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After Atkinson

British University Library planning since 1976

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York University Library

Introduction

In the United Kingdom almost every major university library building is paid for substantially from public funds. These funds come by way of capital grants from the funding agency responsible for higher education. This is now one of the Higher Education Funding Councils, but at the time of the Atkinson Report the agency was the University Grants Committee.

It follows that the funding agency will wish to keep close control over the type of buildings it is paying for and from the earliest proposal stages the agency is involved in vetting and approving the project. Obviously, therefore, the funding agency has a very strong influence on the design of academic library buildings and, despite its theoretical independence from government policies, the amount of capital available for building projects and the government's general policy towards public expenditure and higher education are influential in determining how development proposals from individual institutions are received.

For the funding body to accept the recommendations of a working party such as Atkinson, whose proposals - if adopted - would have a profound affect on the whole philosophy of university library services, therefore represented a momentous step in the history of United Kingdom academic libraries; one which rocked the profession and caused an outcry amongst many academic communities.

Why was this?

In the 1960s, British university library planning moved away from the concept of the traditional, fixed-function building. Seminars given to SCONUL by the American consultant Keyes Metcalf and his colleague Ralph Ellsworth had promoted the concept of the flexible library building with regular column spacing and no load bearing internal walls with floors able to take bookstack loadings anywhere in the building.

This concept was readily accepted by British librarians, who were becoming aware of the shortcomings of such recently completed traditional libraries as Birmingham and Sheffield. The result was the first fully modular academic library in the United Kingdom at Nottingham (the Science Library) in 1964. This was followed by library buildings for the new universities formed in the 1960s and in 1967 by the largest modular academic library ever built in the UK at Edinburgh (diagram 1; diagrams are appended to this paper). The arts and social science library (col.ill. 30-31, p. 22), opened at Nottingham University in 1973, won wide acclaim and came to be regarded as a model for open plan, modular, flexible libraries which other planners tried to follow (e.g. col.ill. 31, p. 22).

The *Report of the University Grants Committee on Libraries (The Parry Report)* published in 1967 had endorsed the "Metcalf" approach and had urged the need for air-conditioning in new library buildings in order to preserve the books.

The result was a spate of new library buildings, other than those for the new universities, almost without exception modular, flexible and with full air-conditioning. These included, to name some of the larger libraries, Stirling, Brunel, the School of Oriental and African Studies (London), Leicester, Leeds South Library, Bradford, Cardiff and Bristol. All of these are over 6,500m² in area, with Nottingham (10,035m²) and SOAS (10,750m²) the largest.

There is a basic similarity about these buildings (e.g. diagram 1: Edinburgh and 2: Cardiff), dictated by the modular concept and the demands of air-conditioning.

The University Grants Committee is reckoned to have spent over £23 million on library buildings in the ten year period up to 1974 - a rate of expenditure that clearly could not be sustained and yet, by 1974, the Committee was faced with the problem that out of 44 university libraries, 11 were virtually full and 18 more estimated that they would be full within four years. Industrial problems in the UK, and rising oil prices marked the growth of economic difficulty in the country with the result that the UGC set up the Atkinson Working Party. Its report *Capital Provision for University Libraries* was immediately accepted by the UGC, before there had been time for the outcry which followed. In a foreword to the Report, Lord Dainton, chairman of the UGC, said: "By the end of 1974 the UGC had come to the conclusion that they were clearly not going to have enough resources, either in the short term or the long term, to build new libraries at all universities on the scale needed to match an indefinitely growing number of books. Even if this had been possible, it was doubtful whether it would have been the most sensible course to follow".

So with Atkinson came the notion of the "self-renewing library of limited growth", i.e. a library in which space required for new acquisitions would be provided largely by space created by withdrawals. Thus the concept of the virtually unlimited growth of academic libraries was brought to an end in the UK. By coincidence, the publication in the same year (1976) of conference proceedings in the USA under the title *A farewell to Alexandria*, showed that American library administrators had reached a similar conclusion.

Implications of the Atkinson Report

The Atkinson Report, whilst effectively bringing to an end the idea of an unending accumulation of library stock, set out to fix some «norms»: by which bids for library space could be measured. Most of these norms are still extant today, but the one which caused most concern to librarians, especially in the older established universities, was the limitation on the size of bookstock expressed as a space equivalent per full time equivalent (fte) student: "it is not unreasonable to assume that a library which

provides 3.8 metres of shelving per fte student should be adequate for normal working purposes" with the rider that storage facilities for additional little-used books should be provided so that items could be fetched within 24 hours.

Librarians had a two-fold worry here: firstly, that librarians with large bookstocks built up over a long period would be unfairly penalised and secondly that the extra staff needed to service the storage facilities outside the library would add to the recurrent running costs.

Effects of the Atkinson Report

Surprisingly, no less than 50,000m² of additional academic library space was built in the four years 1978-1982. However, of this 16,000m² represented a major extension to Manchester University Library (col.ill. 33, p. 23) which had long been in the pipe-line and a further 26,000m² was conversion of existing warehouse buildings into library space for the London School of Economics (col.ill. 23, 32) and for Strathclyde. The only truly new "green field" library was at Loughborough University, planning for which had begun before the *Atkinson Report*, but which nevertheless had Atkinson norms applied by the UGC in the course of building. As the then librarian, Professor Tony Evans, remarked in an article in *IATUL Proceedings* Atkinson's restrictions on collection size were not a problem in an institution with a relatively small bookstock and the only difficulties encountered with the UGC arose from the proposal to house the Library School on top of the library building. This was only finally agreed with the UGC at the expense of library «balance» (circulation) area Loughborough was not therefore greatly affected by Atkinson.

What of libraries following Loughborough? Between 1982 and 1985 several major new buildings were completed. These were at Newcastle University and Exeter, with significant extensions at Durham University (col.ill. 34, p. 23) and Aberdeen. From 1985 to 1988 new library buildings were completed for Queen Mary and Westfield College (col.ill. 39-41, p. 25-26; diagrams 3-5) and Goldsmith's College (both in the

University of London) and Dundee University, whilst major extensions are built at Reading, Southampton and Glasgow and a large conversion of academic space was converted to extend the library at UMIST - the University of Manchester Institute of Science and Technology; in total, a further 31,000m² of library accommodation was funded by the UGC in this six year period.

These were all libraries to which the new Atkinson norms had been applied throughout the planning stages; every building was subjected to rigorous scrutiny by the UGC Officers and yet, despite all the fears about Atkinson, they have - for the most part - turned out to be satisfactory libraries coping well with the demands placed on them initially and only now facing difficulties with the enormous expansion in student numbers (of which more later).

Most of these buildings are modular and open-plan and therefore flexible in their interior layouts; they have thus coped well until the recent huge increases in users and this highlights one of the weaknesses in the *Atkinson Report* - its emphasis on the size of bookstock as a major factor in determining overall space requirements. In practice, bottoms on seats are far more significant in terms of space needs than are books. As Dr. Ratcliffe expressed it, in responding to Atkinson: "Book storage presents the least expensive, the least area consuming, the least sophisticated of a library's space problems. Books are impersonal items in a library. Unlike readers and staff they do not complain if squeezed, nor are they supported by Factories and Shops Acts if housed under inhospitable conditions."

