UNIVERSITY LIBRARY
GHENT UNIVERSITY
COMPETITION BOOKLET
MARCH 2007

UNIVERSITEITSBIBLIOTHEEK
UNIVERSITEIT GENT
WEDSTRIJDDOSSIER
MAART 2007

OO 1201 C

Inhoud

Voorwoord

Ontwerpprincipes

Perspectieven
- Stedelijk en Architecturaal ontwerp
- Geschiedenis en Restauratie

Techniek
- Duurzaamheid
- Passieve intelligentie
- Energieconcept
- Bouwtechnieken
- Licht
- Akoestiek
- Bibliotheektechnieken
- Brandpreventie

Management
- Ontwerpproces
- Kostenberekening
- Oppervlakten
- Planning

Reeks van tekeningen en beelden

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- Design Process
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- Surfaces
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Set of Drawings and Images

Ontwerpprincipes

Henry van der Velde's gebouw van de Gentse Universiteits-bibliotheek is een belangrijke landmark, die deel van zijn présence en kracht in de skyline van Gent heeft verloren. De architectuur kan als opmerkelijk voorbeeld van de interbellum-periode worden beschouwd. De biblioheek bevat een voorname verzameling op het gebied van Kunst en Filosofie.

Ons project is gebaseerd op de intensivering en herinterpretatie van de bestaande stedelijke en architecturale eigenschappen. Eerder dan te werk te gaan met diepe transformaties of de toevoeging van nieuwe elementen, proberen we de verborgen krachten van het gebouw te stimuleren om de stijve elementen van deze indrukwekkende gigant te re-mobiliseren.

De voornaamste doelstelling van de restauratie is de herontdekking van de originele eigenschappen, zoals de structuur van de ruimte, materieële eigenschappen en chromatische kenmerken.

In overeenstemming met zijn symbolisch en inherent belang zal het ensemble van zijn geïsoleerd bestaan worden bevrijd en worden verbonden met de aangrenzende campus en zijn directe omgeving door een veelheid aan nieuwe openingen.

De ruimtes van de bibliotheek, midden in een polariteit tussen *flow* en *focus*, worden ontsloten en hernieuwd. De dualiteit tussen de toren - die wordt geopend en gereïntegreerd in de stroom van boeken, lezers en bezoekers - en het ingesloten veld van waterlelies in de centrale tuin belichaamt de geanimeerde situatie op symbolische en functionele wijze.

De energie die in deze polariteit wordt vrijgegeven zal een magnetisch veld van collectieve en individuele krachten creëren: aantrekking, afleiding, concentratie, suggestieve vibraties die oscilleren tussen monumentaliteit en geborgenheid.

Design Principles

Henry van de Velde's building of the Ghent University Library is an important landmark, which lost parts of its presence and force within the skyline of Ghent. The architectural design can be considered as an outstanding example of the *interbellum* period. The library holds a significant collection in the fields of Art and Philosophy.

Our project is based on the intensification and reinterpretation of the existing urban and architectural qualities. Instead of proceeding with deep transformations or the addition of new elements, we intend to stimulate the hidden forces of the building to remobilise the stiff elements of an impressive giant.

Main objective of the restoration works is the rediscovery of original qualities such as spatial structure, material properties and chromatic characteristics.

In accordance to its symbolic and inherent importance the ensemble will be released from its isolated existence and linked with the adjoining campus and its immediate neighbourhood by a multitude of new openings.

The library's setting, in a polarity between flow and focus, will be disclosed and purified. The duality between the tower - opened up and reintegrated into the flux of books, readers and visitors - and the enclosed field of water lilies within the central garden embodies the vibrant situation in a symbolic and functional way.

The energy released by this polarity will create a magnetic field of collective and individual forces: attraction, distraction, concentration, suggestive radiation oscillating between monumentality and the reader's harbourage.

Voorwoord

Dit dossier beschrijft de onderzoeken en reflecties die we ontwikkelden voor wedstrijd omtrent de Bibliotheek van de Universiteit Gent. Het is verdeeld in drie hoofddelen: *Perspectieven, Techniek en Management*.

Perspectieven beschrijft onze blik op de huidige situatie. Onze overwegingen omvatten ondermeer de relaties met de omringende stad, het monument en de bibliotheek.
Op deze basis zal ons voorstel worden geschetst, gaande van stedelijke schaal tot de schaal van het gebouw. Een evaluatie van het monument en een methodologie voor restauratie zal worden voorgesteld.

Techniek benadert de verschillende conceptuele en technologische aspecten van het project. Dit omvat de bouw- en restauratietechnologie, klimaat- en energetische concepten, verlichting en akoestiek, brandpreventie en bibliotheeklogistiek.

Management bevat de details van het ontwerpproces, de kostenberekening, de oppervlaktegegevens en een projectchronologie.

Een reeks illustraties, tekeningen en plannen in schaal 1:300 wordt bijgesloten.

Dit werk heeft niet als doel een definitieve en voltooide oplossing voor te stellen. Het schetst veeleer de krijtlijnen van het project en toont de kernideeën, vormen en technieken die het uitgangspunt voor een op proces-georiënteerde ontwikkeling kunnen worden.

Preface

This dossier describes our investigations and reflections that have been developed for the Ghent University Library competition. It is structured in three main parts: *Perspective*, *Techniques* and *Management*.

Perspective will depict our point of view on the current situation. Our considerations will include the relation towards the surrounding city, the monument and the library. On this basis a proposal - ranging from urban to building scale - will be outlined. An evaluation of the monument as well as a methodology for restoration will be presented.

Techniques approaches the different conceptual and technological aspects of the project. This includes building and restoration technology, climatic and energetic concepts, lighting and acoustics, fire prevention and library logistics.

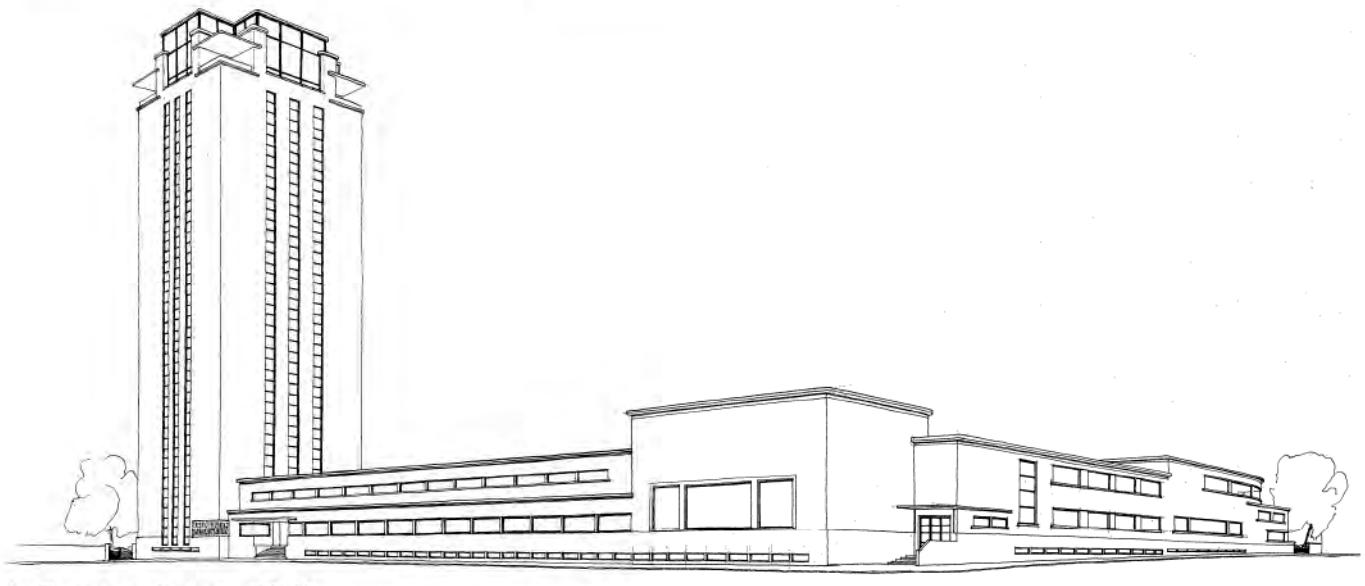
Management will contain details of the design process, the cost calculation, surface area data and a project timeline.

A set of illustrations, drawings and plans will be attached.

This work does not intend to present a definitive and finished solution. It rather creates the outline for a project and reveals its core ideas, forms and techniques that could become the starting point for a process-oriented development.

Impressions and Interpretations
Indrukken en Interpretaties

A visible and a less visible heritage of Gent come together in the University Library. Van de Velde's building with its monumental book tower continues a tradition of vertical expression of proudness visible in imposing church towers of the city. The collection of books, especially the precious "ά-books", materializes a practice of public erudition and humanities since Reformation.



* Perspective 1935

Rather than to emphazise the books as museum pieces and to create events with them, the University Library seems to consider its main mission unchanged: to keep books, to receive readers. An old and secrete activity - turning pages, dealing with texts and meaning - takes place in a monumental building, slight paper sheets full of signs are stored in a massive tower made of concrete refusing symbolism and expressivity.

Against the general evolution of quick information treatment and pictographic lecture, book reading is still a slow activity. Concentration, silence, quest of good understanding went together with the real presence of books in monastic, aristocratic or baroque libraries up to the 18th century.

The books having been removed from the reading room into special storages because of their increasing quantities, libraries tried to create since the 19th century adequate

* Ghent city skyline

* Tower view of the courtyard

atmosphere by other means such as suggestive architecture, evocative wall paintings, monumental volumes, exclusive furniture, special garden or patio perspectives outside. Henry van de Velde went a different way.

The geometric brightness coming from front and top in the reading rooms refuses architectural rhetoric as well as monastic abstinence. The act of reading takes place here in a kind of semi-opacity. Is seems to be separated from the outer world and nevertheless close to it. Nor strict isolation, nor excessive communication and publicity. This quality of calm - rather than solemn silence - and of ambiguous atmosphere in the reading room is situated in between two other main elements in van de Veldes building.

The garden - which was originally intended to be an access area to the library - is a hybrid of courtyard and exterior foyer.

At the same time, the tower with its monumental form making of it a reference point for the whole city of Gent refuses to be a real monument. It opposes to the great historic monuments of the ecclesiastic towers all around a kind of raw monumentality made of pure service and factory look, sublimated by the vertical window files and the books behind like by a neckband of pearls and by the belvedere crown on the top.

The inner communication system of the library complex, at least, is not always clear with its dead ends, loop ways and sudden curves. This is mainly due to the former division between the Library and the HIKO.

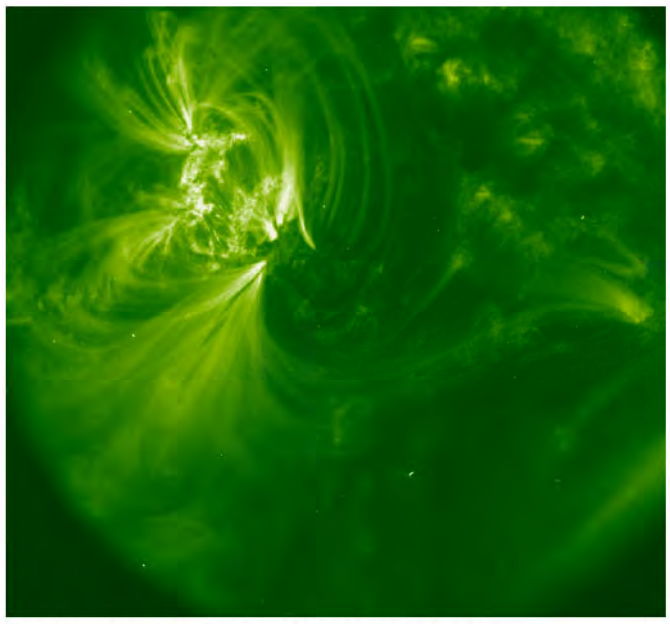
We consider these ambiguities as a special property of van de Velde's building and as a basis of large possibilities. The purpose should be not to correct van de Velde's work, but to reveal and to *fluidify* its aspects of hesitation.

Intentions / Magnetic Field
Intenties / Magnetisch veld

Tower, garden, reading rooms and inner circulation are not considered in our project as elements of a more or less perfected architectural organism, but rather as force centres of a magnetic field.

Like the metal powder on a sheet of paper draws and withdraws forms under the influence of the magnets, the different functions of the library - conservation, preservation, presentation, administration of books - create changing interference with the movements of readers, books, students and possible visitors.

Magnetic field became a mental image of the energetic organism we propose for the University Library.



* Magnetic loop observations

The fundamental polarity, inherent to the University Library in its present form, but not explicitly expressed, is visible in the structuring axe between the tower and the garden. Verticality and horizontality, compactness and vacuity, concave and convex urban matrix, panoramic and concentric perspective, local density of books and temporally floating imagination of the readers - this duality represents, rather than a rigid opposition system, a visual and functional tension going through the whole building. A positive and negative charge - in terms of energy, which means: free from any aspect of value - holds the building in a constant but always changing situation of potentiality.

Going-through-areas for the students from one point to another of the university, places of concentrated study, casual meeting points, rooms for events and organised discussion, attractive perspectives or space details for visitors from outside etc. are the always changing elements

of the library and make of it a kind of sculpture of inner forces. Zones of increasing and decreasing densities create unstable centres of gravity and maintain the whole complex of the library in a condition of moving equilibrium.

