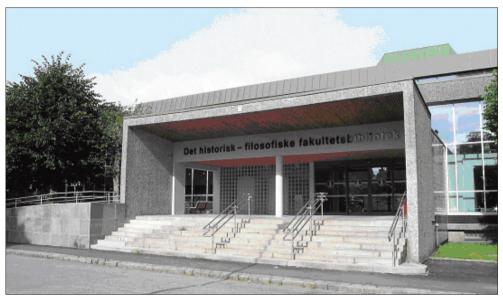# Modern technology – modern library premises

On the renovation and modernisation of the Arts and Humanities Library at the University of Bergen – how the recent progress in technology and concepts formed a modern library

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Main entrance, 2005. (Photo: Pedro Vásquez, 2005)

Introduction

The traditional book library as we know it is gradually disappearing. Modern technologies, like the world wide web and numerous other internet services, in short *the digital age*, is making its full impact. Together with modern technologies and the development of digital services, there is also a change in the concept itself of a modern scientific library. Libraries are no longer merely to deliver information to students and researchers, but to a larger extent than before to act as pedagogical and systematic mediators of information.

In August 2005 the Arts and Humanities Library in Bergen reopened, after the renovation and rehabilitation of the old University Library main building. This chapter aims at showing how the new digital reality, and the changes in

library management which follow from that, have influenced and given direction to our planning and reconstruction process and thereby formed the new Arts and Humanities Library in Bergen.

After starting with some words about what we planned for, I will say something about the history of our library, then proceed to the planning and construction process. I will then describe how our plans changed, before concluding with a section on what we got, our library of 2005.

What we planned for

Our original building, the old University Library, was a closed stack library building completed in 1961. This building was outdated in more than one respect. Today´s requirements in both construction and technology left us only with two options – either a brand new building, or a total renovation of the old one. During the 1990s several committees at our library contributed to an analysis of what functions we wished our modern library to have. On the basis of this analysis a large reconstruction and renovation project was planned.

Desired functions – aims and visions – 1998

The analysis of desired functions were completed by November 1998. Architect Mr. Lars Jarle Nore from the company NORMAN A/S was in charge of this work, on behalf of the University of Bergen Department of Management and Investments, and a group of user representatives from the University Library.

Aims
- An Arts and Humanities Research Library with collocation of all Arts and humnanitites related collections.
- A user oriented specialised research library with open shelf collections and a varied line of services, as far as possible self served by the users (cf. Function analysis (Funksjonsalaysen), 1998, p. 6)

Visions
- A flexible shape adaptable to future needs
- A library that makes easily available every information recource
- A library with learning centre functions, able to evaluate, handle and mediate information
- A library with teaching functions tha support and supplement faculty teaching *(cf. Function analysis (Funksjonsanalysen), 1998, p. 6)

Several of our aims and visions emerged from the fact that we were running an old fashioned subject library where both form and content were, in more than one respect out-of-date. Our original building was already named an Arts and Humanities Library, but it was also seen by many as the general University Library. Reasons for this were partly the fact that several of the University Library's central administrative functions still were located in the building and partly the fact that our building served as a general book and journal repository for the University Library.

Below is a short outline of the history of our old library building, together with a description of the conditions that had to be met before we could start reconstruction and renovation.

History

The old University Library

Around the time when the Bergen Museum was founded in 1825, there were several collections of books established, old documents, manuscripts and so forth. Those early collections became the core stock of the Library of the Bergen Museum. When the museum was transformed into a university in 1946/47, the collections from the museum became university collections. Therefore the old Museum Library, originating from the 1820s, is the origin of today's University Library Collections (Gatland et al. 1996: 9-13).

The University Library stayed in the 19th century premises of the Bergen Museum until 1961. Following more than 20 years of long bureaucratic discussion, a donation of 5 million kroner from one of Bergen's shipowners, Mr. J. L. Mowinckel, made possible the construction of a modern building for the University Library. On 13th of September the new library building had its official opening ceremony, in the presence of His Royal Majesty King Olav V.

Some facts on the University Library in 1961

- Floor space: 6,350 m², 3 floors, 6 floors book tower
- 500 m area with main catalogues, reference books etc. open to the public
- Student reading room with 230 seats
- Entrance area with exhibition spaces
- 400 m² inner area with recepion and service area
- 5000 m² of closed stacks areas with a total capacity of approximately 15,000 shelf meters

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From main library to Arts and Humanities Library

The new University Library in Bergen in 1961 was constructed on the model of old, traditional European university libraries. The users of the library had to place and order for every book they wanted to borrow, and library staff had to pick the book from closed stacks and bring them to the service area where the users would collect them.