Despite the outcry over Atkinson, I think these later buildings show that it is perfectly possible to produce satisfactory library buildings using the Atkinson norms. I may say, incidentally, that although the *Atkinson Report* appeared in 1976, there has been no significant change in these norms in nearly 20 years since. When Chairman of SCONUL's Buildings Committee, I was involved in several attempts to put pressure on the University Funding Council (the successor to the UGC) to reconsider the norms, but to no avail.

Impact of information technology

The reason for seeking a reconsideration of the norms was not directly related to the overall provision of 1.25m² per student, nor to the notional 3.8m of bookstack per student, but to the impact of information technology on libraries.

In 1989 Dr. Thomas Graham, librarian of the University of York, produced a report for SCONUL on the impact of information technology on academic libraries (*Information Technology and Library Buildings*, January 1989). Amongst the most significant recommendations in that Report was the finding that 2.3m² per reader place was insufficient to provide the space needed for users of IT. In fact, Dr. Graham recommended that 3.9m² to 4.1m² was a more realistic figure (col.ill. 36, p. 24). So far, to my knowledge, the Funding Body (now the Higher Education Funding Council) has not responded. However, the need to accommodate a terminal and a keyboard at a reader place as well as conventional printed material shows clearly that 2.3m², based on a reading surface area of 900mm x 600mm, is insufficient (col.ill. 37, p. 24). However, if these dimensions are increased, there is an impact on basic planning in terms of module sizes and column spacing.

In fact, attempting to cope with the demands of information technology has had an influence on library planning in various ways. One obvious problem in open-plan, modular libraries is that of running cables. The absence of internal walls and (in many new libraries) the lack of suspended ceilings make it very difficult to find ways of conducting cabling across the interior of the library (col.ill. 38, p. 25).

A lot of attention was paid to this in the planning of the new library for Queen Mary and Westfield College (diagram 4), completed in 1988. The decision was taken to carrying wiring for power and data transmission through trunking at table top height around the perimeter of the library. From here the cabling could be extended to all tables via plastic trunking under the worktops. This system was supplemented by underfloor ducting to carry cables to staff areas on each floor.

At University of Manchester Institute of Science and Technology (UMIST), academic space was converted to library use to provide a large extension and here a perimeter skirting level system of cabling was adopted, similar in concept to that at Queen Mary and Westfield. In other libraries, especially where suspended ceilings are provided, cable runs have been installed in the ceiling. This is neat, but the problem arises in providing drops from the ceiling to table height and this usually entails unsightly poles.

Some more recent libraries - the Aldham Robarts Library at Liverpool John Moores University (col.ill. 43, p. 27) is an example - have adopted the expensive solution of installing suspended floors with the cabling beneath. This, of course, gives excellent flexibility but since the floors have to be strong enough to take the weight of bookstacks, the cost is very high and unlikely to be met from Funding Council allowances. The library at the Institute of Education in the University of London has adopted this solution, but is already experiencing some flexing in the floors!

Another design problem posed by the new technology concerns lighting. The standard open plan provision of lighting by fluorescent tubes at ceiling level is not satisfactory where the avoidance of glare and reflections on terminal screens is essential. Some libraries have therefore turned to uplighters, relying on reflected light from a white painted ceiling/floor slab to give glare free, even illumination, especially over reading areas (col.ill. 35, p. 24). Since such lighting is not suitable for bookstack areas, flexibility between the two is becoming compromised.

One answer to this problem, adopted at Queen Mary and Westfield, has been to run stack lighting between and parallel to the stacks but mounted on tracks to allow for alteration of aisle widths; uplighting over the adjacent reading areas allows for a flexibility zone between the two (col.ill. 41, p. 26; diagram 5).

The need for cable runs for power and data and the extra space requirements for work stations for both readers and staff, make it essential that decisions on how these requirements will be met should be taken at an early planning stage of any new library.

The space required for work-stations or larger tables may affect the size of the structural grid and decisions on how to run ducting for cabling may affect the whole external appearance of the building in terms of window sill heights, or the position of full height windows (col.ill. 39-40, p. 25). The control of daylight entering the building may also be relevant to the siting of terminals.

A whole new set of factors and cost commitments therefore arise from the impact of the new information technology and the need to cater for enhancements and developments in that technology over the life of the library building. It is likely that modular, open plan, flexible buildings will prove more adaptable in this respect than the earlier fixed function libraries.

A conference held in York in April 1994 on building libraries for the information age came to the conclusion that libraries had to be flexible in outlook but maintain their identity and that the information technology role had to be a planning priority.

As I have said, most of the post-Atkinson academic libraires in the UK have been open-plan, modular, open access libraries which reflect the current philosophy of librarianship and of the library as a place of study where readers and the materials they use mix freely. As more and more of these materials are in formats other than print on paper and as self-directed learning becomes an increasingly widespread educational philosophy, the term "learning resources centre" is becoming more frequently used to describe the library building, especially in the newer university institutions, which have previously had a heavy emphasis on teaching.

Problems of modular libraries

Uncertainties over the scale and rate of development of Information Technology are likely to be persuasive arguments for the continued planning of modular, flexible libraries in the United Kingdom. However numerous problems have emerged concerning such buildings and these have led to the modification of the earlier designs in various ways. The basic elements in earlier traditional modular libraries have been set out

frequently by the architect Harry Faulkner-Brown, who has designed numerous successful academic libraries, including Nottingham and Newcastle. Faulkner-Brown laid down what he described as his "ten commandments" for library buildings, which stipulate that a library should be flexible, compact, accessible, varied (in provision of accommodation), organised, comfortable, constant in environment, secure, economic and expendable.

It was a tenet of Faulkner-Brown that such a building should be as near cubic in shape as possible, with sealed windows and full air-conditioning. Typical Faulkner-Brown buildings of this type are:

- Nottingham (diagram 6; col.ill. 30-31, p. 22);
- St. Andrews (diagram 7);
- Newcastle (diagram 8; col.ill. 35-37, p. 24).

Given the requirements of modularity, there is bound to be a similarity between libraries planned to this specification (e.g. Exeter and Aberystwyth (diagram 9)) which are not Faulkner-Brown buildings, but have a marked similarity.

An eminent English architect, Norman Foster, said recently that "architecture should lift the spirit" and it is a charge often levied against modular, cuboid libraries that they fail to do this. Here is Susan Hagan, writing in the *Architect's Journal* about Bristol University Library:

"The layout is obviously efficient and a librarian's idea of heaven, but inside it does create a problem of endless unmodulated vistas from one end of the building to another and of endless repetition on the exterior."