Heterogeneous forces create attraction, distraction, concentration, release of tension. Each element will modify the

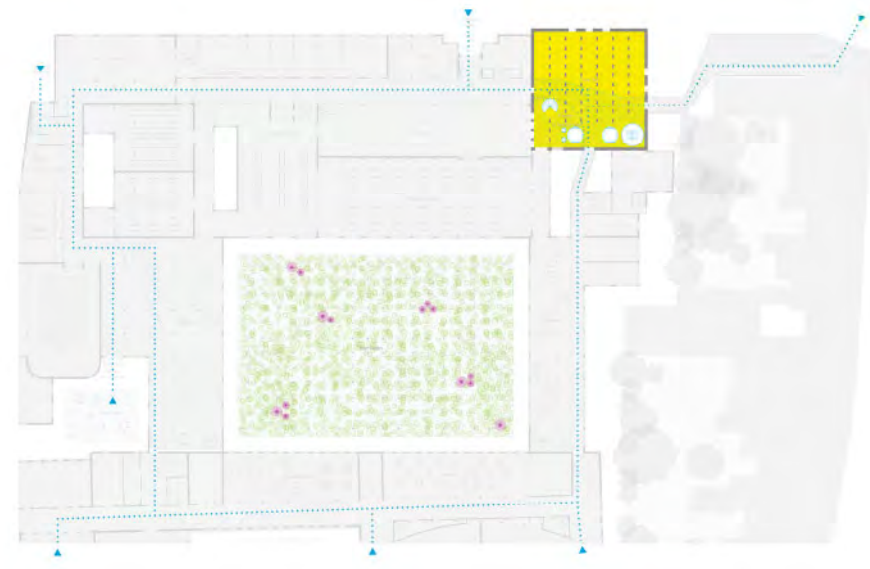
* Presence of Inner Garden and Book Tower

dynamic of forces in a kind of intensified reality provoking permanent movement and yet remaining in a vibrating, almost unreal immobility. It is oscillation of possibilities dancing above what really exists.

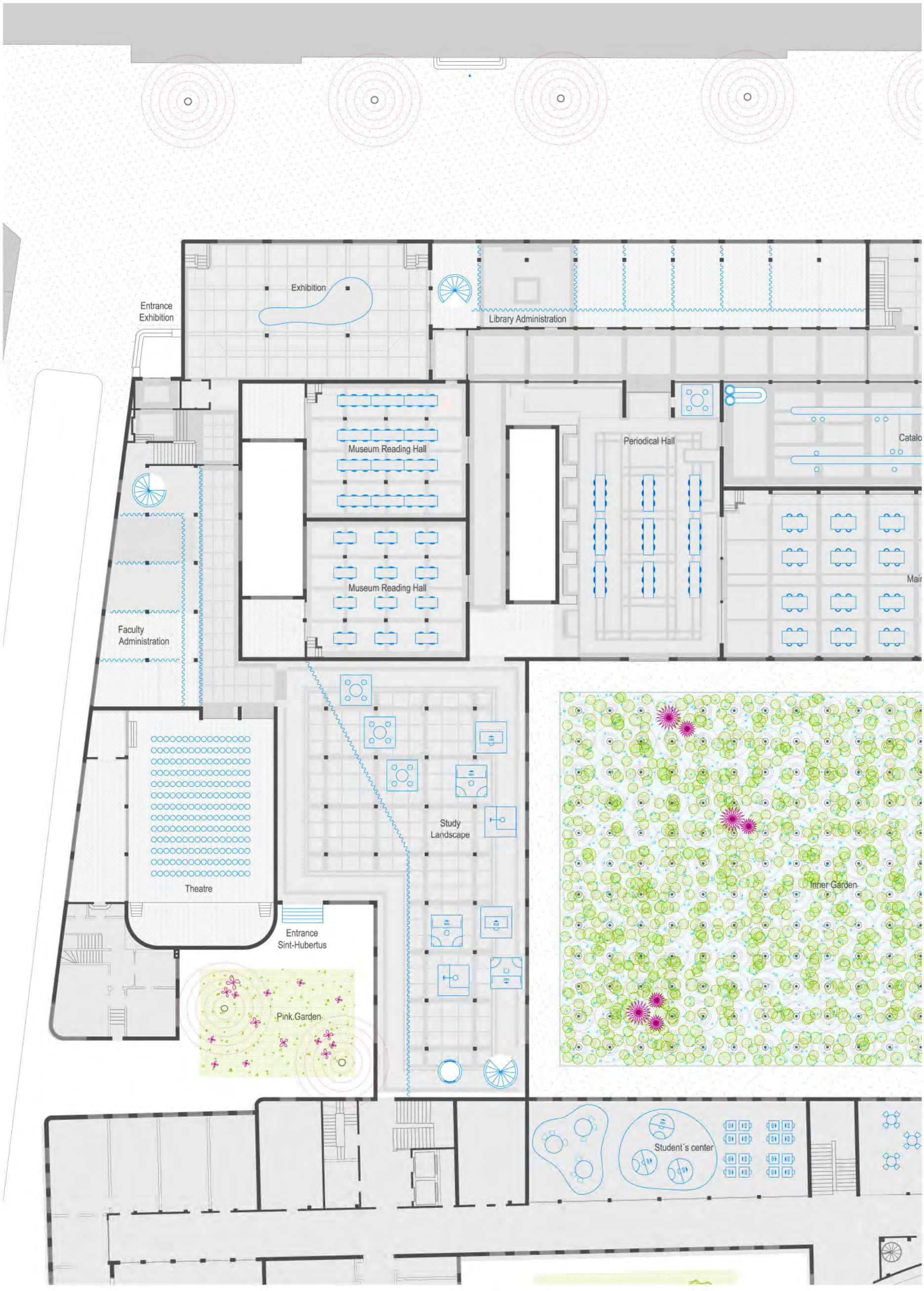
Intentions / General Concept
Intenties / Algemeen Concept

* Inside / Outside

The concept of the new University Library evolves between two main poles: The book tower and the interior garden.
The reading rooms are placed as a contiguous ensemble around the northern part of the enclosed garden. This central formation is embraced by a protective ring of beads that contains diverse functional elements: Administration, Dean's office, head librarian office, exhibition, cloakroom, study landscape, café, students centre, auditoria and transitional open zones.
Via this public layer the library connects to the surrounding city and the other university faculties in multiple ways.



* Polarities and Connections

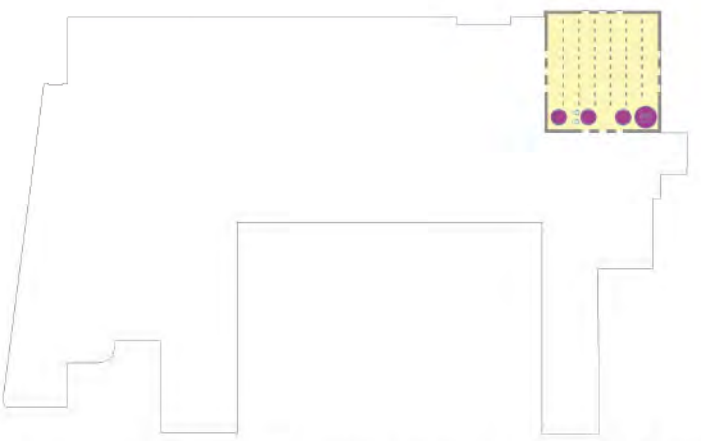


GROUND FLOOR

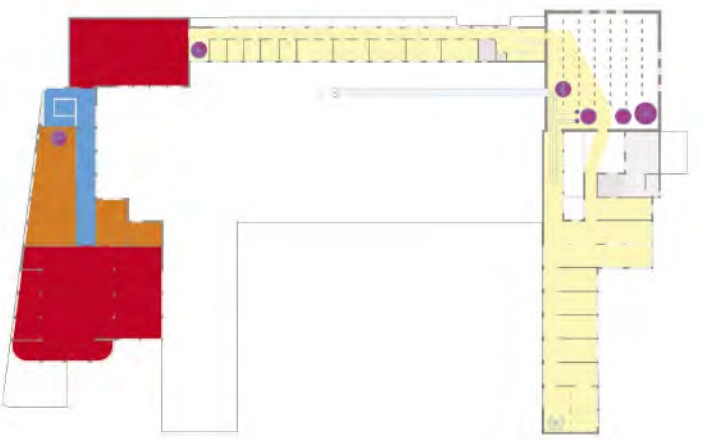

Entrance
Rozier
Lockers
Tower Hall
Entrance
to Reading Halls
gue Hall
n Reading Hall
Study
Landscape
Aquarium
Entrance Window

0 1 5 10 1/300

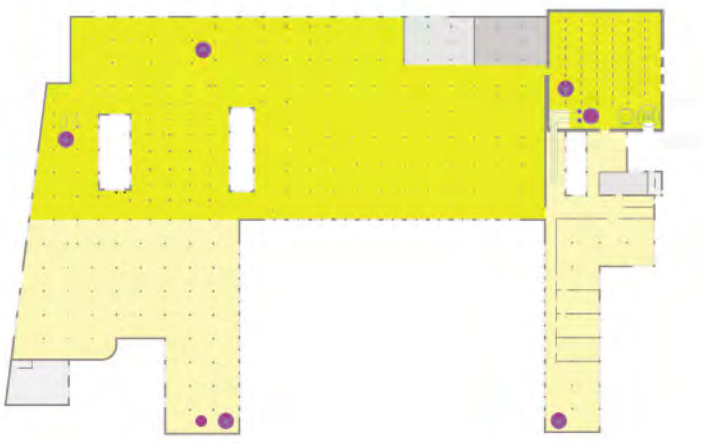
* Functions and circulations Sky Lounge



* Functions and circulations Standard Floor



* Functions and circulations First Floor



* Functions and circulations Basement

LIBRARY PUBLIC SPACE

LIBRARY COLLECTION & OFFICES

FACULTY PUBLIC

FACULTY OFFICES

CAFETERIA EXHIBITION SKYLOUNGE

CIRCULATION

TECHNICAL SPACE

ANCILLARY SPACE

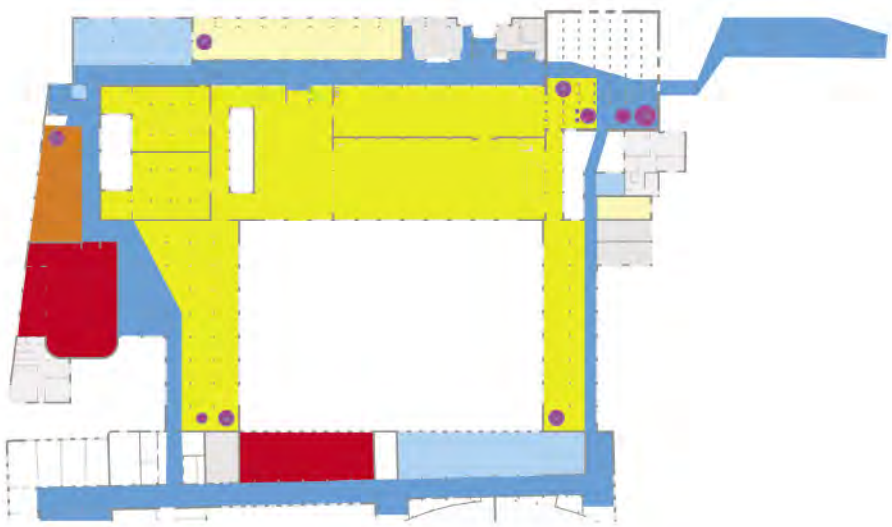
OTHER

Intentions / Distribution
Intenties / Beweging

In general the architectural design of Henry van de Velde does not propose a precise distinction of movement and occupation spaces.

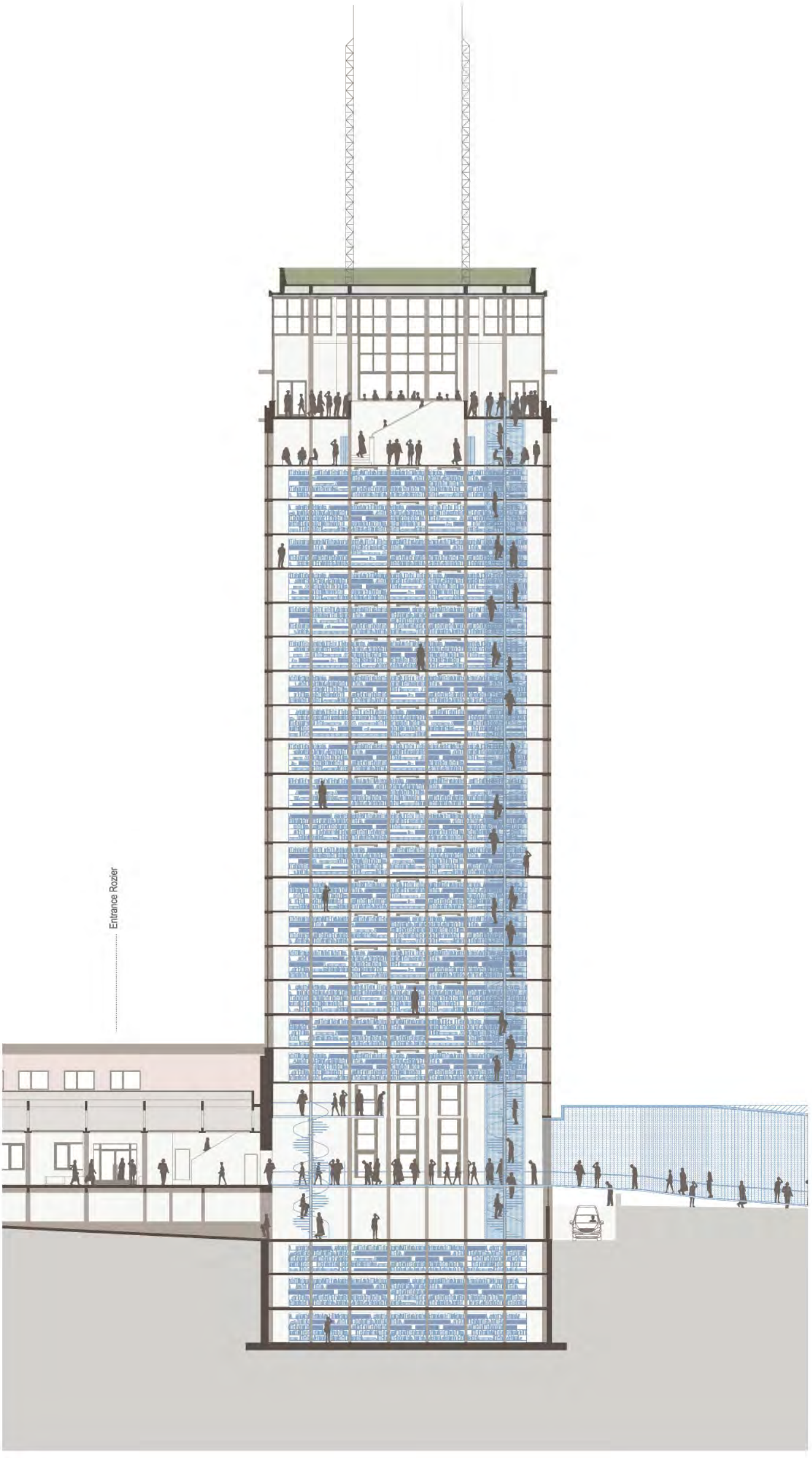
Through the organic composition of square, rectangular and ellongated spaces a rather floating continuum emerges. The concept envisioned here is following up this design principle.

