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Transforming the Library for the New Millennium

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Abstract:

In the past decade, academic libraries have experienced dramatic change. Various developments including new information and communication technologies and new pedagogies as well as changes in how students learn are transforming the traditional role of libraries. In response, libraries are adopting a broader educational role in creating flexible, technology-rich learning spaces. This paper will trace the progress of a major library refurbishment project at Bond University, illustrating how these trends have shaped the project. The paper will describe the project initiation, stakeholder input, the role of the architect and the design stage.

The Net Generation, Libraries and Learning Spaces

Libraries have always been central to the learning mission in higher education. Traditionally, libraries have provided enduring collections of text-based resources, a place of quiet reflection for individual study and research as well as the expert advice of librarians to assist students to discover the available resources. While libraries have been adapting their environment to changes in technology, pedagogy and the learning styles of succeeding cohorts of students in recent decades, the advent of ubiquitous access to digital information has created a growing gap between the time-honoured culture of libraries and the newest generation of students, known variously as the Net Gen, Generation Y, the Millennials and Generation Me (Gibbons, 2007).

At the risk of over simplifying, it is useful to touch on some of the disconnects between the Net Gen and the conventional environments found in university libraries. These relate to the characteristics and learning styles of the net generation and their preferences in accessing and using information resources and support services. There are further disconnects relating to the physical spaces in libraries and the extent to which they incorporate the pervasive information technology of the Digital Age.

Today's net generation students have grown up in the Information Age and may be described as "digital natives" speaking the language of the internet and digital technologies. This is in contrast to older generations of faculty and librarians, who can be portrayed as "digital immigrants," and who have learned how to superimpose their use of information technology on former concepts of academic endeavour. (Prensky 2001)

Net generation students intuitively use technology that has been woven into their lives since birth. Their "affinity for technology translates into new and different expectations about how to gather, work with, translate and share information." (Rainie 2006). For example the net generation typically depends on the internet to find new information as well as to self publish their own material via blogs and other networking services such as Flickr, MySpace, YouTube and Facebook. They do not seek out the more complicated text-based library catalogues and databases of scholarly online journals preferring the simplicity of Google despite the limitations.

While libraries are traditionally based on logical, linear systems, the net generation prefers to construct knowledge by "cherry picking" from a variety of sources. Furthermore, while they are highly visually literate, they seem to have less well developed text literacy. (Oblinger and Oblinger, 2005)

In terms of service delivery, the net generation expects good customer service when and where they need it. They like to self serve and value services delivered via visual interactive web sites that can be personalised and customised to their individual needs.

The net generation uses mobile phones and other communication devices to remain constantly connected wherever they are. As prolific communicators, they gravitate

towards social activities and prefer to work and learn in teams or interact peer—to-peer. (Oblinger and Oblinger, 2005).

The net generation uses a wide range of technologies without the instruction manual. They prefer experiential learning and engagement rather than “being told” and favour learning through discovery. This exploratory style of learning predisposes them to figuring things out for themselves and they do not readily accept they should have to “learn the system” from experts. Consequently, they are not interested in being taught how to navigate the complex systems libraries have always provided.

It is important to be aware that these characteristics are all in sharp contrast to the culture of traditional library environments, which were geared to silent, individual learning from linear text-based resources, without the use of technology.

In responding to these disconnects, libraries have been modernising their facilities and services to create more welcoming environments that will encourage the social academic experience that the net generation is seeking. The concept of the Information Commons is one of the new kinds of spaces being incorporated in university libraries to promote “an atmosphere in which social and academic interests can easily intersect” (Lippincott, 2005, p5). These spaces can vary enormously, but typically they include computer workstations in configurations to support individuals and small groups, group study rooms, as well as informal socialising spaces with comfortable furniture in flexible arrangements. The software applications provided are geared to accessing information but crucially must also have the capability to create new information products preferably in multimedia formats. (Lippincott, 2005).

Services provided as part of the information commons range from self-service to service desks staffed by both library and IT staff. Food and drink vending machines as well as coffee shops are also a feature in some information commons.

In the following sections of this paper, we will describe the learning environment at Bond University and explore how the trends mentioned above have influenced a major project to refurbish the University’s Main Library.

