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In its membership, APLA embraces every type of library: public, regional, school, college, university and special libraries in the Atlantic Provinces of Canada.



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atlantic provinces library association

# THE SYSTEMS DESIGN PROCESS

W. J. Kurmey

Library literature today is replete with references to the "new technology", "the information explosion" and the "flood of literature" which conjures up images of desks and tables piled high with books, library stacks overflowing to warehouses, rooms piled from floor to ceiling with books, reports, journals. Quantity has never been a deterrent to operation of a successful system. If it were, the telephone system in the United States alone would employ more operators than the population of the country. This is an example of a system which, faced with the prospect of a "flood of calls", met the situation with foresight and planning. Not only has this system proved to be a productive commercial enterprise but it has also achieved the status of a public utility. Similarly in libraries, the handling of quantity of material is no barrier to maintaining a collection as a repository of material. Quantity of service also is no deterrent to successful operation – in fact, quantity of service has been used for decades as justification for maintaining a library based on the assumption that the more a library is used the greater its contribution to society as a whole in providing an effective means of transferring information; as an agency of communication between creator and user of information.

The above discussion does not, of course, take into account the consideration of quality or nature of the materials or services provided. It is possible to employ effective and well known inventory practices to handling the control of literature, to handle the organization of material in a repository, even to predicting usage on a statistical basis and maintaining stock levels to satisfy predicted demand. The basic problems confronting libraries today are not dependent on quantity of materials or quantity of service but on the changes in society which have led to a different "depth" of service expected from the library. No longer can the library be viewed as a repository, collection oriented system.

Changes in society have caused a reexamination of the relation between material content, organization for use, and accessibility to the user. The ineffectual attempt by libraries to meet this changing demand and the consequent disillusionment on the part of users can be attributed to the failure on the part of librarians to recognize their changing role. Quantity is not the problem, changing conceptual relationship of the library as only one of many agencies of communication is. Many of the competitive "information" agencies are designed to adapt themselves more easily to changing conditions than the time-honored institution, the library, and are more successful at their task. No longer can the library remain a passive communication channel if it is to avoid designation as simply a "repository of knowledge".

At one time, librarians could argue that the lack of money was the reason for lack of service and materials. In general, this deficiency has been removed. The new rationalization, lack of adequate staff, will be removed by the introduction of the "technician" taking on the routine responsibilities leaving the librarian to professional

duties. There no longer will be any excuse for the plaintive statement, "If we give users more service 'in depth' we will be swamped with a demand we can't handle". In another attempt to meet changing conditions, some libraries have introduced new devices, computers, to accommodate the changing nature of service and to partially alleviate clerical turnover. The glamorous prospects of mechanization have yet to be realized in practice – if anything, machines have been a retrogressive step due to the inability of librarians to change the conceptual basis of their attitudes to the role of the library. The effect of Mooer's law, a user will use the most convenient and easiest method of obtaining information, has been to place the library about eighth in line of usefulness as a communications channel, a rather precarious position.

The panacea held up to librarians is "systems design", "systems analysis", dealing with the "total systems approach", "integrated systems" and more recently, "man-machine interactive systems". The utility of the systems concept has been not as a labor saving device, but rather as a forceful framework in which to reexamine existing administrative, organizational and service concepts present in libraries. Beneath the glamor of flashing lights, magnetic tape and TV consoles lies an orientation in approach which has been presented in many forms. The systems process is not dependent on the machine but is a more precise application of organized common sense. A system can be generally defined as a collection of objects and attributes related according to some selection criteria. This Baconian concept is the same fundamental basis underlying the construction of classification schemes.

The systems process involves attempts at isolation of conceptual processes into an organized framework within the state of organized creative technology. Accepting the definition of technology as the "useful application of knowledge" implies coverage of a broad continuum from creative innovation to commercial marketing and use. *A priori* examination of many system projects leads to isolation of five interdependent processes problem definition, selection of objectives, systems synthesis, systems analysis and systems evaluation. Problem definition includes the identification of requirements of users and examination of the many ways in which the users interact with their environments. This has been widely attempted in libraries during the past decade, but the use studies have rarely been used. No one seems to believe factual evidence which contradicts, in some cases, intuitive judgment. Certainly librarians have been reluctant to accept factual evidence of use preferring to state that they "know what the users want and how the users use the library". Selection of objectives differs from *ad hoc* policy in that the ultimate objectives are isolated as goals irrespective of the methods by which these goals may be achieved. Personal bias obviously is operational, thus selection may be more accurately stated as selection of reasonable objectives, although any goals which are unreasonable will be identified in later stages of the systems process. Systems synthesis involves the development of methods of achieving the identified goals, again reasonably biased in the sense of slanted to those systems which have some prospect of achieving goals. Systems analysis in this context, which is *not* the usual use of the term as it appears in library literature, involves the detailed description of components of each system, the processes involved, and the relationship between processes, components, and relationships themselves in sufficient detail as to permit relative evaluation in systems evaluation. Systems evaluation involves narrowing the consideration of alternative systems to those which appear to be the most feasible given the environmental constraints under which the system is to become operational. It is apparent that the processes are not mutually exclusive, occur in hierarchies dependent on priority, and form a cycle of events which take place in the examination of methods of achieving goals.

The systems process cannot be considered as an independent entity but must be considered an integral part of the planning,

research and development processes associated with administrative action within an organization. Problem definition and systems synthesis, in fact, are fundamental parts of the research function. Choice of objectives and systems evaluation interact with administrative decision-making and the entire systems process extends into the development effort by way of feedback monitoring and field testing involved in implementation which, in itself, may require further research and further recycling of the entire process.

The value of the systems process lies in its application and in the attempt to further isolate the processes involved in an objective manner. This in turn requires a change in thinking, a change in orientation to the entire administrative process. Simple designation of one or two persons as "systems librarian", "librarian systems analyst" or "librarian programmer" does not achieve the reorientation vital to the concept of the systems process.

The systems process does not replace administrative judgment. It is an attempt to define issues and alternatives clearly and to provide administrators with a meaningful study of the relevant facts and implications of alternative choices made under uncertainty so that they can exercise well-informed judgment. In effect, it is a replacement of the "seat of the pants" approach to management based on gathering expert opinion and deriving intuitive judgment with a clear and precise examination of the problem requiring a decision, the alternative methods of solving the problem, the implications of the solutions on the overall long-range goals of the organization and presentation of alternative methods which may be feasibly implemented to achieve a consistent pattern of administrative action.

It is clear from the description of the systems process that it involves no new concepts, and certainly is not dependent on the use of the computer. The computer has aided in the development of the process in that planning for the application of data processing devices and methodology in the library requires even more precise cycling through the same processes at an absurdly detailed level. Some librarians may justifiably claim to have been following the systems approach for a good many years. These, however, appear to be in the minority. The systems process merely states the obvious: that good administrative decisions are based on clearly defined objectives and alternatives with all of the assumptions, factors, calculations and judgment laid bare so that all interested parties can see exactly how the conclusions were derived, how the information provided was used, and how the various assumptions influenced the results. In addition, it provides an organized method of achieving these aims.

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# PLANNING FOR THE SECOND CENTURY

## an approach to library planning in theory and in practice

A. H. MacDonald

In 1867, as the British North American colonies were preparing to confederate, the Rev. George M. Grant launched an appeal to establish a library for the forty-nine year old Dalhousie College. In November, 1967 during the Centennial of that Confederation, Dalhousie moved into another era by calling tenders for the Isaac Walton Killam Memorial Library.

It is with this building that the University Library plans to meet the challenges of the future and it is partly because of this building that Dalhousie University moves with some optimism into the second century. When completed in late 1969, the 240,000 sq. ft. Killam Library will be a fitting tribute to one of the University's principal benefactors and will become its principle communications and information center.

