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-Libraries are institutions of learning -

They represent the cultural heritage and values of a society.

Public libraries are often located at places of urban significance or, in the course of time help to establish the latter. They may be landmarks in the urban landscape and help to orient oneself. A public library serves the people, and its spirit should be truly public. A City and University Library in particular, is a highly frequented place where students and citizens meet. It can therefore easily become more than just a place for obtaining information. It can become a place for human interaction, offering spaces to enjoy a concert, to exhibit art or to go there to have lunch or dinner. In that sense, it could be transformed from an institution which is usually used during the day into a vital place which is also used in the evening and on the weekend.

The following project pursues the notion of breaking with the traditional image of a public library, expanding its service and thus increasing its position as a place of public interest. This notion is a result of my thesis work, rather than the initial idea from which I started.

The location of the project at the edge of the university campus in Frankfurt, Germany and the existence of a theater next to the existing library offered the possibility of establishing a cultural meeting place in one of Frankfurt’s city districts.
The Site

The site forms the northern end of the university campus and is located at the intersection of two major roads in Frankfurt. The Zeppelinallee is part of the ‘Alleenring’, a beltway that surrounds Frankfurt. The other major road is the Bockenheimer Landstrasse which leads directly into downtown in the southeast. Adjacent to the site to the south is the university campus that stretches out over three blocks. The university buildings create various courtyards inside the blocks to provide quiet zones on campus. On the western border of the site are mid-rise office buildings, and the northern end is characterized by mostly four story townhouses. Office buildings are lined along Bockenheimer Landstrasse in the east, and the botanical garden faces the site in the north-east. A side entrance of the garden is located on Zeppelinallee. The terrain of the site is flat.
The City and University Library, which was built in the 60’s, consists of a three story entrance and administration building and a four story library building. The center of the site is occupied by the ‘Bockenheimer Depot’, a former train depot, built in 1899 which is now being used as a theater. A rectifier station exists on the northern end of the site. North of the City and University Library is an old factory building which will be demolished. Subway exits exist on the eastern and southern boundaries of the site, and a tram stop is located on the western edge.
The Bockenheim tram depot, built in 1899, is an outstanding example of wood engineering. The floor plan of the building is like a three-nave basilica. The outer walls of yellow brick were not plastered and have red ledges and band ornaments. The front is structured with pillars and cornices. Over the central arch is a half circle window. The roof structure is with wood bindings or buttresses in a half circle. The ideas for this type of construction originate from architect P. Delormes, and are rarely seen anymore. The remodeling by architects Heinrici and Geiger maintained the appearance of the original building.
The project
The addition to the library
“You should not be forced to put people through the library. It should be just something in its structure which says, ‘What a wonderful place to go,’ and of course, the location has much to do with it, and its convenience has much to do with it, but essentially, it is its nature which you are after to convey. Glare is bad in the library; wall space is important. Little spaces where you can adjourn with a book are tremendously important. So you might say that the world is put before you through the books.”
1. Existing library building
2. Existing entrance and administration building
3. New university square
4. New open air gallery and fountain
5. Former train depot - Bockenheimer Depot
6. Tram stop
7. Side entrance - Botanical Garden
To define the eastern boundary of the new university square, elements are added to the sides of the existing library buildings. These elements create a narrow, street-like atrium. This street is a covered counterpart to the open plaza and offers a restaurant, a gallery, an exhibition space, a bookstore, an amphitheater, an auditorium, and the circulation desk of the library at grade. The upper floors are entirely dedicated to the library. This configuration allows the entire ground floor to become a part of the plaza, and the spaces can be used outside of the library's operating hours.

The atrium subdivides the existing and the new parts into two distinct zones. One side is facing a busy street, the other one is facing the courtyard-like plaza. This condition offered the possibility of architectural response.

1. Gallery
2. Restaurant and Bar
3. Circulation Desk
4. Exhibition Space
5. Auditorium
6. Amphitheater
7. Bookstore

Existing library buildings in dark grey
The different conditions of the added parts, one side is facing a busy street, whereas the other side...
faces the courtyard-like plaza, demanded architectural response.
The part of the library building facing the street is a massive structure with few openings toward the street. It consists of a row of parallel concrete block walls which are reinforced by a concrete structure. Prefabricated concrete floor slabs create a repetition of one space module. This side houses the bookstacks and is meant to be the permanent, anchoring part of the library.
The light part

The part of the library building facing the plaza houses the reading spaces supported by a steel framework that is enclosed by an independent outer steel structure. The inner steel framework is placed around a concrete bridge structure and offers the possibility of various space configurations according to the library’s needs. The bridges are direct paths to the bookstacks and may be regarded as ambassadors of the massive part. The sample configuration shows reading spaces on various levels which are connected to each other by stairs and voids and may be read as single volumes or as one flowing space.

