STADIUM FOR ZURICH

STADIUM FOR ZURICH

ETH ZURICH
DEPARTMENT OF ARCHITECTURE
PROFESSOR CHRISTIAN KEREZ
AUTUMN SEMESTER 2019

STUDENTS

Alan von Arx
Gabriel Bleisch
Milena Bojovic
Leon Dähler
Fabian Heer
Djordje Jeftic
Lisa Kusaka
Tu Lan
Jan Lubes
Maurizio Mätzler
Noah Richner
Timothy Schärer
Salome Schepers
Yuning Song
Lukas Schütz
Moritz Späh
Christoph Stahel
Fabian Stenmanns
Matthias von Sinner
Cyrill Wechsler
Chantal Winiger
Linquan Xu
Zheng Wenda

ASSISTANTS

Nadia Dias
Joni Kaçani
Michelle Nägeli

ELEVEN BUILDINGS

1. SANT'IVO DELLA SAPIENZA
Rom, Francesco Borromini; Jan Lubes, Fabian Stenmanns p. 6

2. BASILICA DI SAN GIOVANNI IN LATERANO
Rom, Francesco Borromini; Milena Bojovic, Djordje Jeftic p. 12

3. BARCELONA PAVILION & LAKE SHORE DRIVE APARTMENTS
Barcelona / Chicago, Mies van der Rohe, Timothy Schärer, Lukas Schütz p. 20

4. FACULDADE DE ARQUITETURA E URBANISMO
Sao Paulo, João Villanova Artigas; Gabriel Bleisch, Matthias von Sinner p. 26

5. NATIONAL ASSEMBLY BUILDING OF BANGLADESH
Dhaka, Louis Kahn; Linquan Xu, Alan von Arx p. 34

6. J.W. SCHAFFER HOUSE
Los Angeles, John Lautner; Fabian Heer, Noah Richner p. 38

7. HOUSE IN UEHARA, HOUSE IN WHITE & TANIKAWA HOUSE
Tokyo / Karuizawa, Kazuo Shinohara; Wenda Zheng, Yuning Song p. 48

8. CASA BATLLÓ
Barcelona, Antoni Gaudi; Maurizio Mätzler, Leon Dähler p. 56

9. COLONIA GÜELL CRYPTA
Barcelona, Antoni Gaudi; Lisa Kusaka, Tu Lan, Cyrill Wechsler p. 64

10. ARANGO HOUSE
Acapulco, John Lautner; Moritz Späh, Christoph Stahel p. 72

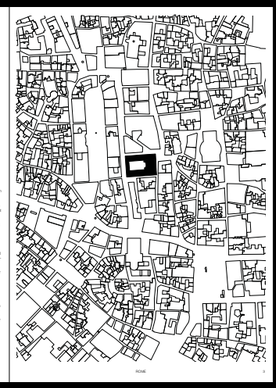
11. GODSTEIN RESIDENCE
Los Angeles, John Lautner; Salome Schepers, Chantal Winiger p. 80

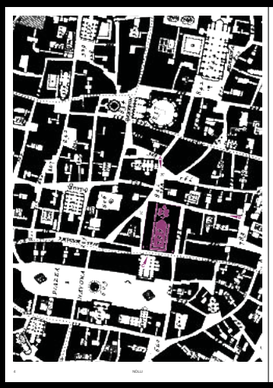
SANT IVO‘DELLA SAPIENZA
Francesco Borromini

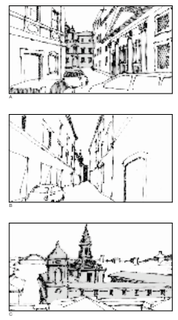
Jan Lubes
Fabian Stenmanns

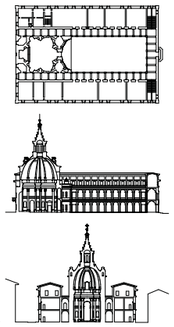
SANT'IVO ALLA SAPIENZA
FRANCESCO BORROMINI, ROME

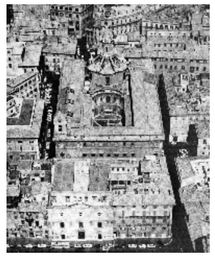
Die erste räumliche Annäherung an **Sant'Ivo alla Sapienza** wird im Stadtraum lediglich durch stets beschränkte Blicke auf die charakteristische Kuppel des Zentralbaus entlang ebenfalls wechselnder Blickachsen durch die verschiedenen Gassen, Straßen und Plätze Roms ermöglicht. Dabei wird die Kuppel, welche sich aufgrund der Lage des Gebäudes in einer Sackgasse nur von einer Seite zeigt, durch die umgebenden Verhältnisse binder Gebäude eindeutig durch die nachträgliche Einpassung der Kirche ein eximierer Gestalt der nächstliegenden Kulatur der Palazzine. Hierbei wird die Kirche von zwei Gebäudetreilen mit vergrößerten zweigeschossigen Arkaden in direktem Kontakt gesetzt. Dadurch wird die Kirche zum Teil der Straßenfassade und bildet einen Platz vor der Kirche aus. Dieser Platz ist der Eingang zur kontraxen Frontfassade Sant'Ivos, welche als einzige Blick direkt die eigenen physischen Begrenzung dient. In ihrer Raumwirkung bedeutet sich aber auch diese auf den eingeschränkten Blau. Liest man die Chronologie der Baudöttige außer Acht, scheinen sich die weiblichen Gestaltungsmittel der Fassade, welche sich in Form von Pilastern, Nischen und Fenstern ausdrücken, mit den männlichen Gestaltungsmitteln der Grundrisse Fassung des Innyraumes, welche diesen zeitweise ausmacht, zu vereinen. Vorraum dem als einem Vorhof zur Kirche wahrnimmt (Nolli). Zudem ist für diese Raumwirkung ist auch die Positionierung des einzigen Zugangs zur Kirche an zentraler Stelle in der kontraxen Frontfassade. Dieser führt über einen Treppenlauf zunächst in den Vorraum und dann weiter in den Innenraum. Dieser ist geprägt von einem zentralen, gesamte Kirche aus an Gast, dessen Mitte die Arkaden und dessen Decke bei Hörnerl ist. Die zentrierende Überspannung des Innenhofs, zur Begleitung des Kirchenraums, eingeit dessen Relevanz und baldast Palazzo sowie Kirche trotz engster Verflechtung eigenständig. Die Grundform dieser ist ein gleichseitiges Dreieck mit halbkreisförmigen Ausschnitungen an den Seitenmitten und in gleichem Radius entlegten Subtraktionen an den Spitzen beschrieben. Resultiert ist die äußere Begrenzung durch drei sodgar konvexe sowie drei konkave Wände, welche sich in einer Ordnung aus Pilastern, Nischen und Fenstern ausdrücken. Dadurch wird die Wahrnehmung des im umgebenden Verkehr bewirkten zu Bewegung von innen und Außenraum Kirnen. Zusätzliche unterganzinnere wurde Entsuchen gen weiten dadaber hinaus die Kreisförmie des Grundrisses fort und tragen dieses durch der Bogenleichtas in eine weitere Ebene. Der Innenraum ist geprägt von einem zentralen Raum, welcher sich aus einem Kreis und einem Dreieck zusammensetzt. Die Kuppel mit ihrem schlanken Dachaus setzt sich dies einzigartige Kuppel der Kirche fort, welche die Wahrnehmung des direkte kompaxen Raums spiegelt. In ihrer Grundform baut diese zwar auf dem beschriebenen unteren Raum auf, trägt dessen Komplexität allerdings bei zu einem einzigen Kreis an diesem Ende ab. Dieselben bahnden sich sachte Fensteröffnung gebaut von aufwendiger Ornamentik, die je nach Sonnenstand zusätzliche Spotlights im Kirchenraum wandern lassen. Die verfeiste Ausgleich beider Formen erfolgt erfolgt ein verschiedenen Grades, welche sich in der Form der Pilaster, welche sich zwischen Kuppel und Wand ausdrücken, wiederfinden. Die Pilaster bilden eine Ordnung aus Kolonnen, welche die oberen Lichtquelle hüllen und gleichzeitige Spitze der Kirche trägt. In Kontrast zum Beiwerkes gleichzt unverhältnisses Hauptraum ebenso die dieneenden Räume, welche sich entsprechend ihrer Bedeutung der Hauptgrundmerkle folgen, indem sie die beiden großen Nischen, welche sich zwischen Kuppel und Wand ausdrücken, wiederfinden. Die Nischen bilden eine Ordnung aus Kolonnen, welche den zentralen Gängen zu einzelne wird. In der inneren Wahrnehmung werden diese gleichzt ausgeblendet und wenn nicht ausblendbar folgar verschleiert, indem etwa die Zugang durch einen fleischen zweiten Turfdgel der inneren Symmetrie unterwerfen wird.
Die Fassade Sant'Ivos ist geprägt von einer Ordnung aus Pilastern, welche sich in der Form der Kuppel wiederfinden. Dabei ist der Kuppel immer dem senkrechten Tentlous, was die äußere Leistarkeit ersichtend, dardzer hinaus bezeichnet dieser eine wachsenlig kurzeuse und trennt abwechselnde Grundform. Indem die Kuppel wie bereits beschrieben auf der Grundrisstreln bwesen verfällt sich diese nur in der Basis und Spitze, wodurch sich ohne weiteres Randstellen ergeben, die lediglich die abwechselnden Teilen der äußeren Fensterbaldaugen verraten.
Abschließend soll darauf hingewiesen werden, dass die Spannung von innen, außen sowie dem Dazwischen lediglich einer räumlichen Betrachtungsweise entspringt.

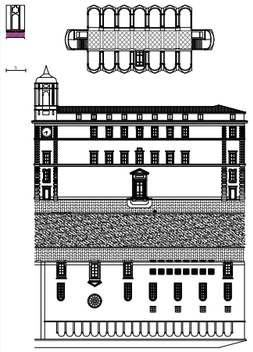


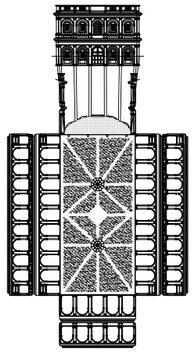


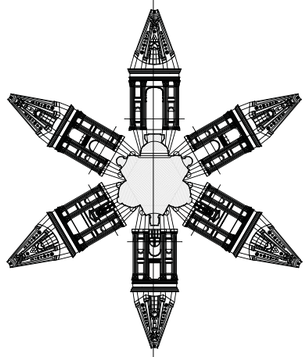


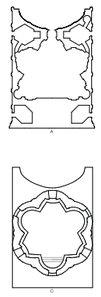


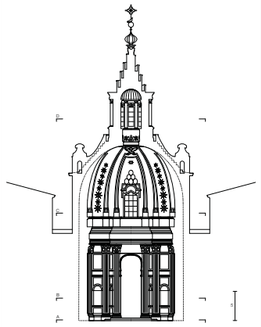


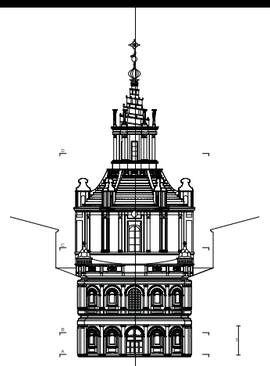


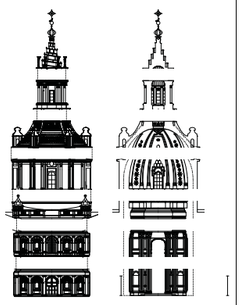


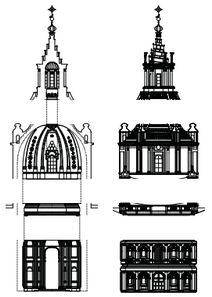


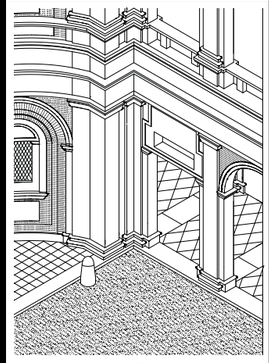


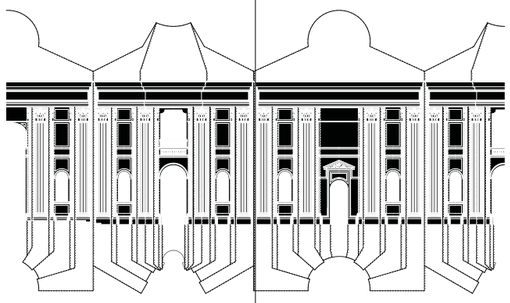


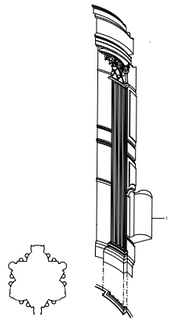


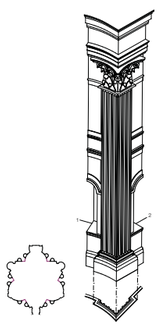


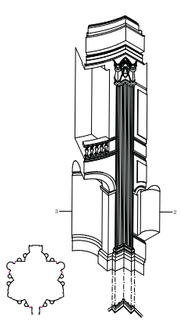


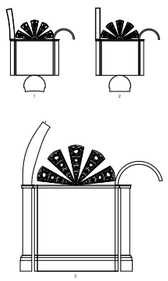


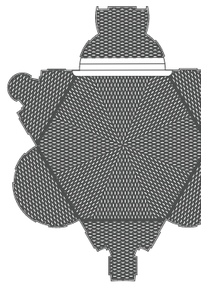


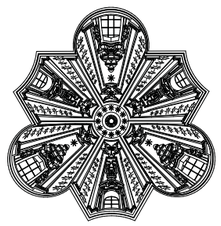


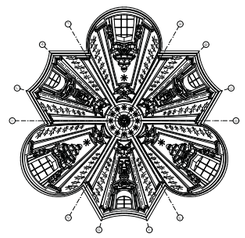


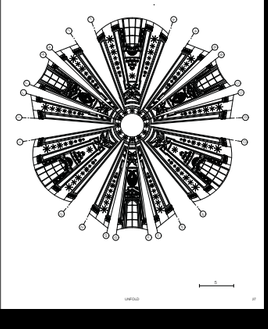


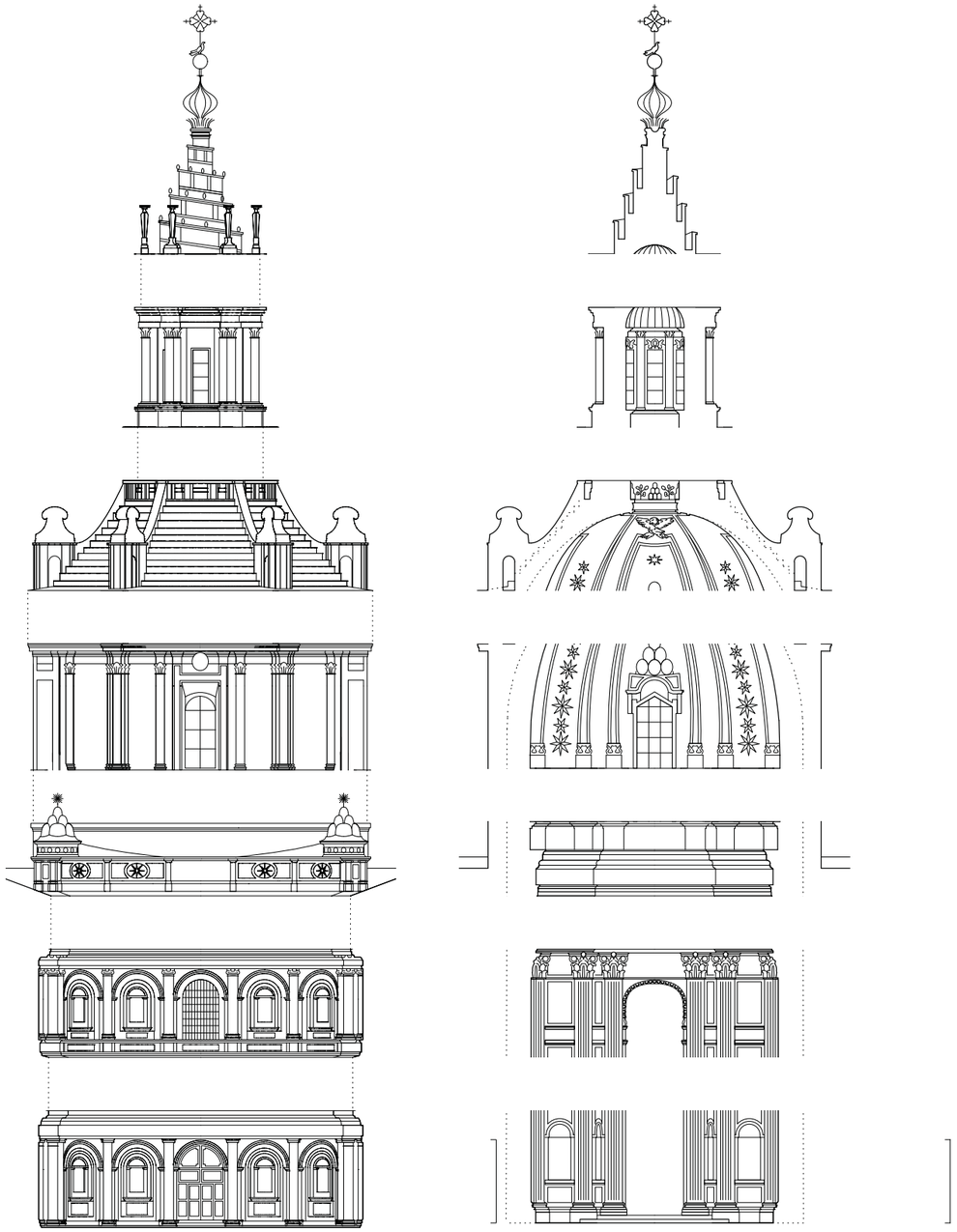




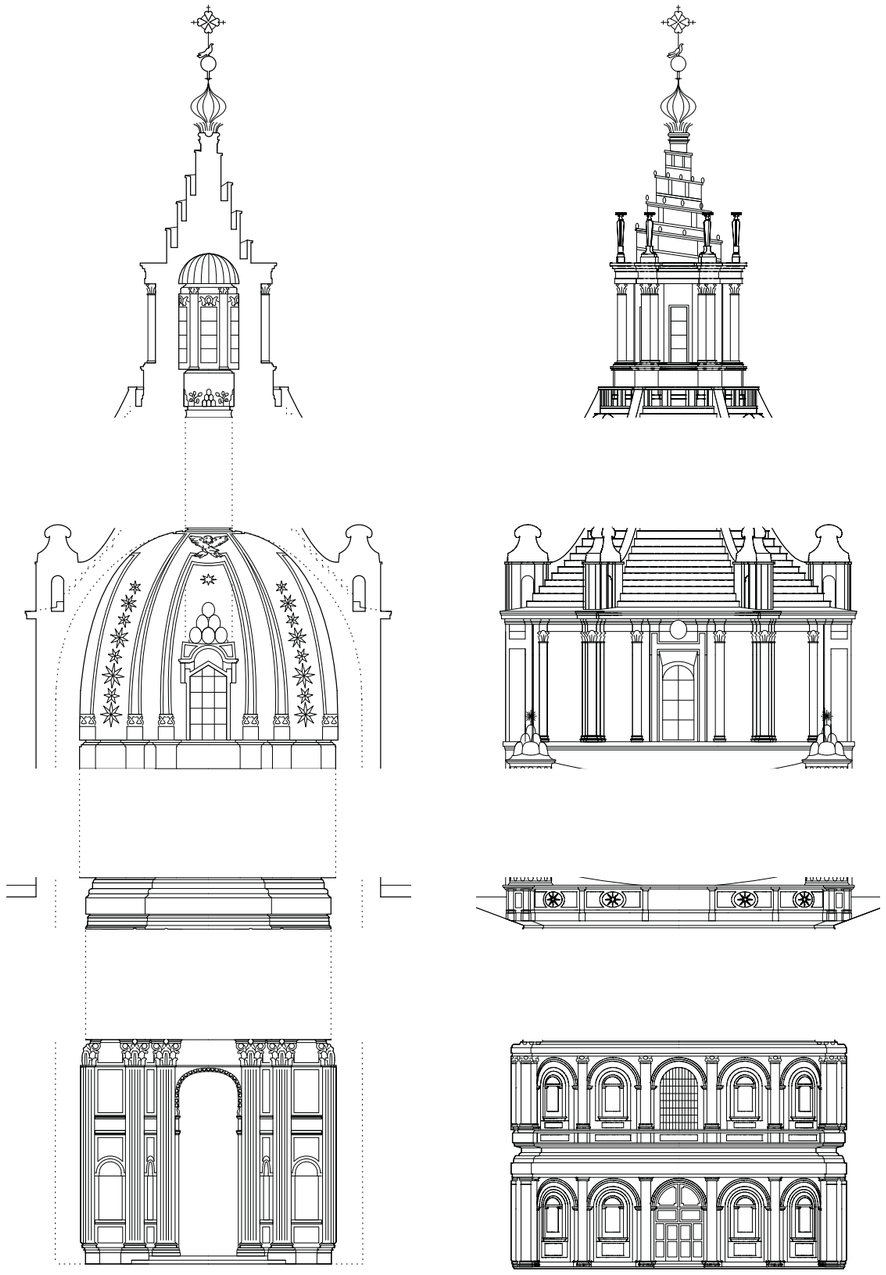








EXTERIOR SEGMENTATION



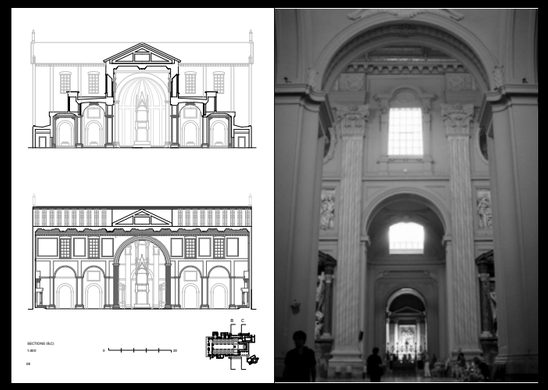
INTERIOR SEGMENTATION

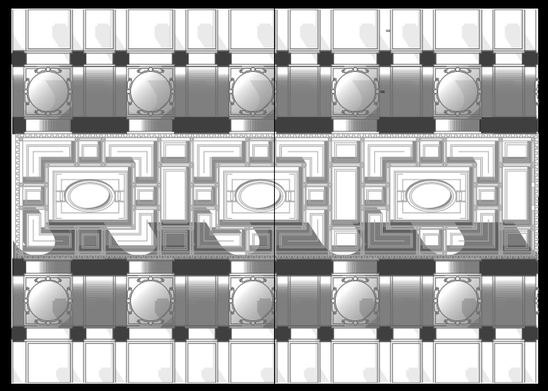
10

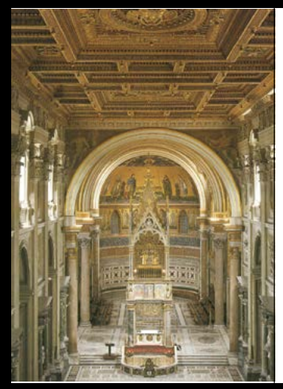
INTERIOR UNROLLED

BASILICA DI SAN GIOVANNI IN LATERANO
Francesco Borromini

Milena Bojovic
Djordje Jeftic





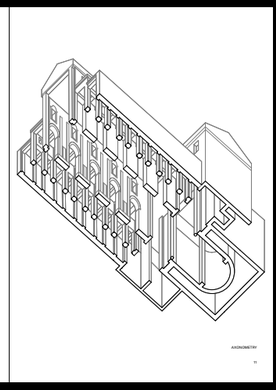


PORTRAIT

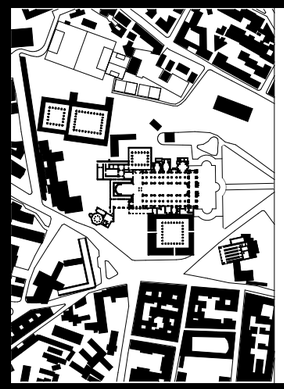
The Basilica San Giovanni in Laterano is one of the four papal major basilicas in Rome and considered as the oldest and highest ranking of them and therefor holding the unique title of the Archbasilica (Papal Archbasilica of Saint John Lateran). The foundations of this mother of all churches go way back to the 4th century when they were first inaugurated, therefor making it the oldest public church in the city of Rome, and the oldest basilica of the Western world. The present-day church is a reconstruction commisioned by Pope Sixtus V., as part of his greater urban program in the 16th century, due to fire damages and inadequate prior restorations. Further renovations of the interior followed under the direction of Francesco Borromini in the 17th century, which gave it its current appearance. Its dedication is to John the Baptist Galilei. Adjacent to the Archbasilica is the Lateran Palace, an ancient palace of the Roman Empire which was used as the main papal residence.
Thanks to this unique ranking as the papal archbasilica, the church is realized in a way which makes the basilica unique and incomparable to any sorts. The edifice is the shear embodiment of it's importance, shown not only in it's size but also in the meticulous way how the basilica is executed :the basilica is in anyway possible monumental. Through the conditions of enormous size, strict regularity, an overload of decorations and ambiguous divisional elements the basilica gives off an overwhelming sensation which servers for a unique sense of spatiality.

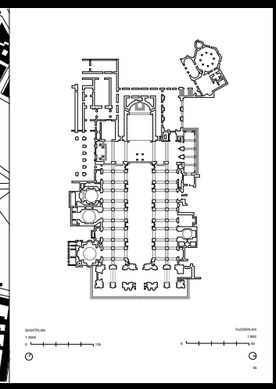
SPATIAL CONFIGURATION

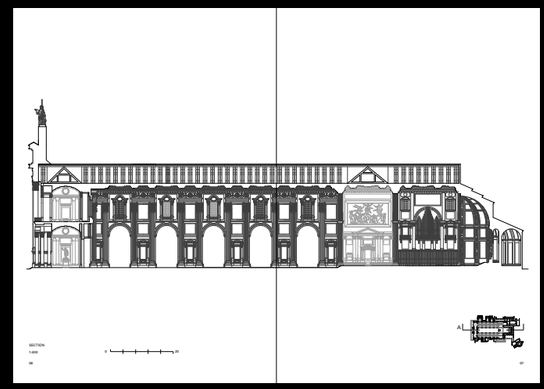
Due to its significance in history and intended purpose the basilica is a monumental and enormous edifice. It is clearly a place for mass gatherings and important events. This monumental character differs significantly from the rest of the Roman Catholic churches. The interior consists of 5 naves which are parallel to each other. Instead of being perceived as a succession of colonnades like in any other basilica, the colonnades in this basilica create something which is rather being perceived as a hierarchy of rooms. In this instance the uniform space of a basilica is divided in a variation of rooms and colonnades are transformed into divisional walls and supports. These rooms are created by differences in heights and distances, incidence of light and changes in rhythm. Particularly in the main nave the colonnades are not experienced as such but rather as a facade which is rhythmically broken up.

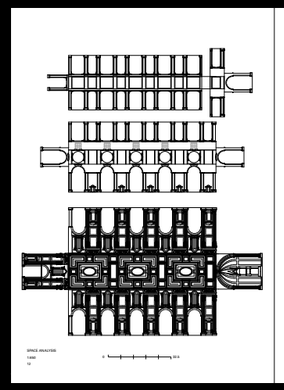


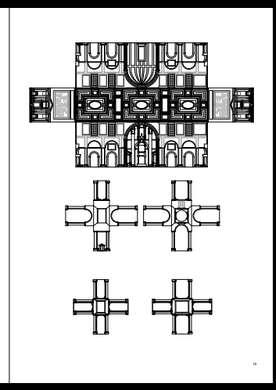
AXONOMETRY

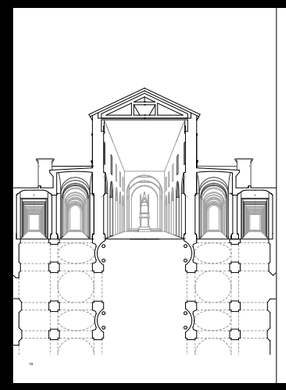


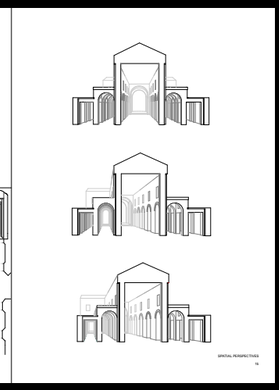












SPATIAL PERSPECTIVES
15

SECTION ANALYSIS

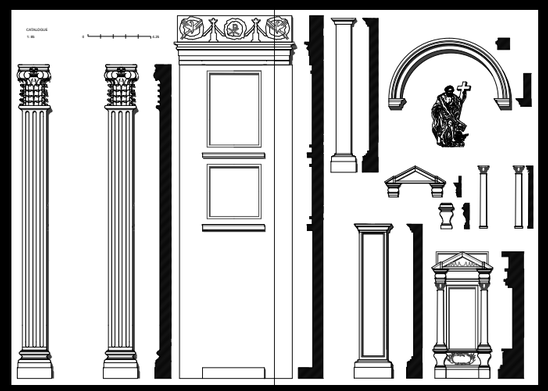
The partition of the basilica in five naves is what constitutes a first separation in rooms : passage rooms.This division in adjoining parallel naves is mainly perceived through the definition of differing naves achieved through establishing height and mass differences, changes in level of detail and different incidence of light. Each nave stretches from the portikus to the altar. Showing this conditions of layering in a series of sections reveals what kind of an effect this layerings has and what a pivotal role this plays in the overall appearance of the edifice.