Since a building project of this magnitude is not embarked upon without a substantial planning effort, it was felt that our experience might be useful to those who are embarking on similar journeys.

*The Philosophy*

A library is just not another building. It should in fact be an embodiment of the educational philosophy of the institution, its attitude to students and faculty, to learning and research. With this in mind, any librarian anticipating such an undertaking as a new central library and communications center should carefully examine not only the functions of existing operations but also the general philosophy of his university and of library service in the university setting with particular reference to future needs and aspirations.

Such a golden opportunity comes only once in a generation. Unfortunately, the librarian too often sets his sights too low. Too many new libraries are built as solutions to old problems. Only if an ideal situation is sought and one dares to dream the "impossible dream" can one achieve a workable reality.

When written communications finally evolved into portable form, libraries came into existence. It was thought at that time that great libraries, such as that of Alexandria, could obtain and preserve all written knowledge. This possibility was theoretically valid until shattered in the fifteenth century by printing, the mechanization of the written form.

Since that time, new mechanical developments have continually furthered the proliferation of the written word while man's continuing development of the mechanical has introduced a growing array of new communications techniques including the audio-visual and electronic media. These newer techniques are beginning to play an ever increasing part in our efforts towards intellectual attainment and recreation. At the same time, they have com-

pounded the problems of the librarian, as preserver and as organizer and retriever of knowledge.

Whatever the final answer, the inroads of these media upon the reader's time should serve to impress everyone that there is a unity among all the communications media. As purveyor of knowledge in printed form the librarian, through the library, is strategically located and wonderfully equipped to provide the unifying vehicle for the new challenges now appearing. Libraries should be active, broadly-based resources operating in support of our teaching and research programmes. In the library, the librarian must blend effectively all the relevant advances in modern technology without sacrificing the traditional library features which remain valid.

From the planning point of view the biggest problem is the future. Who can guess exactly what it holds in store. If the building and library developments of the last fifteen years are taken as a portent of things to come, the library which will service the next generation will differ radically from the library of today. We have come a long way from the era of the library as a monument in Gothic.

The burgeoning technology is only one aspect to be considered. Will the student explosion continue? Will curricula become even more flexible? Will our faculty continue to grow in size and interest? Are any traditional teaching methods immune to change? How will adult education and extension work develop? What forms will future inter-library co-operation take? Will book production continue its upward spiral? Will government involve itself even further in the education process?

These questions are but a few which have some bearing on library development. Because the movement for experimentation and change continues to gain momentum, there are only ephemeral answers to these questions. A new library building should reflect this state of flux. The librarian should provide systems and capabilities which allow for continual adaptation to developments. To use the threadbare cliche of the library planner, everything must be flexible.

*The People*

The library is more than a conglomeration of steel and concrete, furniture and books. The essential ingredient is the human factor, the people of the university community, the people of the social community. The library is their workshop. It must be a tool to allow them to seek intellectual development at their own speed in surroundings compatible with their needs. The library building which is not built first and foremost for its community is better not built at all!

Every community differs. The first task for the planner is to discover the nature of his constituency. Who are the people? What are their needs in a library context?

*The Program*

The planning of a new library is initially the problem of many people with a variety of backgrounds including Board members, faculty, administrators, librarians, consultants, architects, campus planners and even students. The function of the program is to give this group a statement of the library needs of the institution, to be a vehicle to gain approval of these needs and to assist the architect in transforming these needs to realistic proposals.

The program should be written mainly by the librarian or library consultant with the assistance of the University planning and operating officials. In preparing such a document, visits to institutions with outstanding new library buildings can only result in a better product. No librarian should ever be ashamed to utilize the experience or ingenuity of another institution if it will enable his own institution to give improved service.

Once the program has been written and accepted the consideration and often the worst hazard is the *Site*. What size is it? What shape? What are the geotechnical peculiarities? How does it relate to the campus pattern? Are there any limitations because of the style of construction? The fewer limitations the better.

The other essential ingredient for achieving the dream is to design the building from the inside out. One's goal here is to take the essential service and mechanical decisions and combine them with the resultant variety of staff and user traffic patterns and then create the optimum arrangment of operational faculties so that every operation is executed with ease and efficiency in the shortest time and travel distance with as little interference as possible among operations. In short, the goal is the best mix of people and place. Although there is no perfect system, it is possible to plan a very efficient flow and work pattern close to these specifications.

Once the matter of site and other limitations has been settled, there remain three basic types of planning decisions. There are the service decisions, the mechanical decisions and the arrangement decisions. All of the decisions will influence the final pattern of the building.

*Service*: The service decisions should be made as the written program is being developed. Some of the questions to be covered at that time include:

—How many users of each type must be served immediately and eventually?

— What is the operating structure, centralized, divisional or departmental?

— What is the working arrangement within the library?

— What will be the nature of Technical Services?

— How much inter-library co-operation is planned or forseen?

— How large is the collection to be?

— Should the collection be integrated with service areas or kept in a separate stack?

— Should collection access be open or restricted?

— Should seating be in reading rooms, or at the various types of individual seating, or a mix of both?

— What form will access to the building take?

— How should internal traffic be controlled?

— What of the black box? Will there be requirements for computer facilities, data processing, teaching machines, telex, telefacsimile equipment, etc.?

— Are non-library areas to be included in the building?

*Mechanical*: As one is preparing to implement the program many structural and mechanical questions are brought up by the architects and engineers. Many of these purely technical decisions are of fundamental interest to the librarian. Some of the questions that may arise include:

— Is construction to take the traditional or modular approach?

— Is the building to be air-conditioned?

— Are windows required? If so, in what arrangement?

—What are the restrictions of the local building and fire codes particularly for stairs and plumbing?

— How are the books to be arranged?

— How are the people to be arranged?

— How many floors are required?

— Is vertical transportation to be by stair or elevator or both?

— What are the space requirements for mechanical services such as airconditioning, heating, elevators, electrical system, etc.?

— How will building maintenance be handled and what space will be required by these services?

— What type of floor covering is to be used?

Of these one of the most critical for the library is the modular aspect. By its nature this decision will have a major effect on the layout of the building.

There are two elements in the *Modular Approach*. First, all weight of the building is taken by a system of regularly spaced columns throughout the structure. No bearing walls are used. Secondly, all fixed interfloor services such as stairs, ducts, elevators and plumbing are clustered in one or two central cores. All other floorspace in the building is free for whatever applications are required at the time.

The distance between the columns may differ for each axis. From the point of view of the librarian this figure should create space which allows the integration of the basic shelving measurement, at the same time allowing 3' aisles between the stacks. Architects have expressed a preference for a multiple of 4½' which is ideal as it allows a combination of both requirements. The initial proposal for the Killam Library was 27' x 31½' which was later revised to 27' square module utilizing columns integrated with the stack structure. This has allowed a very economic assignment of space.

*Arrangement:* The evolution of a final pattern is by no stretch of the imagination a simple task. Over a period of months literally hundreds of permutations and combinations of arrangements can be drawn up, discussed, improved or discarded by the librarians and the architects. Even the supposed final arrangement will be subject to dozens of refinements before the building is finished.

In arranging a library layout, *three-dimensional building block approach* is very useful. In this method one starts with an arrangement of core functions and then gradually builds a plan by clustering other categories of services around, above and below the core in an advantageous manner.

At the same time the size of the various areas is manipulated to create arrangements compatible with space requirements, space available and the patterns already established. There seem to be at least six distinct blocks for consideration: 1. Primary service core group. 2. Secondary service core group. 3. Mechanical group. 4. General services group. 5. Permanent non-library areas. 6. Temporary non-library areas.