The light part accommodates the reading rooms, and its independent steel framework inside offers the possibility of spatial variations.
Placed in front of both the massive and the light parts of the library building are service elements that house stairs, elevators, bathrooms and other necessary rooms. These service cores are topped with a ‘mechanical penthouse’ that contains the HVAC systems which serve the adjacent zones. A gap separates these spaces from the other spaces and makes them independent. In addition, the service elements act as a transitional space before entering the bookstack side or the reading rooms.
Service elements are placed in front of each part of the building to serve the adjacent spaces.
Tour through the building
The library has three major entrances. The south entrance faces Bockenheimer Landstr. and the campus, the plaza entrance in the west, and one in the north that connects to the path.
Entering the building from the north or south, the entire length of the atrium is revealed. The visitor is presented with the new parts that face each other and are connected by bridges. The circular circulation desk penetrates into the ‘street’ and marks the ‘entrance’ to the library.
The circulation desk of the library is located in the center of the existing library building. Its counter penetrates into the ‘street’ and makes it clearly visible from all three entrances. The two main elevators are facing each other and go up and down in the gap between the added parts and the existing structure.
A gap separates the service core from the bookstacks. Small bridges connect both sides and lead to stairs to the different levels.
Individual study cells are located along the back aisle of the 2nd and 4th floors. Every structural bay of the addition is marked by wide concrete columns housing two back-facing carrels.
The study carrels are lined with beechwood. The polished concrete floor stops where the carrels begin. The reading desks receive light by narrow two-story windows that separate the loadbearing concrete structure from the concrete block infill. Sliding wooden shutters allow one to regulate the amount of direct light that falls onto the desks.
The low ceiling of the bookstack area folds up shortly before it reaches the outer wall and becomes the parapet wall of the mezzanine floor. A void above the carrels is the result. The parapet wall is fairly high to limit the views down to the carrels, and it works as a light reflector for the floor below.
Louis I. Kahn’s library at Exeter Academy has a similar arrangement of such reading carrels with the difference that the two-storey space is big enough to be shared by the mezzanine levels, whereas in my project, the two-storey space is a projection of the very realm of the reading carrels that can almost only be perceivable when sitting at a desk looking up.
Larger study carrels can be found on the top floor of the building.
They provide a view over the city.
Views of the massive part
The reader who prefers larger reading spaces may walk over to the reading rooms. He can use the bridges that connect both parts and experience the atrium space in doing so. He is presented with the individual reading cells that are looming into the atrium when taking one of the bridges to the reading rooms. The cells are meant to be occupied by individuals who are doing long term research.
The concrete bridges provide access to the reading rooms and extend to the plaza facade where they become a little balcony that offers a view of the plaza.
The reading rooms are enclosed by translucent glass which has transparent openings to offer views. The translucent enclosure guarantees an even, indirect light in the spaces. The reader can choose whether he or she wants to sit close to an opening and have a view or to concentrate on reading where there are no openings.
The notion of transparency and translucency characterizes the reading rooms.
Separated from the reading rooms that penetrate each other is one room that has no ‘windows’ on eye level. It offers a transparent clerestory window that marks different ceiling heights. Readers can concentrate on their studies. A similar space that is defined by its perimeter and the incoming light is Peter Zumthor’s Kunsthalle in Bregenz.
Floor cutouts mark the location where the new atrium penetrates the existing library buildings to guarantee a continuation of the atrium space. These openings subdivide the existing building into reading zones and bookstack spaces.
View toward reading rooms from 2nd floor of existing library building

View toward reading rooms from 4th floor of existing library building
The Bookstore on the Ground Floor

Basement - Bookstore
The west facade is characterized by a separated layer of sunscreen elements that are placed along the entire length of the library. They formally unite the existing and the new parts and provide glare-free reading spaces. The microshade elements block the direct light of the setting sun in the west but allow light from other angles to penetrate the screen. This light is reflected by the micro louvers that distribute an even, glare-free light into the reading spaces.
The screen wall causes a constantly changing appearance of the building according to the view angle and the time of the day. The microshade elements block views from the southwest but allow views from other directions. During the day, most of the sunlight will be reflected by the screens and the facade becomes opaque, whereas during the night, artificial light illuminates the interior and reveals its structure.

The interior is revealed during the night

The facade becomes opaque during the day
The spatial development of the addition

- The massive part -

I started thinking about the massive part as a structure that would protect the books from direct sunlight. A repetitive structural system of vertical walls defines small spatial units for stacking the books. These spaces would connect to a larger volume that filters and reflects direct sunlight to the adjacent spaces.
The space adjacent to the bookstacks became higher as the notion of presenting the books and the strong vertical walls developed.
The spatial development of the addition

- The massive part -
The final configuration consists of two spatially and structurally independent elements. A similar development can be seen in Louis I. Kahn’s Salk Institute for Biological Studies, where he eventually separated the laboratories from the studies in an attempt to differentiate the scientific environment of research from the study rooms.