The integrative circulation system of the project arises by interconnecting existing spaces. The library connects to former HIKO and to the BLANDIJN Faculty of Arts and Philosophy. Existing dead-end situations are opened up and in an organic way the library is internally reorganised and integrates externally into its immediate context.



* Functions and circulations Ground Floor

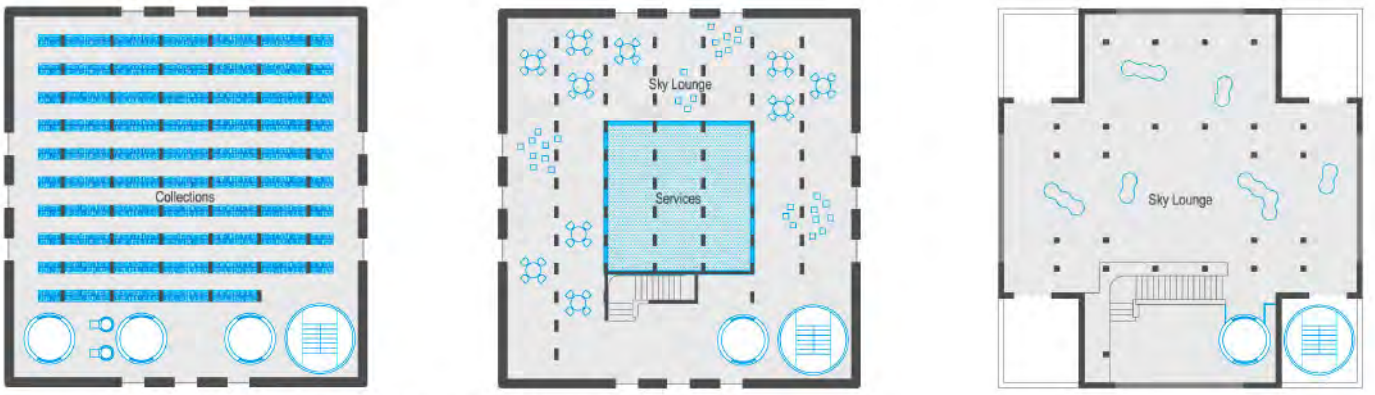
Simultaneously a clear differentiation is created between the internal circulation of the reading rooms - accessible via one single entrance - and the circular, rhizome-like distribution interconnecting the manifold functions of the library complex.


Entrance Rozier

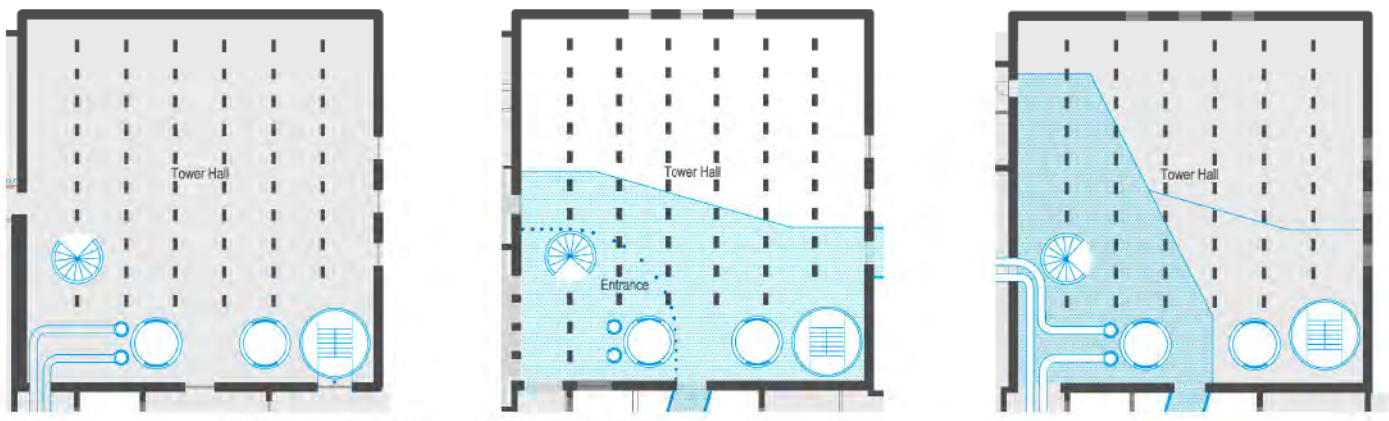
Intentions / Book Tower
Intenties / Boekentoren

The book tower becomes the important switching constituent. It connects vertical and horizontal flows, offers the publicly accessible belvedere and accommodates the main part of the precious bookstock of the Ghent University Library.

On the west-side the ground floor of the book tower opens up to the monumental vestibule, towards the east it connects via an overpass to the new entrance building on Sint-Pietersnieuwstraat.



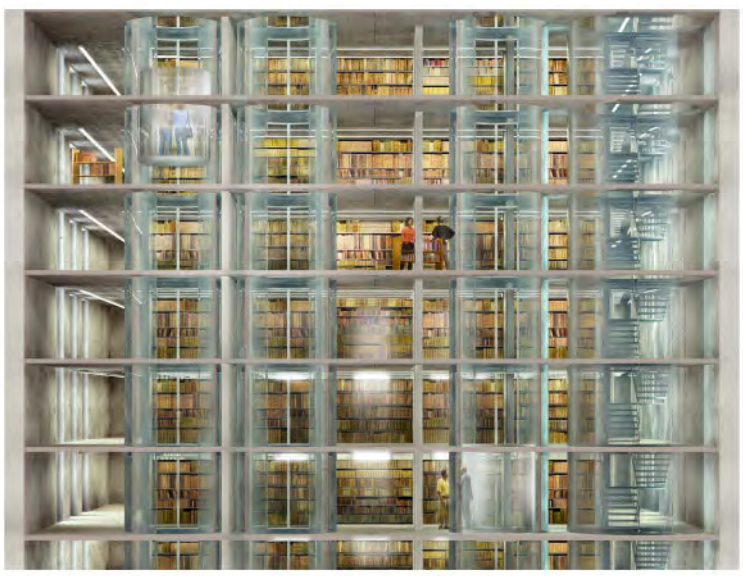
* Standard floor / Sky Lounge floors



* Basement / Ground Floor / First Floor

Through large openings in the ceiling the archive-storey as well as the above levels become perceivable. From here, all levels of the tower are accessible via the elevator- and staircase-tubes.
This new monumental space becomes the central entry area as it was envisioned by Henry van de Velde's in earlier design stages. The reading rooms are accessible from here only.

The floors -4 to -2 and 2 to 19 further on provide book storage space. An efficient and secure storage of the bookstock will be ensured by the reactivation of the original passive climatic regulation, the implementation of a new

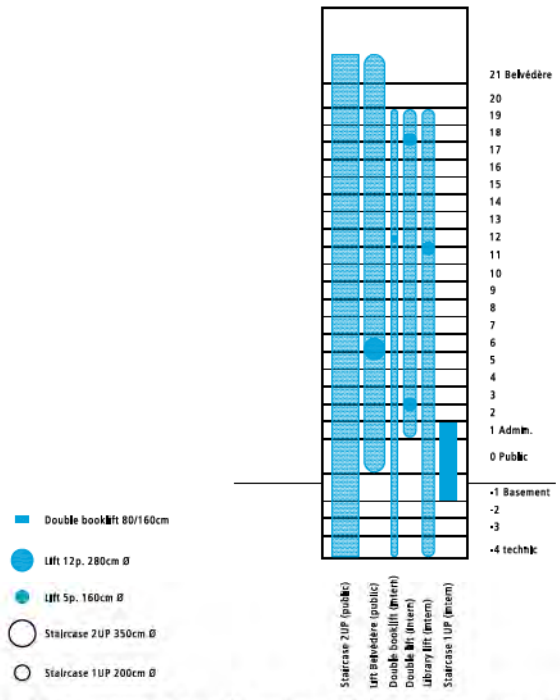


* Book Tower, entrance, collection and Sky Lounge

paternoster system and a more effective organisation of the book shelves. The storage capacity of the tower will be increased by 10%.

In the two top floors the Sky lounge is located - a laboratory and open platform for manifold public activities of the Ghent University Library.

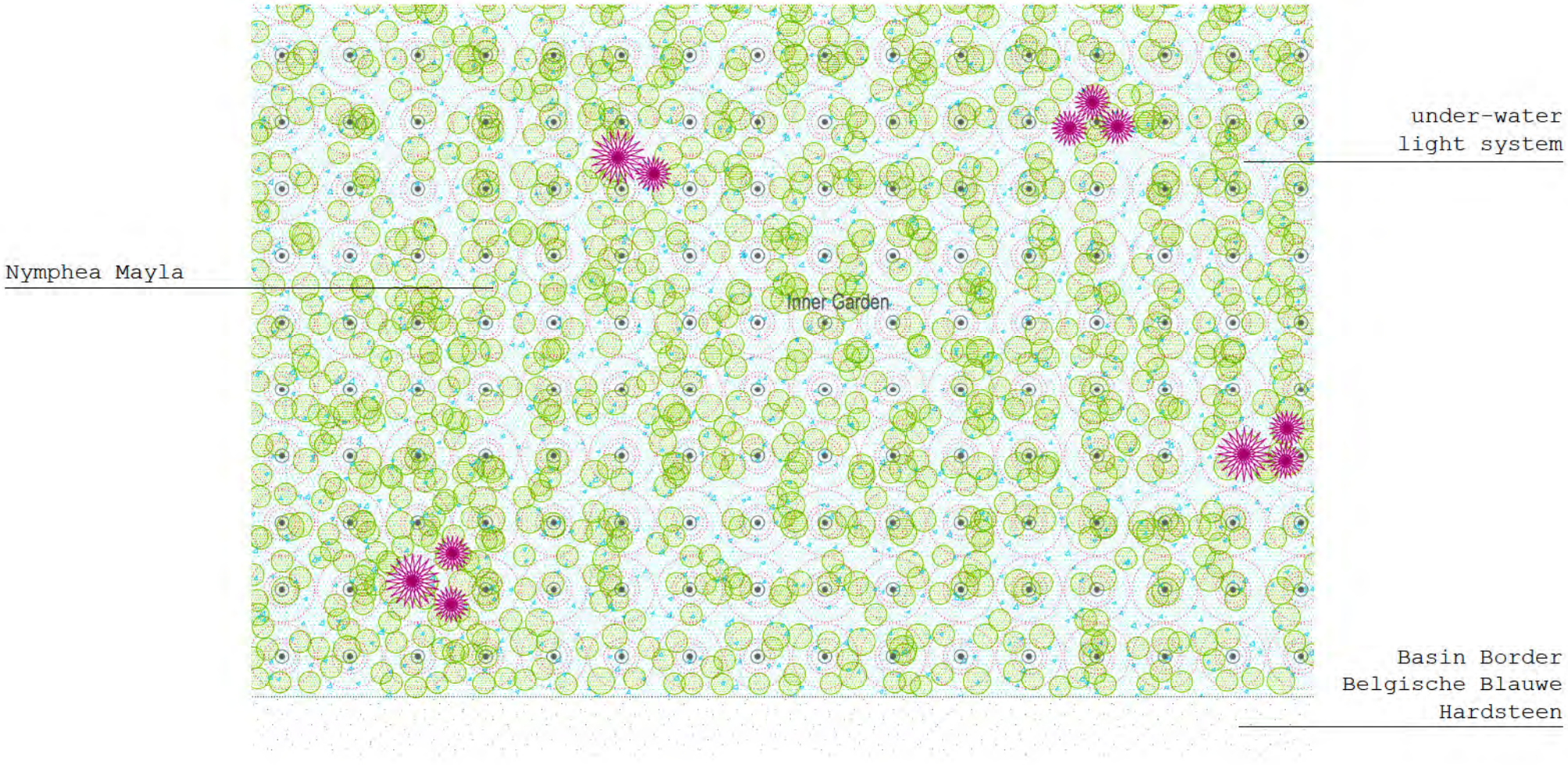
With the public belvedere on top of the huge archive, the tower oscillates between a storage silo and lighthouse.