Problems other than aesthetics have however shown up. Deep plan, air-conditioned buildings rely heavily on efficient mechanical services for their comfort levels and it became apparent during the 1980s that although the UGC was in favour of air-conditioning in libraries in principle, the building cost allowances granted by the UGC did not permit the installation of really top class systems. To have air-conditioning at all often involved compromises elsewhere in the planning in order to keep within the overall cost limits.

Even more seriously, many of the air-conditioning installations predated the steep rises in energy costs in the UK in the late 1970s. As a result, some libraries can no longer afford to run the installation to its full specification, principally cutting down on chilling air during the summer. The increasing financial stringency facing UK universities has also meant drastic reductions in maintenance staff, with the result that air-conditioning systems are not maintained at full efficiency, or even fully understood.

The appearance of a number of articles in the press in the mid 1980s on "Sick building syndrome" prompted SCONUL's Buildings Committee to commission a survey of academic libraries with sealed, air-conditioned buildings and compare these with buildings relying on mechanical ventilation. The survey was carried out by Andrew McDonald, now librarian of Sunderland University. He found that, in general, staff and users were more comfortable in buildings with mechanical ventilation, where staff were usually able to open windows and therefore felt that they had more control over their environment.

For example, the last two editions of *Library Buildings*, covering the period 1984 to 1994, show that of six new free-standing libraries in the 1984-89 edition, three had full air-conditioning installed in a conventionally sealed library; in the 1990-94 edition, out of eleven free-standing libraries, only two were fully air-conditioned. These were the Brotherton Library extension at Leeds, where conservation of material is highly important and the new library for Royal Holloway in London (diagram 10), which is a traditional, deep plan rectangular building.

Some of the other new buildings in these volumes offer interesting configurations different from the conventional rectangle:

- Aytoun Manchester Metropolitan (diagram 11)
- Aldham Robarts, Liverpool John Moores University (diagram 12)
- Queen Mary & Westfield College

These plans suggest that, freed from the constraints of a cube shaped library, architects are now prepared to experiment with less conventional solutions (cf. University of Sunderland, St. Peter's site; col.ill. 44, p. 27). It is interesting to note that some eminent architects are becoming involved with new buildings: Norman Foster at Cranfield (col.ill. 45-46, p. 28),

Robert Gordons at Aberdeen, Quinlan Terry (col.ill. 47, p. 29) and Colin Rice at Cambridge (col.ill. 48, p. 29).

Modular, open plan libraries with most stock on open access have other penalties. High building costs have been mentioned; there are also high energy costs arising not only from air-conditioning, but also from the reliance on artificial lighting throughout opening hours.

Space penalties arise from the more generous stack aisle widths needed for open access shelving (the UGC norm, from Atkinson, for open access storage is 4.65m² per 1000 volumes, as compared with 4.03m² for closed access storage and 2.07m² for mobile stack).

Further problems arise over security of stock. As the cost of publications continues to rise and the financial situation of students goes into further decline, academic libraries in the UK have seen a distressing rise in the amount of stock mutilated by the removal of pages or even whole chapters. Despite the theory that open plan libraries are self policing because readers can observe what other readers are doing, wrong doers still find ample opportunity to carry out their assaults on the library's stock. Another common practice is the deliberate concealment of books by placing them in a different section of the library - a practice becoming more difficult to counter as pressure grows on library staff.

These problems are endemic in modular, flexible, open access libraries yet all the indications are that this type of design will continue, albeit with modifications, for the time being.

Current problems of library space

In the past few years most UK academic libraries have run into space difficulties. These have not generally arisen, despite Atkinson's concern, over shelf space, but over providing sufficient seating for readers. Possible trouble over the growth of collections, predicted by Atkinson, has never become a problem on the scale predicted. Sharp falls in university library expenditure in the late 1970s and 1980s as a result of the declining economic situation allied to continuing huge rises in the cost of periodical subscriptions meant that the accession rate for most libraries fell sharply;

add to this availability of more information in new, compact formats and the result is that problems over stack space have not been a major concern, even in libraries with large research collections. The installation of more compact shelving, often on open access, has enabled libraries to avoid the laborious "self renewing" exercises involved in Atkinson's concept.

By 1992 academic library accommodation problems had become so acute and widespread that the Funding Councils set up a Review Group under the Chairmanship of Sir Brian Follett. This Group produced its Report (*The Joint Funding Council's Libraries Review Group: Report*) in December 1993. Unlike Atkinson, this Report was not solely concerned with capital expenditure. Its terms of references were "to investigate the future national needs for the development of library and information resources including operational and study space requirements for teaching and research in higher education institutions and to identify ways to meet those needs taking into account:

- the planned expansion of higher education
- the current and potential impact of information technology
- the possibilities of greater cooperation and sharing of capital and recurrent resources."

The Report claims, rightly, to be the first to attempt a review of library and related provision in the United Kingdom since the *Parry Report* of 1987.

Whilst given a lot of attention to the impact of information technology, Follett also recognizes the enormous problems facing UK academic libraries as a result of the huge increase in student numbers over the last decade: "The serious pressure on space in libraries is illustrated by the fact that while student numbers have grown by about 70% in the last seven years across institutions as a whole, space for readers has increased by only a few per cent." And this is at a time when the need to provide for information technology has made the existing allowance per reader inadequate! The *Follett Report* goes on to estimate that the total cost of meeting the need for additional library space (using in the calculation, of course, the Atkinson norms) arising solely from the growth in student numbers between 1985 and 1993, is approximately £140 million. How

much greater would this sum be if due account were taken of the findings of Dr. Graham and others concerning the increased space needs for IT!

Follett goes on to say that institutions should be expected to find about 2/3 of that estimated figure, with the Funding Councils putting up some £50 million. Since several university institutions are in financial difficulties, putting up this money for library space will pose problems.

For 1995 the Funding Councils accepted the Follett Report's findings and a sum of £10 million was made available in this first year for building work in libraries related directly to student numbers. Almost all universities responded to the Funding Councils' call for proposals and as a result about £35 million has been spent on library extensions during 1995 - a real spurt in the academic library building programme in the United Kingdom.

Interestingly, the Funding Councils let it be known that they were not interested in applications for funding for "traditional" library extensions which represented a mix of reading space and bookstacks. Applications had to be based solely on the increase in student numbers and arguments for additional stack areas did not succeed. So it could be said that Atkinson lives on, nearly twenty years later!

Perhaps LIBER should arrange another seminar on this subject in another twenty years time, at which post-Follett UK libraries could be considered.