Bond University

Bond University was established as the first private, not-for-profit university in Australia. Since it commenced in 1989, it has had more than 10,000 graduates with a current on-campus enrolment of approximately 3550. There is an almost equal mix of domestic and international students with domestic students being drawn from all Australian States and Territories, and international students coming from over 70 different countries. Bond University has four faculties (Business Technology and Sustainable Development, Health Sciences and Medicine, Humanities and Social Sciences, and Law) that offer courses at both undergraduate and postgraduate level. Bond has a progressive culture of teaching and learning where innovative programs and teaching methods complement traditional academic values. There is a significant emphasis on face to face teaching and Bond has one of the lowest student to staff ratios in Australia.

Over 18 years of challenges and changes, Bond has adapted to the needs of the workplace, liaising with key employers in all fields to develop programs that reflect the current technological, theoretical and practical demands of the corporate environment. Identifying emerging areas of skills shortage, the curriculum has expanded to include new and in-demand disciplines such as forensic science, medicine, IT management, health sciences and more. The three-semester academic year at Bond is aimed at accelerating entry into the workforce in these high-demand disciplines.

The Library at Bond University is well resourced and this ensures an excellent array of services, facilities and resources. However, as a small but diverse institution, the Library faces some intriguing challenges in meeting the varied needs of staff and students. In line with the University's strategic goals to respond quickly to market trends, the Library must be prepared to shift focus and adapt to new course offerings, transforming technologies, evolving pedagogies and, not least, student expectations for high quality teaching and learning facilities and spaces.

As students attending a well-respected private institution, Bond University students take it for granted that the library will provide a high quality, technology-rich learning environment as well as all the features of a traditional library. While the library has gradually been modernising over the years to meet these expectations, the constraints of the building's 20th century heritage are seriously limiting the transformational change now needed, and since 2001 the library has been actively seeking a major refurbishment and expansion. The first phase of the refurbishment is occurring in 2007 with further phases planned over the next two to three years.

The journey towards transformation

Bond University Library comprises two sites, the Main Library, which supports the majority of the disciplinary subject areas taught by the University, and the Law Library supporting the Law Faculty. The libraries provide a fully integrated service and many students use both libraries as part of their studies.

Built in 1989, the Main Library occupies the southern wing of the University's Arch Building, which is the central and most prominent building on campus, designed by Japanese architect Arata Isozaki. Although originally conceived as the University library, the building design made few concessions to the new role that was beginning to evolve for libraries at the time. The space was designed to accommodate printed book and journal collections, a small audiovisual collection and individual study seating in rows of carrels, but there was little provision made for the potential impacts of the information technology revolution that was already unfolding. While even in 1989 it was well understood that students would need excellent IT skills in their future careers, the impacts of the IT revolution for the library were not envisioned or factored in. Thus, while the traditional role of the university library as the hub of the institution was ostensibly assured by its central location and iconic exterior, this did not necessarily eventuate, due to the lack of foresight about the impacts of the pervasive technology of the Information Age.

The political dimension

The early years of Bond University's development were turbulent as the small private institution established its credentials and ownership woes were sorted out. However, by 2002, acquisition of the campus land and buildings by Bond University Limited was finalised and this marked the beginning of a turnaround in the financial prosperity of the institution. The appointment of a new Director of Library Services in the latter part of 2001 saw a renewed focus on planning for renovations and refurbishment of the Library, and over the next few years the Director worked hard to build the political capital needed to gain the University's commitment to such a project.

In 2004, a new Vice-Chancellor was appointed and the efforts to raise the profile of the Library as the hub of the campus community were stepped up. The Vice-Chancellor embraced the challenge to reinstate the Library as "the heart of the University," and the University's new Chancellor was also enthusiastic about improving the library facilities. Attention then turned to considering how funding could be obtained to carry out the required changes to the building.

In the meantime, the Library prepared a number of reports and discussion papers on the types of spaces needed in the refurbished Library, and feedback from stakeholders was gathered through focus groups and surveys, as well as through the Library's regular Suggestion Box and the Rodski Customer Satisfaction Survey¹.

Stakeholders involved in focus groups included students, academic staff, library staff as well as the University's Senior Management Group and Council. Focus groups were held prior to commencement of the planning phase and also when preliminary plans were available for response from stakeholders. In total more than 200 staff and students were involved in giving their feedback prior to commencement of the project and as the plans started to take shape.

Results of one of the surveys and the early student focus groups are included in Appendix 1. The consistent message from stakeholders was the need for high quality computing facilities (including internet access, multimedia applications, projection facilities and wireless access), more space for group work, socialising/lounging areas, as well as a range of more traditional library spaces such as quiet study areas and access to books, newspapers, journals and DVDs. Surprisingly calls for a coffee shop were not as strong as expected.