* New vertical circulations in the tower

Intentions / Garden
Intenties / Tuin

The quiet and enclosed interior garden acts as a counter-balance to the active and energetic book tower. A vibrating equilibrium is created between these two poles of the library.
First of all the reading rooms benefit from the direct visual contact with this silent focal point of the ensemble.
The contemplative nature of the place is underlined by a water-lily-covered basin that extends over the entire surface of the courtyard. A circumferential plateau creates the transition between basin and building.
On the surface of the 80 cm deep basin a plentiful field of



aquatic vegetation is unfolded. The proposed Nymphea Mayla is an evergreen water lily and its star-shaped blossoms show fuchsia-like colours in spring and summertime.
Underwater lighting of the basin generates a glowing interplay of water and vegetation in dusk and dawn hours.

INNER GARDEN

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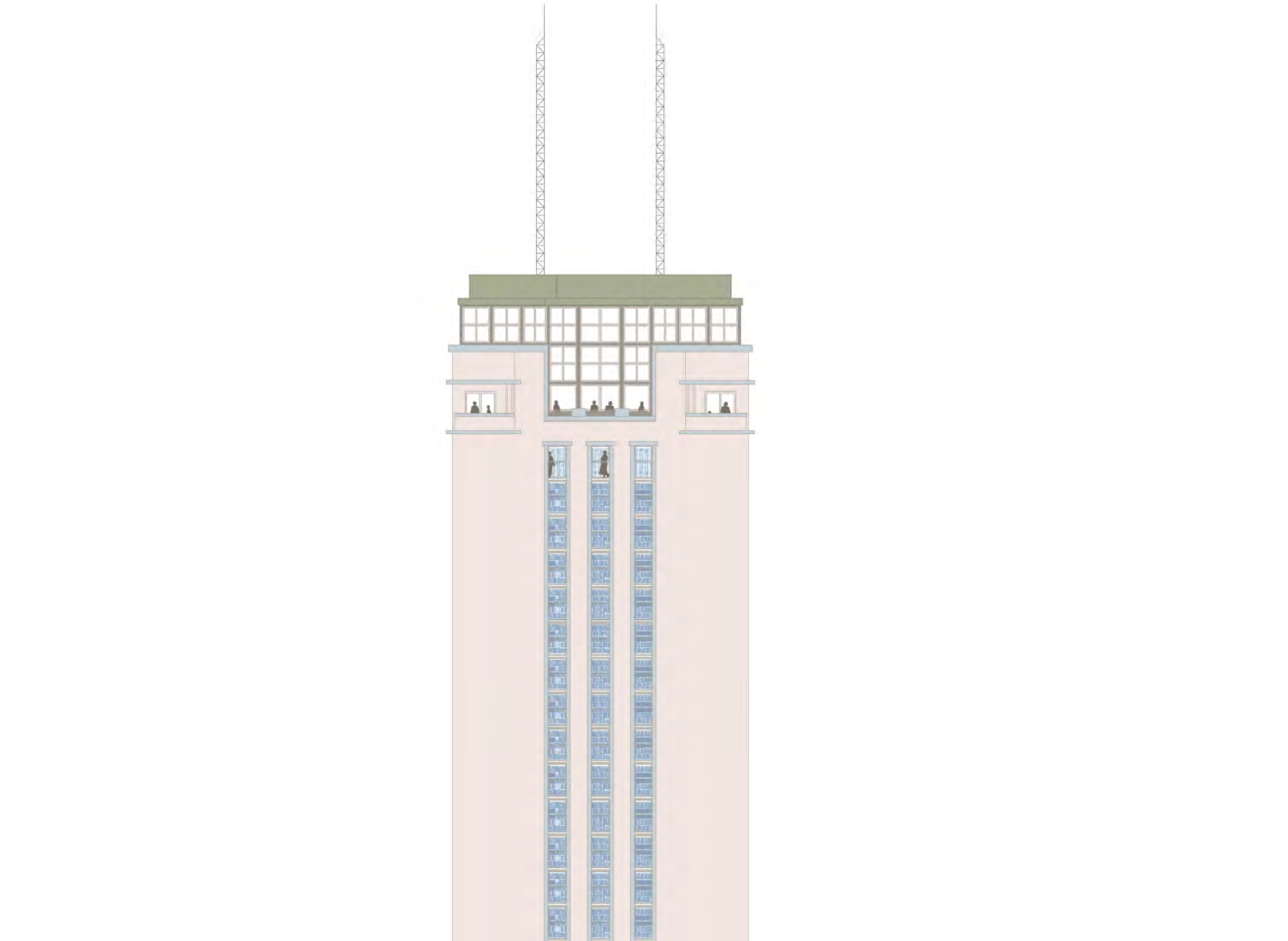
PERSPECTIVES
URBAN AND ARCHITECTURAL DRAFT



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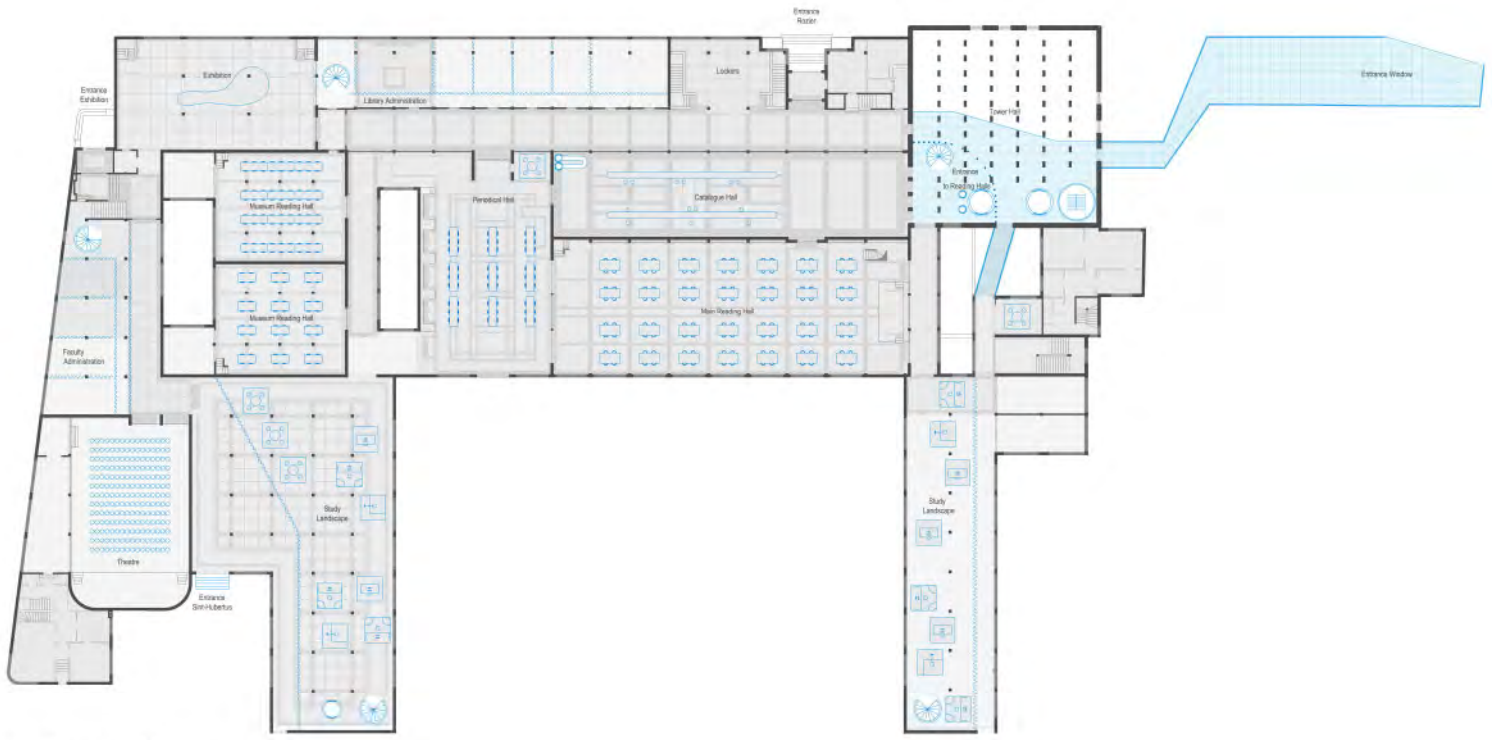


* Groundfloor

Intentions / Reading Halls
Intenties / Leeszalen

The reading halls of the Ghent University Library are directly connected to the book tower. After having surpassed the entrance hall in the southwest both levels of the reading halls can be accessed.
The ground floor is wrapped around the interior garden and the water lily covered basin.

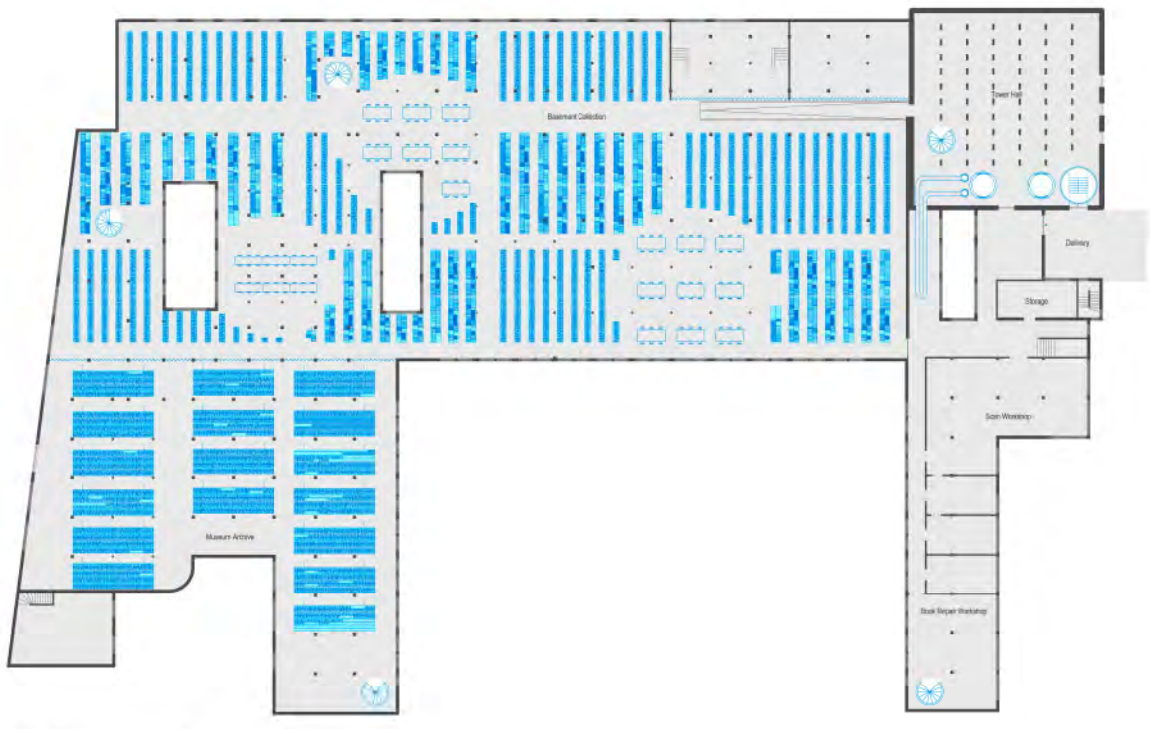
Passing the loan desk and catalogue hall the following classical zones of the library can be accessed:

- Main reading hall (102 places)
- periodicals hall (54 places)
- Museum collection (2 x 25 places)

* Main Reading Hall

Furthermore two 'study landscapes' are offered. Enclosed and well-equipped *cubicles* provide enhanced working atmosphere for small groups as well as individuals. If these areas will be exclusively accessible from the controlled library zone or directly from the public distribution is still to evaluate.

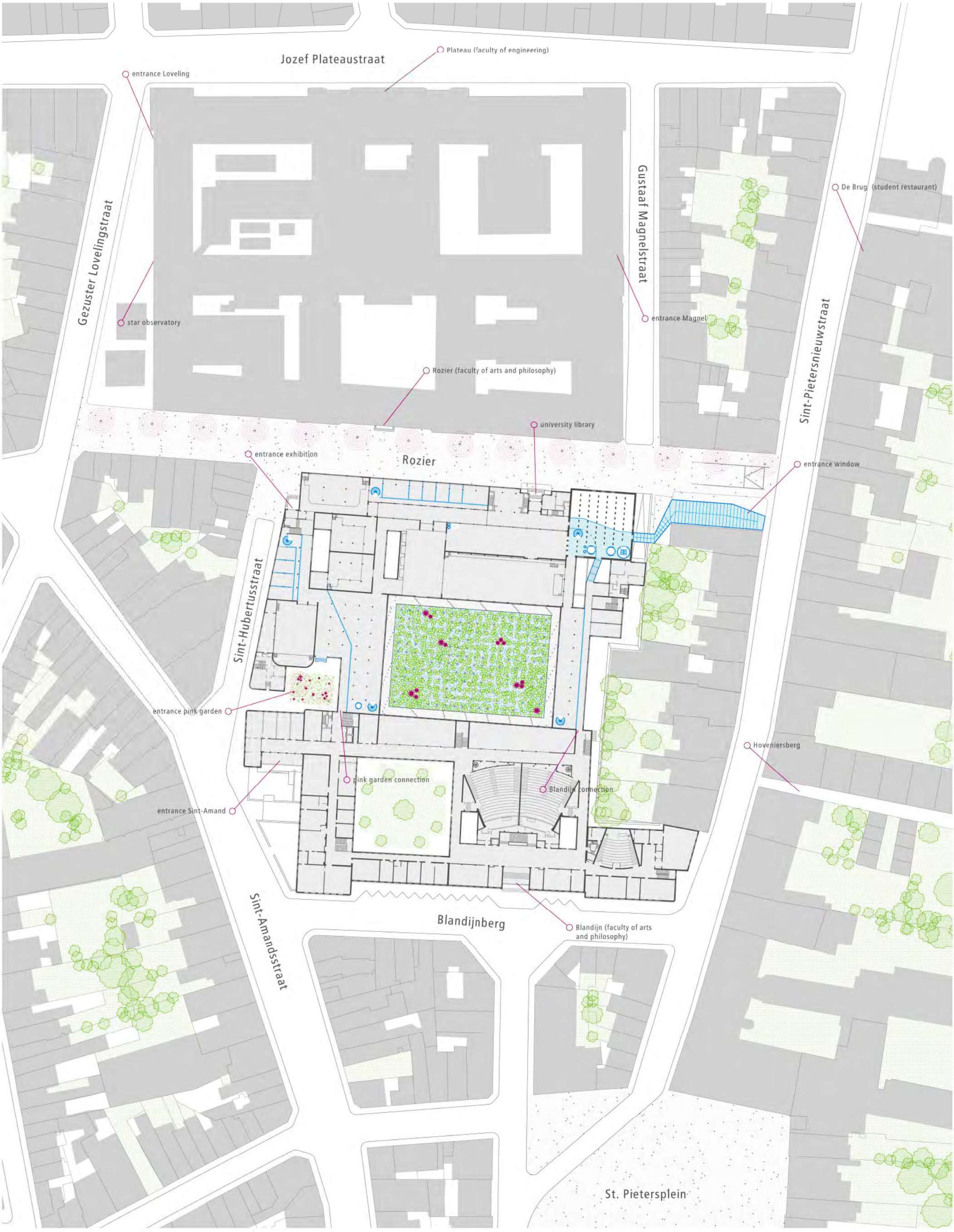
* Study Landscape


Basement Collection
Tower Hall
Delivery
Storage
Scan Workshop
Museum Archive
Book Repair Workshop

* Basement

In the basement floor 30 more study places can be found next to the various collections and historical periodicals. The secluded atmosphere and lighting situation suggests intense research activity. Historical newspapers and magazines will still be available for study here.

