

# “The Brain” – The Philological Library, Free University of Berlin

by KLAUS U. WERNER, MONIKA DIECKS

The slides of this paper can be found at: [http://www.zhbluzern.ch/LIBER-LAG/PP\\_LAG\\_04/Thursday/KU\\_Werner\\_and\\_M\\_Diecks/2004-03\\_liberseminar\\_werner+diecks\\_presentation.pdf](http://www.zhbluzern.ch/LIBER-LAG/PP_LAG_04/Thursday/KU_Werner_and_M_Diecks/2004-03_liberseminar_werner+diecks_presentation.pdf)

## WHY A NEW LIBRARY?

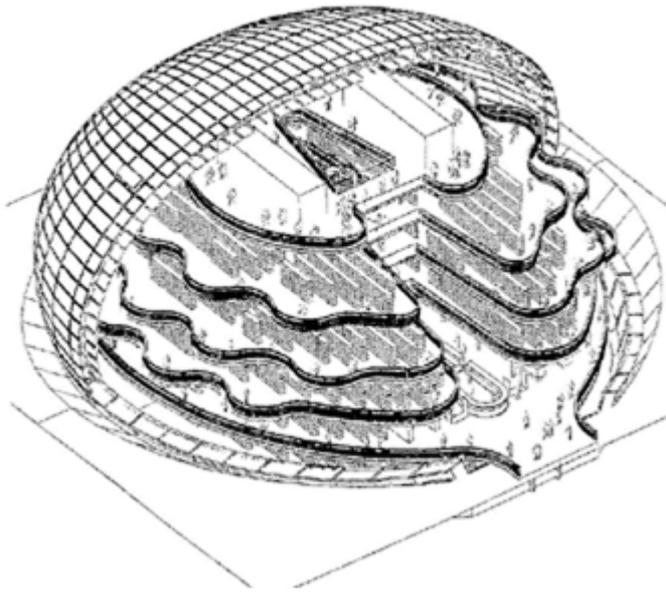
In 1997 [Lord Norman Foster](#) was commissioned to design a new library building to house the 10 previously separate departmental libraries of the Faculty of Philosophy and Humanities. The new library had to be integrated into the existing Free University building of 1971, which would simultaneously undergo a comprehensive refurbishment. The ‘[Rostlaube](#)’ (‘rusty shack’) is a typical example of late sixties architecture. It was designed by Candilis, Josic and Woods in a modular gridding system influenced by Le Corbusier. The entire structure now has to be stripped of asbestos, the worn-out façade needs a facelift and the technical infrastructure must be updated to meet present standards. As far as the reconstruction is concerned, Foster has opted to preserve the original state where possible and keep alterations to a minimum. The library is a completely new component, though, for which parts of the existing building had to be removed.

The erection of a new library building was necessitated by the intention of bringing together within the ‘Rostlaube’ 10 separate departments, currently spread all over campus, together with their staff and administrative offices as well as lecture-rooms. At the same time, the departmental libraries are to be integrated into one, which is a completely new departure for the Free University. The collections of the [Philological Library](#) cover classical and modern languages and literatures as well as comparative literature and linguistics. The new building will have a capacity of 800,000 volumes on open shelves and desk space for 650 readers. A state-of-the-art energy-saving heating system is included in the overall budget of 18 million Euros, while the cost of shelves and computer equipment is excluded.

## THE ARCHITECT’S IDEA

Foster has created libraries with open, transparent structures before: Of these three, two are in the UK and one is in France: [Cranfield University Library](#) (1992), a public library in Nîmes (“[Carré d’Art](#)”) in the south of France (1993), and the faculty and library building of the [Law School](#) of the University of Cambridge (1995). The design of the Cambridge law school library shows some marked similarities with our building, like open floors and the overarching structure of glass elements, only that in Berlin the panels are partly glass and partly metal.

Lord Foster won the architectural competition with a design featuring a filigree roof of steel and glass curving over a large yard of the original campus building. However, this concept underwent several revisions in the planning process and resulted in a building with a wide-span steel structure encompassing five open floors. The structure is cupola-shaped over an oval ground plan. On the inside there will be an correspondingly curved textile skin, which is designed to create an astonishing space impression. The library building can thus be interpreted as corresponding to the shape of the human brain.



Library with rows of bookshelves on the different floors

### **THE METAPHOR OF “THE BRAIN”**

There is something appealing in the concept of the library as a brain. Getting used to this metaphor, visitors may well see more and more similarities between our library building and the structure and function of the human brain. Like a human skull sheltering the brain the new dome-shaped library is located in one of the inner courts of the grid-like campus building. A double-layered skin supported by a wide-span steel structure encloses the five-storey concrete structure of the library. The outer casing consists of light metal panels and 40% glass elements. On the inside will be a - lightly translucent -curved skin of glass-fibre fabric panels with 8% window elements.



14. April 2004

In keeping with the brain-metaphor, this white internal skin can be identified with the cerebral membrane, while the space between the inner and outer skin serves as a sort of air-canal for the natural ventilation of the building. The flow of air can be regulated through controllable flaps on the outer skin.