Prototypes and experimentation

While the project to refurbish the Main Library took time to gain momentum, there were a number of opportunities to build prototypes and test concepts.

One such opportunity came in 2004 when, on a very limited budget and with minimal external involvement from architects and designers, a refurbishment of the Law Library was undertaken. The main drivers were:

- accommodating the changing learning needs and behaviours of students

- creating better "way-finding" and making better use of the non-purpose-built space
- moving the entrance to a more accessible part of the building and thereby giving the Library an identity apart from the Law Faculty foyer
- creating a dedicated space for higher degree research Law students
- creating zones ranging from noisy to quiet to silent
- moving staff downstairs to be accessible to customers
- creating more enclosed group study rooms

Based on similar designs seen at other institutions, circular pods with four computers each were installed with additional chairs in the vicinity to cater for collaborative work in pairs and groups. In line with trends towards increasing use of online reference sources, the Reference Collection was culled significantly to make space for these additional computer pods.

Staff offices on the upper level were converted into group study rooms and computers were placed in these to facilitate group work. Wireless network access was extended across both levels of the Library.

Workstations which had previously been dedicated to particular functions such as catalogue use and viewing of video streamed lectures have systematically been replaced with general access workstations with extensive access to applications. Some computers were retained in a separate room to accommodate students who have a preference for using computers in a quieter environment.

Individual study carrels were retained on the upper level to cater for individual use. Evidence is that these are not used consistently throughout the semester but are heavily occupied in the lead up to exams.

The number of open group study tables was increased and all of these were located on the lower, noisy level. A large boardroom table was refurbished and fitted with power outlets to enable group laptop use.

Most of the objectives of the Law Library refurbishment were achieved and the space is much more functional in terms of meeting students' needs. One measure of the success of the refurbishment was the immediate increase in the number of visits to the Law Library.

A number of changes were also made in the Main Library to tweak the layout and make the best possible use of the space in the interim before the major refurbishment. From 2003 onwards, larger tables were progressively provided for group study use. In 2004 library staff vacated four offices which were converted into group study rooms that together with the existing two, created a suite of six much sought-after rooms. Almost immediately, the number of group rooms appeared to be inadequate as students clamoured to book them, especially during the peak assignment submission times and the lead up to exams.

In 2005, a minor re-organisation of staff on the main entry level made available a small office that was converted into a reprographics centre housing printers, photocopiers, change machines, etc.

At the same time, decreasing use of the print Reference Collection indicated major deselection was required, and the remaining resources were then dispersed to collections housed elsewhere. As a result, a sizable proportion of the Library's entry-level floor became available for experimentation with new concepts in library space design, using prototypes.

Based on student feedback on the "quad-pods" in the refurbished Law Library, larger pods were installed in the Main Library. This provided more surface desk space for individual users as well as increasing the available space for students to gather around a single computer in small groups.

Around the same time, one of the University's main general student computing laboratories was decommissioned so that the space could be used for other more pressing purposes, and the general access computers were moved into the Library. This was a welcome move for students who had long indicated their preference to study and work in the Library, rather than in the "clinical computer laboratory environment" in the basement of the building. Additional computer pods were obtained and most of the computers were relocated to the Library's entry-level floor, with a few being placed on the upper level to meet the need for computer use in a quiet area. Computers were also placed in three of the six group study rooms.

Wireless network access was extended throughout all levels of the Library and utility poles installed to provide power outlets at table height for laptop users. Both the electrical and data switch capacity on this level had to be expanded to accommodate the additional computers and places for laptop users. It is interesting to note that despite a high level of laptop ownership amongst students (over 80%), the demand for desktop computers on campus has continued unabated.

Once occupied, it quickly became apparent that this new area on the entry level of the Library was a kind of primitive Information Commons that would be a noisy and often overcrowded learning space. This did not appear to daunt students, who continually flock to the area and can be seen engaging in serious study, both collaboratively and individually. The space is also popular for social learning, chatting on Skype and using other user controlled technologies.

Besides overcrowding and noise, a number of other limitations soon became apparent:

- The standard tables and chairs used in the area are not suited to the constant rearranging and flexibility needed in the Information Commons environment. Consequently, daily maintenance is required to avoid workplace health and safety risks. Portable, modular furniture that is custom designed for this purpose is essential and this has been factored into the design for the Multimedia Learning Centre and the Main Library refurbishment
- The limitation on the number and placement of power outlets has also resulted in health and safety hazards and potential laptop damage due to students criss-crossing the floor with their power cords.
- Finally, the constraints associated with the structural elements of the building and the placement of furniture, power and network outlets has prevented any

effective zoning of the space for particular purposes. This appears to add to the frenetic atmosphere in the area

Despite the limitations this new area has been enormously successful and has attracted a significant increase of 40% in students visiting the Library. Furthermore, the space has provided a valuable “test-bed” for experimenting with furniture prototypes and different space concepts.