* Research Reading Hall (Basement)


Jozef Plateaustraat
Plateau (faculty of engineering)
entrance Loveling
Gezuster Lovelingstraat
star observatory
Gustaaf Magnelstraat
entrance Magnel
De Brug (student restaurant)
Sint-Pietersnieuwstraat
Rozier (faculty of arts and philosophy)
university library
entrance exhibition
Rozier
entrance window
Sint-Hubertusstraat
entrance pink garden
pink garden connection
Blandijn connection
Hoveniersberg
entrance Sint-Amand
Sint-Amandsstraat
Blandijnberg
Blandijn (faculty of arts and philosophy)
St. Pietersplein

Intentions / Urban Situation
Intenties / Stedelijke situatie

The university campus in Blandijnberg consists of a multitude of institutes and organisations situated east and west of Sint-Pieternieuwstraat. In an indistinct way the nodal point of this configuration - the Ghent University Library - touches the main axis of the campus with an empty plot between Rozier and Sint-Pietersnieuwstraat.

A new urban element - the *Entrance Window* - creates the missing link between the library and the main campus axis. This *window* represents the library towards the city and offers direct access to the book tower. In combination with the present entrance Rozier, the porch of former HIKO and an additional opening to Sint-Hubertusstraat a new continuum of circulations within the Blandijnberg quarter is introduced. During late hours access can be managed in accordance to various usage patterns; i.e. the *Sky Lounge* is accessed via the new *Entrance Window* and the main auditorium via Sint-Hubertusstraat.

* *Entrance Window* opens up towards the urban situation

Furthermore it is proposed to dedicate Rozier to pedestrians between Sint-Hubertus and Sint-Pietersnieuwstraat and apply a *Belgische Blauwe Hardsteen* pavement. A *parvis-like* field would be created between the Ghent University Library and the Faculty of Arts and Philosophy.

Heritage Interest
Cultureel Erfgoed

of the Complex built for the University of ghent
by Henry van de Velde (1863-1957)

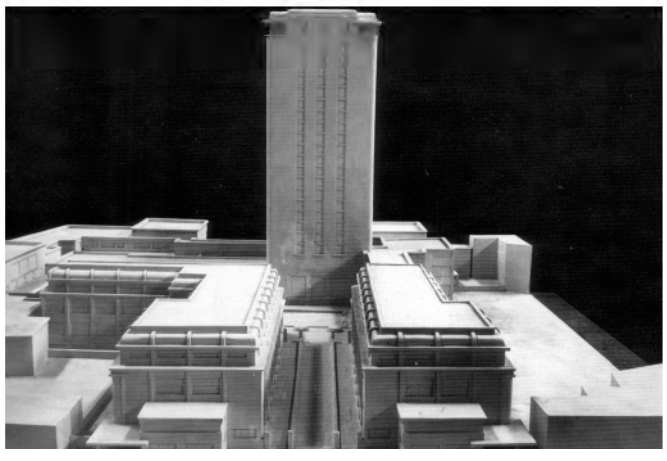
EVALUATION

1. Henry van de Velde and the complex of Ghent

The central library of Ghent and the Hiko are representing the most important and ever conserved complex built by Henry van de Velde during his career. It is even more important because this architect, known as an international protagonist of Art Nouveau and as the master of modernism in Belgium, achieved his "built works" mostly in Germany and in the Netherlands.

The size of the complex compared with the city of Ghent and its achievement in reinforced concrete represents an atypical building in the works of van de Velde, who collaborated for the occasion with other university professors as famous as J.N. Cloquet and G. Magnel for the stability and concrete. The tower, designed as a « book silo », represents a typological innovation on the international level whose qualities are still recognised today. It is also one of the most significant building of the Interbellum in Belgium, as well as for it strong expressiveness than technically for the implementation of reinforced concrete.

Erected during the second half of the 30's, this architectural grouping still belongs to the concept of Gesamtkunstwerk: van de Velde has drawn the architecture, the finishing, the furniture and even the garden. As far as it has reached the mass-producing, this work is in the center of the reflection about the equipment (rather than the furnishing) that will expend rapidly from the 50's in Belgium.
Therefore this work is marking a turning point. Finally, this complex gives the most precise representation of the influence - so debated - that this famous artist exerted over the education of generations of architects, engineers, designers and furniture creators in his country as abroad.



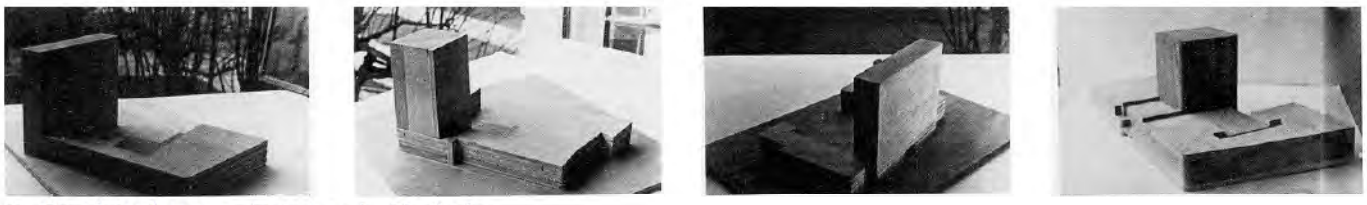
* Plaster Model 1934

For van de Velde (who was approaching his 70) this order received in 1933 was the crowning achievement of his career as a professor at the university, where he was teaching the history of architecture and the history of industrial arts since 1926. It should represent the first phase of a larger order, including other universities. This project, whose plaster model of 1934 can testify, was unfortunately not carried out.

Relating the history of the project and the development of the different outlines that were followed is interesting: this progression allows to precise some options and changes of courses of van de Velde that can explain the future interventions. This progression can be made from the studying of the archives kept in Ghent but also from four other sources where original documents were preserved (preliminary documents of the final project):

- The Archives et Musée de la littérature (FS X 544 et FS X 953 à FS X 960) : letters and photos of a hundred of documents
- The Library of the Ecole supérieure des Arts visuels de la Cambre : photos of the preliminary models in cardboard ;
- The archives of the Gillion company (executive plans of reinforced concrete of the tower);
- The archives of the architect Eugène Delatte (private property today):
    - 3 different pre-projects,
    - pre-project of June,
    - 1 pre-project of February + 1 project of March,
    - 20 drawings on tracing paper of the HIKO and of the library,
    - 150 drawings on tracing paper for the finishing of the Hiko and of the library.

The different preliminary studies and known models explicitly show the searched carried out by van de Velde in order to fit the library into the landscape of Ghent. They demonstrate that there is no one-to-one connection between the form and the function by van de Velde and on the contrary show the dialogue he wanted to establish between the architectural and the urban form (even if later projects have not been realised according to the plans)
The evaluation of the heritage interest of the library and the Hiko that follows, concerns its integration into the



* Preliminary Project Models

city as well as its intrinsic spatial and architectural qualities. Those qualities are examined in four points of view: the spatial system, the structuring spaces, the light and the colour. The question of original furniture is also taken into account.The reflection is based on the « as built » plans of van de Velde (published in the magazine La Technique des travaux). Those documents allowed a coherent reading/interpretation of the group of buildings because the small changes that occurred in time have sometimes altered the original intention and legibility.

2. ARTICULATION OF THE COMPLEX ON THE URBAN FABRIC.

The Tower

Built in the image of the Flemish belfries as the symbol of freedom through knowledge, the tower of the Ghent library plays a pivotal role in the urban landscape. At night, the belvedere is lighting up the city like a lantern. Its strategic issue in the whole city requires to be sustained and reinforced by a strong local root, well connected to the significant public spaces and to the urban fabric.
Different obligations led to another situation than the one planed by van de Velde. Indeed, at the moment of the construction they planed a direct visual cohesion between the place, the exterior garden, the library and the tower. The construction of the new Blandijn wing after the war definitely mortgages the initial project. The way the tower integrates itself into the local urban fabric is really simplistic in comparison with the original project thought by van de Velde (see implementation plan published in the magazine La Technique des Travaux, Brussels, Mai-June 1948). However, the competition gives the opportunity to improve the integration of the tower in the Rozierstraat: the construction of the corner parcel (Rozier/St.-Pietersniewstraat) should allow to glorify the surprise effect and reinforced the coherence of the urban fabric at the same time.

The Complex

Four architectural events punctuate the articulation of the library and the Hiko into the urban fabric (see plan 1):
- the effect of the tower in the Rozierstraat (+ the service exit);
- the main entry of the library Rozierstraat, set back from the street (remains of the old square planed by van de Velde);
- the Rozier/Sint-Hubertusstraat corner, the Hiko entry and its glass stairwell;
- The caretaker's lodge of the Sint-Hubertusstraat and its small garden that make the change in the complex scale in

comparison with the traditional fragment that was conserved at the moment of the construction (see plan of 1948). The house also has intrinsic qualities (architectural expression, distribution and inner spaces).

The Treating of the *Skin* of the Complex

The radiant and lightning look is an important aspect of the original project of van de Velde. It can be found in the tower and in other constructions thanks to the use of light pink concrete. Trained as a painter, fascinated by theories concerning the harmony of colours, van de Velde gave importance to the colour in the architecture.
In his work he systematically turns the beige tones into pink (to avoid the sadness of green or dirty yellow (see, for example, the coating original colours of the Gregoire and Cohen's houses that dated from the same time). Here, the colour of concrete is voluntary in opposition with the heaviness of the building. The « immaterial » aspect of the material (in the way that it needs to de-materialise the material to make it alive, and to struggle against the weight of the material) is an important data in the architectural course of the Ghent library. That is also a constant preoccupation of van de Velde who wrote from 1901:" the material is evolving toward its most immaterial expression". In 1910 he writes it explicitly in "Die Belebung des Stoffes als Prinzip der Schönheit"(Essays, Insel-Verlag, Leipzig, 1910, pp. 28 and following).

The Garden

The garden is relegated in the position of inner islands whereas it was designed to play a more important visual role from the integration into the urban fabric point of view. It belongs in any case to the spatial system of the architectural group. Van de Velde has probably designed it in the idea of a meditative garden (like a cloister garden). It reveals in "depression" in relation to the has less importance than the others spaces that delimits it and represents more a visual than a functional articulation because of the calm required by the library. Its structure is already present on the first sketches of van de Velde and the ornamental pond refers to the monument for Peter Benoît (built with Oscar Jespers in Antwerp at the same time). The double row of poplar trees planed on the first « as built » project extended the main axis of the library entry towards the planed extensions and the Sint-Pietersplein. It represents an important component to be rectified. At the beginning the hedges did not exist; today they are reducing the natural lightning of the basement through the windows along the garden.

3. HERITAGE INTEREST OF INNER SPACES

In its current condition, the study is focused on the public and readers open spaces, because they determine the spatial system and the structuring spaces of the architectural complex. It does not mean that the other spaces have no interest and does not deserve to be studied. Split by large glass partition walls, the former museum and the rooms of the library wing perpendicular to the Rozierstraat are spaces of high quality where the features have to be at the most preserved. However, regarding the intervention course and the complexity of the programme, it was really important to emphasize what was the essence of the two edifices (Library and Hiko) and to establish what could integrate one with the other in a dynamic way. That is what we did here.

The Library

In the inner dynamic of the library and in the interactions between the rooms and the readers, the tower represents a sort of dead weight due to the fact that only books live in there (and the library staff). However, it appears as the major component of the system when giving it its center of gravity. It links the two wings of the library (one is open to the public the other is not) and is symbolically built at one of the two ends of the main passage.
The monumental vestibule condenses the axiality of the complex: it maintains the legibility, the distribution and the permeability. It gives access to the catalogues room, to the main reading room and to the periodical press room. Linking the tower to the precious collections (manuscripts room, old print rooms and incunabula), it is also getting in contact with the entry and linking the three cross axis of the composition. The main cross axis links the entry with the catalogues room and with the reading room. When van de Velde built the library, the axis should continue, beyond the garden, at the bottom of the inner street that linked (at least visually) the inner garden and the Sint-Pietersplein (see plan 1948). The big vestibule represents then the major link between the most significant spaces of the library. Its architectural treatment (spatial composition, scale, light, preciousness of the materials) matches perfectly with this aim. Its force and its legibility are obtained from the pronounced opposition between its solid wall, punctuated with the office doors accentuated by the marble frames, and the translucent wall (originally transparent) that opens onto the catalogues room. The immateriality of this wall is accentuated by the continuation of the bright ceiling and the flooring (see the “calepinage” plan) On the other side, the continuous base in dark grey marble accentuates the linear aspect of the vestibule. At the beginning, the combination of opaque/transparent walls was reversed right/left in the

second part of the passage in the direction of the former exhibition room. All the main distribution axis takes its dynamic and its intelligibility from this subtle game between the solid and the void, the dark and the bright, the shade and the light.