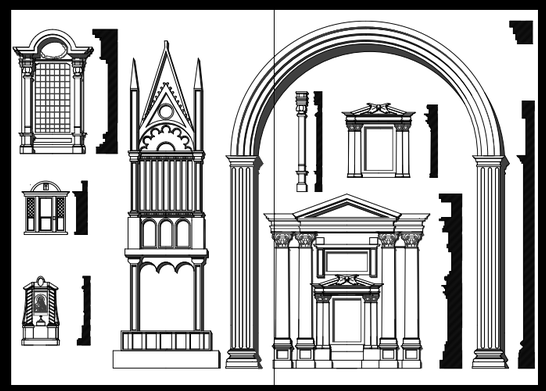
FLOORPLAN ANALYSIS

Studying the relationship of the mass of the walls and supports compared to the height and division of the differing naves reveals a new sense of monumentality and weight the basilica carries in itself. The shear mass used to build the edifice is what makes up most of its spatial properties: monumentality executed through detailing and configuration achieved through precise division.

"INSZENIERUNG" - CATALOGUE

The interior of the Basilica offers a sensory overload of detailings thanks to Borromini's restorations in the 17th century. But this multitude of detailings further enhances the spatial perception trough their unique scale and meticulously execution. They present a completely new and intricate reading of the interior: by looking at each detailing on its own the space gains additional depth and layering. Through the elaboration of each element the aspect of monumentality of the whole basilica is even further enhanced.

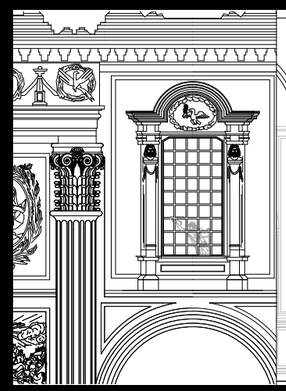


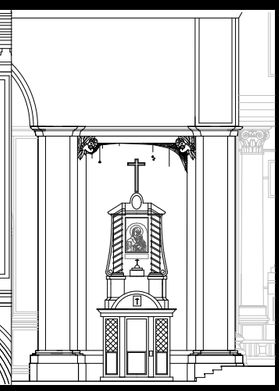


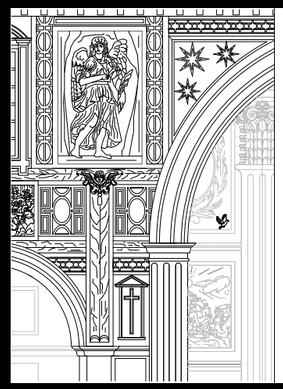
"INSZENIERUNG" - SCENES

SIGNES
1:50
0
1.5

Looking at the decorations and detailings without any reference of size they appear to be regularly sized. As soon as put in context of the human scale, it becomes imminent what monumental and enormous detailings are placed in the edifice. It almost seems like the scale of the basilica isn't built for humans but rather for the divine. It's almost like the inferior position of the divine compared to the human is embodied in the basilica itself.

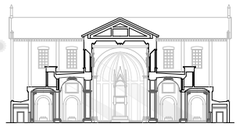






"INSZENIERUNG" - LIGHT

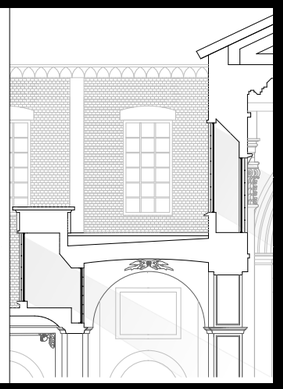
Additionally to using height differences, divisional elements, regularity and an huge amount of decorations one important component which enhances the unique spatiality is the influence and incidence of light. Not only is the light guided through a series of windows, but also the windows itself are arranged in a way so that the light creates a unique spatial effect. Through the use of light the depth of the naves is further enhanced. The different light conditions also help enhance the division within the five naves as well as within the naves themselves.



LIGHT DIAGRAM

1:400

0 20



WINDOW DETAIL

1:75

0 2,75

IMPRESSIONS OF LIGHT

INDICATION OF SOURCE

p. 02: Pietrangeli Carlo, 1990: "San Giovanni in Laterano", p. 178

p. 09: private collection, Christian Kerez, year unknown

p.16: online source: https://artinhistoryproject.com/sites/assets/files/28236/giovanni-battista-piranesi-views-of-rome-1768-trinium-art-history.jpg

p. 20: lecture Christian Kerez, 2015: origin unknown

p. 22: lecture Christian Kerez, 2015: origin unknown

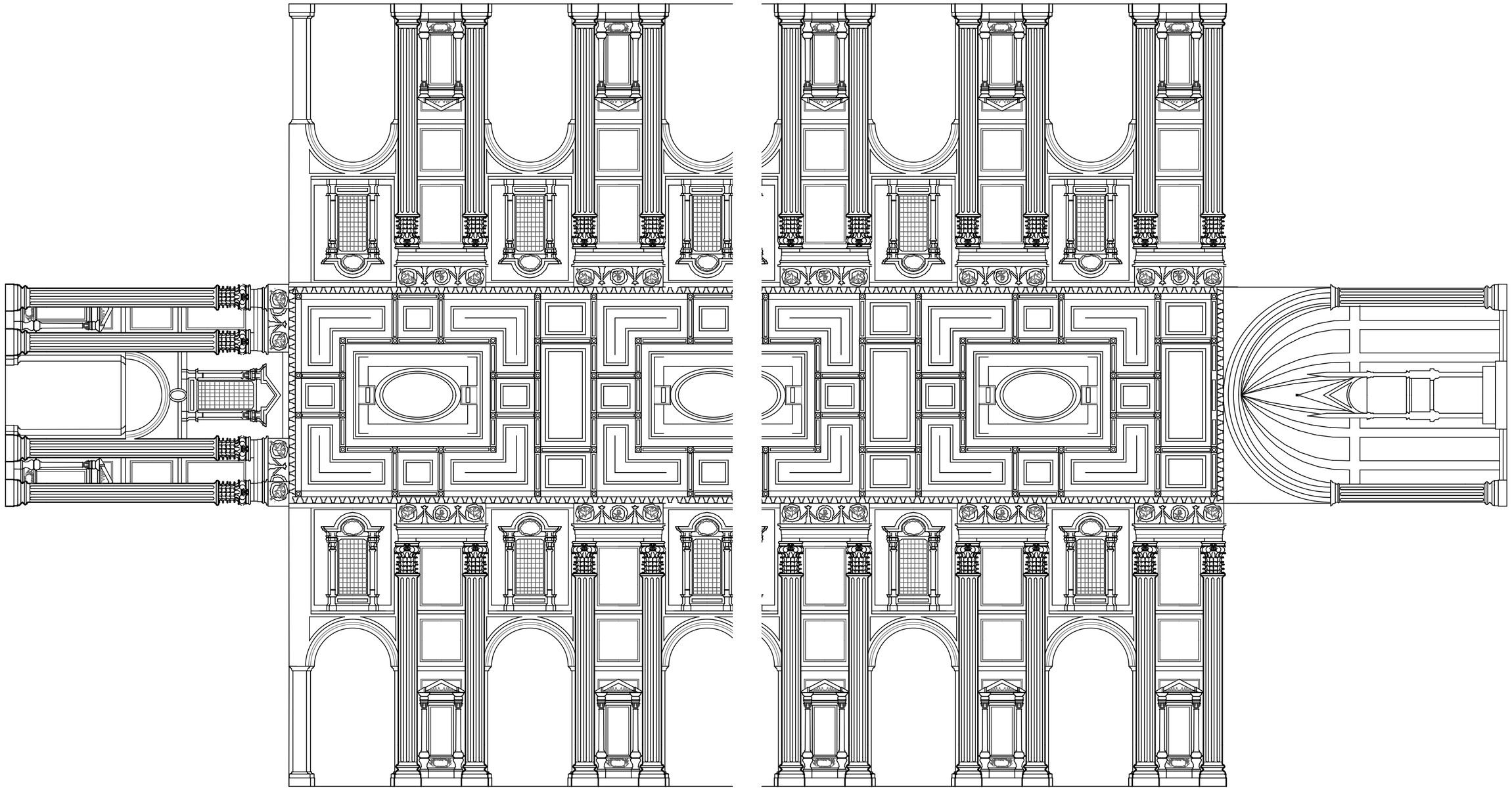
p. 23: Pietrangeli Carlo, 1990: "San Giovanni in Laterano", p. 190

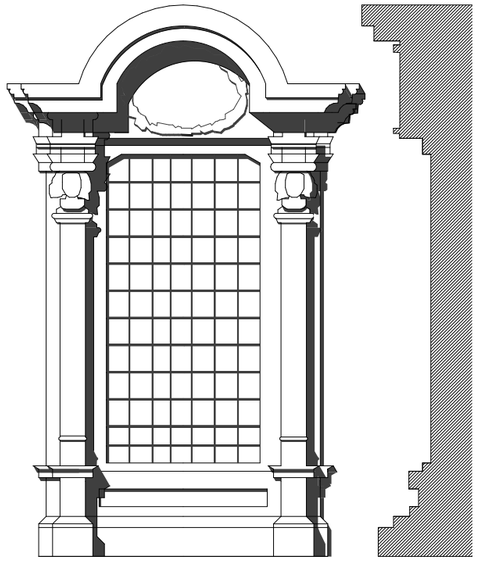
p. 28: private collection, Christian Kerez, year unknown

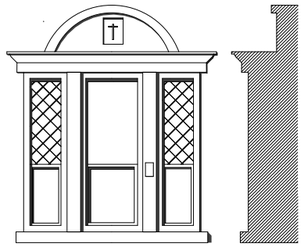
p. 33: private collection, Christian Kerez, year unknown

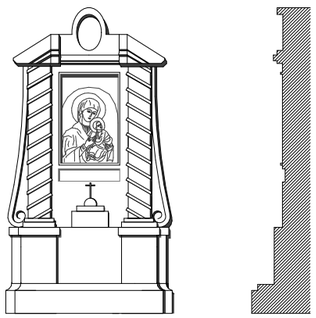
p. 37: Pietrangeli Carlo, 1990: "San Giovanni in Laterano", p. 207

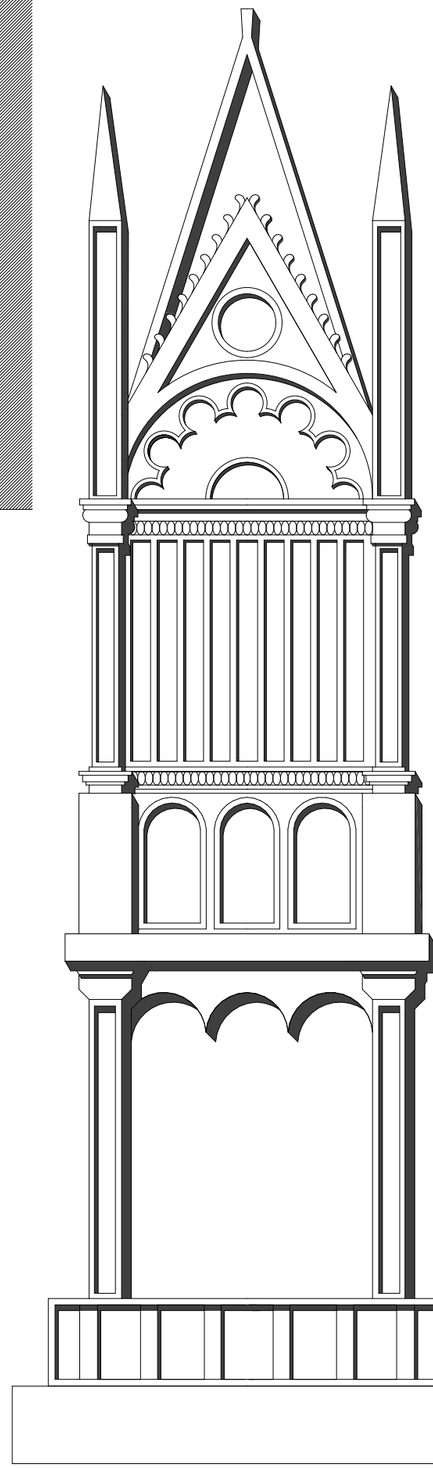
p. 38: Pietrangeli Carlo, 1990: "San Giovanni in Laterano", p. 210

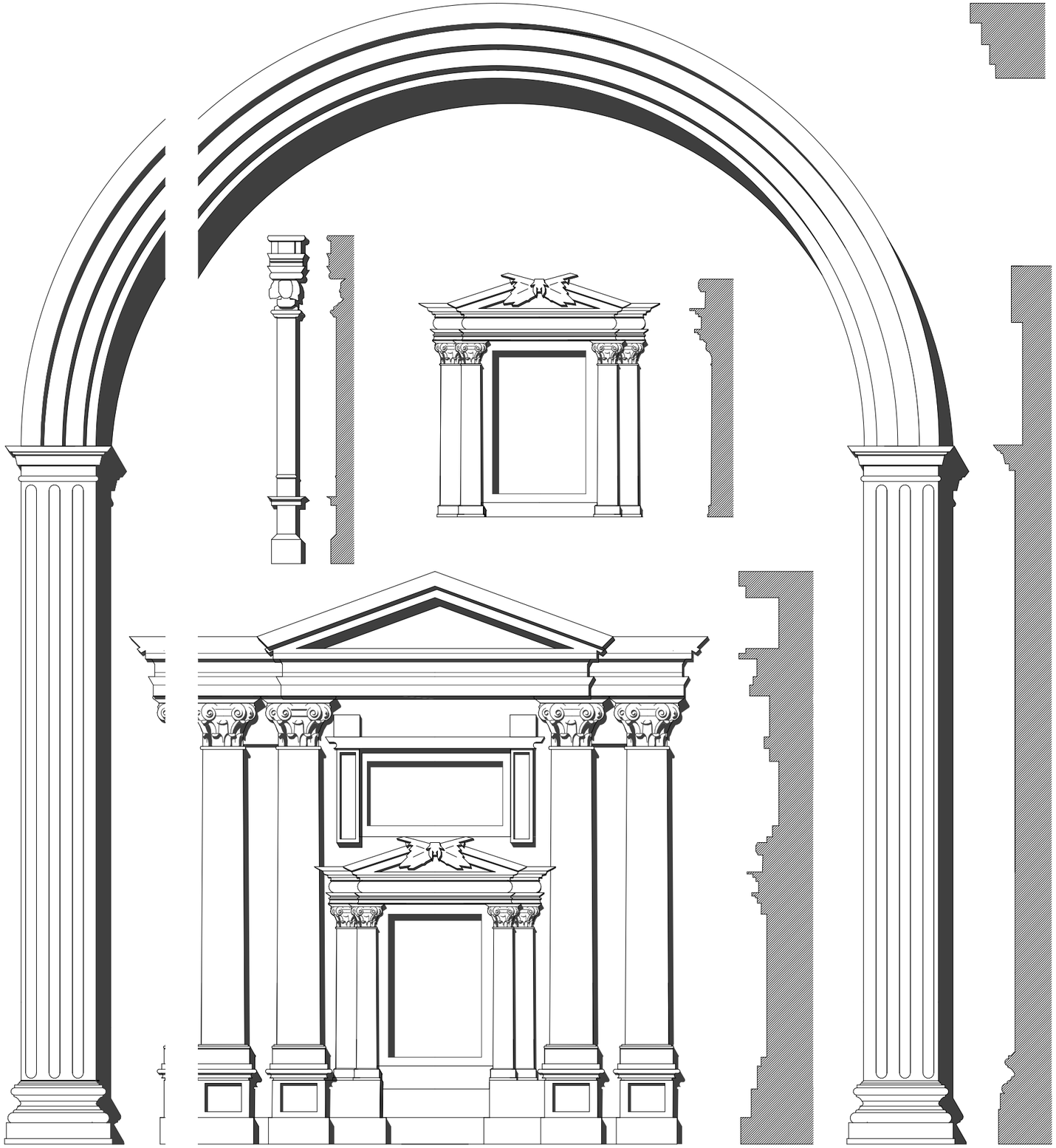












BARCELONA PAVILION & LAKE SHORE DRVE APARTMENTS

Mies van der Rohe

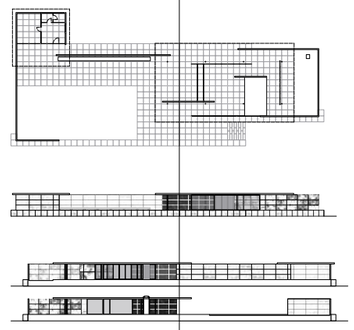
Timothy Schärer
Lukas Schütz

GERMAN PAVILION / BARCELONA / 1928-29

The German Pavilion was built for the Barcelona International Exposition in 1929. It is situated at the end of a monumental axis, slightly shifted out on a secondary one. The building consists of a travertine-clad base, two covered single-storey areas and two water basins. In the floor plan, two U-shaped walls frame the centrifugally freely arranged covered part and physically terminate the space. All the vertical elements are built in a steel frame construction. The roof is supported by eight cruciform columns, the floor by a grid of cruciform cross-sections and chrome-plated cross-shaped columns, two glass and two onyx marble elements as well as a light-well surrounded by obscured glass. In the larger covered part, all surfaces are reflecting. This creates a horizontal depth and even more undefined space confinements.

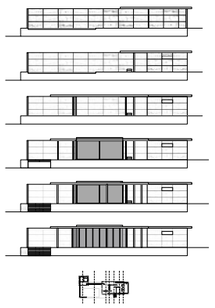
The obscured glass of the light-well is the most reflecting surface and it presents the strongest division in the space. Although the pavilion is physically open and accessible, it is not clear how one is to enter, from which the viewer positioned himself. It is neglecting the presence of the area behind it, enhanced by the illumination. One could talk about the similarities that have been drawn between the pavilion and the Doric temple, with its plinth, columns and optical refinements. But in this analysis the focus will be set on the construction of surfaces between two horizontal planes and how the spatial complexity and richness is achieved.

3



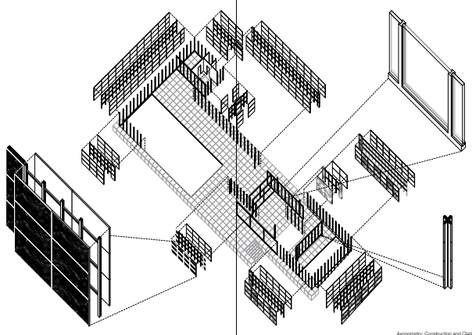
Floor plan / Elevation / Sections

5



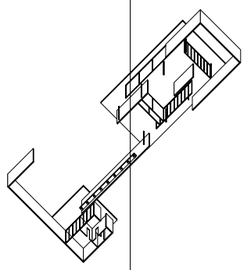
Sections

6



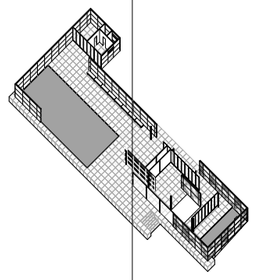
Axonometry: Construction and Cladding

9



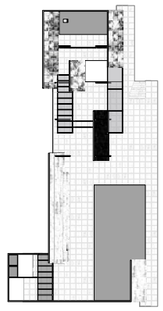
Axonometry: below

11



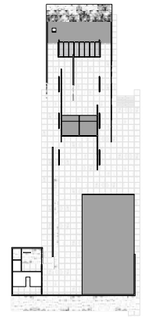
Axonometry overview

13



Axonometry 0 degrees (turned)

14



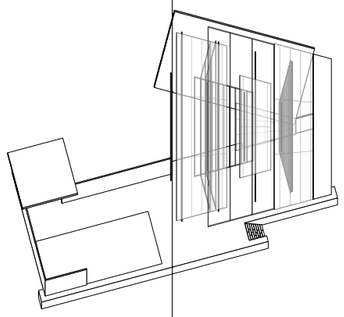
Axonometry 0 degrees

15

16

Reflected elements along mirror axis, superimposed on ground floor plan

17

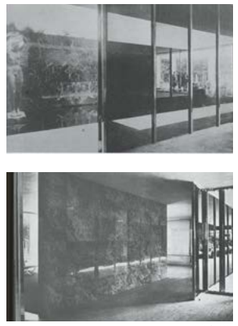


Axonometries combined: spatial density

19

Materiality / Reflections

20



Materiality / Reflections

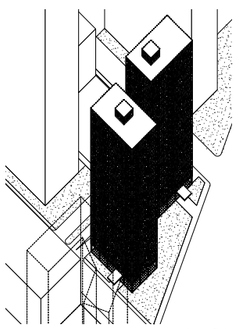
21

LAKE SHORE DRIVE 860-880 / CHICAGO / 1949-51

The two largely identical apartment towers on Lake Shore Drive 860-880 stand on the shore of the Lake Michigan in Chicago. They are 80 meters or 26 floors high and stand orthogonally apart form each other, forming an L-shape in the floor plan. The architecture is arranged around a 21-foot grid. the structure is a steel frame construction with a curtain wall of glass and aluminum. The grid is visible in the facade and the applied I-beams. The original floor plans were designed in a non-dividing way with no doors except for the bathroom. These schemes were not realised due to the fact that they were classified as studios, where as conventional rooms could be added up to form multi-bedroom apartments, which were financially more profitable.xx

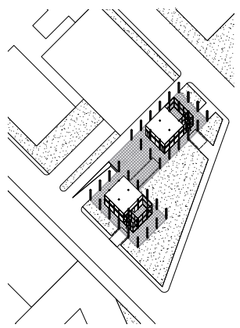
The ground floor is characterized by a rather open space with a strong presence of the cladded pillars painted black, a continous travertine floor as well as glazed and setbacked entrance areas. Inside the apartments the floor is covered with a light grey carpet and the walls are kept in a light tone to subtly preset. The missing walls together with the full view through the windows result in a horizontally prolonged space stretching outside of conventional boundaries. Outside the continuously exaltedness emphasis the facades vertically. Differentiation of two window formats add a certain complexity to the grid.

23



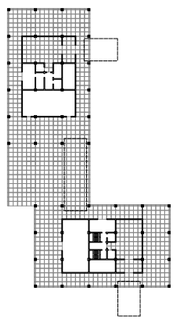
Axonometry Situation

24



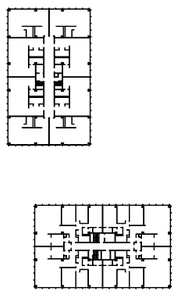
Axonometry ground floor

25



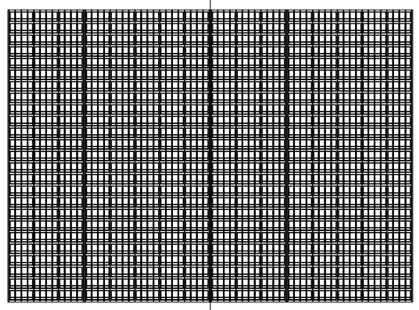
Groundfloor plan

26



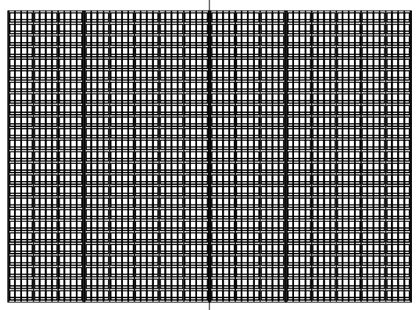
Regular floor plan

27



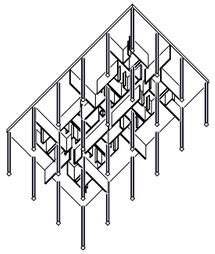
Elevation / Vertical Articulation

29



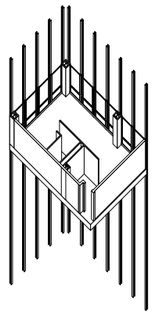
Elevation / Glazing

31



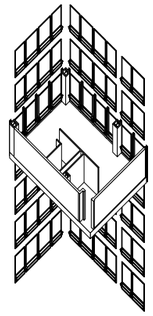
Axonometry from below

32



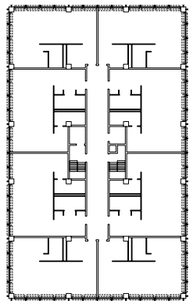
Axonometry apartment

33



Axonometry mechanical windows

34

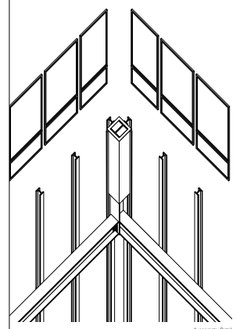


Floor plan with all windows open

35

Axonometry Construction

36



Axonometry Detail

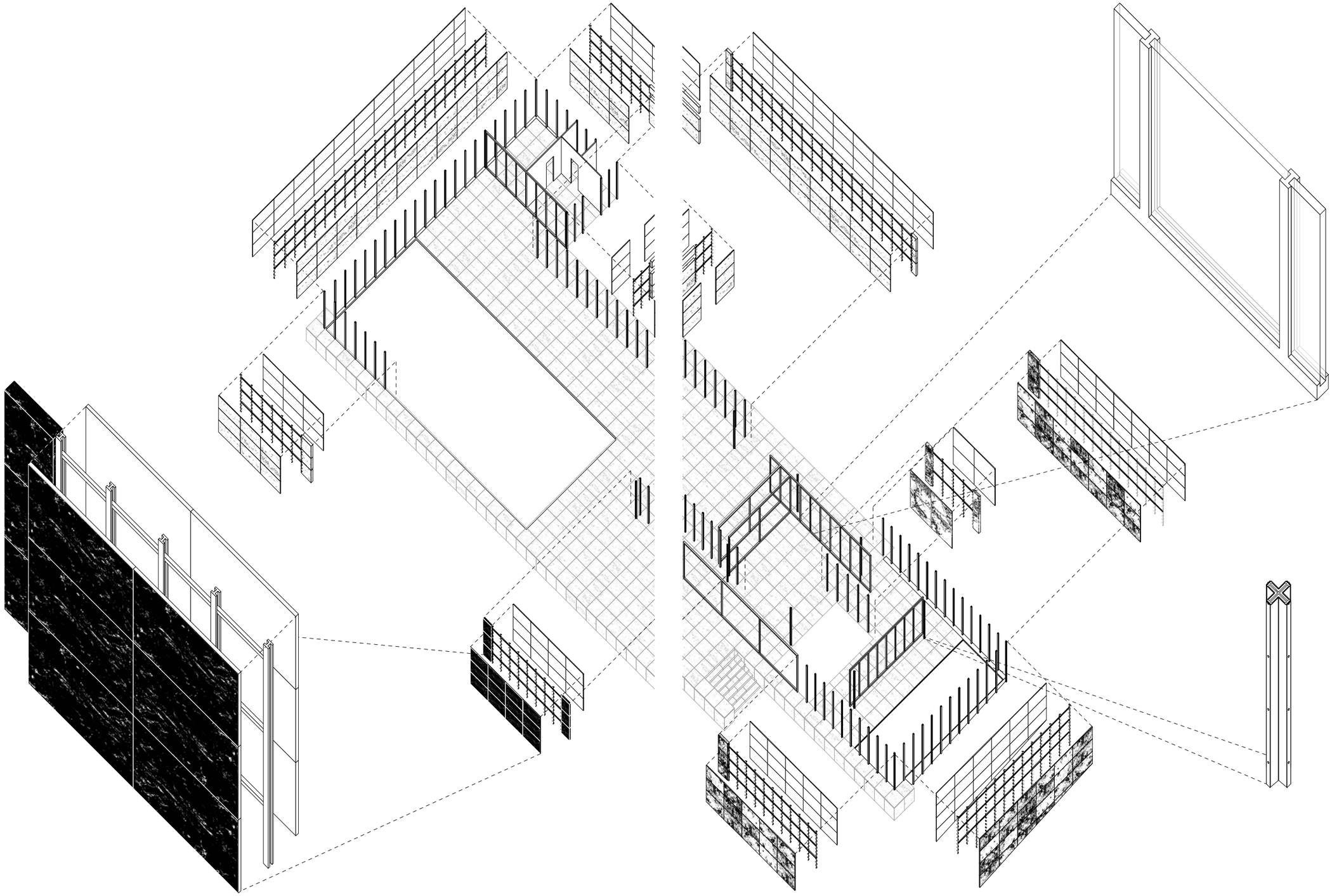
37

Inside view / Steel frame construction

38

Ground floor / Facade elevation

39



Axonometry: Construction and Cladding

FACULDADE DE ARQUITETURA E URBANISMO

João Villanova Artigas

Gabriel Bleisch
Matthias von Sinner

Analyse

Faculdade de Arquitetura e Urbanismo
Sao Paulo, Vilanova Artigas, 1961

von Gabriel Bleisch & Matthias von Sinner

1

Inhaltsverzeichnis

- Einleitung
- Situationsplan und Ansichten
- Struktur
- Programm
- Schnitte und Grundrisse
- Räumliche Sequenz
- Saion

2

3

Faculdade de Arquitetura e Urbanismo (FAU)
Sao Paulo, Vilanova Artigas, 1961

Einleitung

Auf den ersten Blick sieht das FAU nach einem eher verschlossenen Gebäude aus. Die obersten Stockwerke sind in eine total geschlossene Betonwand gehüllt, welche das Volumen und den Parameter des Bauwerks definiert. Erfolgreich dieses ersten Eindruck löst sich das Gebäude im Erdgeschoss teilweise auf und bietet grosse Öffnungen in den Salon (zentralen Hall). Diese Hall ist mit einer Rampe versehen, welche verbindet so auch den Untergeschoss mit dem Rest des Gebäudes.

Wenn man in diesem Salon steht, ergibt sich ein ähnlicher erster Eindruck wie von aussen: Man sieht eine fast geschlossene Betonwand. Die Fenster, welche sich zwischen den Betonwänden befinden, lassen nur Tageslicht eintreten. Die Räume wie den Studiokunsten bildet die Decke die einzige Lichtquelle, zeigen sich die meisten Stockwerke sehr introvertiert gegen den Salon. Die Geschosse der beiden Seitenwellen (und Ober eine leicht ansteigende Rampe von sechs Metern Breite und Konturlänge) Metern Länge miteinander verbunden, welche den Salon in zwei gleichgrosse Hälften unterteilen. Die Rampen bilden eine Ausnahme, weil sich die Rampen eher als eine Erweiterung der Studiopätzen als ein vertikales Erschliessungselement.

