

## Werk

**Titel:** The Ten Commandments revisited: the Qualities of Good Library Space

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**Ort:** München

**Jahr:** 2006

**PURL:** [https://resolver.sub.uni-goettingen.de/purl?514854618\\_0016](https://resolver.sub.uni-goettingen.de/purl?514854618_0016) | LOG\_0020

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## The Ten Commandments revisited: the Qualities of Good Library Space

by ANDREW MCDONALD

The slides of this paper can be found at: [http://www.zhbluzern.ch/LIBER-LAG/PP\\_LAG\\_06/Wednesday/McDonald\\_10com-rev.pdf](http://www.zhbluzern.ch/LIBER-LAG/PP_LAG_06/Wednesday/McDonald_10com-rev.pdf)

### ABSTRACT

An increasing diversity of imaginative new academic libraries are being constructed around the world, successfully combining exciting architectural expression, inspiring internal spaces and good functionality. Library managers must have a strong vision for the new library and this should inspire the design and the whole building process. This paper explores the key qualities of good learning space, whether in new or refurbished buildings. It is suggested that, ideally, learning space should be functional, adaptable, accessible, varied, interactive, conducive, environmentally suitable, safe and secure, efficient and suitable for information technology. New space should also have "oomph", capturing the minds of users and the spirit of the university. These indicative issues should be discussed in the brief and throughout the planning process, and the priority given to them will depend on the mission and culture of the library. Greater attention is being given to daylight, natural ventilation, cultural artwork, noise management, security, disabled access, information skills training and provision for e-services. Planning is increasingly centred on people or the learner, emphasising the need for social, interactive and collaborative learning spaces as well as for traditional spaces for quiet study and reflection. Some libraries are joined-up with other services. The academic library is an enduring physical 'place', providing a blended, hybrid environment of traditional and electronic services crucial for the future of our universities and their communities.

### INTRODUCTION

I am very pleased to be addressing my second LIBER Architecture Group seminar for several reasons. At a time when LIBER is considering its future, the continued success of the Architecture Group is a timely reminder of the unceasing importance of new library buildings and of the huge interest in space planning and design in libraries throughout Europe. Indeed, it is reassuring to see so many delegates from a wide variety of libraries

ANDREW MCDONALD

here at this seminar. It is also a pleasure to be in this impressive new library of the University of Utrecht and to see the extent to which an outstanding new library building can influence the work of a university.

In my largely visual presentation, I should like to explore the important qualities of good library space and I will reflect on some of the trends we are seeing in the growing diversity of imaginatively designed new libraries around the world. While I will concentrate on university libraries, these qualities are sufficiently generic to relate to the design of others sorts of libraries and, indeed, to learning space in general.

### **FROM COMMANDMENTS TO QUALITIES**

I much prefer to reflect on 'qualities' rather than 'commandments'. I believe that identifying some generic qualities of good library space helps us define the range of issues we should be considering throughout the planning process and that this enhances our creativity in designing the wonderful new spaces required to meet the changing needs of our users. These qualities are not intended as a prescriptive set of 'instructions' about planning issues that might have the effect of restricting our design options or, more seriously, of determining particular design solutions.

The challenges of planning academic libraries for tomorrow are very different from the seventies when Harry Faulkner-Brown, a well-established British architect responsible for designing many library buildings around the world, first elucidated some desirable qualities that became widely known as the 'ten commandments' of planning libraries (Faulkner-Brown, 1979; 1998; 1999). He suggested a library should be flexible, compact, accessible, extendible, varied, organised, comfortable, constant in environment, secure, and economic. First discussed in the sixties, it is not surprising that some of the words now have rather different meanings and that emphases have changed considerably

### **VISION, COMMUNICATION AND CREATIVITY**

Planning new library space is about creating the physical environment to support the learning, teaching and research aspirations of our institutions, not only for the immediate future, but also for succeeding generations of users. The library director must have a strong vision for the nature of the new space required and has the important responsibility of communicating this vision to all those involved in the planning and design process. Indeed, this vision should inspire the design process (Bazillion & Braun, 1994). In a nutshell, leading a major building project is about managing change, taking and managing risks, and changing the culture of an organisation.

