



# THE HEREFORD ACADEMY

## The Sponsor's ICT Vision

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## 1.0 INTRODUCTION

The following paper outlines the Sponsor's vision for Information Communication Technology (ICT) which is central to the Academy's vision to support, enhance and transform teaching and learning whilst playing a major role in the shaping of school leadership and management. ICT will also be required to underpin the Academy's specialism of Science, Health and Sport.

## 2.0 TRANSFORMATION OF TEACHING AND LEARNING

The Sponsor's Vision for the Academy is to create an innovative 21<sup>st</sup> Century learning environment. Within this environment teaching and learning will be transformed and a key lever in that transformation will be a robust, scalable and effective ICT solution. It will provide learners with as many external influences as possible as well as offering lifelong learning through the extended school model. This will build upon existing investment in the predecessor school (Wyebridge Sports College) in which ICT has been effectively integrated into both learning and teaching and the management and administration of the school.

From the very first year of learning at the Hereford Academy the ICT-rich environment will underpin both pedagogical practice and the pastoral structure. This will result in the teacher relinquishing their traditional role as the gatekeeper of knowledge and moving toward the role of a manager of learning. The ICT provision will also free the teacher from the front of the classroom enabling them to move through teaching spaces in a more flexible manner offering support, challenge and guidance to learners. This is due to the interactive nature of a whiteboard allowing it to be controlled from either a laptop or an interactive tablet device liberating the teacher from the traditional position of 'back to the class' writing on a chalkboard or similar. This will be strengthened by a comprehensive professional development and change management programme, drawing in both teaching and non-teaching staff, learners and, where relevant, parents and other stakeholders.

The curriculum itself will be divided into four core clusters which will be developed independently of each other but delivered in unison. The united model of delivery will be managed through a Learning Platform (LP) to fit the concept of four clusters. Enabling staff to use the LP to deliver the four core clusters will be part of the professional development and change management programme to be delivered in the new Academy.

This shift in classroom practice and the deployment of a curriculum cluster model will make the Academy a very different environment from any of the feeder primary schools in the area. Given the issues that currently exist around the transition from primary to secondary school, the Academy will need to ensure that the step change in ICT provision will not serve as a further obstacle in the successful integration into secondary school life. This will be done by offering years 5 and 6 in the feeder primary schools online access to the LP so they will have built up a familiarity with the Academy's key mechanism for curriculum delivery. The programme will run in conjunction with a range of events designed to familiarise primary pupils with life at the new Academy.

### 3.0 CURRICULUM VALUES

The Hereford Academy has a broad and pervasive set of curriculum values commensurate with the school ethos and the Academy specialisms. The exploration of these values will be key to the direction of the Academy as well as providing a framework for all learners outside the formal confines of Academy life. Subsequently, it is critical that the ICT solution sourced for the Academy not only reflects but also strengthens these values. A comprehensive list of values can be found in the Education Brief. The key curriculum values that can be supported through ICT are:

- Co-operation;
- Independence and challenge;
- Achievement; and
- Punctuality.

#### **Co-operation**

The functionality of the LP will facilitate peer co-operation and collaboration on a broad range of projects and work modules. It will be delivered through an appropriate blend of file sharing, 'wiki' sites, email, instant messaging and ubiquitous connectivity, allowing all learners to develop their skills in a group setting as well as permitting informal peer review. The collaborative and co-operative ethos will be extended beyond the confines of the physical Academy as learners reach out to national and international experts on a range of subject matters using video conferencing, appropriate online mentoring and email.

#### **Independence & Challenge**

Personalised learning opportunities will be delivered through the LP. Content and curriculum resources will be presented on the users' desktop in accordance with the skill level and requirements of the individual, supporting learners in their journey towards independence. This will also integrate with the teachers' new role as a manager of learning rather than a gatekeeper of knowledge. They will maintain oversight of the learner as he or she explores individual learning opportunities. Given that the learning pathways would, within teacher defined parameters, be bespoke, they would also serve to challenge learners ensuring that material they engage with will stretch them to reach their full learning potential.

