

# TECHNISCHE UNIVERSITÄT WIEN

## MASTERARBEIT

### STOCKHOLM CITY LIBRARY

Ausgeführt zum Zwecke der Erlangung des akademischen Grades  
eines Diplom-Ingenieurs / Diplom-Ingenieurin unter der Leitung von:

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Wien, am 08.11.2010



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**“ For all knowledge and wonder which is the seed of knowledge  
is an impression of pleasure in itself “**

Sir Francis Bacon, Religious Meditations, Of Heresies, 1597  
English author, courtier, & philosopher (1561 - 1626)

## THE NEW STOCKHOLM CITY LIBRARY

### The Architectural Competition

In May 2006 the city of Stockholm invited architects to take part in a two-stage competition. The first of these two stages was an open international competition. Due to the estimation of the City Planning Administration the inhabitants of the region of Stockholm will increase to approx. 2.300.000 by the year 2030. In this case the city will not have a public library that lives up to the ambition of a sparkling cultural city of knowledge.

The competition as a whole aimed to find a proposal for an attractive well-functioning library of high architectonic quality with a concept strong enough to withstand a dynamic implementation process.

In order to be able to maintain and develop the Public Library as the main library in the city and as a central public meeting place for learning and reading, new activities and functions must be added in a new extension to the Asplund building.

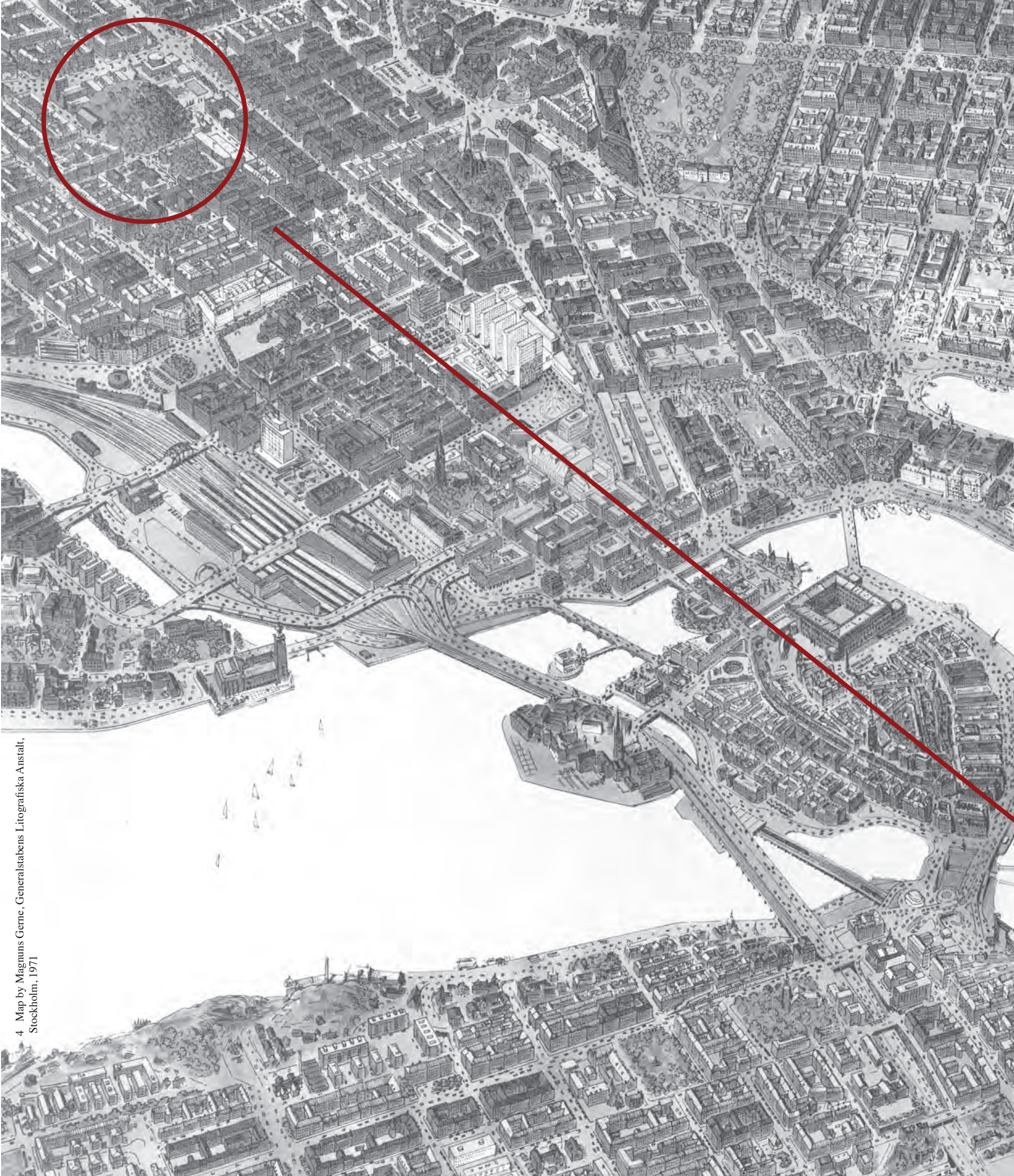
The competition has been commissioned by:

The Stockholm City Executive Board and is being carried out by the City Planning Committee together with the City Real Estate and Market Halls Committee, the City Culture Committee and the City Development Committee. The competition is being organized in cooperation with the Swedish Association of Architects and fulfils the joint competition rules of the construction sector in accordance with the Swedish Act on Public Procurement.







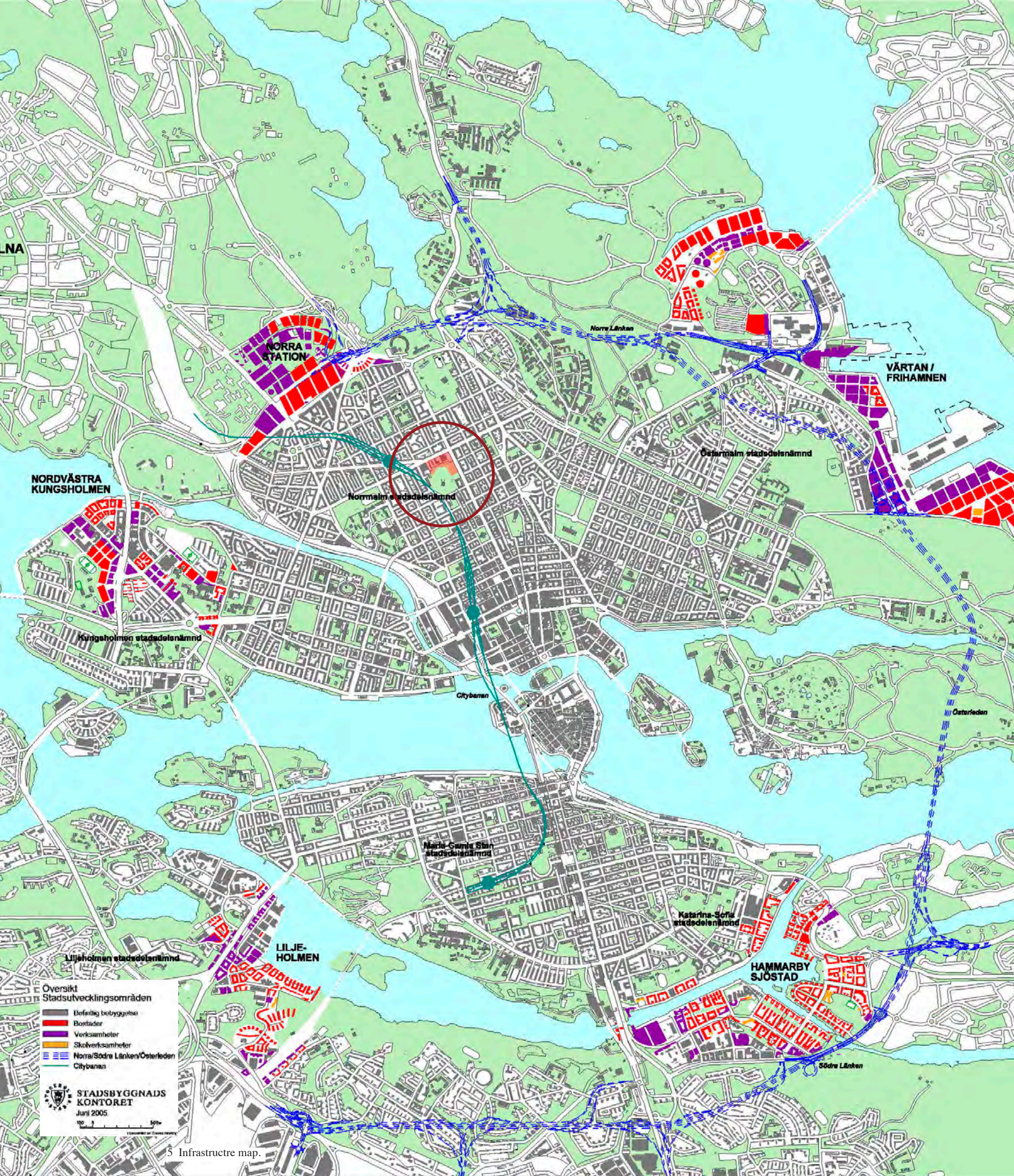


4 Map by Magnus Germe, Generalstabens Litografiska Anstalt, Stockholm, 1971



# STOCKHOLM CITY LIBRARY

- its geological and historical development



LNA

NORDVÄSTRA  
KUNGSHOLMEN

**Oversikt  
Stadsutvecklingsområden**

- Befintlig bebyggelse
- Bostäder
- Verksamheter
- Skolverksamheter
- Norra/Södra Länken/Österleden
- Citybanan

**STADSBYGGNAJS  
KONTORET**  
Juni 2005

100 0 500

**NORRA  
STATION**

Normalmäns stadsdelenämnd

Citybanan

Närings-Gamla Södra  
stadsdelenämnd

LILJE-  
HOLMEN

Liljeholmens stadsdelenämnd

Norra Länkan

Östermalm stadsdelenämnd

VÄRTAN /  
FRIHAMNEN

Katarina-Sofia  
stadsdelenämnd

HAMMARBY  
SJÖSTAD

Österleden

Södra Länkan

5 Infrastructre map.

4 Previous page: Stockholm city map by Magnus Gerne, Generalstabens Litografiska Anstalt, Stockholm, 1971

5 Opposite page: Stockholm city map of the inner city / express railway system, 2005. Grey marked : existing buildings. Red: recent finished buildings. Magenta: under construction. Blue dotted line marks the Norra/Södra Express railway system with its extensions under construction.

6 Top right: Stockholm Boroughs, showing the districts of Stockholm, 1998 - 2006.

7a Bottom right: Extract of a map showing the metro / railway tunnelsystem in a large scale.

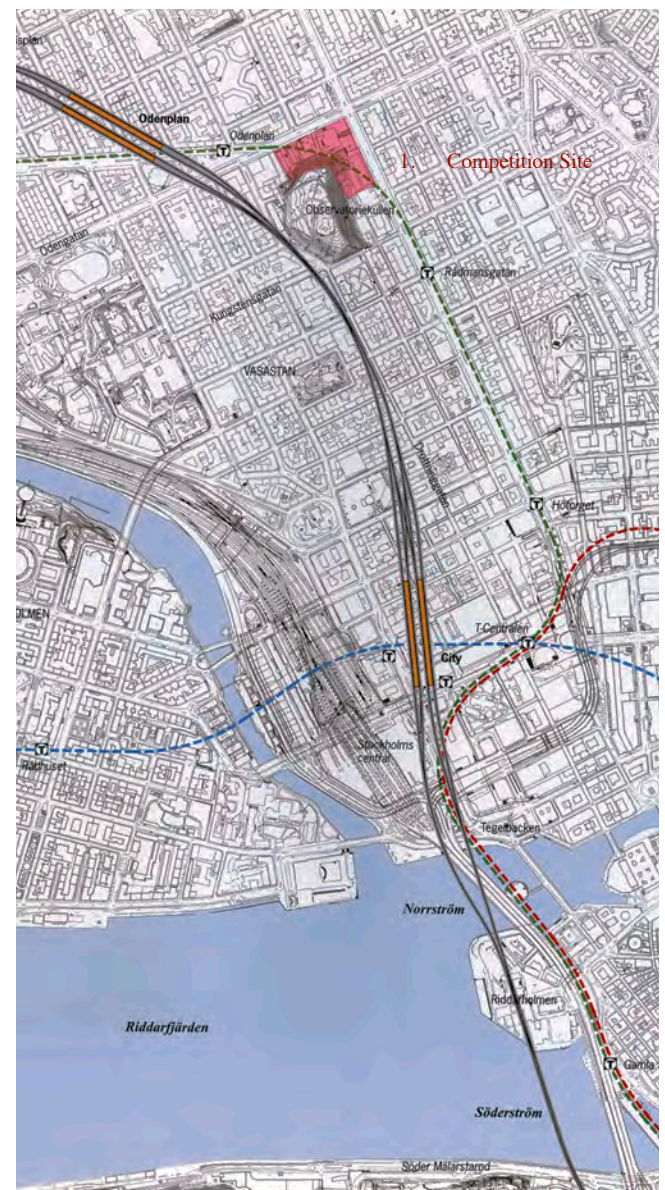
7b Bottom left: Extract of a closer Map of the city around Observatory Hill. Bottom left: the Stockholm Metro / Underground railway System, 2006.

## The region of Stockholm

The region of Stockholm is the biggest Agglomeration in Sweden with 1.93 million Inhabitants. Stockholm itself has approximately 782.855 Inhabitants.

That means that 21% of Sweden Citizens live in that region. The city represents the political and financial centre of Sweden with buildings from all ages since the 15th century. The geography of Stockholm, with its islands and bodies of water, makes for a natural division of the inner city into three major zones. North Of Galma Stan ( Normalm, Vasastan Östermalm), the small island Gamla Stan and the large Södermalm another, and the island Kungholmen a rather small district in the west. Outside the inner city, it has mainly a suburban character (picture 6).

The map on the left side (picture 5) shows some of the developing areas around the inner city and how they are connected to the new infrastructure. A new system consisting of the city express railway (blue) and the underground metro system (green) will provide excellent access not only from Stockholm itself but also from the entire Malar region with its developing cities. One of the three main new underground stations is Odenplan close to the Asplund Library. A new metro line will also connect Odenplan to the new biomedical university at North Station (Norra station) and the inner city center. Below is a recent metro plan showing the huge extend of the area in 2006.



8 Top right: Urban geological map showing the route of the ridge through the city. Green represents the direction of the ridge, with stone, gravel and sand on rock.

### The development of the area around Observatoriekullen (Observatory Hill)

#### The “Quartier Latin” of Stockholm

The landscape of Stockholm and the city grid plan are characterized by Stockholmsasen (The Stockholm Ridge); the esker which runs through the city in a north-south direction. The Stockholm Ridge has been excavated and exploited over the centuries.

Today the Stockholm Ridge is visible in only three places in the City of Stockholm, of which Observatory Hill is the only one in the inner city to be seen from all four quarters. The hill is characterized by an English landscape garden.

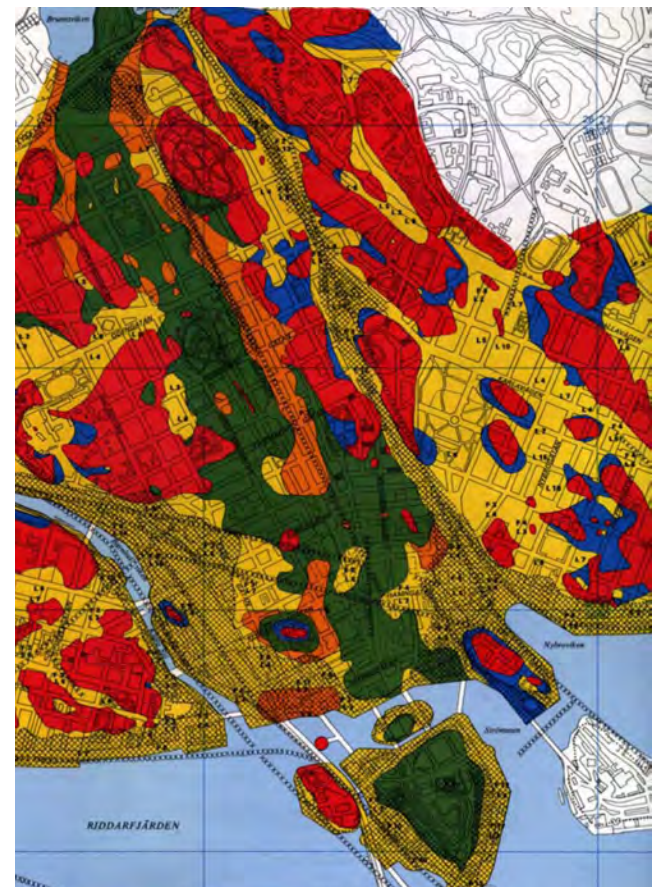
The Stockholm Observatory designed by Carl Harleman, was built at the top of Observatory Hill with a view over the city in 1753.

Therefore the Observatory was built on what remained of the Ridge because it was one of the highest points in the city. The great scientific importance of the Observatory, and the strong symbolic value to which its prominent geographical position contributed, attracted additional institutions of learning constructed in a belt around the hill during 19th and 20th centuries. It was the City's intension to create Stockholm's own Quartier Latin with the Observatory as its obvious centre. Threw centuries of development, the area around Observatory Hill has become something of a district of its own, symbolizing knowledge and education in Stockholm. Most of the buildings were designed by the foremost contemporary architects at that time.

The Stockholm Ridge is thus the origin of this development. Due to its visibility the hill is an extremely important element in the topography of Stockholm. (picture 8)

In the mid-17th century, the Stockholm Ridge was still undeveloped. Due to a map dated 1642 (picture 9) the ridge appears as a very visible, characteristic and important element of the city. The black dot on the hill marks a windmill which was located there when the map was drawn. Main roads run around two sides of the Hill, even if the city has not grown yet was far as the hill.

In an extract from an oil-painting dated about 1689 (picture 11), Stockholm can be seen from the west. The windmill furthest to the left may be situated on the current site occupied by the Observatory.



In the 1850s streets and precincts have now also been laid out to the north of Observatory Hill. While the northern stretch of the ridge through the city consists only of isolated high points (picture 12). The network of streets which developed by the hill has certain similarities with that of today.

In the 1930s the current network of streets around Observatory Hill has been laid out, the Stockholm Public Library has been built. The Observatory Hill is by that time the only visible remnant of the Stockholm Ridge in the inner-city (picture 13).

9 Top: Map Showing the undeveloped Stockholm Ridge from 1642. The ridge appears as a very visible and characteristic element in the city. In the top left hand corner of the map it continues northwards, with the hill that is now known as Observatory Hill. A black dot on the hill marks a windmill which was located there when the map was drawn. Main roads run on both sides of the hill. The city itself has not yet grown as far as the hill.



10a Bottom left: Extract from an colour-washed etching dated about 1780s, red circle marking the location of the observatory hill. It shows the area north east of Observatory Hill, which still has a rural character.



10b Bottom right: The property plan dating from 1796 shows the Observatory and the 'English Park' belonging to it, laid out in the 1790s. The pink coloured sections show the bare sides of the ridge, which stretch down towards the adjoining streets and properties.



### National Interest / Cultural Values of the College district

Each and every one of the buildings around Observatory Hill is of high cultural value. Because of its national interest, Stockholm College district is protected under the Swedish Environmental Code. In the city planning regulations, the Stockholm Ridge is highlighted as an important feature determining the character of the city. The Observatory, the Public Library, the Stockholm School of Economics have been classified 'blue' according to the cultural classification of Stockholm inner city.

Moreover the collective value is enhanced by the relationship between the buildings and the topography in such a way that this must be considered in the proposal for a new Stockholm Library. The topography and visibility of Observatory Hill are significant and together with the park landscape important to safeguard. The Hill and the part that faces Sveavagen street reflects the original shape and vegetation of the area.

The entire city centre is of national interest as regards the preservation of cultural heritage and this early college district of Stockholm with the Observatory, Public Library, park and university buildings is highlighted as an area that reflects the historical growth and expansion of the city.

The national interest is due to the historical use of Observatory Hill as a campus for various educational establishment very high.

The Asplund library is a very important part of this intangible and immaterial value in its functioning as a public library.







11 Opposite page: Extract from a map of the whole city, dated 1751. City precincts and streets surround the Observatory Hill on three sides. A windmill is located to the north of the Observatory. Most of the parts of the ridge have been developed, only in the northern part still some remain unexploited.

12 Right page: Extract from a map of the whole city, dated 1853. Streets and precincts have now also been laid out to the north of the Observatory Hill. The northern stretch of the ridge through the city consists only of isolated high points.

13 Left page: Extract from a map of the whole city, dated 1930. The street network around Observatory Hill has now been laid out. The City Library has been built, and the Observatory Hill is the only visible remnant of the Stockholm Ridge left.

14 Opposite page:  
Architectural guide to Stockholm from H O Andersson and F Bedoire's "Stockholms Byggnader" from 1977.  
3. Stockholm City Library  
20. School of Law and Humanities ( 1925)  
34. School of Economics (1925)





3  
20  
34

VASASTADEN

NORRMALM

ÖSTERMALM

RIDDARFJÄRDEN

RIDDER  
STADEN  
HOLMEN

STADEN  
MELLAN  
BROARNA

Strömmen

SÖDERMALM

DEL AV INRE STADEN och  
STADEN MELLAN BROARNA  
i topografiska blad 33

15 Top right: The urban environment around Observatory Hill and the Stockholm Public Library is characterized above all by 19th century buildings.

16 Middle: Precincts are closed, with rows of stone-built houses, surrounding courtyards including houses.

17 Bottom right: The streets are mostly of fixed design, 5 storeys high in accordance with the city plans and building regulations of the late 19th century.

### The Character / Typography of the surrounding

The part of Stockholm where Observatoriekullen (Observatory Hill) and the Stockholm Public Library lie is characterized by buildings and structures typical of Norrmalm, Södermalm and Östermalm, the areas of the inner city of Stockholm. The built environments in these areas emerged over several epochs.

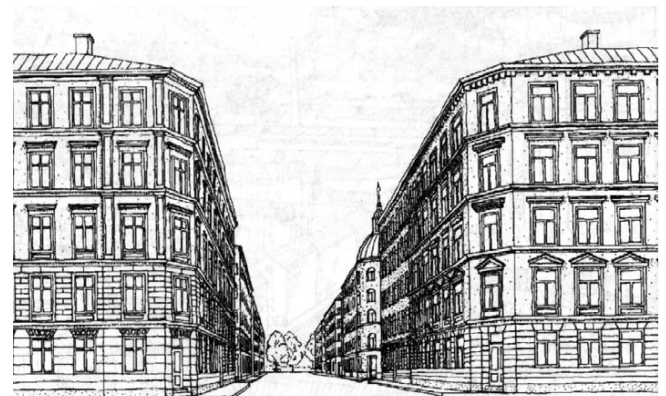
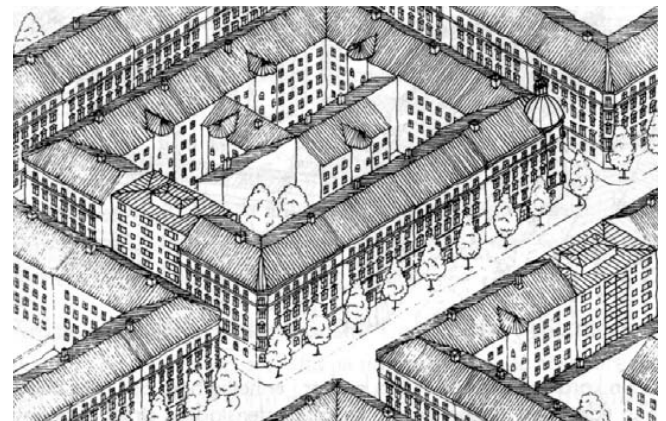
The beginnings of the right-angled street pattern started in the 17th century, a time when a number of major city planning projects were implemented in Stockholm.

During the second half of the 19th century, further comprehensive city plans were implemented, still based on the ideal of a grid-iron plan and modelled on major European cities such as Paris, Vienna and Berlin.

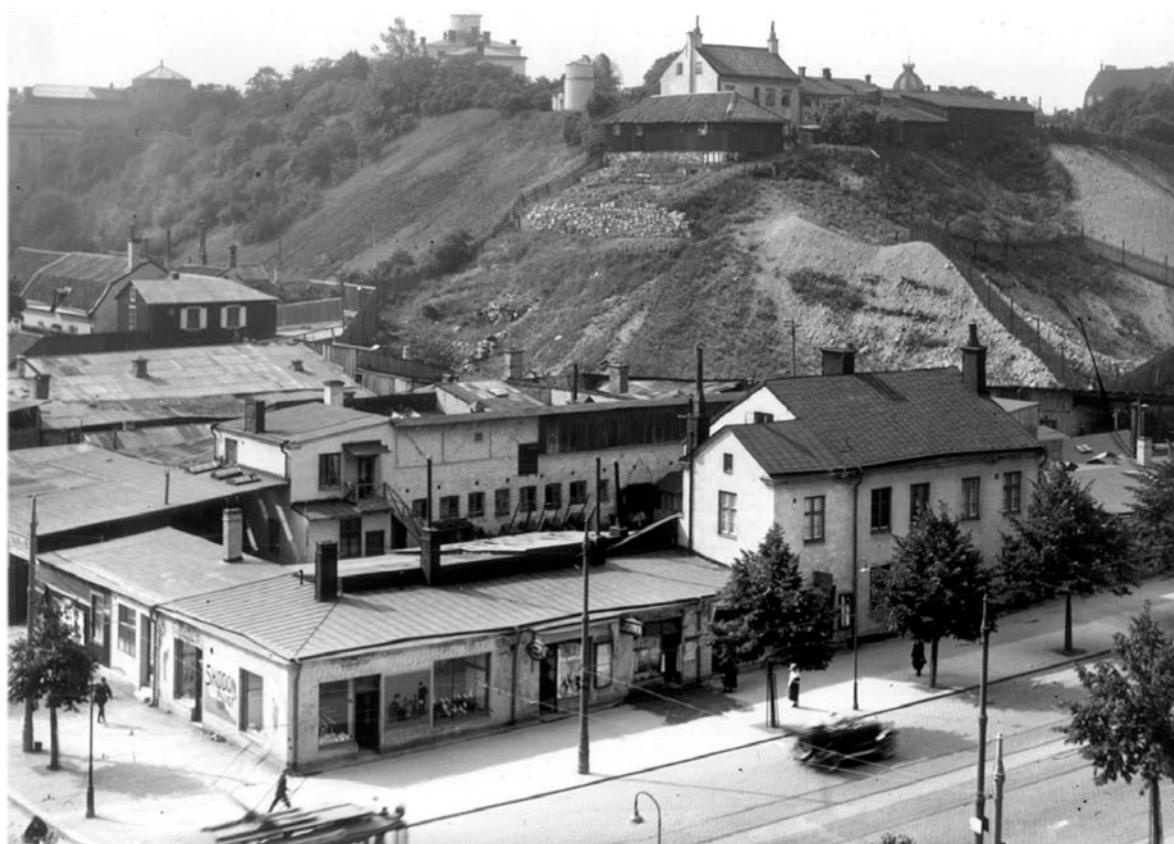
The present street widths and height and alignment of the buildings are characterized above all by the city plans and building regulations of the 19th century. Therefore Sveavägen and Odengatan the main streets surrounding the site area and the Observatory Hill, are examples of the late 19th century ideal city plan.

The precincts are laid out with the clear intention of being rectangular. They are closed, with rows of stone-built houses around courtyards with houses at the back. The streets are of fixed design, often with streets 18 metres wide and houses 20 metres high (5 storeys). During both the 17th and 19th centuries, efforts were made to allow public buildings or parks and water areas to form backdrops to the streets.

Sveavägen street is lined by buildings with homogeneous heights and facade lines. Odengatan street on the north of the library and its annexes, is the other major avenue. This street was also laid according to the 1879 city plan and crosses Sveavägen at right angles. The facades are tightly packed. To the south, the more open spacing of the buildings on the Stockholm College district creates views up towards the greenery of the Observatory Hill.



18 Bottom right:  
Photograph from the  
north - east dated 1924.  
It shows the area below  
the Observatory Hill  
where the Stockholm City  
library stands today, at  
the corner of Sveavägen  
and Odengatan street.  
The excavated gravel  
sides of the esker of that  
time are very visible. The  
Observatory stands out  
as the highest building  
in the area.



19 Top right: Interior perspective of the entrance, from the vestibule, showing the importance Asplund attached to this axial route, 1921.

## The Asplund City Library 1918 - 1928

E. Gunnar Asplund (1885-1940)

Born in Stockholm, the son of a civil servant, he studied at the KTH in Stockholm, and at the independent Klara Architectural School. He visited Germany, Belgium, France and studied library design in the USA. Gave lectures on Swedish architecture, was appointed professor at the KTH in 1931, and edited the journal *Architektur* (1917-1920).

Asplund is probably the most influential and original Scandinavian architect of the first half of the 20th century.

### The beginning 1918

Asplund's City Library underwent almost a ten-year development. The changes of style between the first drawings, the final building and the reaction of the city planners reveal a struggle for the final identity.

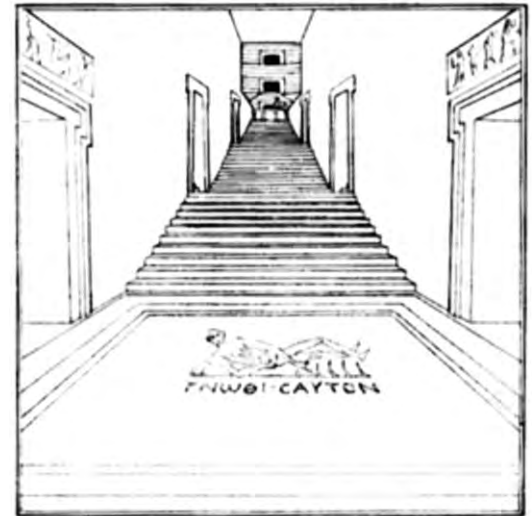
The library committee founded in 1910 invited Asplund in 1918 to investigate the task and set up a brief for a competition.

Gunnar Asplund started his project by going to the USA with the City Librarian Fredrik Hjelmquist in 1920 in order to study public libraries in different cities such as Germany and England. The City had donated a site on a street corner in northern Stockholm, at the crossing of Sveavägen and Odengatan. It stands at the base of the Observatory Hill, one of the few remaining natural outcrops in the city, which has been preserved as a park.

The free public library principle was based on the libraries being accessible to everyone. It was more or less a strong political message from which everyone could borrow books free of charge. One way of improving the level of education and fostering the inhabitants to become democratic citizens was to enhance people's ability to read and to promote an interest in reading.

Internally, the main idea was to have a central lending hall with side wings to serve as tranquil reading rooms.

*"People would enter from the street and suddenly a great hall of books would open up like a circular horizon with books all round. People would be completely transported by the books ..."* Gunnar Asplund 24

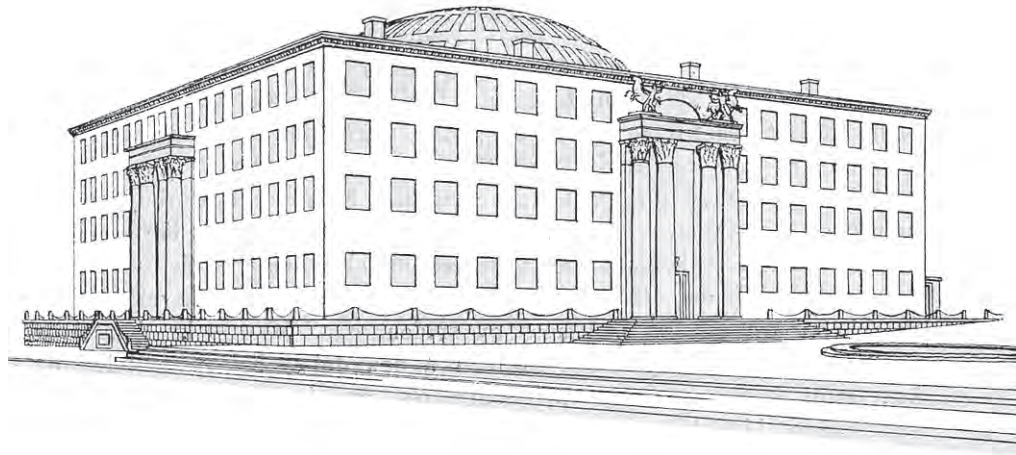


Asplund transformed the lessons and experience he learnt during traveling into the first drawings of the new Stockholm library showing a cylindrical central space with four closed wings around it. The first drawings show lofty temple-cell with tympanum and with columns in front. The relationship of the long, low hall to the high, square library recalls Schinkel's plan for the Neue Packhof in Berlin. The original scheme, dated 1921 consisted of a domed central lending hall. Asplund was trying to approximate a spherical space.

In the front facade drawing (picture 16) there appears, silhouetted above the entrance, a curious symbol, a bald head in profile with a projecting goatee for which there is no known explanation.

It might represent the key to Asplund's symbolic vision of the design, that he conceived the building as a metaphor for the mind and that the almost spherical rotunda symbolizes the interior of the cranium.

The visual analogy between the head and the building in section is revealing in this regard. In a perspective drawing (picture 19) we find a floor mosaic of an emaciated body with the Greek inscription Gnoti Seafton, or "Know Thyself". This detail would be consistent with this interpretation.

