

Adapting library buildings to the digital age: an illustrated talk

Nigel Macartney

University of Ulster, Northern Ireland, UK

The theme of this Conference is “Library Management in a Changing Environment”. With library buildings we can change some of the environment in which we operate. Indeed, one of the themes of this paper is the effect of changing the library on our staff, on our users and their effect on our services as they change.

Some history will help us appreciate the effects of changing technology and environment on libraries. One of the earliest libraries of which we are aware is the archive room in the city of Ebla, Syria. The city was flourishing 4,000 years ago and archaeologists have uncovered the archive in a very good state of preservation. There were shelves, the marks of which against the surviving wall can still be seen today. The diplomatic records stored here were on slate and clay tablets – multimedia in modern terms!

Subsequently, classical libraries held “books” and other records in the form of papyrus rolls or rolls made of other materials, though notes and letters would often be written on bark or wax tablets. At the well-preserved library at Ephesus (circa 1st century AD), visitors can still see the holes in the walls in which rolls were stored. Much more familiar to us today are the mediaeval and renaissance libraries in which bound volumes were stored at fixed locations on shelves. These libraries were handling manuscripts on vellum or parchment and, later, printed books, representing the latest in new technology. There were often relatively few users and it was a highly controlled environment, very unlike the library today.

The next step forward in the technology of information storage was the creation of microform materials, which began to make their presence felt in libraries in the 1950s and 1960s. This development was also followed by the availability of audio-visual materials on cassette, vinyl record, and slide or film, followed later by videocassettes. These materials for the first time placed the user in front of a screen or a tape or record deck and often with headphones. Many information specialists predicted that they would have a very significant impact on learning, teaching and research and, as well would influence library design. However, readers did not find them easy to use – there were too many formats and they were cumbersome for library staff and users. The promised revolution did not appear.

The first major breakthrough since the invention of the printed book was the arrival of the computer terminal in the library. Initially there were “dumb terminals” providing access to a limited range of data or services, but the personal computer workstation made its appearance in the 1980’s and twenty years later it

is impossible to visualise a modern library without a large number of these machines. Library users actually liked the new technology and appreciated the growing range of information that a single machine was able to handle with ease and quality – sound, moving image, colour, text or illustrations all can be accessed swiftly.

Before I discuss modern library buildings, I would like to consider the changing behaviour of students and researchers; I believe their approach to study is changing significantly and I am not sure that librarians appreciate yet the importance of these changes.

A very senior professor at my university remarked earlier this year that he had seen more change in student behaviour in the last 5 years than in the previous 30!

Why? We can see external pressures on students, notably the growing expenses of studying at tertiary level and the decline of state subsidies to students in many countries. We have noticed in my university that fewer students are staying in university accommodation since it appears to be cheaper for them to live at home and drive to college in a car. I have also surveyed UK universities on the decline in campus bookshops; it would appear that many, if not most are suffering declining sales.

The expectation levels of students are now very high, but if they do not find what they want when they want it, they increasingly cease pursuing the matter. We can see this phenomenon demonstrated in the use of the Internet and standard search engines (especially Google) for research for study; there is evidence from studies in the UK¹ and elsewhere that there are disappointing levels of use by undergraduates of the subject services provided nationally or by the libraries themselves on the web.

Employers are demanding that students can demonstrate team-working skills and universities are responding by setting group assignments and projects – this means that information is shared rather than sought by each individual.

How do these trends show themselves to us? In many, if not all libraries there is a detectable decline in the number of loans per student – or at best it may be static after many years of rises. Inter-library loans may also be in decline where there is good provision of electronic journals and information services. However, there are some very popular electronic services, notably Web of Science (the use of which at the University of Ulster rose by 47% in the last year).

Reaching students for surveys and questionnaires is also proving difficult, apparently because of both “questionnaire fatigue” on their part but also because they are not on campus as much, now that they can access resources remotely and communicate with their tutors by email.