Diagram 1: Edinburgh University Library

Anthony Quinsee

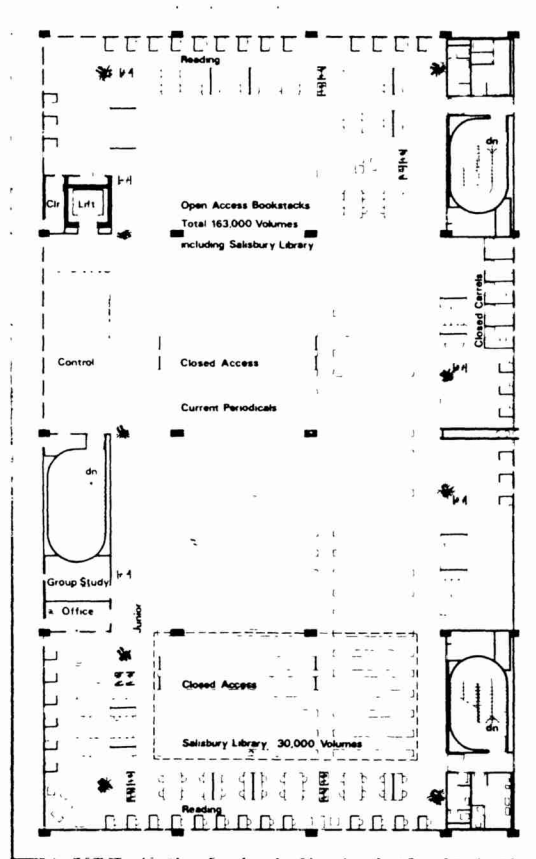
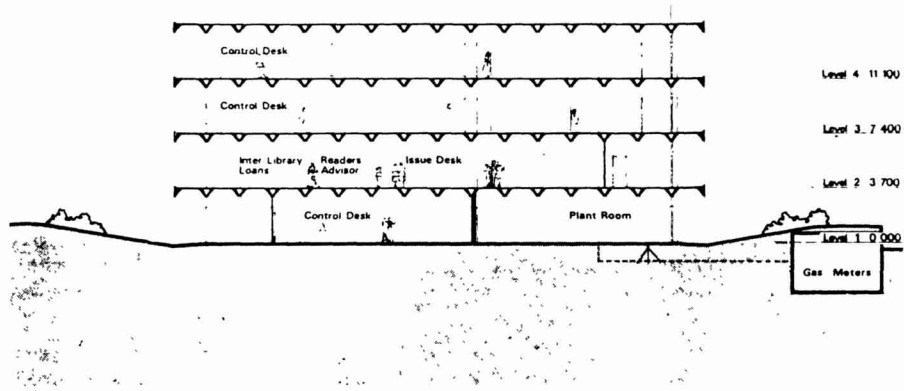


Diagram 2: Cardiff University Library - East-West-Section - Level 3

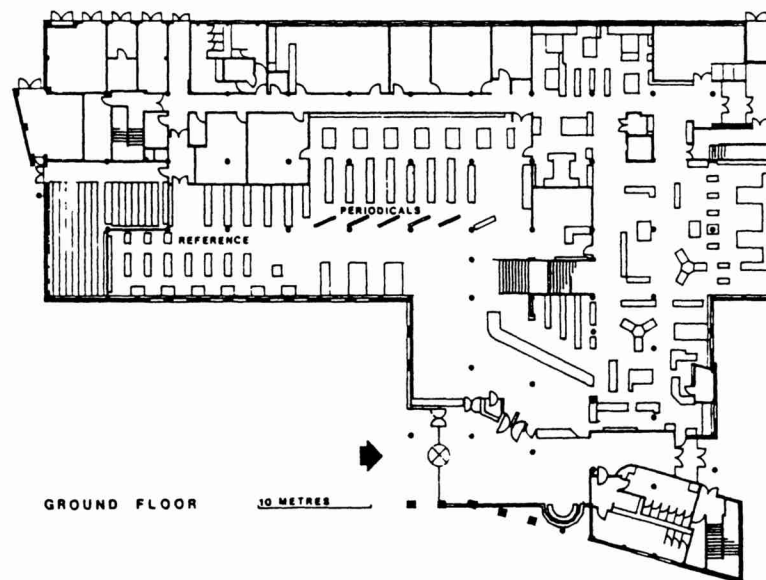
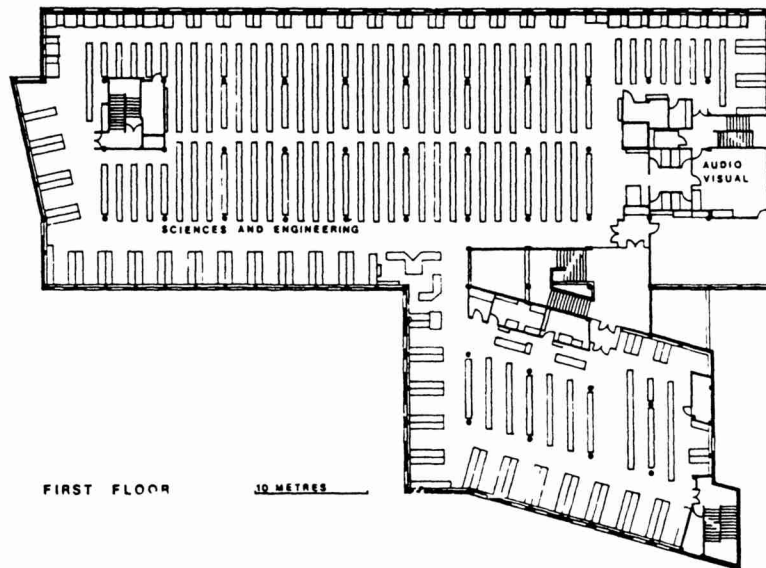