Durch das Betreten dieser Rampen erschliessen Teile des Gebäudes ohne Hinterlässe - selbst ohne Tür - ernschliee. Dernoch werden die einzelnen Räume durch pribiate gesetzte Wände und Blickbeziige voneinander abgetrennt und erhalten so eine gewisse Autonomie.

Introduction

On the first glance the FAU looks like a rather closed-up building. The upper most floor is wrapped in an unpenetrated outer concrete wall defining the buildings volume. Contradicting this first impression the building opens up on the lower floors creating large open pathways into the buildings central hall (Salon) which in parts even slops down to connect the underground floors with the rest of the building.

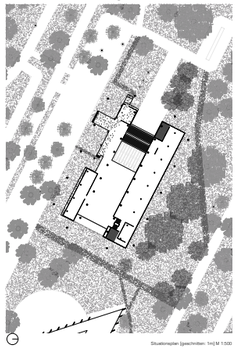
Standing in the central hall one receives an impression similar to the one from the outside. United by the very symmetrical, perforated roof which distributes natural light throughout the entire school (for some spaces like the studios on the second floor it is the only source of sunlight) the interior seems to be composed out of independent boxes attached on top of two ramps which connect the underground floors with the rest of the building. The ramps are six meters wide and having a width of six and a length of up to twenty-five meters with almost none existing railings, thus creating a strong openness, these ramps behave more like an extension of the studios than as a vertical circulation. The ramps are placed in the two side wings and divide those themselfs as new concrete walls with only a few to none openings to the hall enhances the idea of autonomous, introverted boxes. By walking on the ramps you can reach almost every part of the building without ever stepping through a single door. By controlling the view with precisely positioned walls, the rooms gain a sense of independence without introducing strongly segregating elements.

4

Situationsplan & Ansichten

Das Äussere ist von der komplett umlaufenden Schlitzbetonwand der obersten Stockwerke geprägt, während sich das Erdgeschoss zur Umgebung hin öffnet und einfach zugänglich ist.

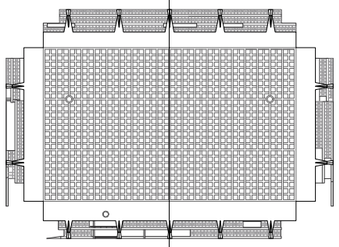
5



Situationsplan [geschnitten: 1m] M 1:500

6

7



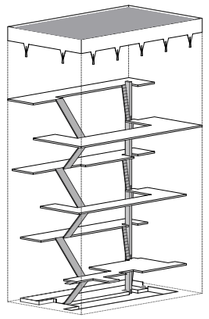
Dechaufsicht mit allen Fassaden M 1:500

8

Struktur

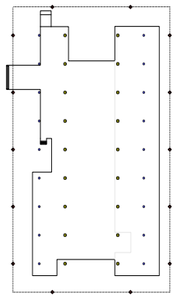
Das Gebäude basiert auf einer Stützen-Platten-Konstruktion, welche die Splitlevelanordnung der Geschosse ermöglicht.

9



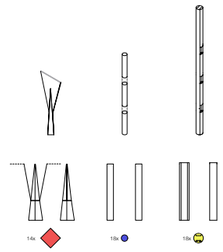
Bodenplatten Axonometrie M 1:1500

10



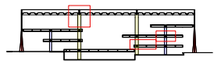
Stützenraster M 1:500

11



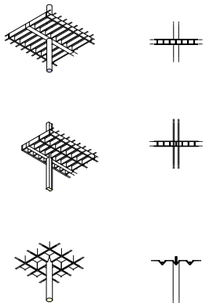
Stützenkatalog

12



Bodenplatten im Schnitt und Konsteksteilen zu Stützen M 1:500

13



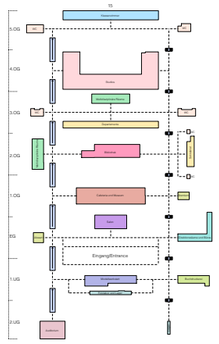
Stützen-Platten Details

14

Programm

Das Programm bildet die Grundstruktur der inneren Aufteilung. Die einzelnen Räume sind stark auf den jeweiligen Nutzen abgestimmt.

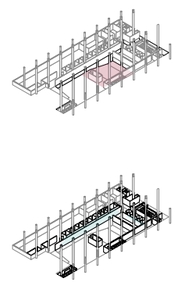
15



Schnittplan mit den Grössen, Anordnungen und Verbindungen der Funktionen

16

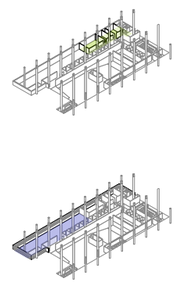
1.UG & 2.UG



Auditorium mit Wänden gegen das Eindrinch ▲ ▼ Fotolabor und Lager mit raumhohen Betonwänden

17

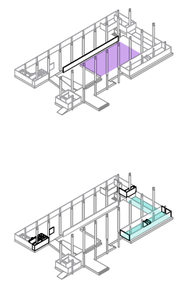
1.UG & 2.UG



Buchhandlerei mit raumhohen Trennwänden ▲ ▼ Modellwerkstatt mit Fenster

18

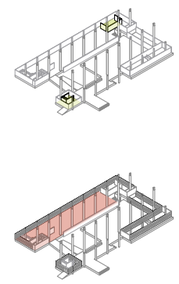
EG & 1.OG



Salon mit halbhohen Betonwänden ▲ ▼ Direktionsräume und Büros mit raumhohen Betonwänden

19

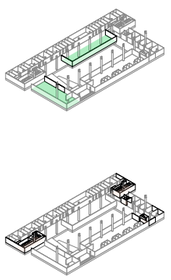
EG & 1.OG



Gisinium und Abwart mit raumhohen Trennwänden ▲ ▼ Cafeteria und Museum mit Fenster

20

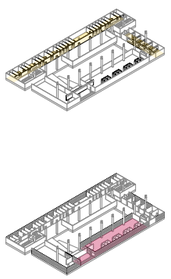
2.OG & 3.OG



Multizweckräume Räume mit halbhohen Betonwänden ▲ ▼ WC's mit raumhohen Betonwänden

21

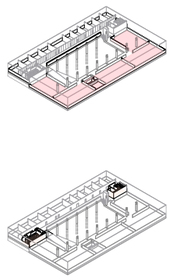
2.OG & 3.OG



Departemente und Sekretariat mit raumhohen Trennwänden ▲ ▼ Bibliothek und Balkon mit Fenster

22

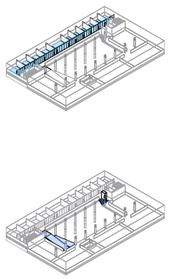
4.OG & 5.OG



Studios mit halbhohen Betonwänden ▲ ▼ WC's mit raumhohen Betonwänden

23

4.OG & 5.OG



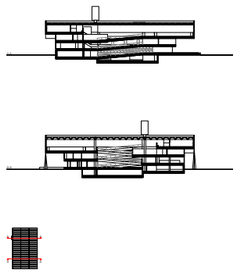
Klassenzimmer mit raumhohen Trennwänden ▲ ▼ Eischliessung

24

Schnitte & Grundrisse

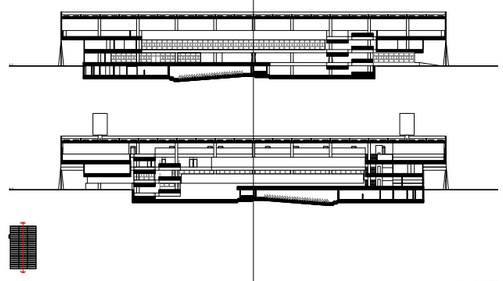
Der innere Ausdruck des Gebäudes wird durch die Gegenüberstellung der Splitlevelgeschosse sowie sorgfältig gewählte Blickbeziige dominiert.

25



Querschnitte M 1:500

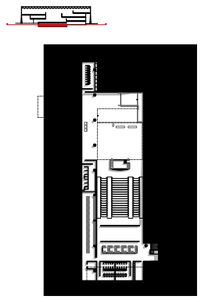
26



Längeschnitte M 1:333

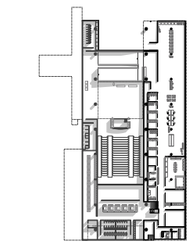
27

28



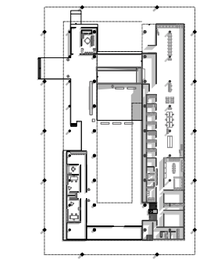
Grundriss 2 UG-Eindreich M 1:500

29



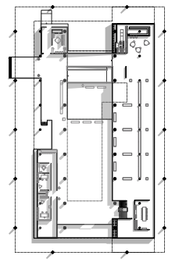
Grundriss 2 UG-1 UG M 1:500

30



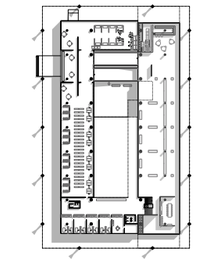
Grundriss EG-1 UG M 1:500

31



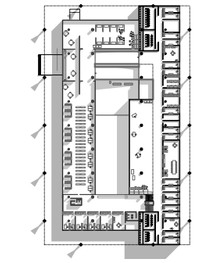
Grundriss EG-1 OG M 1:500

32



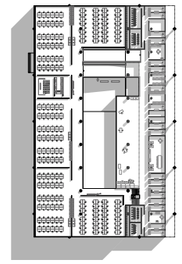
Grundriss 2 OG-1 OG M 1:500

33



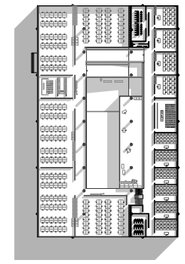
Grundriss 2 OG-3 OG M 1:500

34



Grundriss 4 OG-5 OG M 1:500

35



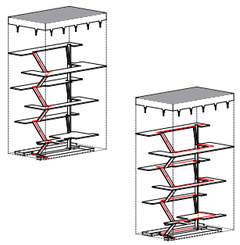
Querschnitt 4 OG-5 OG M 1:500

36

Räumliche Sequenz

Das Innere kann als eine Sequenz von Räumen und Programmen verstanden werden, welche durch die flache Rampe und den Eindrehkeuzgeschoss einfach durchlaufen werden kann.

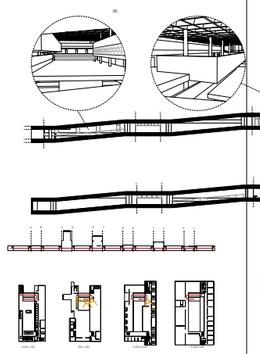
37



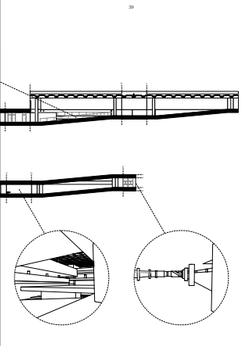
▼Weg entlang der Rampe [3.39-39] ▲

▼Weg um den Salon [5.40-47]

38

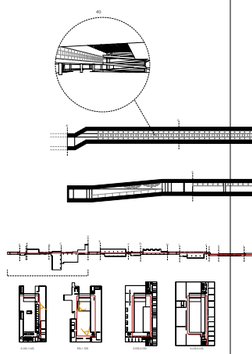


39

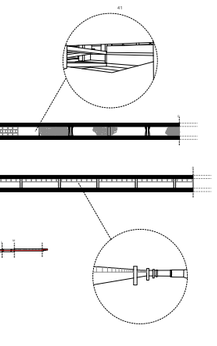


Weg-Schnitt entlang der Rampe [Vom 2 UG in 5 OG]

40

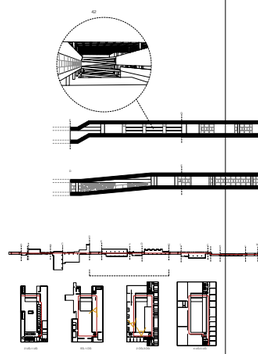


41

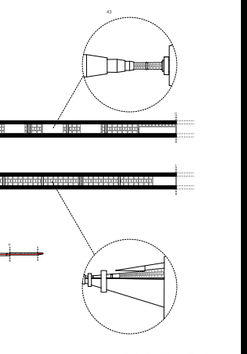


Weg-Schnitt um die innere Halle [Vom 2 UG bis EG]

42

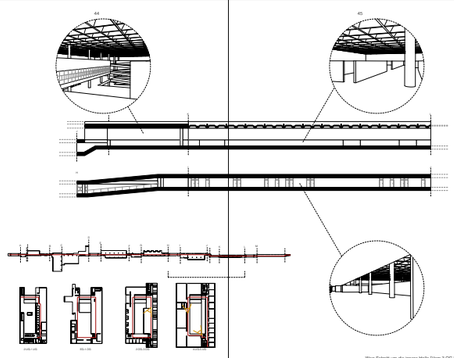


43



Weg-Schnitt um die innere Halle [Vom EG bis 2 OG]

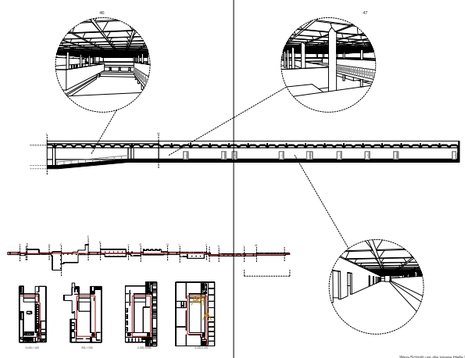
44



45

Weg-Schnitt um die innere Halle [Vom 3 OG bis 4 OG]

46



47

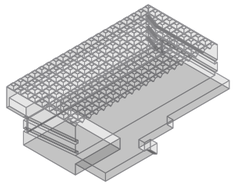
Weg-Schnitt um die innere Halle [5 OG]

48

Salon

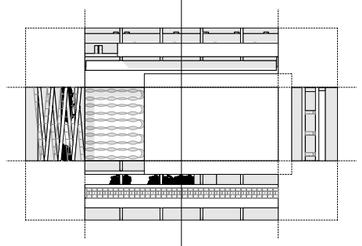
Der Salon bildet das Herzstück des Gebäudes als Zentrum des inneren Geschehens.

49



Räumliches Negativ des Salons M 1:333

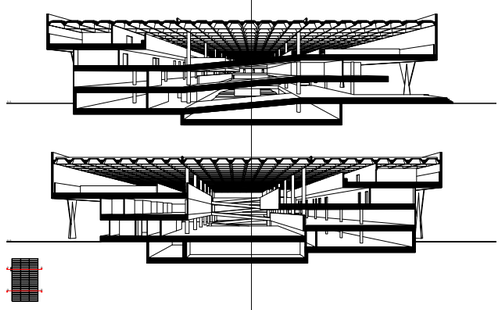
50



51

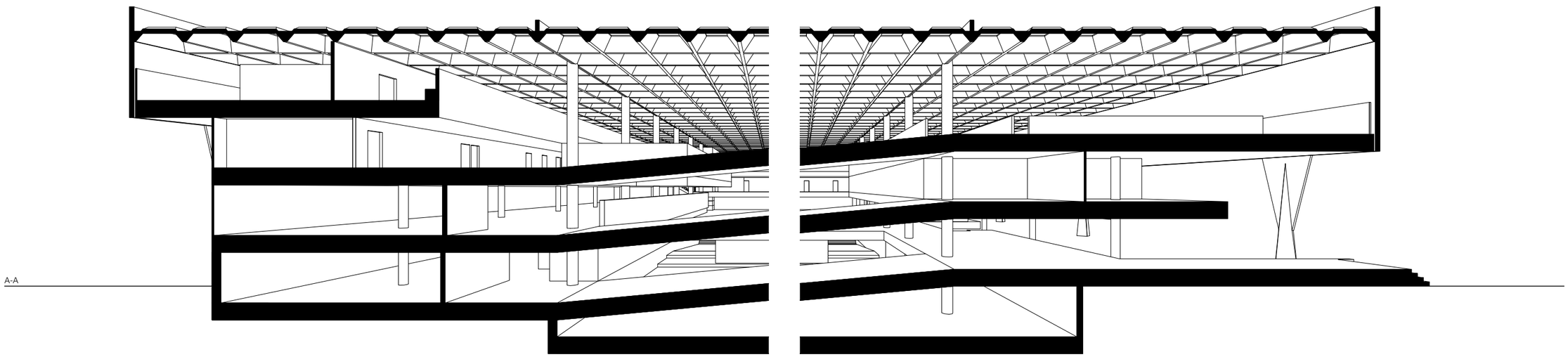
Innenansichten des Salons mit Boden M 1:333

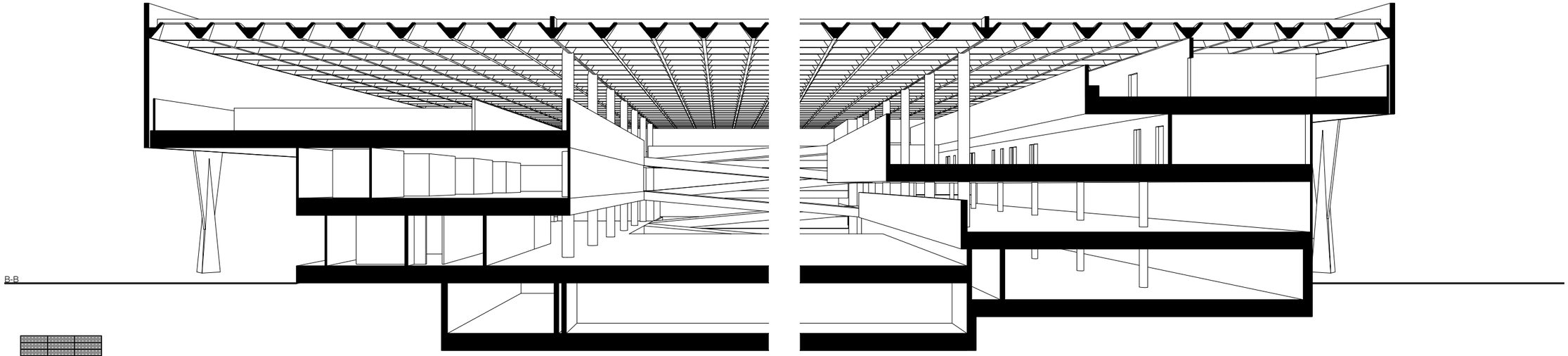
52

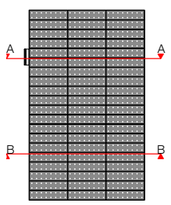


53

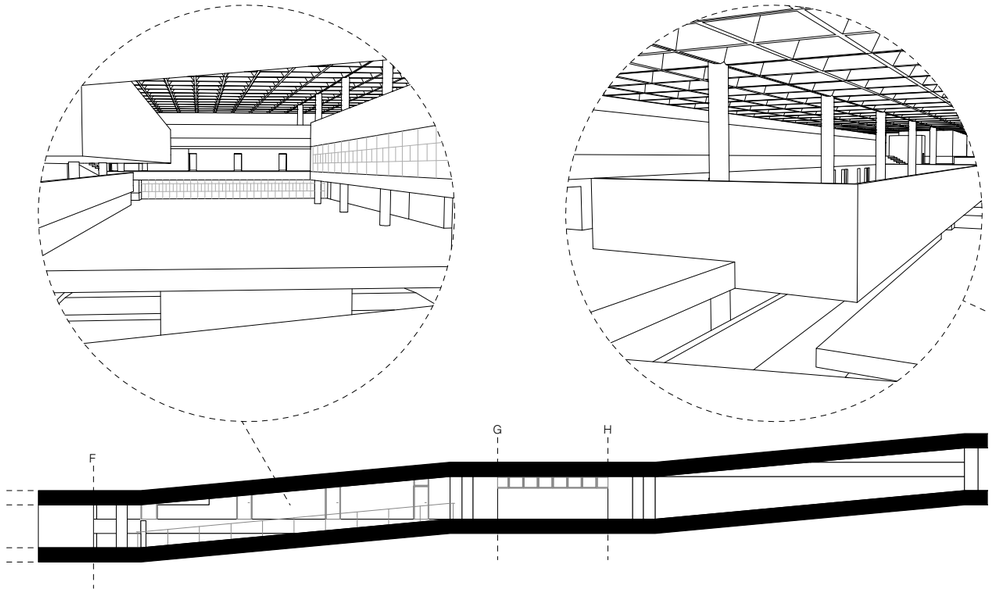
Schnittperspektiven des Salons M 1:200

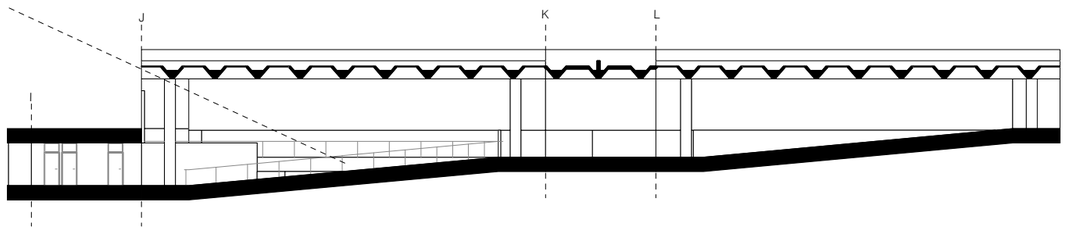


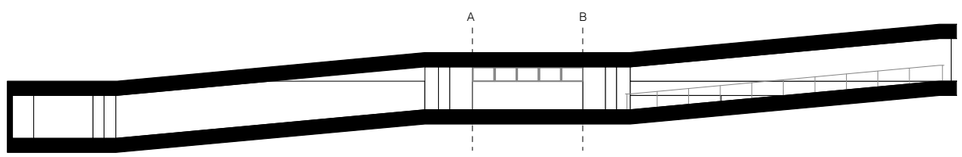


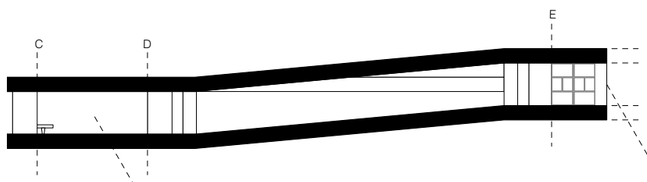


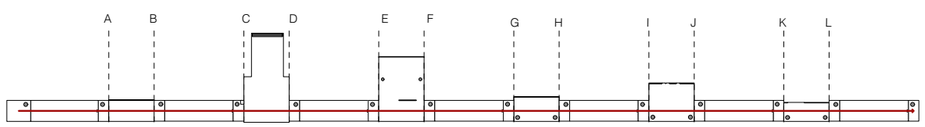
Schnittperspektiven des Salons M 1:200

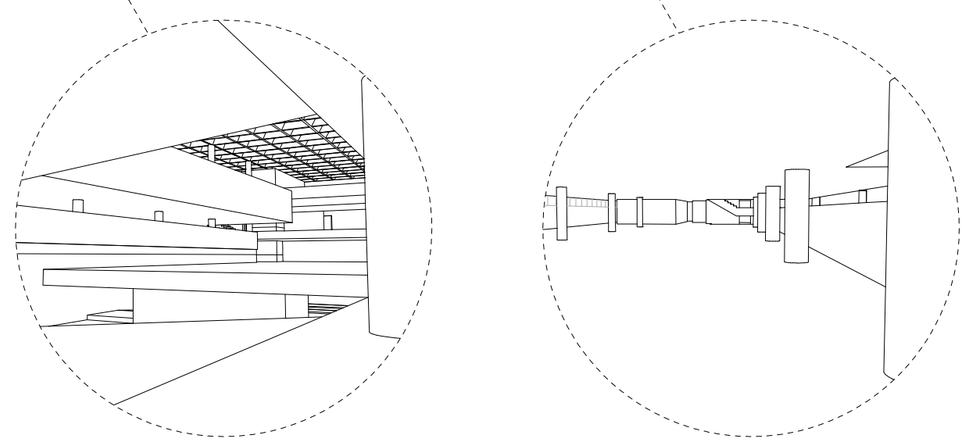


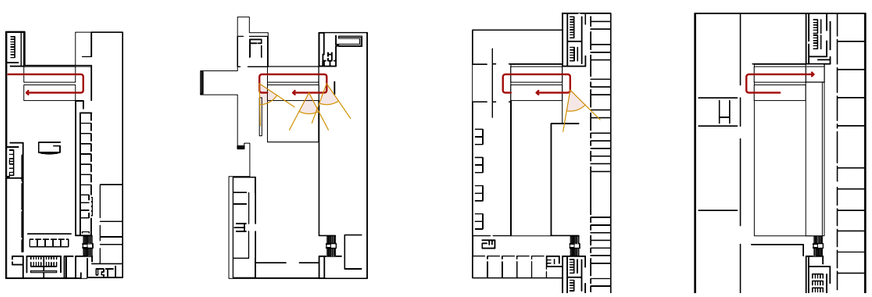












2.UG-1.UG

EG-1.OG

2.OG-3.OG

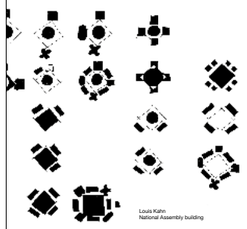
4.UG-5.UG

Weg-Schnitt entlang der Rampe [Vom 2.UG in 5.OG]

NATIONAL ASSEMBLY BUILDING OF BANGLADESH

Louis Kahn

Linquan Xu
Alan von Arx



Louis Kahn
National Assembly building

Building Analysis and Drawing
by Linquan Xu
Alan von Arx

Chair Christian Kerez
Teaching Assistent
Sauren Jost
Nigel Michelle
Crosiez Gay Nadia Ranesa

3

A Walk
Order
Set of Plans
Space of Walls
Gallery

5

A walk

A lake

Sher-e-Bangla Nagar, à Dakha, est composé d'un vaste ensemble de bâtiments organisés autour d'un lac artificiel situé à l'intérieur même de la capitale. Ces différents bâtiments, bien qu'ayant des programmes divergeant, partagent beaucoup de similarités tant dans leur formalité que leur matérialité. Les formes géométriques pures, les lignes droites qui structurent le plan et les coupes de ces constructions en brique qui se posent elles mêmes sur un socle lui dans la même matière. Au coeur de cet ensemble aux couleurs rougeâtre se dresse, les pieds dans l'eau, un grand édifice gris et blanc, grand chef d'orchestre de cette composition.

A building

L'assemblée nationale se démarque non seulement par sa bichromie mais également dans ses proportions. Bien que le bâtiment soit composé en grande partie de façades aveugles, les ouvertures qui viennent partiés percer cette continuité, permettent de deviner la superposition des étages au sein du bâtiment. Tantôt carrées, rondes ou enfin triangulaires elles coupent avec les fines bandes horizontales blanchies tissées sur le gris du béton laissé apparent. Elles brisent ponctuellement le motif qui s'enroule autour du périmètre du bâtiment en échange d'un regard sur l'intérieur.

7

A bridge

L'entrée du bâtiment n'est possible qu'en deux points qui sont les uniques moyens de passage vers cette presque-île. Ils s'opposent sur le même axe nord sud, séparés par le grand volume central qui occupe le coeur de l'édifice, de manière à ce qu'on ne puisse jamais les voir simultanément. L'entrée la plus au nord semble être la plus officielle. C'est un important volume cubique massif qui s'ouvre sur toute la hauteur en son centre. Cette unique ouverture le rend d'autant plus massif qu'elle ne s'élève qu'une fraction de son intérêt que du reste extérieur. Il est peut d'arriver à imaginer ce qui se déroule à l'intérieur. On y accède par une vaste place tout en brique qui mène vers un grand escalier, lui même percé au milieu de son ascension. A l'issu de cette longue série de marches, l'ouverture qui séparait le volume en deux parties est devenue un long couloir qui invite les citoyens à pénétrer le bâtiment qui forme désormais un seul tout.

A door

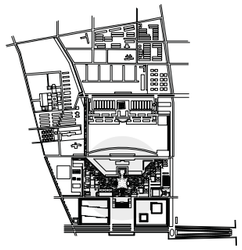
La porte donne sur un espace tout en hauteur qui offre en spectacle quatre murs qui monte vertigineusement pour ne s'arrêter que peu avant d'atteindre le toit. Ces derniers sont chacun percés deux fois par de grandes ouvertures circulaires qui révèlent de grands escaliers. En progressant dans le hall, on se rend compte que d'autres murs semblables succèdent la première épaisseur. L'espace devient une succession de couche qui se superposent dans la profondeur.

9

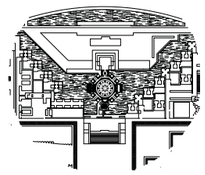
A street

Ce sont plusieurs bâtiments qui remplissent chacun des programmes et des ambitions spatiales différentes mais qui ont pour facteur commun de s'assembler autour d'un bâtiment central qui est leur raison même d'exister. Entre ces bâtiments s'est formé un espace à part entière qui ressemble partiés à celui d'une rue entourées de part et autres de bâtiments de plusieurs étages. C'est une rue qui s'immuale autour de la salle du parlement en offrant l'accès à la fois à la fois au lac et à l'entrée principale du bâtiment qui s'ouvre au sud. La lumière qui pénètre par ces ouvertures glisse d'abord le long des hautes façades aleintour avant de venir se poser à nos pieds en de nombreuses lignes claires. La nuit, ce sont les lampadaires installés à distance fixe tout le long de cette rue qui prennent le relai.

11

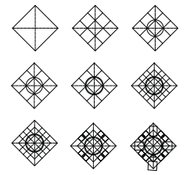


Master plan



Zoom in

A Walk
Order
Set of Plans
Space of Walls
Gallery



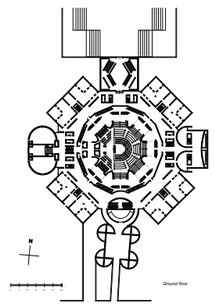
Decomposition of the plan

Order

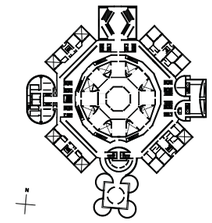
Kahn acknowledges the "Center" in this building; he places the assembly chamber in the center for the first time in his works and has it surrounded by other functions: office, restaurant and mosque etc.