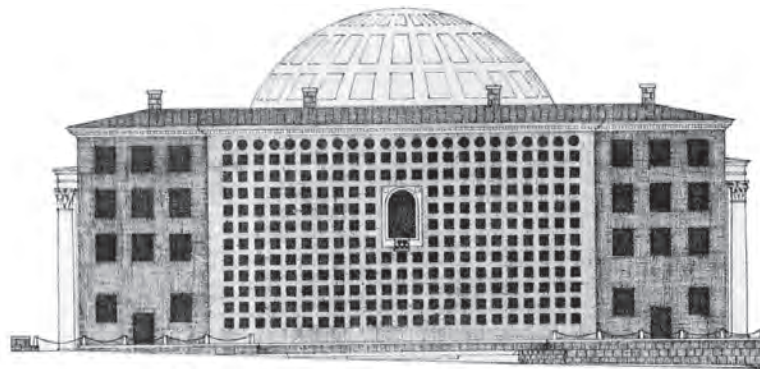
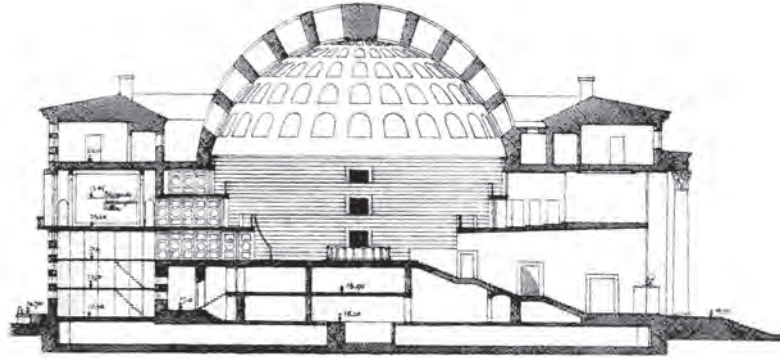


20 Top: Perspective of the first project, as seen from the north.

21 Top right: Front facade, first scheme 1921.

22 Middle right: Section. Showing the progression from the street on the right up to the heart of the building.

23 Bottom right: Back facade, first scheme 1921.





24 Top left: Asplunds sketch of a mosaic from the Appian Way, inscribed “**Know Thyself**”.

25 Top right: Door handles on the main entrance doors depict the figures of Adam and Eve offering apples of knowledge.

The back facade is quite unorthodox for the period and is also symbolically consistent. The Grid of the square windows to light what were to be mainly the stacks may be interpreted as a model for information storage and retrieval, and so in a sense, for a mechanical concept of the mind. If this interpretation is correct, then it would recall the work of great neoclassicists a long time earlier.

The proposal for a cenotaph by Étienne-Louis Boullée for the English scientist Isaac Newton in 1784 (picture 21), which would have taken the form of a sphere 150 m high embedded in a circular base topped with cypress trees. Though the structure was never built, its design was engraved and circulated widely in professional circles. If we compare Boullées spherical interior for the Newton cenotaph which was a mechanical model of the universe, Asplunds spherical lending hall represented the interior of the mind.

For structural and formal reasons, the dome was changed to a tall cylinder. Not only would the skylit dome have been difficult and expensive to build, it would hardly have been perceptible from the exterior. But still Asplund did not abandon the symbolic dimension; he gave it more abstract articulation.

The principle of dramatic interpretation and tranquil completion achieved its breakthrough when Asplund prepared his first scheme for the Stockholm City Library in 1921. The visitor was to approach by way of a single long, straight, upward path. This would lead from the outside of the world up to the main entrance and into the lobby, where he would be confronted by a slightly macabre skeletal image in the floor, with the admonition “Gnoti Cafton” - “Know Thyself” (picture 19).

In his diary from a journey through the Mediterranean countries we read:

*“The Greek theatre is big in size and effect. The same splendid seriousness as temoles. The arrangement of the open space with the sky above, with all seats focusing on the stage, the plain and the sea”.*

The library though is a metaphor for the mind, encompassing the known and the unknown, reason and instinct. The Greek spelling of that of the original, sketched by Gunnar Asplund during his journey in 1914 in the Museo delle Terme in Rome (picture 20).

A final small detail gives further twist to the symbolism of the library. The door handles of the main entrance to the library are, on the outside and inside respectively, the sculpted nude figures in



Bronze of Adam and Eve each holding an apple (picture 23).

They somehow are reminder of our primitive and innocent beginnings. And their sensual nude bodies, which the public must clasp in order to enter and exit, are an insistent reminder of the flesh to those delving into the world of mind.

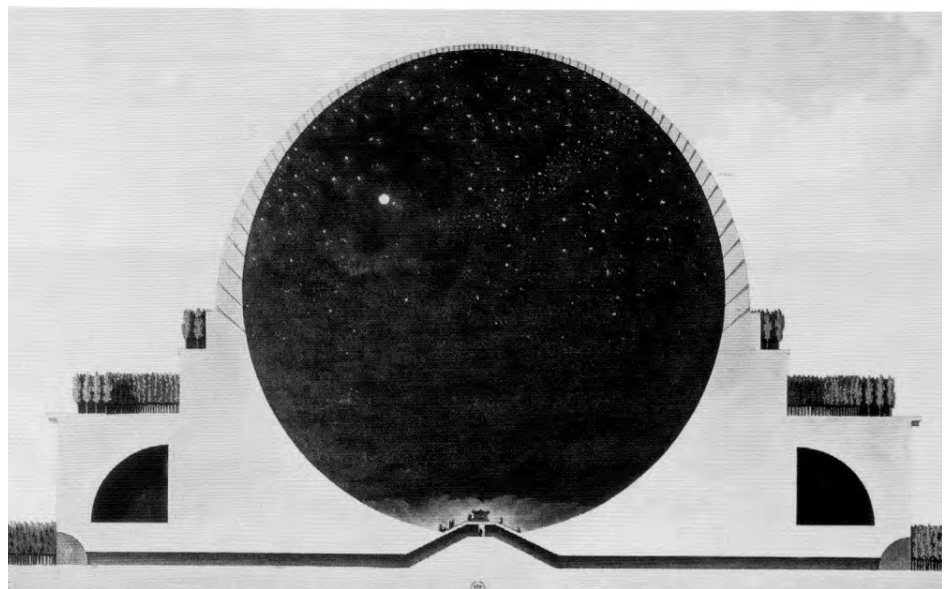
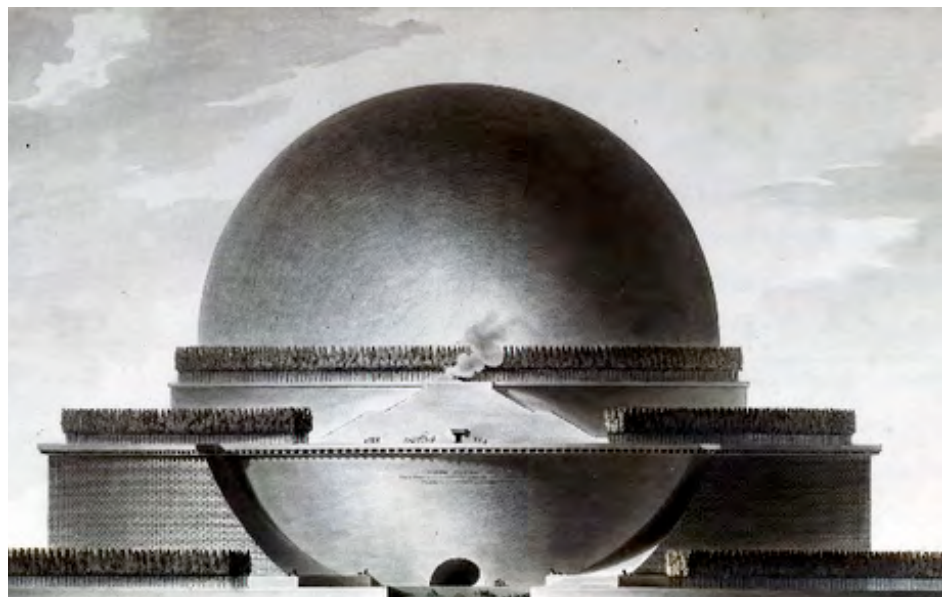
In one of his first drawings from 1919 he planned a new university as a giant temple of knowledge next to the Observatory (picture 25/26). He developed the drawings which led to the final location of both the School of Economics and the library. Asplund decided to place the library so that the middle point of the rotunda approached the mid - axis of the Observatory and corresponded to the middle point of the old and the new prime meridians. The library had a primary position at the intersection.

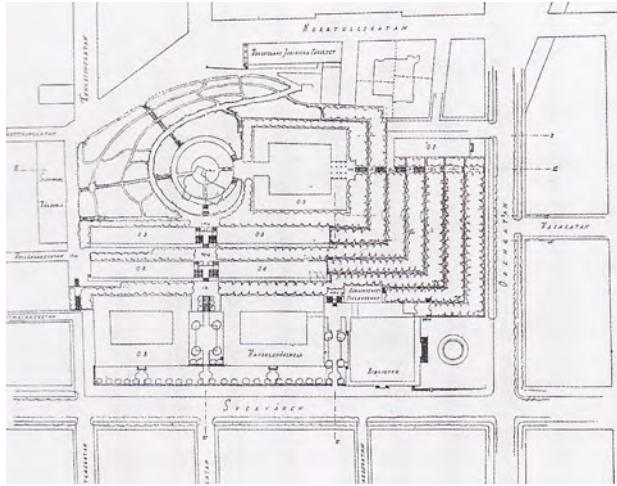
The first scheme was subsequently abandoned because of constructional difficulties and cost considerations. The main plan was retained and internal walls were reduced in thickness and the dome replaced with a shallow steel frame construction. Asplund did not abandon the idea of the sky ceiling because he had found a new way of abolishing distance in the ceiling of the library lending hall, as expressed by the abstractly geometrical form language. In one of the reading rooms he had an astronomical map put up to the ceiling.



26 Top right: Proposal for a cenotaph by Étienne-Louis Boullée for the English scientist Isaac Newton in 1784.

27 Bottom right: Section cenotaph.





28 Top left: Site plan, 1922. The library is set back from Odengatan / Sveavägen street corner with a square in front to the north. The observatory hill is terraced in a severe orthogonal manner, with ranges of trees and a courtyard building at the top.

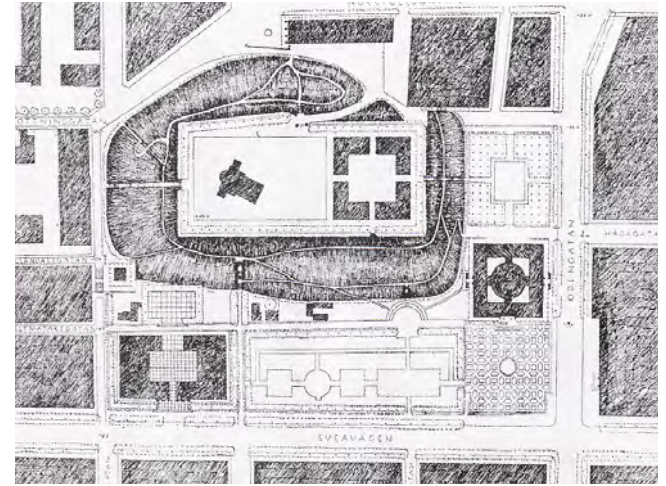
29 Top right: Site plan, 1923. Now the building is set back along Odengatan street, with its entrance facing east. The treatment of the hill is far less formal, still it is crowned by a new courtyard building. (Asplunds temple of knowledge)

### Siting of the Library

The site, a large, L - shaped parcel along Sveavägen and Odengatan street in the inner city of Stockholm, was dominated by the tall, steep Observatory hill in the middle of the block. The Site plan of the project evolved through several stages, the building changing in both position and orientation. The question was how to relate to the hill and whether to impose geometrical forms on the landscape or to let the topography break through and contrast with the building. In his first site plan of 1922 was the most formal, with the hillside terraced in a severe orthogonal manner, stressed by lines of trees at each level. The library building was positioned on Sveavägen with its main entrance facing north into a public square.

In the scheme site plan of 1919 Asplund positioned the library unturned from the corner. Two new public buildings, one of them the University School of Economics, were to occupy the frontage of Sveavägen south of the library, slightly set back from the building line. Asplund intended to crown the northern part of the hill with another public building in courtyard form. In the following year in 1923 he revised the site plan. The public square on the corner remained, though the library was now moved to the east side next to Odengatan. The School of Economics therefore took up the southern corner of the site leaving space for a park in front of the hill. The crown on the hill remained, the observatory retained by creating a plateau for both, but letting the hillside retain its natural shape with informal paths. The square at the street intersection was balanced by a second, less urban one behind the library.

The city planners reacted with a schematic proposal by moving the library to the corner, simplifying Asplunds park on Sveavägen and creating a market place on Odengatan. Asplund was persuaded to abandon his square at the intersection, but insisted on setting the library back from Sveavägen developing the idea of a raised platform. That platform became a space for shops opening at street level. In 1924 a limited planing competition for the park along Sveavägen was organized, and won by Asplund. He also planed a market hall along Odengatan in 1926, which was never realised. (Picture 26) In the final scheme, the library stand alone on its base, with a ramp cut through the main entrance, dramatizing the passage into the building. The building itself is slightly twisted, aligning with the axis of Odengatan which on a large scale in not quite square with Sveavägen.



The School of Economics was built in 1925-26 by Tengbom, leaving the site between the two buildings for a new park. There Asplund planed a large rectangular pond fed by an artificial stream which burst out of the hill.

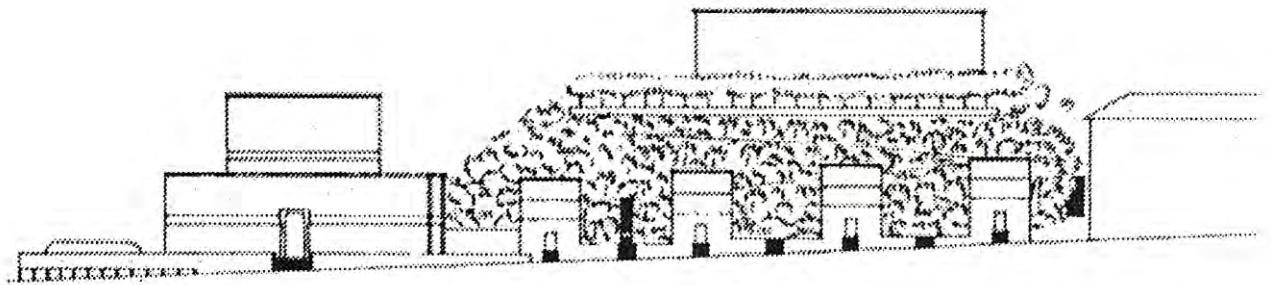
*“Asplund was a great nature lover, you could tell that when he was working on gardens. What i have in mind is Observatory Hill, the pool we designed, the little bridge over the stream, the benches where people were able to sit and look at the pool and the hill, and the way the City Library grows out of the hill ... “ 32*

### The final scheme / The completed project

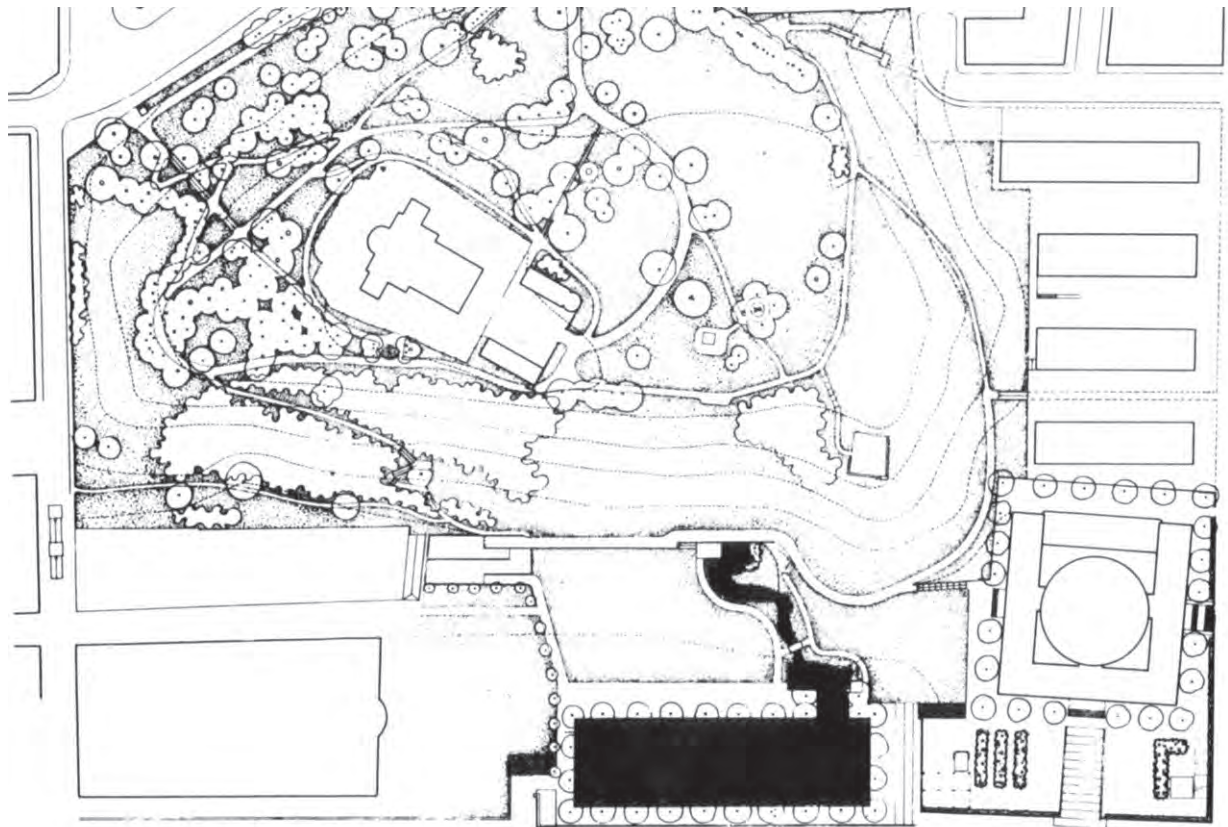
Gunnar Asplund presented the final drawings at the end of 1923 beginning of 1924 and the library was inaugurated in 1928. The design of the project at that time developed into a cylindrical rotunda with its unique design bringing together the style of neoclassicism with contemporary modernism. Asplund tries to avoid the mixture of different styles by melting traditional elements with classicism in its primitive form. His favorites of using geometrical forms in his designs can be seen clearly in the early drawings from 1921 and in the final drawings. Asplund uses Egyptian neoclassicist motives to be seen on the facade of the library. Important features in the library were clarity and accessibility and it represents the end of the neo-classicism before Asplund transformed his architecture language into functionalism ( Woodland Cemetery, Stockholm 1935-1940 ) As mentioned before providing free books for everyone was a political and democratic message the building is centered in a huge cylindrical central space which represents the book lending hall. The building is designed symmetrically surrounded by four closed wings with study ,lecture rooms and the administrative parts. The fourth wing was by then been taken away for cost reasons but it has been erected in 1932.

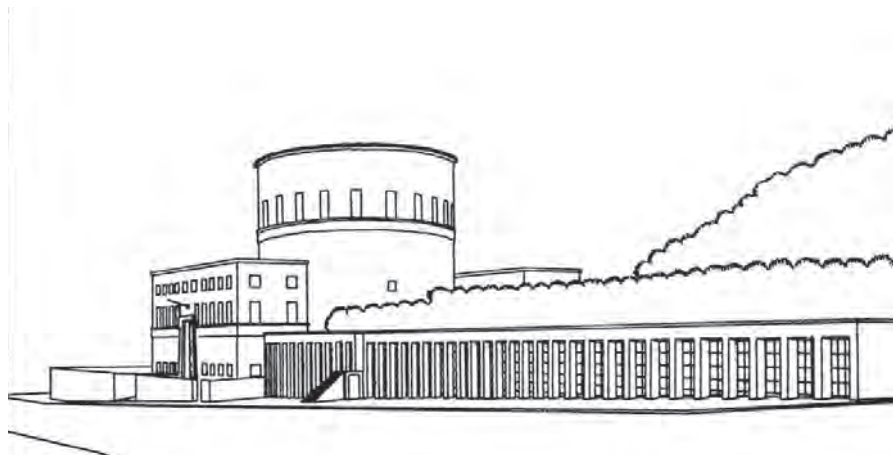
As shown In the section from 1924 (picture 31), the long stair situation at the main entrance faced west is intended. After pausing in the lobby the visitor was to continue up the long staircase pointing in the direction of the tiers of bookshelves and the tranquillity of contemplation under the great dome of the central lending hall. The staircase becomes more or less some kind of act of its own. Due to this entrance situation, it is further more the building that determines the route, not the street network.

30 Top right:  
North facade .



31 Bottom right: The final site plan, almost as realized. The library is set back from Sveavägen, now at the bottom of the drawing, and is slightly skewed to the axis of Odengatan. The park to the south in front of the School of Economics has a large pond (shown in black). The observatory remains in place on top of the hill.





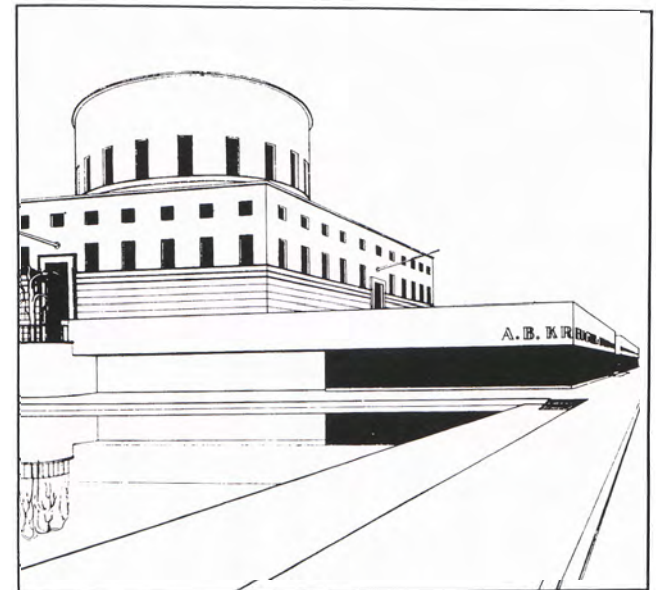
32 Top left: Drawing perspective from the west in 1926 of the back of the library with Asplunds proposal: Odenhallen (market halls to the street Odengatan).

33 Middle right: Cover picture of Arkitektur Byggmästaren in which the library was published, as a simple perspective of the library and its base showing the modernist line of shops facing Sveavägen. Very minimal drawing playing up form geometry, playing down material and texture.

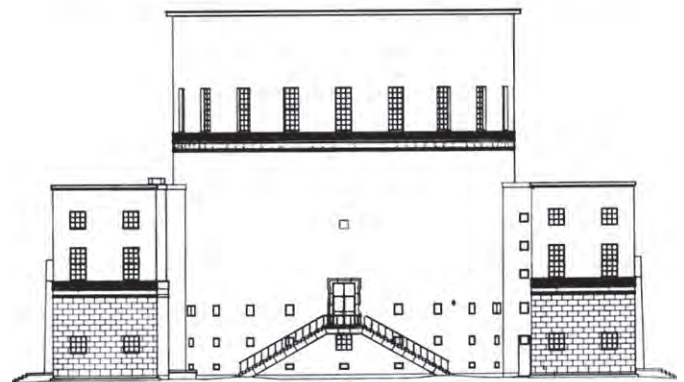
34 Top right: East Facade, 1921.

The Odenhallen, as the proposed market behind the library was named, was a long, rectangular, single story, single-loaded corridor building set back from the street to allow temporary open air stands in front of it. While the library was under construction Asplund entered and won a competition for the arrangement of the park along Sveavägen. In addition he was asked to design the market hall along Odengatan, which was never built.

The building is constructed of brick and concrete. The framed floor has steel joists supporting concrete planks, which are finished with a concrete floor topping under a thick, single color linoleum. The roof over the lending hall is in steel construction, with sheet copper cladding and a 'mullioned' ceiling. The Facades also changed considerably, in 1921 Asplund had conceived the library as a naked brick building. In the final building he used colored render instead of naked brick, and the roof were flat hidden behind parapets. The facade is accentuated by a double frieze. The upper part of the frieze is more classical, the lower part obviously a parade of hieroglyphics. The library was completed in 1927 and opened in 1928. At first the building remained with its three wings, the fourth wing intended for book stacks was added in 1932. The shops were completed in 1930, and the work on the pond and the surrounding park went until 1934.



The shops were completed in a definite modernist with horizontal lines and white render. After Asplund converted from Neoclassicism to modernism, mixing - contrast with styles seems to be intended. The library leaves the visitors with two overwhelming impressions. On one hand there is an archaic monumental geometrical volume accentuated by classical/ hieroglyphic frieze, to be entered by huge stone portals. On the other hand, the very minimal and modernist line of shops. Asplunds progression towards Modernism was remarkably fast; so much that by the time of the Stockholm Exhibition in 1930 he was playing a leading role in Sweden.



35 Top left: Stockholm City Library Garden, 1927.

36 Top middle and 37 Top right: Photograph from 1927 - 25. Showing the composition in its entirety with the Park and reflecting pond in front of the libraries south facade and the bazaar buildings under the terraces facing Sveavägen.



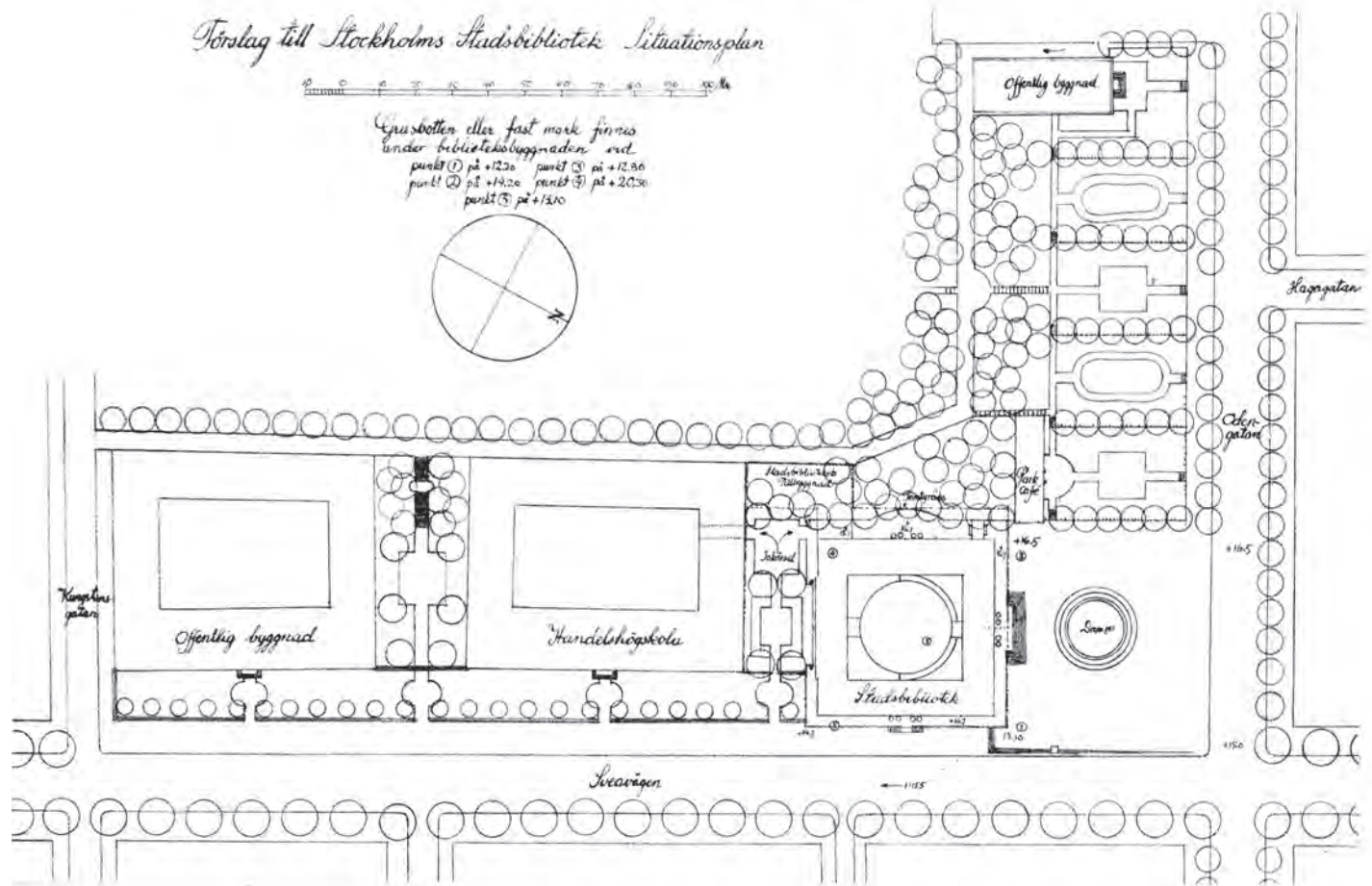
38 Bottom right: The Public Library and Library Park in 1938.



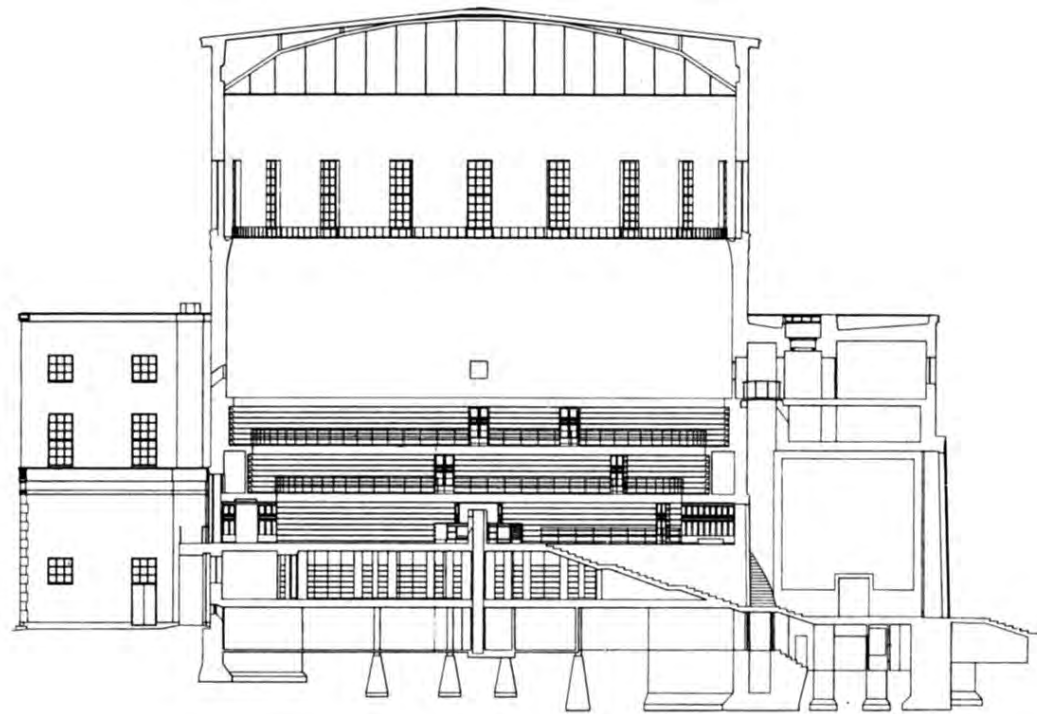
39 Top right: The fourth wing added in 1932.



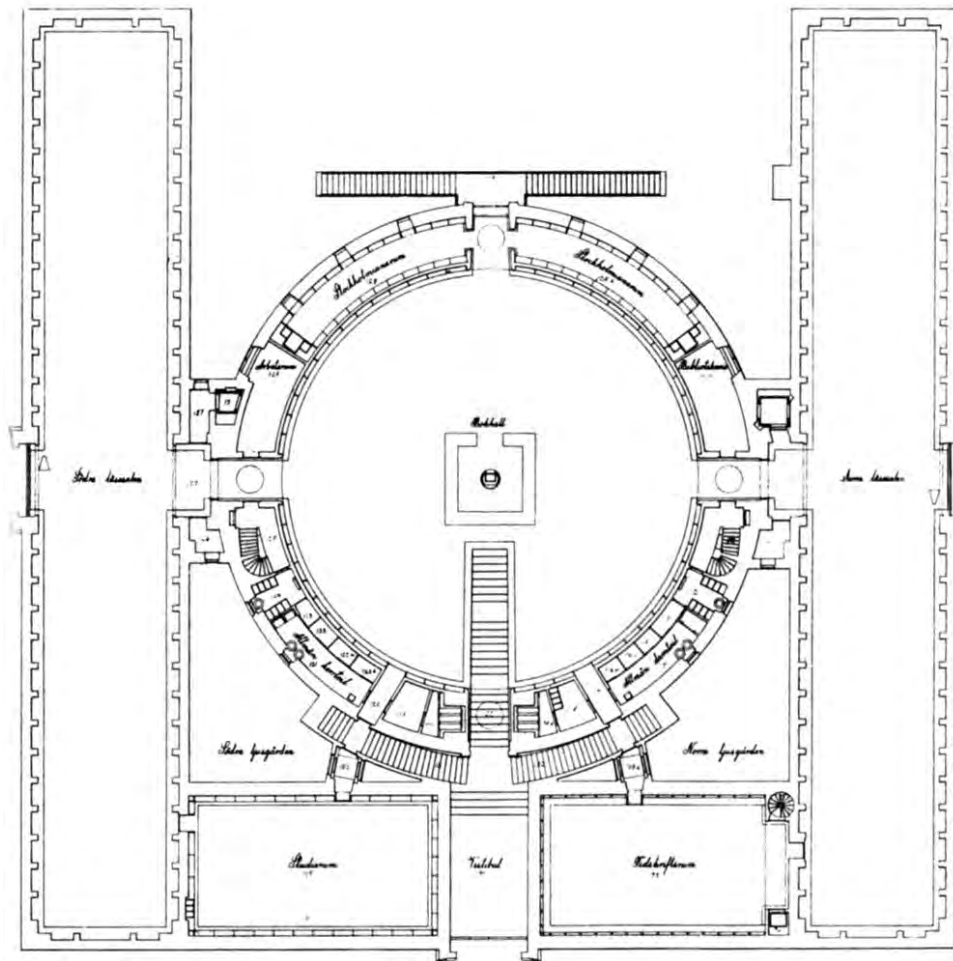
40 Bottom: Site Plan, 1921. Showing a complete different concept.



