

# Using Information and Communications Technology to Help Meet Educational Needs

English and Literacy Co-ordinator Nicky Buxton says the greater emphasis on IT – and the Tadpole notebook’s straight-forward functionality – has changed the style of teaching and learning at the college.

“It took a short while to get used to it, but now I always think about how I can use the notebooks to get more done. Students prefer IT to using a pen and paper, work doesn’t get lost, and it can help those with poor handwriting. It promotes quicker and clearer communications: I can receive work and give feedback via e-mail, so quite simply we get more done. I believe this immediacy, and the extra time and variety that allows, is positive educationally.”

Health and Social Care teacher Sally Kirk values the notebooks in helping to prepare lessons and reduce paperwork. “What we have here now is a joy – the laptops give students independence to research subjects where, when and how is best for them. They can search more resources and get more in-depth information ... They learn more that way.”

### Technical benefits

Tadpole Ultra-thin client notebooks allow access to any application they need that’s held on the server – whether Windows, Linux or Solaris based – simply by clicking on the relevant icon on students’ desktops. Furthermore, access is possible via any device with a browser, for example from their home PC, or hand-held device, or even an internet cafe on the other side of the world.

### The future

Derby College is constantly reassessing its IT resources as opportunities arise. Two campuses recently acquired by the College outside the city boundaries and undergoing significant refurbishment are, for example, looking at their IT needs. Another General Dynamics Itronix development that may soon find a place in colleges’ diverse study programmes is the ability to access the service using 3G connections ~~as well as the college’s WiFi network~~. This would allow student access to the same ICT service on work placement or elsewhere outside the college sites.



Some of the college’s 550 notebooks are stored in the library, ready for use by students

For more on Tadpole® Ultra-Thin Clients pPlease end this line with a period. adpole

## Case Study

# Using Information and Communications Technology to Help Meet Educational Needs

## Derby College Employs Ultra-Thin Client Notebook Computers



### Challenge

Provide wireless, ultra thin client computing solution for 6,000 full-time and 16,000 part-time college students.

### Solution

Tadpole’s high-quality, robust and lightweight ultra-thin client notebooks

### Application

Vocational education at the Roundhouse campus, Derby College, UK

Tadpole’s ultra-thin client computing solution is helping Derby College provide an innovative, creative and cost effective learning environment. By centralizing operating systems, applications and data, ultra-thin clients enable Derby College to greatly simplify IT administration.



Students at Derby College and Tadpole ultra-thin client computing

### Derby College

The needs of educational institutions are evolving all the time, often driven by changing teaching and learning styles. Information and Communications Technology (ICT) is playing an increasingly important and positive role in helping the performance of teachers and students alike.

A new campus, the Roundhouse at Derby College, UK has used an historic building to successfully combine the old and the new – designing and building an innovative and creative learning environment for students on vocational courses as varied as engineering and hair and beauty – with latest-generation ICT provided by the Tadpole products group of General Dynamics C4 Systems at its heart.

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## Ultra-Thin Client Notebooks

### 21st century facelift for historic building

The new £48 million campus, which is located near the city's railway station, is centred on a converted Roundhouse that was built 170 years ago to service locomotives that entered and left the structure via a turntable linked to a radial set of rail tracks.

The Grade II\* building, which indicates a designation of special architectural and historic interest, was derelict when acquired by Derby College. Faculty seniors, aided by development funding, conceived a state-of-the-art educational setting inside the cloak of 19th century heritage – echoes of which remain within its 21st century transformation.

Jacqui Garton, the College's Head of IT, says the building's fundamental redevelopment was a real opportunity to start from scratch and mould a leading-edge solution. "Our Principal's brief was to produce something at the cutting edge of technology, so that's what we set out to do. With space at a premium, we needed to be flexible. We avoided fixed IT classrooms, opting for flexible IT that would go to the student in class or be accessible during their free time at college.

"Most students are technology savvy. They are used to accessing information

online, and come to us expecting at least the level of IT they have experienced previously at school – and at home."

### A cost-effective and 'green' solution

"The solution had to be simple and cost-effective, so a full networked PC laptop solution would have been a step too far in terms of both cost and complexity. Furthermore, most Roundhouse students are aged 16-18, so our duty of care to them had to include full control of the material they could access," continued Jacqui.