Diagram 3: Queen Mary and Westfield

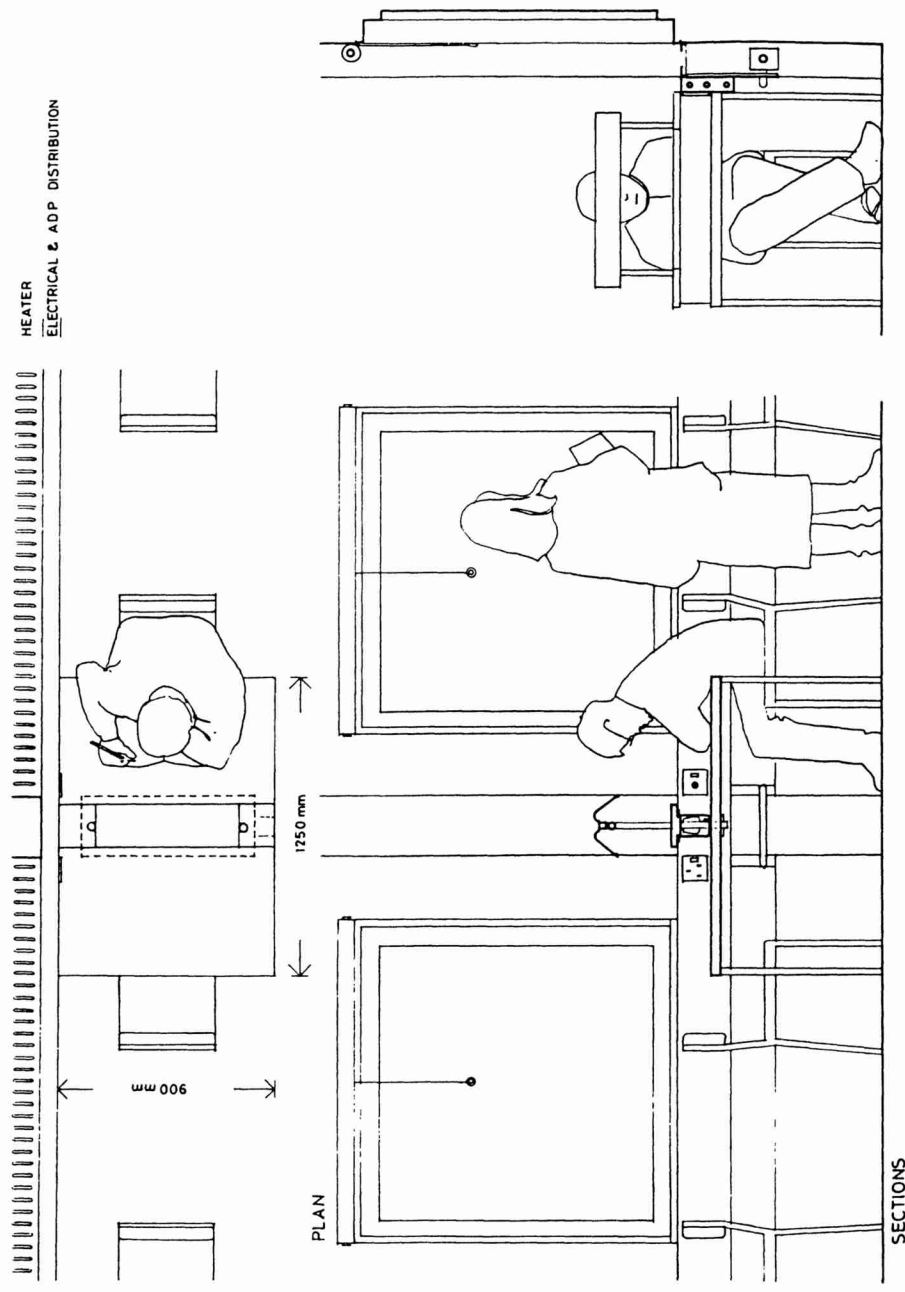


Diagram 4: Queen Mary and Westfield-typical readers' table

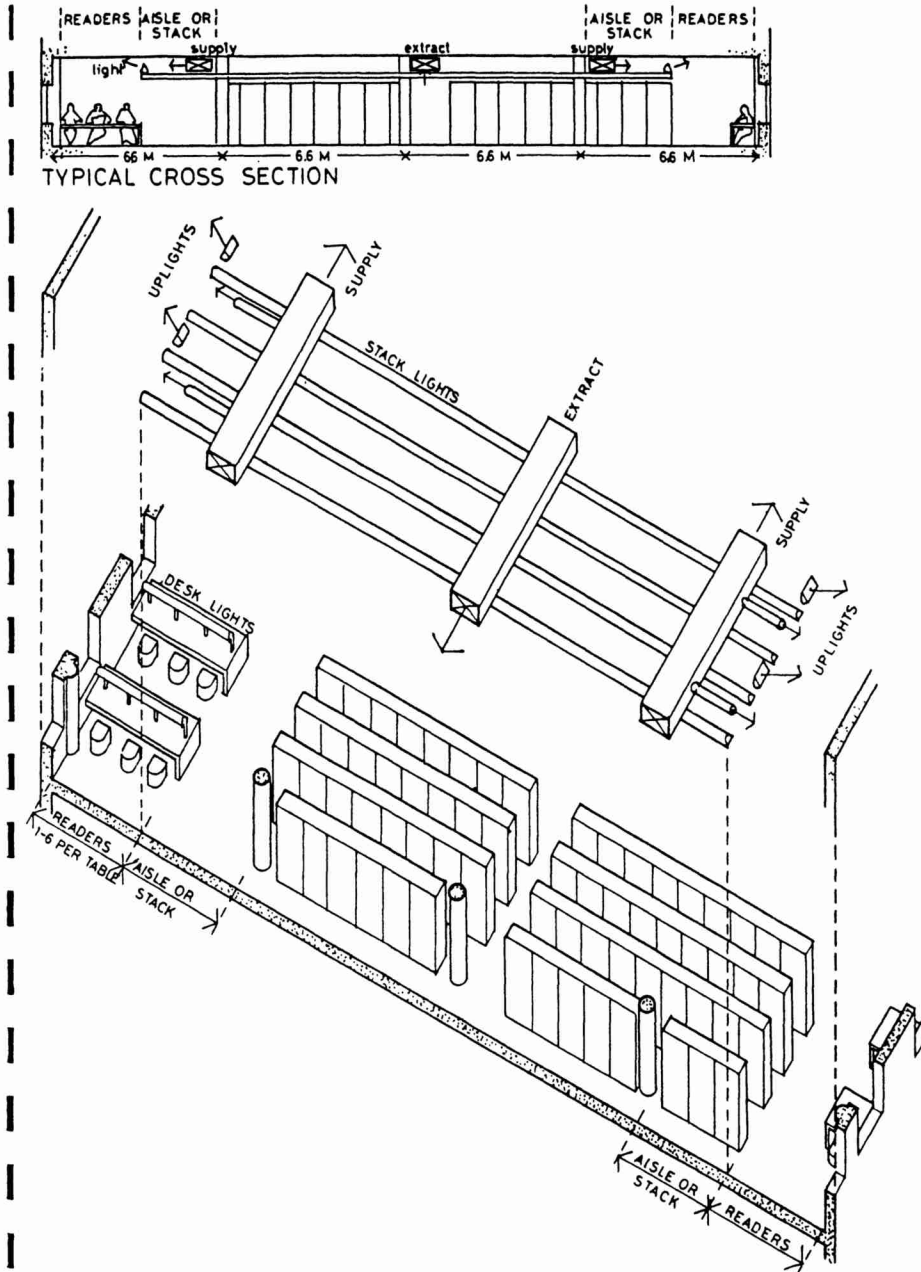
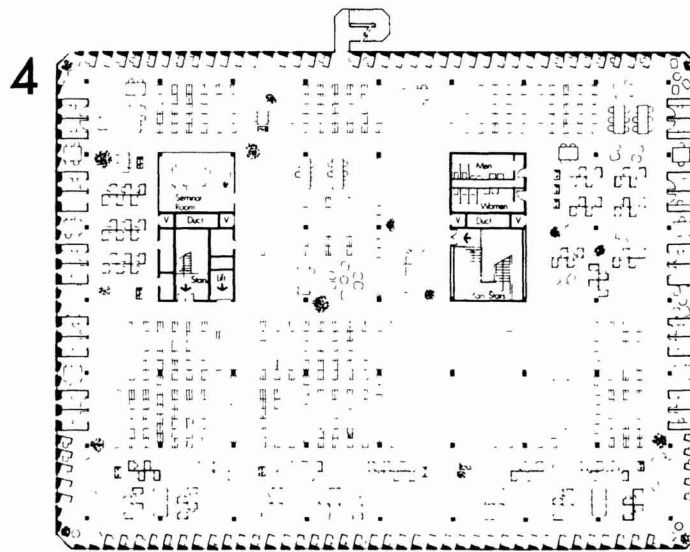
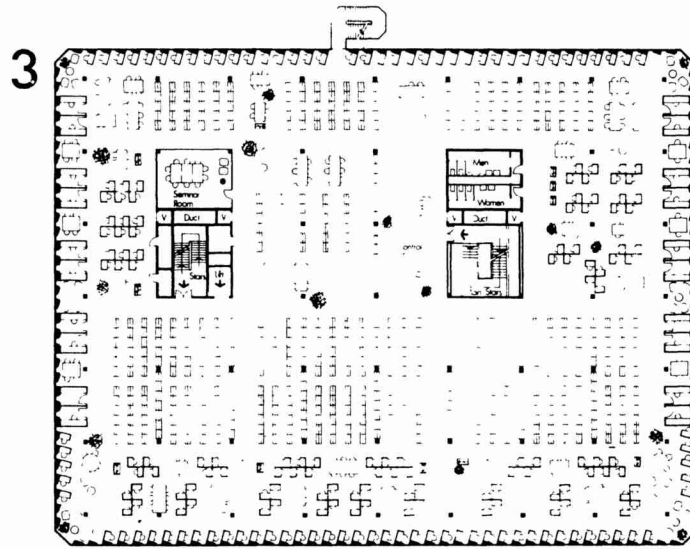