As William J. R. Curtis describes, the Assembly at Dacca was placed on a vast brick platform surrounded by water, and was constructed in naked grey concrete with an overlay of thin white marble lines.

13



Ground floor



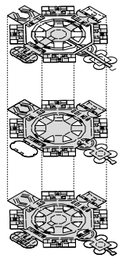
First floor

15

Second floor

First floor

Ground floor



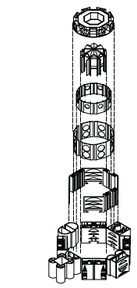
Circulation

Space of Walls

Louis I Kahn has 13 built works in his career; they can, according to Hideaki Hariguchi, be categorized into four phases. National Assembly in Dhaka characterizes the third phase: space of walls. Unlike the wall of modernism, Kahn's wall is heavy. Clearly. He utilizes the walls to separate and organize the space. What the modernists defy is revisited by Kahn.

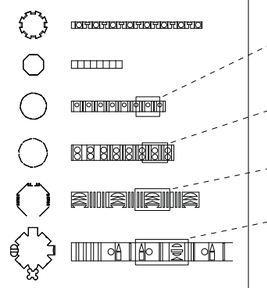
Referring to the Salk Institute, on the facade of the Assembly, Kahn introduces double layers of wall to create physical depth and to partially regulate the sunlight. The windows distance themselves from the outer-layer. Preceding Mario Botta and Carlo Scarpa, Kahn also adds Triangle and circle shaped openings to the outer layer.

17

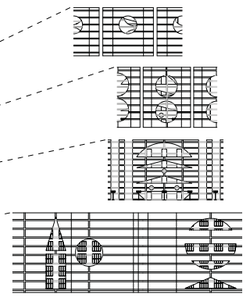


Exploded view

19

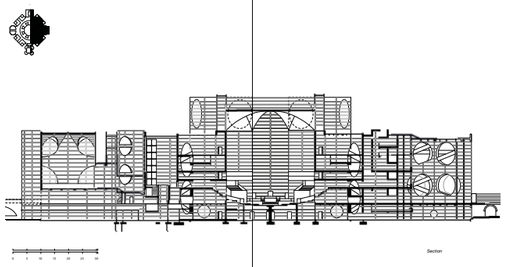


Unrolled layers



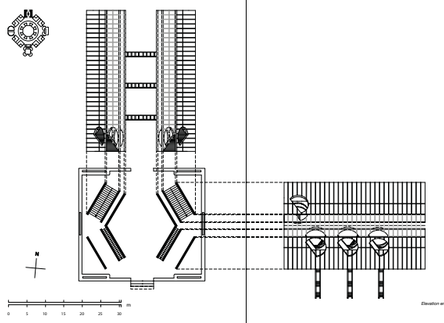
Zooms

21



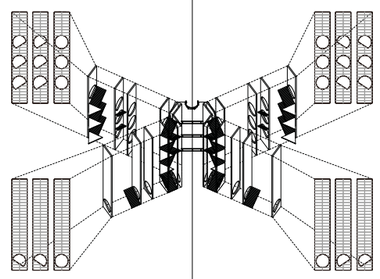
Section

23



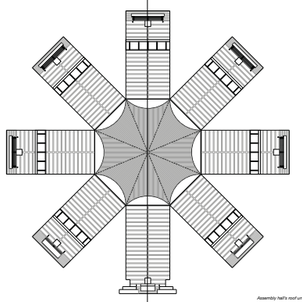
Elevation entry hall

25



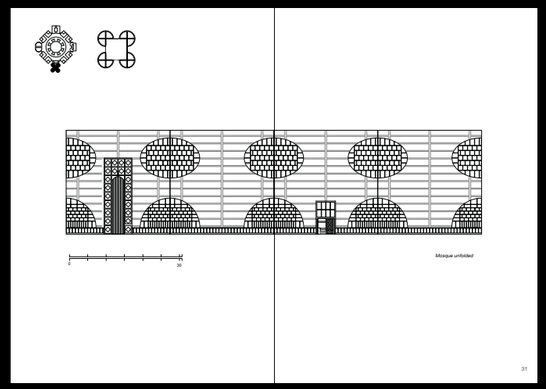
Collection of walls

27

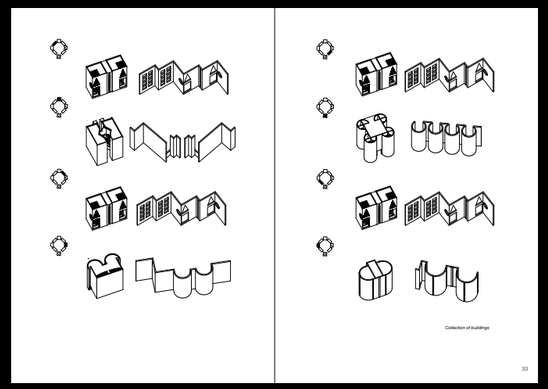


Assembly hall's roof unfolded

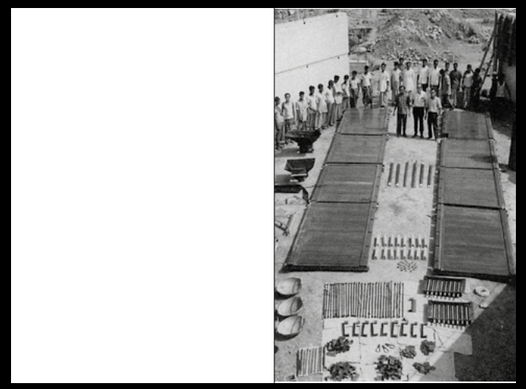
29

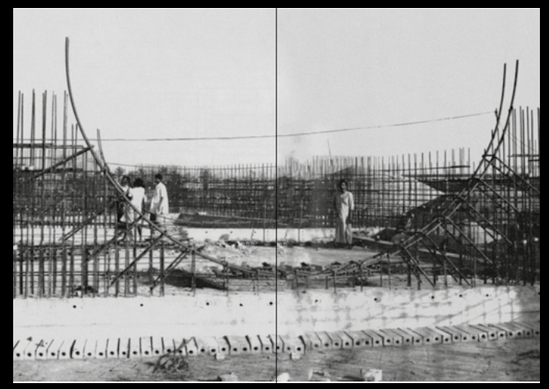


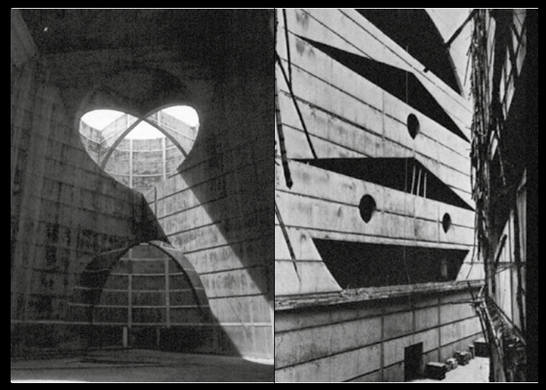
Mosque unfolded

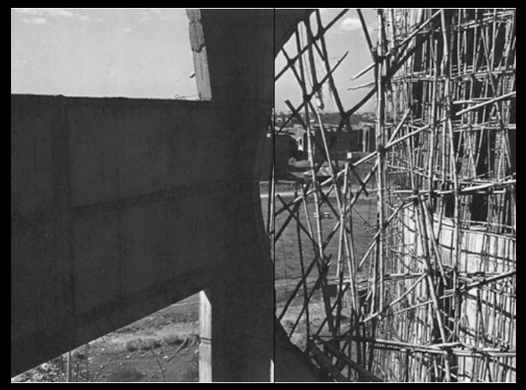


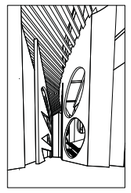
Collection of buildings











References

Sharad Jhaveri, Louis I. Kahn: Complete Works 1935-1974, Birkhauser, Enlarged 2nd edition, 1987.

William J. R. Curtis, Modern Architecture Since 1900, Phaidon Press, 3 Revised edition, 1996.

Klaus-Peter Gast, Louis I. Kahn: The Idea of Order, Birkhauser, 1 edition, 2001.

Online Resource

https://3dwarehouse.sketchup.com/model/c9cc1d2f3368fd82109fd24b51f4e0c/National-Assembly-Building-of-Bangladesh

https://3dwarehouse.sketchup.com/model/7f42f316-44b6-4bd3-b403ffb8ec2678/Louis-Kahns-National-Assembly-Hall-Dhaka-Bangladesh

https://www.bibliocad.com/en/library/piano-louis-kahn_74386/

https://www.archiweb.cz/en/b/budova-narodniho-shromazdeni-jatiyo-sangshad-bhaban

https://archnet.org/sites/70/publications/153?5-36 原口秀昭(Hideaki Haraguchi), ルイス・カーンの空間構成 ―アクシャ「9倍化」の理論の建築論から、彰国社, 1998.

□5–39 Robert McCarter, Louis I Kahn, Phaidon Press, 2005.

J.W. SCHAFFER HOUSE
John Lautner

Fabian Heer
Noah Richner

THE J. W. SCHAFFER HOUSE, 1949
BY JOHN LAUTNER

an analysis by

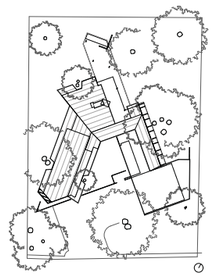
Fabian Heer
Noah Richner

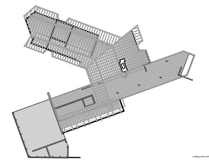
Ideas on floor plan, construction and surface

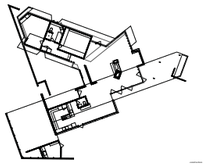
This study needs of a center is situated in Glendale, Los Angeles. Nestled into the house from the street. A second driveway leads you directly from the street to the flat ended carport. The facade facing the street is dominated by horizontal elements with various characteristics. The volume is confined by a horizontal layered Gunite. Some brick wooden element is based on two Gunite pieces, which are stacked or a shaped form. Between each i there is a gap from approximately half an element. The entrance door is made of a wooden panel with a glass window in the middle. The main house and the carport are divided by a massive brick wall, which, together with the fence, enforces the visitor to the inside of the house. After this threshold the visitor enters a small courtyard with a pool and a wooden pergola on the right side. The pergola is by passing the out of side concrete, which are placed on a 90 degrees angle to a wall out of vertically adjoined wooden planks. The low ceiling is formed by wooden planks as well, but inverted to a 30 degrees angle to the wall. At the end of the inside this inverted ceiling is the entrance door, which is curved and made out of a massive wooden panel. The gap between the door and the flanking walls is glazed, so that the light can enter the hallway. The hallway is a long, narrow space, which leads the visitor to the processed along the core from the outside room through the house into the garden. The pavement is only pre-casted with glazing, which goes to the ground, and leaving glazed wooden doors. The room gets light from the ceiling, which is made out of a wooden grid, which is glazed. The ceiling is also used as the entrance to the massive chimney out of brick. Behind this another room with a sofa is in the extension of the fireplace opening. This niche is closed by a overlapping wooden wall on the right side and bordered on the left side. The front part as this left side is covered in plywood, the upper part is glazed. Through that glass one can see into the garden and the connection with the rest, which ended in the hallway. The hallway is also connected to the bedroom wing and the kitchen wing, which are located between. These vertical wooden planks are aligned to the ritchen of the office roof. The dimensions receive another bend, which is formed to a rectangular angle. At this point, a change of material happens. The wooden planks are replaced by a brick wall, which is also formed to a rectangular angle. The living/dining wing is underlined by groups of windows out of glass and bands around the chimney. Along this wall, the floor is filled with gravel and combined by a small brick wall which is holding the glass. The terrace outside is slightly higher than on the inside. Through the wall and the height difference, the close connection from the house to its surrounding and the Gunite from inside and outside is an important feature. The ceiling is made out of a wooden grid, which is also used as a light source. Gravel and bands in a 30 degrees angle to the closed wall of the sleeping area, which is accompanied by a light band on the roof. The glass wall is divided by a glazed wooden door which connects the living area with an outside terrace. The front opens towards a 30 to mirroring piece of low zones to the house with a gray concrete paving the and gravel filling along the wall.

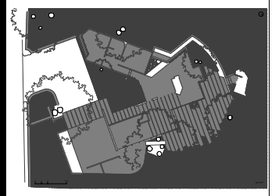
The sleeping area is a rectangular room with a low ceiling. Inverted wooden bandsles is placed. This construction is more high, defines the space and at the same time is creating a passage which is leading to the sleeping area. The sleeping area is two steps higher than the rest of the house. Another change of material is given by the wooden panels which are placed on the ceiling and the wooden floor. Between by an addition of wooden planks similar to the ceilings and roof and because a wall. The openings become windows with frames in a classical sense. The sleeping room is the area of the overdue dimensions and from the house of closed wall with openings of the sleeping area with to large glass front and a base out of bricks in the south side, which is similar to the one described for the living area. The bricks are placed in a 30 degrees angle to the wooden planks of the ceiling. The ceiling is also used in the sleeping rooms too, as well as the niche in the living area, not both with the addition of planks but covered with large frames plywood panels on the inside.

The office is located in the south-east of the house. It is formed by frame with vertical wooden planks and glazed gaps. Also there frameis, the gaps cross on 90 degrees angle to the edge of the roof where a 90 degrees glazed corner is formed. In this threshold space of the glazed corner, the floor is filled with gravel coming from the courtyard. Following the bend in the south, one can see once again the brick wall shaping the entrance of the house. Looking closer at the spiral appearance, one realizes that the wall is made out of a brick wall, which is also used as a light source. Behind the wall, the entrance and location part of the place of sauna and hidden rooms. Back at the entrance the space opens to the dining and kitchen area. The theme of the horizontally marked interior. Two horizontal planes are used, one ceiling and one floor, which are connected by a wall. Overlap the inner high horizontal planes and, underlying, a low ceiling for a light strip or an opening was used. Underlying the roof once again make the strong connection from the house with its surrounding worlds.