The PRIMARY CORE GROUP is made up first of those focal points used by all library patrons. This group is ideally located on the main floor. This includes such areas as the public catalogue, the information desk, circulation point, current serials and in some cases the reserve book operation. The other core group, the stacks and seating facilities, can be considered later. This approach will vary a bit if the book collection and service areas are to be integrated.

The starting point when developing the arrangement of the core services should be the entrance and lobby, for this relationship is extremely important. Too often the undergraduate, particularly the freshman, is intimidated by a large complicated facility which he is only beginning to learn to use. Substantial effort should be expended to devise an inviting entrance and lobby which should allow the patron to quickly discover the location of all focal points without any inquiry or searching.

The second category of areas to be considered in the core are those directly supporting focal points. These *support areas* include workrooms for Serials, Circulation and Information Services and often include the Reference and Bibliography Collection as well. The areas must be directly accessible from the focal point concerned, although the workrooms should not be particularly visible. In the ideal situation, a third group, the related aspects of *Technical Services* should be closely tied in to the appropriate work areas.

On the surface these three levels of facilities in the primary core would seem to fall together fairly easily. Unfortunately, as any librarian knows, these areas are not independent. Each function (e.g. Serials) is a complex of many departments and services which are themselves subject to many inter-relationships on all levels and between levels.

The SECONDARY CORE GROUP includes the main book collection, the various types of patron seating and such support areas as public conference rooms, patron lounges and smoking areas and possibly audio-visual and map services. It is the arrangement of this core group that determines the number and size of floors beyond the main floors. These support services should be clustered in such a way to allow arrangement of the book collection in an easily understood manner.

It is while the primary and secondary core groups are being manipulated that the many fundamental service and MECHANICAL DECISIONS made earlier should be implemented. Close liaison with the architects and engineers at this stage will allow adjustment of these requirements to suit library needs. However once the mechanical layout is frozen it becomes the most inflexible aspect of the building and usually requires major reworking and delay if a change is requested.

One of these closely related decisions is *traffic and vertical transportation.* An advantageous traffic pattern uses stairs and/or elevators to siphon off the various types of traffic not requiring the focal points before these two flows become congested in the vicinity of these points. Interference from a third flow, staff and book traffic, can be avoided by inclusion of a separate passenger elevator in a place convenient to the circulation department.

In the same vein, the decision concerning *control* must be implemented at this stage. If book stacks and study areas are to be unsupervised and open to all patrons, a single controlled exit point is essential. The problem is compounded if there are to be non-library areas in the building for access to these areas from within and without the building should be possible without minimizing the effectiveness of the control point.

The fourth group, GENERAL SERVICES, are those which do not have specific locations requirements. The first of these is the *Administrative Services* which can be placed anwhere in the building on a main traffic artery, although a main floor location would be most advantageous.

All the *public image facilities* such as auditoria, special collections, archives, exhibition areas, etc. also fall into this category. These areas should be readily available to the visiting public but at the same time are best placed outside normal library traffic patterns and in some cases access should be available outside the control pattern.

Other general services include closed book storage, general storage, staff lounge and eating facilities, maintenance facilities and electrical and telephone control boxes.

FURNITURE AND EQUIPMENT:
Throughout all stages of planning, furniture and equipment requirements must play an important role. Basic decisions such as desk, table and carrel sizes, shelving types, minimum aisle widths and the like should be made before serious work begins on the service core layouts. Only when this is done and experimental layouts are tried can areas be created which are adequate to the established requirements.

As planning progresses each type of furniture should be thoroughly investigated to decide whether custom or standard units should be specified. At this stage a small investment in samples and mock-ups can often mean better and often cheaper equip-

ment and arrangements in the finished building.

NON-LIBRARY AREAS – Most libraries which are planned with adequate space for the future will require all their space immediately. Very early in the planning stages, the planners will be subject to many pressures from other departments in the University to provide space for non-library uses. The library is a choice location. With most University facilities so overcrowded it would be impolitic for the librarian to completely oppose such allocation of space. On the other hand it would be improper if he allowed the prime function of the building to be subverted.

Pressures will come for two types of accommodation. First, there are those who seek *permanent quarters* in the library. This group could include general university services such as the language laboratory, photographic services, the computer center or classrooms which are always needed; image-builders such as theatres and art galleries as well as academics who wish the convenience of conducting their own business within the library. Libraries have also been known to contain cafeterias, museums and faculty clubs.

If such space is to be allocated, the librarian has two duties. First and foremost, he must assure that these faculties in no way interfere with the security or integrity of the library operation. Ideally there should be no contact between the two unless it can be handled outside the normal library control patterns. If possible the general operation of the builing as a whole should be handled through the librarian's office. Also if it is possible, the planners should try to limit these tenants to those whose functions and activities relate to or supplement those of the library as a center for research and communication.

The second group are those who seek only *temporary use* of space that is excess to initial requirements of the collection. These can be a great problem for allotment is often made on the basis of need. Before becoming involved with discussions of such space there are a number of things which should be well established.

The critical word is "temporary". The prime duty of the planning team is to plan a library as a final product. Therefore, any temporary uses must be subject to these factors as well as the above mentioned control limitations. With these understandings, the librarian should determine what space is available and determine how long the space can be freed for non-library uses. Then he can arrange for a user whose requirements are parallel to those of the library.

DETAILS—-Once the general planning has been accomplished the planning group is faced with an area of endeavour which can mean the difference between an adequate library and an outstanding library. This is detail. It includes the telephone system, the key system, copying machines and a thousand and one other items ranging from coathooks to clocks, waste disposal to pencil sharpeners, building directories to door mats, water fountains to electric outlet locations, vaults to the card catalogue and so on and so forth. The exclusion or inclusion without thought of any of these details can do nothing but harm to the overall picture which we try to create in the library.

KILLAM MEMORIAL LIBRARY:

To illustrate how these principles were applied to the project at hand we set out this abridged history of the planning phase. Development of the library suffered several setbacks before finally getting underway. The first step, as is often the case, involved investigating the possibilities for expansion of the existing inadequate and inefficient building. It soon became obvious that this was not the proper course to follow and plans were temporarily abandoned.

The next setback was the departure of the University Librarian. During the year when this post was vacant the responsibility for planning the new facility was in the hands of a Library Planning Committee and the three senior departmental librarians. Unfortunately, none of the librarians or committee members had any experience in planning a library.

The main contribution of this group was the preparation of an initial program of anticipated requirements. They were assisted by two brief visits of Dr. Stephen McCarthy, Director of Libraries at Cornell University, who acted as Library Consultant. This document was inherited by Mr. Louis Vagianos when he was appointed Director of Libraries in May, 1966.

After the new document had been reviewed, a statement of philosophy and a new statement of requirements for the library system was prepared. This dealt with the community to be served, the function of the library system in the local context, the implications of future developments, and the functions and interrelationships of the various areas of the building. Once these requirements were established, the business of planning the actual structure could begin.

The first ingredient was the COMMUNITY. We were expected to serve a projected community of 8,000 students and 750 faculty by 1980. This involved:

1. Undergraduates in Arts and Science requiring pleasant surroundings for course-orientated and casual reading as well as a smooth introduction to the world of research for the more serious members of the group.

2. Faculty, research workers and graduate students requiring different, more private facilities for their work and expanded resources for their research.