Diagram 5: Queen Mary and Westfield-Planning principles



Scale 1 : 500

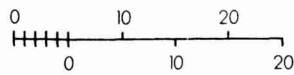


Diagram 6: Nottingham University

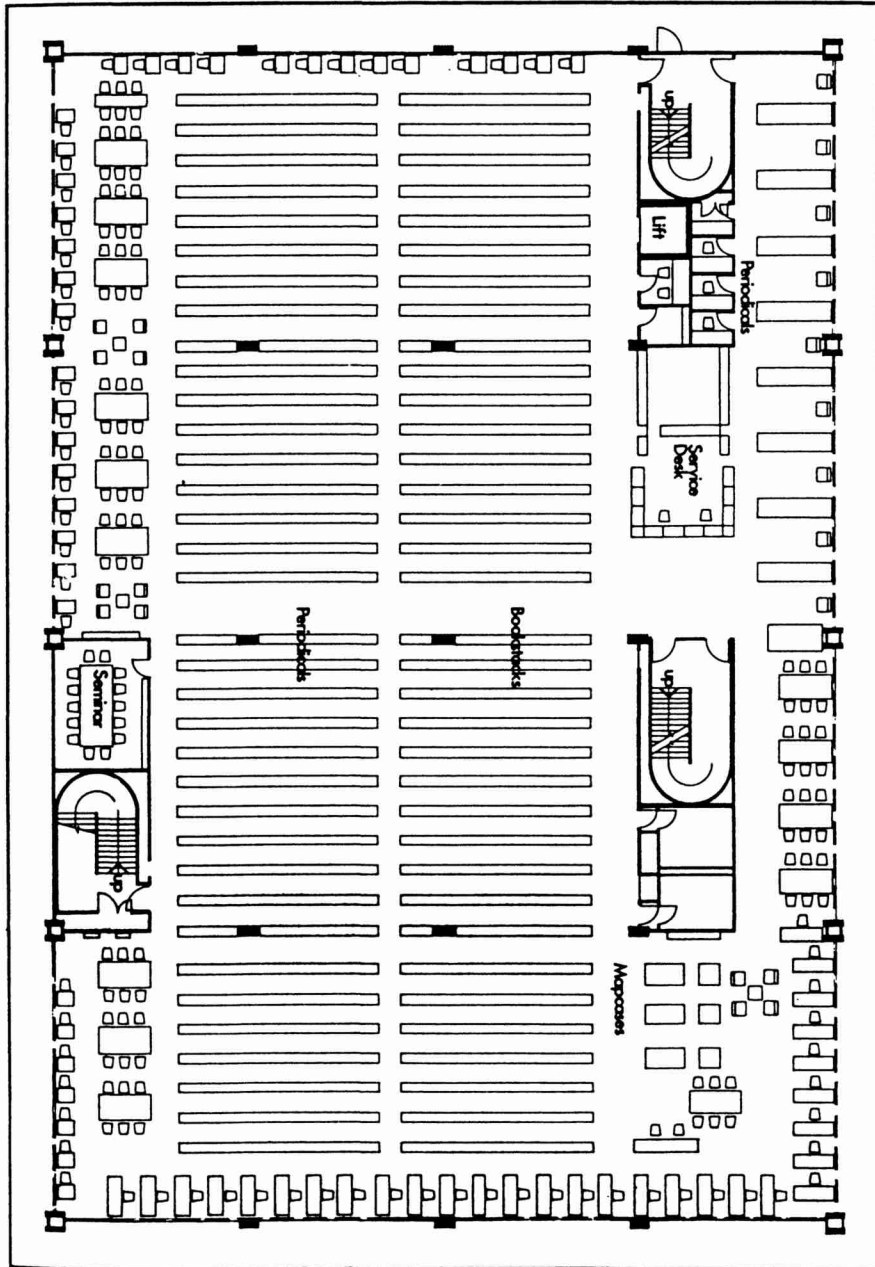
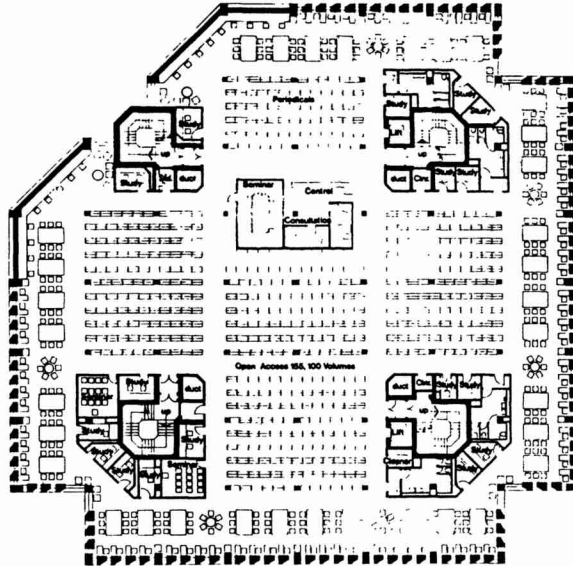
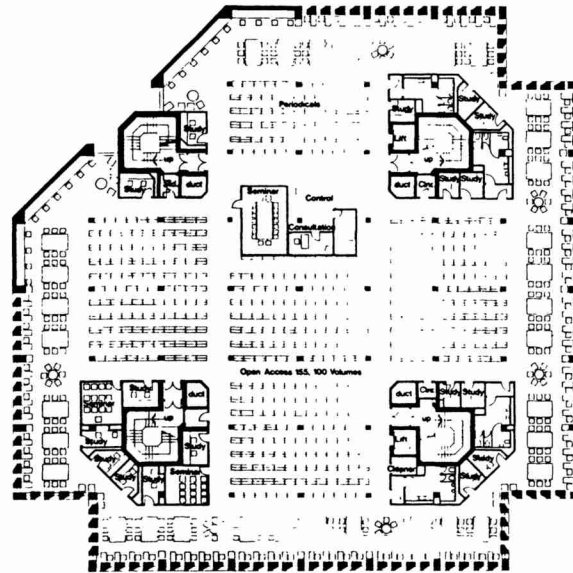