The HIKO

The Hiko is built like an independent building intended to house one of the university faculties. It is not so monumental and complex than the library because it is intended to a target public. In another scale than the library, the beautiful glass stairwell that looked onto the entry and the passage that leads to the library of the first floor condenses the axility of the edifice. On the ground floor the passage led to the conference room, really changed today but whose original plan let's imagine certain qualities (round angles, lateral galleries overhanging the street through large openings).

Main Spatial and Architectural Features of the Complex

The study of the heritage interest of the two buildings stresses their main spatial and architectural features :
- axis and spatial system : legibility, accessibility, permeability
- structuring spaces, outstanding rooms
- Light

These features are shown in three documents. They complement one another without any hierarchic distinction: the structuring spaces have a meaning only regarding the axiality; the light sustains the spatial system and reinforces the structuring spaces. The polychromy of the different components and the floors calepinage confirm it.

a) The main axis - the spatial system
Axis represent the frame of the spatial system of the two entities, each at its own scale. The reflection is focused on the spatial system of the more significant parts, i.e. the main rooms opened to the public, the students and the

* Main Building Axes

* Preliminary Conservation Schemes

readers. On the plans axis are in blue, in red or in orange (and green for outside) according to their importance and their link with rooms they directly deserved. When there is a link between an axis and the room it gives onto, this exchange is pointed out with a colour spot. The stairwells (vertical axes) are pointed out with hatching.

b) The structuring spaces - outstanding rooms (plan 3)
Structuring spaces and outstanding rooms allow the legibility of the distribution system (see plan 3). On the architectural point of view those spaces are significant thanks to their :
- scale (search of monumentality)
- composition (pilasters, rhythm of solids and voids)
- natural light (zenithal, lateral, light shafts)
- materials.

Rooms opened to the public and the students are pink on the plan. Rooms opened to readers are orange. The tower (in blue) represents the amortizement point of the spatial system.
Wisely built at the end of the big passage, it emphasises the power of the catalogues and the reading rooms, but also of the wing used for the administrative works and others. At the top of the tower, the belvedere is lighting up the city like a big lantern. In addition to its technical features (water cistern, warmed plenum, heat choc resistant slab, etc.) it offers a masterful inner space and an unrestricted view of the city.

* Light Schemes

c) The light
The light is a determining point of the spatial system, of the legibility of structuring spaces and of the architectural interest of the most significant rooms. Light sources (façades and roofs) are pointed out in yellow.
The three plans (axes, structuring spaces and light) complement one another and are superimposed on one another. The big bright ceilings represent one of the basic qualities of the library and, some of the axes are therefore oriented through the main passage because of that particularity. The orange axis of the manuscripts room and the red axis leading to the precious collections are a good example in that case. This increases the synergy of the main vestibule.

However, an unknown element was supporting the three approaches: the polychromy.

d) The colour
The polychromy is an important aspect of the spatial work of van de Velde. It is only known thanks to the floors and the marble wall panels or panelling still present in the most outstanding spaces. The fact that the layout and the plan of floor confirm the three other plans (spatial system, structuring spaces, light) shows how much the colours belong to the whole concept. The search for the original polychromy represents then a big part in the study about the legibility of the complex; it is one of the important points of the study prerequisite to its restoration. The coating walls as well as the ceiling, the original frames (window frames and large glass partition walls), the visible structures of the glass roofs, the radiator cover, the frames, the plinths, etc. will be studied.

Furniture
a) Van de Velde designed furniture
Henry van de Velde designed the wooden furniture of the most significant spaces of the library as well as some librarians' offices. One part of this furniture was mobile (reading tables, chairs, desk lamp), the other part not (shelves of the big reading room, small alcoves, compartments of the periodical press room, pillar lights in the manuscripts room, wall panels of the belvedere, etc.) Even spread out in the whole complex, this furniture seems to be for the main part conserved, which is exceptional. Henry van de Velde being one of the international forerunners of design, it is really important to take this feature into account in the reflection about the restoration and the re-appropriateness of the complex.

Before any decision about the future use of the furniture is taken, a precise evaluation had to be made, in order to make a diagnosis of its state of preservation and to identify it (original location) :

- large reading tables were at the beginning in the manuscripts room,
- tables with prominent lateral blocks of the periodical press room,
- table with massive trapezoïd feet of the main reading room,
- small square tables with one central foot in the catalogues room,
- tubular chairs on the main reading room,
- etc.

According to the results and the current requirements, it will be checked if it is relevant to recreate entities as close as possible to the original complex (that would give the most significant spaces all their interest), or, if it is better to join in a coherent way the conserved furniture pieces but in other more quiet rooms as the main reading room and the periodical press reading room. As the furniture is solidly-built (often realised in solid wood), the aim is to continue to use it as possible. If confirmed, this possibility will be accompanied with concrete measures (maintenance, localisation) and with particular care (cover the wooden tables with glass sheet, for example). A specialist in restoration of furniture of the Interbellum will join the reflection.

b) The wall panels of the belvedere
The belvedere is unquestionably the more spectacular room of the library. A large part of its interest comes from its fixed furniture, especially the polychromy of its marble walls and panellings of different woods. All this deserves a special care and restoration effort, directed also towards the restoration of damaged floors and the restitution of the general polychromy (colour of the walls without wood or marble, ceilings, frames, radiator covers, etc.).

c) The metal shelves of the tower
The metal furniture of the tower (shelves between the concrete structure) was tailor made. That furniture, for the most part functional, does not have the “label” of van de Velde and has probably been realised, following his advice, by a company specialised in this type of storage furniture. There is nothing against its preserving. However, if special conditions of conservation are required for certain pieces of work, the replacement of some features by more appropriate storage might be considered.

d) The standard office furniture and the old furniture
Some pieces of furniture have not been designed by van de Velde ; they have probably been chosen (on his advice ?) by the librarian among the common production at that time. This is the case for some chairs, office furniture, lamps (former wall lamps in the manuscript room), etc. Finally, it seems that some furniture but also some objects dating from the old library still exist. Those features have also been listed before the best decisions concerning their preservation and their localisation are taken.

4. CONCLUSION AND RECOMMENDATIONS

The complex of the library of Ghent and the Hiko has been listed as monument. Its exceptional character is motivated on an international (typological innovation of the tower/ silo), on the urban (central point in the urban landscape of Ghent) and in the van de Velde works point of view (main and atypical realisation).
Being listed, the complex must be preserved with its basic features and with the complementary aspects (furniture included) because they complement each other. However, some features represent the essence of the classified monument.
Let's list the 10 recommendations to carry out :

- The tower and its belvedere should be restored keeping the original aspect giving by van de Velde, in particular the beige-pink colour of concrete.

- The four main articulations of the complex in the urban fabric have to be more emphasized (place of rooms, treatment of public open spaces, restructuration of the destroyed urban fabric).

- The meditative garden with its ornamental pond and its plantations should be restored in order to reinforced the entry axis of the library and give it a landing place.

- A major constraint in terms of heritage is the preservation of the axiality of the main vestibule and its architectural qualities (solid and void, light, materials). That aim can only be reached by preserving for the most part the connections and the numerous activities that come on it.

- The connection of the main vestibule with the main passage of the HIKO allows to increase the axiality of the spatial system and in the same time to create independent entities (flexibility).

- The preservation of architectural qualities, of light and of floors, of coloured spaces on the plans represents also a major constraint in a project of re-appropriation of the complex.

- As the edifice is listed, any essential interventions on this spaces will be motivated not only concerning the program, but also concerning the emphasizing of the heritage. Those interventions will strive to exploit the intelligence of the origin system and its architectural qualities.

- Spaces, without colour on the plans, have to be studied in the point of view of their characteristics and qualities. The former museum and the large rooms separated with glass partition walls for example, deserve the biggest attention. That is the same for some librarians' offices and the caretaker's loge close to the HIKO.

- The polychromy represents a main aspect of the spatial system developed by van de Velde; it supports its search on light, on floors composition and on wall panels. Extra stratigraphic studies have to be carried out on walls, on frames, on ironwork, etc. Those will be restored at least in the structuring spaces.

- Furniture designed by van de Velde belongs intrinsically to the original concept. It will be the subject of a survey, of a meticulous restoration and of a project of reuse in the most outstanding rooms of the complex if possible.

Guidelines for the Restoration and Conservation Planning
Richtlijnen voor de restauratie- en behoudsplanning

The Gent University Library is a listed monument of high importance in local, national and international respect. For this reason alterations of van de Velde's library are based on a profound knowledge of the complete building in terms of both physical and architectural evidence.
Interventions must at the same time strengthen the existing building, visualize the beauties of van de Velde's architecture and improve its functionality for future use. No mayor alterations of the original and historic fabric will be accepted unless unenviable due to the necessities of modern requirements and the customers programme. In general additional demands in terms of functionality and decrees will be satisfied by additional architectural or technical elements, not by destruction of existing important elements of van de Veldes architecture. Thus the major part of the intervention will be reversible in accordance with the demands of the Charta of Venice (1964). Strengths and values of the historic building will be used or reactivated in order to minimize interventions as well as costs.

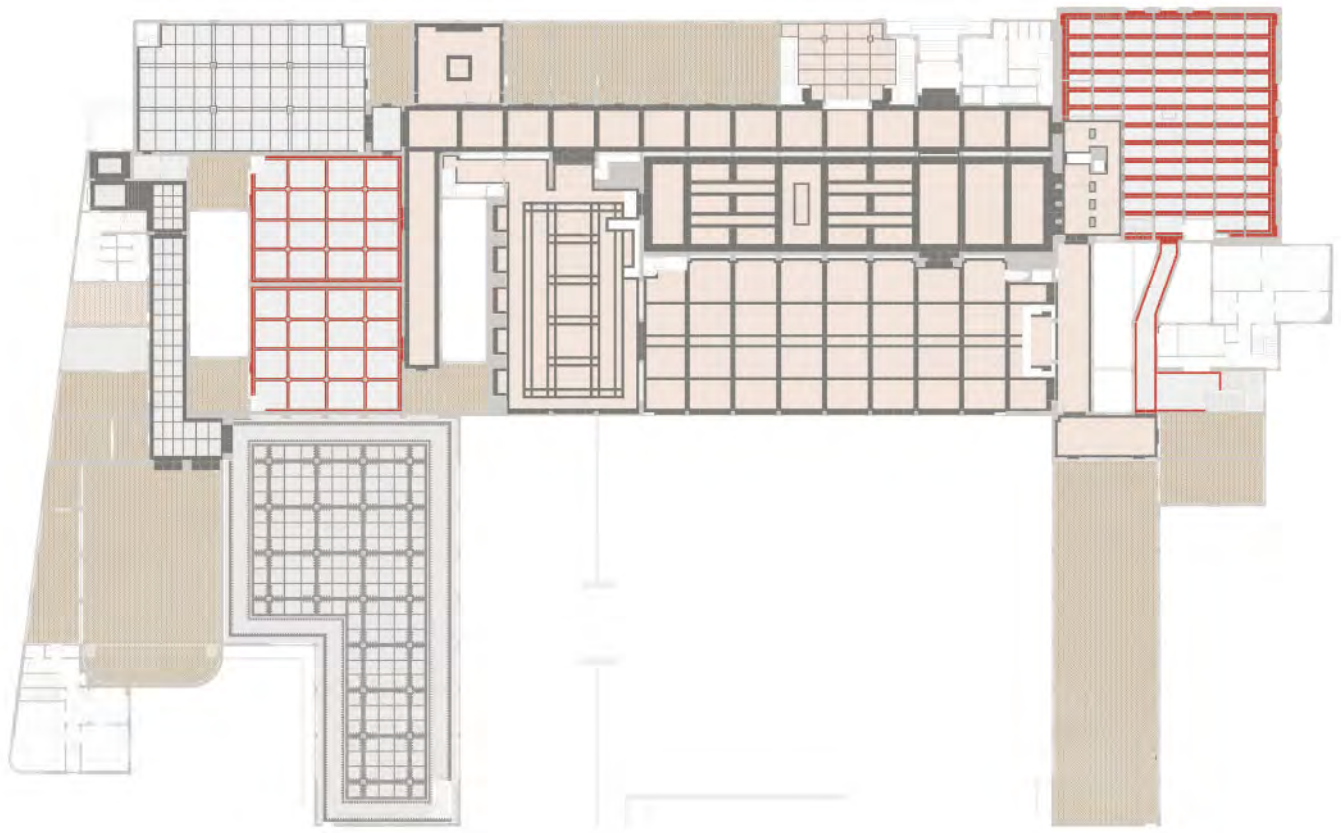
The analysis of the building covers

- Compiling the historical facts and known sources,
- Detecting the material and physical structure of the building from the files of the archives.
- Cross-checking these data by respective laboratories in order to verify and clarify the actual situation.
- Detailed mapping of the existing architectural elements of van de Velde's design in a room log in order to make sure that the entire and systematic knowledge of the complete building with the whole entity of the important structures and decorations is the basic starting point of the design and construction activities.
- Classifying these elements according to their material, historic and aesthetic value in order to make a professional and relevant choice if necessary.
- Recording all relevant alterations of the building in order to differ van de Velde's design from later additions.