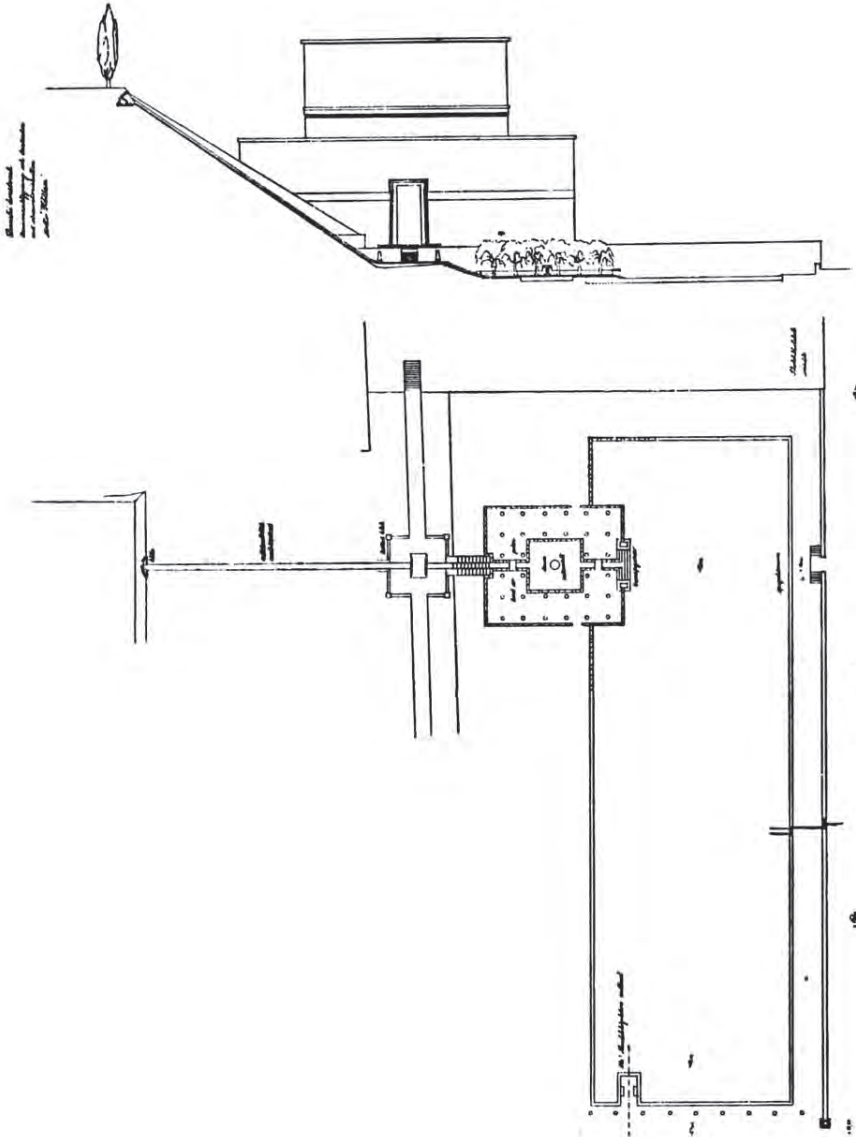
41 Top:  
Final section through  
the main Entrance from  
1924. Asplund developed  
the former low dome over  
the central library hall  
in the first project from  
1921 into the cylindrical  
rotunda.



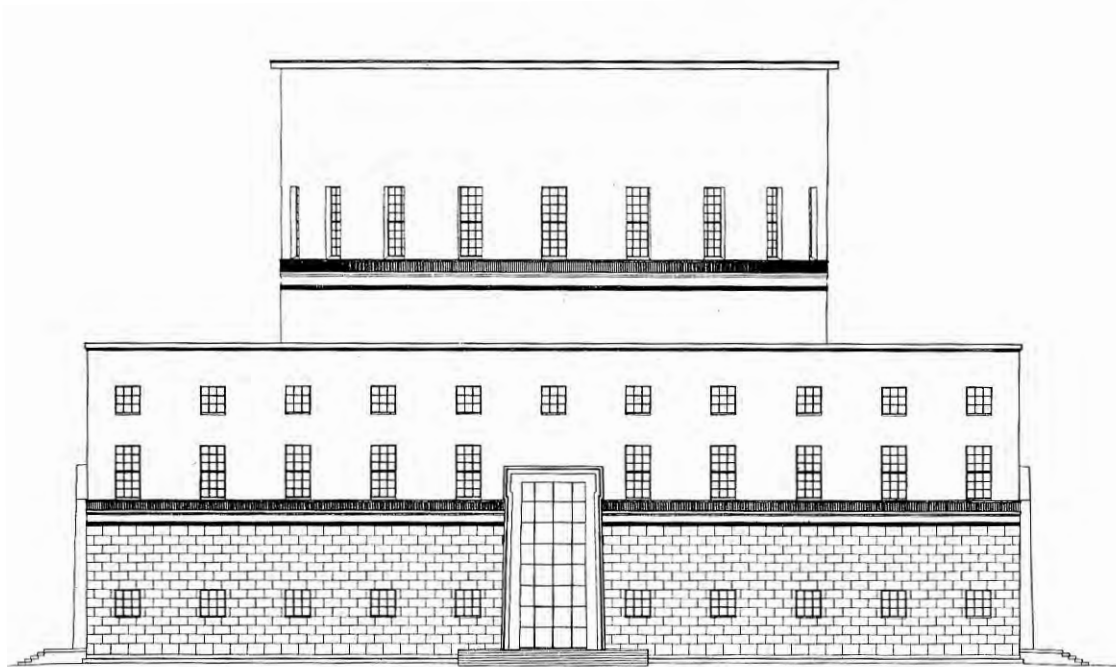
42 Bottom: Plan of the  
2nd floor ( lending hall ).



43 Top left: South Facade  
and Site plan, 1921.

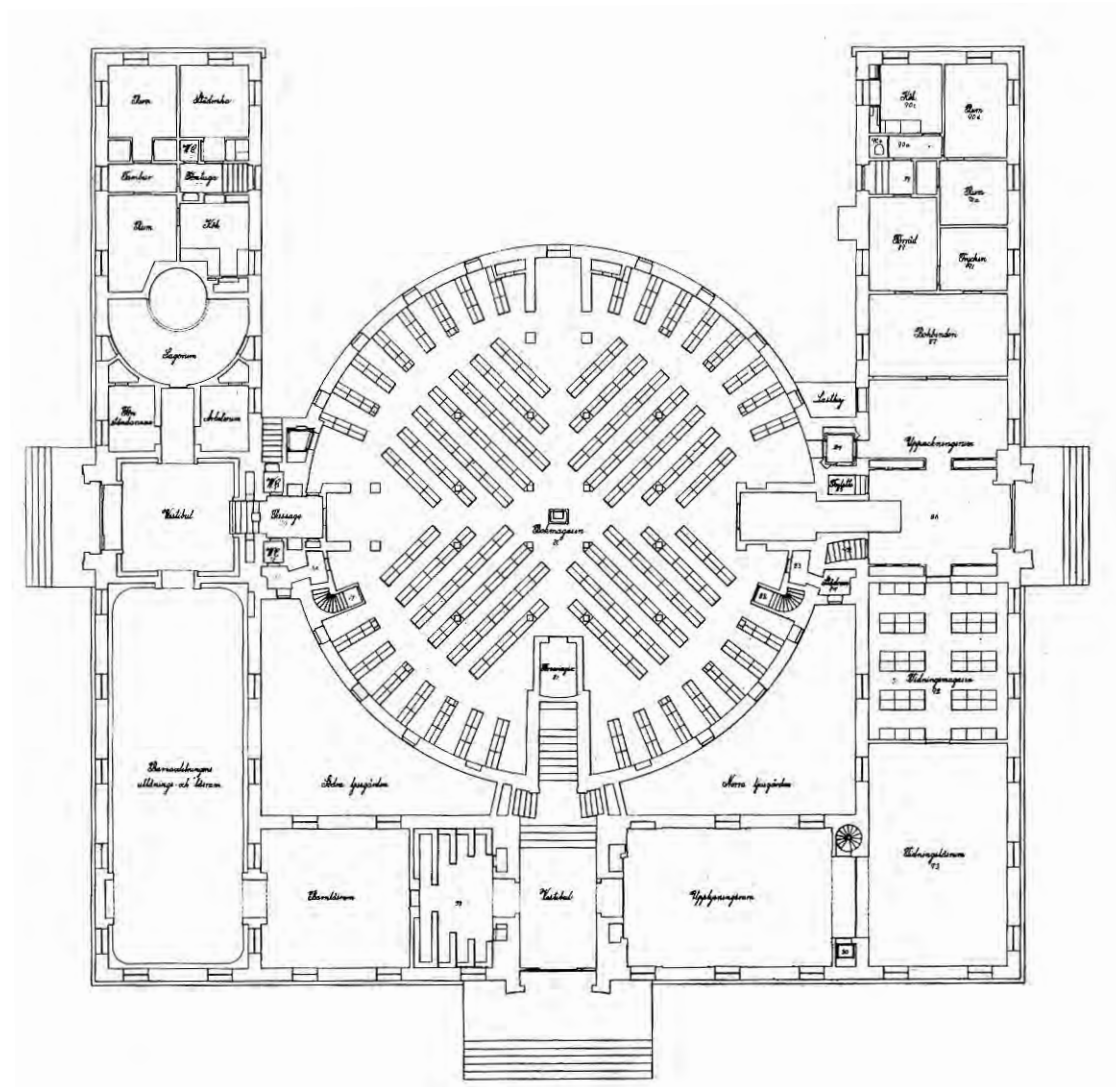






44 Top: Facade from Sveavägen.

45 Bottom: Asplund's final plan for the library from 1924. The fourth wing had by then been taken away for cost reasons and the rotunda's majestic cylinder stood facing west.



**Odengatan Street**

The street was established in the Norrmalm city plan in 1879 as a new, wider, tree lined major road running east to west.

**Sveavägen Street**

The city districts major road running north to south, like Odengatan established in the city plan of 1879. Sveavägen is however a much older street (originally called Stora Badstugatan) dating from the 17th century, which was then widened and lengthened.

**Norr tullsgatan Street**

Since the 17th century, this street has constituted an extension of Drottninggatan northwards to the outskirts of the city centre and the main road to Uppsala.

**Kungstensgatan Street**

This street which stretches eastwards from the south side of Observatory Hill is referred to as early as the mid 18th century under a variety of different names.

METRO ENTRANCE

LÄKARHUSET MEDICAL

SCHOOL OF LAW / HUMANITIES

SCHOOL OF ECONOMICS

OBSERVATORY



46 *Opposite page:*  
*Aerial photograph with  
the competition site and  
surrounding buildings.*

47 *Top right:*  
**1.** *Observatory for  
the Royal Academy of  
Sciences, architect: C.  
Hårleman, 1748–53.  
Westfacing  
facades. Extended  
northwards in 1874–75,  
architect: J.E. Söderlund.  
A revolving observatory  
tower was added to the  
south part of the Observa-  
tory in 1877.*

48 *Middle right:*  
**1a-1b.** *The observatory  
wings seen from the north  
west: 1a Stora Magnet-  
huset (Greater Magnet  
House), 1838, addition  
of an observatory tower  
in 1914. An oblong out-  
building from 1881, can  
be seen on the left of the  
picture.*

49 *Bottom right:*  
**2.** *The Stockholm School  
of Economics, architect: I.  
Tengbom 1925–26. Exten-  
sion to the south-west, ar-  
chitect: Å. Ahlström 1975.  
Facades facing north and  
the part of Observatory  
Grove that was planned  
by Asplund. A footpath  
can be seen on the right  
of the picture. This can be  
said to be a remnant of what  
used to be the northern  
part of old Salmätar-  
gatan.*

### The Area around the library

During the 1860s the Institute of Technology and the School of Mining were erected south of Observatory Hill. Around the turn of the century, a laboratory building was added. During the 1920s the learning institutes came to form an increasingly clearly defined circle around the hill. Draft city plans from the 1920s show four narrow parallel buildings west of the Stockholm Public Library, as well as a major college building on the north-west slope of the hill. The School of Economics was built at the same time below Observatory Hill on Sveavägen in a strict neoclassical style, designed by Ivar Tengbom.

The buildings on the northern side of the hill were demolished before the Public Library was built. The new law and arts faculty building and the first narrow parallel building (Annex 3) for the Stockholm College, both designed by Erik Lallerstedt, were constructed at the northern and western side of the hill.

The two additional buildings (Annex 2 and Annex 1), the former by Lallerstedt, the later by Paul Hedqvist, were built in the 1930s and 1950s. Annex 2 and Annex 3 were designed by Eric Lallerstedt in classical style with their characteristic gable entrances facing Odengatan. They were erected to house the biochemistry and social science departments for the university college in 1931–32. Stockholm University College was nationalized in 1960 and became Stockholm University moving out to its current site at Frescati during 1970s. Most of the old university college buildings around Observatory Hill have, however maintained their educational function till today.





### Stockholm College District

The following, photographs and building data connected to the map showing the Stockholm College district, briefly describe the buildings, squares and streets that are part of or adjacent to this district, designated an area of national interest by the Swedish National Heritage Board.

50 Top right:

**3a.** Stockholm Public Library, architect: G. Asplund, 1924–27. Facade facing east and towards Sveavägen.

51 Top middle:

**3a.** The bazaar buildings with terraces, erected in accordance with Asplund's sketches in 1928, can be seen on each side of the steps leading up to the Library's main entrance.

52 Opposite Top left:

**4.** Spelbomskan 7 (Annex 1) The Stockholm college arts library, architect: P. Hedqvist 1952–53. Facades facing north and Odengatan and towards Spelbomskans Square respectively.

53 Opposite Top right:

**5.** Spelbomskan 3 (Annex 2) The Stockholm college social science institute as the middle of the three annexes, architect: E. Lallerstedt 1932. Facades facing north and towards Odengatan. The north side of Observatory Hill is just visible between the annexes.



- Stockholm College or other institut of higher education / research
- Non - formal education
- Residential buildings
- Offices or commercial premises

54 Middle left:  
**6. Spelbomskan 13 (Annex 3)** The Stockholm college biochemistry institute on the right of the picture. Architect: E. Lallerstedt 1929–30 Facades facing north, towards Odengatan.



55 Middle right:  
**7 / 8. Spelbomskan 12 and 9 (Folksam and Diligentia)** Both office properties from the 1950s and 1960s seen from Observatory Hill looking north west. The lower building (Folksam) in the foreground, architect: R. Hagstrand, 1957-60, the higher building behind (Diligentia), architect: S. Lindegren, 1962–70.



56 Bottom left:  
**9. Spelbomskan 15** Residential building, architect: Sjösteen & Johansson, 1884–85. Facades facing west and south. The two office properties are just visible on the left of the picture.



57 Bottom right:  
**10. Spelbomskan 14** The Stockholm college institute of organic chemistry, architect: P. Hedqvist, 1938–39. Extended as part of the college in 1957–59. South facing facades. The path up Observatory Hill is visible on the right.



58 Top:

11. Bergsmannen större  
8 The Stockholm college  
law and arts faculties,  
architect: E. Lallerstedt,  
1925–26. Temple gable  
facing south alongside the  
west side of Observatory  
Hill. The parks oldest,  
slightly curved road up  
the west side of the hill  
can be seen on the right  
of the picture, with the  
Diligentia building in the  
background.

59 Middle:

Spelbomskans Square

60 Bottom:

Observatorielunden (Ob-  
servatory Grove).

61 Opposite page:

Aerial view.

### Spelbomskan Square / Observatory Grove

Spelbomskan Square was established as a square after the erection of Annex 1 in the 1950s. The square was given its name in 1963 but the name can be traced back to the mill that stood on the north side of Observatory Hill during the 18th century and up until 1868. View looking south over the square with the L shaped annex and the steep northfacing slope of the hill in the background.

The name given to the English landscape garden surrounding the Old Observatory since 1885. The garden was established in the 1790s and designed by C.F. Adelcrantz and at that time included the highest part of the hill with a road up from the west. The extension in the 1920s with new roads, terrace walls and the flatter Library Park, designed by G. Asplund in 1931–32, made the Observatory Grove accessible from every side and gave it its present size and shape. View looking west over the part closest to the Public Library. The bronze sculpture Stegrande kentaur (A rearing centaur) by Sigrid Fridman in 1939 crowns the north east corner of the garden, lower down on the flatter part can be seen the sculpture Dansande ungdom (Dancing youth) by Ivar Johnsson in 1937.





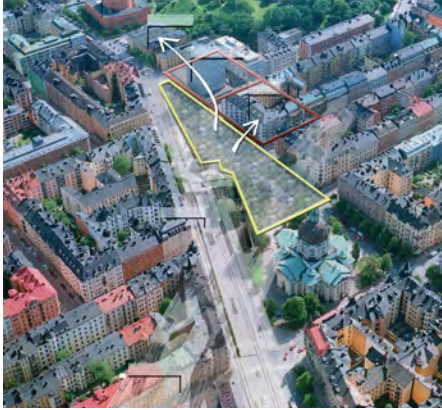
SCHOOL OF ECONOMICS

OBSERVATORY

SCHOOL OF LAW

SITE AREA

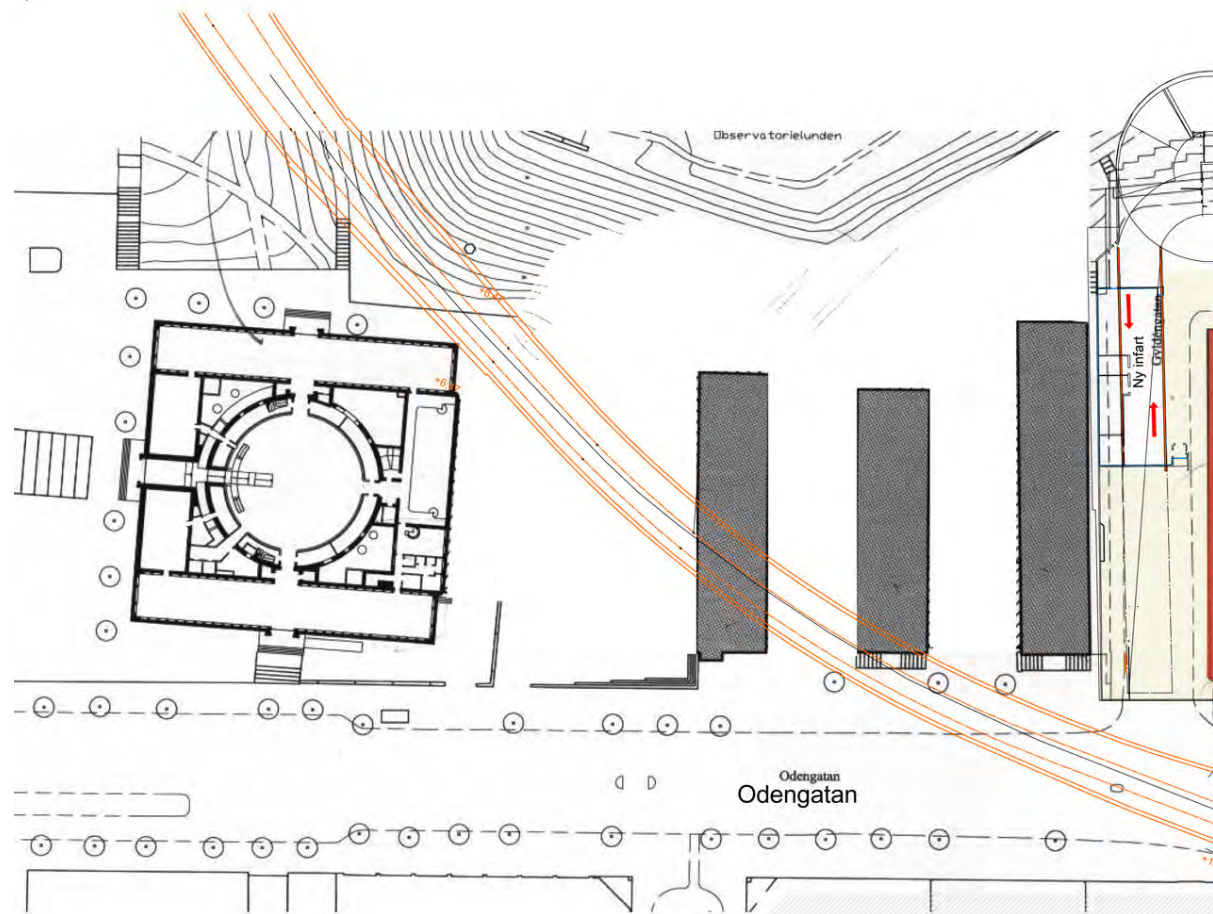
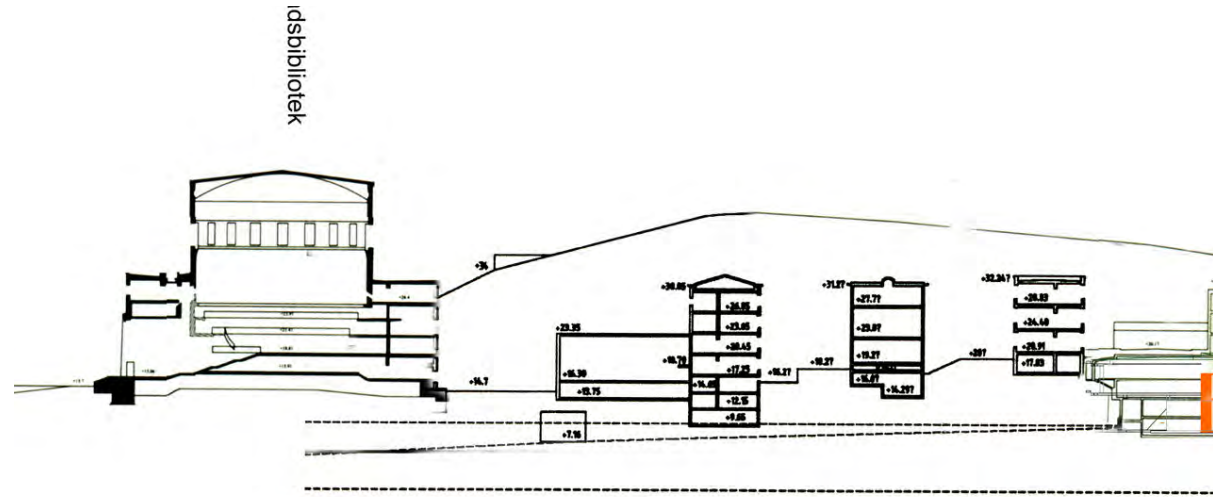
LÄKARHUSET MEDICAL



### Construction of the underground Shopping Centre

The Public Library currently has appr. 3 000 visitors per day or 1.2 million visitors per year. The library is thus the fourth most visited cultural institution in Stockholm. The most important project for the continued development of the area is the construction of the new City Express Railway system with a major station linked to and situated under the underground station at Odenplan. This City Express Railway system will connect the new library with a number of cities in the whole region of Stockholm. This will result in a ten-fold increase of appr. 100 000 passengers per day. There is a planned underground link with the new Biomedical University on the Norra station area with a possible further extension to Solna Centre. The construction of the City Railway Express started in 2007 and will be completed in 2013/14.

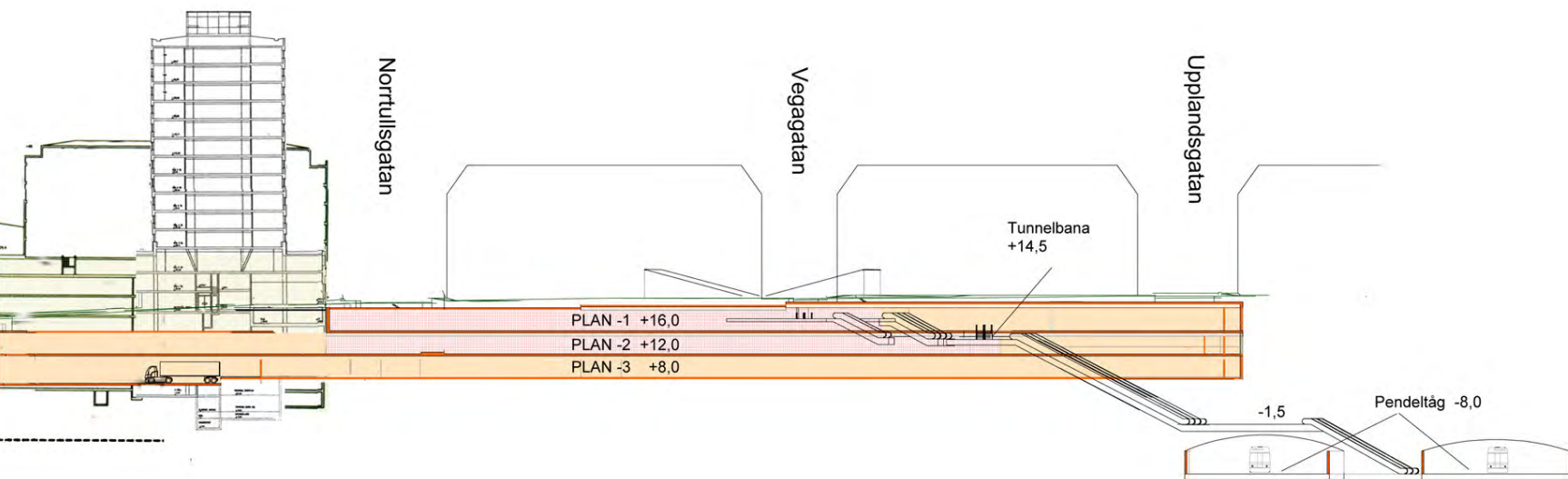
The underground shopping centre will be built and linked to the underground and the City Railway with commercial premises at street level in some of the buildings facing Odengatan in the Diligentia property.



62 Top:  
Aerial view of the underground shopping center, marking the direction of the City Express Railway system.

63 Both pages:  
Railway Station floor plan and section.





64 Top right: The main Entrance Hall reminding of an Egyptian temple with staircase up to the rotunda and the main lending Hall.

65 First Middle: The hanging chandelier as a visual focus gradually gives way to the majesty of the great drum.

66 Second Middle: The main staircase.

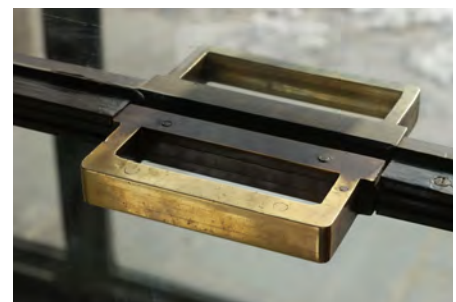
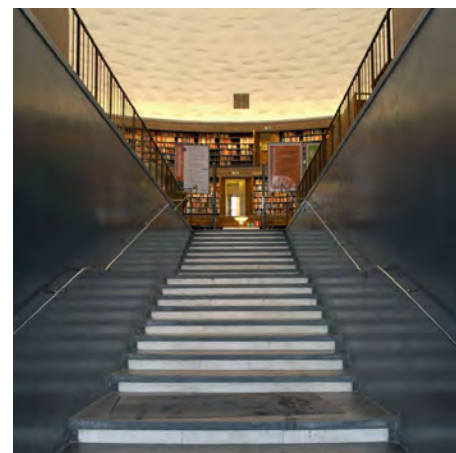
67 Bottom right: Door-handle.

68 Bottom left: Fine wall reliefs are positioned on both sides of the staircase depicting scenes created by sculptor Ivar Johnson.

### The Library today / Additions and Refurbishments

Asplund did not only design the interior fittings and fixtures but also a unique collection of furniture and electric fittings of which some remain today in a renovated and renewed condition. Still the library was far too small from the very beginning and Asplund was involved in ongoing supplementary work throughout the 1930s. His son Hans Asplund continued the work in the 1950s. Gunnar Asplund's original windows and glass sections with their elegant thin metal framing and single glazing have been replaced over the years with varying results and at times downright carelessly. Today only a few windows remain. Further changes have been carried out since 2000.

Some pictures are included here to give a slight impression.

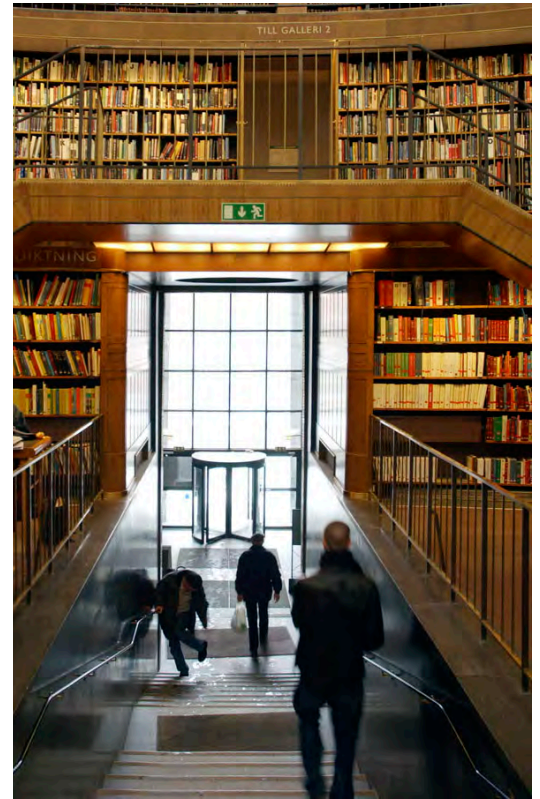




69 Top left:  
Original drinking Fountain made of brass and black marble.

70 Top right:  
Main staircase leading to the lending hall.

71 Bottom: Large main lending Hall facing the main entrance from Sveavägen street.





DANSK

NORSK

ENGLISH

HISS



DEUTSCH

FOLO STOR STIL  
LÄTT LAST

DRAMATIK





72 Previous page: The main lending hall.

73 Opposite Top: Wall relief above the entrance of the Children and Youngs People Section : Sagorum.

74 Opposite Bottom: Original furniture designed by Gunnar Asplund especially for the library.

75 Top left: View towards observatory hill from the first floor.

76 Bottom: Main entrance hall with wall reliefs positioned on both sides of the staircase depicting scenes from Iliad created by sculptor Ivar Johnsson.







# **THE STOCKHOLM CITY LIBRARY**

# THE NEW LIBRARY

## Fundamental Principles

The new Public Library shall provide a considerable increase of public space which increases from the current 3.700 m<sup>2</sup> to 16.600 m<sup>2</sup>. The library requires in total approximately 24.000 m<sup>2</sup> compared to the current 14.000 m<sup>2</sup>. Of those about 6500 m<sup>2</sup> are currently in the Old Asplund Library. From a preservation point of view, the Asplund Library should remain a \* Temple of books\*.

**01 - Entrances** / The old Asplund entrance has to remain the main entrance, still two more main entrances are provided from the Odengatan and Sveavägen Street. It is visible and functions as an eye catcher in order to attract and invite people to come and visit the new library. Its Intention is to create curiosity and to provide an overview. The side entrances provide access to the Learning Zone, where visitors can borrow media 24 hours a day.

**02 - The News Zone** / It functions as a communication channel between the library and the outside world. It includes information desks, newspapers, magazines, periodicals and computers, which offer worldwide communication.

**03 - The Learning Zone** / Carrels and work stations with computers, partly open 24 hours a day.

**04 - 07 Studios / Teaching Rooms / Lecture Hall - Auditoriums** / Multimedia rooms for creative innovation geared towards the spoken and the written word. It can be used privately or in groups. The studios can be combined into a larger studio. Four rooms for computer based courses. Lectures can be held in two flexible rooms with high technical standard that can easily be adapted to suit different activities such as lectures, discussions with writers, and communication for 300 and 100 people respectively.

**08 - 16 Subject Areas / Open Media** / The media collection at the Public Library with 1.1 million copies, should be presented in accordance with different subject areas, organised by content not form. Each subject area has its own character and is characterised by its orientation and profile. There are study areas, reading areas, seats and group rooms within each subject area. Each area shall provide space for smaller exhibitions and the library programme of events. The library inspires visitors to discover and find things in the library in different ways.

**20 - Depositories** / A closed depository with approximately 165.000 volumes of books and 750 running metres for the storage of older issues of magazines.

**21 - Sorting Machines** / A totally automatic system for the management of the entire flow of media through, to and from the library. The system shall handle both the media in the public library and

library. The system shall handle both the media in the public library and the media that arrives at the Logistic Centre. Borrowing terminals are located at all the entrances of the library. The location of the sorting machine must entail good communication between the main entrance and the Logistic Centre.

### 22 - Media Management

**23 - The Logistic Centre / Loading Platform** / This is a shared reception area with a loading platform for transported media and deliveries to and from the entire library complex. The reception area must be equipped with an air separator between the loading platform and the rest of the loading area. There must be room for three library buses to park.

**24 - Caretakers Office** / Four workstations for: Transportation, technical support, cash management, sorting post and general issues regarding inventories.

**25 - Management** / Joint management functions for the Stockholm Public Library organisation. Different types of work stations for eight employees.

**26 - Marketing Department** / Work stations for 15 employees in an office landscape. Graphic design, management, production ... and exhibition.

**27 - Virtual Unit** / Responsible for virtual management and development work. Open landscape office for 15 employees.

**28 - Outreach Activities** / Office unit to provide consultative support to the city district libraries.

**29 - The Stockholm Regional Library** / This unit consists of a county library and a borrowing centre. Its activities include both consultation towards the municipal libraries in the county as well as support in the shape of the actual supply of media including 20 work stations.

**30 - Staff areas** / Meeting areas and lunchrooms will be shared by all departments and sub - organisations in the building in order to promote communication between them.