At the same time when Bergen opened a new, unified University Library, the trend in other academic institutions was to move from the concept of one large library to smaller branch libraries, bringing library services closer to users and faculty. Already, in 1961, several large research libraries in Europe and the USA were offering users open stacks with direct access to the books. During the 1960's and 1970's the development was clearly in the direction of both open stack libraries and splitting up of central libraries into faculty or department libraries.

These developments also reached Bergen. There was already a medical library service at the university hospital, established in 1956. Since 1968 there has been a Faculty Librarian for Medicine. In 1970 the Medical Library moved into its own premises nearby the university hospital. In the following years faculty library units were established for the other university faculties; these libraries were more or less separated organisationally from the old Main Library.

The later university rector Ole Didrik Lærum lead a committee, with participation by among others our present Library director, Kari Garnes, that decided on decentralising as a main strategy for the University library. The committee presented a framework for how the decentralisation process was to proceed (cf. Gatland et al. 1996: 48-49)

The opening of the Arts and Humanities Library in 2005 marks the final completion of this decentralisation process. We can safely say that the process from main library towards faculty libraries has been a long one – almost 50 years (Gatland et al.).

One precondition for the renovation work to start, was the moving of administrative functions and certain support functions from our building in the summer of 2002. Finally the library building was so empty that it became practically possible to start renovation on it (cf. Function analysis 1998: 3).

The planning and construction process

There was a rapid pace to the planning and construction work, and there were many deadlines to meet. The following outlines the processes that were gone through.

From analysis of desired functions to pre-project – the planning process - 1998 to 2001

By summer 2001 the floor area of the Arts and Humanities Library had increased to about 8,700 m². To be able to stack a constantly growing amount of books, the library had taken over the basement of the Arts and Humanities faculty building, even the one time garage of the faculty staff was now converted into library space. The total book repository at our disposal had now reached 33,000 shelf meters, while Arts and Humanities Collections amounted to somewhere between 27,000 and 28,000 meters. All available space at our library was now occupied by books.

In December 2000 the so called sketch project was started. This project developed further the function analysis of 1998 (cf. User committee, 12.12.2000). The User committee consisted of representatives from the University Library, the University Properties Management Department (EIA), the architect, and other representatives who were called on when needed.

At the time when the User committee was initiated, the first architect Lars Jarle Nore of the company Norman A/S had been replaced by Nicolai Alfsen of Lille Frøen A/S. The function analysis from 1998 was now revised and certain important adjustments done.

Already by December 2000 the suggestion was made that "certain areas of the building should be arranged to serve Information Competence learning" (cf. User committee, 12.12.2000). A study trip to Sweden and Denmark in spring 2001 inspired the User committee with many ideas for how to plan for learning centre activities in our new library. The reform of higher education in Norway at the same time prescribed an increase in student writing activities. This was also an important incentive for us to give priority to information resources. The idea of a learning centre, with emphasis on specially adapted areas for digital media and teaching activities, was also an important aim in our planning.

During spring 2001 our function analysis was adjusted, and plans for the logistic operations of the renovation and reconstruction process were made. Together with the architects and the builder (EIA, University Property Management Department), entrepreneurs were now developing the technical solutions for the transformation of the old Main Library building into a modern faculty library. This work resulted in a document called Pre project (Forprosjekt, June 2001).

Numerous important details of the renovated building were defined in this document. The main floors were to be opened up. Plans were made for a large open space of two floors, around which a mezzanine level was planned, with seats for study or relaxation, and book shelves. Not least, the idea of a coffee bar found it's way to the official planning documents.

It is important here to remember that the basic idea and the plan for the 1961 building was to keep the books, everything except reference literature, under lock and kept away from the hands of the public. The building of 1961 was probably one of the last larger library buildings in Europe to be constructed this way. The main contrast with what we have today, is that the public areas were very small. In fact, general public access was restricted to the reference and counter area, and the reading room, all on the main floor of the building as it stood in 1961.

The former reference area, which was previously dominated by large cabinets with card indices and a large volume of older reference books, was to be replaced by a modern space where digital tools of reference would be prominent. Study rooms for students, teaching rooms, and separate areas for computer use were planned. The old large reading room was to be split up to cater for different functions. At the same time, reading desks and computer desks were planned as an integrated part of library, by being placed in all parts of the building in a spread pattern.

The work leading to the Pre project 2001 was in reality an adaptation of the function analysis of 1998 to our modern technical, or rather digital, world. But the planning process for the transformation of the building did not end there. It was rather that the first step had been taken. Through the whole construction process new decisions were made, and old ones altered because of the rapid development of digital media and electronic technology.

The renovation and reconstruction process – moving and building - 2001 to 2005
As mentioned, the plans for the reconstruction and the related logistics were made in spring 2001. This planning was relatively complicated, because the collections of the library were so large and diverse, and because we had decided to keep our services up and running with only a very short down time planned. Our main questions now were:

- How can we handle our book collections during reconstruction?
- How can we keep running our ordinary library functions, and how do we organise our staff?