When considering library buildings, the first issue is the cost of new ones. I was privileged to be on the staff of the British Library when the new building at St Pancras in London was opened in 1998; the cost at circa 690 million euros was a matter for critical comment in the newspapers and Parliament, but I would argue that the building (which has a design life of 250 years) represents good value in the light of some other UK projects, such as the Millennium Dome! A large central university library can cost between 20 and 50 million euros.

¹ JISC's Monitoring and Evaluation Framework (<http://www.jisc.ac.uk>)

For this reason, universities will often consider an extension to the library. A good example is that of the London School of Economics which opened its extended building in 2002; while only extending the floor area by 8%, the re-modelling created more space by clearing away many internal walls in the old building.

I would like to concentrate on a case study at the University of Ulster. This University, created in 1984 from four previously separate institutions is a regional university with campuses in Belfast, Jordanstown, Coleraine and Londonderry. It has just under 24,000 students and a staff of 3,500 and is the largest university in Ireland as a whole.

The library at the Jordanstown campus was built in the 1960s and was overcrowded and gloomy – there was a lack of natural light especially in the main reading room. The campus' computer laboratories were also overcrowded and it was agreed to extend the library in such a way as to revolutionise access to PCs on the campus. This policy was easier to pursue because the library is part of a “converged” structure in which computer, media and reprographic services also form a part. This model can be found in about 50% of the university sector in the UK. I believe there are considerable advantages in this approach, especially in developing the wide range of skilled staff that are now needed to support students and researchers and in harmonising the services we deliver.

The site was a particularly difficult one for the architect who had to design a 2000 square metre extension to the existing 4,000 square metre library; he did this by constructing a two storey building which cut into the original at an angle.

The student population that the building would serve is some 14,000. So we installed some 1,200 study spaces (900 networked) and 11 group study rooms. In terms of library stock, there are 275,000 books and 100,000 journal volumes, along with many CDs, DVDs, videocassettes and music scores. There is a 40 seat training room and a small videoconference suite – the latter is very useful for library staff on different campuses to communicate with each other, since the distances which separate the sites range up to 100 kilometres.

What we did not anticipate was the scale on which the students would respond to the new facilities. The number of visits recorded by the gate counter doubled initially, though it has now settled back to 8,000 per day, a 60% rise on the previous numbers visiting the old library. At first, there was also an increase in book loans (22%) but that has also now fallen back, especially as the library's electronic resources have continued to expand. The group study rooms are also very popular and, in my observation, are being used effectively for joint project work and are not abused.

We have also introduced a staffed computer support point next to the library circulation desk, which has encouraged the staff from the different disciplines to get to know each other and to work co-operatively.

There are queues at popular times for the 500 workstations in the new extension, such that we have had to install a set of rope barriers to control those waiting! But the building has succeeded in drawing casual users out of the computer laboratories so that the latter can now be exclusively dedicated to teaching.

We had deliberately planned the concentration of PCs together at the front of the building for two reasons; firstly to keep the noise away from the “traditional” areas of the library where quiet study would take place and secondly so that we could support this area with skilled computer staff throughout the day. We had seen libraries such as those at Tilburg (Netherlands) and Liverpool John Moores (UK)

where there were clusters of workstations mixed in with the books and journals, but because of sheer scale of the numbers of PCs we wished to provide we did not think this was space efficient or sustainable in terms of noise.

A challenging aspect of the building project was that we had to keep the library open during all phases of the construction. The London School of Economics had been fortunate enough to be able to “borrow” an empty library nearby while they remodelled their library, but this was not possible at Jordanstown. There has been relatively little written on the management of such a process; we had to move the library stock and staff, as well as the readers three times. We provided additional quiet study spaces away from the building work and planned particularly noisy phases carefully so as not affect those studying for exams.

We have been careful to evaluate what we learned from this building, as well as from studying those of other libraries. As far as the construction is concerned, it is important to appoint a project manager, who should liaise with the builders, architects and university estates department; the colleague we seconded to this project was also very good at planning books and shelving, since we had to move them three times!

We also had to plan ahead in case of delays – such plans were used on a number of occasions, as the construction was a very difficult project. We ran a major communications programme with staff and students to keep them informed on progress and developments.