### *The Ten Commandments revisited: the Qualities of Good Library Space*

Space is a precious and expensive resource and planning new space is a serious business, not least because of the considerable capital sums involved and the implications for recurrent expenditure. But it is also an enjoyable and creative process which, inevitably, is not without its 'creative tensions'. It is worth remembering that there are no prescribed solutions in planning library buildings - no one knows all the answers, and no two projects are the same. Indeed, different architects and planners will often develop very different design solutions to a particular set of requirements. But, as a rule, the best libraries emerge when there has been a strong shared vision and good communication between all those involved in the process, especially between the architect and the librarian. The qualities presented here are simply the range of issues on which the planning team should take a view.

#### **What's in a name?**

Although I have used the word 'library', and this continues to be a strong brand in society, institutions have chosen a number of different names for their new buildings. There are new learning centres, learning resource centres, learning streets, learning hubs, learning malls, learning grids, idea stores, cultural centres, research villages and so on. In the eighties and nineties, some regarded learning resource centres as a new building type with distinctive qualities (Higher Education Design Quality Forum, 1996). But many forward-looking, new 'libraries' offer similar facilities and in practice are 'hybrid' services with, perhaps, a different balance of traditional collections, electronic services and readers places, whether in support of learning and teaching, or of research, or both (McDonald, 1996). Currently, there is considerable interest in the design of learning and research spaces in the technology-rich further and higher education sectors (HEFCE, SMG, 2006; JISC, 2006; SFC, 2006).

#### **More new buildings than ever**

Despite some almost reckless predictions about the end of libraries and their book collections, due to the rapid growth in networked electronic information and the use of the internet, universities continue to build new libraries and refurbish existing buildings. In the last twelve years, there have been more than 120 new academic library projects in the UK costing an estimated £500 million (SCONUL, 2006). In the USA, 31 new academic library building projects were completed in 2004/05 alone at a cost of almost \$370 million (Fox, 2005). Each one of these designs represents a particular vision of what a new library should look like, both from the inside and the outside.

## QUALITIES OF LIBRARY SPACE

It is now suggested (McDonald, 2000; 2002; 2003) that good library space has a number of important qualities and that, ideally, this new space should be:

- functional
- adaptable
- accessible
- varied
- interactive
- conducive
- environmentally suitable
- safe and secure
- efficient
- suitable for information technology
- and have 'oomph'

These generic qualities help to define what planners should be striving for in their new libraries. They are the critical issues that should be addressed in the brief and should be discussed with the planning team throughout the planning process, and they form a set of criteria against which design solutions can be assessed. Indeed, they are the very qualities that set libraries apart from other building types.

Clearly, the priority given to each of these qualities will depend on the mission and culture of the institution, and the role and aims of its library service. They are intended as an indicative set of qualities and should never be taken as a prescriptive set of solutions. Inevitably there are tensions and even conflicts between these qualities, as well as within each of them, and they all have resource implications.

These qualities are equally relevant to all space planning exercises - a new building or an extension, a refurbishment or an adaptation, making better use of existing space, or any combination of such projects. Clearly, design solutions vary considerably in different universities, in different higher education systems and in different cultures and climates. However, I do firmly believe that the qualities discussed here are the key considerations for designing new learning space wherever this may be. Indeed, it is reassuring that the design trends in libraries are surprisingly similar all over the world.

We will consider each of these defining qualities in a little more detail.

## *The Ten Commandments revisited: the Qualities of Good Library Space*

### **Functional**

*space that works well, looks good and lasts well*

We should aim to design libraries which are functional, easy to use and economical to operate. New space must enable the library to fulfil its role and facilitate the delivery of high-quality services. Functional interests should take priority over any purely aesthetic considerations, but our libraries should look really good too. The design should recognise the crucial importance of people, books and information technology, and the dynamic relationship and complex interactions between them. It should achieve a balance between the needs of the teaching, learning and research communities. New space must also enable the service to respond to the changing needs of the academic community.