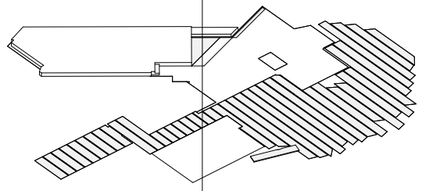


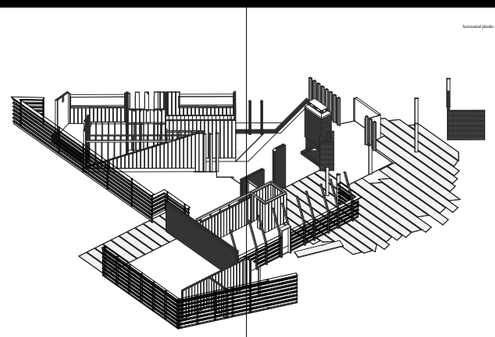


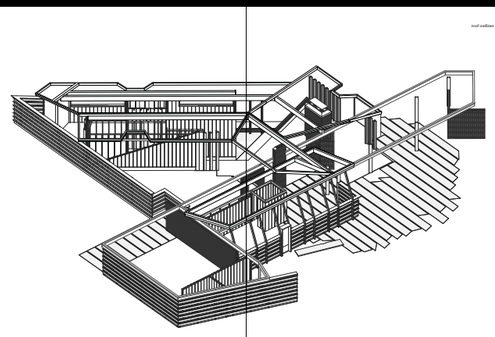


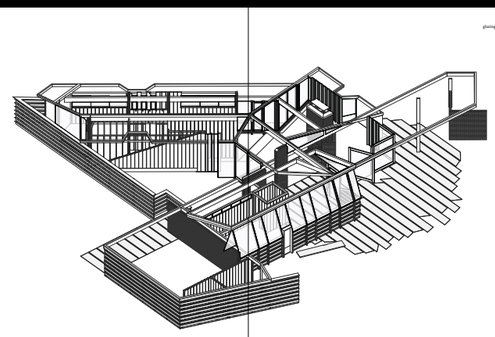


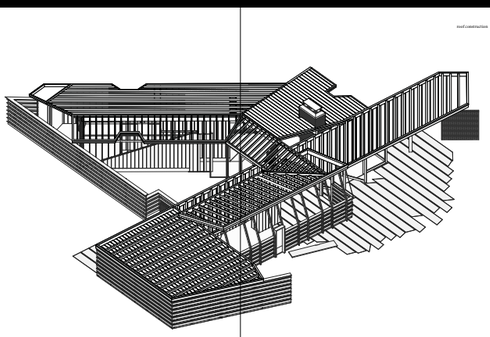
1st chapter
disassembly

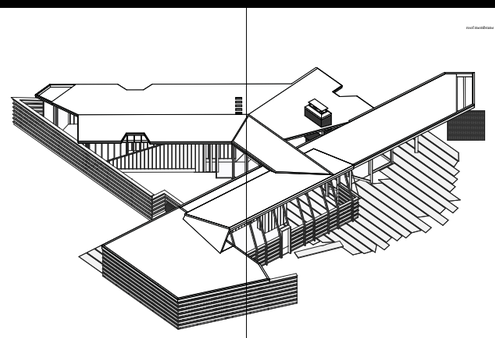


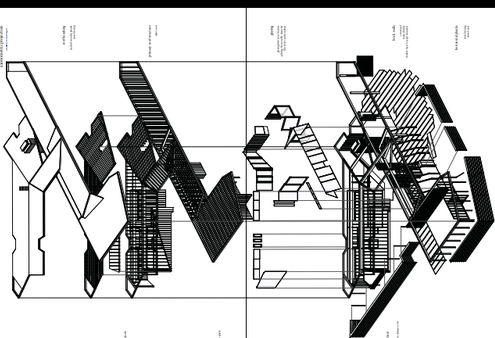




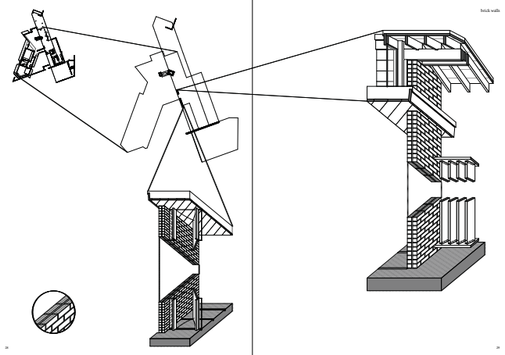


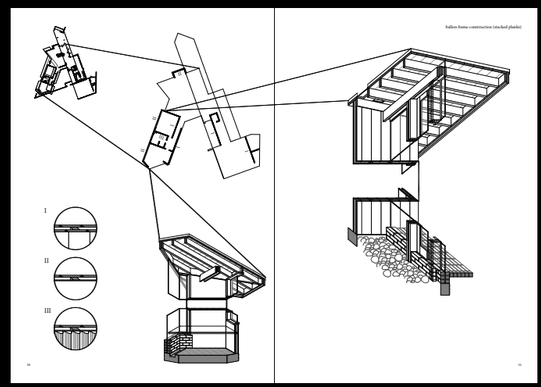


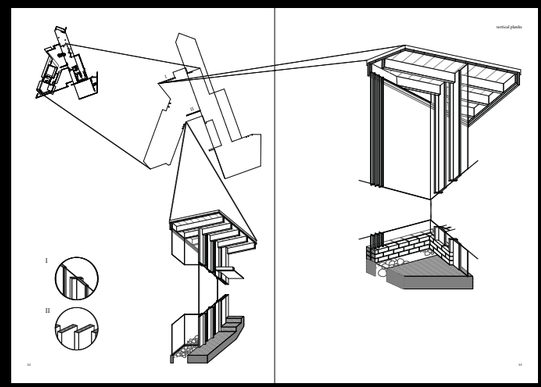


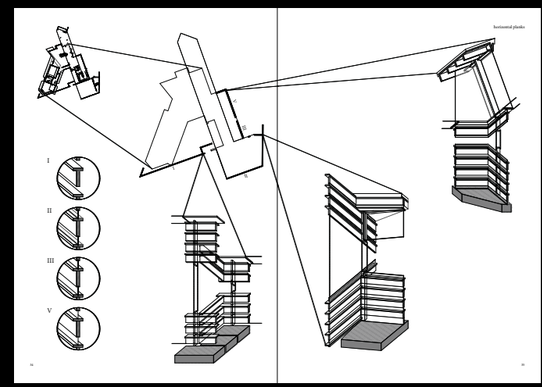


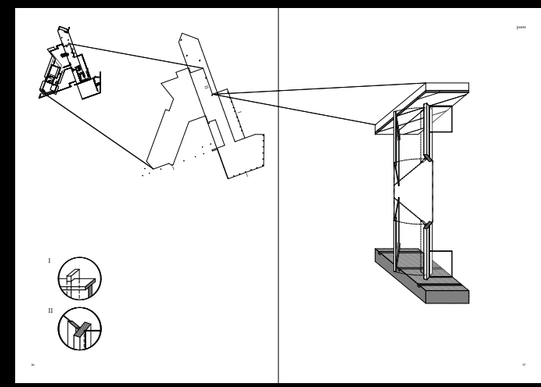
2st chapter
assembly



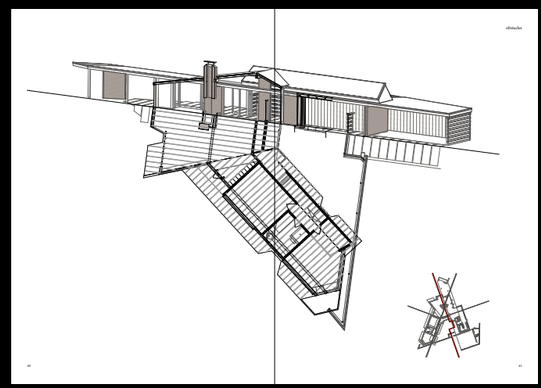


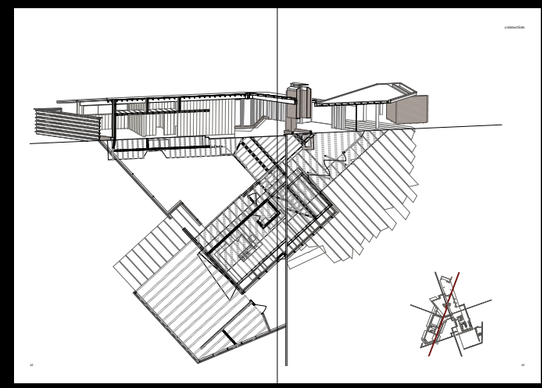


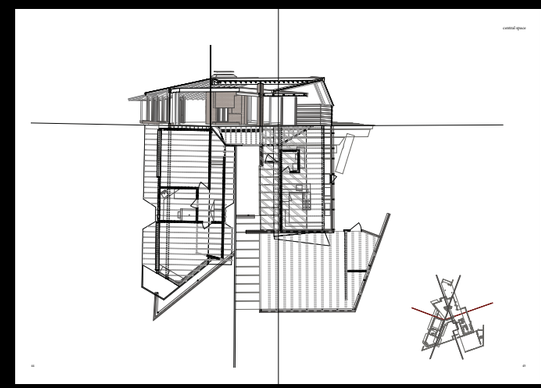


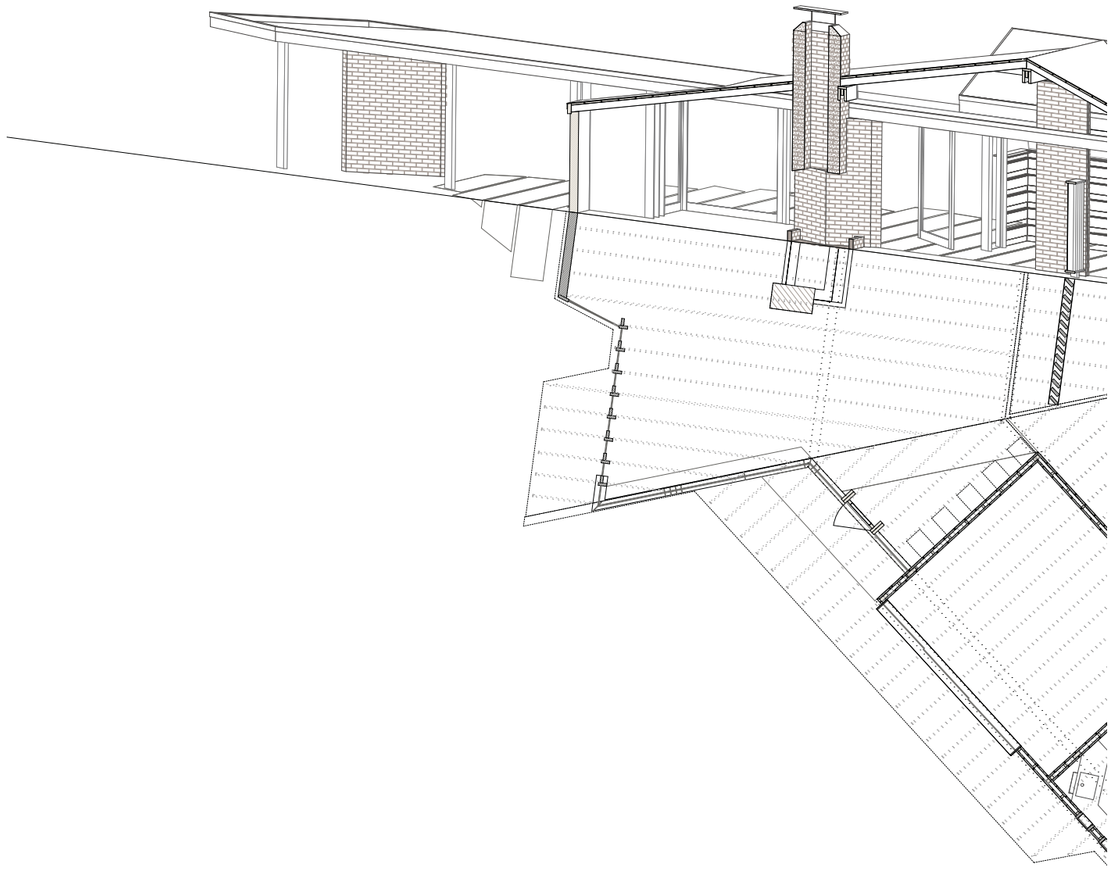


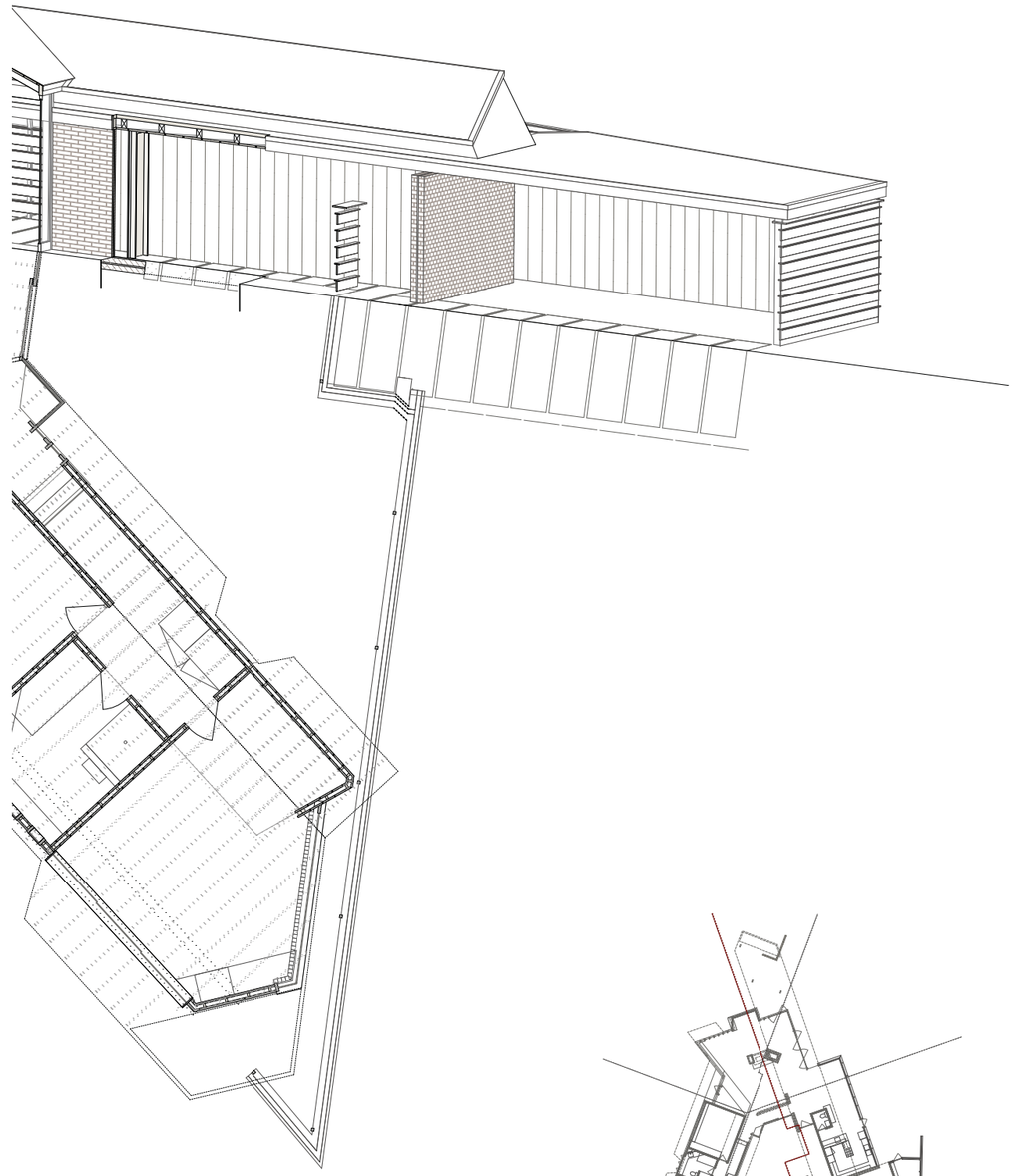
3rd chapter
vistas and layers

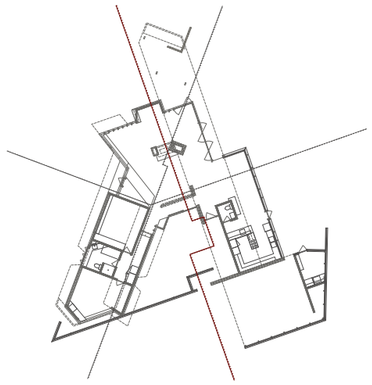












axonometric projection

ARCHICAD STUDENTENVER

roof membrane

red surface

roof boarding

stacked wooden planks
cross bracing

wooden envelope

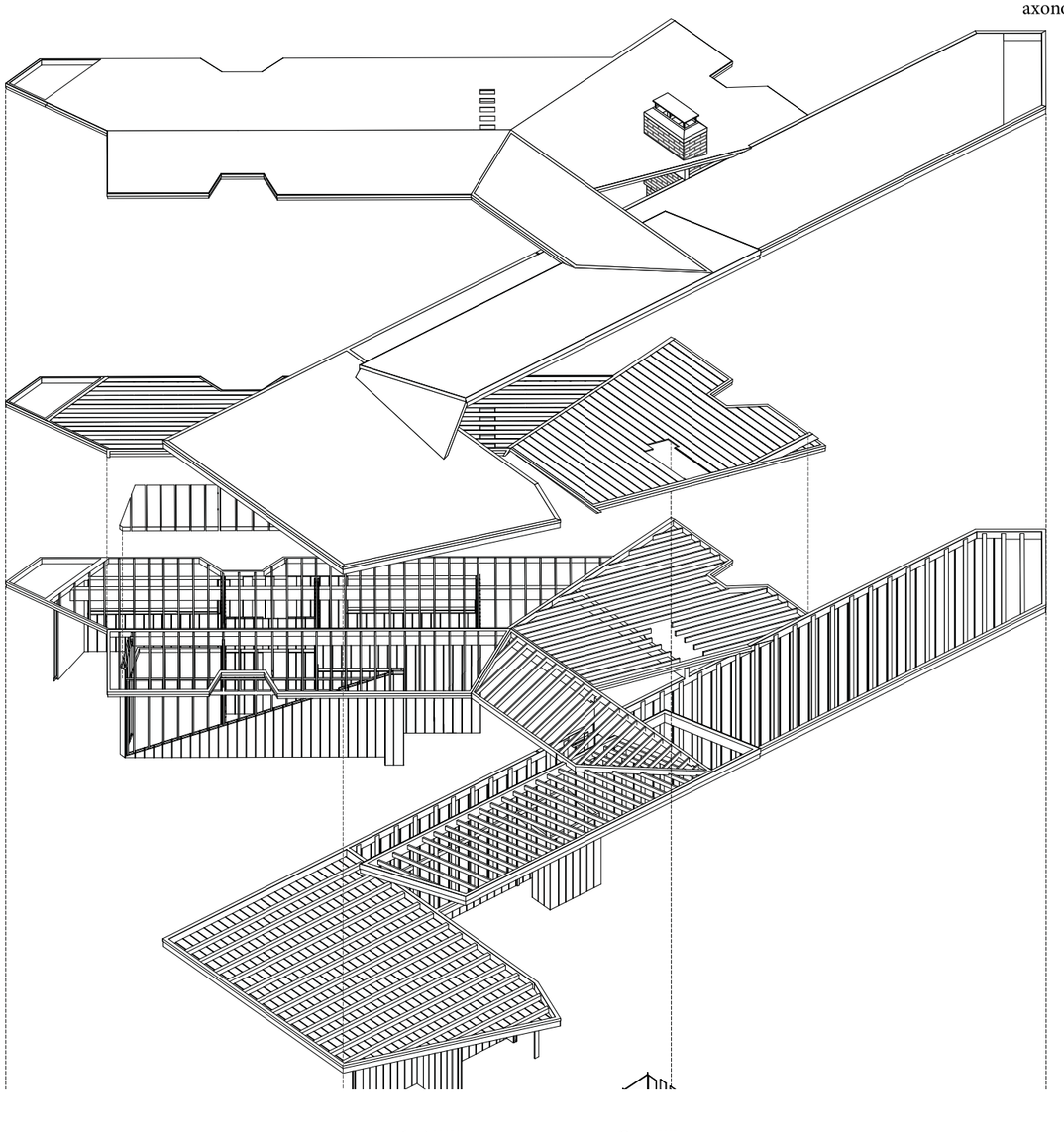
vertically stacked wooden planks
cross bracing

primary roof structure

rafter roof

bearer

wooden beams in three parts



glazing

glazing between structure
glazing for movable elements
like doors and windows

ballon framing structure

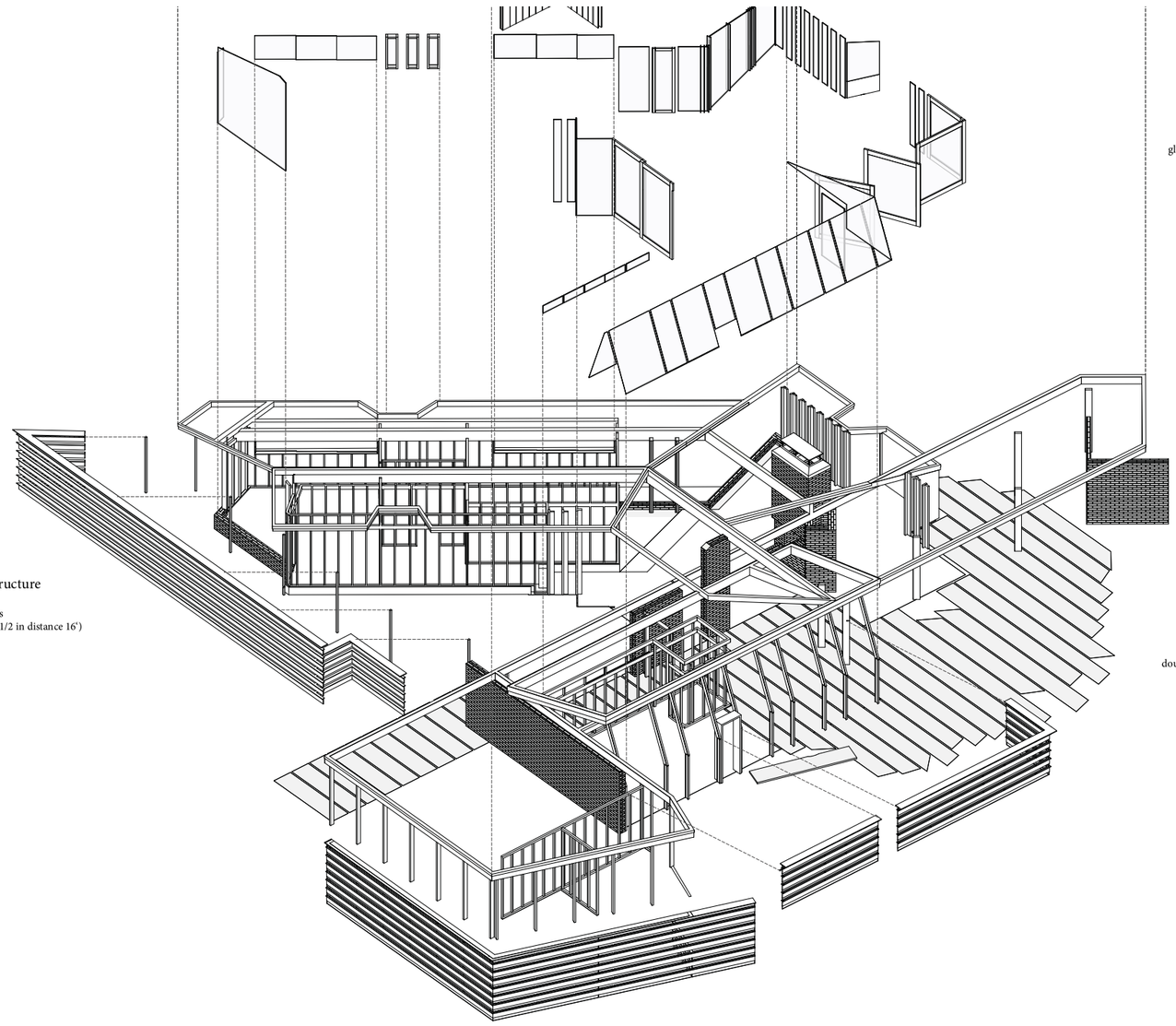
construction hypothesis
stud pattern (1' 1/2 x 2' 1/2 in distance 16')

brick walls

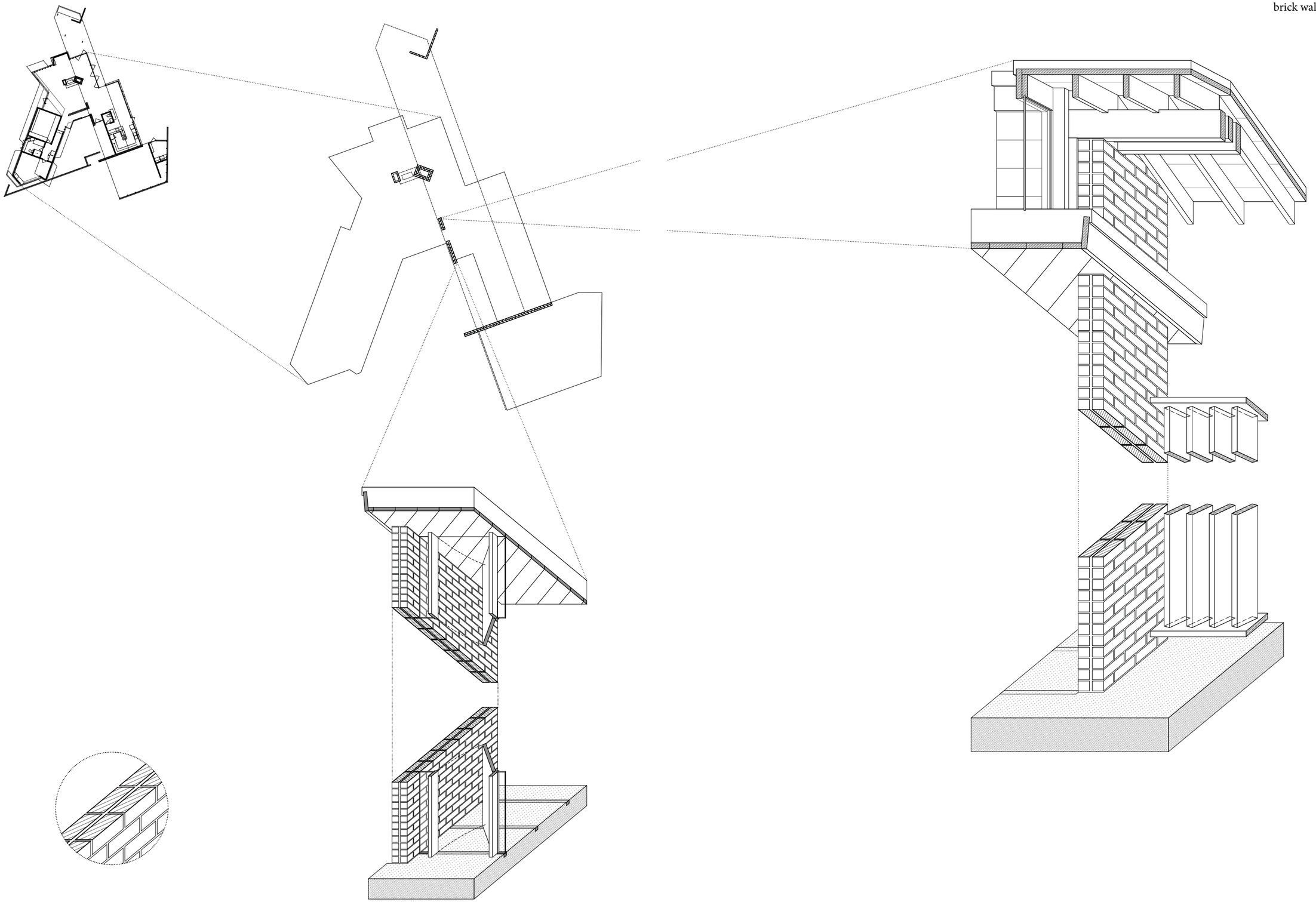
structural
room divider
double-layer (except chimney)

horizontal planks

cross bracing
visual cover



brick walls



HOUSE IN UEHARA, HOUSE IN WHITE & TANIKAWA HOUSE

Kazuo Schinohara

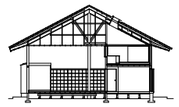
Wenda Zheng
Yuning Song

Kazuo Shinohara
3 Houses

Contents

House in White 4
Tanikawa Residence 23
House in Uehara 37

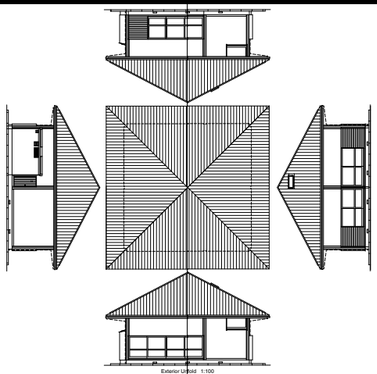
House in White



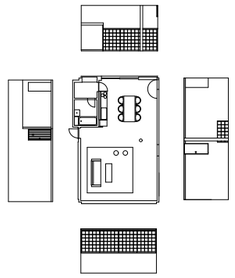
Section 1:100 5

Ground Floor 1:100 6

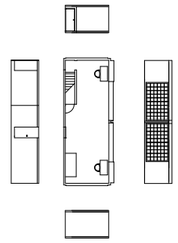
Roof Plan 1:100 7



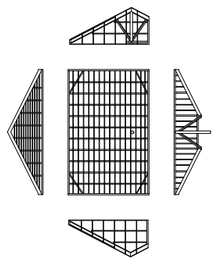
Exterior Unfold 1:100 8 9



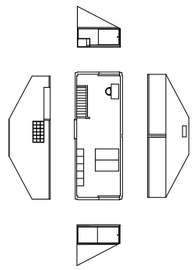
Ground Floor Interior Unfold 1:100 10



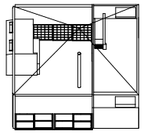
11



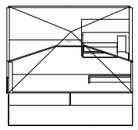
First Floor Interior Unfold 1:100 12



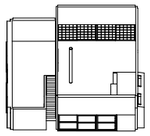
13



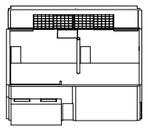
Isometric 1:100 14



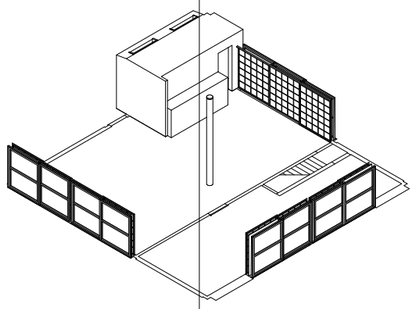
Isometric 1:100 15



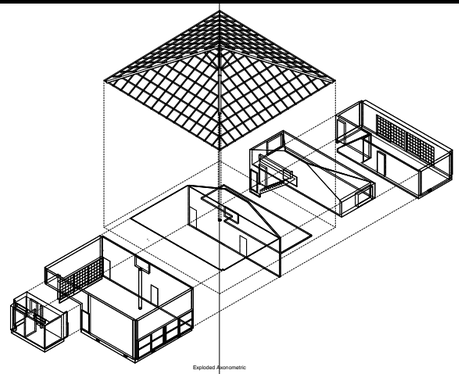
Isometric 1:100 16



Isometric 1:100 17



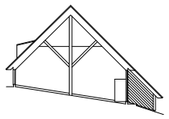
18 19



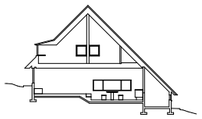
Exploded Axonometric 20 21

Tanikawa Residence

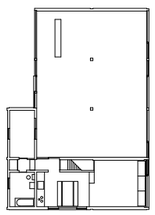
22



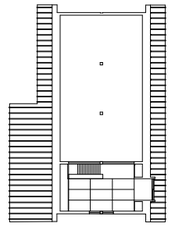
Section 1:100 24



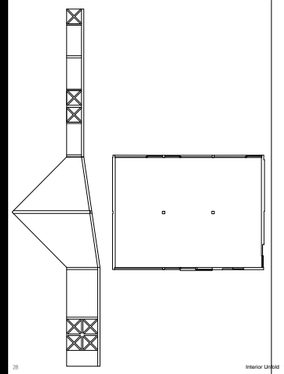
Section 1:100 25



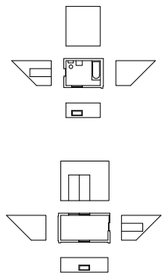
Ground Floor 1:100 26



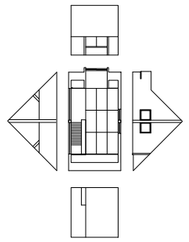
First Floor 1:100 27



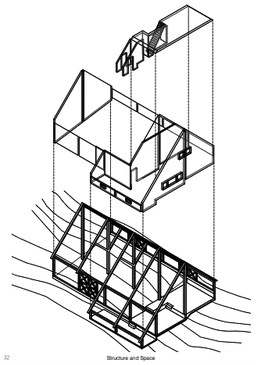
Interior Unfold 1:100 28 29



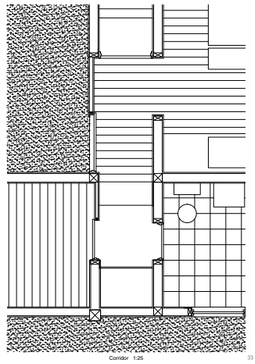
30 Interior Unfold 1:100



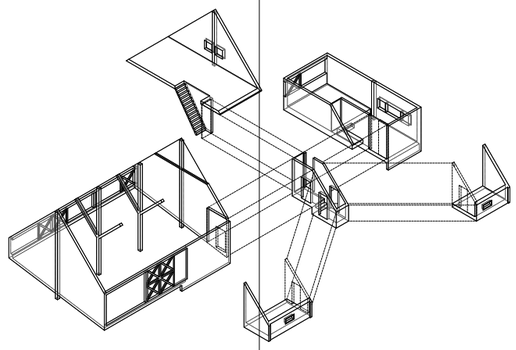
31



32 Structure and Space



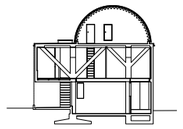
Corridor 1:25 33



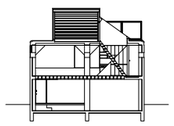
34 Corridor Connections 35

36

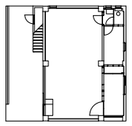
House in Uehara



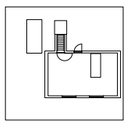
38 Section 1:100



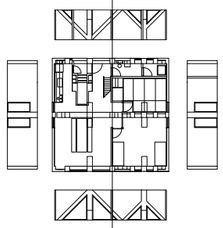
Section 1:100 39



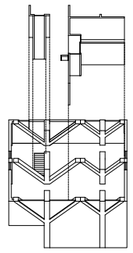
40 Ground Floor 1:100



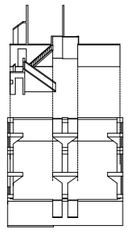
Second Floor 1:100 41



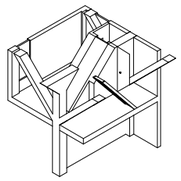
42 Second Floor and Interior Unfold 1:100 43



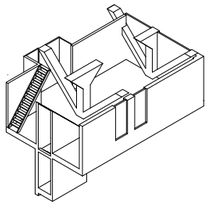
44 Isometric 1:100



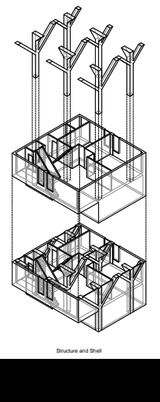
Isometric 1:100 45



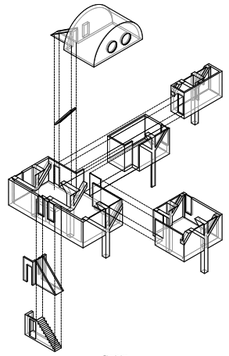
46 Structure and Space



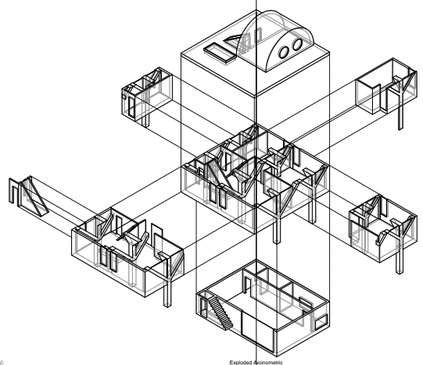
Structure and Space 47



48 Structure and Shell

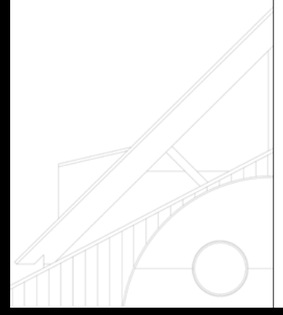


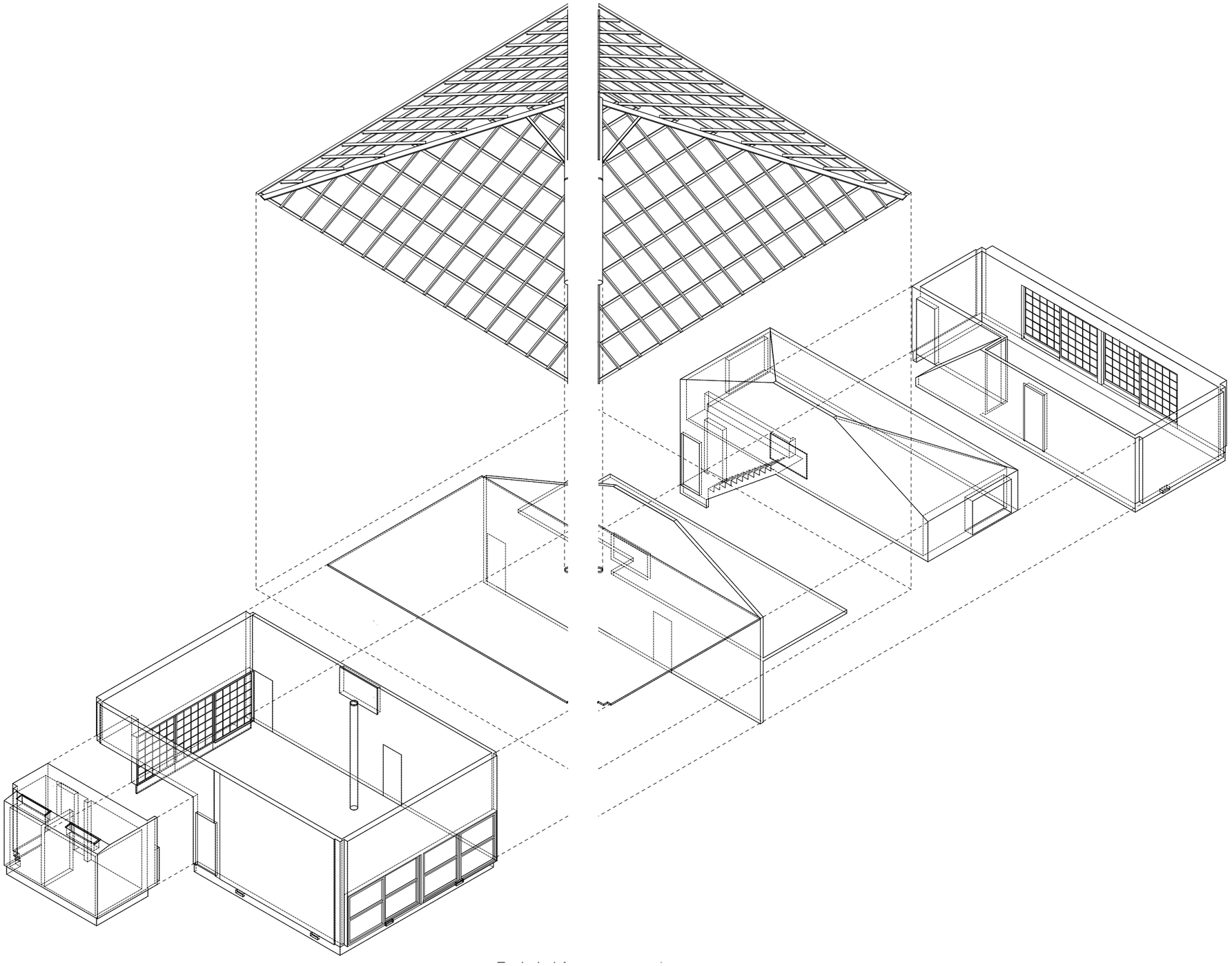
Circulation 49

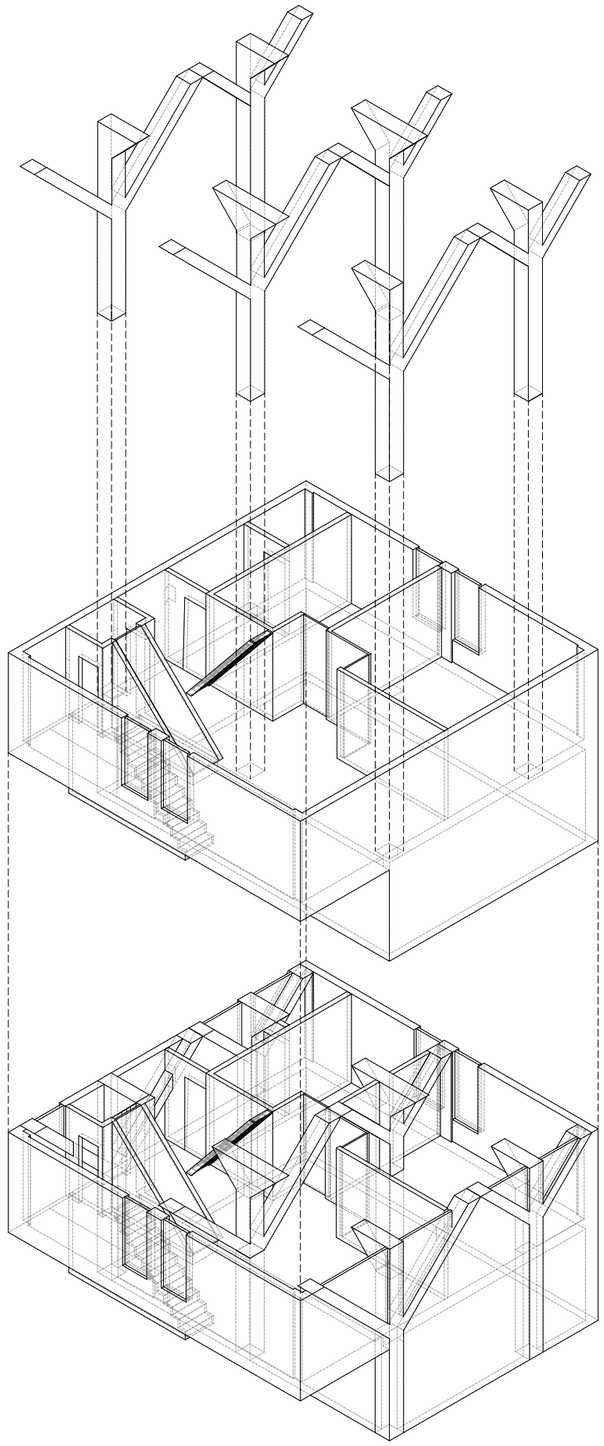


50 Exploded Axonometric 51

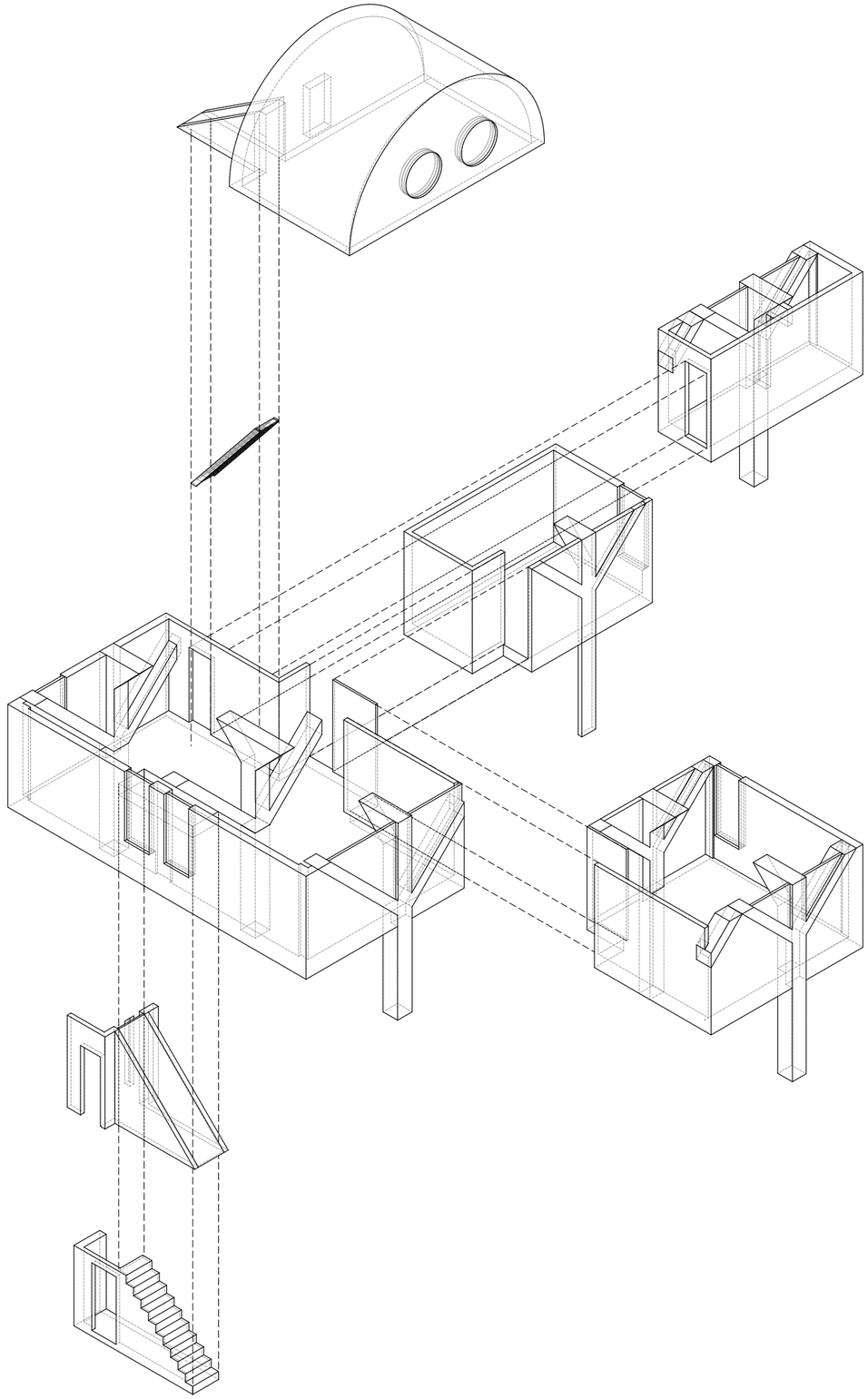
Wenda Zheng
Yuning Song







Structure and Shell



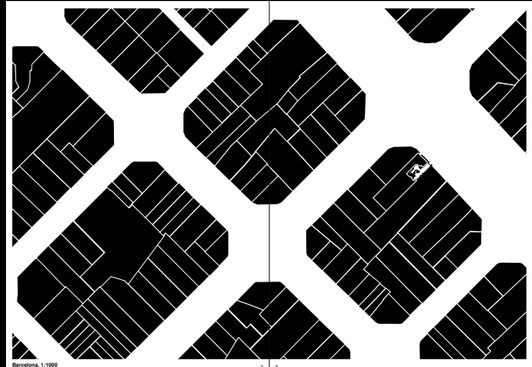
Circulation

CASA BATLLÓ
Antoni Gaudi

Maurizio Mätzler
Leon Dähler

Antoni Gaudi - Casa Batlló
Barcelona, 1906

Maurizio Maetzler
Leon Daehler



Barcelona, 1:1000 2 3

In the middle of Barcelona's city grid, on the main shopping street, lies Antoni Gaudi's Casa Batlló. It was finished in 1906 as a refurbishment of an 1877 building designed by Gaudi's professor, Emilio Sala Cortés. The former five storey building was transformed into the site of many spatially unique and fascinating spaces.