"We therefore undertook a selection process and ultimately acquired around 550 high-quality, robust and lightweight Tadpole ultra-thin client notebooks, which offered us the optimum cost of ownership through reduced technical support and improved security, together with the availability, accessibility and flexibility valued by students and staff"

Tadpole's ultra-thin client notebooks also offer greater longevity than standard PCs, as all operating systems, applications and data resides on the network. This means that updates are made at the network level, eliminating deskside maintenance requirements for the devices. The devices are stateless – like a telephone – and so don't become redundant with the regular introduction of new system upgrades.

Two hundred and fifty of the Tadpole notebooks at Derby College are dedicated for classrooms – via a dozen trolleys each with 20 notebooks and built-in battery recharging – while the other 300 are stored and kept on charge in a bank within the college library.

Any student can take out a notebook – just as they do library books – for up to two hours at a time to undertake course work, find information online or work on group projects outside the classroom. Wireless access points are liberally distributed around the library, classrooms and the Roundhouse itself, and the units even work effectively in the nearby courtyard.

### More time to learn

All information pertinent and proprietary to Derby College's broad array of full- and part-time courses is held on a dedicated server. Students simply turn on the notebook and log in via a password to access files on their network drive. Users are greeted with a personalized desktop view



Students in the Roundhouse

that reflects exactly where they left off the last time they used the system.

This 'instant-on' capability means no time is wasted booting up operating systems – so more time is spent on actual learning. When new applications/operating systems need loading, they are simply installed once on the college's central server and not on each individual laptop, which represents a very significant reduction in the technical support required.

Simplicity and functionality is further enhanced by the college's Moodle™-based virtual learning environment, which allows staff and students to log on and share resources and work. It helps staff plan lessons, which can be saved and retrieved later by students, and serves as an interactive tool during lessons, via whiteboards that can be annotated, with extra features such as voting buttons.

"We also see potential for streaming media whereby lessons are recorded on video and made available to students unable to attend classes for unforeseen reasons: this is also ideal for distance learning," adds Jacqui.

### Simple, safe and secure for education

Tadpole ultra-thin client notebooks are a safe and secure option as they do not themselves store any data or systems capability – all of which is held by the college server. No proprietary information can therefore leave the building – and

should a unit go beyond the campus gate, it simply won't work.

Inside the Roundhouse, the Tadpole notebooks are proving popular with both students and staff – and helping to cultivate a positive and creative approach to education. Library administrators are kept busy with a constant flow of students signing the notebooks out.

Matt Ireland, a final-year engineering apprentice with engine-maker Rolls-Royce, spends just one day a week at the college but has never had any problem with accessing a notebook.

"We use the college's ICT architecture a lot, and I'm comfortable with it. We use desktop PCs for some specialized engineering programs, but for projects, spreadsheets, or background research we use the Tadpole notebooks to find, record and store information. The system has cut down on the paperwork in our folders ... and some tutors accept our work via Moodle."

Jessica Walton and Laurie Abbott use the notebooks to research the latest developments they can apply within the site's beauty salons. "We often need up-to-date information, and even produce promotional leaflets for the salons," adds Laurie.

## Derby College: A Thriving Community

Derby College conducts a wide range of academic and vocational courses for students of all ages. It is one of the largest Further Education Colleges in England, and comprises several campuses spread across the city of Derby and Derbyshire – including the exciting and innovative Roundhouse development.

The College's educational portfolio covers everything from GCSEs to foundation degrees, apprenticeships and vocational courses that are a foundation for professional life, bespoke training solutions for local businesses, plus adult education to maintain and update skills. Flexibility is an important feature in offering students study options that meet their lifestyle and commitments.

There are almost 6,000 full-time students and a further 16,000 under part-time tuition at the college. Vocational subjects are as varied as hair and beauty, construction, engineering, IT, caring, performing arts, media, music, animal care, horticulture and conservation.



Student collaboration enhanced by Tadpole thin client notebooks

## Tadpole® Ultra-thin Clients

Tadpole products, from General Dynamics Itronix, provide ultra-thin client solutions for desktop and mobile computing that dramatically improve the manageability and reliability of IT assets, increase data security, and enhance productivity, while reducing operational costs and streamlining administrative resources. By centralizing operating systems, applications and data in the cloud, ultra-thin clients enable educational environments to greatly simplify IT administration and support learning environments more effectively. Tadpole provides:

- Instant access to a customized learning environment from any ultra-thin client on the network
- Student access with ultra-secure controls and absolute data protection
- Familiar notebook computer form factor
- Centralized management - ultra-thin clients require zero-administration locally
- Mobility of laptops allows for new classrooms, labs, and campuses to be easily added to the network, enabling flexible deployment and reconfiguration of computing resources as needs change

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Jacqui Garton, Derby College Head of IT