The design phase

In 2005, the search was begun for an appropriate architect, who would prepare a master plan for the refurbishment of the Main Library, and several architects who had experience in major library projects were invited to present their ideas and concepts for the project. After a lengthy selection process, the architectural firm chosen was selected for their extensive experience in library projects in university settings. The architect selected also demonstrated an in-depth understanding of the evolving learning and teaching developments in higher education and the consequent need for flexible student-centred learning spaces.

The initial overall aim of the refurbishment project was to optimise use of the existing space in the Main Library building, to incorporate new adaptable learning spaces that could accommodate a multitude of activities and have the capacity to evolve to suit changing needs over time. Another fundamental aim was to re-establish the Library as a landmark community building on campus that would enhance the University’s prestige and profile.

Within those lofty aims were embedded a host of more specific goals:

- To create a variety of flexible group study spaces including small meeting rooms.
- To create a technology rich multi-media learning environment.
- To create a 24x7 study space.
- To improve “way-finding” by showing connections between the three levels.
- To improve signage.
- To create a high tech multi-purpose teaching space that would be available for general use when not being used for formal teaching activities.
- To create an efficient reprographics area.
- To create a one-stop-shop service area that would provide library/information, IT and AV assistance.
- To create a coffee lounge area for informal social gatherings.
- To incorporate quality furniture and fittings to create a welcoming atmosphere and sense of community.
- To incorporate elements of the traditional library such as well laid out collection areas, quiet study spaces, new books displays, new journals and newspaper reading areas and high use collection space.
- To create flexible staff offices.
- And last, but not least, to significantly expand the number of toilets on the heavily used entry level of the building.

As planning for the refurbishment of the Main Library unfolded, organisational changes as well as other space needs of the University came to light and these directly impacted on the library plans. For example, in November 2006, the Library and IT Services were merged into a new single organisational entity and the design brief was expanded to take into consideration how staff could be brought together in the refurbished Main Library space. The architect had also been contracted to develop plans to increase office space for the Faculty of Humanities and Social Sciences which is located in the wing of the Arch building opposite the Main Library wing. This had some ramifications for the space available for the Library. To take into account these additional requirements, an extension to the building was included, covering three levels for the Library as well the level below the Library (housing IT services).

At this stage, the Library plan included a range of design concepts that would achieve the goals described above. Highlights of the design include:

- Structural changes to open up more windows into the Library, making connections between the Library's learning environment and the campus outside.
- Opening up of the building internally, to provide a clear view from the entrance at one end through to the glass wall at the other end of the building, providing a spectacular view of the University lake.
- Structural changes to create stairways leading from the entry level to the top floor providing visual "way-finding" and interlinking the three main levels.
- A café area near the entrance, flowing into an Information Commons incorporating a wireless enabled space for social learning with power outlets for laptops, supplemented with a series of jellybean-shaped tables with desktop computers. Several small study booths and a larger group study space are also incorporated on this level.
- Two collaborative learning rooms fitted with smartboards and HD data projectors on the entry level.
- A "triage desk" near the entrance to provide a seamless one-stop service area.
- Two suites of staff offices; one on the entry level for front line customer service staff and the other on the top level. Both office suites are designed for a combination of library and IT professionals working in an integrated manner.

When early designs for the library refurbishment and expansion were almost complete, planning was put on hold, due to a pressing need to convert the University's Art Gallery into a high tech learning centre that would cater for all students as well as the specific needs of multimedia and gaming students. The Art Gallery is managed by the Library and is only occasionally used for art exhibitions and social functions. Due to a number of inadequate design features, including poor acoustics and a glass ceiling causing heat and light problems, the space has been little used over the years.

Many of the initial design concepts for the Main Library were carried over to what has become known as the Multimedia Learning Centre and a number of innovative new features added:

- Study booths with large LCD screens to make collaborative group work easier.
- Varying sized pods with desktop computers that can be used by individuals or small groups.
- Banquet style seating to cater for social learning.

The new Multimedia Learning Centre is designed to operate as a 24x7 study space, and therefore this requirement is no longer in the brief for the library plan.