Diagram 7: St. Andrews University Library



Level 3



Level 4

Diagram 8: Newcastle University Library

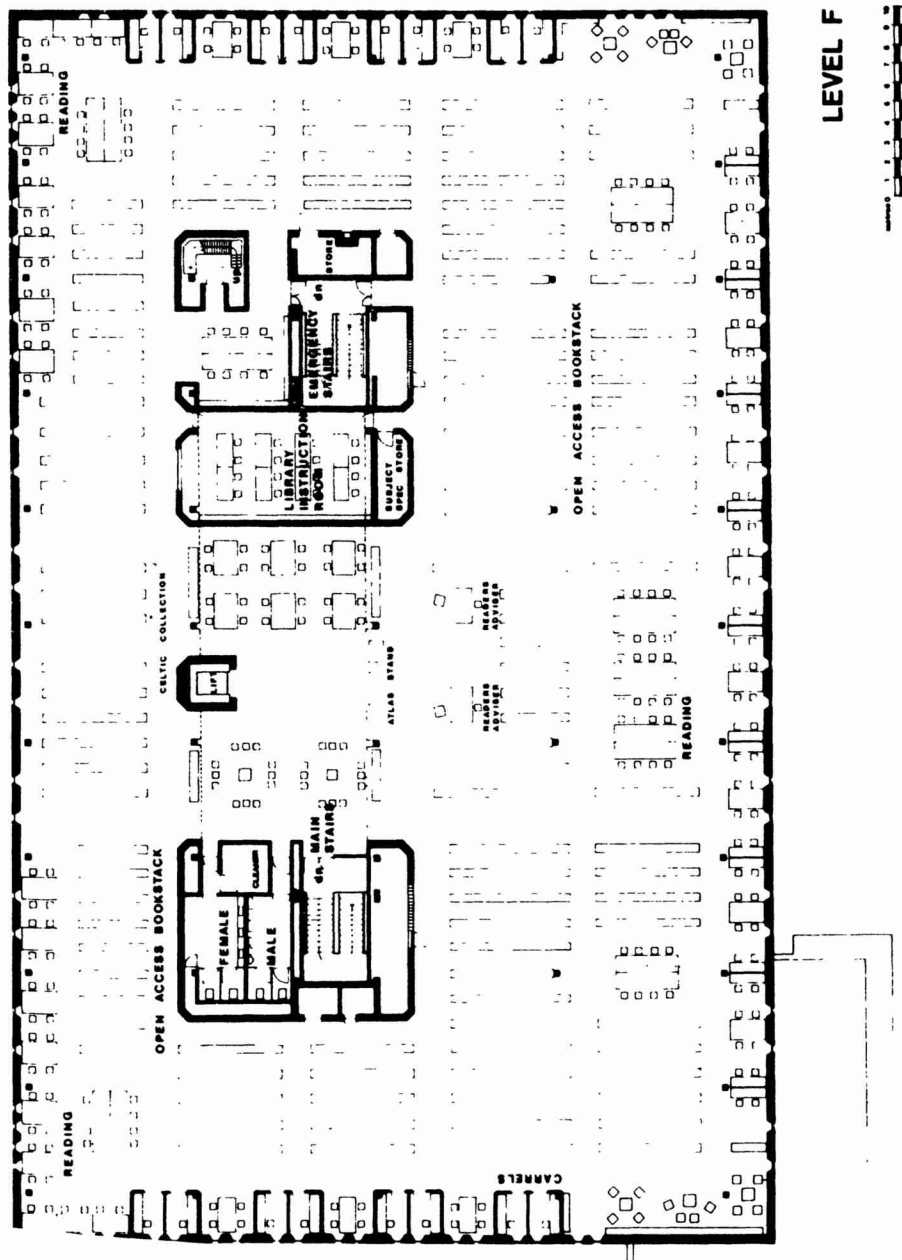


Diagram 9: Aberystwyth University Library

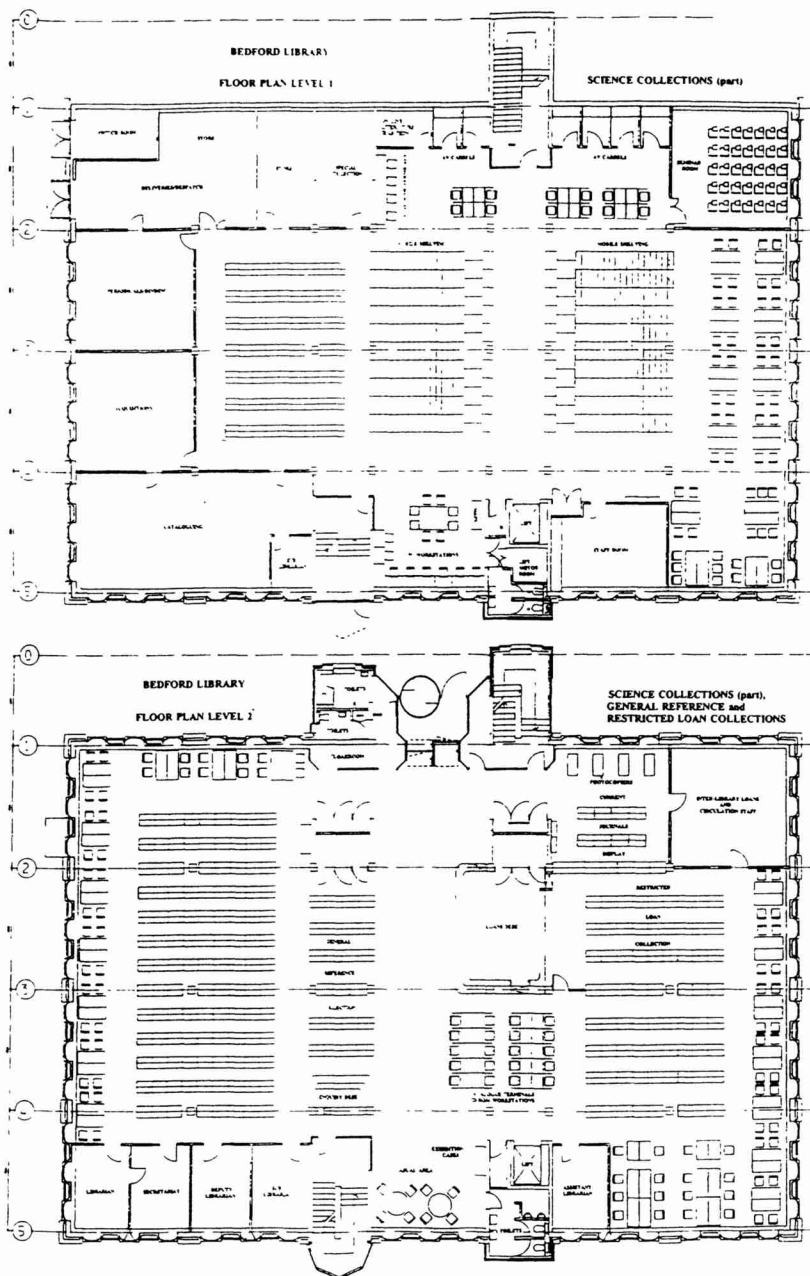


Diagram 10: Royal Holloway