Recent design trends emphasise a 'people-centred' approach to planning (Wu, 2003). Planning new library space is essentially about people, or rather it is about creating the space in which people can interact with the collections, information technology and services they need. It is people who design libraries, people who deliver services and people who use them. Above all, the user should be at the centre of the whole process. As Dowlin confirms: "The magic of libraries is in connecting minds...and successful library buildings in the 21<sup>st</sup> century will enable those connections to happen." (Dowlin, 1999).

### **Adaptable**

*flexible space, the use of which can easily be changed*

Future proofing is a difficult art, but one fundamental question is how far ahead we should plan? Stewart Brand reminds us: "All buildings are predictions. All predictions are wrong" (Brand, 1994). But any predictions about the size and nature of buildings for the future will depend upon how we envisage library services will be delivered in the networked learning and information age. One library director reflects on this dilemma: "You can't be sure how these spaces will be used. You are just creating the opportunities for things to happen" (JISC, 2006, p. 13). Lucker suggests we can only plan buildings for 20 years because of the pace of change in information technology, e-learning and higher education (Lucker, in press). Others would suggest much longer planning periods. Pragmatists might suggest that we should look as far ahead as we can, or perhaps as far as we can afford.

Paradoxically, one of the few certainties in planning new libraries is the almost guaranteed uncertainty about future use, particularly in relation to information technology, organisational structures and user behaviour. It is, therefore, important to achieve a high degree of flexibility in the building so that the use of space can easily be

changed with the minimum of disruption, merely by rearranging the furniture, shelving and equipment. Achieving long-term flexibility can, however, be more costly than delivering short-term functionality, and planners are now more pragmatic, seeking an appropriate balance between cost and adaptability requirements.

For example, it is generally held that the floor loading should be sufficient for book stacks throughout the building. The growing use of information technology, often at the expense of book stacks, has challenged this view. Some learning resource centres, housing predominantly IT-based resources, have been constructed to office, rather than traditional library, floor loading standards. However, any potential savings should be carefully assessed against the loss of long-term flexibility.

### **Accessible**

*social space which is inviting, easy-to-use and promotes independence*

The library is the central academic focus of the university and plays a strong social rôle in the learning, teaching and research processes within the institution. It should be as accessible as possible, encouraging and inviting people to make full use of the services it provides. It must cater for the growing number of increasingly demanding 'customers' and their diverse various learning and research styles, and for traditional and electronic modes of delivery.

Access should be as clear and straightforward as possible with a self-evident layout facilitating independent study. Great progress has been made in providing simple and attractive signage systems, and we are now seeing the use of digital signs, plasma screens and even audible signs.

The design of busy entrance areas is changing, particularly as many libraries have installed access control, smart cards and self-service systems. The growth of 24-hour, 7-day access requires attention to the security and robustness of the building and its collections, furniture and equipment, as well as to the safety of readers and staff.

The design must meet the current legal requirements for access by those with disabilities and learning differences, not least because good design for disabled people is generally good design for the able-bodied. The law in many countries requires institutions to make 'reasonable adjustments' to ensure access by disabled people and makes 'discrimination' against disabled people unlawful.

## **Varied**

*with a choice of learning and research spaces and for different media*

We should provide a variety of study environments to suit the growing diversity of our users and their different styles of learning and discovery. Students should be encouraged to learn at their own pace and in their own time, with provision not only for quiet study and independent learning, but also, increasingly, for group work and interactive learning. Indeed, the provision of social and collaborative spaces in which users can interact with each other is an important trend. The 'hybrid library' must, of course, provide access to both traditional and electronic resources, and an increasing amount of space is devoted to IT services (both wired and wireless provision) and technical support, information skills training and seminar rooms.

The huge variety of reader places range from single person to multi-person tables of various shapes, casual seating, study rooms and group study facilities. Some readers like an 'active' or noisy social learning environment; others prefer a quiet study environment with good acoustic and visual privacy and this can be achieved to different degrees with various furniture designs, including table dividers, bookstands, mesh screens and carrels.