**31 - The Swedish Institute of Children Books** / The Swedish Institute is a public library and information centre for literature aimed at children and young people. It does not belong to the same organisation as the Public Library. Its activities are geared towards adults who are interested in literature aimed at children and young people. The library is primarily a reference library and the borrowing facili-

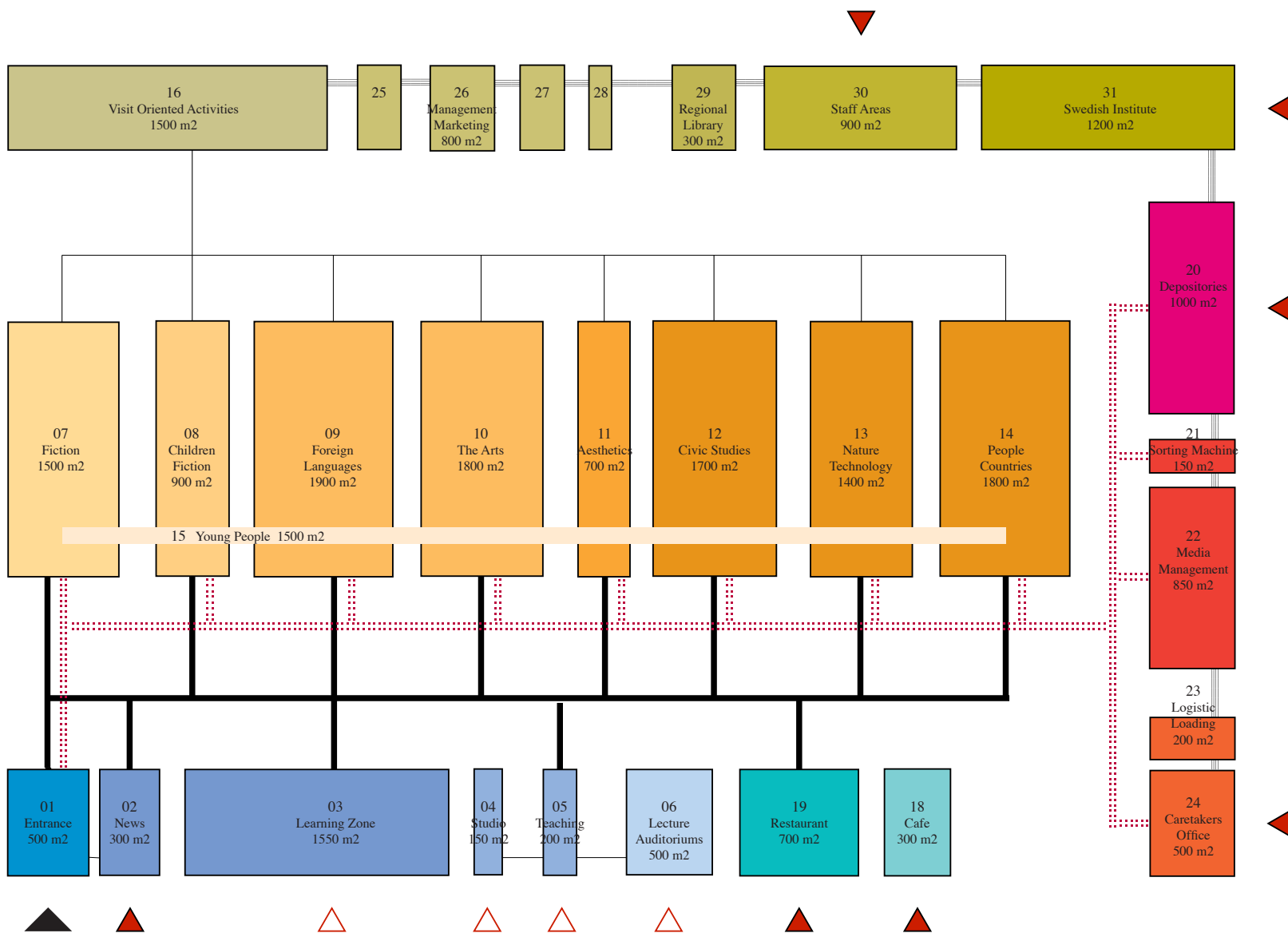
77 Top right: Overview of the required media in Asplunds Library.

78 Bottom: Schematic Functional Overview showing the interaction between the different subject media and the public external and internal flow.

SHEMATIC FUNTIONAL OVERVIEW

- ..... SORTING MACHINE
- IMPORTANT PUBLIC FLOW
- ==== INTERNAL FLOW
- LESS IMPORTANT PUBLIC FLOW

The Library	2005	2014
Books	844 000	770 000
Books and media on public display	40%	60%
Books and media stored in depositories	60%	40%
Public areas (MUA)	3 700 m <sup>2</sup>	16 600 m <sup>2</sup>
Study places	250	600
Reading places	10	400
Seats	50	200
Visitors per day	3 000	7 000
Members of staff	80	120



# SPLIT IT

THE FIRST SCHEME

## Main idea – concept

The new library should serve as an architectural dynamic counterpole to the simple and austere old library built in the neoclassizistic style in 1928 and to its surrounding buildings of the site area. The new library originates within the source of the Observatory Hill and develops across. Based on the hugeness and monumentality of the stone a sculpture grows out of the hill to get loose of it in order to be finally split like a granite into a massive monolith and a translucent solitaire.

This idea is realized as the source of the Observatory Hill and is reflected in the chosen material:

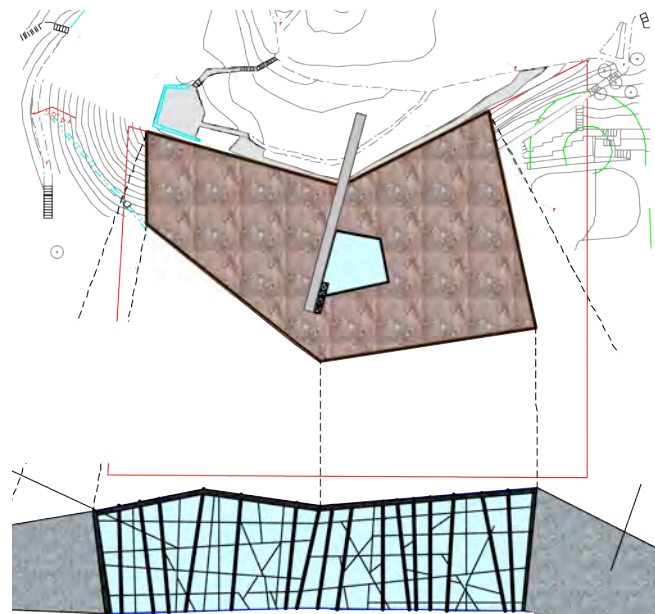
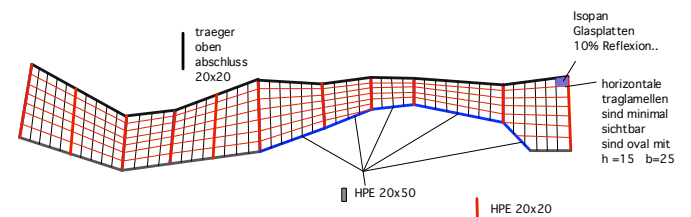
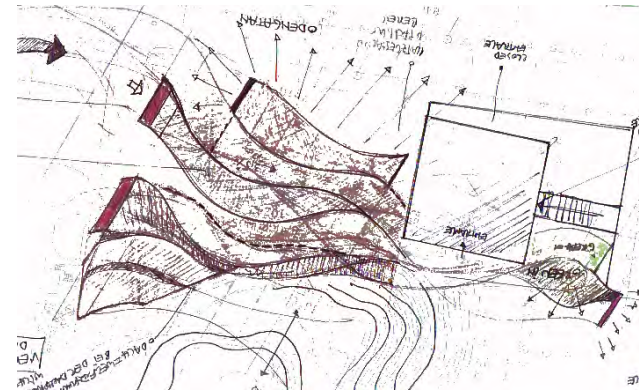
The monolith = granite = massive;

Solitaire = ease, dynamic and to get away from the source.

Splitting from the hill leads to a direct admittance between the new subway shopping area and the old Asplund library over to the planned subway extension. The monolith has to be regarded as part of the hill and forms therefore an integrated whole. Vegetation and Planting is intended on the roof being partly used as it gives an excellent view of the café towards the site area. The path leads directly to the Observatory Hill.

A straight curtain wall is situated at the ridge where this metaphorically huge stone is split and therefore intended to show the contrary of the massive outside. It is more or less as seen on the façade a curtain wall consisting of a steel structure reflecting on its surface a stone cut. Due to its importance the functions as well as the public flow are located around an air well in order to facilitate sharing of learning areas and creating interesting areas where creativity of

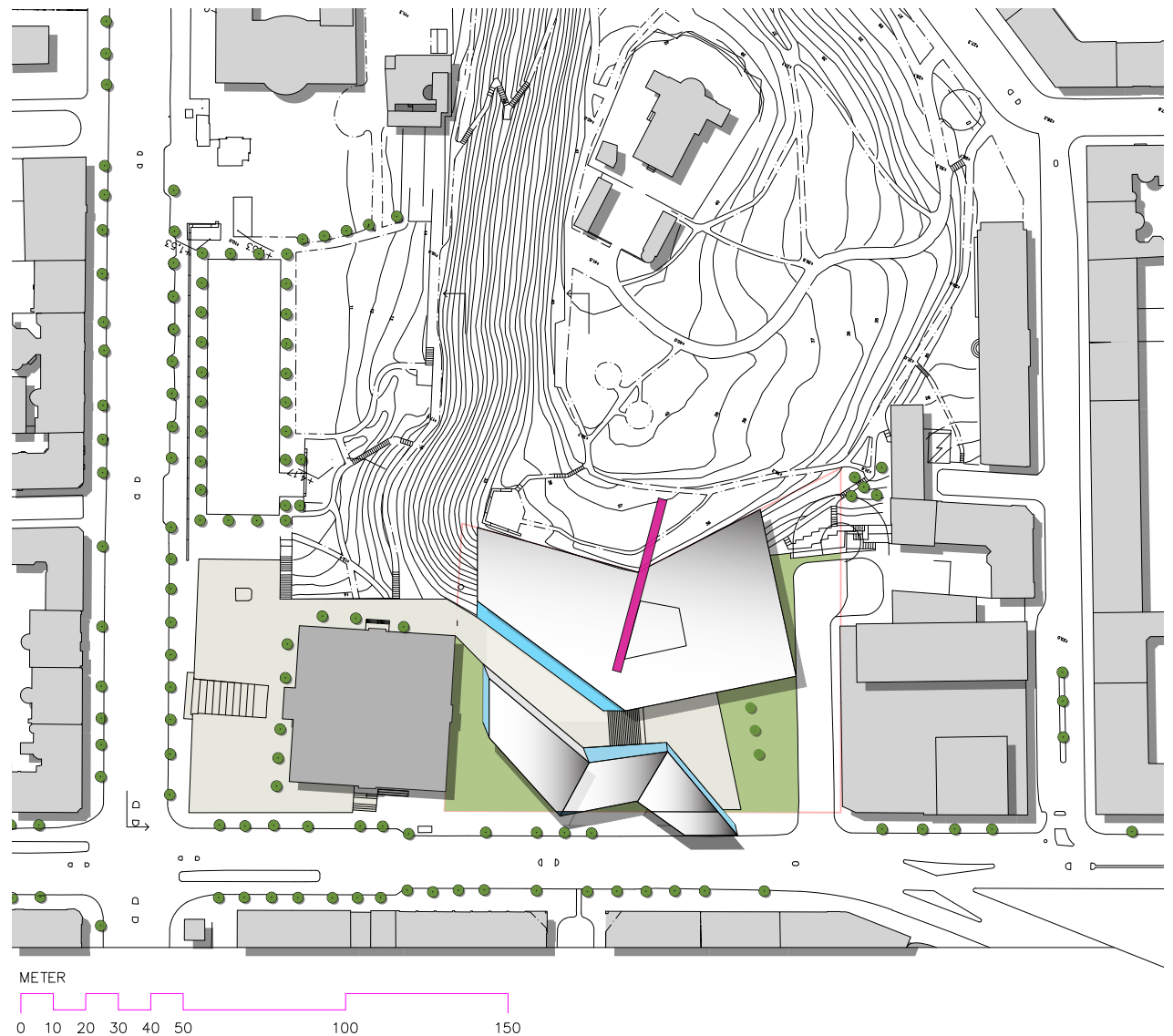
The old library should be kept as far as possible without too much changes due to its historical value. Therefore only slight changes for functional reasons should take place. Still the bazaar area should function as a surface being visualized and consisting a curtain wall providing area for shopping and archeology. A thrilling space experience is provided by the functional different heights – up to 9 metres – and levels with galleries.



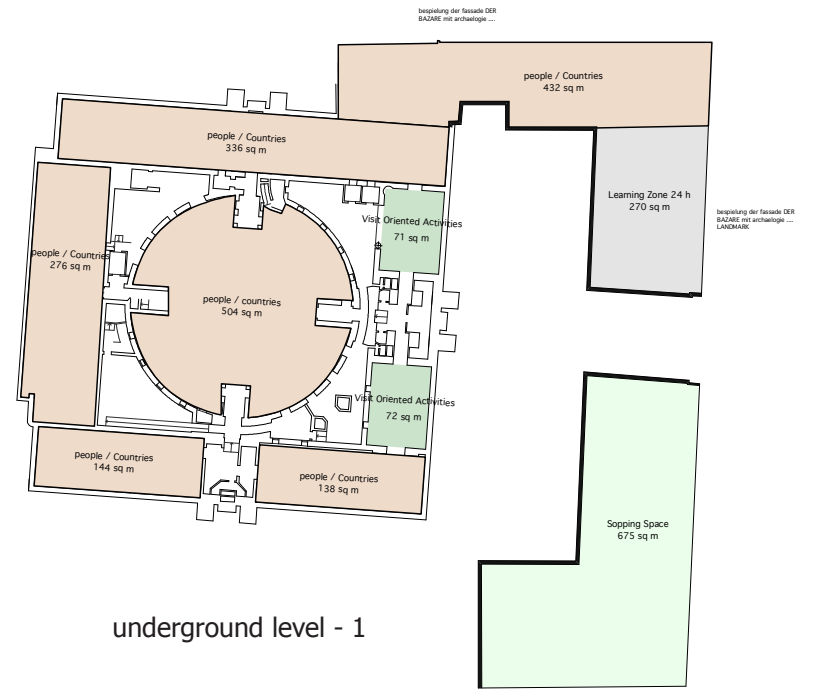
79, 80 , 81 Opposite page:  
Different scetches of the  
first drawings.

82 Top right and Bottom:  
Site Calculation with the  
total Main Usable Area  
and the site plan of the  
first drawings.

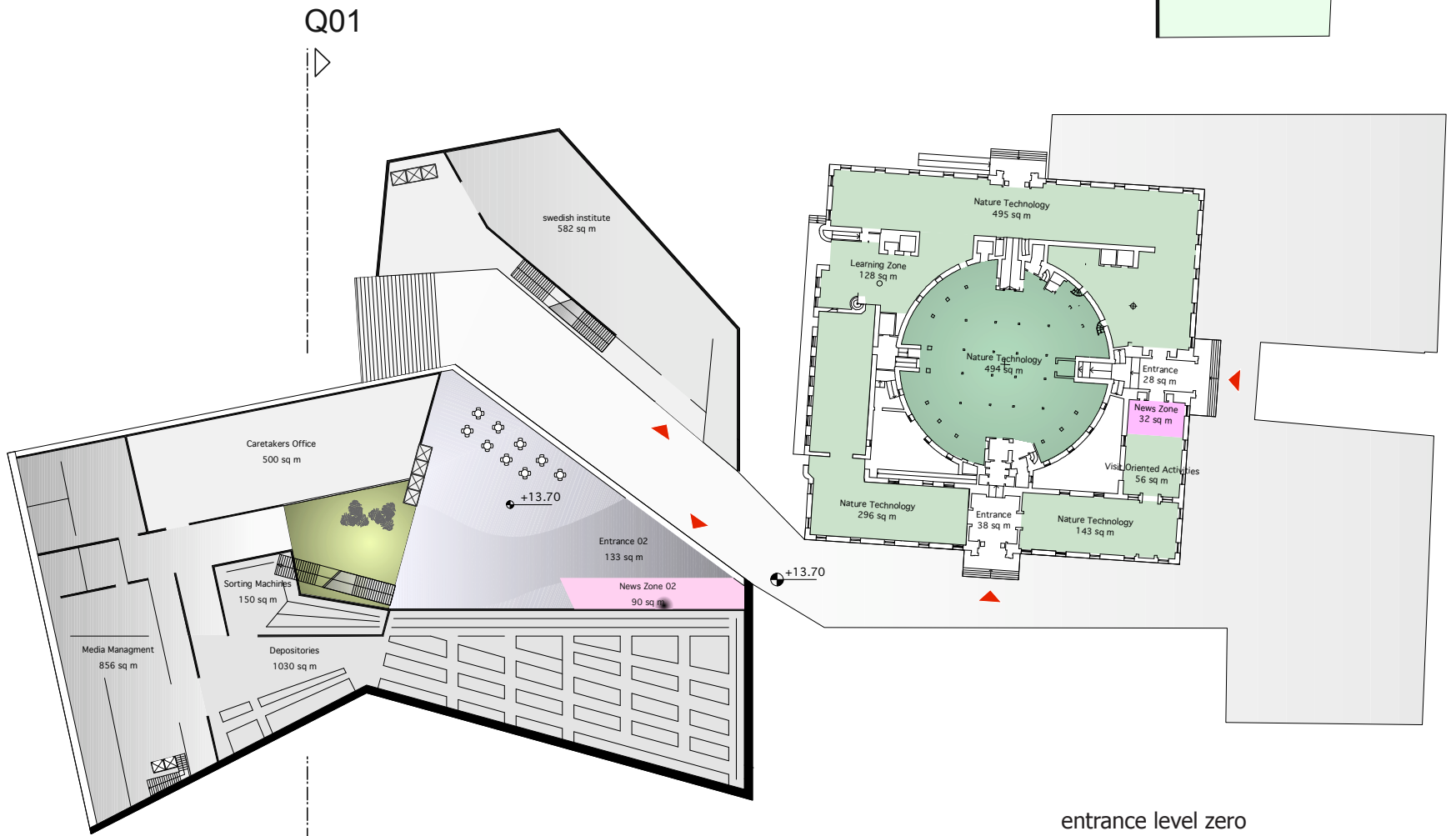
SITE CALCULATION		PROPOSED	ACTUAL			
		PUBLIC AREAS		18	Cafe	300 305
01	Entrances	500	518	19	Restaurant	700 703
02	The News Zone	300	297	DEPOSITORY MEDIA MANAGEMENT		
03	The Learning	1550	1564	20	Depositories	1000 1030
04	Studio	150	196	21	Sorting Machines	150 150
05	Teaching – 200	200		22	Media Management	850 865
06	Lecture	500	501	23	Logistics / Loading	200 200
		SUBJECT AREAS / OPEN MEDIA		24	Caretaker's Office	500 500
07	Fiction	1500	1510	ADMINISTRATION AND STAFF		
08	Children's Fiction	900	908	25	Management	200 212
09	Foreign	1900	1906	26	Marketing	300 317
10	The Arts	1800	1808	27	Virtual	200 209
11	Aesthetics	700	742	28	Outreach activities	100 100
12	Civic Studies	1700	1700	29	Regional Library	300 300
13	Nature and	1400	1428	30	Staff Areas	900 982
14	People and	1800	1830	31	The Swedish Institute	1200 1214
15	Young People	500	500	32	Shopping	600 675
16	Visit oriented	1500	1525	TOTAL MUA		24000 24420
17	Other Public	200	200	TOTAL GROSS		29000 29794



82,83 Top and Bottom:  
Underground / Entrance  
level floor plan.

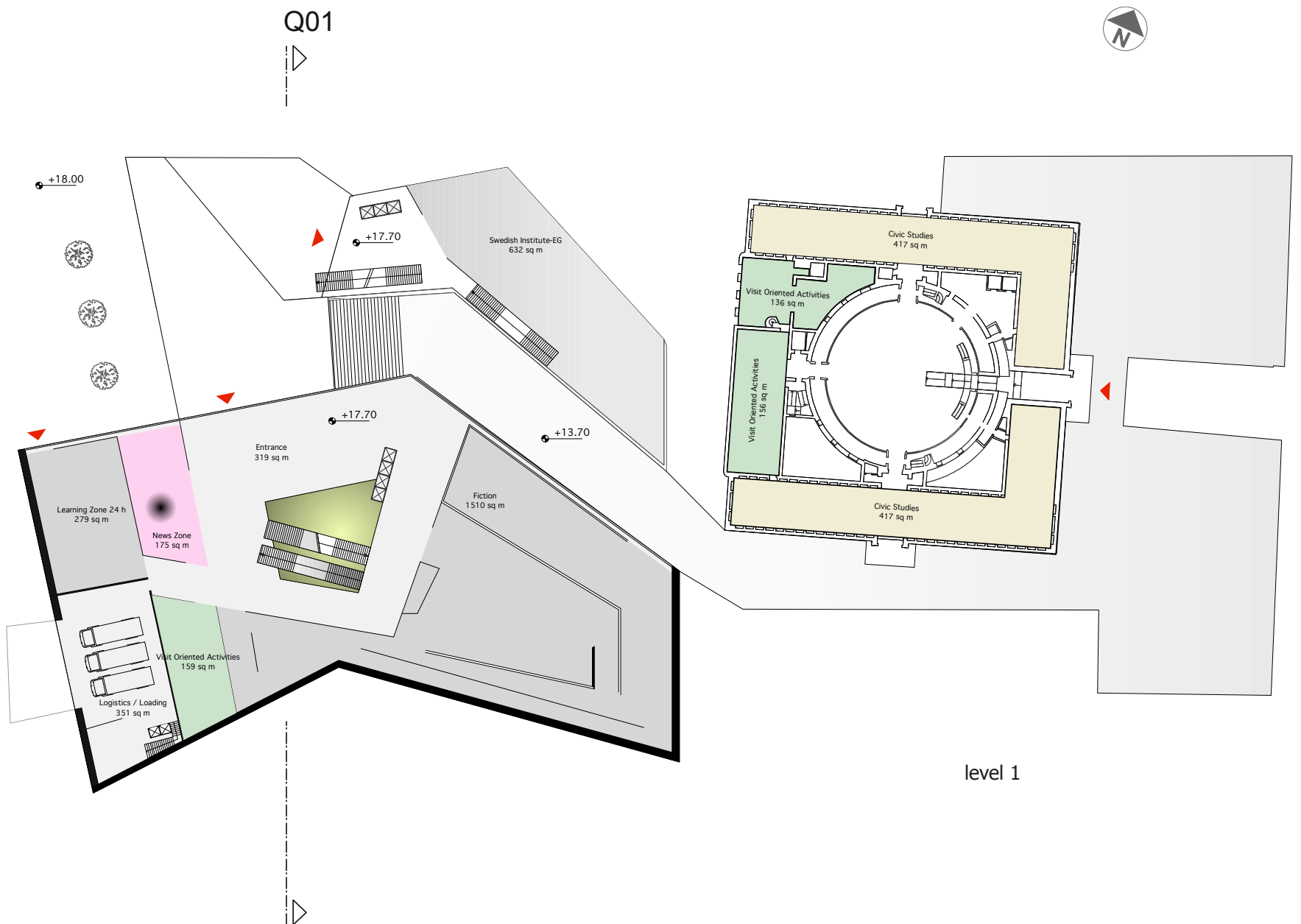
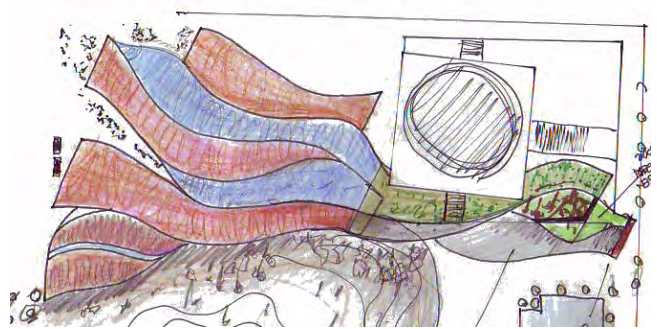


underground level - 1



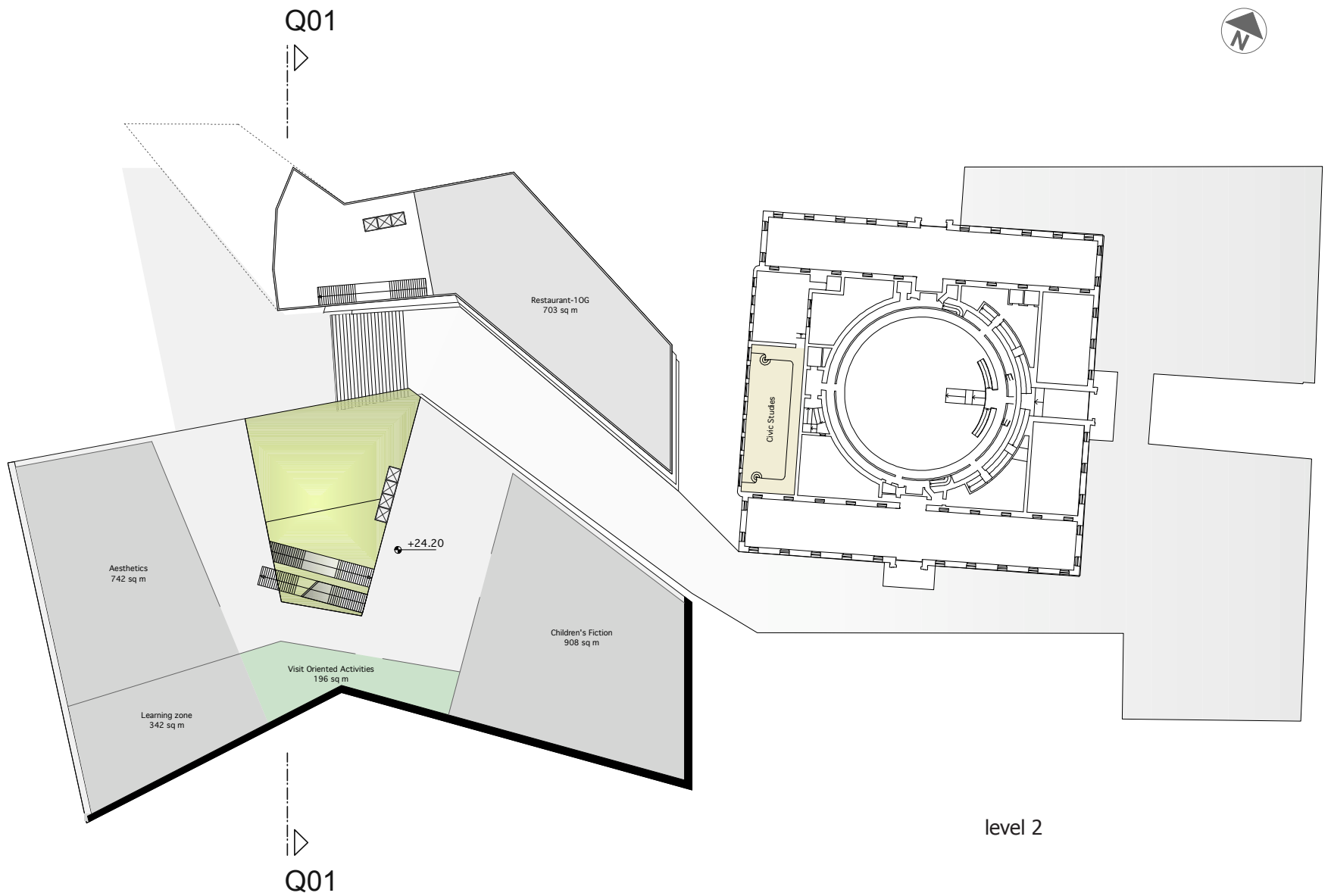
entrance level zero

84 Bottom: 1st floor of the New Library, at the Entrance Level of Asplund Library.

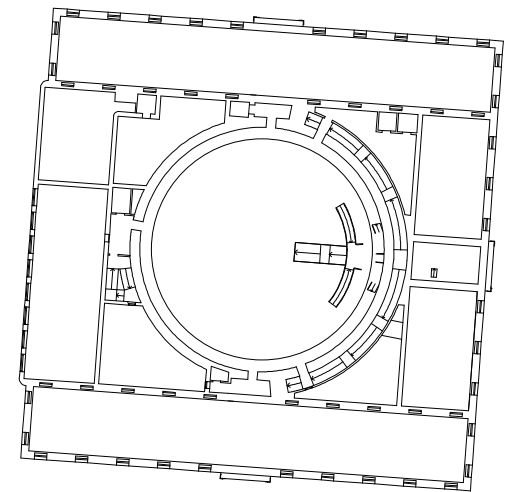
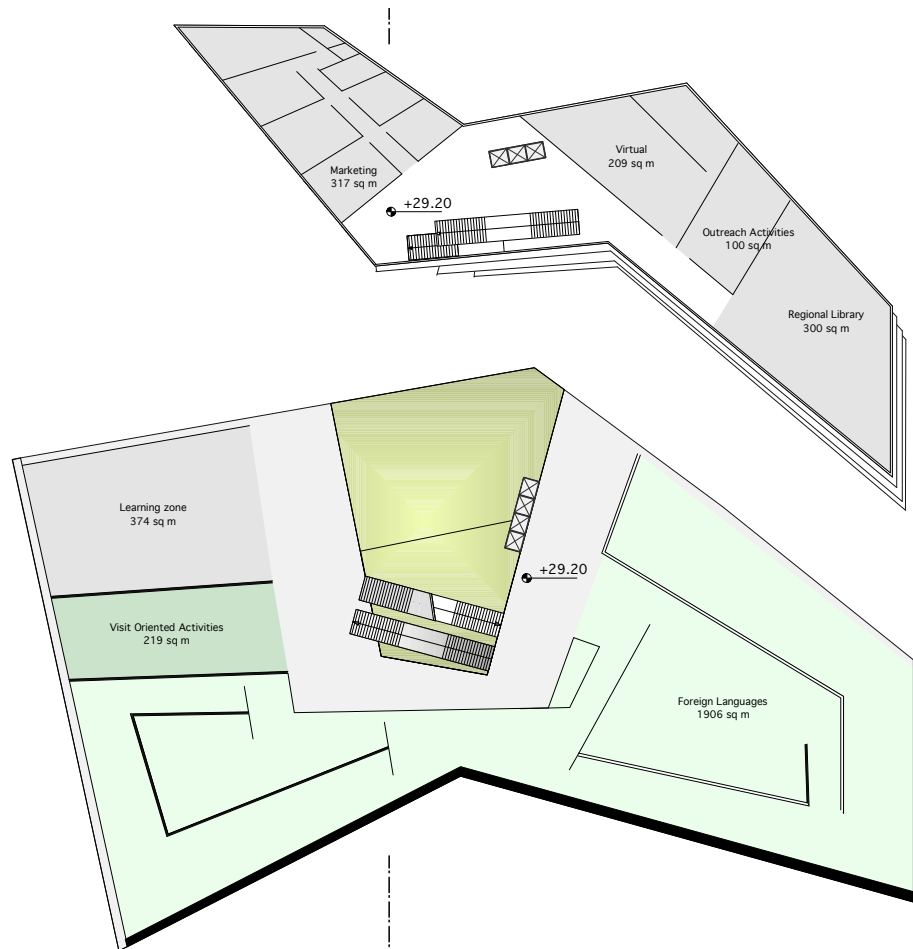


85: Bottom:  
2nd floor plan.

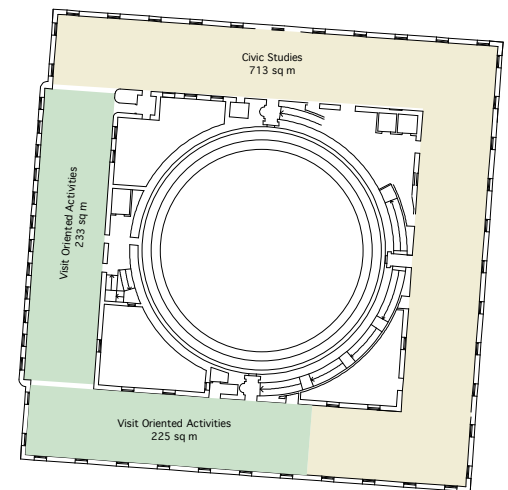
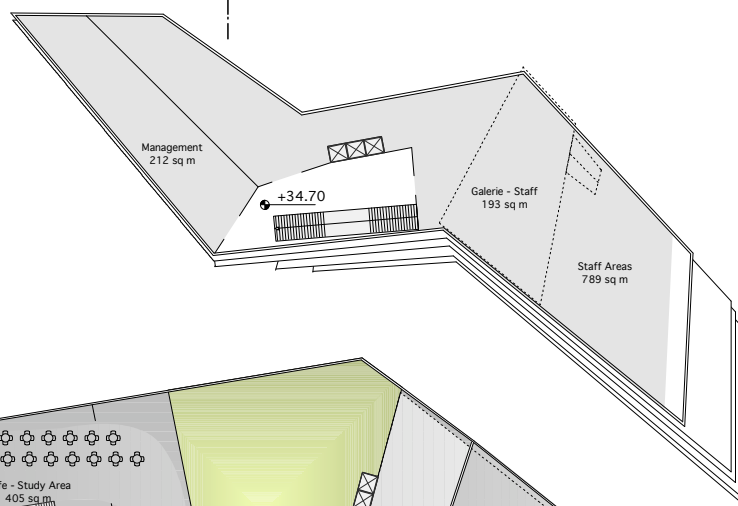
86: Opposite page:  
3rd and 4th floor plan.