#### **Achievement**

One of the key drivers of the Academies programme is to improve attainment levels, and ICT will, as a natural consequence, support the Academy's curriculum value of Achievement. As described elsewhere in this vision, the ICT provision will allow learners to consider data and statistics relating to performance, enabling them to become more involved in improving their own attainment. This may involve peer-tutor target-setting, with regular reviews of progress towards these agreed targets.

There will also be opportunities to celebrate achievement by using plasma screens around the school, which could relay recordings of Sports Day, school productions, presentations, assemblies, etc.

### **Punctuality**

The Management Information System (MIS) will manage a broad range of pupil level data including developing a timetable. As the MIS will be integrated with the LP, every user will receive an RSS <sup>1</sup> feed (or equivalent technology) to their LP desktop allowing them access to real time timetabling data. Not only will this promote punctuality but it will also allow the management to offer shorter notice of timetabling changes in the event of a staff sickness or room unavailability. (Use may also be made of the plasma screens, although this will not be their principle function.)

## **4.0 ICT PROVISION**

The sponsor does not see ICT provision as an end in itself. All ICT provision must underpin teaching and learning to enable the required transformation. As such, the ICT provision will include Teacher Toolkits for every teacher. This equates to a networked mobile device, a whiteboard and projection facility in every teaching space and access to a range of curriculum support tools accessed through the LP. In addition there will be high quality support and ICT training available to all staff, teaching and non-teaching.

In addition to the teacher focussed provision, every teaching space will have a set of networked mobile devices, RFID<sup>2</sup> protected, that can be used by each class using the room, thus removing the need for students to carry such a device with them around the academy. When not in use, the devices can be left to charge in specialised racks provided. Remote projection facilities will also be universally available, supported by the academy's own WiFi system, in addition to interactive whiteboards.

The Sponsor considered the 1:1 model offering every pupil a networked mobile device for the duration of the school day and for them to take home and use. However, the levels of deprivation in South Wye, teaching experience of the sponsor and colleagues in the predecessor school and concerns over security influenced the Sponsor to adopt a model that ensured that during the school day there was access to ICT for all.

The networked mobile device will negate, in the long term, the need for ICT suites. However, the transition from the existing school to Academy will require effective and focussed change management. As such, there will be a period of 18 to 24 months where ICT suites will provide an effective tool for teachers as they migrate across to a transformed pedagogy reflecting the 'four clusters' model and the enhanced ICT provision. The Grove Building in the existing school will probably be retained as part of the new school, and currently houses some ICT suites. As such, it will then offer an ICT suite to teachers for the duration of the build programme.

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<sup>1</sup> RSS (which, in its most recent format, stands for "Really Simple Syndication") is a family of web feed formats used to publish frequently updated content such as blog entries, news headlines or podcasts to a webpage.

<sup>2</sup> Radio-frequency identification (RFID) is an automatic identification method, relying on storing and remotely retrieving data using devices called RFID tags or transponders.

For those with Additional Education Needs (AEN), timetabling will be as flexible as possible to enable long periods of focused learning that may be necessary to overcome individual challenges, alongside additional user specific ICT equipment provided when necessary.

The ICT provision will support the Academy's specialisms of Science, Health and Sport.

ICT, for example, can offer a range of different tools for use in school **Science** activity, including:

- Tools for data capture, processing and interpretation including data logging systems, graphing tools and modelling environments;
- Multimedia software for simulations and 'virtual experiments';
- Publishing and presentation tools;
- Digital recording equipment;
- Computer-controlled microscopes.

ICT provision can also be used to enhance learning in **Sport**. Broadly speaking, the ICT provision will consist of technology that supports the following:

- Timing; and
- Recording results and visual images for feedback and analysis;

This will need to be supported by hardware including but not limited to:

- Digital cameras with video and still facilities;
- Display screens, whiteboards, and projectors, including the Sports Hall;
- Sound systems with recording facilities;
- Laptops, ultra-mobile PCs or handheld devices; and
- IP enabled stopwatches.