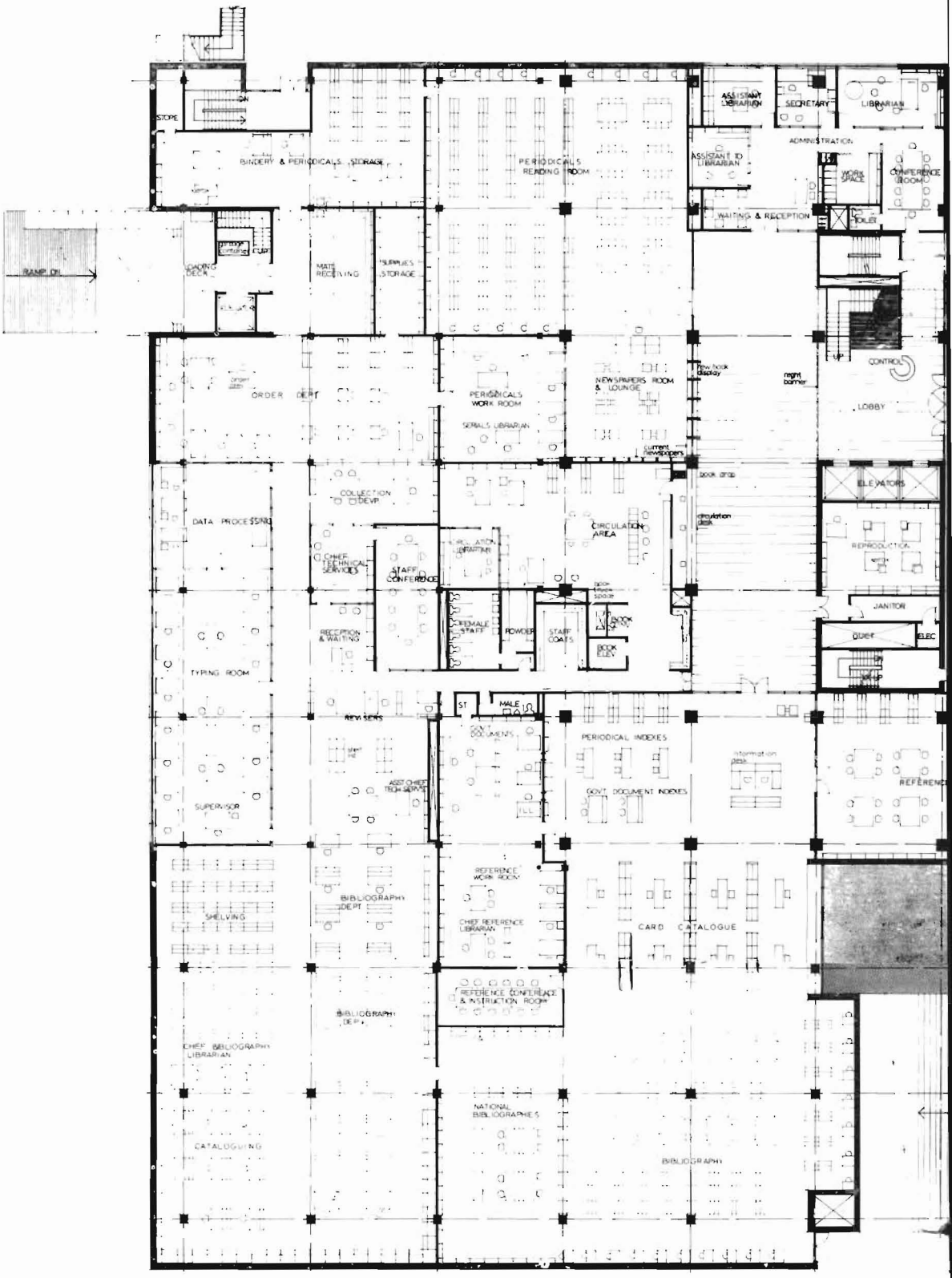
3. Students in medicine, health professions and the law needing service to supplement that received from specialized professional libraries.

4. Consideration of the special needs of the general public in the city, the province and the region wherever possible.

To support this community it was estimated that the new library should eventually hold some one million volumes in an open stack arrangement serviced by a full-time library staff of 150 aided by 75 part-time students assistants. An eventual seating capacity for at least 2000 was specified with emphasis placed on provision of individual study areas.

Next came the group of fundamental SERVICE DECISIONS. The Dalhousie University Library System will eventually contain three basic segments: the University Library housed in the Killam Library; the Sir James Dunn Law Library in the Weldon Building and the W. K. Kellogg Health Sciences Library in the Sir Charles Tupper Medical Building.

The Science Division of the University Library will initially be housed within the Killam Library until space becomes available in the new Life and Physical Sciences buildings now being planned. Central processing will be provided in the Killam Library for the University Library and will be available to the other libraries where required. It is also expected that the library will become a referral center for the prov-

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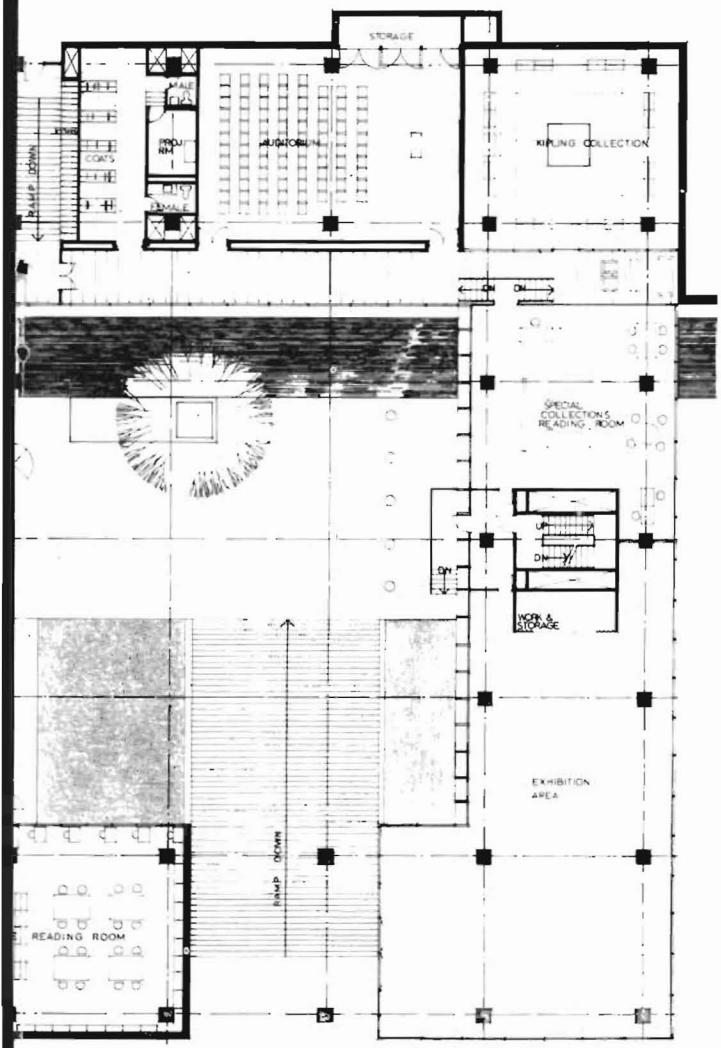
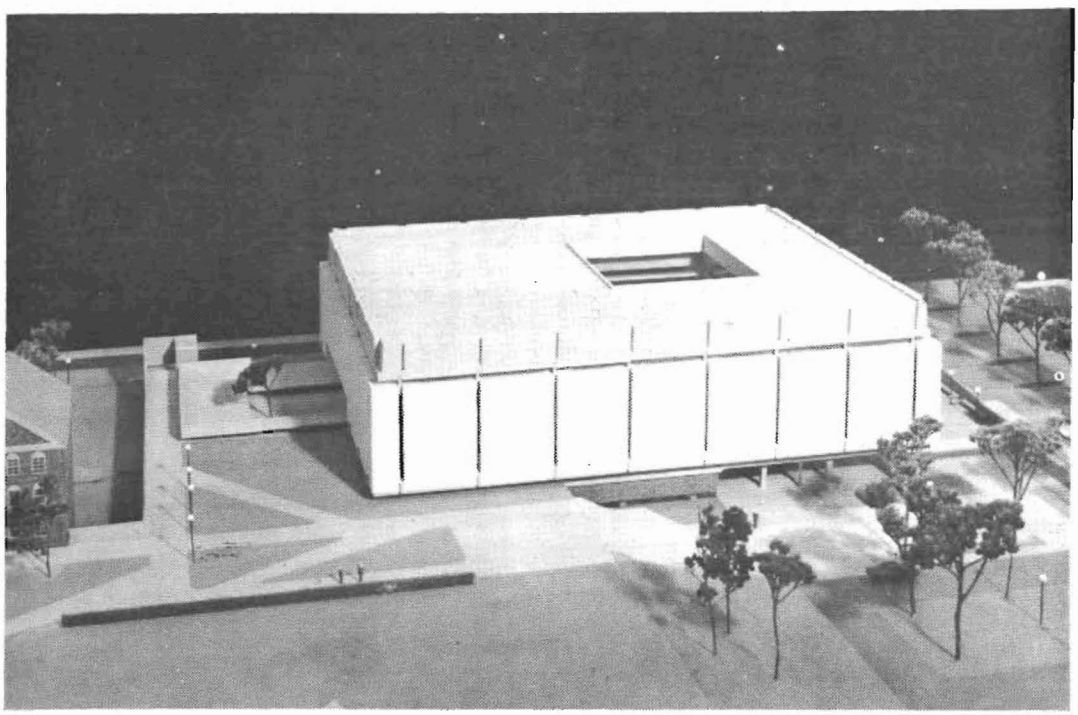