And, of course, we had to amend the design a few weeks after it was finished. Library staff did not like some of the rooms they had been allocated since they had no natural light; we swapped them with some group study rooms where this feature is not so important. More significantly, we found that the entrance area could not cope at peak times with the numbers coming in and going out; indeed, the heavy turnstile we had installed with the aim of controlling entrance by student identity card was soon broken. We are planning to change the area this summer and to have a separate entrance and exit.

Other areas where we monitored the building closely included noise control in both the PC and reading areas, inflexibility due to not all desks being networked and the design of the circulation and computer support desk.

My experience suggests that cultural; and organisational change is more likely to succeed if the physical environment is altered; if people are asked to work in different ways but they still sit at the same desk in the same office they are likely not to respond. Hence the integration of our library, computing, media and reprographic staff has been speeded up at Jordanstown with the opening of the extended building.

We have also observed with interest the effect of the building on students. The light, airy and pleasant spaces in the building are attracting them, as is the provision of a very large area of computers where they know they will need queue for a few minutes if at all. We also suspect that the area is becoming part of the social fabric of the campus; students know that there are so many people in this area that they can find their friends more easily here than anywhere else! This feature has consequences since, as I have already mentioned, some of the equipment was not designed to take this much use, while facilities such as toilets need to be generously provided and properly maintained during the day.

Even as the Jordanstown extension was under construction, we found ourselves planning another library, this time at the Londonderry campus, thanks to the

generosity of Atlantic Philanthropies, the charity that had funded most of the Jordanstown extension. This time, however, it was easier to construct a separate building on a new site. The new building was opened in January 2003 and provided 3,800 square metres for c.3,500 students. As far as the library itself is concerned, there are 310 study spaces – all of them networked this time. Task lighting on some study desks made it an attractive place to work and seemed to create an atmosphere of studiousness. We were less successful this time in getting the design right for the open access short loan area and have had to make some changes after opening (as one always must).

We retained the idea of a totally separate area for computer workstations, though this time it was located on the top floor of a 3-storey building. A particular feature was to install a glass wall around this area so that noise did not spill out into the inevitable atrium that the architect had designed; in this we were influenced by the design of the University of Hertfordshire (UK) building.

Computer support staff were accommodated in an office on the same floor; it was also glazed so that the staff could observe the students at work and also so that students could see that there were staff available to help them. A team with mixed computing and media skills was installed here as part of the process of getting staff from different disciplines to work with each other; the new building has meant that the various staff offices scattered all over the campus can be reduced and now all staff are accommodated near to students and researchers, either in the library building or the computer centre.

The coffee bar on the second floor has proved a great success. It is a particularly attractive room with a very pleasant view over the river. Students have somewhere to drink and eat and are less inclined to try to smuggle their cups into the reading or computing areas. There are laptop points here as well for those who like to have mobile computing.

The effect of the new building took a little longer than at Jordanstown to show itself, mainly because it is on the periphery of the campus. But there has been a 45% increase in seat occupancy over the former library and an encouraging increase of 10% in book circulation (though student numbers have risen). It is noticeable that, unlike at Jordanstown where the library is in the middle of the campus and which has no café, the students at Londonderry are staying longer; having arrived there, they seem to appreciate the level of facilities and are less inclined to flit in and out!

Before summing up, I would like to come full circle by emphasising that the “new” has now come to the rescue of the “old”; by agreement with the Bishop of Derry and Raphoe, the University has accommodated the historic renaissance library of the bishopric in its environmentally controlled Rare Books Room. The collection is now awaiting conservation and cataloguing; it is certain to prove an invaluable resource for historians and will cast a fascinating light on library history.

I would draw three conclusions from this paper. Firstly, librarians used to be able to argue for bigger libraries to accommodate more and more printed volumes; this is no longer an argument most universities will accept because of the impact of electronic publishing and the changing behaviour of students and researchers.

However, re-designed buildings will allow librarians to manage student learning better as well as to assist in the process of change in services and in the organisation and culture of their staff.

Finally, the speed of change in universities has become very fast indeed in recent years and we should be ready to keep on altering the way we deliver our services and the design and layout of our buildings – as long as we need buildings at all!