The cranium covers a compact building with five levels all of which have nearly the same floor-plan, but get smaller in size on the upper floors. Again, like a brain they are clearly split in a right and a left hemisphere. The division between the two lobes of the brain is especially evident in the three upper levels which recede into galleries round the atrium of the library entrance area on the first floor. This allows the visitor to experience the library, in spite of its compactness, as a spacious, clearly structured building. A central, if smaller opening from the first floor atrium into the basement will create a generous sense of space also down there.

Even before visitors enter the library, they are offered some OPAC-terminals and lockers in a free-access area. The circulation desk will be located on the first floor, right in the centre of the atrium, which is, by the way, roughly the place where in a human brain the optic nerve can be found. Supervision, one of the duties of staff at the circulation desk, will be supported by an automated book-detection system, which will be installed at both sides of the desk.

The different floor levels are connected by a central open staircase and the two adjacent central building cores. The cores are parallel structures with emergency staircases, a lift, sanitary rooms and rooms for technical equipment. To take up the brain metaphor once again, the parallel central cores correspond to the interbrain with its large paired core. The interbrain conveys all sensory reception from the outer world to the cerebral cortex. In library terms, it leads users from the outer world to the stacks and to the readers' desks.

Close to the interbrain the midbrain functions like a highway for all up- and down-leading nerve tracts. In terms of our library, the cables going through the central core to readers' desks represent the nerve-tracts. Half the desks are networked - on the left-hand side of the library, where in the human brain language- and communication-skills are located. Additionally, users will have access to the university network by wireless LAN within the whole library.

The technical control centre is located in the central rear half of the basement. That is roughly the same place where in the human brain the cerebellum and the brain stem are found: in the posterior cranial fosse at the bottom back part of the skull. The motoric functions of the brain stem are not unlike those of the technical control centre of the library, which supervises the energy-saving air conditioning system including natural ventilation and heat recovery. Water conduits running through the concrete core of the building will achieve heating and cooling. The concrete also serves as an economic heat accumulator. This kind of sophisticated energy-saving system has been utilized before by Lord Foster in the [Reichstag](#), the German Parliament building in Berlin.

The total shelf space of 24.000 linear meters is distributed unevenly over the five levels due to the receding floor plans. However, the arrangement of the shelves follows the same pattern on each level in order to achieve a maximum exploitation of the available space. The lighting is fixed at the ceiling in the middle of the aisles, except on the uppermost level, where the lighting is fixed to the shelves themselves (as there is no ceiling). The architects have stipulated the shelves to be grey in order to correspond with the concrete ceilings and the presumably grey wall-to-wall-carpeting. The brain, after all, consists of grey matter, so the colour code appears most consistent.

The 636 readers' seats are located around the open stacks at a continuous desk running along the outer railings on each level. The three upper levels undulate like brain lobes. Similar to the way in which the brain's surface is extended, this pattern allows for a greater number of work places for readers. In fact, the total number of places will far surpass those available in the original departmental libraries. It is estimated that there will be a marked increase in demand for work space due both to our transition to the concept of a reading library and to the attraction exerted by the new library building and its original architecture. In the human brain the undulated border, called the cerebral cortex, is the main integrating organ of the central nervous system. This is where the real brainwork goes on: language is understood, impulses for action are given, and experience is stored for memory. This is also, roughly, what readers are supposed to do at the library's cerebral cortex, the desks along the outer railings on all floor levels: to understand, to transform and to store information, be it on paper or, as is becoming ever more frequent, electronically.

For this reason all work places are supplied with electric power, both for individual reading-lamps and for plugging in laptop computers. For the time being, however, their use will be restricted to the left side of the brain, the one that is networked. The reason is that many readers in philological disciplines still require quiet, keyboard-free zones in a library. Once the new technology of silent keyboards has become affordable for the average reader these restrictions will hopefully become superfluous. A flexible extension of the laptop zone can be instituted easily thanks to wireless LAN that is accessible throughout the library. Forty work places will be equipped not with PCs, but thin client terminals. Two computers serving as OPAC terminals will be located on each level by the staircase, other computers can be found in the reference-area at the back half of level one. Also, easily accessible in a central aisle, there will be two desks with special facilities for visually handicapped users. These work places will also be provided with special facilities for multimedia use.

The reference desk for two librarians is placed in the middle of the entrance level. Users have no direct access to librarians' offices, because the whole library administration will be located outside the brain in the main university building. This spatial separation of reading room and library administration is characteristic of the architecture of our new building: the library (or the brain) will be ready for use by readers who do not need to be conscious of the work done backstage in the administrative offices. Nevertheless, the two buildings are of course connected through a passage in the basement. This tunnel will also allow users access to a group study room, the computer training room and reader-printer facilities located in the basement of the administration building. There are also plans for a comfortable lobby to read newspapers and have a conversation. Rolling stacks with a capacity for 40,000 volumes, reserved mainly for rare books, will remain closed to the public.