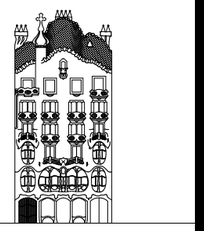
Gaudi was especially focused on three main components of the building. These being the apartment of the family Batlló on the first storey, the newly added sixth floor and roof, and two lightwells with a staircase in their midst. This booklet and accompanying text discusses said spaces in more detail and depth.

The most striking aspect of the first floor is the seemingly random and organic way both ceiling and walls are formulated. Most of the time there is no distinction between ceiling and wall, as the former bends down to the latter at ends and the other begins. This fact drives the view of the visitor upwards, the lack of clear edges making it difficult to accurately ascertain the size of these spaces. The thresholds (or perhaps anti-thresholds) created via these internionally formulated wall segments are very precise. With both their proportions and their articulation towards the conjoining room, they define the relationship between the spaces. More precisely, they either close up the spatial configuration, or connect it with the following room. These shapes also guide the movement through the apartment, making some entries appear more welcoming than others, there is a clear hierarchy between different doors and thresholds.

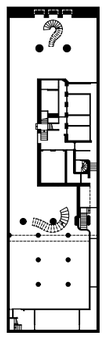
What one does not notice at first glance is the wooden floor, which is totally detached from the other architectural elements. It seems to have no borders. Here, there is no threshold. Unimpeded by any door or wall, it runs through the first floor as a separate element, guiding the spectators' view to the wall-ceiling combination, which only starts to tilt and connect above door heights.

For the addition of the sixth floor and the new roof, Gaudi choose the catenary arch as the main spatial as well as load-bearing element. These appear in multiple different forms and sizes. What they have in common is the plaster and white paint in which they are covered. This formulated skin creates the impression of aesthetic unity. The play of light and shadow is enforced by the space in between the arch and the ceiling, depending on where one is in the room, the spaces appear as two different entities, looking at the shape of the vaults, or as one, looking above he read from underneath. As soon as one knows how the roof looks from the outside, and is aware of the well-known metaphor of the dragon's belly lying on the roof which is used to describe its shape, one has the impression of being in the middle of said dragon's ribs. Therefore, these arches are not only a structural element, but can almost be read as an ornament, being varied among the whole floor, forming a cabinet at one place, a bench for sitting at the other, and so forth.

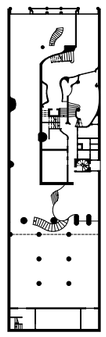
The third and last space of interest is the staircase with its surrounding lightwells. In tandem these features connect the whole house, while making sure that the inhabitants of the apartment, the tenants and the visitors find themselves in a highly dense space, that then opens out over their heads. This horizontally turning into vertically encourages movement through the space. The curved corners and the ceramic tiles in various shades of blue paradoxically appear at the same time soft like something liquid, and yet hard thanks to their shiny surface. They are laid in a darker tone at the top to make the light even throughout the room. To these same ends, the windows become progressively smaller, the higher one goes. It is formulated almost like an interior facade, with windows, tiles and balconies. Those elements on the one hand separate the stairwell from the rest of the building, and on the other hand allow a variety of visual references, providing an ironic visual harmony.



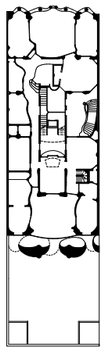
4 5 **elevation, 1:200**



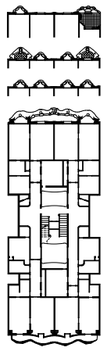
basement, 1:200 6



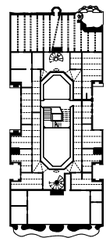
7 **ground floor, 1:200**



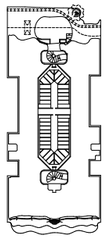
piano nobile, 1:200 8



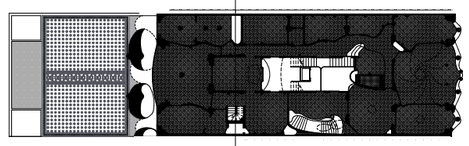
9 **standard floor, 1:200**



attic, 1:200 10

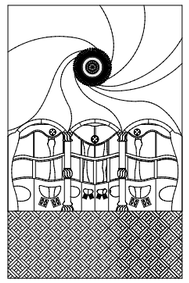


11 **roof, 1:100**

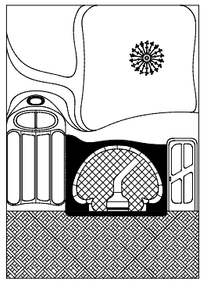


the owner´s apartment 12

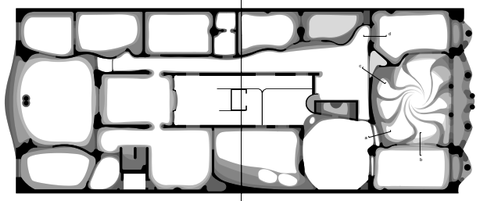
13 **piano nobile, 1:150**



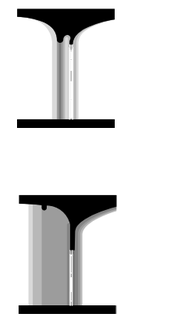
salon 14



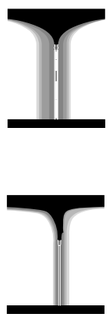
15 **waiting room**



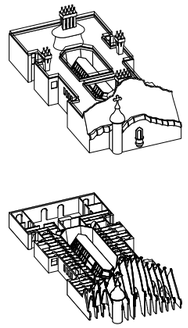
tomography 16 17



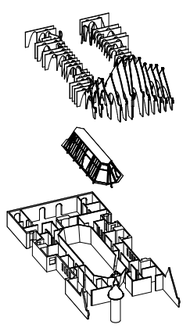
thresholds, 1:50 18



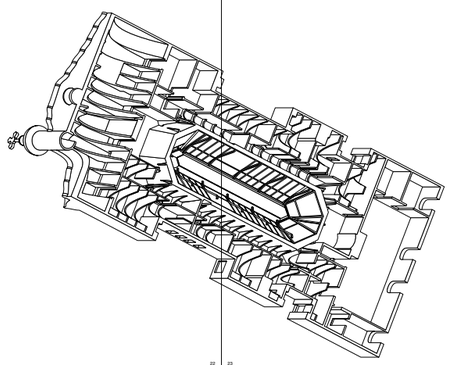
19



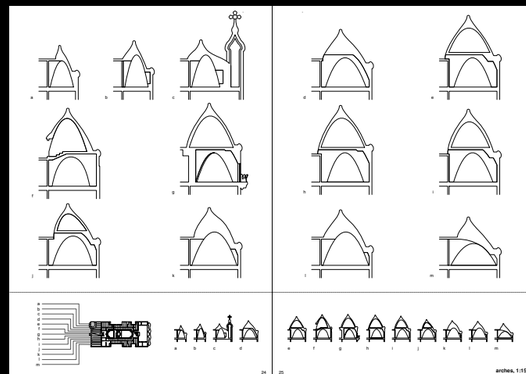
the attic 20



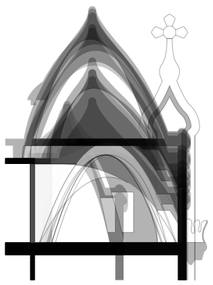
21 **roof structure, 1:200**



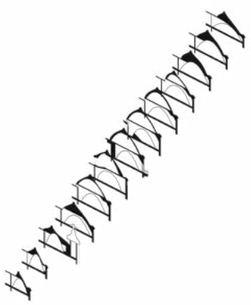
22 23 **attic, 1:100**



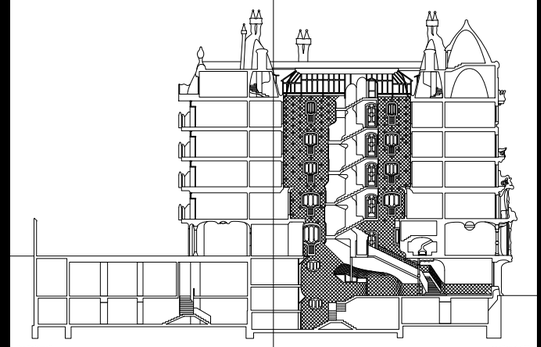
arches, 1:150 24 25



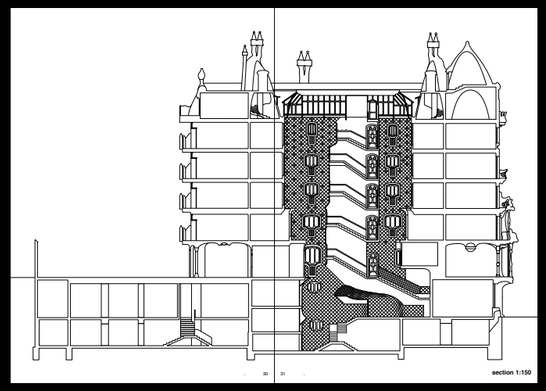
arches, 1:50 26

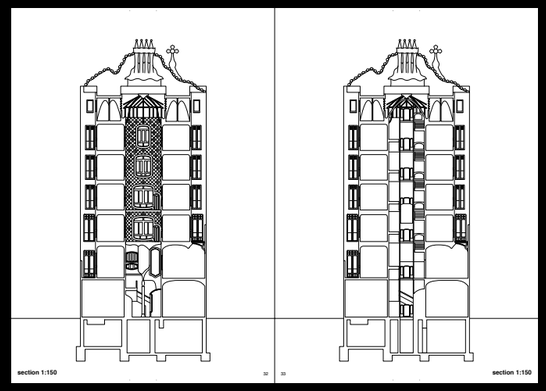


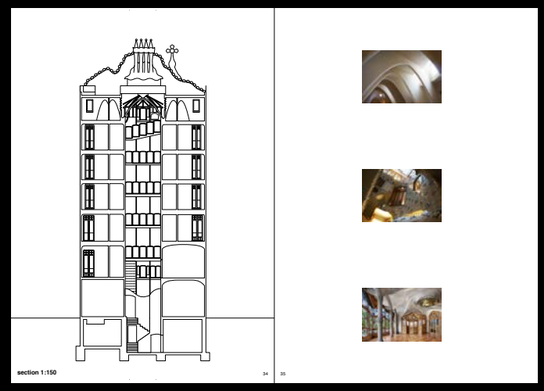
27

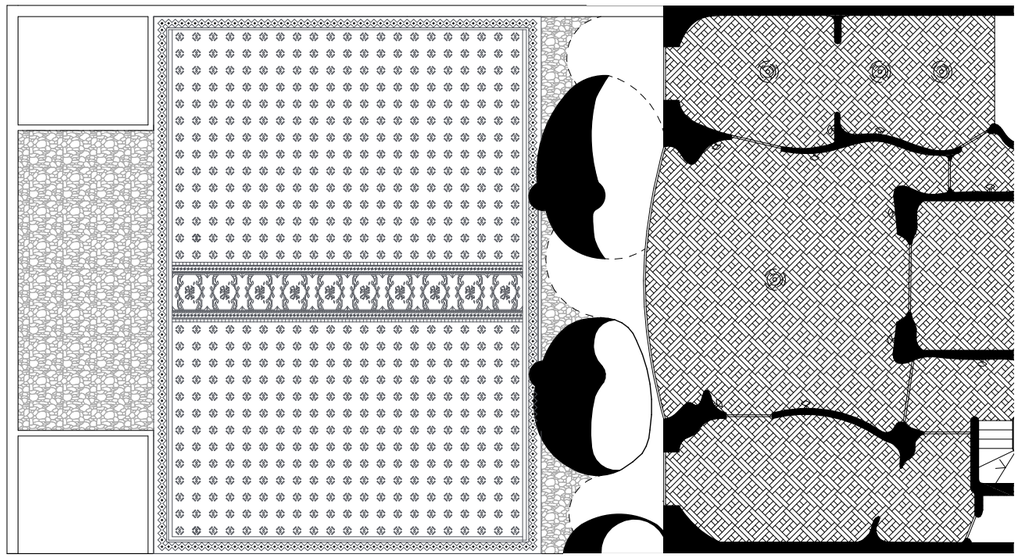


the lightwell 28 29 **section 1:150**

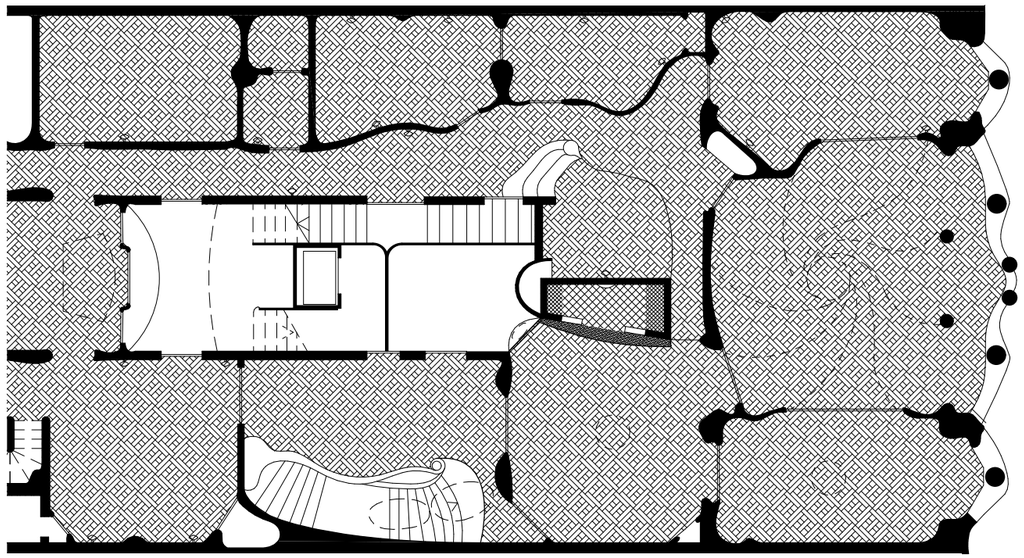

30
31
section 1:150


section 1:150
32
33
section 1:150

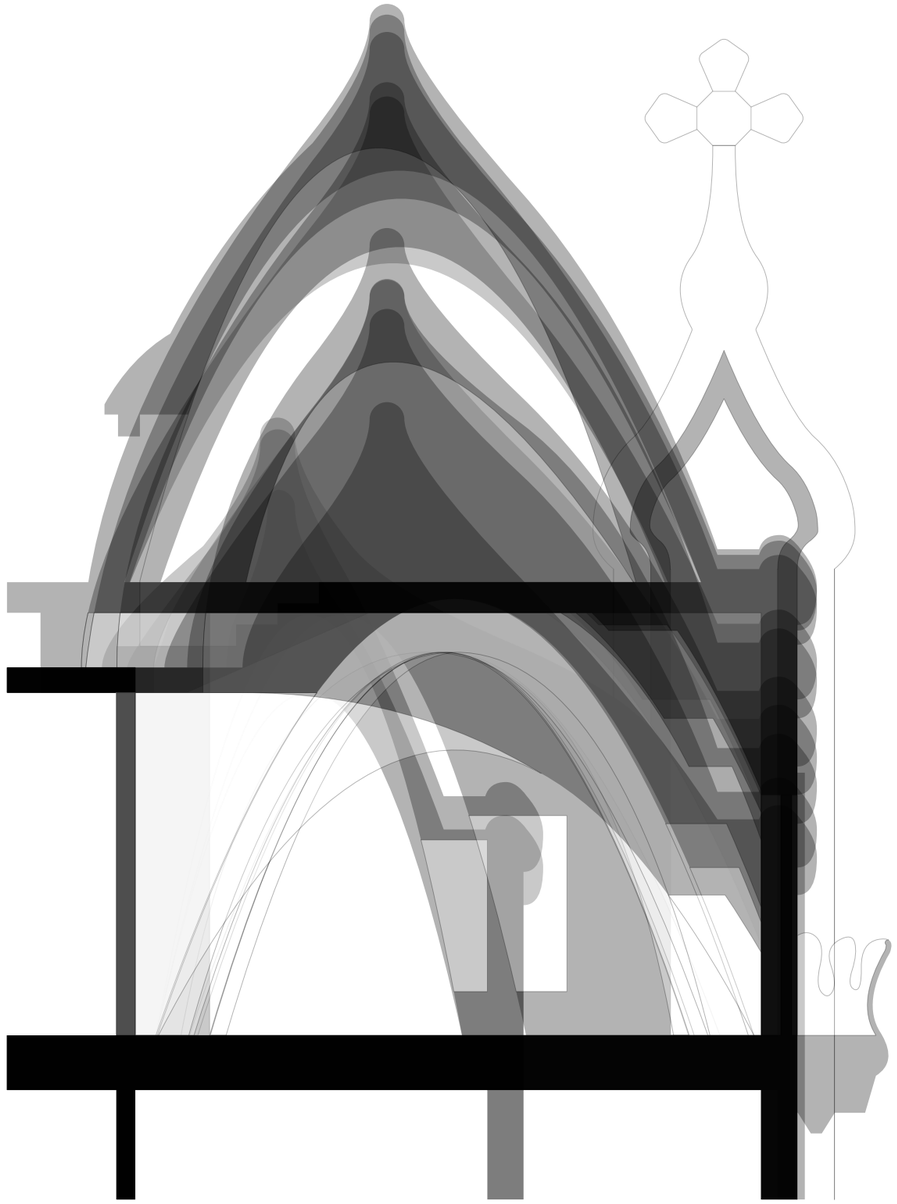

section 1:150
34
35

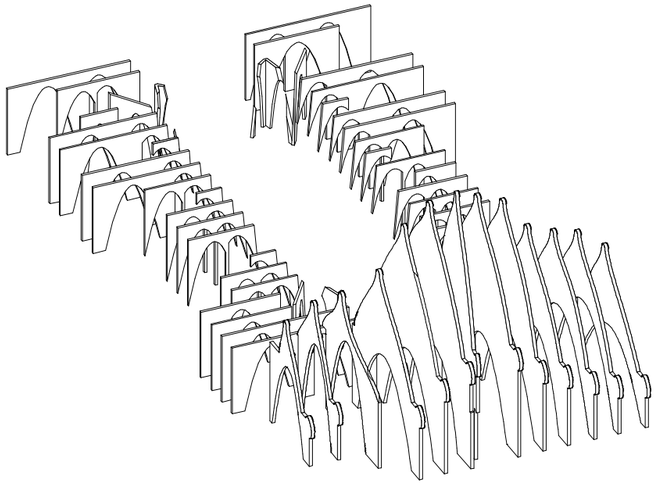


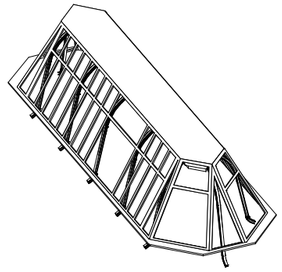
the owner‘s apartment

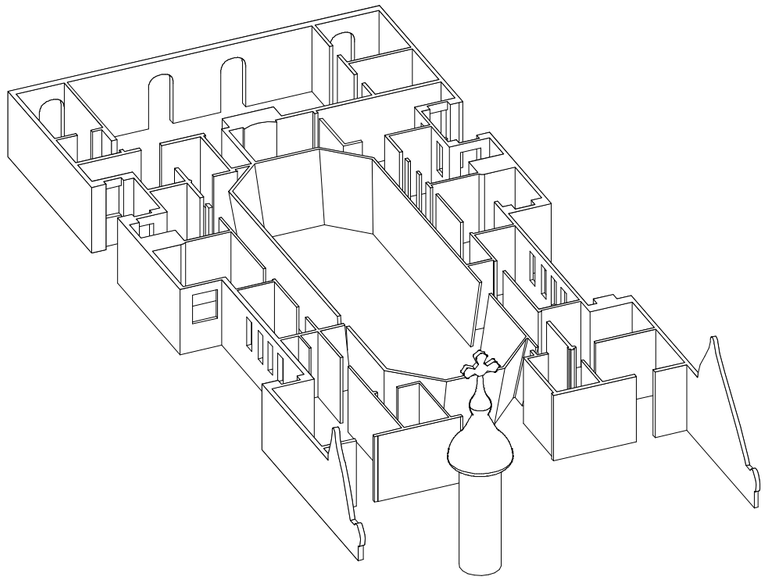


piano nobile, 1:150









COLONIA GÜELL CRYPTA
Antoni Gaudí

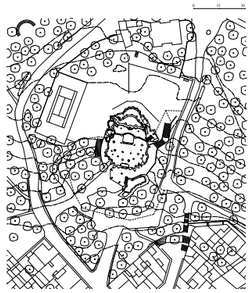
Lisa Kusaka
Tu Lan
Cyrill Wechsler

COLONIA GÜELL CRYPTA

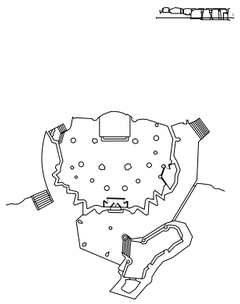
Antoni Gaudí, Barcelona 1916
Case Study by Lisa Kusaka, Tu Lan, Cyrill Wechsler

ETH - DARCH, Chair Christian Kerez, HS19

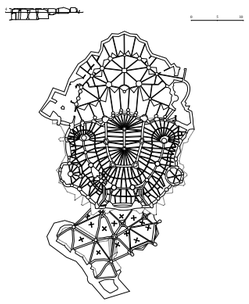
master plan



site plan



floor plan



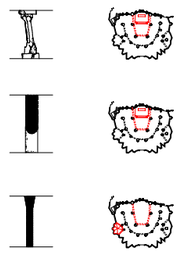
ceiling plan

Columns and Arches

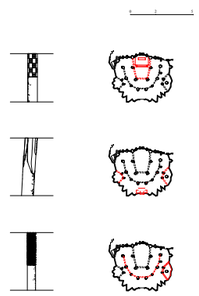
The crypt is divided by a field of columns, organized in two rings. The inner ring is made up of basalt columns, while the outer ones are comprised of brick or concrete, or a combination of the two. However, each column is distinctly its own: by the degree at which it leans, the height at which it stands, and the individual aspects of material by which it is made.

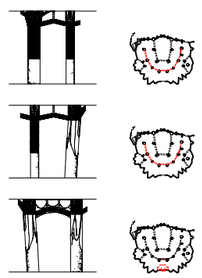
There are two columns that disrupt the balance of the plan. They form a small chapel on the left of the crypt, housing a statue of Jesus. Instead of leaning in toward the stage and altar, they lean outward, significantly altering the overall organization of the other columns. On the right, there are extra columns to counter this effect, revealing nuances that differentiate the two sides of this seemingly symmetrical room.

The arches in the ceiling and the columns on the floor are physically interdependent, but they also tell different narratives about the centre of the room. From the ground, the centre appears to be in the middle of the four basalt columns. Yet on the ceiling, there are two centres: One above the stage, and one between the basalt columns.

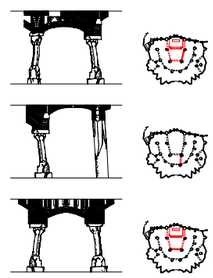


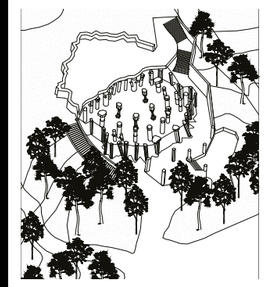
columns catalog





arches catalog





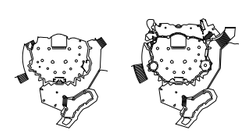
overview

Order and Oddities

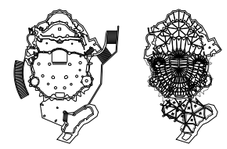
Gaudí's plan of the Colonia Guell Crypta seems at first simple: it describes a large room divided by two rings of columns, one encircling the other. The straightforward organization of the crypt implies regulation and clarity, but then spatial deviations begin to emerge. These peculiarities that break from the order create moments of exception, allowing the space to be simultaneously hierarchical and idiosyncratic, as well as symmetric and orderly.

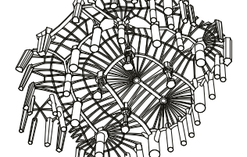
Context

The crypt was designed as a part of a master plan for the manufacturing area, Santa Colonia de Cervello. It would be a holy place for the factory workers, slightly removed from the rest of the town and hidden in a forest. As one moves north through the residential and commercial zones, the orderly gardens and yards eventually give way to a casual grove of trees, in which the crypt is located.



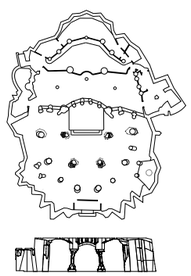
plan summary



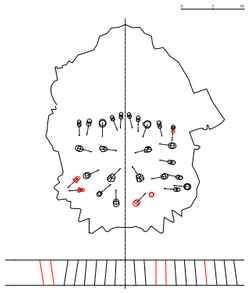


spatial isometry

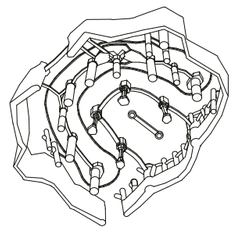
exploded isometry



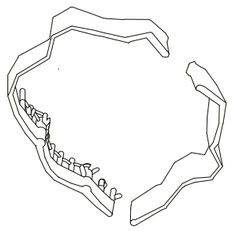
columns plan



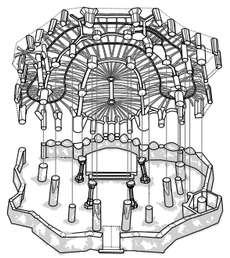
directional diagram



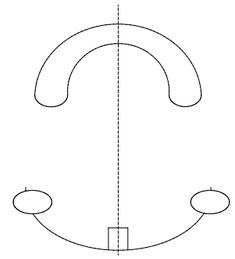
columns isometry



columns angle diagram



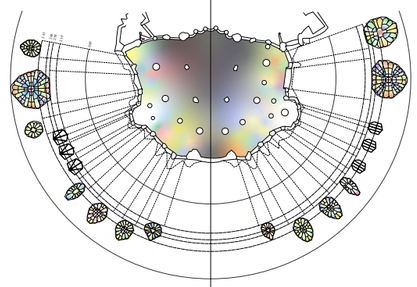
ceiling and floor systems



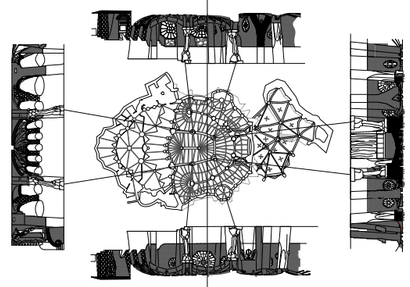
analysis of the centers

Windows

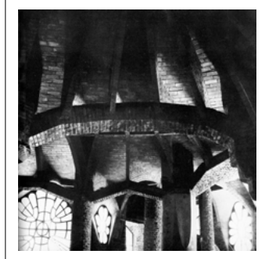
The stained glass windows are placed high on the walls, casting light on to the tops of the columns and the network of arches in the ceiling, leaving the ground in darkness. The quality of light is especially notable due to the deep shadows in the numerous corners of the scalloped perimeter, and the canted walls. Each window has a slightly different pattern and color palletite. The color of the glass subdues the light coming in, saturating the space without overexposing it. As the sun moves throughout the day, the color of the room is constantly shifting, marking the change in time.



light and window diagram



elevations

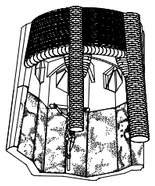


Madonna and Jesus

Two chapels flank the left and right of the room: one houses a statue of Jesus, and the other houses a statue of the Madonna. The symbolic connection between them is further enforced by their symmetric placement within the floor plan, but these two spaces are not equal.