# KILLAM MEMORIAL LIBRARY

Dalhousie
University
Halifax, N. S.

Ground
Floor
Plan



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ince and possibly the region via a modern communications system such as Telex, LDX or direct "on line" computer access.

Fortunately there were few insurmountable hazards to hamper our quest of the "impossible dream". From the beginning the Killam Library has been a librarian's building, with the planning group in constant contact with the architects as the plans were evolved.

In our site we achieved the first of the impossible dreams. The location, on the north west corner of Le Marchant Street and University Avenue, is at a pivotal point on the master plan of the campus. It is equally accessible to the Arts, Science and professional activities. The only limitation placed on the 275' x 375' area was one of height. The building abuts on the University's main quadrangle and was to be limited to about 70' in height in order to relate to the surrounding buildings.

Without site limitations it was possible to achieve the next dream, to work in close concert with the architects and design the building from the inside out. This was manifested on the ground floor when we attempted to place all the functions of the PRIMARY CORE GROUP on the ground floor with access from a central lobby. This allows all focal points to be seen as soon as one enters the lobby.

According to the building block principle we placed the workrooms and associated aspects of Technical Services in juxtaposition to the focal points and still had sufficient space to include the rest of the department. This allowed the arrangement of a very efficient production-line-like flow within the department which also properly supports the focal points and their workrooms.

Even with this amount of space committed there was adequate space to locate two of the GENERAL SERVICES, the Administration group and the public image group including an 80-seat auditorium, Special Collections, the J. MacG. Stewart Kipling Room and a general exhibition area.

These space committments utilized a ground floor area of nearly 50,000 square feet. After much discussion, sketching and revision a viable arrangement which fulfilled the preset conditions was made possible by the introduction of a rather old positioning of all these areas around a architectural technique. This was the central open courtyard. With this decision the character of the building was finally established.

To accommodate all our requirements properly, the 90' square courtyard was offset from the center of the building. This had the effect of creating a number of buildings within a building. This was most evident on the ground floor. All focal points, support areas, the entire Technical Services area and the administration offices were grouped around the main lobby which in turn opened onto the courtyard. This west wing measures some 200' x 300'.

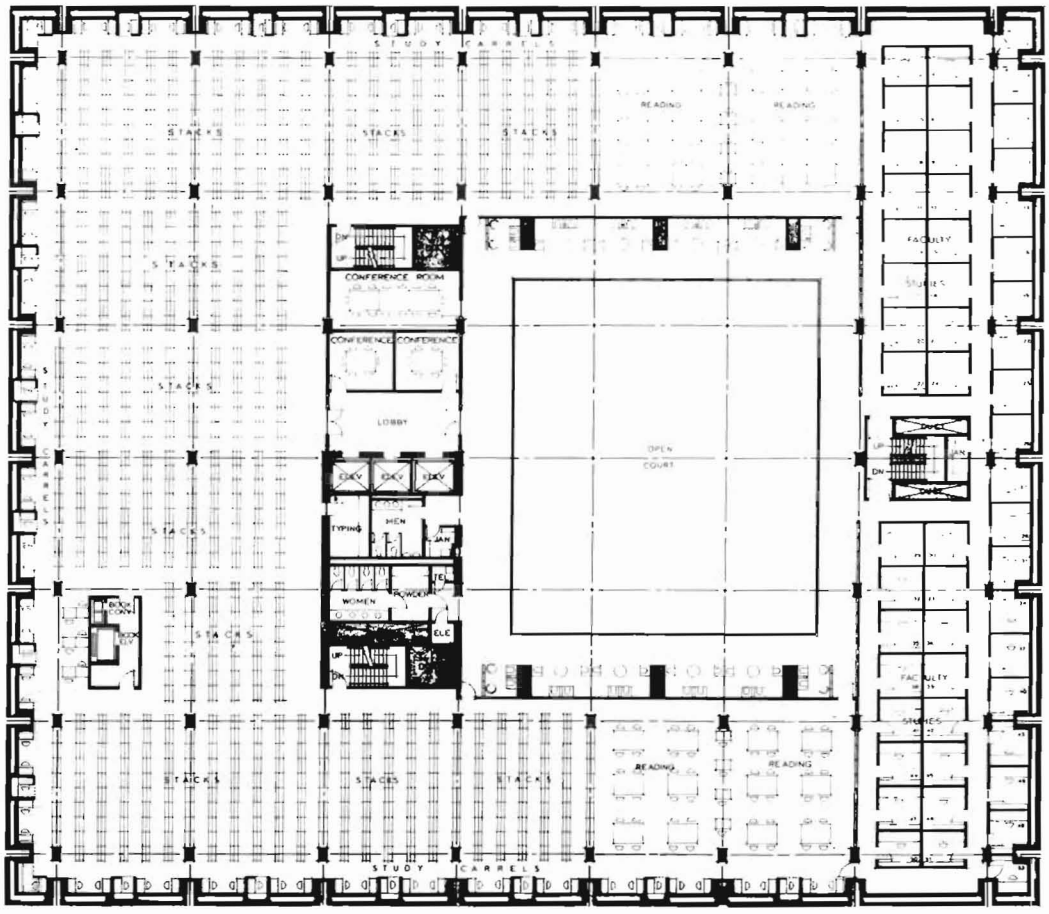
The other three wings contain inviting main entrances from both north and south as well as all the above mentioned image group including an enlarged exhibition area. It is hoped that patrons will be drawn to the library and directed to the focal points by the careful use of lighting and subtle directing forces such as varying textures in the courtyard floor and a lighted pool running from the exterior into the main lobby.

Closely related to this arrangement was the development of the vertical traffic and CONTROL pattern. The main elevator group has been placed just inside the main entrance from the courtyard to siphon off non-focal point traffic. In this area as well is a control desk which patrons must pass if they use the regular exit pattern. Fire stairs are for emergency use only. Also, all the fire exits are within the view of the control desk and are linked to an annunciator panel at the desk which identifies the

stair in use. Access to the whole special purposes wing is outside the control point thus making it readily available to the visiting public without interference with regular control.