Eventually, the high spaces were separated from the bookstacks, due to considerations of servant and served spaces.
The spatial development of the addition

- The light part -

Reading rooms in a library must provide a glare-free, well lit environment. The architect has to deal with the problem of allowing as much light as possible to penetrate the room, whereas avoiding direct sunlight. With this in mind, I started working with the idea of having different levels of translucency and transparency to control the light in the reading spaces. This notion also offered the possibility of engaging in an architectural and visual dialogue between the reading rooms and the plaza on the one hand and between the reading rooms and the opaque part housing the bookstacks on the other hand.
The notion of transparency and translucency was the initial thought for the reading rooms.
An architecture of columns is juxtaposed with the vertical walls of the massive part.
Individual study cells were located toward the atrium.

This early scheme shows the reading rooms as large open spaces structured by unevenly spaced columns and enclosed by a translucent facade. The atrium side is lined with small study cells which could be reserved by individuals on a long-term basis. The floor levels still adhere to the existing library building, a condition that, after review, seemed to be unsatisfactory to the notion of adding new parts to an existing structure.
The spatial development of the addition

- The light part -

In an attempt to make a clear distinction between the existing structure and the addition, and to provide a variety of spaces for the readers, I abandoned the idea of large reading rooms in favor of smaller “reading boxes” that can be freely arranged within a steel framework.

2nd scheme - Floor levels start to move.

3rd scheme - Different reading rooms penetrate each other.

Early scheme - Floor levels correspond to existing structure.

The spatial evolution of the reading rooms shows the effort of
making a distinction between the regularly spaced floors of the existing structure and the added parts.
An analysis of the site revealed that an urban proposal would have to establish a northern ending condition to the university campus. Furthermore, an entrance or gate situation to the campus seemed to be necessary, due to the site’s location at intersecting major roads. Such an entrance situation would furthermore mark the transition from the center of the city to its outer suburbs since the Zeppelinallee beltway divides those parts of the city.

A section along Bockenheimer Landstrasse shows the proposed urban rhythm with gate buildings, not necessarily high rise structures, located next to the bisecting beltways. This rhythm includes a new university square on the site which would be the counterpart to the existing downtown Opera Square.
I envisioned the new square as a cultural meeting place for both the university and the district of Bockenheim. The intention was to unite the theater and the library on a plaza that would enhance the physical proximity of the two buildings. I wanted the library building also to be used during the night, when the Bockenheimer Depot attracts audiences with its different kinds of performances.

The idea for the new university square became the driving force for subsequent design decisions.
The question of how to spatially define a new square lead to a sequence of sketches and models that examined various ways of defining an urban space.
The rectilinear arrangement of the university buildings once determined the placement of the City and University Library and now serves as a formgiver for the new university square. A study of a rectilinear grid for the square examined the possibilities of creating a public space that adheres to the urban layout of the university and frames the Bockenheimer Depot as its physical centerpiece.
The Bockenheimer depot subdivides the square into two almost equal-size parts. The northern part is enclosed on three sides and is fairly quiet, whereas the southern part faces Bockenheimer Landstrasse and thus is open toward the campus. The fact that the depot is not a part of the university is intensified by its rotated position which once was determined by the layout of the tram tracks.
A path is introduced which crosses the university square parallel to the Bockenheimer Depot. It connects the tram stop in the west with the side entrance of the Botanical Garden which will be remodeled. Walking on the path offers varying spatial impressions. It funnels the view when walking toward the Botanical Garden and it opens, coming from the opposite direction.

A path crosses the square and connects the tram stop in the west with the entrance to the Botanical Garden in the east.
I regard this thesis project as an important step in my architectural studies. For me, the documentation of the work offers the opportunity to contemplate where I see myself in the world of architecture and what concepts I can put forward to define my own architecture.

This project represents an investigation that started two years ago when I left Germany to extend my studies at Virginia Tech. Here, I learned to consciously investigate a sensual approach in architecture by studying the correlation between light, material, and space in architecture. I concentrated on the very realm of a person and examined the effects of the incoming natural light and the textural quality of materials on the space. The awareness of how to make an architectural space by controlling the light and materials is one major contribution of my studies to my architecture.

Expanding a library offered the opportunity to apply what I had learned to a big scale project in an urban setting. However, I chose to approach the project from an urban point of view which meant for me to first find an urban form and then imbue specific spatial ideas to that form. When reviewing that approach now, it seems that the location and nature of the project let me emphasize urban considerations and reactions to the site and postpone the search for an architectural form for a library.

The separation of the addition into two facing parts with an atrium space in between, was the result of a literal translation of urban and site considerations into architectural form. This separation also represents the way I approached the design of the addition: First I developed the massive part and then the light part. When I look at the project today, that separated approach seems to be evident. It is at this point still more an ‘addition’ rather than a synergetic whole.

In the future, I want to develop projects based on a spatial idea, from the inside to the outside. Such an approach does not prevent to address urban and site conditions. I believe that a good project considers both, the inside and the setting, however visible or not.

My two years of study here at Virginia Tech have given me the confidence in my abilities to make architectural spaces by controlling the light and materials. It is the search for an architecture that says: "This is a good place to work, read, dwell, sleep, ..."

The next project will fully rely on that notion.
Notes / Credits

Bibliography

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V i t a

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