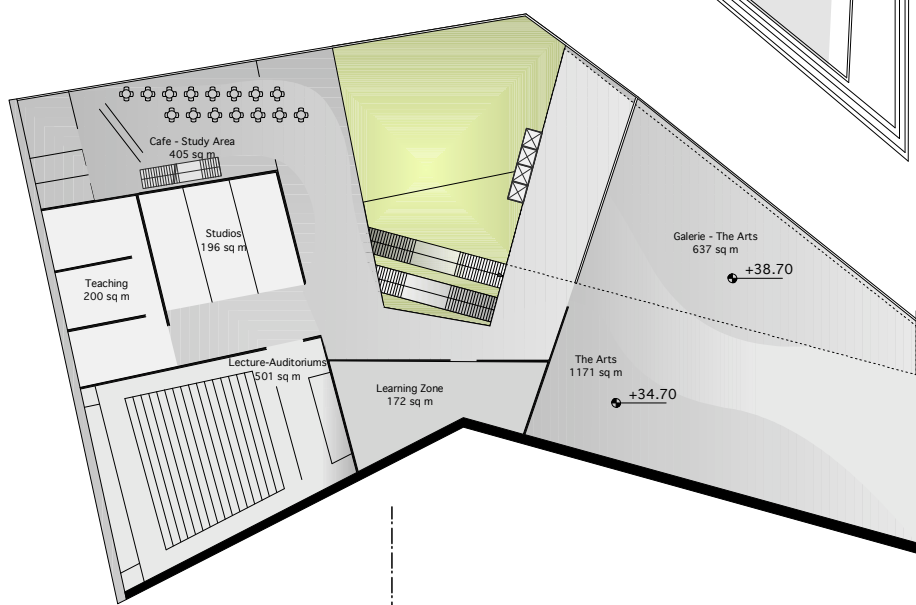




level 3



level 4



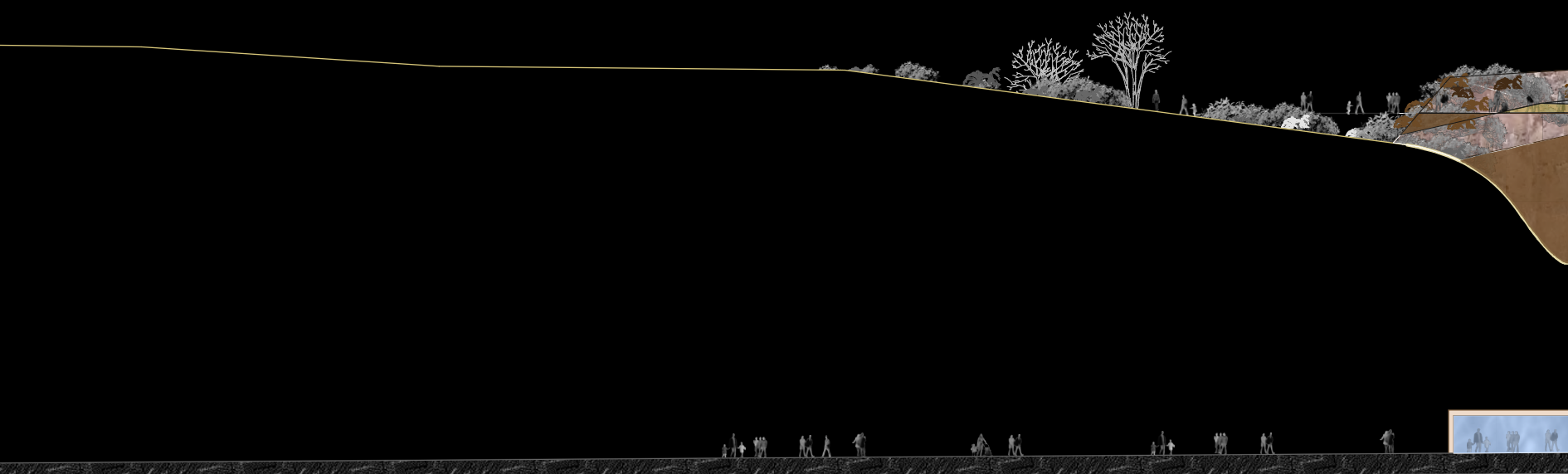
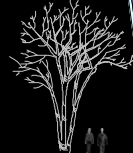
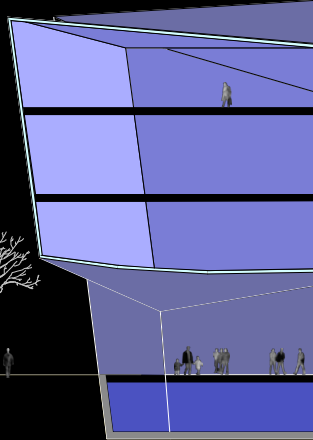
Galerie 28.32

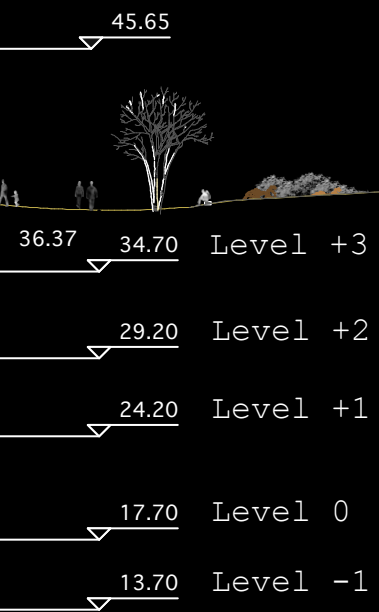
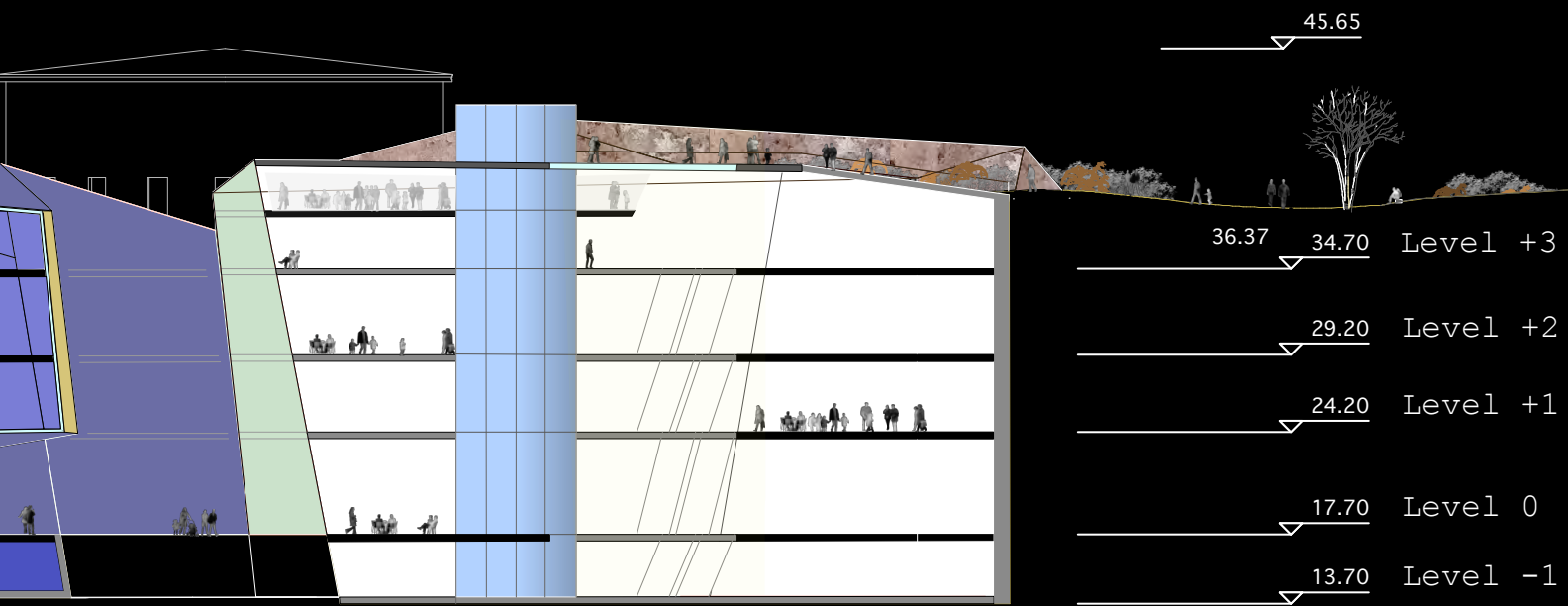
Level +3 34.70

Level +2 29.20

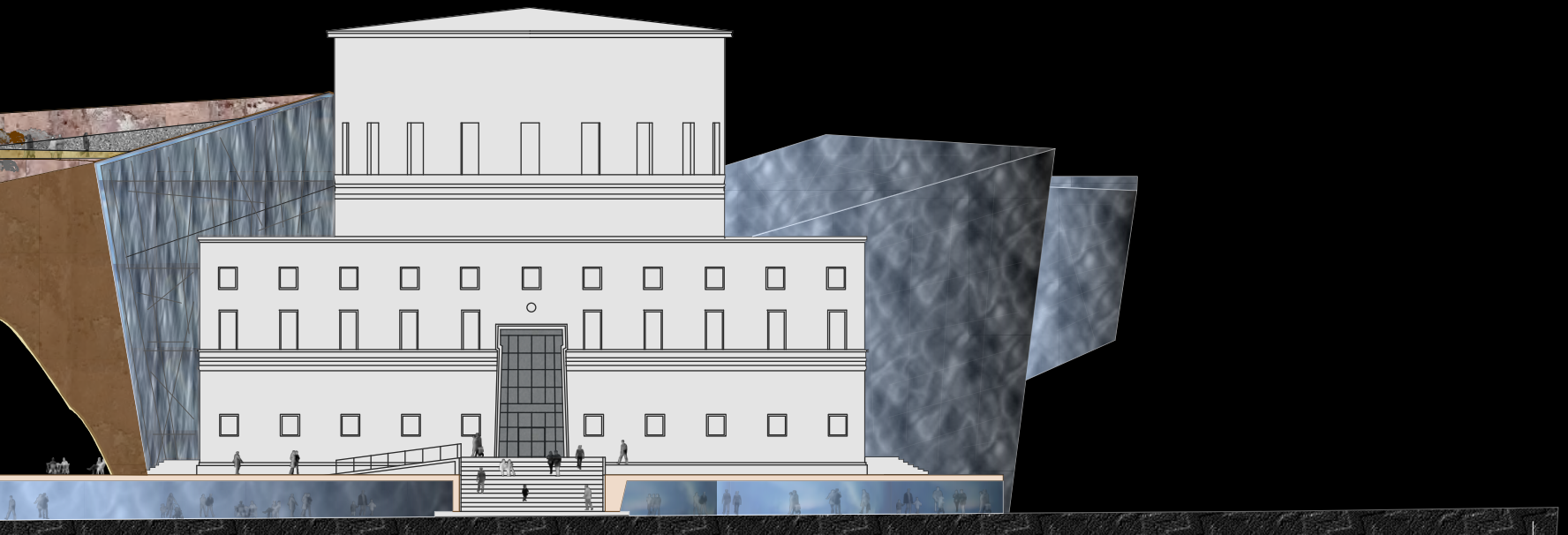
Level +1 24.20

Level 0 17.70

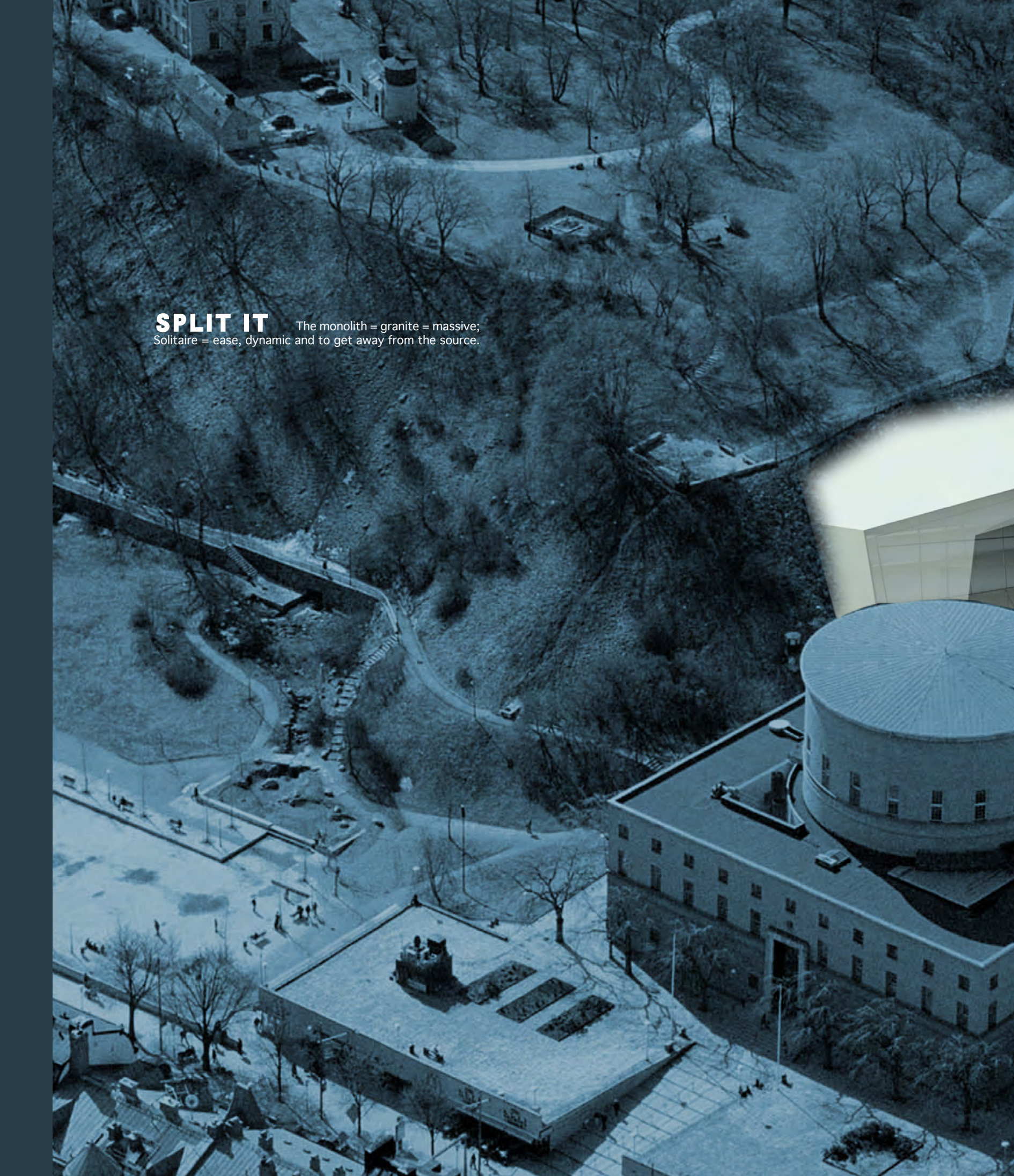




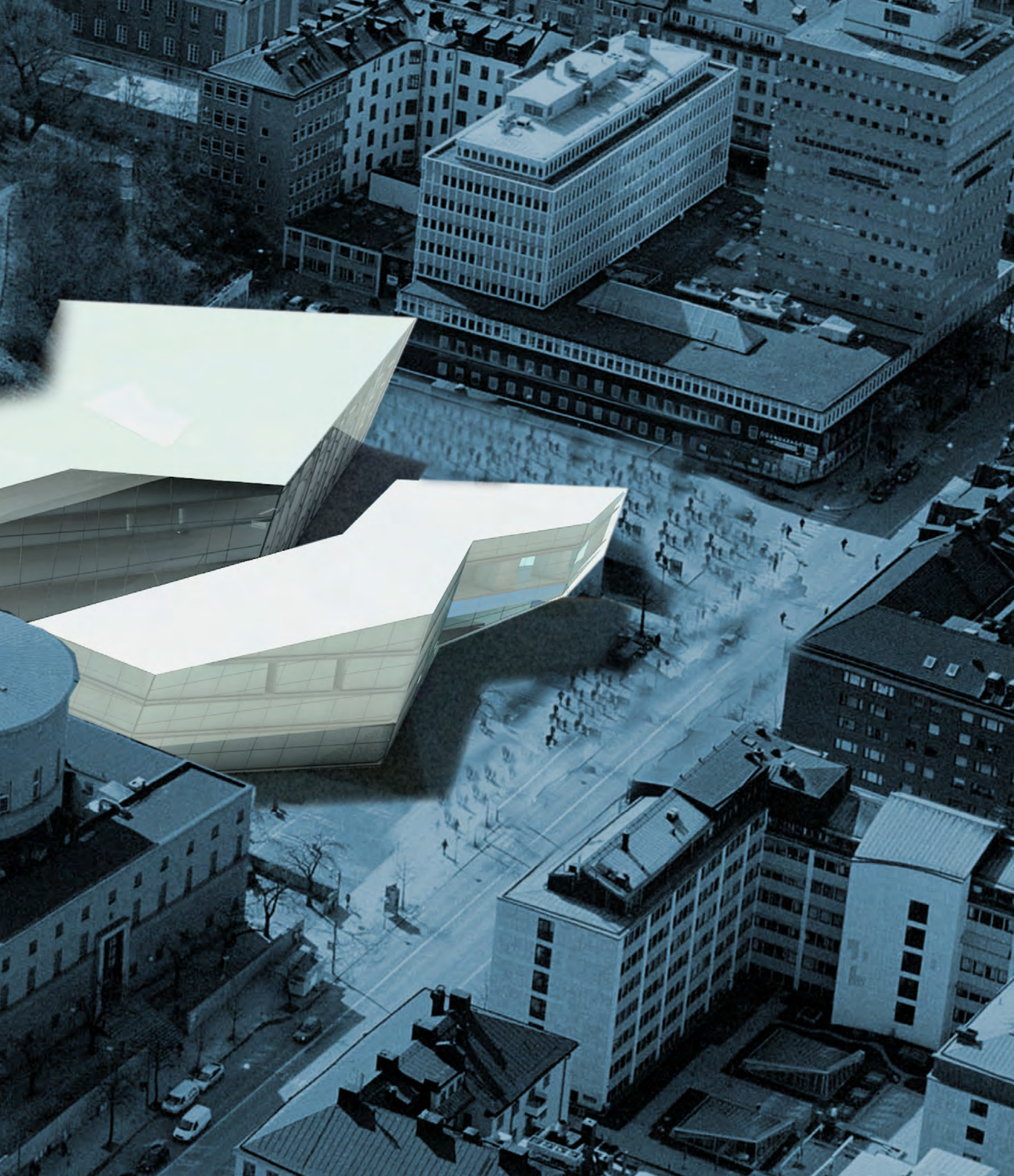
CROSS SECTION M 1: 500



ELEVATION SVEAVÄGEN M 1: 500

An aerial photograph of a campus in winter, covered in snow. The image is mostly in shades of blue and white. In the lower right, a large, multi-story building with a prominent circular section is visible. The circular part has a white, ribbed roof. The surrounding area includes other buildings, trees without leaves, and winding paths. The overall scene is quiet and cold.

**SPLIT IT** The monolith = granite = massive;  
Solitaire = ease, dynamic and to get away from the source.







... It is not up to me to improve the concept of Asplunds neoclasizism library but to develop an extension for the learning of today and tomorrow in a open living public building. “

starting a new scheme *work in progress*

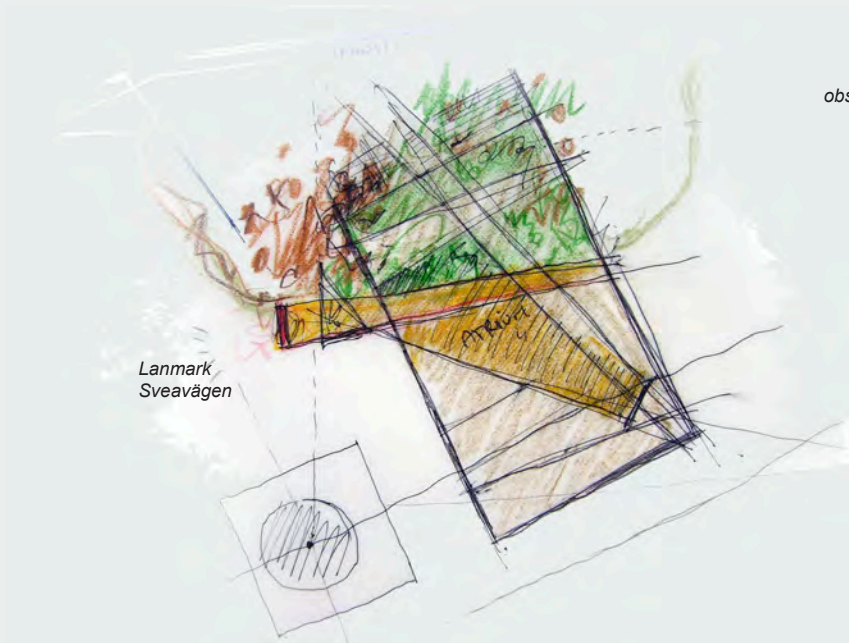


OCCUPIABLE ROOF

*Different materials reflecting the nature & geological history and development.*

- mid length grass = natural concept
- wild long grass
- river stones --- > according to the see and to Asplunds pond
- natural stone coloured grey
- sand

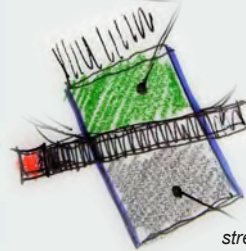
ATRIUM : main social area



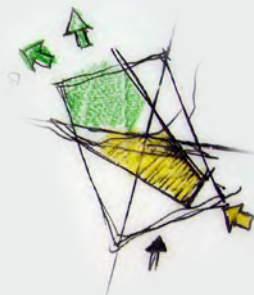
Lanmark  
Sveavägen

observatory hill

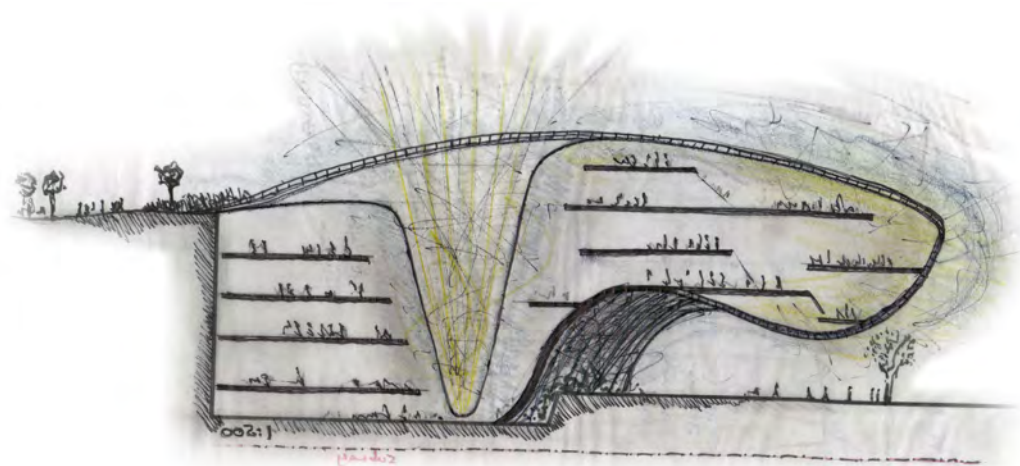
hill side



street side  
main entrance  
ATRIUM







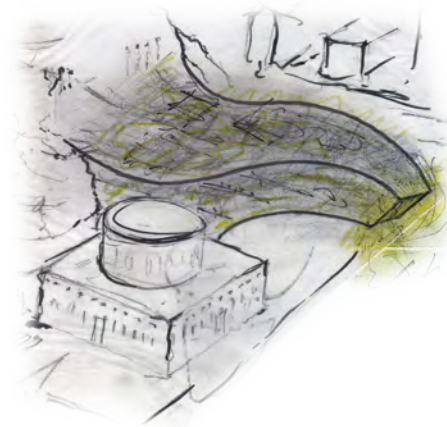
## Atrium

The central ATRIUM increases towards the top, creating the possibility for natural ventilation of the entire building complex. Controlled openings in the facade / roof optimize the indoor climate. The functional system is divided into three parts: Private / Public / semi Public. Stockholms horizontal Cityscape requires a vertical element as a point of reference to the new area of cultural and commercial activities; manifesting a great potential as a public junction and a meeting place for streams of people.

A1

## Virus Knowledge S1

The virus `knowledge S1` excavated itself from Asplunds Library, starting with the form of a bubble. It started expanding taking advantage of the Annex buildings and destroying them, taking possession of the Hill Site. Throughout the different stages of growth different sections of usage maintain the functional system of the new library. Different time periods during its growth are symbolised by different colours.

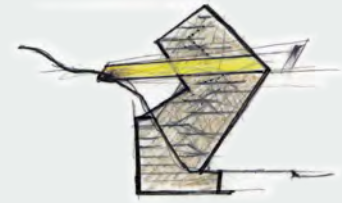
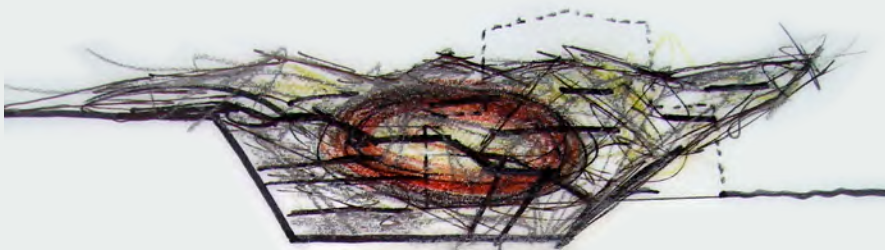
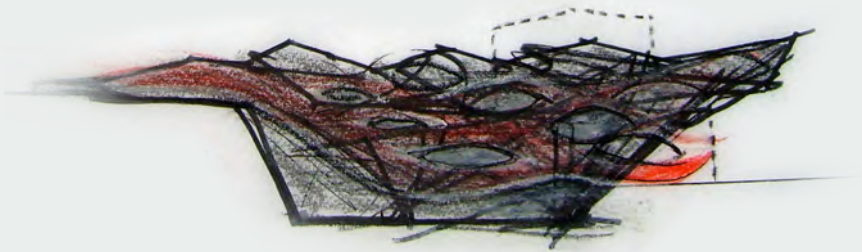
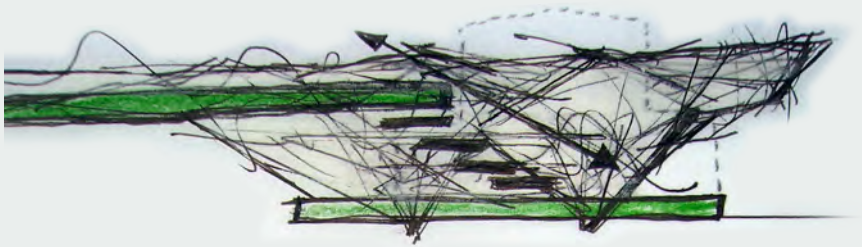


“ Information is not knowledge “ Albert Einstein

S1



## interaction with the Hill Site *public flow*



### GREEN INTERACTION

In a metaphorical context to Asplunds Library through the main staircase, the visitor reaches through different levels the melting zone. The intention is to achieve a melting area consisting of different green zones. Two different green zones / street green and hill green are connected through the main staircase together.

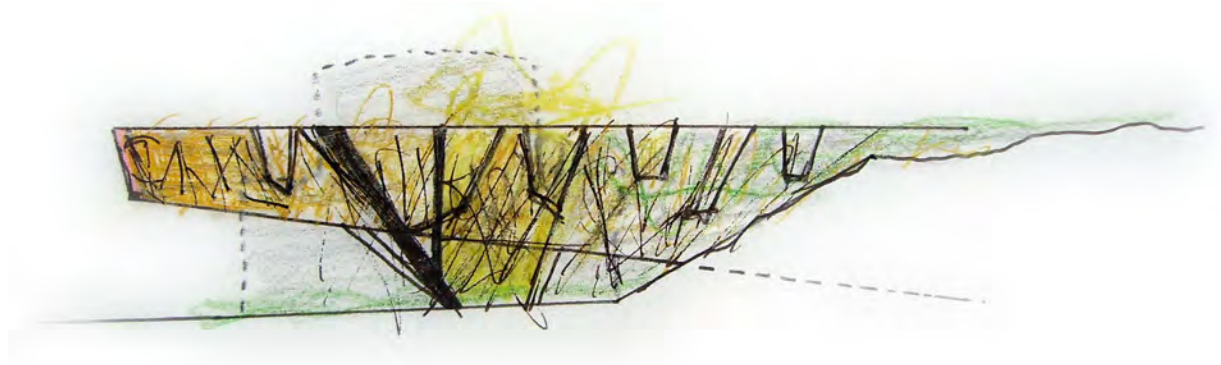
### PUBLIC FLOW

Public flow circulates on different levels.

### LIGHTNING LANDMARK

### MAIN ATRIUM

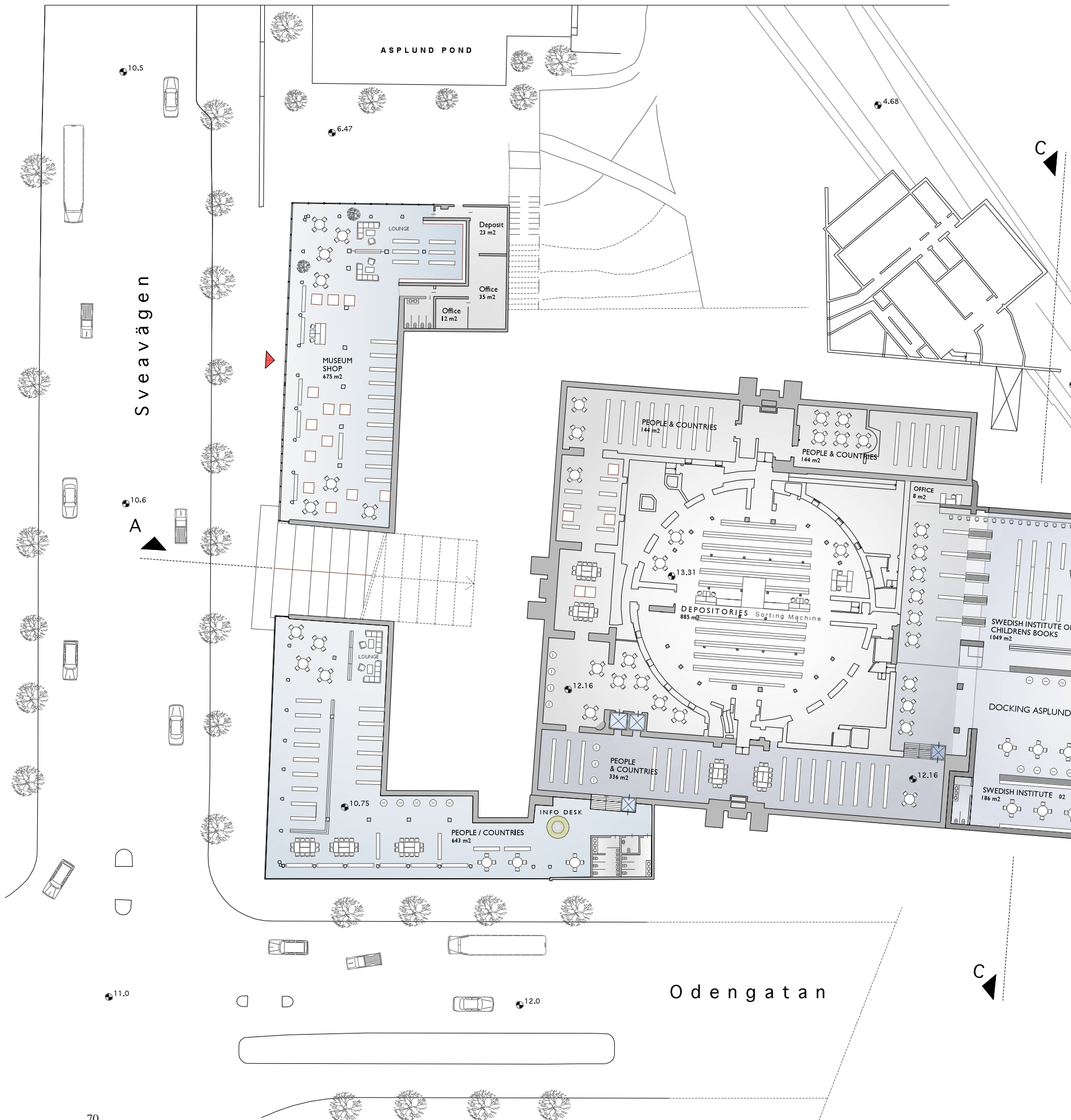
A Main Atrium marks the central area representing the entrance lobby zone.