With the character of this podium floor established, the architects turned their attention to the upper floors and the SECONDARY CORE AREA. The situation called for the bulk of the book collection and student seating in a structure under 70' in height.

The solution was a 160' x 150' four-floor, reinforced concrete building with a special cantilevered ribbed structure to accommodate book stacks. This is in effect a second building with its own ventilation and support systems floating on a necklace of glass. A roof section with lines compatible with the neighboring Chemistry building was similarly treated with a clere story effect. To minimize the bulk of the ground or podium floor it is to be partially built in to a gentle slope on the site. Much of the large west wing will be affected by this arrangement. A plaza with walkways, grass, planters, and benches will be constructed over much of this wing. The rest of this wing will be camouflaged by an outdoor reading patio projecting out from the second floor Reserve Reading Room. A basement was also added.




typical stack floor

A critical decision made about this time concerned the provision of natural light. For many reasons including heating and ventilation problems, exterior aesthetics and carrel arrangement it was decided to use a completely glass-lined courtyard as the principal source of light for the upper floors. The exterior walls will be constructed from pre-cast concrete panels separated at 27' intervals by full-height, foot-wide, strip windows. Where possible, glass was introduced on the ground floor. From nearly all of the areas in the building a patron or staff member can get the psychological lift resulting from a glimpse of natural light. This is greatly assisted by the clerestory collar over much of the ground floor.

When the architect was formulating the design for the upper floors, there was very close consultation with the librarian with regard to the main aspects; shelving, seating and support areas.

STACKS — For academic and economic reasons it was decided to allow completely free access to the book collection which is to be arranged on open stacks with a general capacity for 800,000 volumes. A concrete rib extends down from the concrete slab above each row of book stack for fastening of the steel stack supports. Using this full height support allows the inclusion of two extra shelves to provide readily available dead storage space for another 200,000 volumes. Closed book storage for over 100,000 volumes is to be available in the basement.

The stacks will be lit by fluorescent strips mounted on the underside of the exposed concrete slab and running parallel to the the range of shelves. This in conjunction with the full height stacking forms a natural baffle and reflector for the lighting.

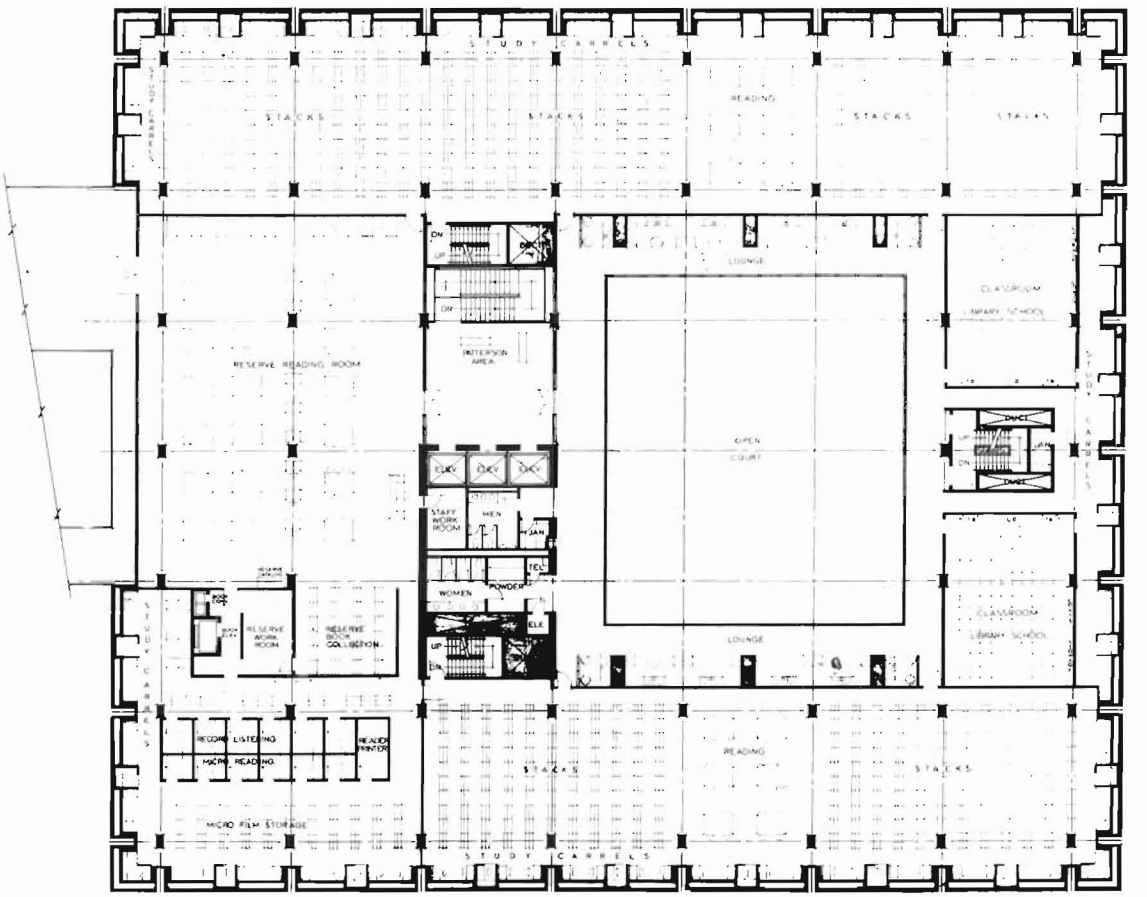
The use of open stacks should encourage the very important browsing function of the Library. A reader often learns more by accident than by design in his travels through the stacks to locate a specific item needed for his research. Although the value of this type of experience cannot be measured, it is essential and should be encouraged.

However, the stack areas are planned in a manner that will make it possible to convert all or parts into controlled areas at a later date, if the situation should ever be necessary. This has already been done to allow the inclusion of the Library School, faculty studies and the staff lounge on the upper floors.

On the ground floor all shelving is free standing and includes many special features such as fixed sloping shelves for items such as CBI, full width pull out shelves, work counters and full height stack dividers.

SEATING and SUPPORT SERVICES— Student study habits vary greatly and call for study areas ranging from the very public to the very private. All should be provided if possible. On the main floor seating will vary from tables and carrels to lounge units. On the upper floors all types of space will be provided.

The largest area on the upper floors will be the 100-seat Reserve and Undergraduate reading room. Access to this area will be via a grand staircase which will divert much traffic from the focal points and main passenger elevators. This room will bear the brunt of general undergraduate use as it will house all materials assigned for required course reading. This collection is a self-service operation which has proved successful in cutting down delays for students as well as introducing a limited browsing situation. This function is a controlled self-contained independent unit within the library, in fact, a library within a library The staff of the Reserve Room will also control the microtext and record collections as well as the supporting




modified stack floor

single seat viewing and twe seat listening rooms. Stack capacity for 8,000 records and 30,000 reels of microfilm is provided as well as microcard storage. The lights in the viewing rooms are equipped with dimmers to provide conditions suited to individual taste.

The main seating unit on all the upper floor is the perimeter carrel. There are some 400 open and over 100 closed carrels arranged in groups of five per module. The four open carrels are divided by a closed carrel thus making it necessary to share a private study area with only one other person. Numerous open carrels are to be found in many other areas throughout these floors. On the slightly smaller fifth floor all carrels are larger and closed. It might be noted that all heat, light and ventilation services are located in the ceiling structure. Thus it is not necessary for any floor or perimeter space to be given up for these services.

On the fourth floor there are 52 faculty studies. These are not offices but are work areas large enough to provide a researcher with a large desk area, space for a typewriter, microtext reader, a file case and 12 bookshelves. They will be assigned on a semester basis to faculty members

engaged in research projects. For the sake of privacy, they will not be equipped with telephones.