Exemplar activities will include pupils using the following:

- Heart and pulse rate monitors plus a variety of other measuring and recording devices to collect, analyse and interpret data;
- Data-recording and analysis software to analyse patterns of play and individual contributions;
- Stop watches linked to data-collection devices to analyse and evaluate performance; and
- Spreadsheets to record and track progress.

As part of the **Health** specialism, the digital cameras, with video and still facilities, and sound systems with recording facilities, will form part of a highly specified media provision that will enable the delivery of a broad range of Performing Arts activities. There will be a dedicated space in the Academy for Music and Drama to combine and it will be equipped with the best quality sound and lighting technology. This will also include the necessary facilities to create "Student TV" which can be relayed through the plasma screens around the school. It is the view of the sponsor that the creative outlet offered through the Performing Arts is essential to the psychological and pastoral well being of young people and is as much part of a Health specialism as healthy eating and regular exercise. This

holistic view of health, as opposed to just focussing on physical well being, reflects the Sponsor's belief that an ICT-rich environment can support the pastoral needs of learners.

The wide range of indoor and outdoor sports facilities supported by ICT will provide important fitness and health information to all students. Regular electronic fitness checks will feed into the health programme and students will have access to the data through the LP. These facilities will be integrated with the ICT provision that supports the Sport specialism, and will be available to students, staff, parents and the wider community, as part of the extended schools programme.

Academies procured through the National Framework are expected to procure an ICT Managed Service via Becta's Infrastructure Services Framework and this Academy will be no different. However, it is envisaged that the LP and the MIS will be out of scope for this procurement. The managed service will, in the transitional period, be a mixed economy of external support and existing onsite resources. The exact operational model to be deployed will be determined through the options appraisal that is part of the Outline Business Case. It is envisaged that, in the longer term, and after extensive user training and support, the need for onsite technical support will become less acute.

## 5.0 THE CHANGE AGENDA

### 14 – 19 Agenda

The Academy is fully committed to national and local 14-19 reforms. ICT will support learning and be a key motivator for students. The opportunity to collaborate with their peers, create their own material and personalise and reflect upon their learning will lead students to engage more effectively in their study. This engagement is a key element in improving retention and achievement for all students.

ICT will be used to strengthen:

- Broad, balanced and flexible curricula;
- Attainment and retention at age 16;
- A wider range of assessment levels to promote inclusion;
- The improvement of core skills for employability;
- Closing the gap between vocational and academic provision providers; and
- Partnership working across providers.

ICT will be embedded to enable:

- The effective use of ICT to record and synthesise learners' achievements into an assessment record;
- Effective systems for sharing data with and between organisations, learners and stakeholders in education and training;
- The use of e-portfolio services to promote reflection, personal learning and thinking skills;

- e-Assessment functionality to support the 14-19 Diploma in particular where learning occurs in the workplace;
- Improved communications between providers so that duty of care is fully effective; and
- Re-engagement of disaffected learners with the wider curriculum and the development of core ICT skills for the workplace.

### **Every Child Matters and the Government's e-Strategy – 'Harnessing Technology'**

Other recent Government policies, initiatives and developments promote improved integration and delivery of services. These include: "Transformational Government", "Connecting the UK: The Digital Strategy", "Every Child Matters" and the national E-Strategy, "Harnessing Technology". The Academy will be a key agent in turning these policies into deliverable outcomes. The key thread running through these national documents is that of ICT and digital development, underpinning and promoting success, supporting transformational change and the management of change.

"Every Child Matters" sets the challenge of integrating services for learners, families and children to offer a seamless service and range of support. The integrated use of ICT systems is crucial if improvement is to be ensured. "Harnessing Technology" is the national ICT strategy for learning and children's services and sets out how ICT can enhance the delivery of ECM. The document demands the development of innovative and responsive ICT systems which will support life-long learning and transformation. These systems must be safe from intrusion, protect users from abuse and ensure the safe storage of key data and resources. There are clear interdependencies between these two initiatives and the Academy will strive to ensure that the ICT solution facilitates and supports the delivery of the ECM agenda.