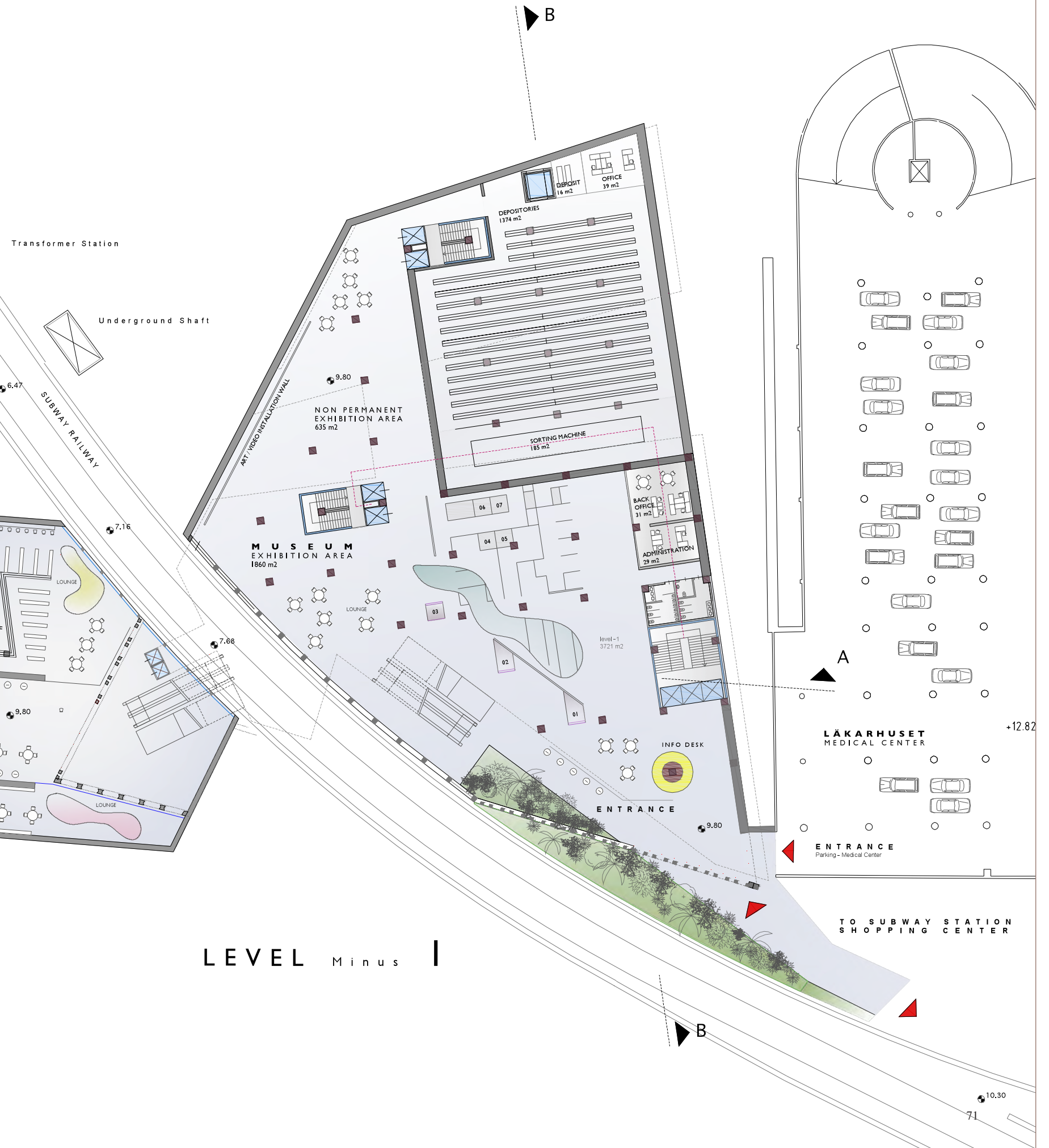


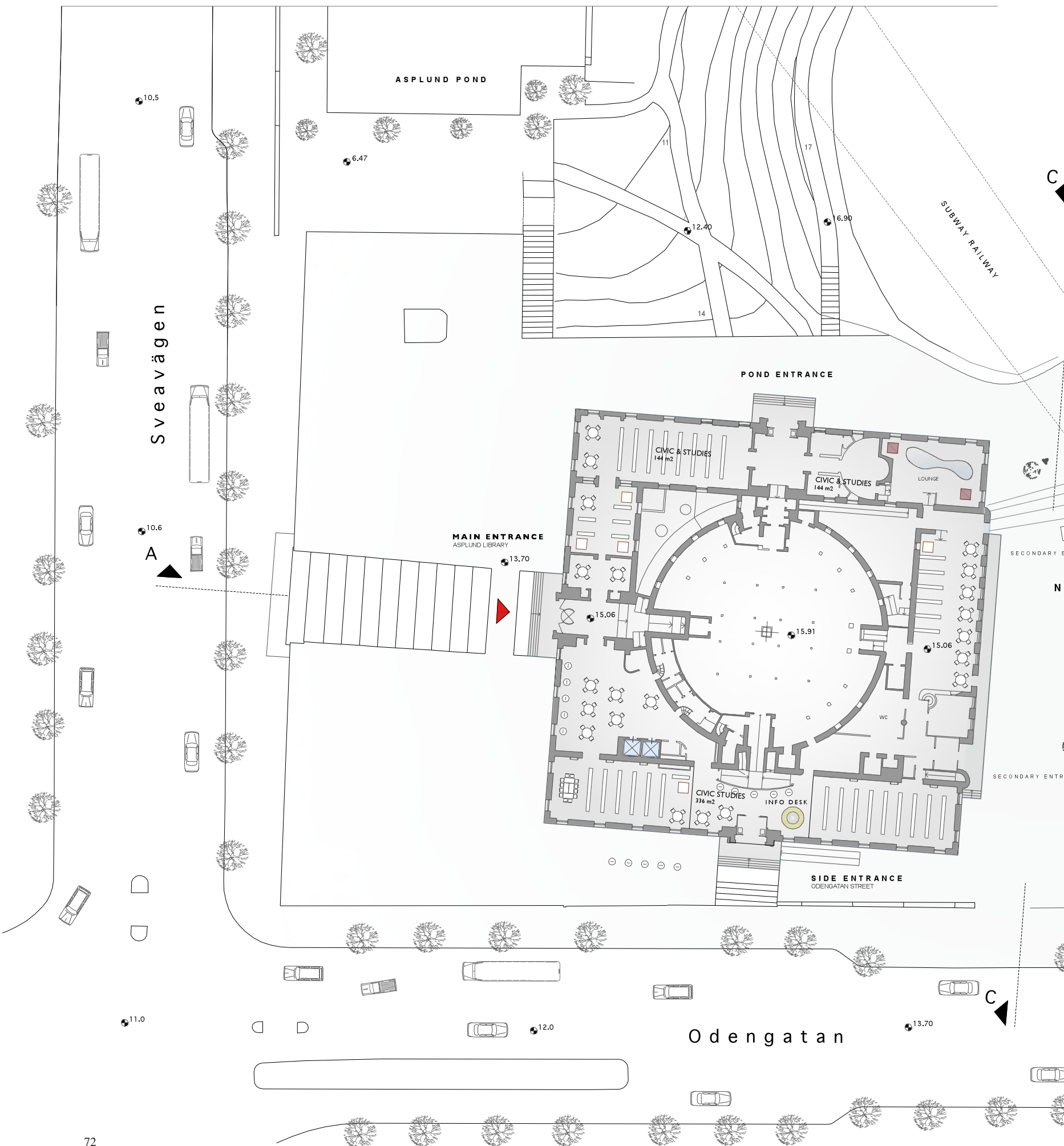
“ Knowledge and human power are synonymous,  
since the ignorance of the cause frustrates the effect “