It may be a surprising claim that in spite of the inevitable noise problems of an open style of architecture, our library should be able to meet entirely the working needs of its users. Previously used to small departmental libraries with cosy corners, which they will not find in our new building, they will be compensated for this by the integration of different collections and the opportunity for interdisciplinary study in the "brain". This objective is greatly aided by the open structure of the library architecture. It is expected that readers' concentration will be stimulated by our library's special working atmosphere and especially the original arrangement of the workspaces. Readers will sit next to each other at continuous desks without facing one another. The only exceptions will be those seats on the galleries round the atrium, which offer a more lively space in the centre of the brain. From the seats along the outer rim readers' view will be directed to the wide-open space under the dome. Readers will see the inner skin of white fabric illuminated by spotlights from the outer railings. They will be invited to project their own creativity onto this screen resembling the white sheet waiting to be filled. Shielded by the brain's skull readers will hopefully be able to concentrate on their work and to focus on their own thoughts. In this way, the library could, perhaps even create a kind of calm monastery charm in the midst of the pulsing campus life.

To keep noise to a minimum users will need to develop more self-discipline. Likewise, the beeping of barcode scanners, the clapping of locker doors and the communication among library staff will have to be kept in check. However, the fabric of the inner skin and the filled bookshelves will help reduce noise. All copying facilities are located in soundproofed areas. There is also an extra quiet work space on level zero, closed off by a glass wall and available to readers with special needs. The alternative, a number of carrels throughout the library, would contradict Foster's idea of an open structure.

## **IS "THE BRAIN" INTELLIGENT?**

Of Faulkner-Brown's "Ten Commandments" for an "intelligent" library building two in particular appear to be problematic with regard to our library ([Faulkner-Brown, 1999](#)). First, the issue of flexibility: We are not able to rearrange all the shelves or take them away in order to install extra desks some day. Only on the top level, the 4<sup>th</sup>, do we have the possibility to change shelf area into reading space, because only there power supply lines are installed in the floor. However, this level accounts for only 10% of the shelf-capacity of the whole building.

The second problematic issue is extensibility: Our building is not laid out for extension, and yet we have a stock increase of about 10,000 books per year. Consequently, the library will be full in 10 years! What's to be done? To prevent overflow, we will pass on any duplicates to the university library, which is a lending library. As the move into our new building will be a merger of ten existing libraries of neighbouring academic disciplines, we expect the number of duplicates to be fairly high.

So, this "brain" may be an intelligent building after all - provided we organise it in an intelligent way!

## **OUTLOOK**

Construction at the library site started in July 2001. Unfortunately there have been some interruptions due to budgetary problems, but by the beginning of 2004 the steel structure was completed, and in April the fitting of the metal panels and glass elements for the dome will be completed as well. By the end of 2004, the entire building should be ready, and hopefully it will open in the spring of 2005.

## Some facts & figures

Architects	Foster and Partners
Competition	1997
Start library site work	2001
Date of completion	Dec. 2004
Net floor area	6290 m <sup>2</sup> (64 m long / 19 m high / 55 m wide)
Budget	18 million Euros (without shelves and computers)

User facilities: 650 user seats

- all reader seats for laptops
- access to the University network (WWW), 50% LAN and Wireless LAN within the library
- 40 seats with computers (Thin Client terminals)
- 1 computer study room with 17 computers
- 1 study room with individual lockers for special readers
- 1 microfilm study room
- newspaper reading area (lobby)
- 2 reading desks with special facilities for visually handicapped users and special facilities for multimedia use
- copying facilities

Collections: 700,000 volumes (capacity: 800,000) on open shelves

- Classical studies 90,000
- Medieval Latin Literature 13,000
- Germanic Studies 185,000
- Dutch language and literature 30,000
- English language and literature 80,000
- French, Italian, Spanish, Portuguese 150,000
- Slavic 70,000
- South American Studies 45,000
- Comparative literature 35,000

## REFERENCES

Faulkner-Brown, Harry: Some thoughts on the design of major library buildings, *Intelligent Library Buildings*. Proceedings of the 10<sup>th</sup> seminar of the IFLA section on Library Buildings and Equipment, ed. by Marie-Françoise Bisbrouck and Marc Chauveinc. München : SAUR, 1999, p. 9-24.

## WEB SITES REFERRED TO IN THE TEXT

Carré d'Art. <http://www.fosterandpartners.com/internetsite/html/Project.asp?JobNo=0344>

Cranfield University Library. <http://www.fosterandpartners.com/internetsite/html/Project.asp?JobNo=0506>

Faculty of Law, University of Cambridge.

<http://www.fosterandpartners.com/internetsite/html/Project.asp?JobNo=0541>

Lord Norman Robert Foster. <http://www.fosterandpartners.com/internetsite/html/>

Philologischen Bibliothek. [http://www.fu-berlin.de/npb/projekte\\_philbibliothek.html](http://www.fu-berlin.de/npb/projekte_philbibliothek.html)

Reichstag, the German Parliament building in Berlin. <http://www.structurae.de/en/structures/data/s0000601/index.cfm>

“Rostlaube”. [http://www.fu-berlin.de/bauplanung/seite\\_geschichte.html](http://www.fu-berlin.de/bauplanung/seite_geschichte.html)