mikael Meoli (Assistant Network Manager) managing all related ICT services from the schools MIS system (SIMS.net) and related data systems to first/second/third line support and the network/server infrastructure.

Over the past year the school has invested heavily in cabling and server infrastructure. New buildings in the school are flood wired with network points and both the new and old buildings are linked with fibre optic cable.

This cabling design is capable of addressing our current and future needs both in terms of an increased number of stations and performance for new technologies.

The ICT department are constantly assessing emerging technologies and work towards applying these in innovative ways to enhance learning at Danes Hill.

Network Infrastructure

Danes Hill has seen a significant investment in its ICT infrastructure. During Summer 2013 we undertook a major installation project of a site-wide, OM3 grade, fibre optic back bone, delivering speeds of 40Gb/s to each building with stacked, layer 3 managed Cisco 3750 POE switches.

Allowing for redundancy each cabinet has two fibre feeds, should one fail the other will automatically take over the management of traffic.

The network is based on Cisco technology, known for its reliability, and is fed by a 20Mb/s managed fibre internet connection. We have two Cisco Catalyst 4500's that each of the 3750's connects to through the fibre backbone. The Catalyst 4500 core setup has been designed with redundancy in mind and should one fail the other automatically takes over the management of traffic. This enables us to provide a wide range of network services for the school community, a range which is continually expanding.

Our firewall/web traffic is managed by a Cisco ASA 5550 (Adaptive Security Appliance).

The virtual server infrastructure was installed in June 2013 and consists of a physical Dell R320 Domain Controller running Windows Server 2012 and three Dell R720s also running Windows Server 2012 with Hyper-V in a cluster providing redundancy should a server fail. There are currently 10 virtual servers hosted within the cluster:

DHS-FS1	File server hosting pupil and staff user areas & shared storage areas. Server is running FSRM (File Server Resource Manager) managing user quotas (currently 1Gb for staff and 500Mb for pupils)
DHS-CONTROL	Hosting our Kantech gate control and scheduling software as well as the Sophos anti-virus management console for deploying and managing virus definition updates.
DHS-DEPLOY	Deployment server (WDS) for the deployment of desktop images/rebuilding of workstations around school. Also hosting WSUS for the deployment of Windows updates.
DHS-EXCHE	Email server hosting Microsoft Exchange 2010. External access managed via the Cisco ASA firewall.
DHS-FINANCE	Server hosting the finance software and payroll management
DHS-HLPDSK	Hosting of the department help desk system for managing user requests
DHS-PRINT	Print server. Running PaperCut print management solution.
DHS-SIMS	Server hosting the schools MIS system (SIMS.net). SQL Server 2012
DHS-WEB1	Internal Webserver. Not externally facing
DHS-WEB2	Internal Webserver. Not externally facing

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All data is stored on our 5.5Tb SAN, a Dell MD3200i (Raid5 with 12 x 550GB present in the enclosure. 1 disk is acting as a hot spare. This disk is not part of the array and will automatically join the array should any of the disks fail.)

Daily backups are taken of each server on a two-week rolling cycle to an on-site NAS which is located in a separate building from the main server room. In addition critical data (MIS/Finance) is backed up to a cloud based storage provider (Gigasoft).

There are approximately 250 networked curriculum workstations, more than 50 student laptops running on our wireless network, and a number of specialist (Mac) computers for the Art and Design Technology departments. There are 2 full ICT suites, a dedicated staff workroom, as well as other areas with computers within regular classrooms.

We run Windows 7 on all of our workstations; we also have a wide variety of software and resources which are used by all subject areas. All of our computers run Microsoft Office 2010.

Our proxy server enables all of the machines attached to our network to connect to the Internet simultaneously. The proxy server also supplies us with web filtering which blocks and controls access to potentially harmful websites. Every Pupil in Years 6, 7 & 8 at Danes Hill have their own email address and this can be used on any of our networked workstations, as well as accessed from home or any internet ready PC.

We have been successfully using Moodle as our Virtual Learning Environment although this is under review with an expectation to develop a learning platform that incorporates a number of systems currently in use at Danes Hill as well as introducing new services such as a Parent Portal.

During Summer 2013 we fully equipped the school site with a managed wireless solution allowing greater use of mobile computing. Work is well underway to build on this and trials have begun in History with a bank of iPads.

In addition from those services (such as printing and email) and applications (such as the Microsoft Office suite) which are considered as standard on a school system, we also provide, amongst others:

- CCTV & Security gate control system
- Telephony
- Display screens
- Video storage and streaming
- Photo archiving
- Library services
- Departmental resources such as SharePoint services
- Learning support software packages (IEP Writer, wordshark etc)
- Parents Evening & Activities booking system
- Wifi access points, with provision for guest login
- ICT Service Desk
- Web & Email Filtering
- Remote Access Portal
- Management Information System
- Sage Accounting Packages
- Payroll management Packages

Teaching & Learning

Danes Hill's ICT provision is embedded within all teaching and learning, with interactive whiteboards and projectors in all classrooms, and several fully equipped and air conditioned IT suites.

The school intranet is currently in the process of a major new development, which will provide a wealth of resources. All pupils may also access the internet, which has suitable filtering applied according to year group. Internet access, e-mail and ICT resources are provided subject to our acceptable use policy, to which all users must adhere. These matters are governed by the School's e-safety policy.

Danes Hill also has strong multimedia resources, with digital still and video cameras available.

Wireless technology has been rolled out across the school site and mobile devices/tablets are being explored for their potential in a number of subject areas.

School Administration & Management

Information Communication Technology plays an ever increasing role in the administration and management of the school. The main drive for this area of ICT is to make much more information freely available to staff, reducing their administration load. As part of this extensive support for ICT it is therefore essential that the administration and management of the school also has access to high quality ICT facilities, such as:

- **Networked workstations** are installed in each administration office, the offices of the Senior Management Team, the Year/Department Heads and in each department room.
- **The SIMS MIS** database holds full and detailed information on every pupil in the school including their home details, medical records, reports and timetables. This information is available to all teaching and administration staff through any workstation.
- **Pupil's assessment records** are held on the SIMS database including CAT scores/results.
- **The library database** holds details of the library catalogue and is available to all staff and pupils through any network station via the school Intranet.
- **The school accounts system** is available (with obvious security limitations on access) to the finance team.
- **Timetable software (Nova-T6)** is used to produce the school timetable.
- **Public examinations entries** and statistics are produced using a range of suitable software.
- **Assessment software** is used to record and analyse public and internal examination results and to produce statistical data.
- **Email System** All teaching and non-teaching staff and pupils (years 6 - 8) can communicate both inside and outside school using E-mail. The school uses Microsoft Exchange 2010 to manage the e-mail system.

- **Remote Access Portal** All teaching and non-teaching staff has access to the Remote Access Portal that provides secure access to the school systems.