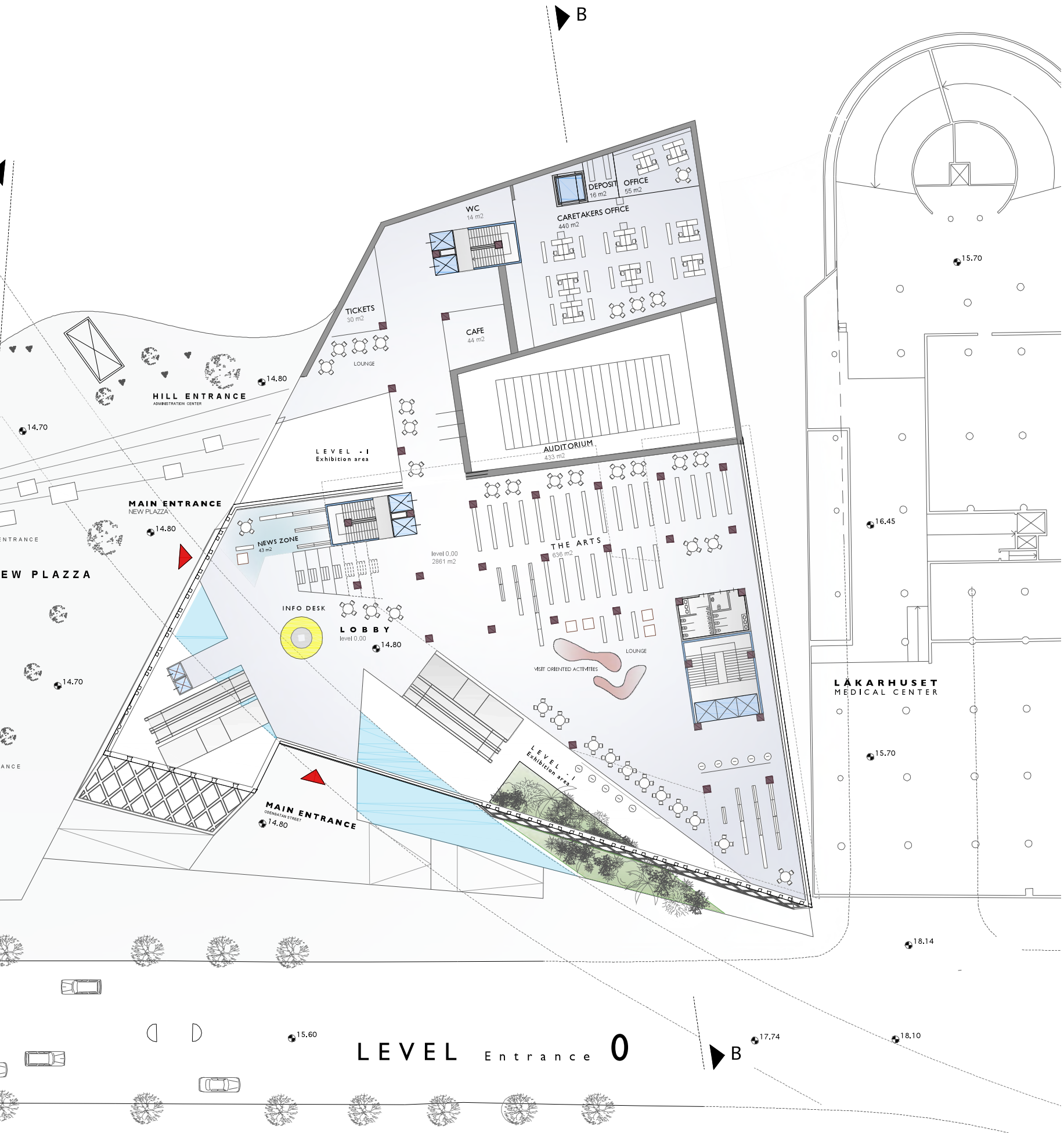
Sir Francis Bacon





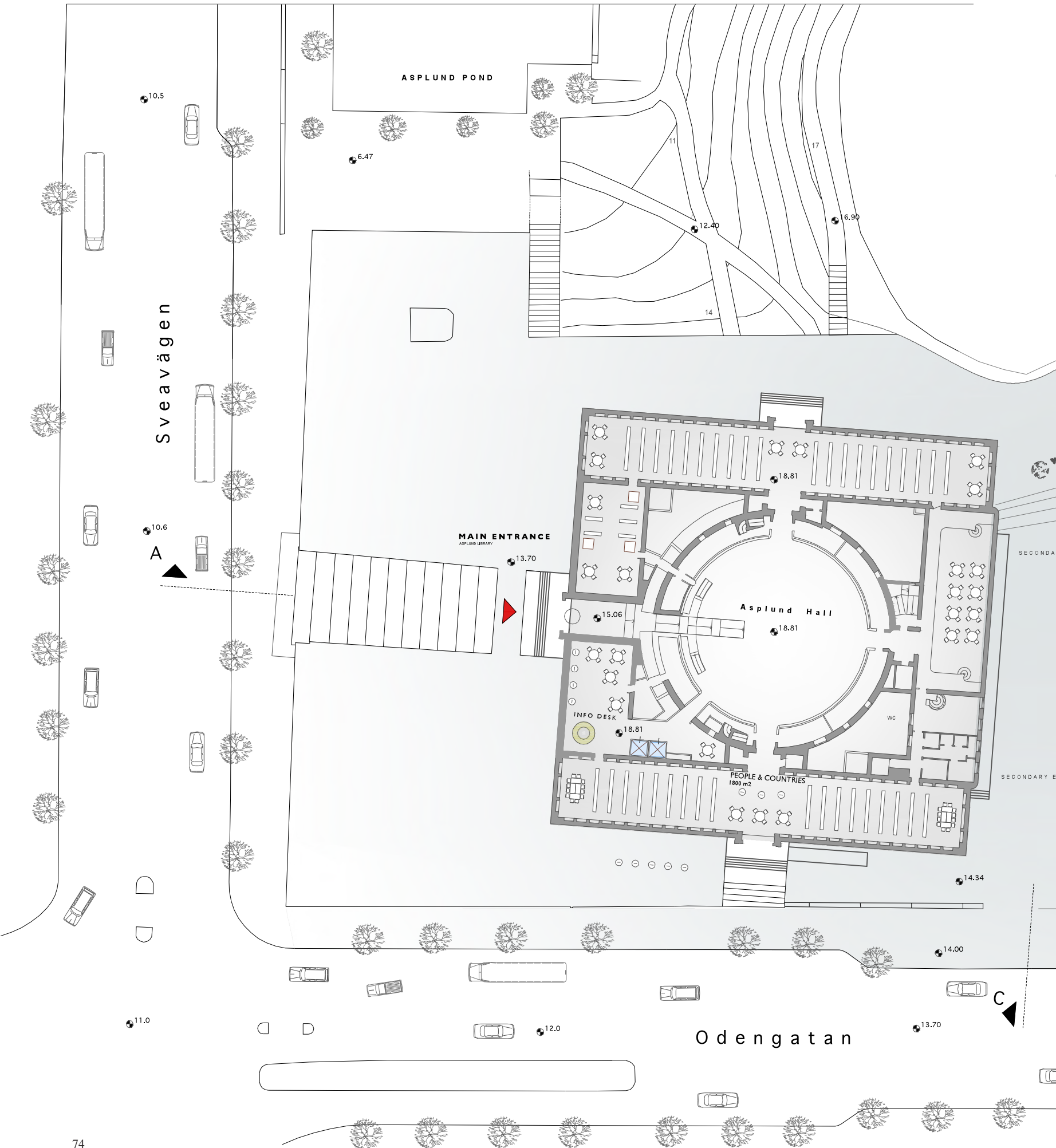




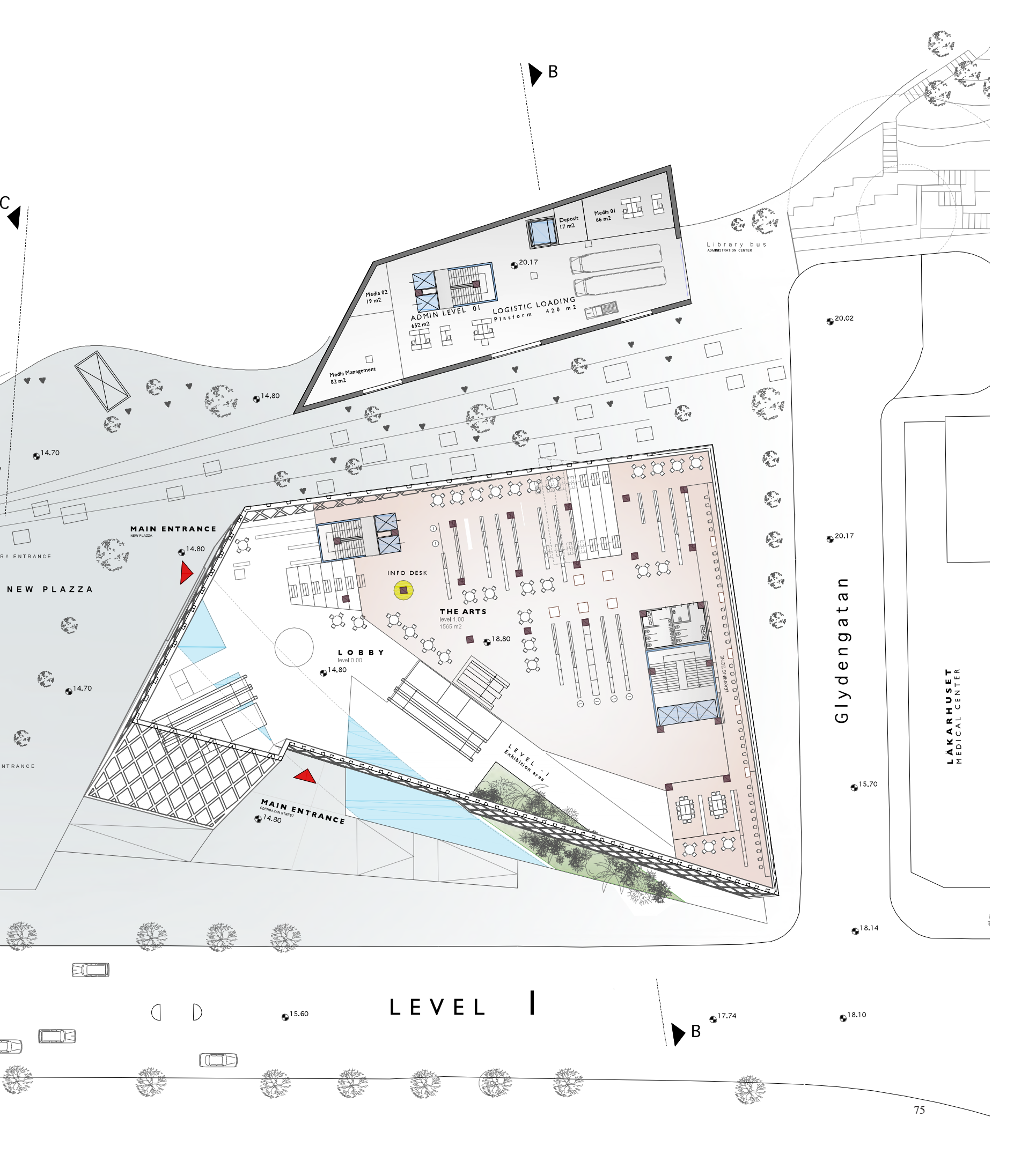


LEVEL Entrance 0

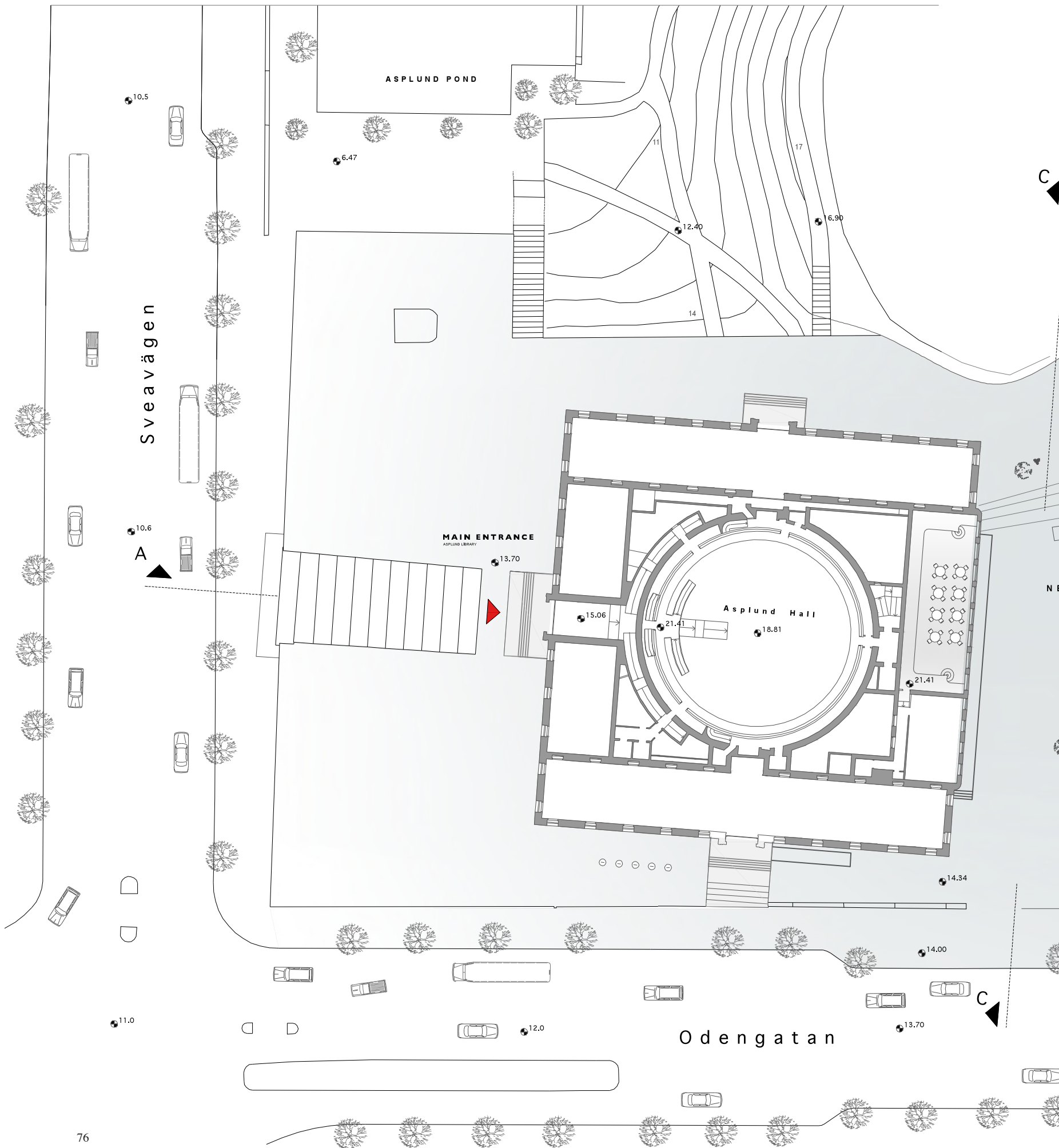
LÅKARHUSET  
MEDICAL CENTER

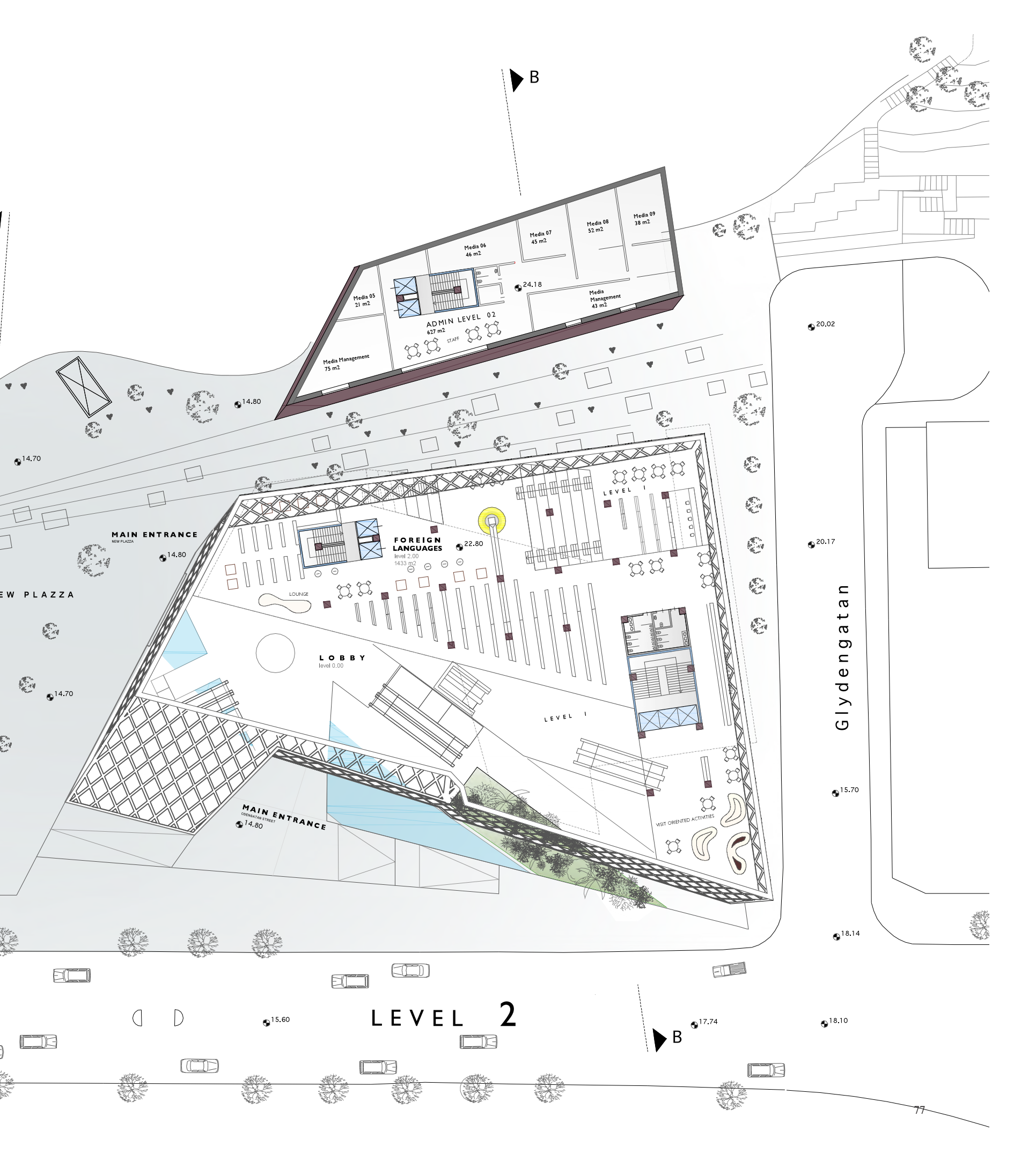






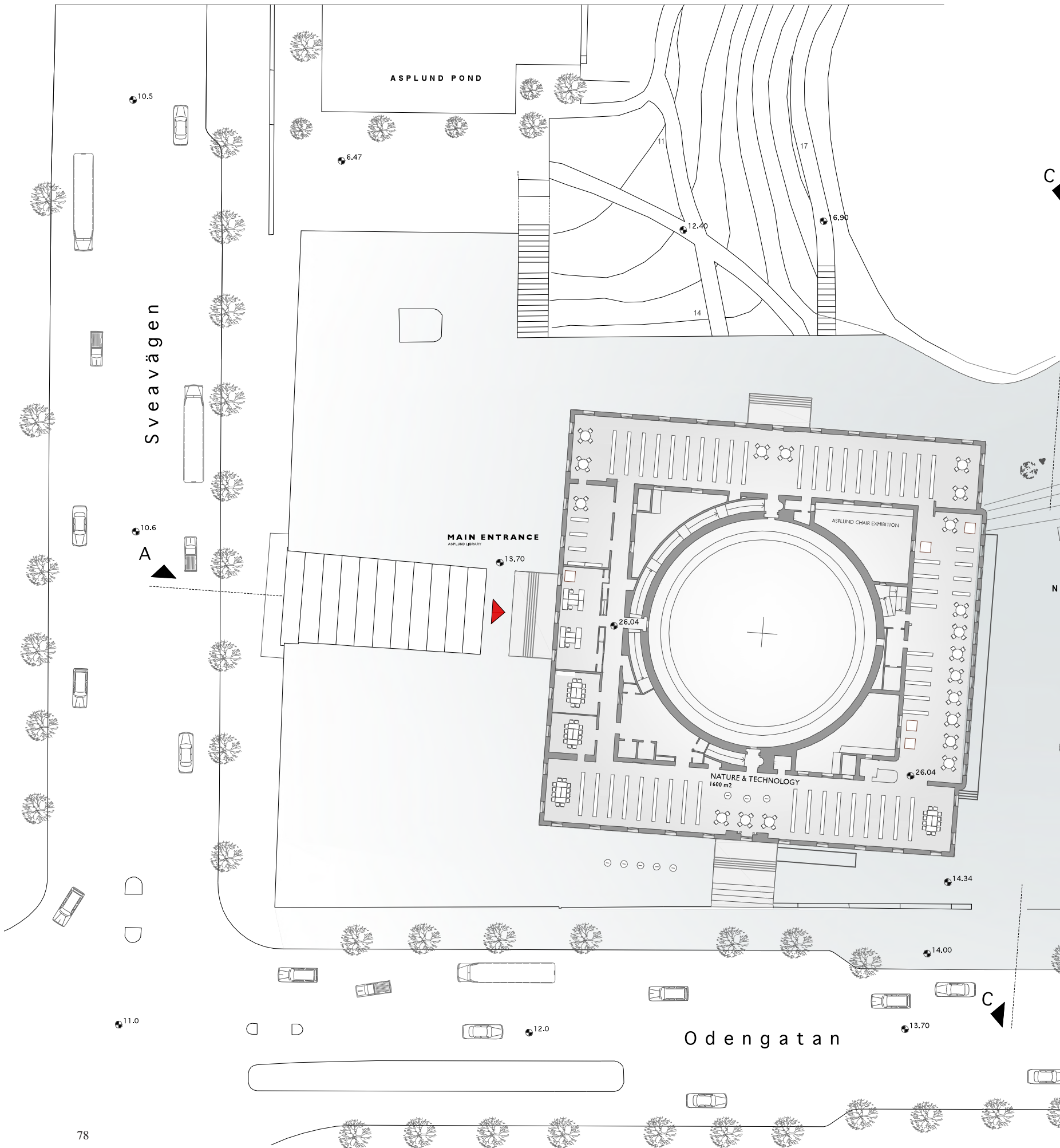
LEVEL I



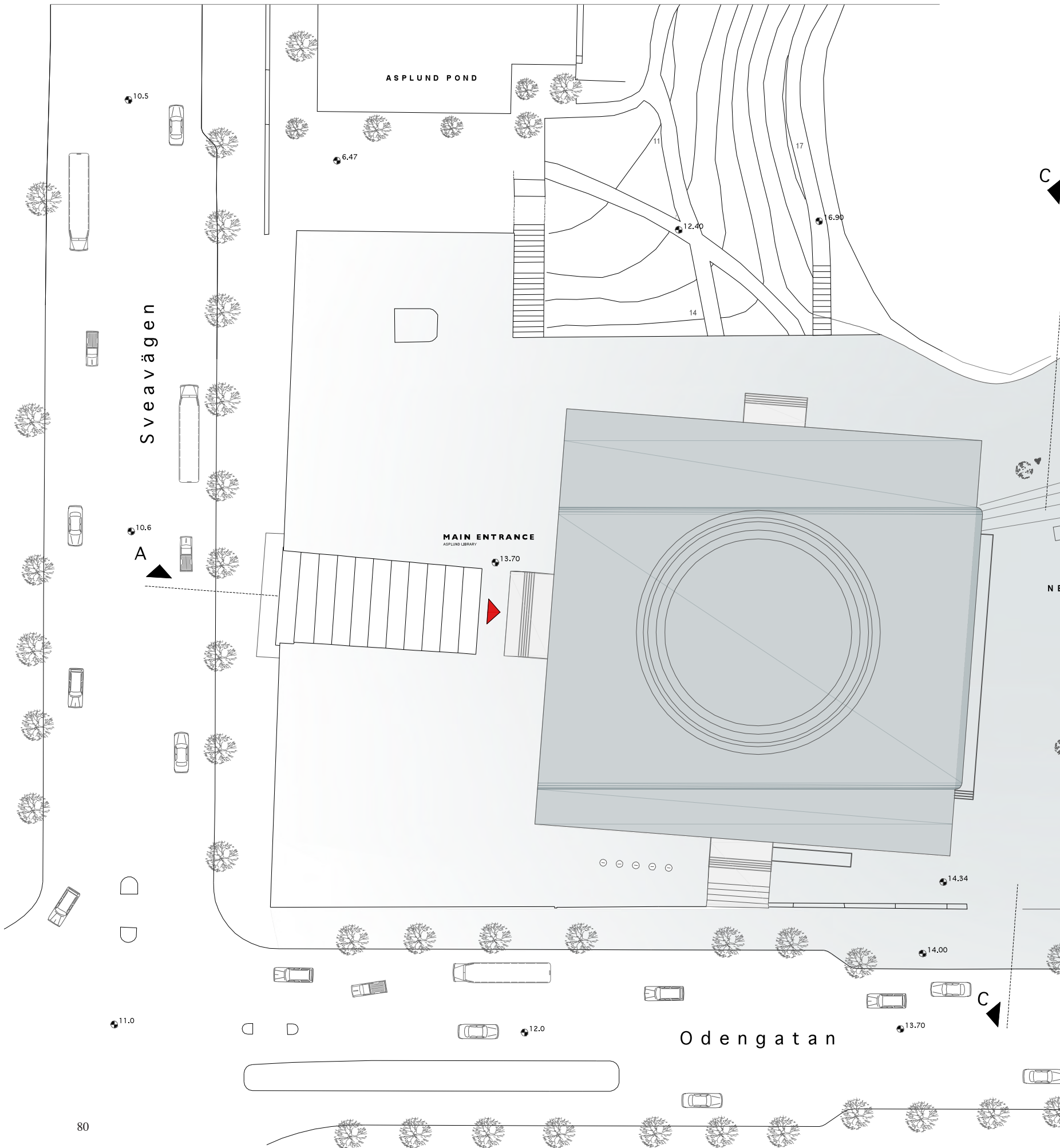


Glydengatan

LEVEL 2





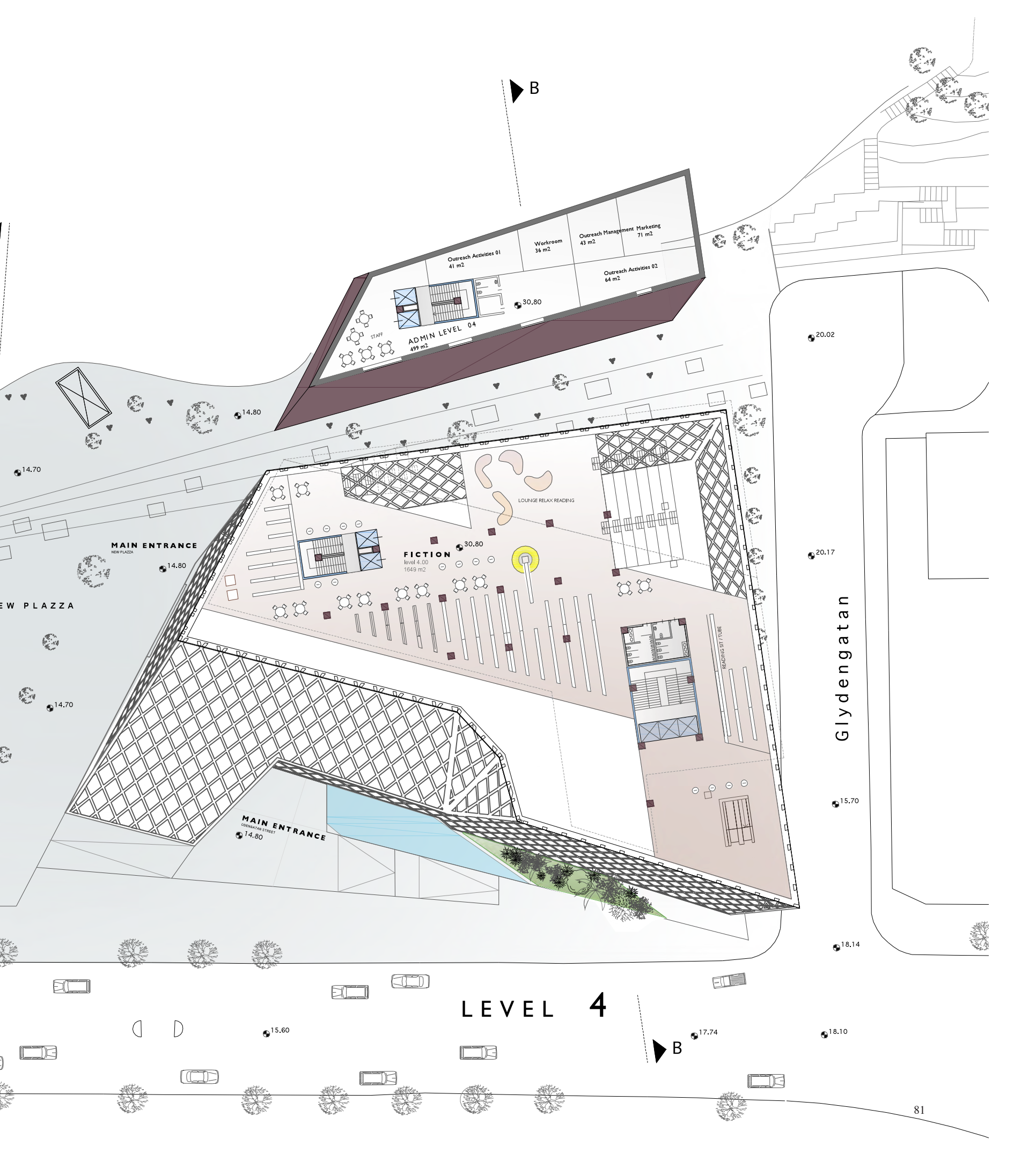


ASPLUND POND

Sveavägen

MAIN ENTRANCE  
ASPLUND LIBRARY

Odengatan



B

ADMIN LEVEL 04  
499 m<sup>2</sup>

Outreach Activities 01  
41 m<sup>2</sup>

Workroom  
36 m<sup>2</sup>

Outreach Management Marketing  
43 m<sup>2</sup>

Outreach Activities 02  
64 m<sup>2</sup>

STAFF

30.80

MAIN ENTRANCE  
NEW PLAZZA

14.80

14.70

NEW PLAZZA

14.70

FICTION  
level 4.00  
1649 m<sup>2</sup>

30.80

LOUNGE RELAX READING

20.02

20.17

15.70

18.14

18.10

MAIN ENTRANCE  
OSENGATAN STREET  
14.80

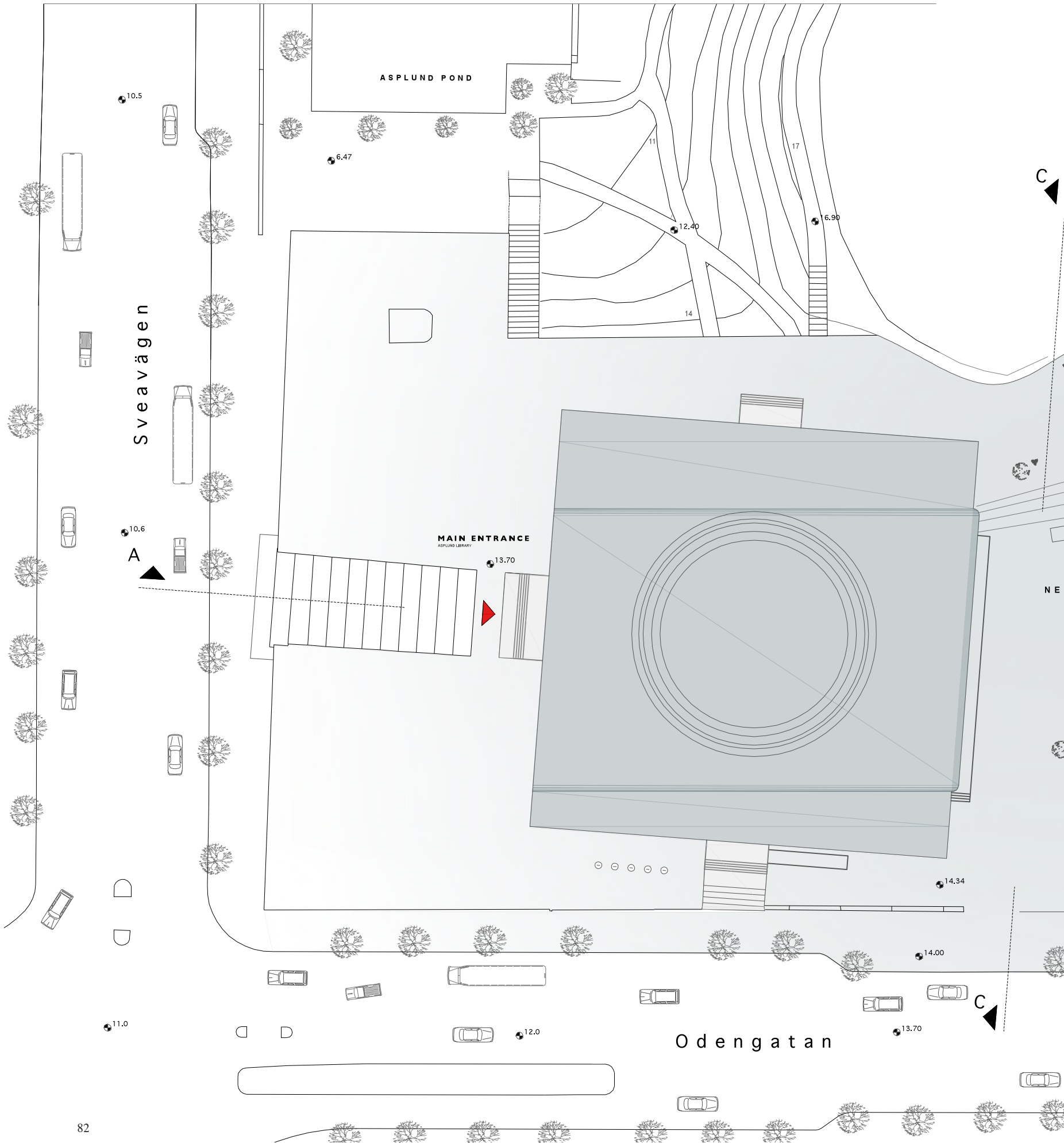
Glydengatan

LEVEL 4

B

17.74

15.60



ASPLUND POND

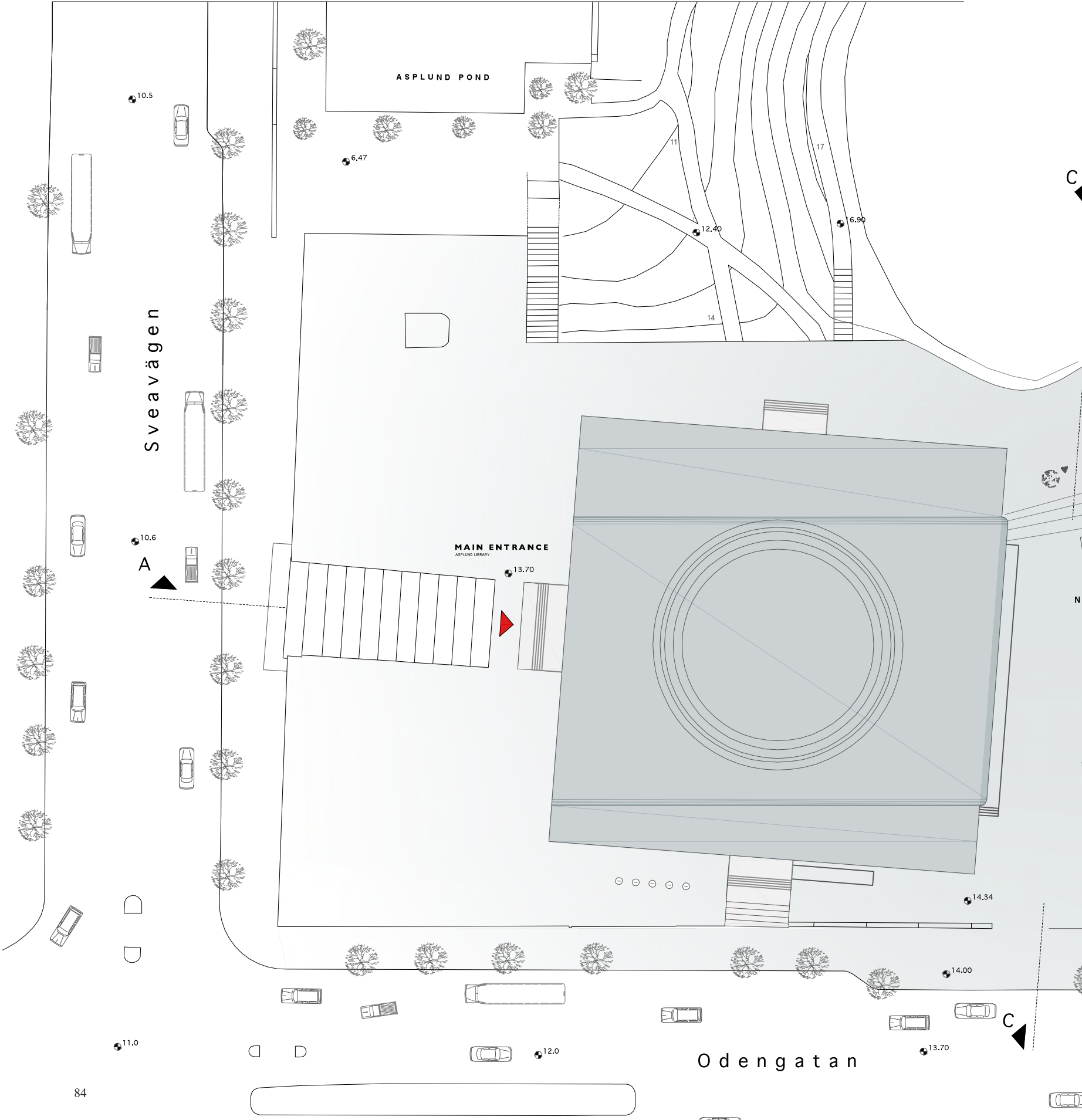
Sveavägen

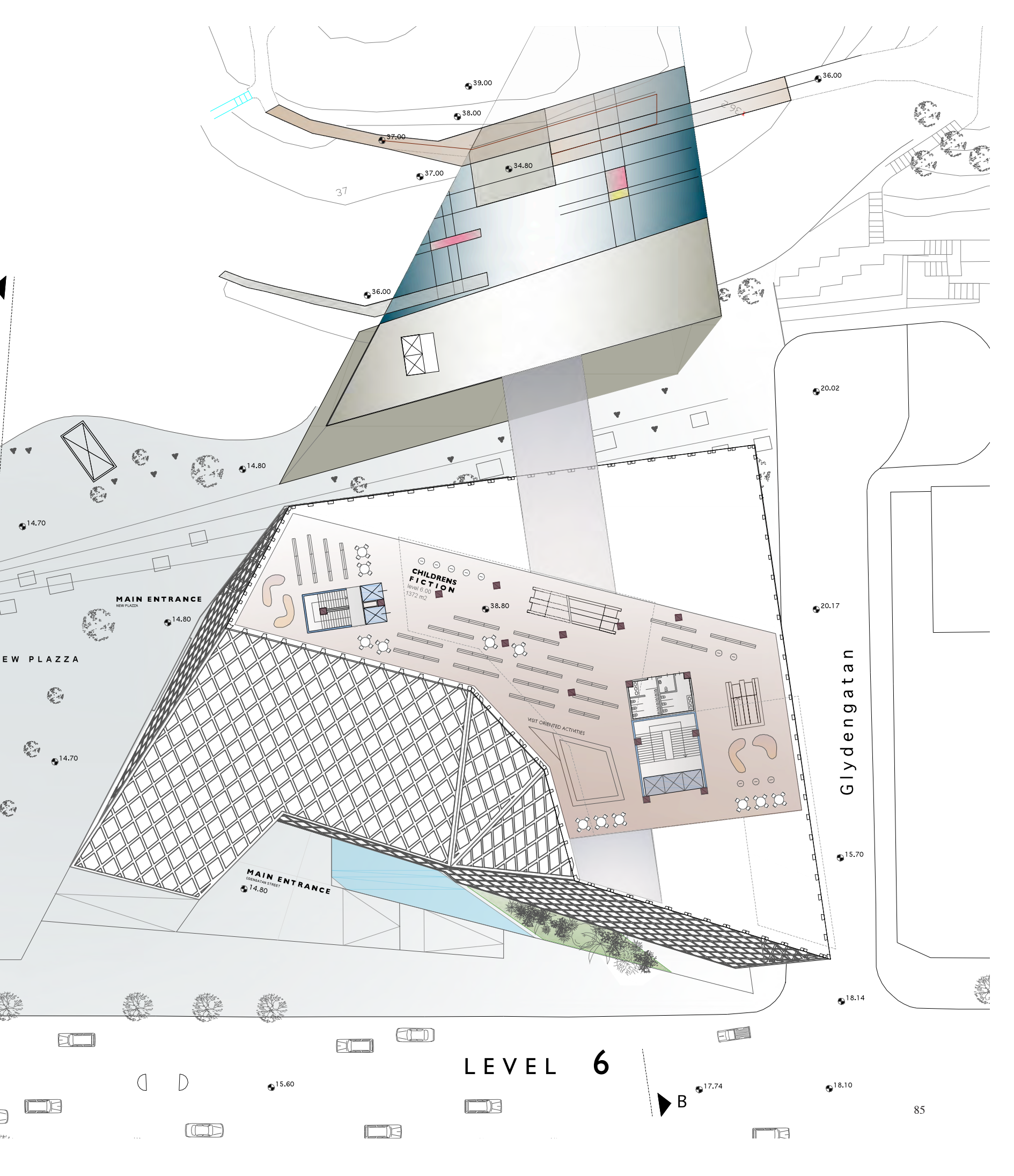
MAIN ENTRANCE  
ASPLUND LIBRARY

Odengatan

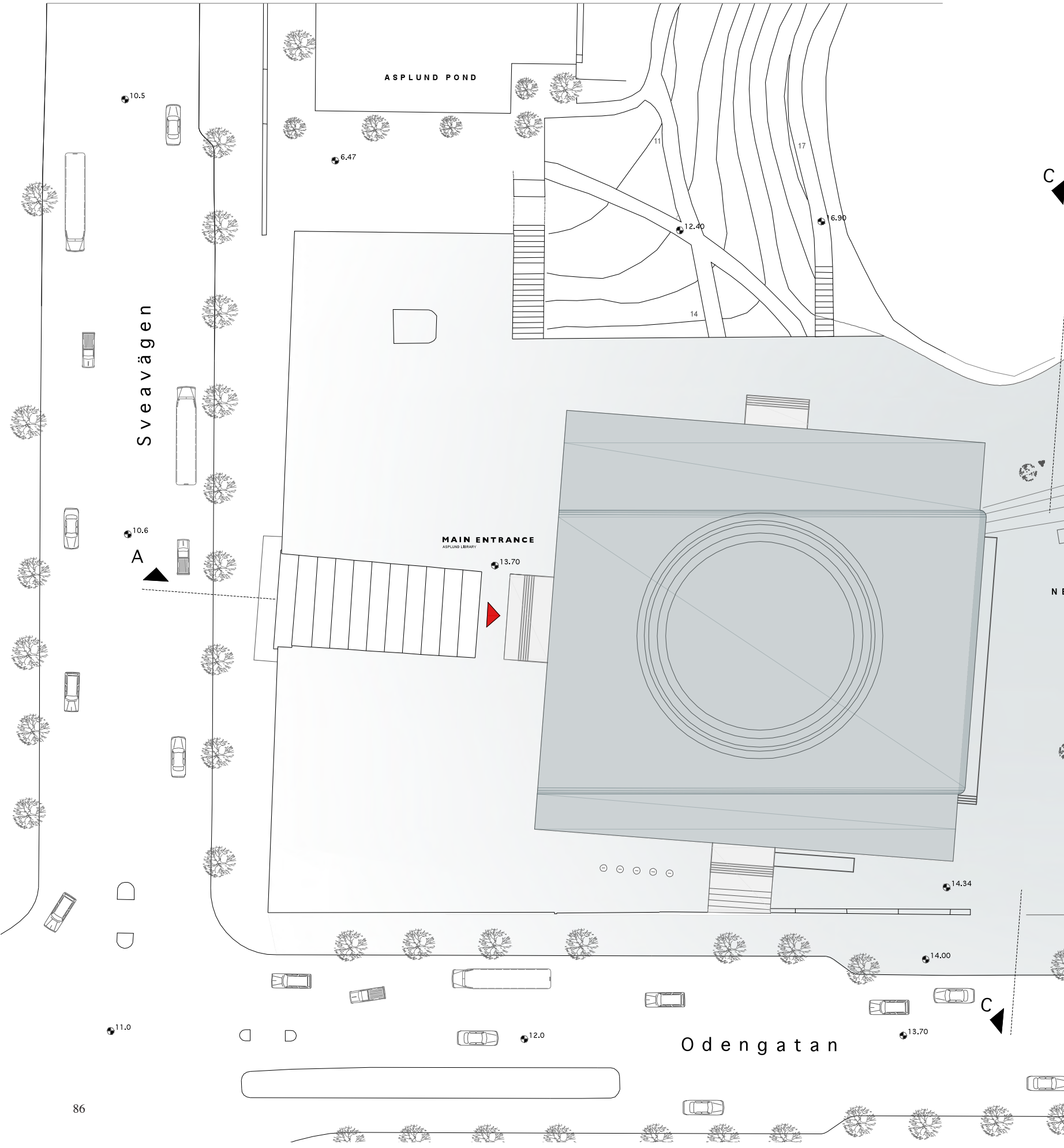








LEVEL 6

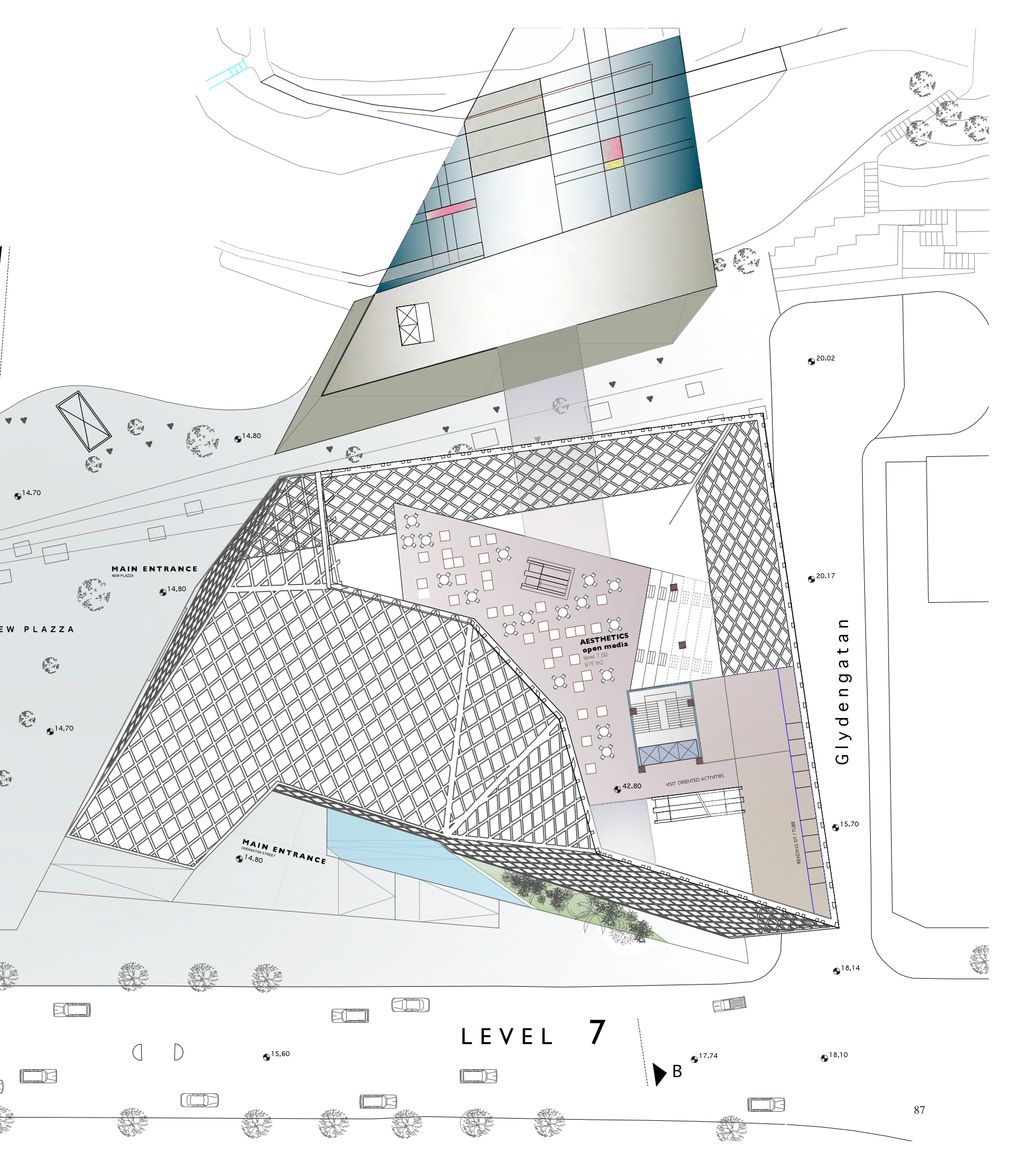


Sveavägen

ASPLUND POND

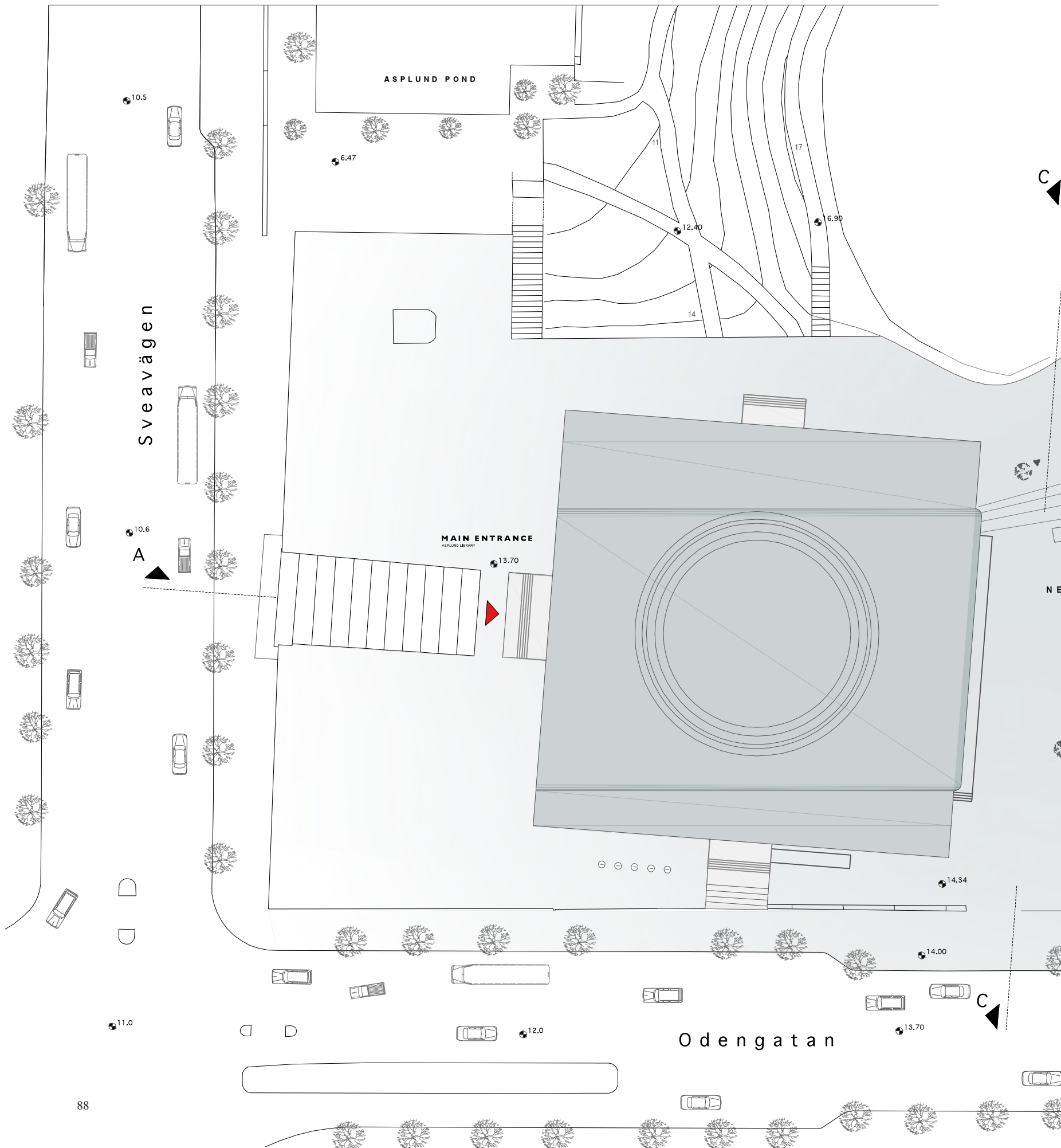
MAIN ENTRANCE  
ASPLUND LIBRARY

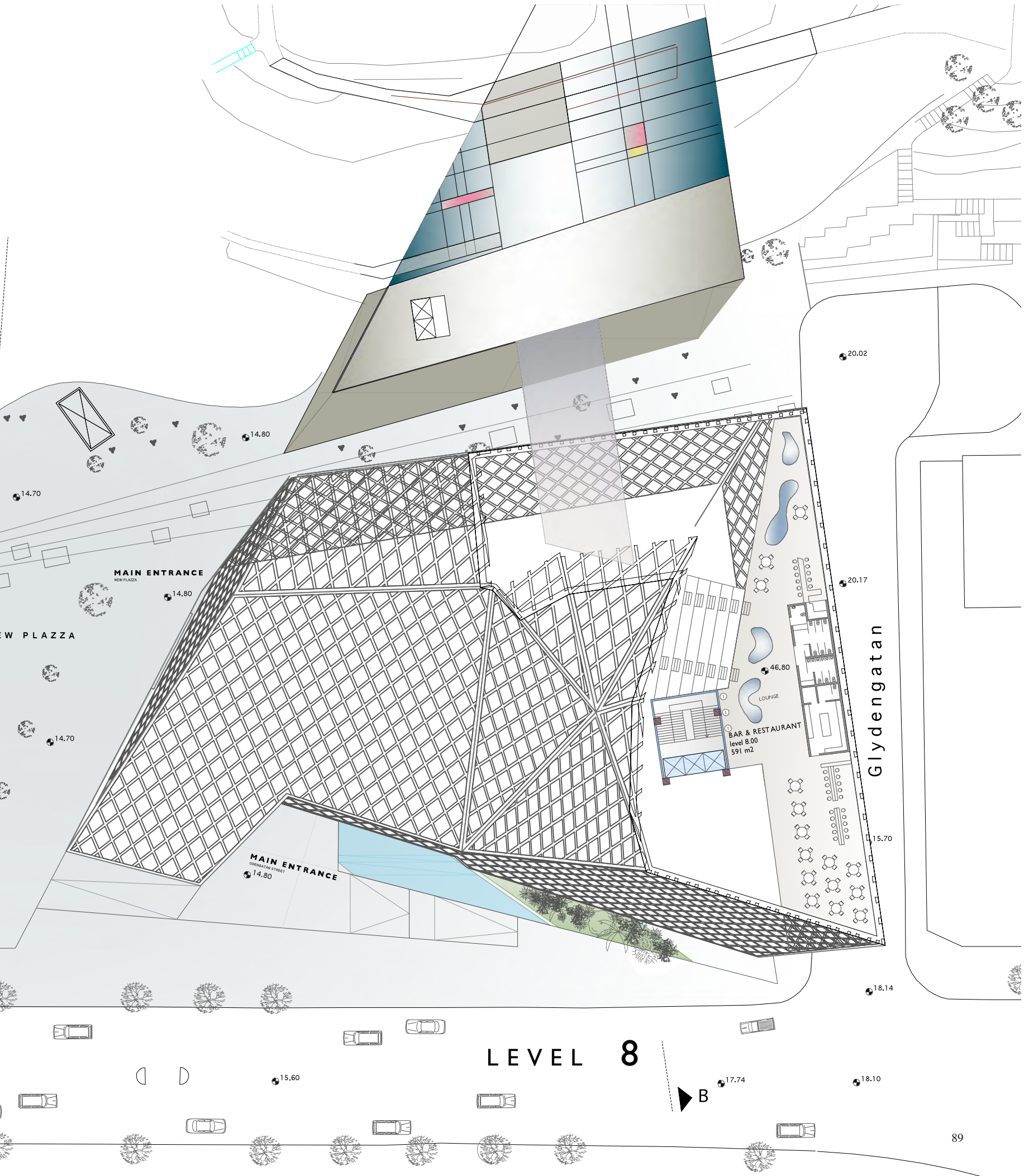
Odengatan



# LEVEL 7

Glydengatan





**LEVEL 8**

## Stockholm City Library Curtain Wall Design

### DESIGN CONCEPT & COLLABORATION

The prismatic chaped form of the Stockholm City Public Library consisting of its elevated platform of program spaces, while creating a variety of interconnected spaces in the interior. The Curtain Wall system is comprised of numerous components, each requiring extensive scrutiny to function separately and as a complete Entity. Therefore a custom made system would be required.

In order to understand the construction system, it is important to review the construction system and its components from many different aspects including aesthetics, structural capacity, thermal performance, weather proofing, maintenance and constnetability. The aesthetic aspect is easy to be seen as a geometrical volume during the day due to the reflection of the sun, later on at night it is more or less defined by the inner flow of users.

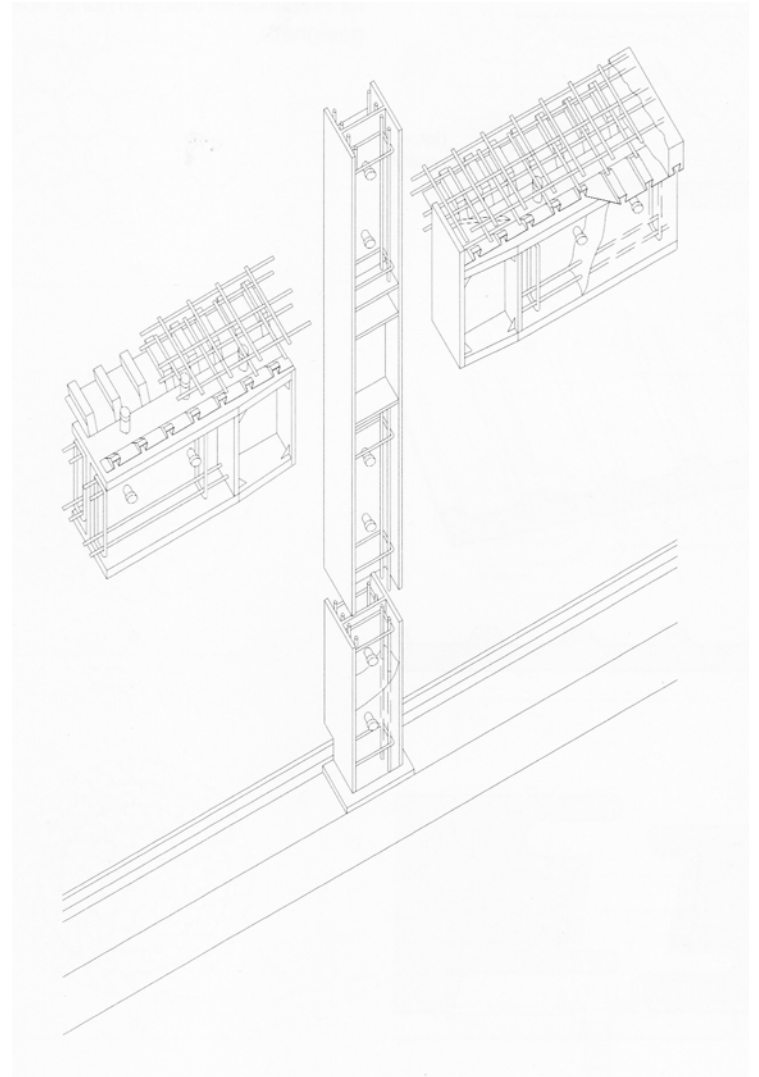
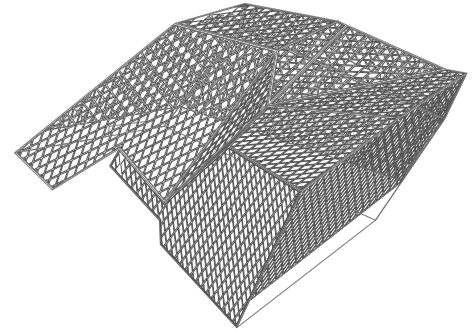
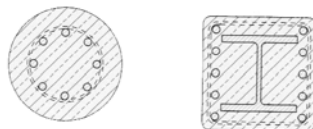
### CONSTRUCTION SYSTEM

The general structure of the building is composed of two systems to ensure the buildings stability. Each one of them creates different conditions for the support of the curtain wall.

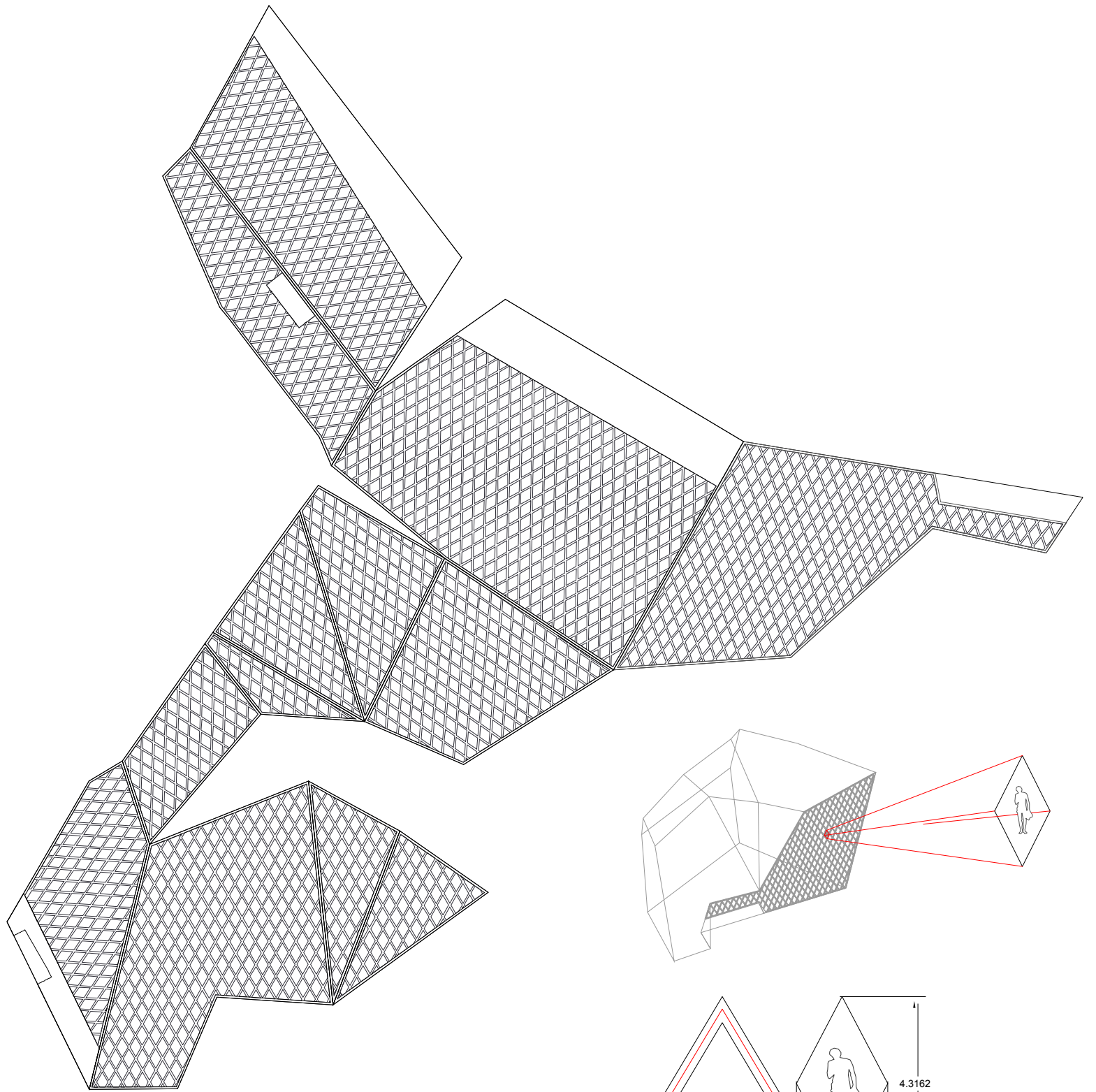
The first system is the load bearing system in form of columns and beams supporting the elevated platforms containing the program spaces.