In some cases interiors are becoming more like an extension of the living room, providing the 'emotional space' for social interaction within the academic community. Trends in retailing suggest that designs will be influenced more by entertainment and technology and the need for 'food with everything', and planners in the USA have explored the learning theme park approach in public libraries. A variety of spaces can be created using different lighting, noise levels and even temperature zones. Indeed, zones or floors for different modes of study are increasingly common and these areas are differentiated by sound and visual clues, layout, style of furniture, and types of technology in different configurations (JISC, 2006). Views about the most appropriate colours for learning and scholarly work vary both in relation to lively interactive service areas and quiet contemplative study areas. One design challenge is to create 'inclusive' spaces that reflect the growing diversity and ethnicity of our user communities. However, these are complex design issues, and there are tensions between creating flexible and well-defined spaces, and between personal and social spaces in buildings.

Many new libraries remain 'standalone' projects, but some have been planned as innovative 'joined-up' services. Several libraries incorporate a range of non-traditional activities into their building, such as student support services, learning cafés (Boone, 2003; 2004) and other social learning spaces. A number of universities are providing integrated student support services through a one-stop shop based approach. Others are building joint facilities with partner bodies with whom they are working to broaden participation in learning. In the USA, some new facilities have been built with student services, health centres and other academic services (Fox & Jones, 1998). Joint university and public libraries have been built in Scandinavia and the USA (Fox, 2005)



and are planned in the UK. New learning centres in the UK have been created in companies, shopping malls, churches, football clubs and other places convenient for lifelong learners (McDonald, 2000). Exciting new joint amenities are emerging from the closer working relationship between libraries, museums and archives. There are huge opportunities in planning these multipurpose 'places', but also significant funding, political and organisational challenges.

### **Interactive**

*well-organised space which promotes contact between users and services*

We must achieve an appropriate balance between the space for collections, services, readers and information technology. The well-organised library not only makes optimum use of the space available, but also promotes interaction between people, and encourages the use of its services. The main counter, enquiry points, group study spaces and information skills rooms are all key areas of interaction in modern libraries.

### **Conducive**

*high-quality humane space which motivates and inspires people*

As the academic heart of the university the library should convey a sense of quality, value and 'place'. The ambience should be conducive to academic work and reflection, and should encourage and inspire its users. Readers, many of whom study for long periods and in increasing numbers, should feel comfortable and safe.

Imaginative architecture, exciting features and varied internal spaces all contribute to the ambience of the environment. This can be further enhanced by paintings, sculptures, stained glass, internal gardens and other 'cultural artwork'. An investment in a high standard of furnishings and finishes will also create this sense of quality and will withstand heavy use over an extended period with the minimum of maintenance. The library should be much more than an unimaginative 'swotting shed' with high density regimented study places.

Noise, particularly from computer clusters and readers themselves, is an increasing problem in libraries and planners are paying considerable attention to the management of sound in new buildings. Acoustic consultants are now often part of the planning team. Ironically, this is even more important in buildings where social interaction is encouraged, because effective noise management enables users to interact with each other without disturbing others unnecessarily. Established approaches include zoning activities and attention to floor and ceiling finishes. One fundamental dilemma is the design of the staircases in the building. Some new buildings are designed around an open central staircase for transparent access and airflow considerations while in others

### *The Ten Commandments revisited: the Qualities of Good Library Space*

planners have enclosed the staircases to contain the inevitable noise associated with readers moving up and down the building.

#### **Environmentally suitable**

*with appropriate conditions for readers, books and computers*

Suitable environmental conditions are required, not only for the comfort of readers, but also for the efficient operation of computers and the preservation of library materials. Ideally, temperature, humidity, dust and pollution levels should all be controlled. Natural or passive ventilation, now common in new buildings, provides an affordable, sustainable and a people-friendly solution. Any building or energy management system fitted should be designed to accommodate the lowest common denominator of building management, and the building should be environmentally appropriate.