In order to decrease the amount of interruption of patrons' support services for the library users are clustered around the central courtyard. This includes lounge space with some 90 comfortable seats on the north and south sides in areas capable of supporting smoking as well as the central core on the west side which will include elevators, twelve conference rooms for individual and group study, typing rooms, washrooms, public telephone, and water fountains. All these areas are out of view of study areas.

NON-LIBRARY AREAS – There are both permanent and temporary non-library areas within the Killam Memorial Library. Permanent tenants are the Computer Center in the basement which is outside the control pattern and the Dalhousie School of Library Science which is on the second and third floors and is subject to the control pattern.

All temporary space allocated has been arranged within limitations placed by the planning of the building as a controllable integrated unit without regard for such temporary arrangements. For example, the fourth floor has been designed as a typical floor. The stacks however will be stored rather than installed. In their place will be a group of some 100 offices for the use of the Faculty of Arts for a period of five years. The area can be returned to full library use with a minimum of time and effort.

On the same pattern, the fifth floor is to be used as a combined science library for about three years until new quarters are available in planned life and physical sciences buildings and part of the space in the basement which is slated for the Computer Center will initially be assigned to the University Language Laboratory.

THE BLACK BOX – This Library will have the capacity to enter the electronic age with a minimum of alteration. The University Computer Center will move from its quarters in one of the present library buildings to the basement of the Killam Library.

All Library areas which have future data processing and computer applications are to be linked by conduit to the Computer Center. These areas include Circulation, Serials, Reference, and Technical Services. Technical Services will also have a data processing room in its own area. It is hoped that the order and circulation departments will have operative EDP programmes when the building is occupied.

With developments now leaning towards the eventual installation of some form of computer-operated or controlled individual study equipment, a conduit structure will also be included to allow the use of these electronic aids in all perimeter carrels as well as conference rooms and classrooms.

Construction – On January 12, 1968, a contract for $6,098,700 was let to Fraser-Brace (Maritimes) Limited for the Killam Library. (The price does not include cost of furniture.) Construction is now under way with completion scheduled for summer, 1969.

Architects: Leslie R. Fairn & Associates, Halifax. Structural Engineers: D. B. Dorey Engineering Ltd., Halifax. Mechanical Engineers: D. J. Morris Engineering Ltd., Halifax. General Contractor: Fraser-Brace (Maritimes) Ltd.

# THE RABBIT HOLE

". . . down went Alice after it, never once considering how in the world she was to get out again." Alice in Wonderland.

The Rabbit-Hole is to be a regular feature of the APLA Bulletin. We invite contributions from readers and we offer contributors the same latitude (and longitude) as the Rev. Dodgson afforded Alice. Any reader who feels himself falling through the earth and approaching the Antipathies is urged to put it all down on paper and send it to the attention of the Editor. "Perhaps (you) shall see it written up somewhere."

## some thoughts on librarians, libraries and automation

*During the past few years I have been directly involved with information systems and information retrieval and indirectly with libraries and librarians.*

*From a number of conversations I have had and from my own personal convictions, I suggest a few items which may be useful for discussion by readers of this journal.*

– Present library systems can be considered obsolete from the point of view of service provided, and in view of current technological development.

– The present rating of libraries by number of volumes and similar yardsticks is ridiculous and should be scrapped. If any yardstick is needed, it should be by service and by other criteria.

–In that library service is often terrible, weeks sometimes being required to obtain certain volumes, concentration on service aspects should be considered important. In addition to book loan requests this is also true of the ability to search for reference material.

– Automated systems developed to date are not, according to criteria, entirely satisfactory and thought should be given to developing a 'best' system utilising new ideas plus useful items from existing systems.

–There is little to be gained from extending present methods of cataloguing and retrieval to an automated system; rather a new look is required.

– Even current technology makes present operations obsolete and technology 'on the horizon' makes any idea of automating present thinking somewhat ludicrous.

–The Library of Congress cataloguing mechanism is cumbersome and unable to cope with advances in subject material. A new approach to the problem is urgently required.

– There is no shortage of library resource personnel, only a measure of their talents and abilities.

– Serious thought should be given to full text processing using optical recognition of documents and statistical cataloguing. This is particularly important as it would be desirable to recatalogue many existing books on some new basis.

– There is a gross waste of librarian talent through duplication of cataloguing.

Coordinated cataloguing across the country would relieve the librarian shortage and lead to better service.

— That a study of the new role of a librarian in an automated environment should be conducted as soon as possible.

— That a pilot automated system should be set up using optical scanning, full text processing and sophisticated retrieval techniques.

— That reviews and cataloguing be concentrated in centres of excellence and distributed on a coordinated basis across the country.

— That studies be made on the possibility of setting up a roster of Canadian scientist and technologist interest, with a profile, so that selective dissemination of information can be implemented. This will take cognisance of the fact that a vast volume of material presented to the scientist may result in his missing items of interest.

— That a study of the use of cathode ray tubes be done with a view to determining the economics of retrieval with these devices for on line library service as offered to manual and batch oriented systems. This study should include alternate search devices.

— That the availability of high speed transmission facilities should be studied and a determination made of its effect on linked library systems.

— That potential fast reproduction services should be investigated and their economy determined, particularly for linked computer networks.

— That steps be taken to develop a national coding system that can tie in with an international system.

— That a thorough cost study of using high powered computers be conducted, recognising the high unit cost of low powered computing facilities.

— That research into data structures for library retrieval be initiated, to be developed along with access methods.

— That any systems developed must be completely flexible to accommodate changing technology, concentration being made on generalised programming and generalised systems development.

— That if free search is desirable then a categorisation of subject is needed, particularly in areas where this has not been attempted e.g. Transportation, Computer Science. This should be in depth categorisation and have a thesaurus type structure.

— That a thorough systems study be conducted before any pilot system is implemented.

*Librarians should be directly involved in this development, but appear to be fumbling the ball, leaving it to the initiative of others. I am afraid we are going to see librarians go the way of the professional accountant. He, too, ignored the many opportunities available to him to resolve the pressing problems he was facing until it was almost too late to do anything about his situation. Immediate action is needed and must be initiated now!*

BERNARD A. HODSON

# OUT of the IN box

a sampling of notes from the library world.

Librarians wishing a demonstration of the new Polaroid CU5 Land Camera should contact Mr. Ken Anderson, 104 Newcastle Street; Apt. 4; Dartmouth, Nova Scotia.

EDUCOM, the Bulletin of the Interuniversity Communications Council is available to interested persons from the Reference Department; Dalhousie University Library, Halifax, Nova Scotia. The October issue is on The Computer and The Law, and the December issue includes an article on Educational Technology.

Recent attractive recruiting pamphlets include those from the Canadian Library Association and the Providence (R.I.) Public Library.

The Science Secretariat of the Privy Council has established a group for the study of scientific and technical information in Canada. The group, made up of representatives of industry, institutes of higher education, and government, is engaged in a survey of scientific and technical information services, the users thereof, and mechanisms for handling such information. Among the librarians in the Study Group are Harry Campbell of Toronto, Louis Vagianos of Dalhousie and Guy Forget of Laval University.

Atlantic Provinces Educational Showplace, an exhibition of communication media related to education, will take place in Halifax, September 12-14, 1968. At the same time, there will be a Conference on Education with outstanding lecturers discussing the applications of the media to be shown in modern education. Attendance at the Conference will be by invitation.

A joint meeting of Chemical Literature Division of the American Chemical Society and the Chemicol Division of Special Libraries Association will be held at Chemical Abstracts Headquarters; Columbus, Ohio on May 3rd and 4th. Topic for the meeting will be The Acquisition, Processing and Dissemination of Chemical Information. For further information, write Larry Besant; Asst. Librarian; Chemical Abstracts Service; Columbus, Ohio 43210.