The second system is a seismic structure, I - beam or O - beam steel arranged in lattice - like geometry connecting platform to platform giving it a maximum of stability. Both systems interact with each other, still providing stability on its own.

S01 Reinforced concrete composite construction  
S02 Reinforced concrete composite column

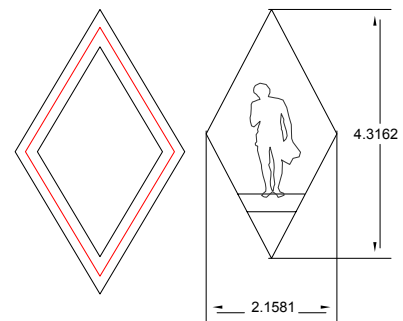






FACADE GEOMETRY

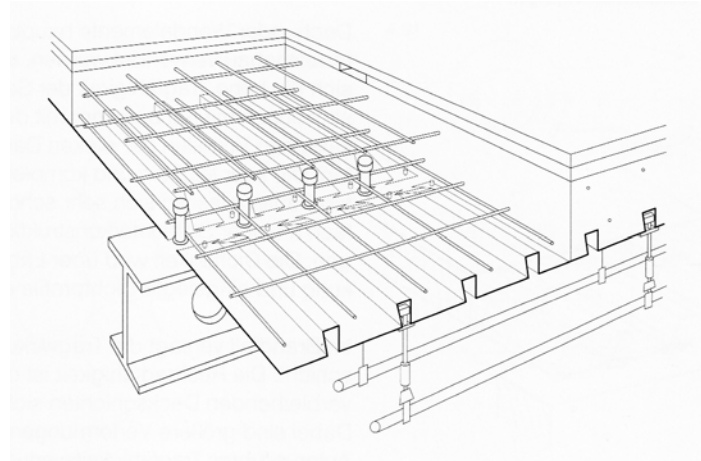
Geometry of the facade facets consists of 13 nonplanar surfaces.



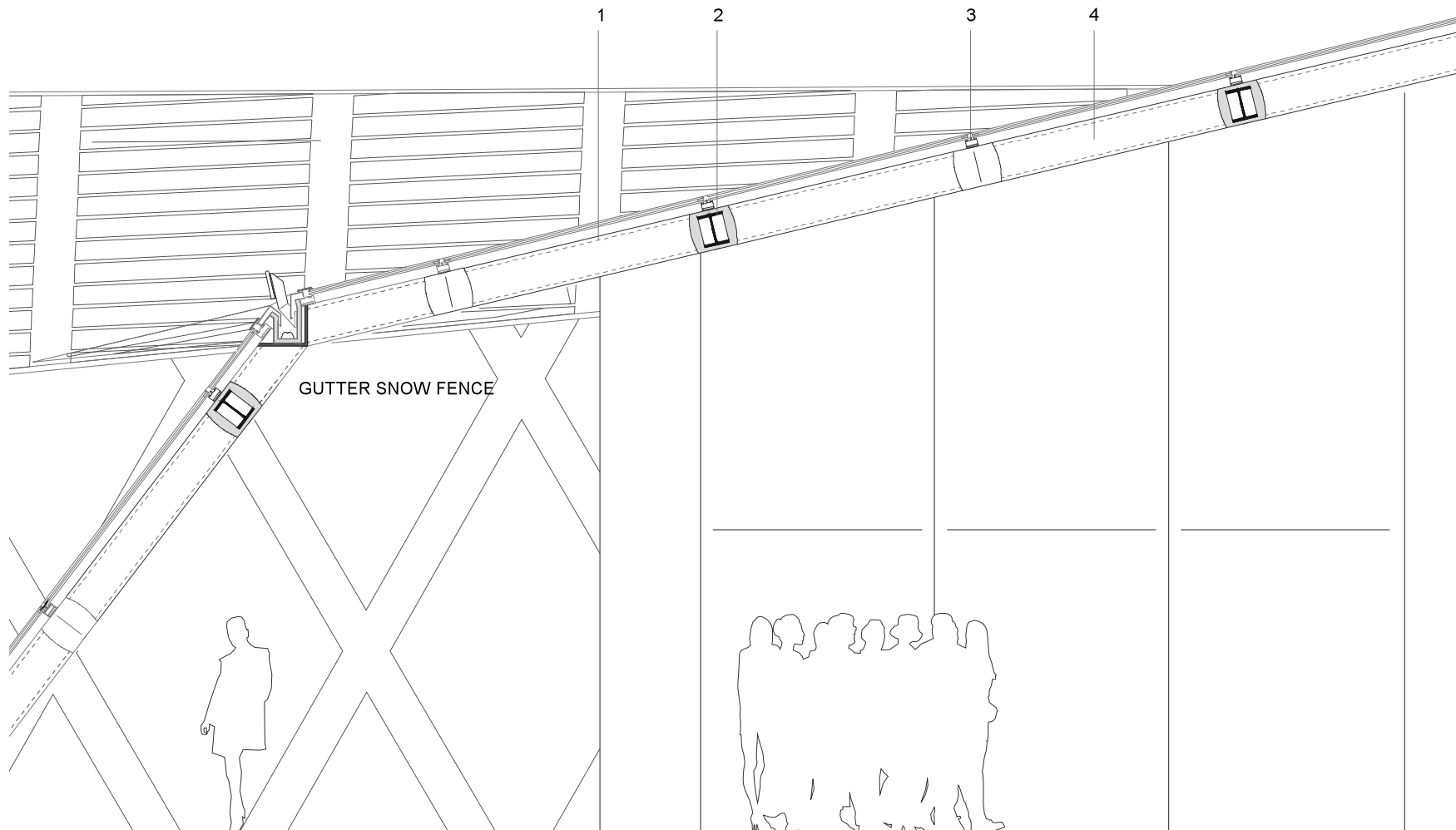
## FACADE DETAILSECTION

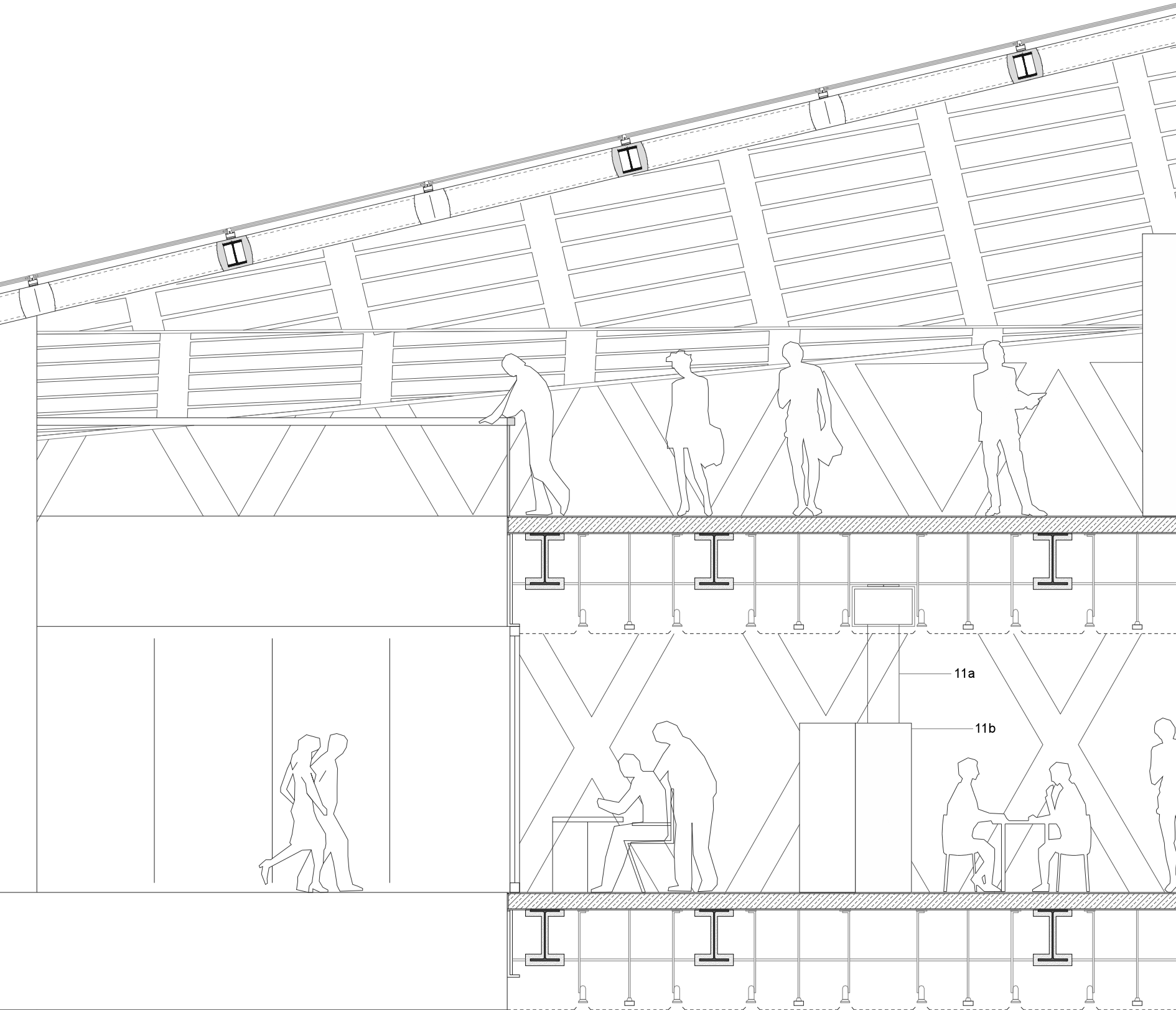
Scale 1:50

- 1 Diamond shaped glass panel 4300 / 2150 mm  
Secondary outer Extrusion mechanically fixed  
ESG 12 mm + SZR 16 mm kryptongas isolated  
VSG 2x 6 mm including expanded metal mesh  
interlayer  $U = 1,5 \text{ W/m}^2\text{K}$
- 2 Seismic Steel structure HEA 250 / 180 mm
- 3 Cap Glas Fastener Aluminium 34 mm  
Exposed Cap Fastener
- 4 Fire protection Cladding Kalziumsilikat coloured  
white approx. min. 25 mm
- 5 Primary Steel structure H 530 / 315 / 150
- 6 Floor covering
- 7 Reinforced concrete system 180 mm
- 8 Epoxide resin 2 mm
- 9 T 600 / 400 mm Steel bridge bearing support
- 10 Suspended ceiling, detached rectangular Grid - Roof
- 11a Sorting machine
- 11b Steel sheet shelf



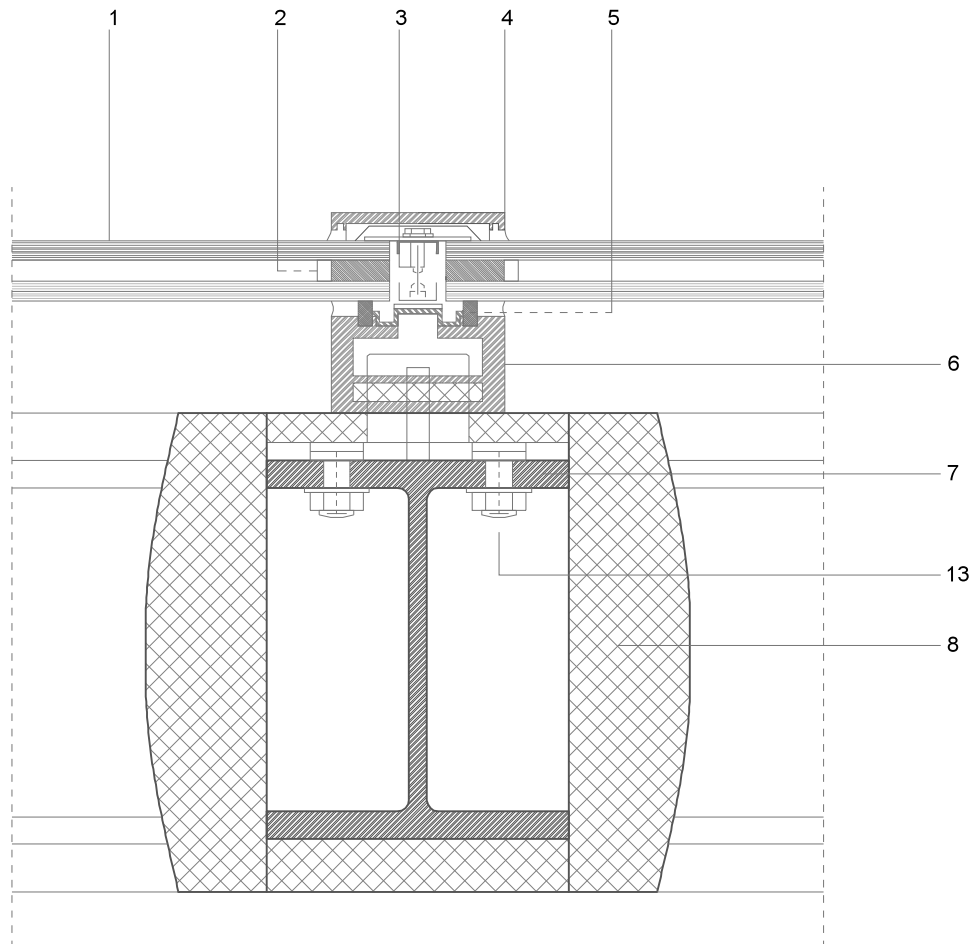
S03 Reinforced Concrete Composite





## TYPICAL MULLION SYSTEM

DETAIL scale 1:5



The predominant mullion system consists of a diamond shaped glass module that presents the most efficient use of non - standard glass panel shapes with adequate steel spanning capacity. Since it is directly supported on the primary steel structure (HEA 250 / 180), it requires a thickened aluminium section to allow a greater spanning ability and fewer support connections. Therefore only two connections points are necessary per diamond module. To manage erection tolerance different blocks are required. The components are attached using a screw within a screw attachment. There is the possibility to emphasize the component construction of the curtain wall system by exposing it for the viewer. On the other hand the preferred construction in this case due to fire protection regulations, a cladding Kalziumsilikat has been used. For the aesthetic part thus it has been coloured white.

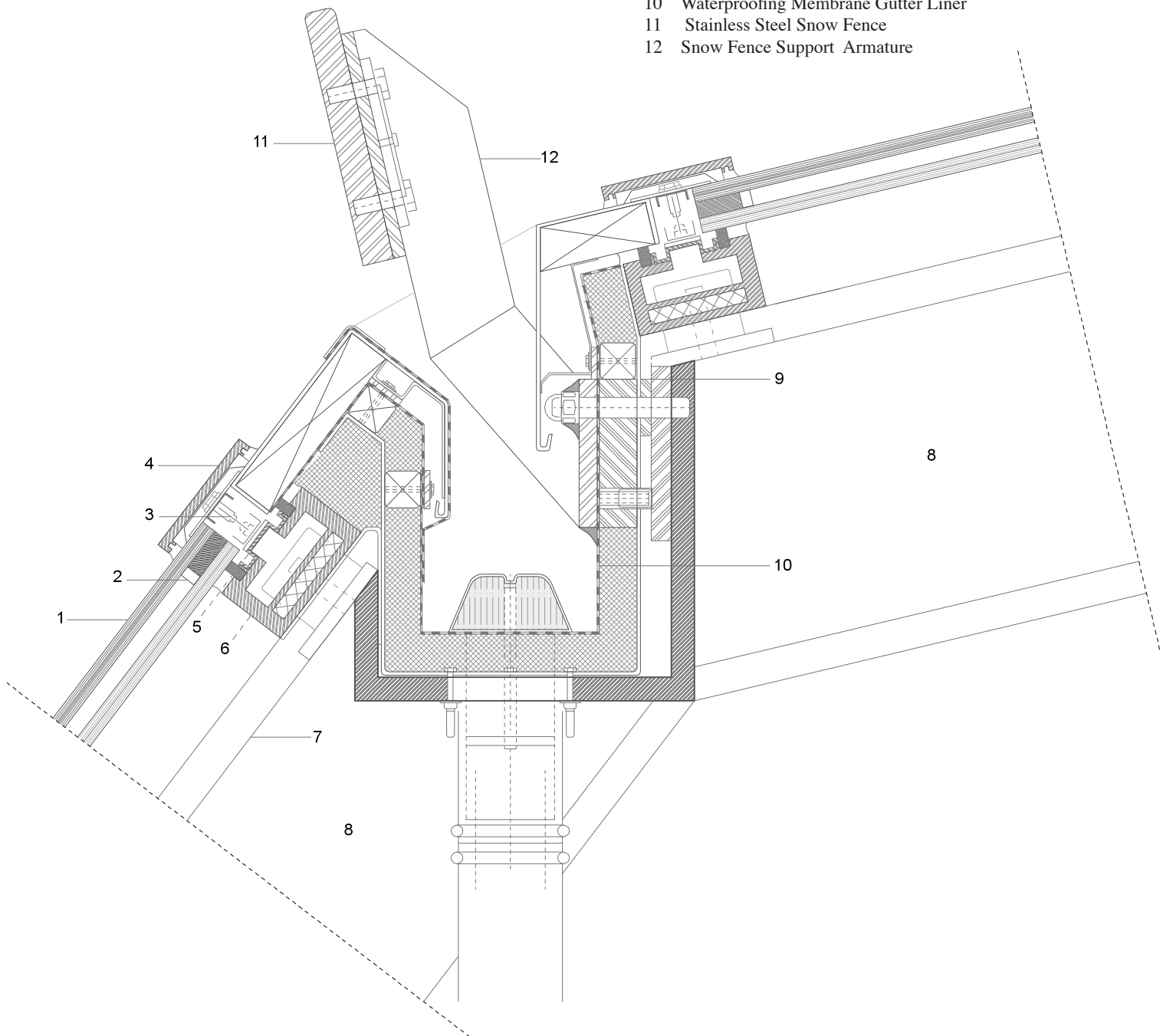
- 1 Diamond shaped glass panel 4300 / 2150 mm  
Secondary outer Extrusion mechanically fixed  
ESG 12 mm + SZR 16 mm kryptongas isolated  
VSG 2x 6 mm including expanded metal mesh  
interlayer U = 1,5 W/m2K
- 2 Gliding Chanel Stainless Steel U-profil  
Silicone Tape
- 3 Stainless Steel glas panel mechanical fixation  
Flexible Butyl Tape
- 4 Cap Glas Fastener Aluminium 34 mm  
Exposed Cap Fastener
- 5 Molded Silicone Gaskets profile
- 6 Diamond module mullion system
- 7 Primary Steel structure HEA 250 / 180 mm
- 8 Fire protection Cladding (Kalziumsilikat) coloured  
white approx. min. 25 mm
- 9 Snow Fence Gutter Penetration
- 10 Waterproofing Membrane Gutter Liner
- 11 Stainless Steel Snow Fence
- 12 Snow Fence Support Armature
- 13 Adjustable Stainless Steel locking

## GUTTER / SNOW FENCE

### DETAIL scale 1:5

According to the climate in Stockholm, a special attention has to be given to the facets where water collection and snow restraint were of concern. Gutters are to be sized a thin through across the lower edge of each facet heading north. 20 mm thick stainless steel gutter are located outside and inside the gutter openings. Each gutter is supported by steel armatures that penetrate the gutters waterproofing layer and is connected to the structural steel construction. Therefore snow and ice is being kept away from sliding off the buildings sloped surfaces.

- 1 Diamond shaped glass panel 4300 / 2150 mm  
Secondary outer Extrusion mechanically fixed  
ESG 12 mm + SZR 16 mm kryptongas isolated  
VSG 2x 6 mm including expanded metal mesh interlayer  
U = 1,5 W/m2K
- 2 Gliding Chanel Stainless Steel U-profil  
Silicone Tape
- 3 Stainless Steel glas panel mechanical fixation  
Flexible Butyl Tape
- 4 Cap Glas Fastener Aluminium 34 mm  
Exposed Cap Fastener
- 5 Molded Silicone Gaskets profile
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- 7 Primary Steel structure HEA 250 / 180 mm
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approx. min. 25 mm
- 9 Snow Fence Gutter Penetration
- 10 Waterproofing Membrane Gutter Liner
- 11 Stainless Steel Snow Fence
- 12 Snow Fence Support Armature

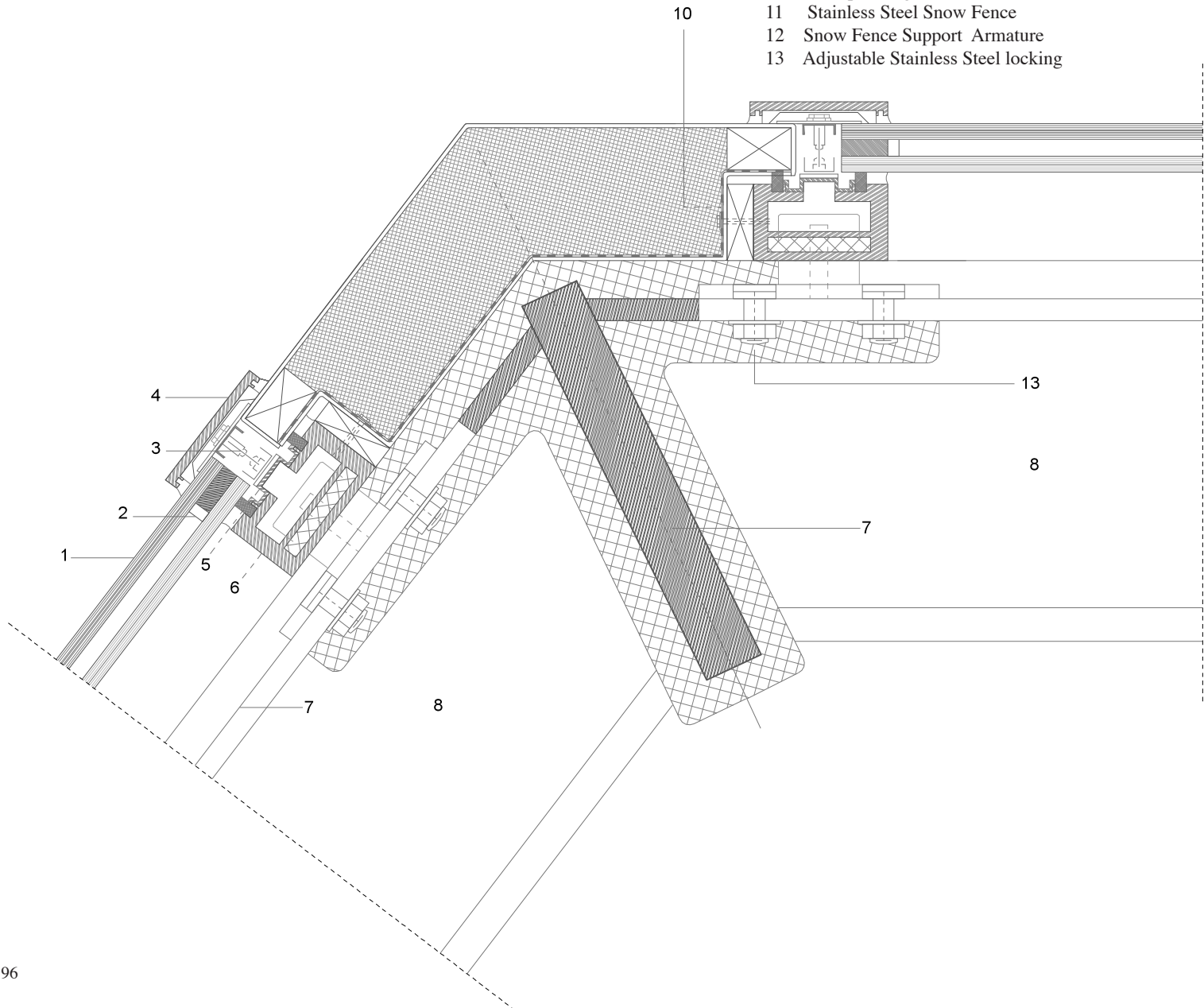


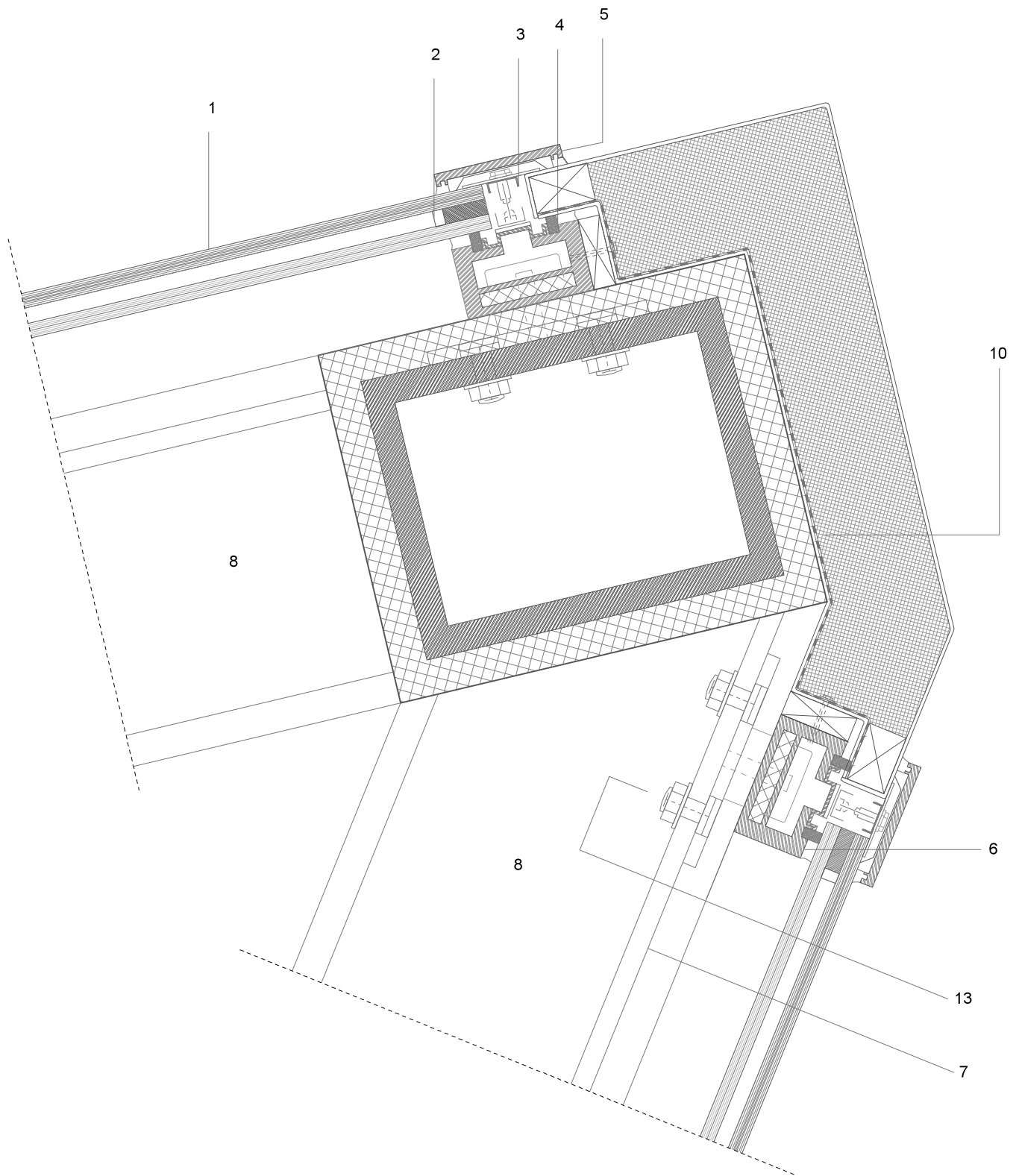
## CORNER PANELS

DETAIL Scale 1:5

The complicated geometry of the facade facets consists of 13 nonplanar surfaces. Where the adjacent surfaces meet forming a seam, insulated aluminium closure panels need to be designed to transition across each seam. Each facade facet of the building has a diamond module contiguous from bottom to top. Due to the different geometrie the diamond module cannot be contiguous around the corner. This creates various different vertical corner conditions. Two detailed solutions can be shown here.

- 1 Diamond shaped glass panel 4300 / 2150 mm  
Secondary outer Extrusion mechanically fixed  
ESG 12 mm + SZR 16 mm kryptongas isolated  
VSG 2x 6 mm including expanded metal mesh  
interlayer U = 1,5 W/m2K
- 2 Gliding Channel Stainless Steel U-profil  
Silicone Tape
- 3 Stainless Steel glas panel mechanical fixation  
Flexible Butyl Tape
- 4 Cap Glas Fastener Aluminium 34 mm  
Exposed Cap Fastener
- 5 Molded Silicone Gaskets profile
- 6 Diamond module mullion system
- 7 Primary Steel structure HEA 250 / 180 mm
- 8 Fire protection Cladding (Kalziumsilikat) coloured  
white approx. min. 25 mm
- 9 Snow Fence Gutter Penetration
- 10 Waterproofing Membrane Gutter Liner
- 11 Stainless Steel Snow Fence
- 12 Snow Fence Support Armature
- 13 Adjustable Stainless Steel locking





# Architecture Modelling









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4. Map by Magnuns Gerne, Generalstabens Litografiska Anstalt, Stockholm, 1971 Scanned from the architecture magazine *International Architect* Volume 01 / Issue 08 / 1982, scanned page 8.
5. Stockholm City Map of the inner city / express railway system. City Development Administration, 2005.
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7. 7a: Extract of a closer Map of the underground system at the site area. Map provided and drawn by the Stockholm City Real Estate Administration and AB Joacobson and Widmark Grundkonsult  
7b: Metro system: <http://www.orangesmile.com/travelguide/stockholm/city-maps.htm>
8. Extract from the urban geological map of Stockholm's inner city. Map provided and drawn by the Stockholm City Real Estate Administration and AB Joacobson and Widmark Grundkonsult.
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16. Illustration from the Stockholm City building regulations, p. 70. Stockholm City Planning Administration.
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18. Photograph by John Wennermark, May 1924. SSM F64434.
19. Illustration from a book by Claes Caldenby & Olof Hultin "The sky as a vault", article by Elias Cornell, Emeritus Professor at Chalmers Institute of Technology Rizzoli International Publications Inc, New York 1986, page 24.
20. Illustration from Gunnar Asplund A book by Peter Blundell Jones, Phaidon 2006, page 113. Courtesy of the Swedish Architectural Museum.
21. Illustration from The MIT Press 1980 , *The Architecture of Erik Gunnar Asplund*. Stuart Wrede, Professor of architecture Oregon school of design, page 110.
22. Illustration from The MIT Press 1980 , *The Architecture of Erik Gunnar Asplund*. Stuart Wrede, Professor of architecture Oregon school of design, page 110.
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25. Door Handle Photograph Illustration from The MIT Press 1980 , *The Architecture of Erik Gunnar Asplund*. Stuart Wrede, Professor of architecture Oregon school of design, page 113.

26. Illustration , proposal for a cenotaph by Boullée, <http://www.rhizomes.net/issue6/armand2.htm>Cenotaph
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28. Site Plan Map dated 1922, Gunnar Asplund A book by Peter Blundell Jones, Phaidon 2006, page 114. Courtesy of the Royal Institute of British Architects.
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30. Illustration of the North Façade, Stockholm City Development Administration, 2005.
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32. Drawing perspective, from the west dated 1926, Illustration from The MIT Press 1980 , The Architecture of Erik Gunnar Asplund. Stuart Wrede, Professor of architecture Oregon school of design, page 94.
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34. East Façade Drawing, Illustration from The MIT Press 1980 , The Architecture of Erik Gunnar Asplund. Stuart Wrede, Professor of architecture Oregon school of design, page 97.
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42. 2<sup>nd</sup> Floor Plan, Gunnar Asplund A book by Peter Blundell Jones, Phaidon 2006, page 119. Courtesy of the Swedish Architectural Museum.
43. Illustration south Façade, dated 1921, provided by Stockholm City Development Administration, 2005.
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45. Final Floor Plan, Gunnar Asplund A book by Peter Blundell Jones, Phaidon 2006, page 119. Courtesy of the Swedish Architectural Museum.
46. Aerial Photo Map, Competition Brief Stockholm City Development Administration, 2005.
47. ---- **60** All photographs were taken by photographer Ingrid Johansson during March and April 2006.
61. Aerial View Photograph, Competition Brief Stockholm City Development Administration, 2005.
62. Reconstructed Aerial View Photograph, illustrated by Karim El Seroui, provided by the Competition Brief Stockholm City Development Administration, 2005.
63. Railway Station Floor Plan, Stockholm City Development Administration, 2005.
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72. Photograph from Gunnar Asplund A book by Peter Blundell Jones, Phaidon 2006, page 122 - 123.
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77. Functional Overview provided by Stockholm City Development Administration, 2005.

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