The chapel for the Madonna is dark, as a spiraling brick roof shields her from the surrounding windows. The statue itself is raised on a large, solid platform framed by two columns that mimic the material make up of the wall. The chapel appears to be an extension of the wall system rather than a space of its own.

Contrarily, the chapel dedicated to Jesus is brightly lit by three large transparent windows, and distinguished by two brick columns that do not appear anywhere else in the room. The statue of Jesus sits at ground level without any barriers, allowing observers to enter the chapel and interact with the statue up close.



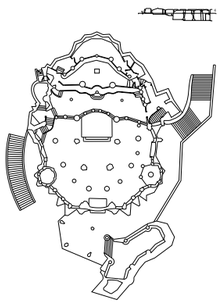
jesus chapel and inner circulation

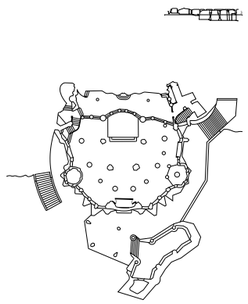
madonna chapel and inner circulation

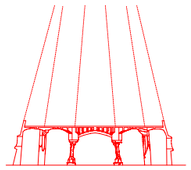
One Last Thought

Perhaps it is interesting to note that the crypt as it stands today could be considered unfinished. The large church that was supposed to rest on top of it was never realized, and only endures in Gaudí's original sketches and drawings. From these drawings, though, one can see how the size and angles of the columns and the complexity of the ceiling arches are related to what would have been the structure above. However, we will never know how the current spatial experience of the crypt is impacted by the lack of the full church, and maybe it doesn't matter.

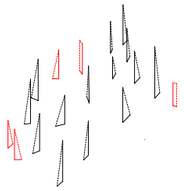
what was planned

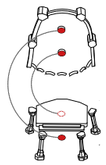


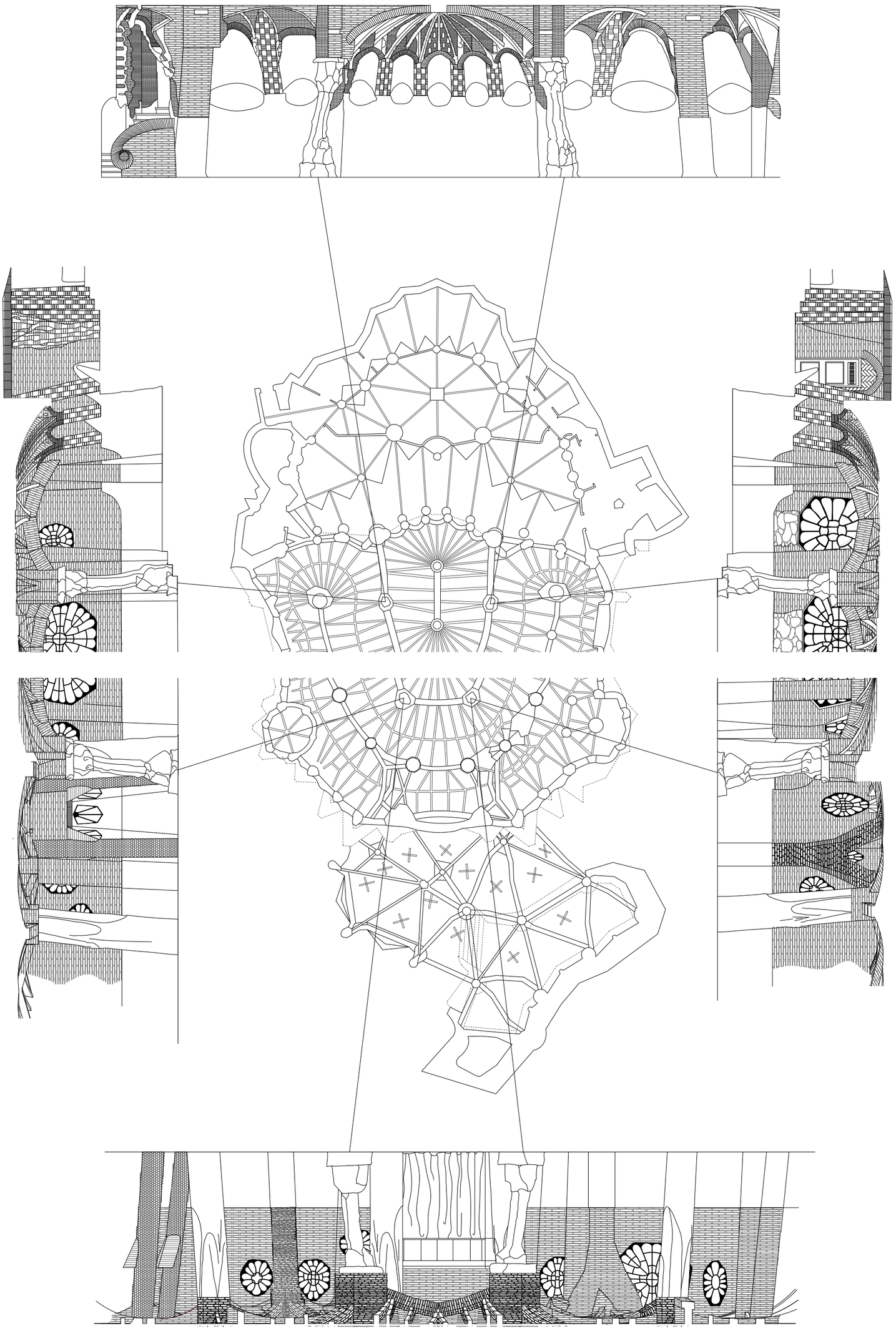


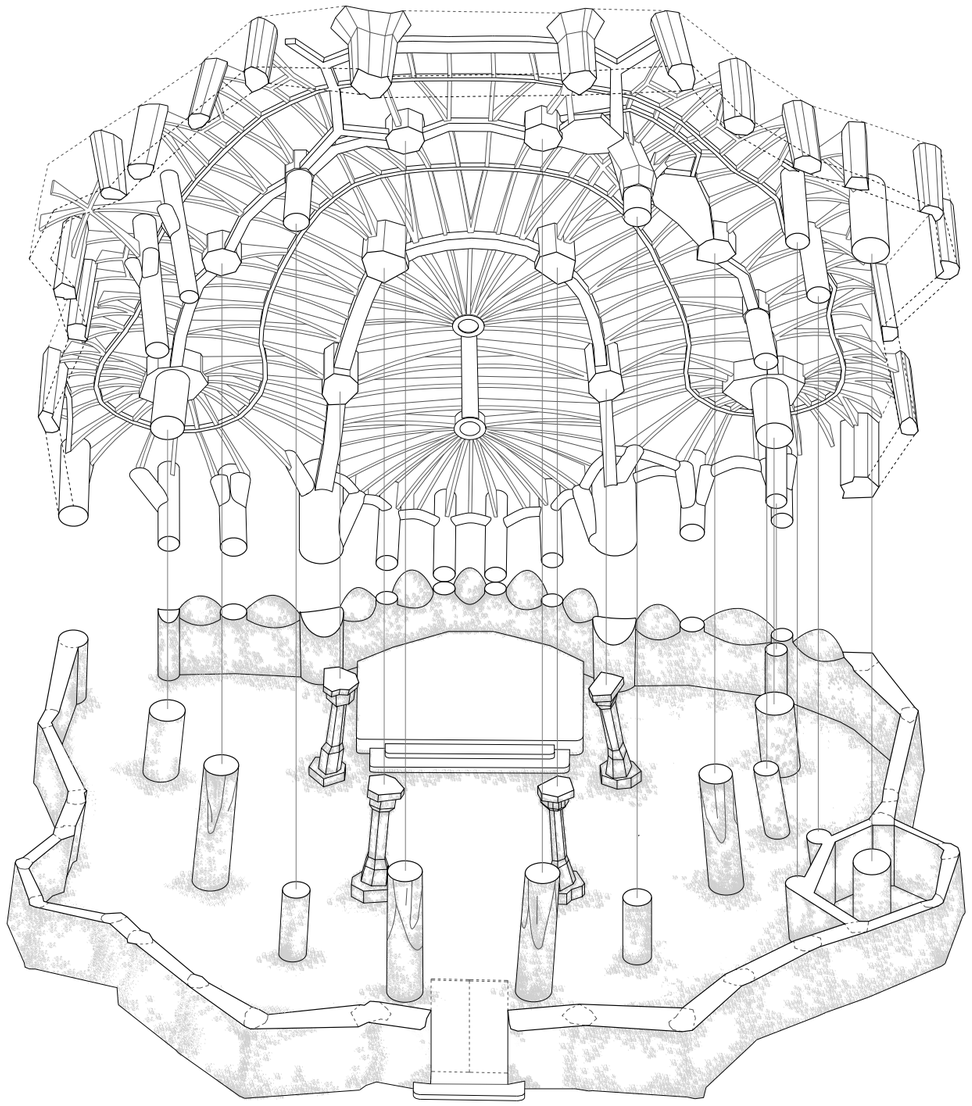


and what is built

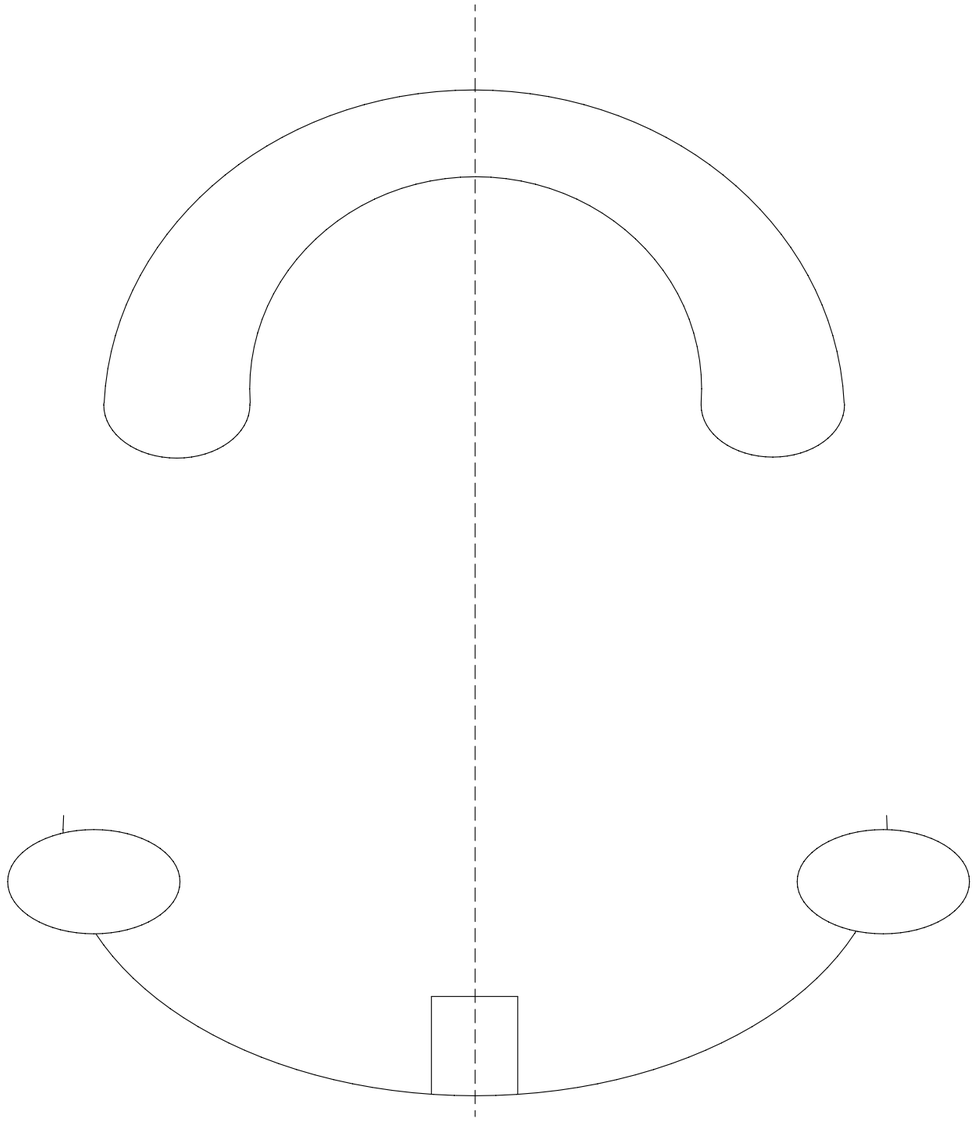








ceiling and floor systems



analysis of the centres

ARANGO HOUSE
John Lautner

Moritz Späh
Christoph Stahel

ARANGO HOUSE
JOHN LAUTNER - ACAPULCO 1973

ETH - DARCH - CHAIR CHRISTIAN KEREZ - HS 2019
Case Study von Moritz Späh & Christoph Stahel

Inhalt

Arango House 04
Formfindung Terrassengeschoss 18
Nutzung / Erschliessung 22
Innen - & Aussenraum 23
Struktur 24
Promenade architecturale 28

Arango House
von John Lautner
Acapulco Mexiko, 1973

Jesús-Ivirio Arango, ein Mexikanischer Geschäftsmann eah in diversen Zeitschriften Artikel und Beiträge über den von John Lautner entworfene Elrod Haus. Dieses riesige Anwesen mit dem Pool und Pavillon in Form einer Kreuzes, welches in Palm Springs faszinierte den Mexikaner. Daraufhin erteilte er Lautner den Auftrag vom Erbauer und Bau einer Ferienresidenz für ihn und seine Familie. Den eventtenaufendem, panoramaeinlegen Ausblick vom Elrod Haus wollte er nach Mexiko transformieren. So war die einzige Einschränkung oder Anforderung seitens Bauherr, dass der Blick auf die Bucht von Acapulco hindernisfrei und in voller Grösse ermöglicht sein soll.

John Lautner hat sich dieses Aussicht zum Hauptkonzept des Gebäudes gemacht. Ein Konzept, welches vom Betreten des Grundstücks über die lange Rampe bis zu den kreinen Brücken immer wieder inszeniert und dramatisiert wird. Lautner hat dieses Gebäude als eine Erweiterung des Hügels entwickelt. Die Form des Hauses folgt der Topographie des Hügels und lässt er direkt in das Gebäude hineinsteigen. Die gebogene Betonstruktur entspringt der felsigen Oberfläche, windet sich ausfragend über das Grundstück und endet geschwungen in der Hügellandschaft. Um das Bauwerk nicht nur hängeartig mit der Landschaft zu verbinden, wurde das schwebende Schwimmbecken als verbindendes Element zwischen Himmel und Meer eingesetzt. Es bildet den Übergang zwischen der Übergangszone Bauen/Himmel und dem Ozean komplett und das Gebäude schwirrt zwischen Erde und Himmel zu sein.

Noch heute ist die Familie Arango im Besitz dieser Residenz. Es liegt an einem steilen Hang oberhalb der Bucht von Acapulco. In weiter Ferne sind die Berge und dahinter der Ozean zu sehen. Dieses Haus ist ein Ort, an dem die Bewohner Acapulco Bay and the mountains. You don't have to go to Acapulco to see the beauty of nature. John Lautner

"When I first walked the site, I got the idea to build a large cantilever that would be a viewing platform for the Bay of Acapulco Bay and the mountains. You don't have to go to Acapulco to see the beauty of nature." John Lautner

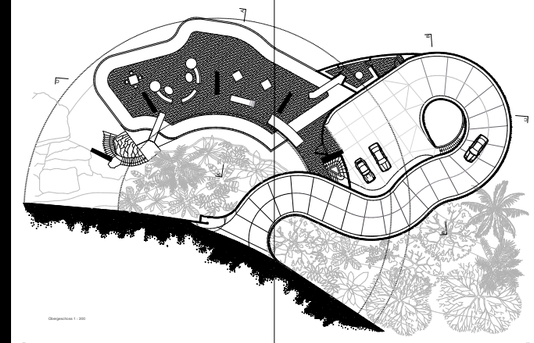
Acapulco

Situationsplan 1 : 1'000

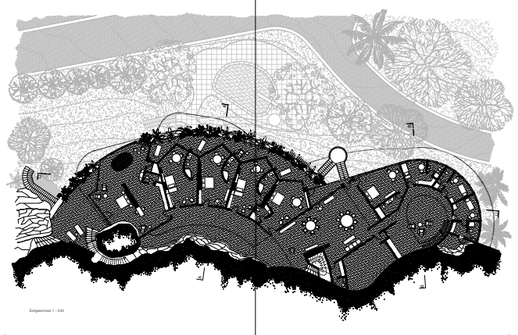
Das Gebäude wird in der Horizontale durch drei massive volumetrische Schieben gegliedert.

Ansicht 1 : 500

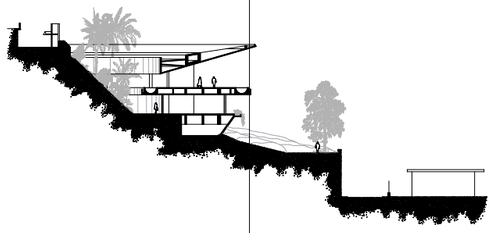
Längsschnitt C-C 1 : 500



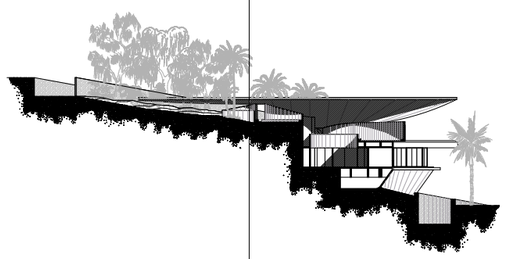
Obergeschoss 1 : 200



Erdgeschoss 1 : 200



Schnitt AA 1 : 200

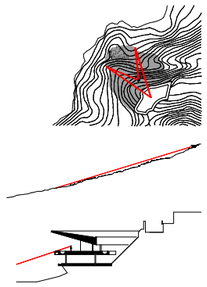


Schnitt BB 1 : 200

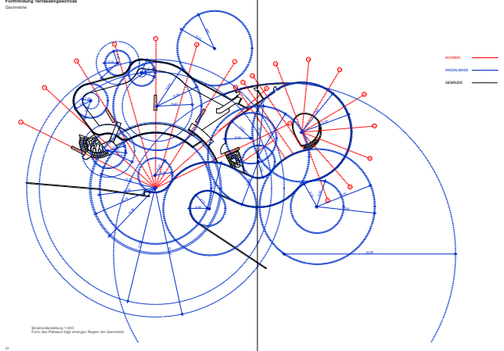
Formfindung Terrassengeschoss
Kontext

Die Form der Platform wagert auf den Kontext. An einer Stelle wäre sie sich nach Ost-West ausgerichtet. Die Form folgt einer Hyperbel-Kurvatures Lae Brisas zu Acapulco. An einer anderen trägt sie der Kustenlinie und kreiert sich nach innen.

Luftbrücksaunen Hotel Las Brisas

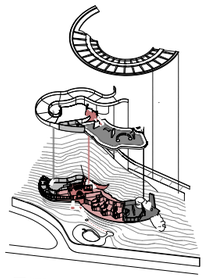


Formfindung Terrassengeschoss
Geometrie

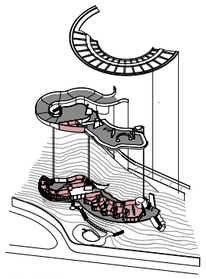


Strukturplanerstellung 1:200
Form des Plateaus folgt strengen Regeln der Geometrie

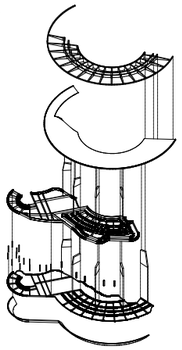
Nutzung / Erschliessung
Organisation



Innen - & Aussenraum
Offene und geschlossene Räume



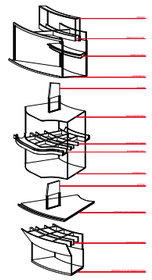
Struktur
Übergeschoss

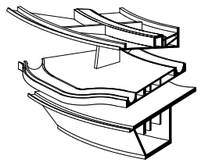


Dachaufsicht

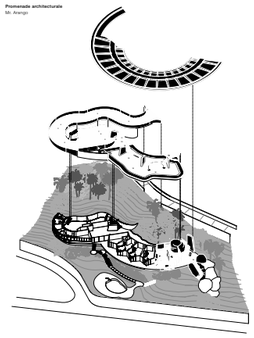
Eine der fünf Stützen, die das Dach tragen.

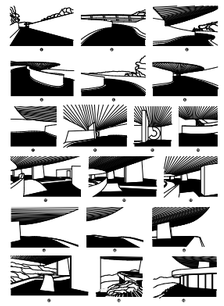
Struktur
Detail



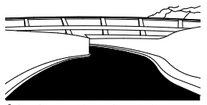


Promenade architecturale
Mr. Arango

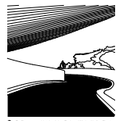




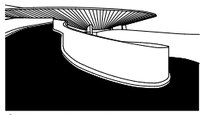
Zuiderkoninsee wird von hohen Mauern gebaut, welche verschiedenartige Bauten umringen.



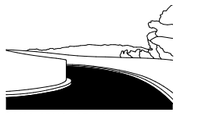
Direkt aus der Zuiderkoninsee wird auch die Pierhaus, welches zum Eingang hinunter führt, selbst gebaut.



Am Pierhaus vorrueber wird ein weiter Raum zum Kern zur Halle führen zum Eingang unter dem Dach hinaufführen.

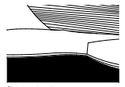


Der Blick zur Seite zeigt nun die Monumentalität dieses riesigen Daches.

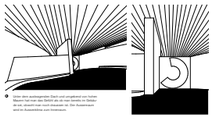


Beidseitig ringen die Bäume der Pierhaus in die Höhe und verdecken zunehmend die gesamte Ansicht.

Von weitem wird der Eingang unter einem riesigen, gewaltigen Dach erkennbar.

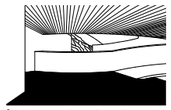


Man kann dann Fahrzeug Richtung Hafen und parkern vor dem Hotel. Wand unterstreicht dem sich ausdehnenden Dachs.

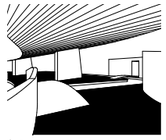


Unter dem ausladenden Dach und umgeben von hohen Mauern hat man das SUCH das sie man sowohl im Winter als auch, erwartet man noch dreiaeuch ist. Der Aussenraum wird im Ausweichlinie zum Hinterraum.

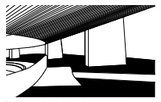
Dem Arrahmen eine Einbaute gelangt man zum monumentalen Eingangsbau welches auch Pierhaus Mahlzeit Stelle gelangt werden. Die Tür steht am Haibbaum den Sandhuren vor.



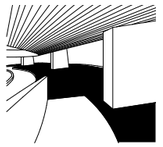
Beim Eingangsbereich kommen viele Elemente wie das Dach, die massive Stütze und eine massive Rundung zusammen.



Durch die exzessive Rundung wird man Richtung Terrasse gelenkt. Die Mauern, an denen sich die Ausstellung auf der Bucht von Scagaurus offnet.

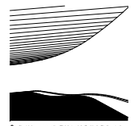


Eine Brücke führt über den Pool, welcher die Terrasse aus den Gebäuden ausgeht.

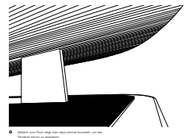


Durch die gebogene Form die Brücke wird man noch näher an das massive Dach gedrückt. Dadurch wird dieses Ding noch größer und massiver.

Die Pool dient den vorbeiiegen erstaunt Terrasse mit dem Hausen wiederhaben.



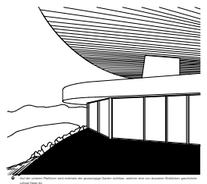
Nun ist der panoramartige Blick hin zum der Bucht, die Einbeit sowie der Berge und der Dünen wiederhaben zu dem einzigen Ruhen.



Welches zum Pool führt führt man dann natürlich trotzdem, um die Terrasse besser zu speisen.

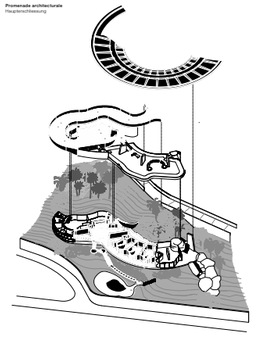
Ein Speisebringung auf die Terrasse wird hier wieder seinem kleinen Bruder, welches zum Maeterior dienen von Mr. Aalsgo Sunden Gibt.

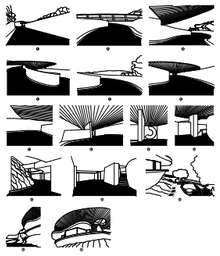
Schwerpunkt wird die Blick weiterhin zurück an die Terrasse gelenkt und dieser Terrasse ist nur hier die schwebter Platform entstanden.



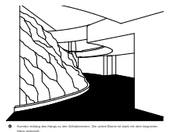
Auf der unteren Platform wird ersichtlich die grosszügige Garten sichtbar, welcher diese von dunklen Gebäuden geschützt, umgeben lässt.

Promenade architecturale
Hauptarchitektenung





Hinter der grossen Stütze versteckt, führt eine Treppe gleich vom Eingangsbereich hinunter zum Mehrzweckraum und den Gästebereichen.



Hierdurch entsteht dies Hangs zu den Schlafzimmern. Die unteren Etaeme ist stark mit dem Gegenstein Hang verbunden.

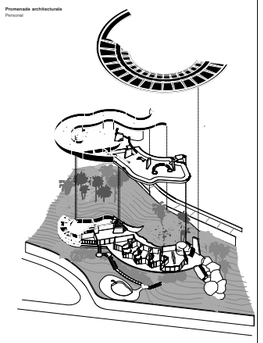
Verstärkt hinter der Stützen liegt das Wohnzimmer, welches zur Bucht durch eine Fenster lediglich geschlossen ist und sonst zur Welt geöffnet ist.

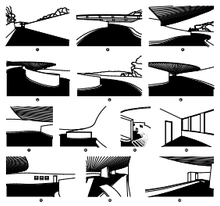
Im tieferen Bereich eine unterdrückenden Wohnzimmers öffnet sich eine Blick hinunter zur Gästewohnungen mit dem Pool.

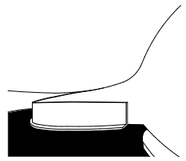
Beim Blick weiter, sehen man ersichtlich die Garten des Pierhauses, welcher umrahmt die Terrasse ergänzend ist.

Von weiten Bestt sieht die weitere Hangzüge entstehen in der sich die Dünen ersteckten.

Promenade architecturale
Personal

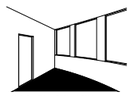




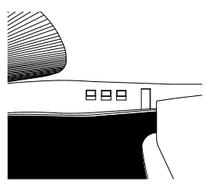


Der Eingang des Personals wird durch den Unterbruch der Brüstung angedeutet.

Unter dem Gebäude durch den Hauptbeteiligung befindet es ein Eingang zum Personal. Dieser Eingang führt zu dem Haupteingang der Mehrzweckraum.



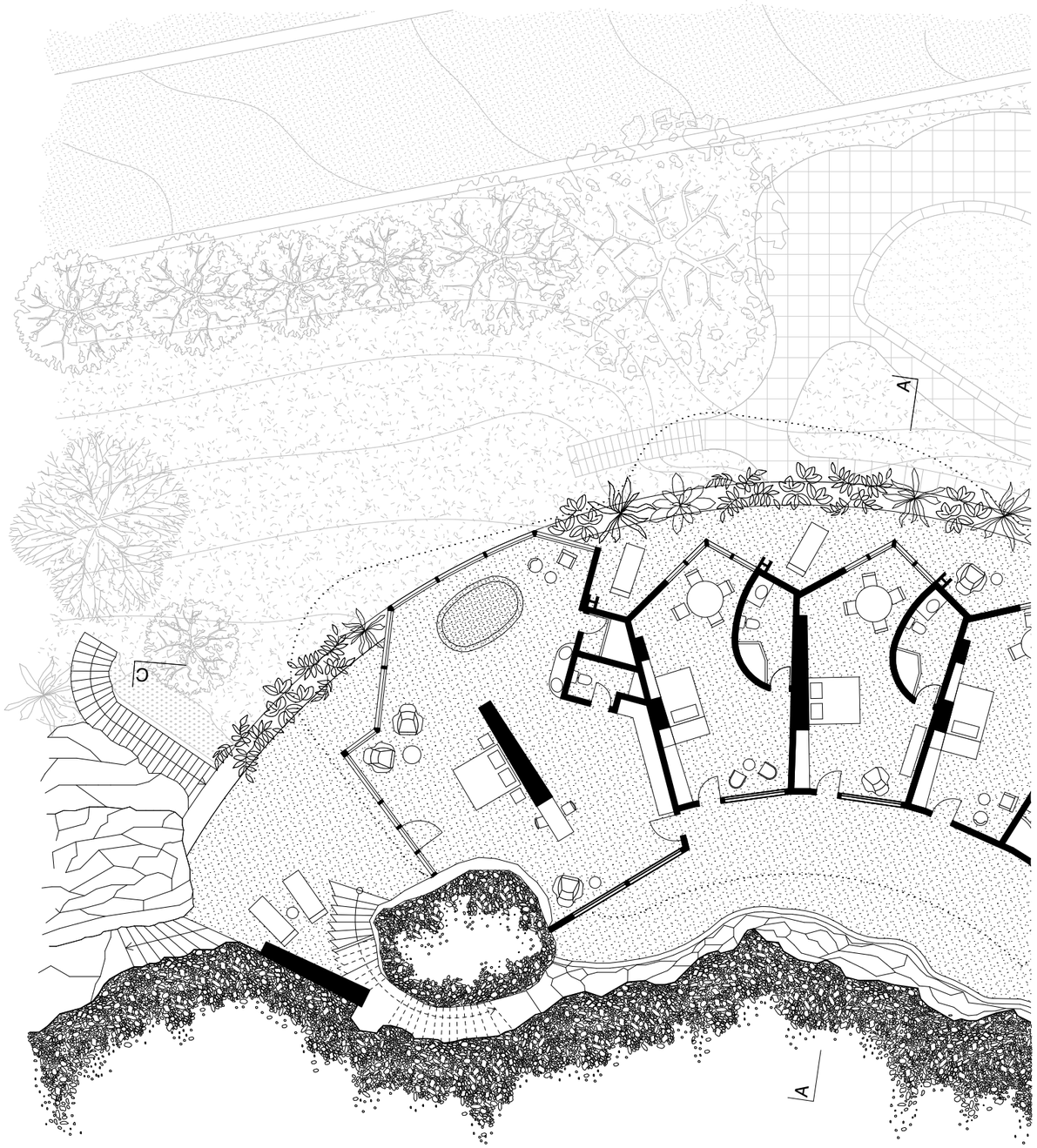
Das Personal hat eigenen Schlafzimmer im Gebäude.