Personalisation is an important theme within ECM as a means of raising standards and promoting improvement. Effective integration and improved services targeted at individual needs demand effective integrated data systems, including back up and disaster recovery. These electronic and computerised systems will need to interact with each other and data will need to be interchangeable at local, regional and national levels. The use of the LP in personalising learning and delivering user specific content is a key part of the ICT Vision. Again, the Academy will seek to use this functionality to support the delivery of ECM.

ICT has a key role within Workforce Remodelling. The LP is crucial within this agenda to reduce duplication and bureaucracy, improve collaboration and communication and share best practice. Linked with this will be a major commitment to staff development with high quality support and training to improve assessment, care and teaching. This may be delivered "in house" or via online and remote training courses, or through remote experts via video conferencing.

## **6.0 LEADERSHIP AND MANAGEMENT**

The Senior Management Team (SMT) will provide the Academy with strategic leadership in ICT with a member of the team being responsible for the strategic operation and development of ICT. This member of the SMT will work closely with the Governor responsible for ICT. The structure will



ensure that ICT remains at the heart of curriculum delivery for the Academy and is managed in a strategic way.

An MIS will enable the effective monitoring of student performance through the collation of an academic dataset which will flag any possible need for intervention. In addition, the MIS will collate data as part of the day-to-day management of the school delivered to the appropriate user's desktop through the LP in the context of a robust and secure online environment. Access to this data will enable the SMT to adopt a more flexible but focussed approach to the management of the Academy.

The integration of the LP and the MIS will allow learners to access their own dataset. This will include a variety of Key Performance Indicators (KPIs) reflecting educational attainment, attendance and behaviour, as well as the more nuanced KPIs that reflect educational added value. It is envisaged that this will help to stimulate and motivate disaffected and disengaged students.

A RFID card, given to each student, will become a key aspect of their Academy life. The card will grant each student access through the Main Entrance, to other authorised areas and to the separate community facility, within the extra safeguards that will be put in place, including separate security zones. This information is immediately updated to the LP where parents can check if their children have arrived at the Academy safely. All hardware used in the academy will also be RFID protected, as will the mobile devices leased to students for use at home.

## 7.0 PARENTAL AND COMMUNITY INVOLVEMENT

The relationship between parents and the Academy will be of crucial importance in the educational and personal development of students. In parallel with termly reports from the four subject clusters and termly parent-student-teacher/tutor meetings, parents will be able to track student performance through the LP. This will extend to real time tracking of student attendance through text messaging and email, allowing the parent/guardian to take appropriate action in the short-term, and work with the school in the medium to long term to prevent future absences. Access to this kind of information will allow for the development of the school/home relationship based on common access to shared information facilitating a more meaningful dialogue.

It is one of the primary goals of the Sponsor that the Academy becomes a catalyst of 'bottom up' social regeneration in South Wye and the wider Hereford area through the provision of services and facilities. An example of this would be the offering of ICT training to members of the community focussing on the following:

- ICT skills training for the workplace e.g. basic, intermediate and advanced business ICT courses;
- Professional ICT training e.g. certification, web design and graphic design;
- Using the Internet as a resource e.g. online employment searches and the use of online services;
- Utilising local authority online services in the context of the eGovernment Agenda.

The underlying aim is that the porous boundaries of the Academy will turn it into a magnet for the local community. In addition, the Academy will attempt to address the issue of the digital divide which is prevalent in this part of Hereford given the levels of deprivation and associated social issues.

The “Digital Divide” is the gap in ICT provision that exists between an ICT rich school environment and the wider community. It is important to remember that this is not just a financial issue. In the words of Niel McLean (Director, Evidence and Practice, Becta)

*“Those on the wrong side of the digital divide are not one homogeneous group. They vary in terms of their socio-demographic make-up and the reasons why they are excluded. There are qualitative differences between:*

- *the ‘have and have nots’, who lack access;*
- *the ‘can and cannots’, who lack the necessary skills and perceptions; and*
- *The ‘do and do nots’, where the focus is more on structural issues and the relevance of ICT and content to various excluded individuals.”*

The Academy will strive to address these three areas as part of its engagement with the local community. It will explore the possibility of leasing ICT provision to local households that currently do not have ICT provision<sup>3</sup>. In addition, the Academy will integrate existing technologies into the overall solution, including using mobile phones, satellite television and gaming consoles as a further means of communication. The leasing of devices to the ‘20%’ of households without ICT provision is seen as preferable to offering each student a device that can be taken home. It is the transferring of the device from home to school and back again on an almost daily basis that exposes the pupils to unacceptable risk. The leasing option allows a device to be taken home and remain there until the leasing arrangements comes to its natural conclusion.