The result of this historic analysis will be triple:

1. Plan showing building phases.

The status of the building will described as found after the finalization by van de Velde and later additions or alterations will be indicated. Such alterations are for an example additional walls, as found for the creation of the present office of the head librarian, or additional glass walls in front of the working spaces of the librarians.



* Floor Covering Plan

2. Plan showing noteworthy architectural elements.

Here we will indicate, which areas of the building have remained more or less unchanged in terms of architecture, surfaces and furniture and which have undergone major changes. We will identify the remaining furniture of the thirties scattered over the whole building. We will furthermore pay high attention to the built in furniture and beyond this map the historic surfaces of floors, walls and ceilings in their historic sturcture. We will detect historic surfaces discovered under later panelling or paint with the tools of the restorer and we will identify the still existing equipment of the building in terms of installations (heating, illumination etc). Last but not least we will identify the remaining original windows in order to design new ones if necessary in an appropriate way.

Based on these actual data we will identify those areas of the building, which apparently are untouchable due to their historic and aesthetic importance as witnesses of the van de Velde architecture and thus have to be preserved without major changes or interventions. We currently think that the entrance together with the vestibule, the corridor with the administrative offices, the space for the catalogue, the reading room and the room for the journals are the most complete and thus important ones. We also consider the quite a few spaces to be of high architectural and aesthetic importance. On the other hand some of the other spaces may be of lesser importance for the future of the library.

3. Conservation Plan

The plan indicates, what kind of importance every single element of the building should have. This document will be discussed with the authorities in due course before the beginning of the detailed architectural design. Only after all parties (owner, authorities, architect etc.) have agreed on this document, the design process will proceed.

Restoration Strategy and Restoration Planning

Based on the decision for the relevant architectural project the general strategy for the restoration will be:

- Preservation of important areas of the building without major changes of the historic fabric. This will include the restoration of the historic colour system according to the finds of the restorers investigations in traditional techniques wherever possible,
- Preservation of the respective materials, such as stone, wood, tiles etc. by qualified restorers in order to present the famous van de Velde architecture in its original appearance.
- Restoration of the historic furniture, now scattered all over the building,
- Repair of historic surfaces in historic techniques, wherever necessary, such as Linoleum flooring, wooden floors or tiles, which might be reproduced by capable firms,
- Reproduction of historic facades, which must be removed in the course of repair, such as the fairfaced concrete of the tower after reinforcing and coating the reinforcing irons inside,
- Repair and improvement of the historic windows with double glazing or additional leaf of windows wherever necessary,
- Removal of most of the disturbing modern additions in those areas, which will be presented as witnesses of the van de Velde time.

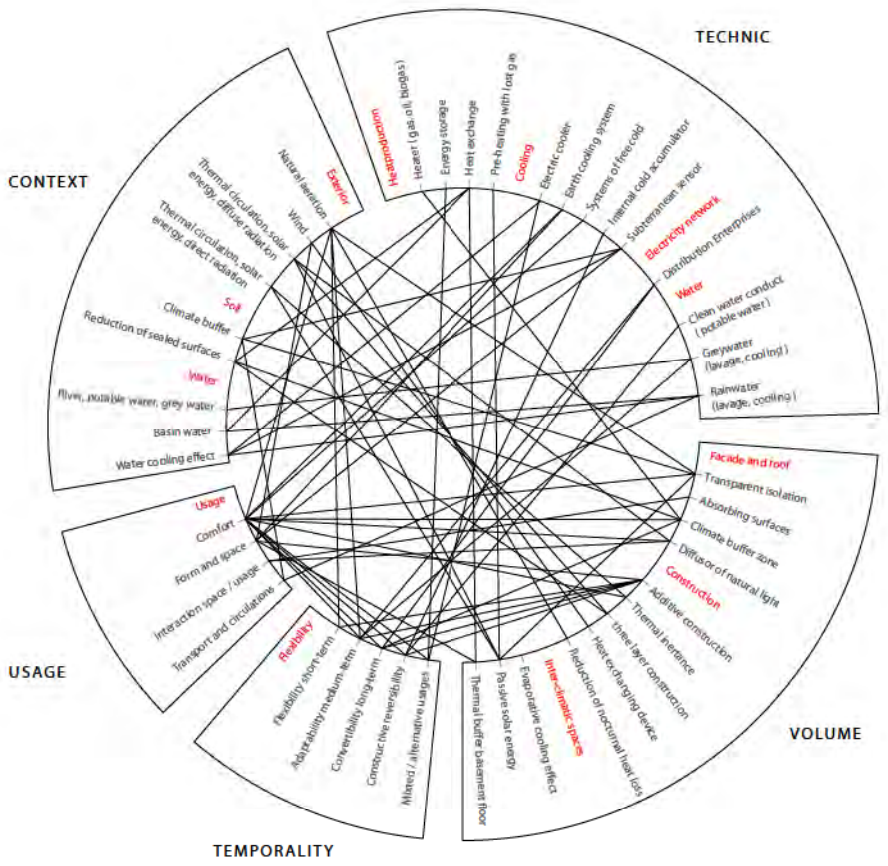
The implementation of the necessary works will be based on detailed measured drawings and will describe the necessary work in detail. Standard solutions will only be implemented, if standard problems can be identified. If not, every single problem will be solved with an individual approach. The general approach is the entity of historic fabric and materials and techniques added.

Supervision of these works on the site will be under the responsibility of a qualified planner and architect, specialized in the restoration of historic monuments.

Sustainability
Duurzaamheid

Beyond the technological, the climatic concept for the Ghent University Library focuses on 'passive intelligence', changing usage patterns and temporality. We consider these points as vital in an ecological evaluation of sustainability.

The project does not seek its ecological performance in autonomous, separated aspects, but rather in an interdependent, synergetic relationship of various categories: Technology, volume, context, usage patterns, material and temporality.



* Graph of Interactions

Passive Intelligence
Passieve intelligentie

The work with and on the architectural and urban heritage allows to notice its large original potential of passive intelligence. Sometimes its structuring and stable effects are stopped by locking the interactivity in the system. In counterpart, there is an attempt to control the global result by the addition of controllable individual parts. In the case of the university library of Ghent, the meticulous observation of the original concept (spaces and construction techniques) allows to identify this passive intelligence, sometimes disrupted by the random of the history. We pointed out our standpoint concerning the eventual restoring or adaptations of these mechanisms.

The Control of the Climate

The problematic of the library is, more than for other buildings, a question of preservation of the climate. The inhabitants are the books, people are visitors. The observation of the techniques used in Ghent shows that they were chosen to favour the hygro-thermal stability.

The Materials

The wall materials of the shell mentioned on the van de Velde's plans are reinforced concrete, brickwork and air-entrained concrete.
The reinforced concrete visible on the outside was smooth formed with steel sheets. Its colour was pinkish and its aggregates were very thin. Today, it is covered by a coating composed of sand and epoxy. The facings (plinths in "blue stone" for example) were used as « lost formwork ». This method causes a common pathology (presence of armatures in gravel nests) that explains the facing disorders.
The air-entrained concrete is well present in big blocks shapes that have an air-entrained structure as the current air-entrained concrete (for example Ytong). But the analysis shows that the material is nearly composed of 100% limestone. The thermal isolation of those blocks is then at least equal to the thermal isolation of the lighter current blocks and their regulating capacity on the humidity is well higher.
Those blocks are often covered by a painted coating. In the tower, the coating is covered by a distemper (whitewash), which keeps its regulating hygroscopic capacity.


* Concrete


* Cellular Concrete Blocks


* Epoxy Skin


* *Belgische Blauwe Hardsteen*

The Tower, the Book Silo

The density and the compactness of the books is the first spontaneous stabilisation factor of the climate. The book guarantees its own climate; it belongs to the inertia of the whole.
The external skin of the tower in elevation is composed of:
- 12 cm thick of smooth and heavy concrete on the outside.
- 10 cm thick of air-entrained concrete blocks on the inside.
The structure is in reinforced concrete. Considering the density and the size of the columns, the slabs between the floors are 9 cm thick.
The original ground finishing has a large hygro-thermal exchange capacity like the inner faces of the tower walls. They show isolation qualities at the same time than thermal inertia. They are also able to absorb and to hold large quantities of humidity without being saturated. In case of thermal chocks they action an adiabatic air-conditioning process. This stage change represents a potential for the preservation of the climate - as far as the surface areas are treated to allow the interaction.
The external skin of the tower (reinforced concrete) is a heavy and dense material, whose adiabatic capacities have to be evaluated. In any case its mass gives it an important thermal inertia.

The Basement Collections
The ground possesses an important thermal inertia. The sections from the time before the construction show a concrete composed of small pieces of bricks that was directly laid on the ground. The foundations must lay down on the good ground. The sections published after the construction show a void under the cellar ground. In any case, it is important in the future to continue to benefit from the inertia of the ground to stabilize the climatic conditions.

The Double Roofs
The university library is covered by a void under the roofs that includes, for the main spaces, the lanterns and the glass roof. The shell of this void is heavy and possesses its own inertia. Unfortunately the roofs have been in the past subjected to a lot of changes. But it is precisely at the interface with the external "skin" that the main part of the passive intelligence is contained. The original lanterns have disappeared and their profile modified. They probably had ventilation and/or air-conditioning system (like in the Palais des Beaux- Arts in Brussels, Victor Horta, 1928). The climate management in those voids can fall within the scope of passive intelligence. For the opaque parts of the roofs, we might choose (apart from the thermal isolation) a climatic inertia reinforced by the adiabatic effect generated by layers of gravel and sand.

Energy Concept
Energieconcept

General Remarks

In the following chapter structural interventions to enhance the buildings climatic conditions will be described. These interventions will be proposed in addition to the reactivation of the buildings existing 'passive intelligence'.

Tower

The most severe problem of the book storage areas in the tower is, that they tent to overheat in summer in the upper levels of the tower. The reasons for the overheating are possibly first of all the solar gains of the windows and the natural ventilation through the windows.
The first step of upgrading should be to replace the windows with solar protection glazing and also prevent unwanted ventilation of the building.
An auxiliary ventilation system with heat und moisture recovery and a small air change rate of 0.5 air changes per hour will help to establish the preferred indoor climate in the tower.
The heating system will be improved by small linear heaters along the outer walls of the tower. They will replace the heat losses in the areas where they occur.
The outer façade works well the way the building is run at the moment. An increase of temperature and especially of relative humidity and water content of the indoor air during the cold season could cause problems that did not arise yet. This topic should be more detailed in the planning process.

Natural Ventilation

The technical system for the indoor climate will be built as simple as possible. In most of the floor space natural ventilation will be sufficient. Only Areas that need a special climate will be equipped with a ventilation system with a minimised air change rate.

Building Techniques
Bouwtechnieken

General Remarks

Just as in the architectural sphere, structural engineering as well necessitates only minimal interventions in the existing building structure.

All changes in loadbearing building elements are undertaken with the highest respect for the basic fabric. All materials and surfaces will - to the highest degree possible - be restored to their original state. Wherever this may not be possible (e.g. for ecological reasons), they will be replaced by the best equivalent in modern materials.

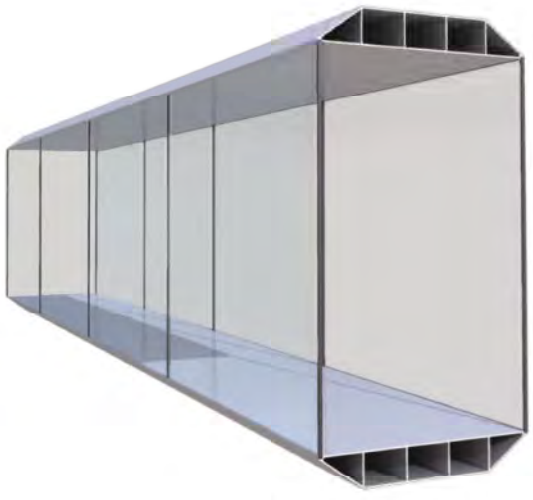
Interventions in the basic fabric aim essentially at changes and modifications of the building's infrastructure (stairways, elevators etc.)

Library Building

In the library building structural interventions are limited to several smaller wall openings and four breakthroughs through the ceilings. The former facilitate horizontal communication, while the latter are needed for the new vertical stairways. The margins of these new openings are reinforced by local binding beams. The stairways are structurally independent units.

In the new entrance hall there will be transparent link-up bridges. The bearing construction of the connecting bridge consists of two multicellular steel box girder cross-sections as floor and roof elements not requiring support between the two buildings.

The two bridge bearings are statically not connected with each other and as a result of all elements combining in the bearing effect, they are extremely slender. The contour of the cross-section is tapered towards the edges of the bridge in cross-section to further enhance the filigree looks and elegance of the construction.