The ambient lighting, whether natural or artificial, should be sufficient both for book stacks and reader places, and must take account of the growing use of computer terminals by readers and library staff. Task lighting or individual table lights have traditionally been used to upgrade the lighting at the reader's desk, but we must make sure the design does not get in the way of installing PCs. Large glazed areas mean that users can enjoy exterior vistas and natural daylight, but double and even triple glazing, tinting, solar film, blinds or architectural shading are necessary to alleviate the worst effects of noise, solar gain and solar glare. Atria can introduce welcome light and natural ventilation to the centre of large buildings.

#### **Safe and secure**

*for people, collections, equipment, data and the building*

There are security risks associated with the building, its users, collections, equipment and data (Quinsee & McDonald, 1991). The design must conform to current health and safety legislation and particular attention should be paid to the ergonomic design of workstations, to securing IT equipment, and to operation during non-standard working hours. Unfortunately, good security measures can sometimes conflict with convenience, aesthetics and even safety.

#### **Efficient**

*economic in space, staffing and running costs*

Libraries must operate as efficiently and economically as possible and most universities will stress the need for minimum running and maintenance costs. In recent years space utilisation and efficiency (HEFCE, SMG, 2006) and life-cycle costs have come under

close scrutiny, and projects need to demonstrate value for money in relation to the large capital sums involved.

Universities may consider the economics and desirability of extending and refurbishing existing buildings as an alternative to constructing new libraries (Fox & Cassin, 1996; McDonald, 1993). Existing buildings may have a symbolic, emotional or architectural significance within the university, and refurbishment may be consistent with established campus plans (Jones, 1999). Planners may also consider the economics and convenience of housing certain less used collections in on- or off-campus stores, often organised on a collaborative basis. At the same time, institutions are beginning to compare the relative life-cycle costs of electronic and traditional libraries.

### **Suitable for information technology**

*with flexible provision for users and staff*

New space must allow the library and its users to benefit fully from rapid advances in ICT: indeed, we should be planning buildings to reflect tomorrow's technologies rather than today's (JISC, 2006) and to surpass the demands of the internet generation (Fox, 1999). In designing spaces for effective, technology-rich learning, we must recognise the considerable challenges presented by trends in mobile learning, connected learning, visual and interactive learning and supporting learning (JISC, 2006). Even though only about 24% of reader places in libraries in the UK have computers at the moment (SCONUL, 2006), the number of computers and peripheral devices continues to grow at a pace and readers are also bringing in their own portable machines. Nevertheless, the ultimate challenge is to have the capability to provide a fully networked computer at virtually any point in the building in an environment conducive to computer use (McDonald et al., 2000).

Effective planning relies on the combined wisdom and experience not only of architects and librarians, but also of computer experts and networking specialists who are increasingly becoming members of the planning team. A suitable proportion of the building budget, typically around 10%, should be devoted to ICT provision to fund the cabling, active equipment, connections and hardware required, together with suitable safety, security and environmental measures.

A genuinely flexible IT support infrastructure is required with a blend of hard-wired, wireless and portable devices. Most new libraries are fully wired-up and provide cabling and trunking around the whole building with docking stations for readers to connect their laptops to the network. Wireless networking is now more commonplace as it becomes faster and cheaper, despite some earlier concerns about reliability and security.

Planners may choose to wire up all the study places, or they may economise by connecting only a certain proportion of them. Computers are often arranged on tables

### *The Ten Commandments revisited: the Qualities of Good Library Space*

around the perimeter where they can easily be served from the wall, but are sometimes placed in the centre of the building to avoid problems of solar glare and gain. In many buildings, computers are simply placed on ordinary tables, which give the most flexible arrangement, but in others specially designed computer furniture is used. Provision is made both for both standing and seated readers. In any case the design of workstations for readers and library staff should respect the appropriate health and safety regulations and make suitable provision for wire management for both safety and aesthetic reasons.