The Academy will also seek to use ICT to build relationships and forge links with local employers, such as those on the Rotherwas Industrial Estate and the local Chamber of Commerce , and explore more work-related learning opportunities. This will create broader scope for learners following a vocational pathway as well as exploiting opportunities for learners to interact and learn from the local community. This will be central to securing as many external influences as possible for learners as described in section 1. ICT will offer communication functionality through email, online discussion forums, and video conferencing. In addition, Anywhere Anytime access to the LP will be critical to learners who are regularly based offsite in pursuit of a vocational qualification with the business or industry partner.

## **8.0 CONNECTIVITY, INFRASTRUCTURE, AND BROADBAND**

The idea of ‘Anywhere, Anytime Learning’ is integral to the ICT vision for the Academy. It will allow students to direct their learning at a pace that best suits them and emphasises the role of a teacher as a Manager of Learning. As such, the LP will be accessible 24/7 via any internet connection.

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<sup>3</sup> A recent school survey indicated that 80% of pupils have access to a PC at home.

The institutional infrastructure of the Academy will provide a converged network capable of delivering Video Conferencing, CCTV over IP and associated security and access, IP telephony, library management and building management systems (BMS) through implementation of VLANs<sup>4</sup> over the network backbone. This will be supported by broadband internet connectivity. This will ultimately allow the Academy to connect to other world class institutions and expand both its resources and learning opportunities.

It is the sponsor's wish that the idea of a "wireless cloud" for Hereford be explored with the Local Council, and other interested parties, in the future. The sponsor feels that this would further assist in closing the "digital divide" in South Wye and enhance connectivity between the Academy and its 3 main "feeder" Primary Schools.

The sponsor, the Academy and the Authority will work with the Regional Broadband Consortium (WMNet) to deploy and develop the educational services offered through WMNet

## 9.0 BUILDING MANAGEMENT

The Academy will use ICT to create living, intelligent buildings integrating BMS into the design and management of the buildings. This will drive down management costs as the Academy will have effective control over utilities, as well as access and secure entry systems for students, staff and parents. In addition, the BMS will collate environmental data and make it available to learners for their consideration. Access to the dataset will further underpin the Academy's science specialism.

New school buildings must have the right physical spaces, correctly configured for the different requirements of class teaching and individual learning, with accessible power and ICT networking and appropriate environmental precautions standards – heating, lighting, ventilation, window blinds etc. The Academy will reflect this. The building management will also facilitate the constant ebb and flow of learning space use both in terms of ICT provision and number of people. Issues such as ventilation, environmental conditions and solar gain will need to be managed in a proactive and flexible manner.

The deployment of RFID cards (as mentioned previously in this document) will allow zoning within the school and management of the building to better reflect user needs and greatly improve security. This will include allowing community use in parallel with school use by isolating community users in the necessary zone thereby ensuring the appropriate level of interaction with the pupils, but still allowing flexible, yet controlled, access to community facilities.

## 10.0 CONCLUSION

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<sup>4</sup> A virtual LAN, commonly known as a VLAN, is a group of hosts with a common set of requirements that communicate as if they were attached to the same wire, regardless of their physical location. A VLAN has the same attributes as a physical LAN, but it allows for end stations to be grouped together even if they are not located on the same LAN segment. Network reconfiguration can be done through software instead of physically relocating devices.

ICT will be a critical component of the curriculum in the Academy and will be a key enabler in the following:

- The transformational agenda for learning and teaching;
- The delivery of the Academy's specialisms;
- The delivery of the curriculum; and
- The management and administration of the Academy.

ICT will contribute to the Academy having an innovative and efficient 21<sup>st</sup> century learning environment acting as an enabler for parental and wider community involvement in the Academy.