The design for the Multimedia Learning Centre was subject to considerable stakeholder input that focussed on the technology capabilities incorporated, and was finally completed in July 2007. Building work commenced in December for completion by March 2008. Once completed, the Multimedia Learning Centre will be managed and staffed by the new Information Services team being developed to provide integrated library and IT service support.

At this juncture, the design phase for the Main Library has recommenced with a series of presentations by the architect to staff and students, with the aim of getting feedback on the concept design. As of January 2008, the building plans have been accepted by the University Council and work is scheduled to commence in mid-2008.

One major benefit of having the Multimedia Learning Centre in place prior to commencement of the library refurbishment is the capacity for this space to be used to house some of the Library's service functions while construction work is under way in the Library building.

The role of the architect

In a project of this nature, the role of the architect is pivotal. In the current project, the architect has contributed a wealth of practical experience and theoretical knowledge. While listening to stakeholders and acting upon their expressed requirements the architect has also managed to challenge and inspire us to consider more ambitious possibilities for the redesigned spaces.

Some of the space concepts developed by the architect are new to stakeholders especially the staff who will work in the space. For example new styles of service delivery, such as self-service, tiered levels of service and roving services based around concierge style service points, are built in to the new design. On the other side of the coin, we have also learned that the ideas and enthusiasm of the architect may need to be tempered with the practical realities of space management and maintenance. In other words, the aesthetics of design must be harmonised with the practicalities of use in the planning and design process.

A good illustration of the interaction between the architect and other stakeholders is demonstrated in the planning and design of the Multimedia Learning Centre, where it was important to consider the purpose of each of the zones in the space when

determining the suitability of technology and furniture. In this instance the concept design was developed by the architect based on the initial brief but then honed and modified with stakeholder input, including crucial input by IT and AV staff, who will be responsible for managing and maintaining the various installations.

In order to achieve the best possible outcomes, the architect has worked hard at seeking and gathering feedback and interacting with stakeholders to challenge their assumptions. This has been a feature of the planning and design for the Multimedia Learning Centre and the Library refurbishment.

Conclusion

Despite the rhetoric about the centrality of the library to the university's mission, in reality, when there are hard choices to make about money or space, the library must be prepared to demonstrate how it provides value for money and justify its claim on scarce resources. It has taken several years to gain the University's commitment to invest in refurbishing the Main Library. The project has had to weather competing demands for space and funds, accommodate a major organisational change and assimilate an evolving notion of what constitutes effective learning spaces.

Along the journey, we have undertaken a minor refurbishment, reconfigured much of the layout of the Main Library, experimented with space concepts and tested furniture prototypes.

As Oblinger finds in the lead article in her book *Learning Spaces*, we have also discovered that "design is a process not a product. [and that] Involving all stakeholders – particularly learners – is essential." (Oblinger, 2006, p1.3).

In the Main Library refurbishment and the design of the Multimedia Learning Centre, the involvement of students, staff and other stakeholders has been an ongoing process that has informed, guided, invigorated and enlightened the plan at all stages. In the final analysis it is this process that will ensure we achieve our goal of transforming the Library for the new millennium.

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Endnote

1. The Rodski Customer Satisfaction Survey is a standardised survey instrument developed by the Rodski Research Group (now called Insync Surveys) to identify which services and aspects of the library users find important, and how well the library is performing in these areas. The instrument has been adopted by the Council of Australian University Librarians and is used by most Australian and New Zealand university libraries to evaluate their performance and benchmark against other libraries.

Appendix 1 Surveys and Focus Groups on the Library Refurbishment 2005

1. Online survey

Student ranking on importance for spaces and activities in the refurbished Library:	
Ranking	Space/Activity
1	Using desktop computers for research and assignments
2	Quiet study areas
3	Using laptops and the wireless network
4	Reading books and journals
5	Group work in rooms
6	Printing and photocopying
7	Staff available for assistance with information research
8	Group work in open areas
9	Lounging, relaxing reading newspapers
10	Meeting friends over coffee or a snack

2. Focus groups

Feedback on what sorts of spaces the Library should be providing now and in the future:

- Group work spaces
- Borrow books and other resources
- Use computers to write, research, email
- Quiet area
- Meet people
- Read newspapers
- Sleep
- Tutor and assist other students (paid and unpaid)
- Printing and photocopying
- Lecture streaming
- Wireless access

If considering a 24x7 study space, the only additional requirement was for appropriate security by security staff, duress button to call security, security surveillance cameras and provision of a security escort to walk to car parks.