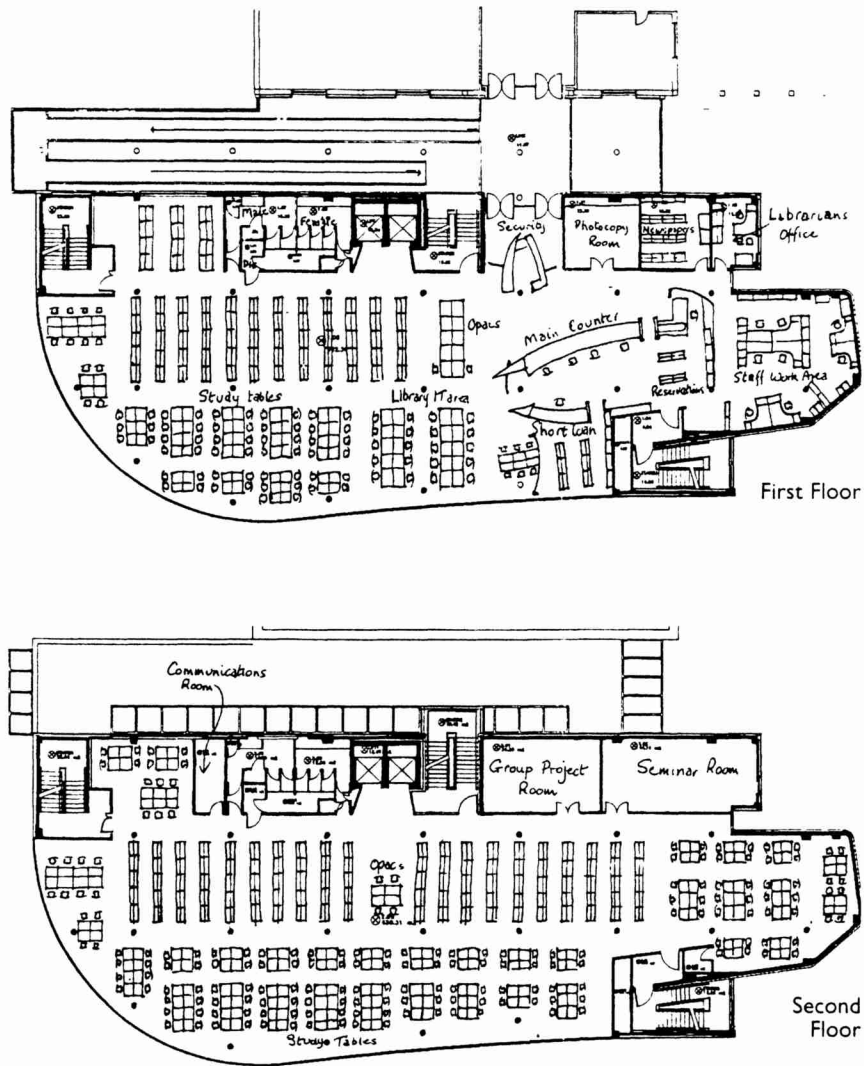
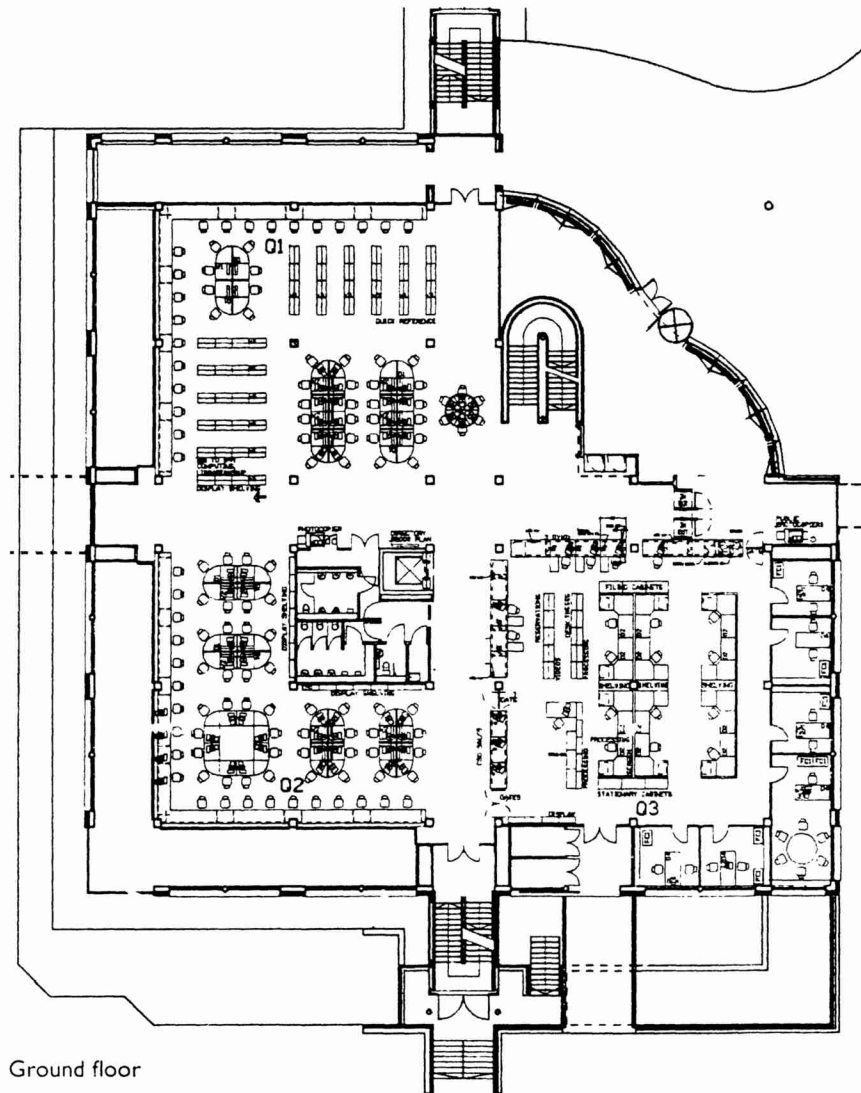


Diagram 11: Aytoun Library, Manchester Metropolitan University



Ground floor

Diagram 12: Aldham Roberts Learning Centre - Liverpool John Moores University-Ground floor