A starting point in planning the logistics was to divide the reconstruction work into different phases. An external book repository was established where literature could be kept during reconstruction work on our building. Then the phases

of reconstruction work, the moving of book stocks, and the relative timing of everything, were put down in a precise and detail led puzzle – our logistical plan (cf. Notes and documents, the User committee, March/April 2001).

Some facts are needed to give an idea of the moving and construction process:

- The library staff (around 40 persons), with equipment, was moved; twice.
- A total of more than 9,000 m² of office and library areas were moved out of, emptied, reconstructed and fitted up again, and moved into.
- A total volume of approximately 55,000 meters of books and journals were moved.

Moving and reconstruction plans were divided into numerous limited jobs that all had to fit into a greater logistical picture.

Our library stayed open and operational for all but two weeks, during the whole process. Our staff conducted their normal work, only in other areas and under changed conditions. We managed to keep our level of service at nearly the ordinary high level through the whole construction period.

New surroundings – change of plans

The automated library

The book is still today the most important information medium in an Arts and Humanities Library, and it will remain so far into the future. Lack of access to the books was the main problem with the old building. The function analysis stated that one of the chief aims of the new library is that it becomes "a user oriented specialised subject library with books on open stacks" (Function analysis 1998: 6). The library we got, presents itself as an open library where the traditional book shelf is a prominent trait. But even if the book shelves are still there, everything is not as before.

In the new library we have chosen modern, technological solutions for the handling of books. The lending profile of our library was stated in our plans at an early point as "a differentiated service, as far as possible self served by the user" (Function analysis 1998: 6).

We then searched for an efficient library system that would provide us with a maximum of automated, user self served book handling. Our choice was to install a so RFID (radio frequency identification) system. This system today handles most operations related to the day to day flow of books through the library. Every book is fitted with a radio chip; the system provides a theft alarm function, facilitates self served borrowing of books, self served handling of returned books, automated sorting of returned books, and allows for misplaced books on the shelves to be located.

In connection with the planning and implementing of the RFID system in the library, we were forced to make a number of adaptations of our spaces and equipment. Among other things, we had to find space in the library for the book return automat, and we had to decide where to place lending and return machines and try to fit everything as good as possible with the rest of the equipment and furniture.

The modern building, being an open library, offered considerably more space than the old one. This space we had to fit up with equipment and furniture, and we did so in quite another, more spread and spacy pattern than before.

Implementing the automated library also had some consequences which we at first did not quite comprehend. An example is the choice of book shelves. The RFID technology would work only if we installed wooden shelves, not metal. All of the shelves in our new library were chosen and installed in such a way that we get optimal use of the radio technology.

We may conclude that both the life of the books, and the material and

placing of the shelves and furniture, of a modern library are determined by modern technology, by what could be called, in a broad sense, the new digital reality.

Book return automat.
Left: The front, where books are returned.

Right: Behind the wall. Transportation line with automatic sorting of books.

(Photos: Pedro Vásquez, 2005)

Development of the electronic catalogue

Our oldest catalogues were handwritten card indices. In 1964 photocopiers brought in to duplicate cards. By 1976 we had semi automatic IBM typewriters with electronic memory. Some of us still remember old colleagues back then talking with reverence about the electric typewriter with correction key. It represented a great practical improvement. At the time when the transition to automated cataloguing started in 1983, our card indices had a volume of several cubic meters and occupied a large part of the public area (cf. Gatland et al. 1996: 58).

Computers were first in use in our library from the mid-1970's. The scientific board of our University decided in 1980 that the University Library were to use the electronic system Bibsys as its main cataloguing tool. Cataloguing on paper cards ended in 1983, and the paper card indices were converted to electronic Bibsys entries in the period 1992 to 2004 (cf. Anne Åsmul this volume). Our users can today search our complete book and journal stock without physically visiting the library.

Earlier, the reference area with card indices and voluminous reference book collections occupied a large part of the central open space of libraries. With the transition from paper cards to electronic catalogue, and with the availability of online reference literature, the physical plan of our central open spaces has changed greatly.

Space has been freed to use for other purposes than catalogue and reference. What we have today in our new library is one area for electronic catalogue access, and one area with large round tables with computers for students to work together or alone. The modern digital reality has therefore brought us a much better, more efficient use of physical space also. Both staff and users welcome this development.

Public functions in the old reference area.

(Photo: Pedro Vásquez, 2005)

Library functions – from book library to learning centre
The internet made it's full impact on modern subject libraries from the mid 1990s. With it came the opportunity to collect electronic information from around the globe. From the turn of the millenium and onwards, an ever growing part of the services of libraries are available online.

From a starting point with electronic catalogues, we have seen the development of full text electronic media. Electronic journals and books, and more recently electronic institutional archives (see Jones, this volume) offering swift publication of research, are in many ways changing the landscape of libraries. The physical look and layout of libraries will also probably change.