Our aim should be to arrange the PCs in an attractive way and provide a high quality e-learning environment. We should compare the merits of distributed PC provision, close to the collections and other information sources, and separate clusters of machines with the benefit of centralised management and support. Machines can be arranged in separate rooms or in open plan areas, and clusters often double up as teaching areas. In designing the layout, there is an inevitable tension between providing the maximum number of machines and creating a conducive space for learning. Large clusters generate considerable noise and heat, and care must be taken to ensure fire protection and security.

More space than ever before is now devoted to ICT services and support and to information skills training. Self-issue and return systems can, meanwhile, radically change the way in which we design entrance areas and counters, since readers can undertake circulation transactions themselves virtually anywhere in the building. Smaller and lower, more informal counters can deal with those transactions, which require staff help. RFID technology is increasingly common and the use of mechanical sorting devices; card-entry systems and smart cards also affect the overall design.

#### **Oomph**

*Bold space that captures the minds of users and the spirit of the university*

The eleventh and almost indefinable quality is best described as the 'oomph' or 'wow' factor. Skilful architects and planners will strike a balance between all these qualities to create inspiring buildings with exciting architectural features and satisfying internal spaces which capture the minds of users and the spirit of the university.

#### **THE LIBRARY AS A 'PLACE'**

The future of the library as a physical 'place' has been a matter of considerable professional speculation and debate. Despite some hasty predictions about the imminence and inevitability of the virtual library, universities around the world continue to create new libraries for learning, teaching and research, often, as it happens, with

growing printed collections. Libraries have not been replaced by ICT: rather the technology and technology-based services have moved into libraries.

Many new libraries are landmark buildings on campus with a strong 'sense of place', and they have facilitated a 'step change' in the support for learning, teaching and research in their institutions. These new buildings continue to provide the 'place' where people can come together to undertake a number of important activities. They come in increasing numbers to study, learn, reflect, interact and exchange ideas. They consult the collections, retrieve information and use the computers provided. They seek the assistance and support of trained information professionals, and they make use of the whole range of managed services provided. Importantly, these 'places' provide access to information and information technology for the information 'have-nots'. The buildings are often the hub for distributing networked services to off-campus users and house growing traditional collections and special collections of important research and heritage materials.

Although the balance between these activities is likely to change, the library building remains the important 'place' where all these essential services can be conveniently provided, even in the virtual age (Hurt, 1997). It is interesting that many of the most automated libraries in the world are still buildings and most often very pleasant ones too. While older buildings may have accommodated technology, today's new libraries are formed by it (Martin & Kennedy, 2004). It is likely that in the medium term physical and virtual space will be equally important and the main challenge will be in providing a blended service where the virtual and the actual spaces are complementary, influenced by the number and diversity of new technologies.

Libraries remain amongst the most socially-inclusive, enduring and well-used 'places' in modern society, and creating good new buildings is critical, not only to the future of our universities, but also to the intellectual capital of our countries. We are witnessing unprecedented and dynamic change in society, higher education, technologies and management. These trends, and the considerable challenges they present to planners, are likely to continue at an ever-increasing pace. Tomorrow's libraries will look and feel very different 'places' from yesterday's buildings. The building shells and spaces we create today will remain lasting tributes to the managerial vision, leadership and influence of the library directors responsible for their planning.

That we have discussed Faulkner-Brown's ten commandments here today confirms the enduring relevance of an approach that identifies some basic principles and generic qualities to inform the planning of successful new libraries. The qualities important for tomorrow's new library buildings relate to a new learning and information age in which higher education, architecture and society have been radically transformed. Even though demonstrating the impact of good library design on learning, teaching and research remains an elusive challenge, it is reassuring for all those involved in the planning

### *The Ten Commandments revisited: the Qualities of Good Library Space*

process that successful new libraries continue to encourage even greater use of both traditional and virtual services, often stimulating a two or three fold increase in demand.

*“if you build it, he will come”* (Field of Dreams, 1989)

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*The Ten Commandments revisited: the Qualities of Good Library Space*

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