On June 3 - 7, there will be a Continuing Education Institute for Health Science Librarians at Temple Buell College, Denver. Registration closes April 1st and inquiries should be sent to Medical Library Association; 919 N. Michigan Avenue; Chicago, Illinois 60611.

*Of interest to Reference Librarians*

*Using Reference Material Effectively.* Chicago, Field Enterprises, 1966. 16 p., which contains the proceedings from two conferences on Reference work: Conference on Creative Use of Reference Materials, Lincoln, Nebraska; Conference on Effective Use of Reference Materials, Coral Gables, Florida.

Suggested list of reference tools for children in Grades 1 - 8 compiled by Lillian Orsini in RQ v. 7, No.2, Winter 1967, p. 79-81.

A bill to establish in the U.S. Library of Congress a National Commission on the Technological Uses of Copyrighted Works was passed by U.S. Senate and referred to the House Judiciary Committee on October 12. Its purpose is to study and compile data on the reproduction and use of copyrighted works of authorship (1) in

automatic systems capable of storing, processing, retrieving, and transferring information and (2) by various forms of machine reproduction. The preliminary report is to be submitted within one year and the final report within three years of the effectice date of the Act.

(College and Research Library News No. 11, November, 1967, p. 276.)

AUTOMATED SEARCHING OF DISSERTATION ABSTRACTS – Available– University Microfilms Inc. at Ann Arbor, Michigan, have recently begun a new service called "Datrix". The service provides a computerized search of their files using key-word lists which describe the subject matter of all dissertations in their extensive collection under three main divisions: Humanities / Social Sciences; Chemistry / Life Sciences: Engineering / Physical Sciences.

Soon after a request form is sent to University Microfilms, "Datrix" mails the patron a bibliography of those dissertations pertinent to his interest.

Librarians who wish to avail themselves of the service should contact University Microfilms.

Some months back a teacher in the south of England asked her twelve year old pupils to describe "My ideal library." The Assistant Librarian reprinted some of them. We hope that the Assistant Librarian will excuse our reprinting these two without permission and will award some sort of prize to the authors:

I think most people keep away from libraries because of the way librarians look. You often see old ladies in wartime dresses thumping books with stamps befare peering at them through dusty spectacles to check for torn pages or late return dates.

Libraries themselves are often dismal places with wooden floors and neat rows of bookshelves cramped with dusty books people never read, and no talkng or silence notices stuck all over the bookshelves.

I think more people would go to libraries if the librarians were more cheerful and did not make such a fuss about small tears when people have been reading in bed.

A good way to brighten up libraries would be to carpet the floors and paint the walls with pleasant colours blending with the soft furniture, and there should be a room where you could talk about books to friends.

I find at my age that if you want to find anything out for schooi, you have to go to the library and write it out in note form, then take the notes home and write the information out in full. A most helpful addition would be someone who could help a person with their homework for children who are slow at picking things up.

David Goble Aged 12.

For the old folks there should be a quiet room where they can read in peace. The chairs could be more comfortable with cushions and blankets for the cold. A room for children who have homework should be in use, with a wide range of reference books. In the centre of the table there should be writing equipment.

On the librarian's desk there should be a book index with book markers. As for the librarians they could wear anythng from long dresses to hippie bells.

In another building there might be an animal laboratory where each person could observe an animal and keep a record of what they find out.

Every night there should be a social evening where young people could dance to pop music For the older people a music or dance night for them might consist of waltzes and slow music.

Joan Tucker, aged 12.

## Letters to the Editor

No letters yet. But we want our readers to know that we welcome your opinions, reactions and suggestions-and will print them if you send them to : The Editor, APLA Bulletin
Dalhousie University Library, Halifax, N. S.

# POSITIONS VACANT

### SCHOOL LIBRARIANS

Applications will be received by the undersigned for the following positions:

1 — John A. MacDonald District High (Five Island Lake)

1 — Duncan MacMillan District High (Sheet Harbor)

1 — Graham Creighton District High (Westphal)

Applicants should possess a Bachelor of Library Science degree and have had library experience. Salary dependant on Nova Scotia license and years of experience, in accordance with the Nova Scotia Provincial Foundation Scale.

C. P. J. Briggs,
Secretary,
Municipal School Board,
P. O. Box 90,
Armdale, Halifax Co., N. S.

### DARTMOUTH REGIONAL LIBRARY

Dartmouth, Nova Scotia

REFERENCE LIBRARIAN with experience required to head the Reference Department of a public library serving a city population of 60,000. New library building

Salary commensurate with qualifications. Benefits include CLA Pension Plan B.

Apply: Chief Librarian
Dartmouth Regional Library
Dartmouth, Nova Scotia

# THE LIBRARY
# UNIVERSITY OF GUELPH

The University of Guelph Library will move into a new central library building, integrating 3 divisional libraries and 20 department libraries in August, 1968. The new library, which represents the first two stages of a three stage building, has space for 625,000 volumes, individual carrels for 1,266 undergraduates 333 graduate students and 111 faculty members and cost $9,000,000.00.

Direct service to faculty and students will be provided through subject divisions of the library. Circulation control is automated and will not be part of public service functions. The Catalogue Information Desk is the responsibility of the Catalogue Division.

The University of Guelph Library book and periodical budget for 1968/69 will be in excess of $500,000.00, and the staff will number 105 positions. Automated procedures are being developed for most technical service operations, and now include serial cataloguing shelf-list conversion, and a documentation system for government publications and technical reports.

Professional Library staff members have academic status and participate in faculty association activities. Advanced study and research are encouraged with faculty conditions for sabbatical or study leave applying to librarians. Pension and other fringe benefits are those enjoyed by the faculty.

The Library invites applications from experienced librarians for the following positions, July, 1968:

1. **Head, Serials Division.**

This Division is to be established July, 1968, with responsibility for ordering, receiving cataloguing and automated processes for all serials except government publications. The present mechanized system produces both catalogue cards and a union list for serials and is to be expanded to include order, check-in and binding routines in 1969. Division staff size for 1968/69 will be 9 positions.

Qualifications: Degree from an accredited library school plus experience, preferably in technical services in a university library.

Salary: Minimum of $9,000.00.

2. **Head, Bibliographic Search Division.**

This Division is responsible for pre-order identification and pre-catalogue searching for all material added to the collection except government publications. A Copy-Larger camera provides instant copy for all items located in the National Union Catalogue or other sources. Division staff size 1968/69, will be 9 positions.

Qualifications: Degree from an accredited library school plus experience, preferably in university library cataloguing.

Salary: Minimum of $9,000.00.

3. **Subject divisional librarians:**

Social Sciences Librarian
Applied Sciences Librarian
Humanities Librarian

These librarians will be responsible for public service activities in these subject divisions of the central university library.

Desired Qualifications: B.L.S. from an accredited library school, Masters degree in the subject field involved, or an advanced M.L.S. degree. Five years experience is expected.

Salary: Minimum of $8,500.00.

4. **Assistant, Documentation Centre.**

Responsibility for public service and acquisition functions in the Documentation Centre, which includes government publications, political science and law.

Qualifications: Undergraduate degree in Political Science and previous experience in working with government publications. Degree from an accredited Library School.

Salary: Minimum of $8,500.00.

5. **Information Librarian.**

Responsibilities include quick reference and telephone reference service, initial interface with students and faculty, supervision of reader services desks in Fine Arts, Rare Books and current periodical area.

Qualifications: Degree from an accredited Library School, plus previous university library reference experience with some supervisory responsibility.

Salary: Minimum of $8,500.00.

Applications should be addressed to:

Mr. L. F. MacRae,
Chief Librarian,
University of Guelph,
Guelph, Ontario.