A large part of scientific literature will in the future be part of the "paperless" world. In the field of journals we already see that the development away from the paper medium has come far, especially in mathematical sciences and medicine. Most of the journals in those sciences are today available electronically. We took this development into account also when planning our new Arts and Humanities Library. With the increased relative volume of electronic publications in mind, we allowed ourselves to cut down the volume of shelves. We could then designate more space for computer desks and study desks, and we had a better opportunity to shape and adjust the aesthetics of the library spaces. This was a freedom we did

not have 10 years ago. Only time will tell if we have interpreted the digital reality correctly and made the right decisions, or if we have miscalculated.

With the transition to electronic libraries there also comes a change in our conception of what a library is. The learning centre idea is today at the very centre of what our university library wants to be. As a learning centre we aim to offer information resources, and an active physical learning space, such as access to computers and study rooms. We will also teach and give courses on the use of our resources and on the larger field of information competence. A library today is not only a keeper and passive deliverer of information, but an active disseminator of intellectual access, information competence and knowledge.

The changes in our mental conception of a library has implications also on its physical infrastructure. Important changes in conception have matured during the period of our planning and reconstruction process, changes that are reflected in the reconstructed and renovated library building as it now stands. A more active role in university education is taken into account and planned for. Heavy investments in computers and digital equipment are made on the basis of a new digital reality and the expectation of larger pedagogical activity in the library. Study and teaching rooms give the building a flexibility to cater for the diverse activities in a modern library.

Developments in technology have shaped the looks of our new Arts and Humanities Library. As we have seen, modern ways of handling the book through an automated library, the electronic catalogue and online resources, together with an active educational role, is the scope and framework for our new library.

Teaching room.
(Photo: Pedro Vásquez, 2005)

The library up and running in 2006 – what did we get?

By 2006 our Arts and Humanities Library presents itself as modern and up to date. Teeming with students and teachers, the library has at once become a pleasant and valuable meeting place for people at the university.

Judging by today's situation, most of the strategic decisions seem to have been correct. Teaching rooms with the latest multi media equipment are in frequent use; study rooms for students are very popular and fully-booked. The self served borrowing, return and alarm system is functioning as planned. A large number of computers are at the disposal of our users, both for internet access and for writing of theses and exams. The new furniture seems also to function as planned.

Free access computer arena.

(Photo: Pedro Vásquez, 2005)

Some facts on the Arts and Humanities Library in 2006

- Opened august 2005 recontructed, renovated and refitted
- Spaces and areas
  - A total of about 8,700 m²
  - Closed areas of about 5,600 m²
  - Total shelf meters of closed stacks about 12,000 m²
- Public areas
  - 3 main floors and a book tower, all with open stacks
  - 3100 m² of stacks, computer areas, 5 study rooms
  - Open colletions of about 6,000 shelf meters
  - 70 public computers
  - 120 study desks
  - Wireless internet network in all open areas

Physical library and digital services – choices made – what should have been done differently?

It is not possible to plan for the unexpected. Many people and institutions had a say in renovation the process, and economics is a hard determining factor in many questions. Economic limitations often force us to choose less than perfect solutions.

Something will always go wrong in a large scale process like our reconstruction and renovation. When it happens, when you can not go by the original plans, you have to be creative on the spot and improvise. Then you must have faith and hope that the end result will be good. We often had to do this in our process, in all stages of it, and really in every aspect of it. Unforseen challenges occurred in the technical field, in relation to furniture and shelves, in several of the moving jobs, and more.

Although preliminary risk analyses were made, in a planning and execution process like the one we went through one is in many respects taken captive by the technological possibilities and development: The digital reality emerges and progresses fast. When the day comes to implement a plan, the basis on which it was made may have changed and made the plan outdated. In our case, automated book lending is an example of this. The technology we implemented in the end, was not available at the time we laid our original plans in 2001. We were compelled to make a change of plans that had quite large consequences for our library building.

The reform of higher education and it's impact on the library also came as something of a surprise to us. Although we adjusted to this we see today that we probably should have used even more space for student study rooms. Neither did we foresee that the collections of the Department of Musicology (UBBGA) were to be located in our library; we had to handle this late in the process and remade some study rooms to make space for the music collections

Technical installations are highly specialised matters and must be planned and constructed by experts. If those experts don't do their job properly, the library can suffer serious consequences at later stages. Technical and safety aspects require a very close and frequent follow up and dialogue through the planning and construction process.

All in all, if the original planning work is good and thorough, most things will fall nicely in place at the end, whether it is digital solutions or other technical challenges. The best way to succeed with a large project like this, is planning, planning and planning. And add to that a good deal of optimism and generosity.

South façade. (Photo: Pedro Vásquez, 2005)

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