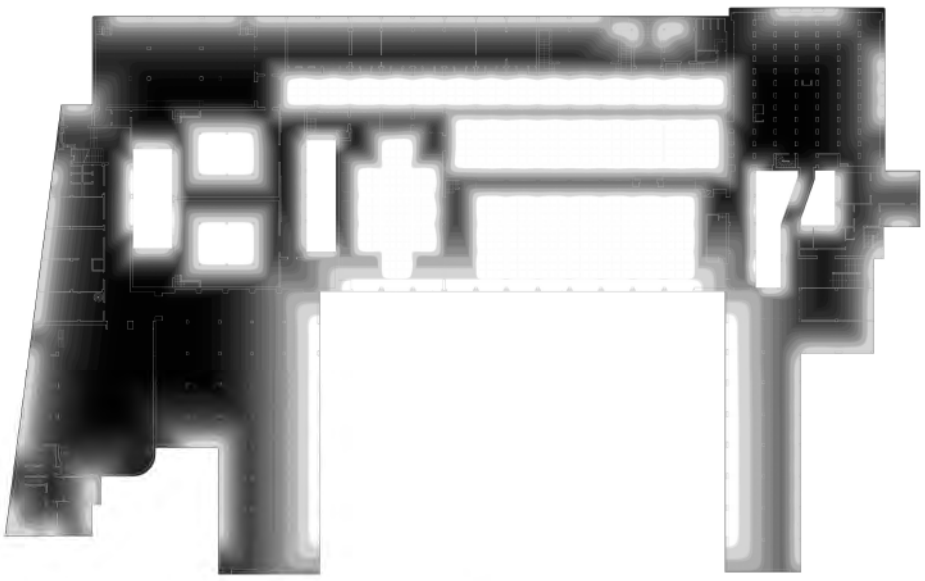
* Bridge connection element

As protection from the weather, the side of the connecting bridge will be enclosed by full-depth glazing. The panes of glass will be attached in lines and without tension to the upper and lower box girders. Through the use of three-layer laminated safety glass giving protection against falling, it is possible on the one hand to clamp the glass flush, and on the other hand to dispense with a handrail across the bridge - which will enhance the filigree appearance and elegance of the bridge construction even more.

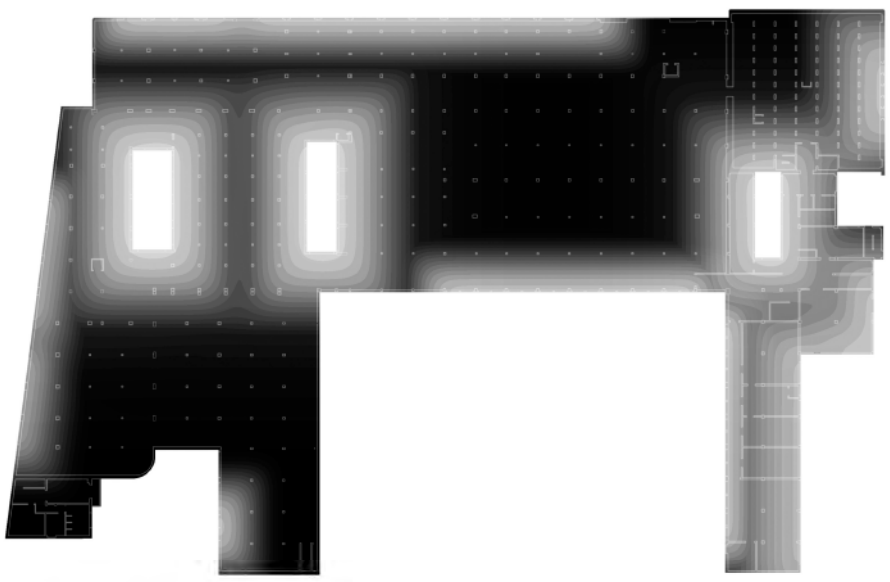
Book Tower

In the book tower there has to be some redevelopment. Moreover, for climatic reasons the glazing has to be changed. Due to the new vertical access system there have to be some changes in the structure. On the south side of the tower there will be two new elevators and a new stairway. The columns in this area are replace by the walls of the new infrastructure parts that are made out of reinforced concrete. During construction time temporary supporting structures will be installed locally.

In the lower storeys of the tower some parts of the ceiling will be removed in order to create a generous entrance area. The parts of the ceiling to be removed were chosen in such a way as to ensure structural stability by the remaining elements.



* Light simulation Ground Floor



* Light simulation Basement

Lighting
Licht

Reading room areas on the ground floor have generous ambient light levels from the extensive skylight system. These existing skylights consist of a daylight at ceiling level within the rooms, and a second layer of roof lights above. The transmittance of these layers will be adjusted to ensure adequate daylight levels within the rooms whilst avoiding glare and overheating. Electric lighting during daylight hours will not be required in these rooms.

Vertical windows in most reading rooms provide an opportunity to rest the eye, and to follow changes in the external weather whilst studying. Fabric blinds will be needed on some façades to prevent excessive sun entry.

As daylight fades at the end of each day some supplementary lighting located within the loft zone will be energised. This means that the daylights in the reading rooms will continue to provide ambient light for circulation, whist desk lights will provide working light for readers and staff.

The glass roofs of the reading halls will be equipped with solar protection glazing in order to prevent an overheating in summer. Due to its inclination it will not reduce the wanted solar gains in winter.
Additionally a glare protection in the space between glass ceiling and glass roof (folio or blinds) will prevent glare in the reading hall and will also reduce overheating in summer. The space between glass ceiling and glass roof should be ventilated by automated windows in the façade or the roof.
The facades will be equipped with a highly reflective screen on the inside, which will reduce the solar gains by 40 %.
The heating system will be kept as it is at the moment with convectors in the space between glass ceiling and glass roof.

Natural light entry to the basement level will be much more limited. This makes these areas particularly suitable for the storage of light sensitive works, perhaps some or all of the libraries rare book collection. The two light wells provide some localised natural light - reading tables and staff areas at basement levels should be located near these light wells to give some access to daylight.

Electric lighting in the basement will be high efficiency fluorescent fixtures controlled using occupancy sensors to minimise energy consumption.

Acoustics
Akoestiek

The reading halls, study labs and auditoria of the Ghent University Library require a high-class acoustic standard.

The volumetric design of Henry van de Velde generally provides a good base, but the mainly hard surface materials such as marble, parquet, rendered concrete and glass possess relatively low absorbent acoustic qualities. With increasing rates of visitor frequentation higher levels of acoustic disturbance are expected.

According to spatial setting and frequentation rates, specific and adequate solutions have to be developed.

Library Techniques
Bibliotheektechnieken

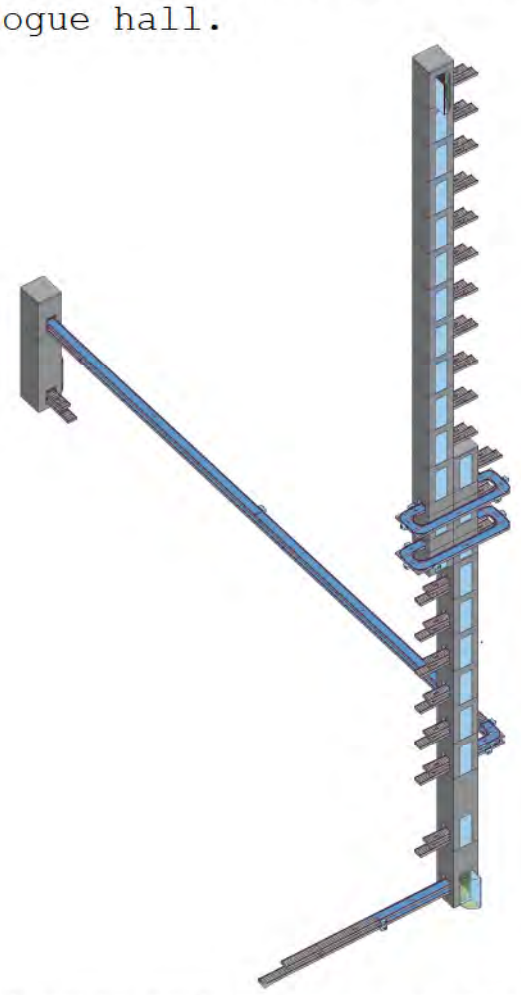
The logistic concept for the organization of the flow of books within the library has to comply with the following demands:

- Provide a silent and comfortable means of transport
- Non-damaging to books and other media
- No interference with movement of users and employees

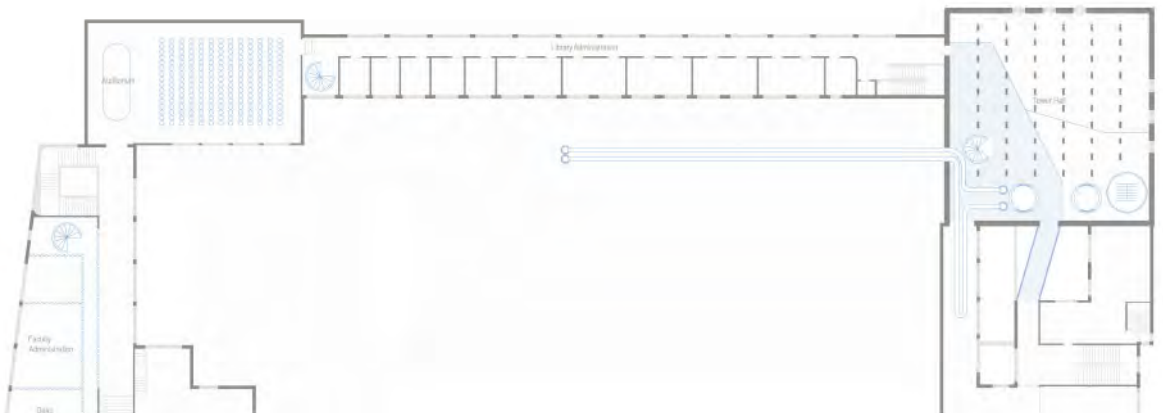
Short system overview:
The delivery is located in the basement area where it is today. From here books travel to the cataloge department on the first floor (check-in). After this they can travel directly to the archive in the tower. Two main elevators ensure the transport within the tower. A buffer exchange zone will be created on the 8th and 9th floor of the tower.
The lending area is supplied via transport lines within the light roof ceiling of the catalogue hall.

Technical Data:

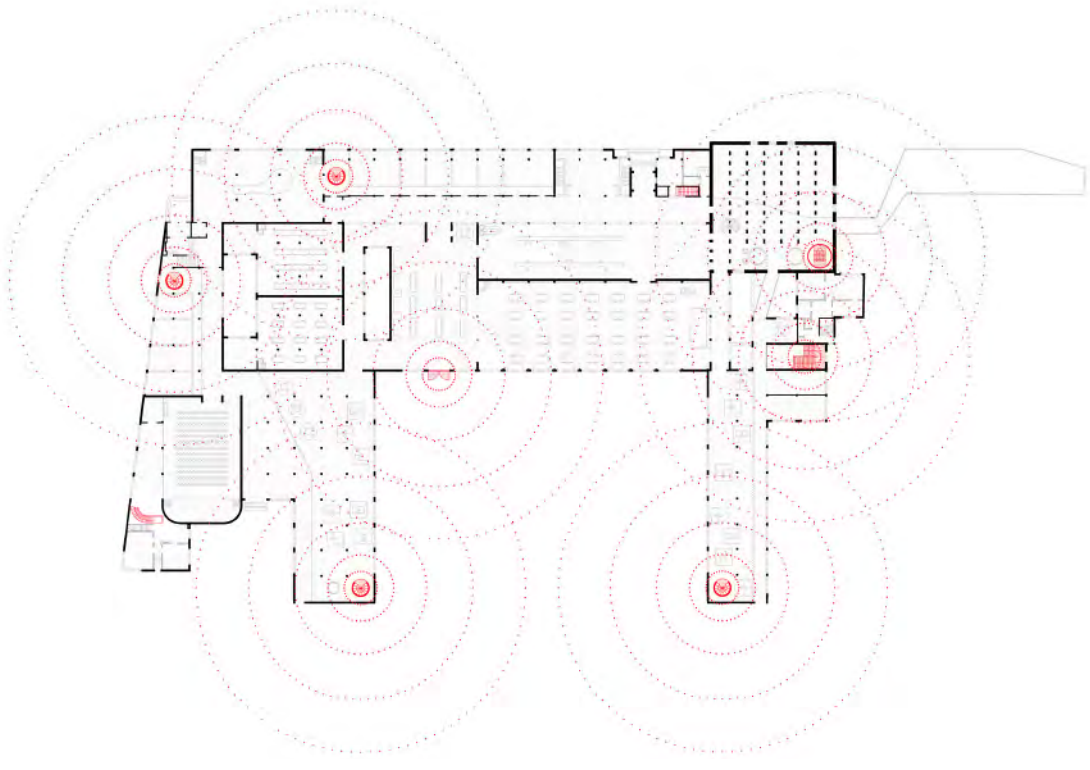
Containers:	600mm x400mm x 210mm
Maximum charge:	50kg
Temperature:	5°-30°C
Air humidity:	>80%
Elevators:	3
Vertical speed:	1.4m/s
Horizontal speed:	0.55m/s



* Tower book transport system



* Book transport from tower to lending area



* Regular distribution of fire escape routes

Fire Protection Concept
Brandpreventie

The general fire protection concept for the Gent University Library is based on four general principles:
- Protection of users
- Protection of books
- Minimum interference with the historical monument
- Removal of escape tracks which had been added

The opening of the tower's top floor - the *Sky Lounge* - to the public demands a completely new organisation of fire escape routes. In order to comply with with Belgian laws and the local fire brigade authorities it is necessary to be able to evacuate the top floor of the tower with a fire-resistant escape staircase and a fire emergency elevator. These two elements guarantee the evacuation of all tower levels.
The staircase with a minimum width of 1.25m per flight has a direct exit to the exterior on the basement level. The central emergency escape stair and the emergency elevator are connected with a 6m² fire-lock chamber per storey. This chamber - normally an open space - is automatically closed in the case of fire.

The vertical circulations at the southern periphery of the tower are fire resistant and guarantee the compartmentalization of the individual tower floors.
The open space which is created at the tower's base that unites the basement floor, the ground floor and the 1st floor will be equipped with high pressure water fog sprinkler devices. As this technique is proved to be non-damaging to books, an extension to the entire library complex could be taken into further consideration during the planning process.

A network of strategically placed fire escape stairs is additionally distributed over the building complex. These exits will replace the existing fire escape tracks on the roof and the facades of the building. In combination with the internal courtyard which will also serve as an emergency escape these measures will guarantee an efficient system to evacuate the library quickly and efficiently in case of unexpected danger.