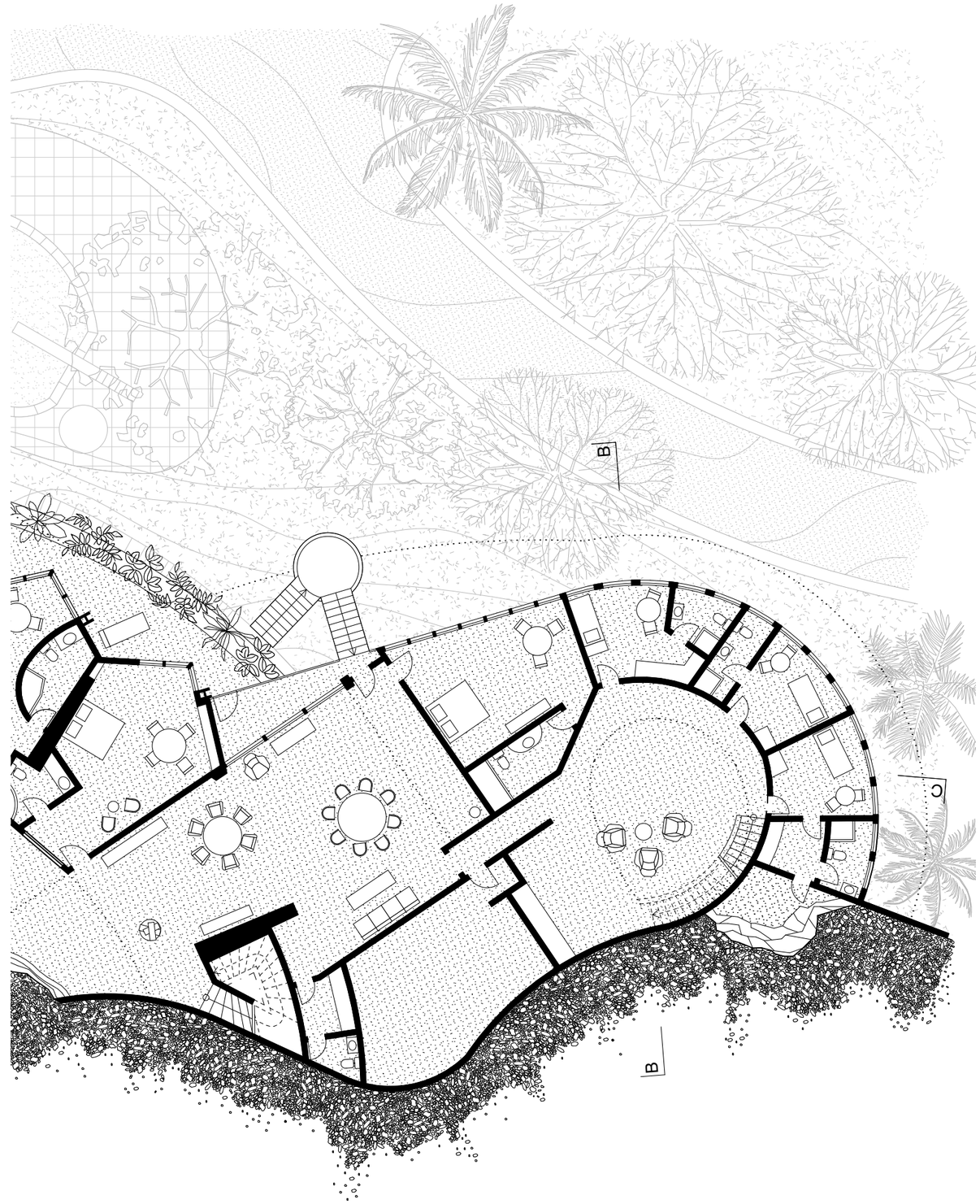


Die Kurve ist aber den Pool zugängigkeit.

Die Kurve ist aber eine Bereich mit der grossen Terrasse verbunden.

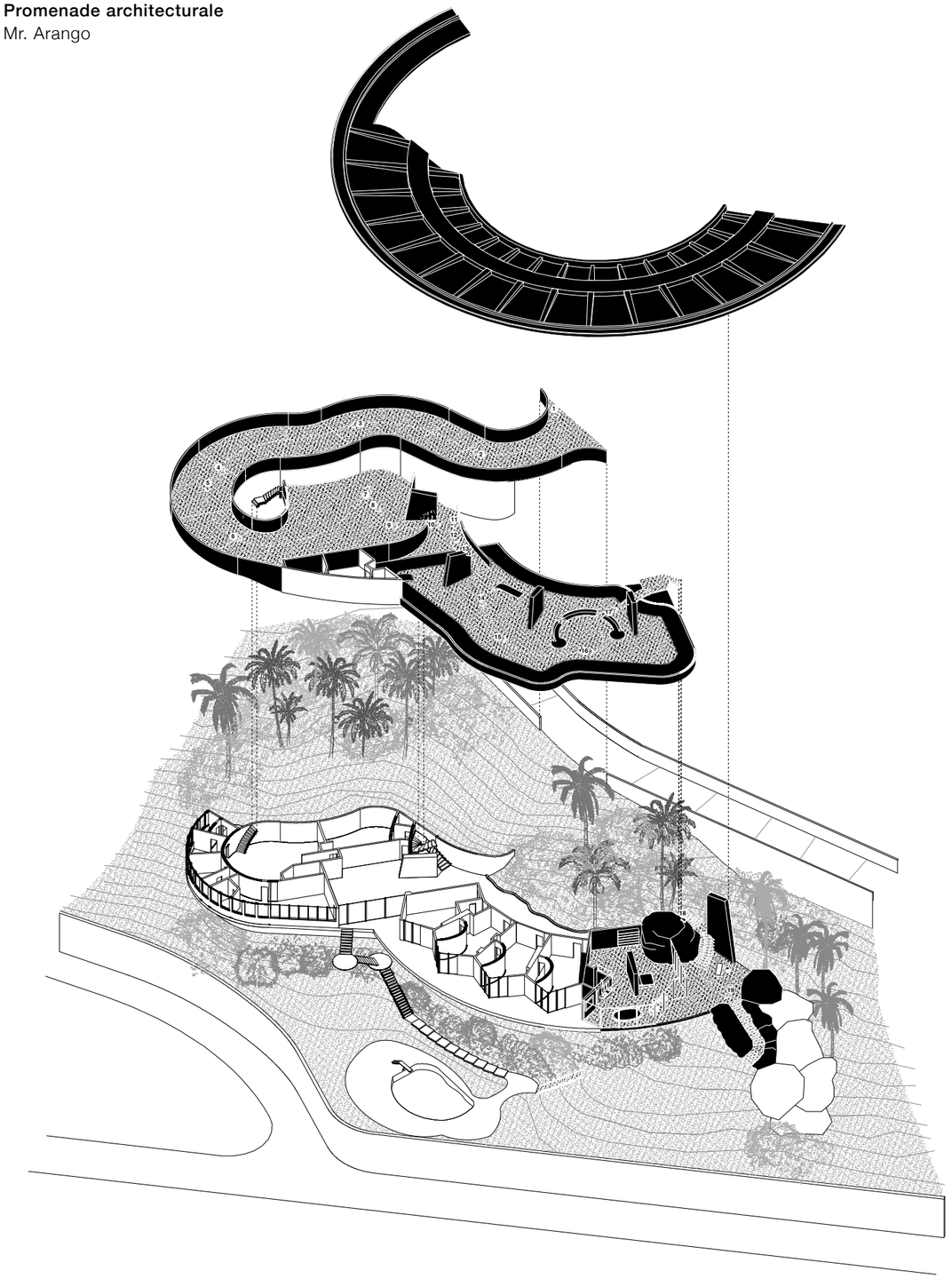
Die Wand, welche aus einer leichten Brüstung bestehen, ist zwar geschlossenen Neues, aber trotz dieser leichte Lüftungen dem Blick auf die Wohnbereichen im Innern zerstoben.

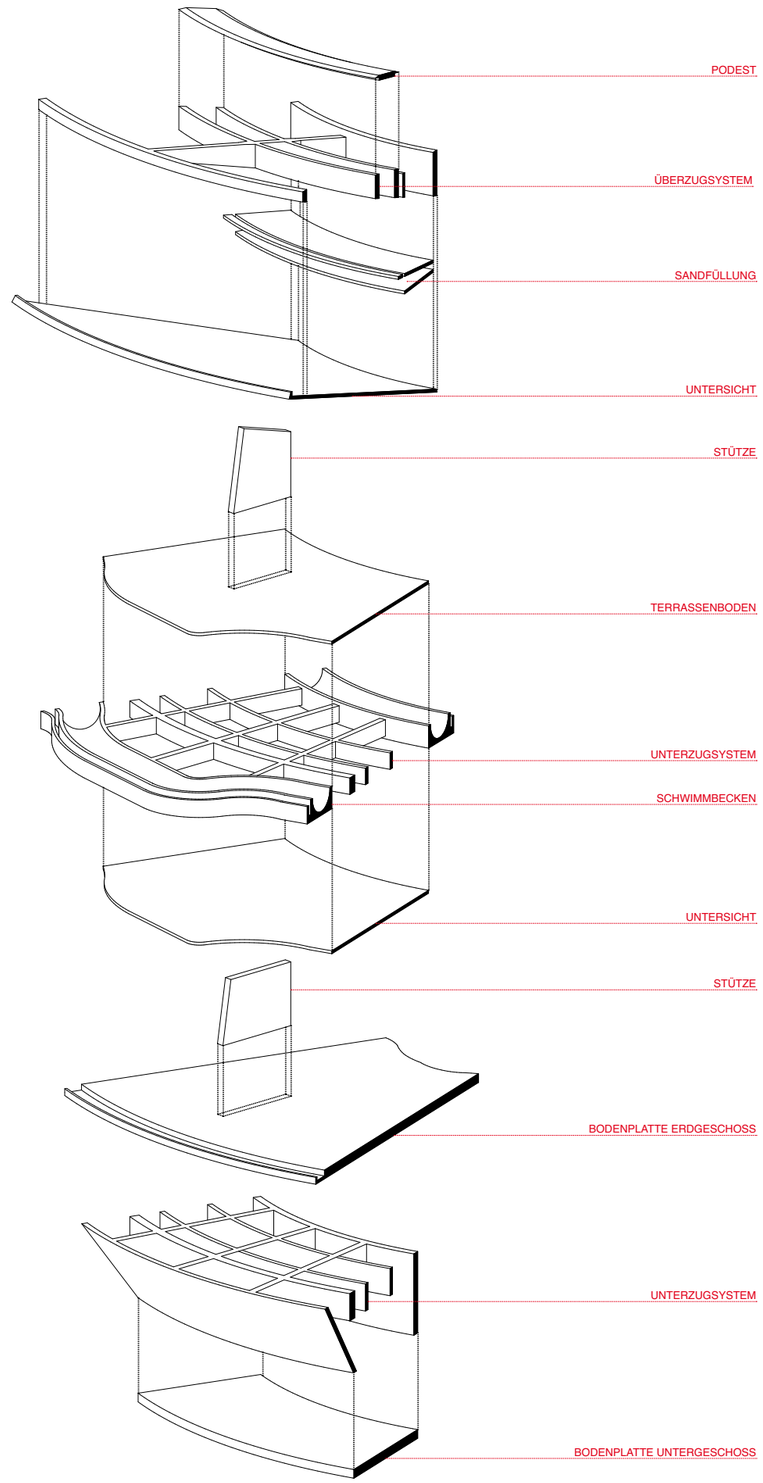




Erdgeschoss 1 : 200

Promenade architecturale
Mr. Arango



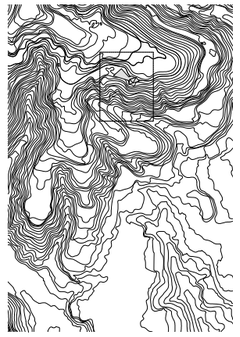


GOLDSTEIN RESIDENCE
John Lautner

Salome Schepers
Chantal Winiger

SHEATS GOLDSTEIN RESIDENCE
Beverly Hills, California by John Lautner

ETH Zurich Department of Architecture
Studio Christian Kerez
Final review EK01 HS 2019
Analysis work by Salome Schepers and Chantal Winiger



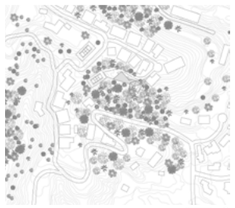
4

APPROACH - SITUATIONS AND TEXT

PLAN ON THE LEFT:
TOPOGRAPHY 1:4000

5

Embedded in a green cloud of tropical plants lies the Sheats Goldstein Residence in the hills of Beverly Hills, Los Angeles, designed by John Lautner. Architecture and nature are intertwined in a way that the building becomes topography just to then become one with it again. A construction where a beginning and an end, a front and a back or an inside and outside are not clearly identifiable. A construction that seeks to become one with nature, celebrating it in its special qualities.
To enter the residence, the visitor is invited to follow around the building. The path is covered and flanked by two walls, producing a feeling of entering a tunnel-like space. The walls dissolve completely at the end of the path into a nature space. The walls dissolve completely or diminish to thin glass membranes that reveal the inside of the construction but also reflect the nature space on the outside, beginning to blend the inside and outside.
To reach the first living space, the visitor has to cross a pond over three stepping stones. The pond is a key element in the transition from the inside of the surroundings. The only layer that separates the living room on the inside from the nature space on the outside is a thing glass membranes, trying to stay at its absolute minimum so the transition between inside and outside becomes almost unnoticeable. This effect is amplified in the entrance area, where the pond has been extended to the inside and the concrete wall breaks through the glass, where it develops to a sitting area.
The house is a long one-story building, with a horizontal layout that seems to grow out of the hilly landscape. The chosen construction allows an absolutely free layout design and directs the visitors view towards the skyline of Los Angeles. The numerous glass elements in the roof create an atmosphere similar to the sun shining through the leaves of trees moving in the wind, creating a dynamic light and shadow play throughout the day. The construction allows the wind and sounds to enter the inside space, which strengthens the feeling of being in a forest further.
To reach the bedroom, a staircase leads down from the living room to a lower level, exiting the inside. At the end of a massive concrete retaining wall lies the bedroom, in the midst of the extensive garden surrounding the residence, solely separated from it by, again, a thing glass membrane. The bedroom, which is hidden from the outside by the concrete wall and a cave, covers the sleeping area and then angles upwards, opening up to the incredible scenery of the lush garden and the night lit skyline of Los Angeles. The construction allows a fluid movement through out it, not only between the inside and outside, but also through the different spaces within the building. The transition between the different spaces and nature space, lower sets in place various elements that overcome that boundary and diffuse the transition again, aiming to minimise it as the only element that defines the inside of the space is the very strong presence of the roof.

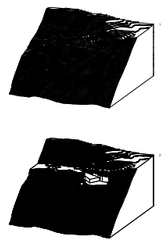


PLAN ABOVE:
SITUATION 1:4000

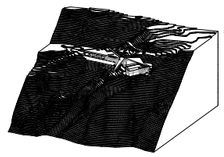
IMAGE ON THE RIGHT SIDE:
FIND THE HOUSE - HOUSE IN THE MIDDLE OF THE GARDEN

6

7



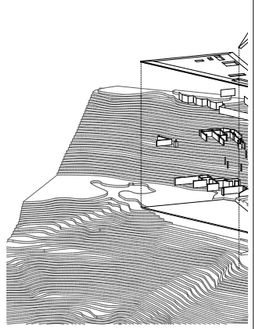
8



TOPOGRAPHY - ANALYSIS OF THE BEFORE AND AFTER

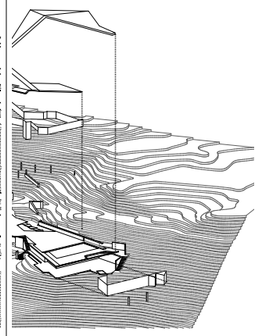
PLAN 1: TOPOGRAPHY BEFORE THE INTERVENTION
PLAN 2: REVISED TOPOGRAPHY
PLAN 3: FINISHED CONSTRUCTION IN THE TOPOGRAPHY

9

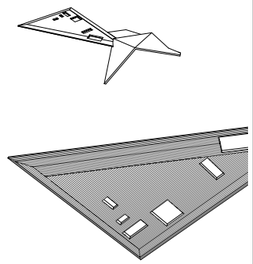


PLAN: EXPLODED ASSEMBLY DRAWING OF THE DIFFERENT ELEMENTS OF THE CONSTRUCTION

10

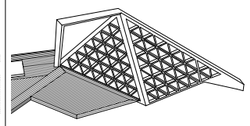


11

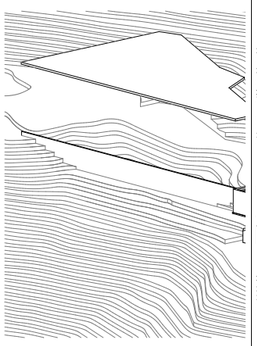


"TOPOGRAPHY" OF THE MAIN ROOF

12

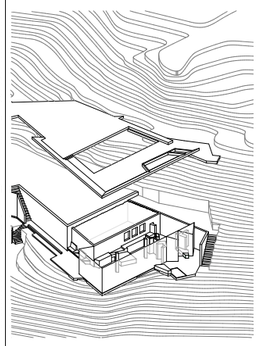


13

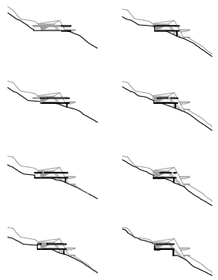


"TOPOGRAPHY" OF THE MAIN BEDROOMS ROOF

14

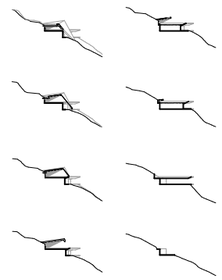


15



TOMOGRAPHY OF THE TOPOGRAPHY IN A COLUMNAR

16



17

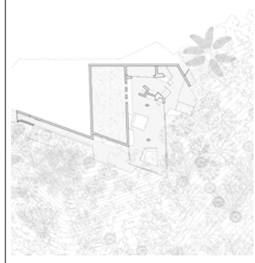
PLAN: GROUNDFLOOR 1:200

18

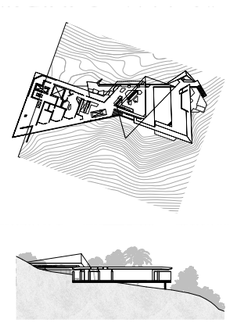
19

PLAN: BASEMENT 1:200

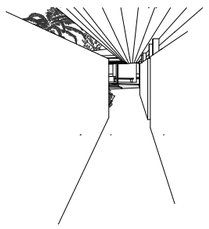
20



21



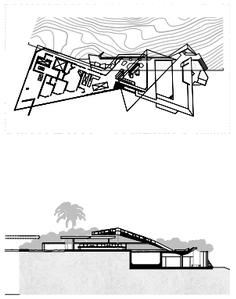
22



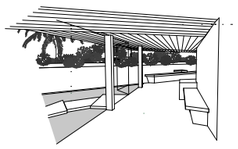
PROMENADE ARCHITECTURALE - SEQUENCE OF SPATIAL QUALITIES

PLANS: GROUNDFLOOR 1:400 AND SECTION 1:200

23

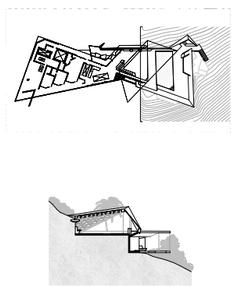


24

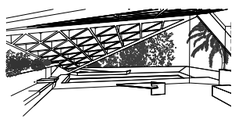


PLANS: GROUNDFLOOR 1:400 AND SECTION 1:200

25

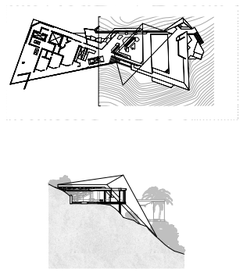


26

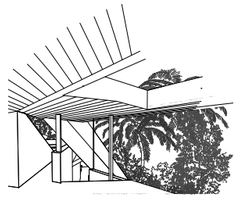


PLANS: GROUNDFLOOR 1:400 AND SECTION 1:200

27

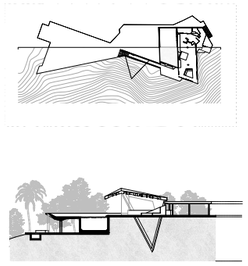


28

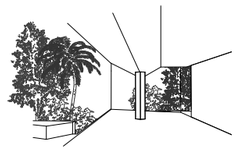


PLANS: GROUNDFLOOR 1:400 AND SECTION 1:200

29

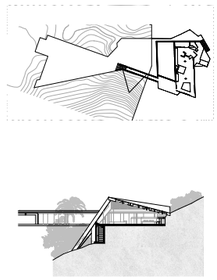


30



PLANS: GROUNDFLOOR 1:400 AND SECTION 1:200

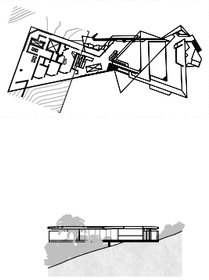
31



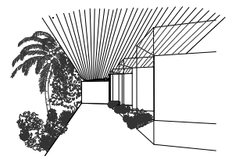
32

PLANS: GROUNDFLOOR 1:400 AND SECTION 1:200

33

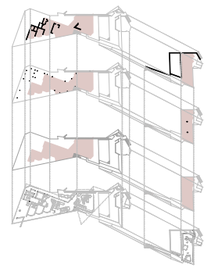


34

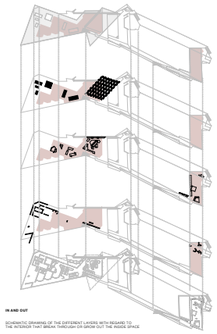


PLANS: GROUNDFLOOR 1:400 AND SECTION 1:200

35



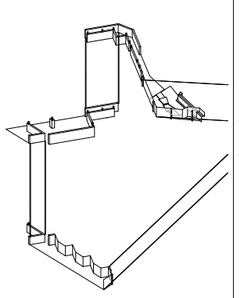
36



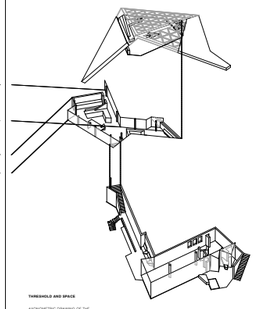
IN AND OUT

SCHEMATIC DRAWING OF THE DIFFERENT LAYERS WITH REGARD TO
THE INTERIOR THAT BREAK THROUGH OR GROW OUT THE INSIDE SPACE

37



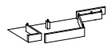
38



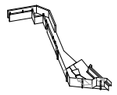
THRESHOLD AND SPACE

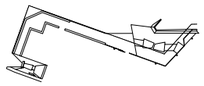
AXONOMETRIC DRAWING OF THE
CONNECTION BETWEEN THE DIFFERENT SPACES

39



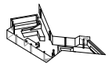
40

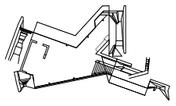




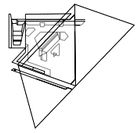
SPACE END THE LEFT : THRESHOLD END THE RIGHT

41



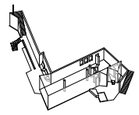


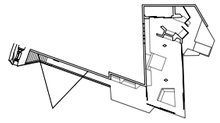
42



SPACE END THE LEFT : SPACE END THE RIGHT

43



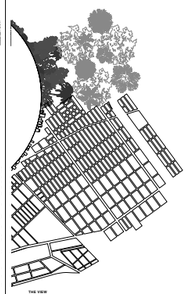


44

SPACE WITH THRESHOLD END THE LEFT : THRESHOLD END THE RIGHT

45

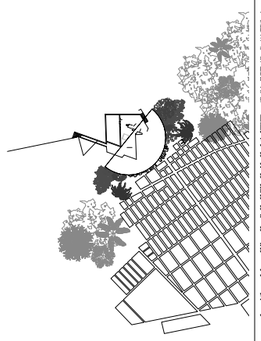
46



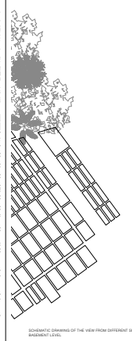
THE VIEW

SCHEMATIC DRAWING OF THE VIEW FROM DIFFERENT SPACES ON THE
GROUNDFLOOR LEVEL

47

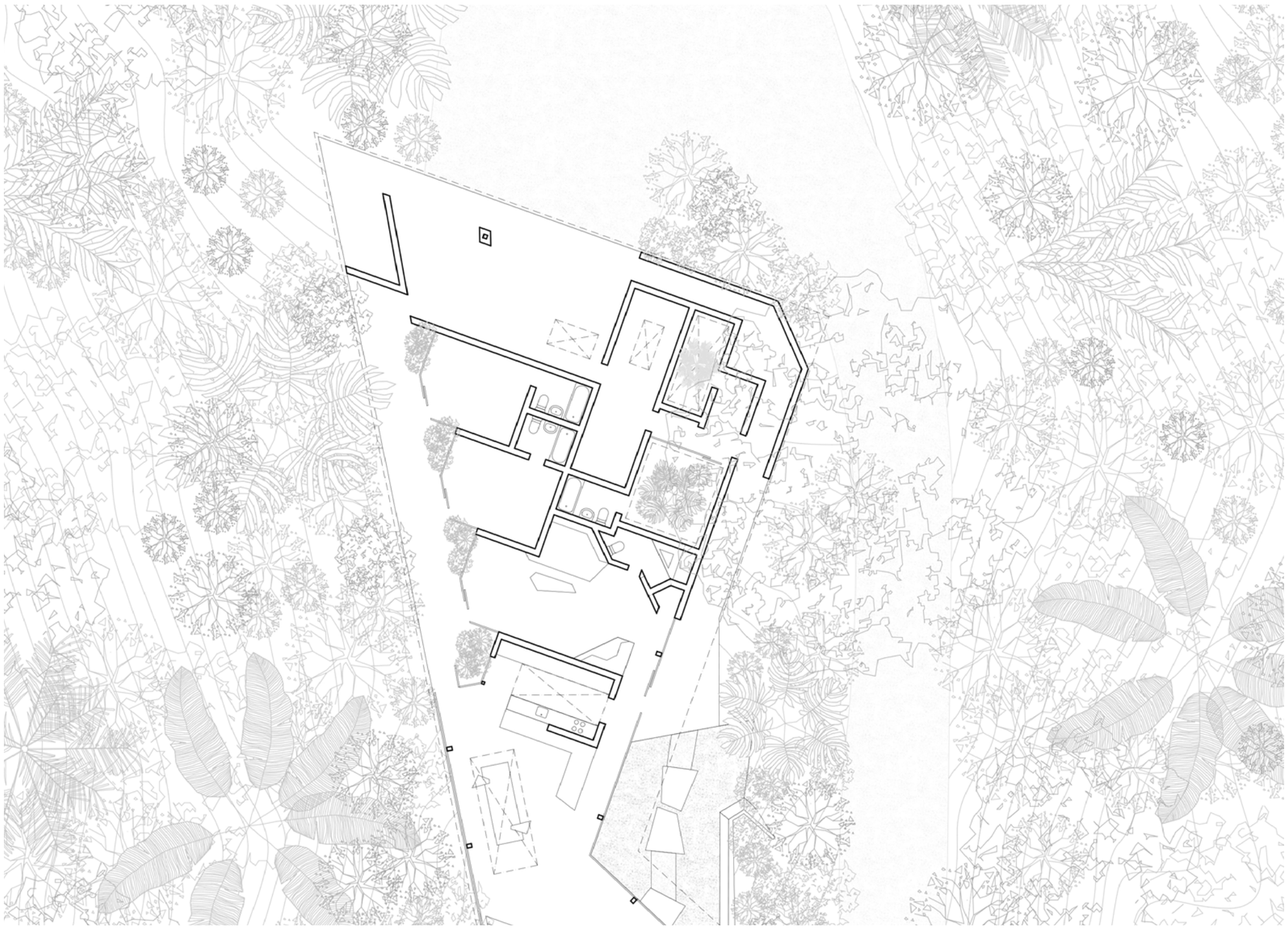


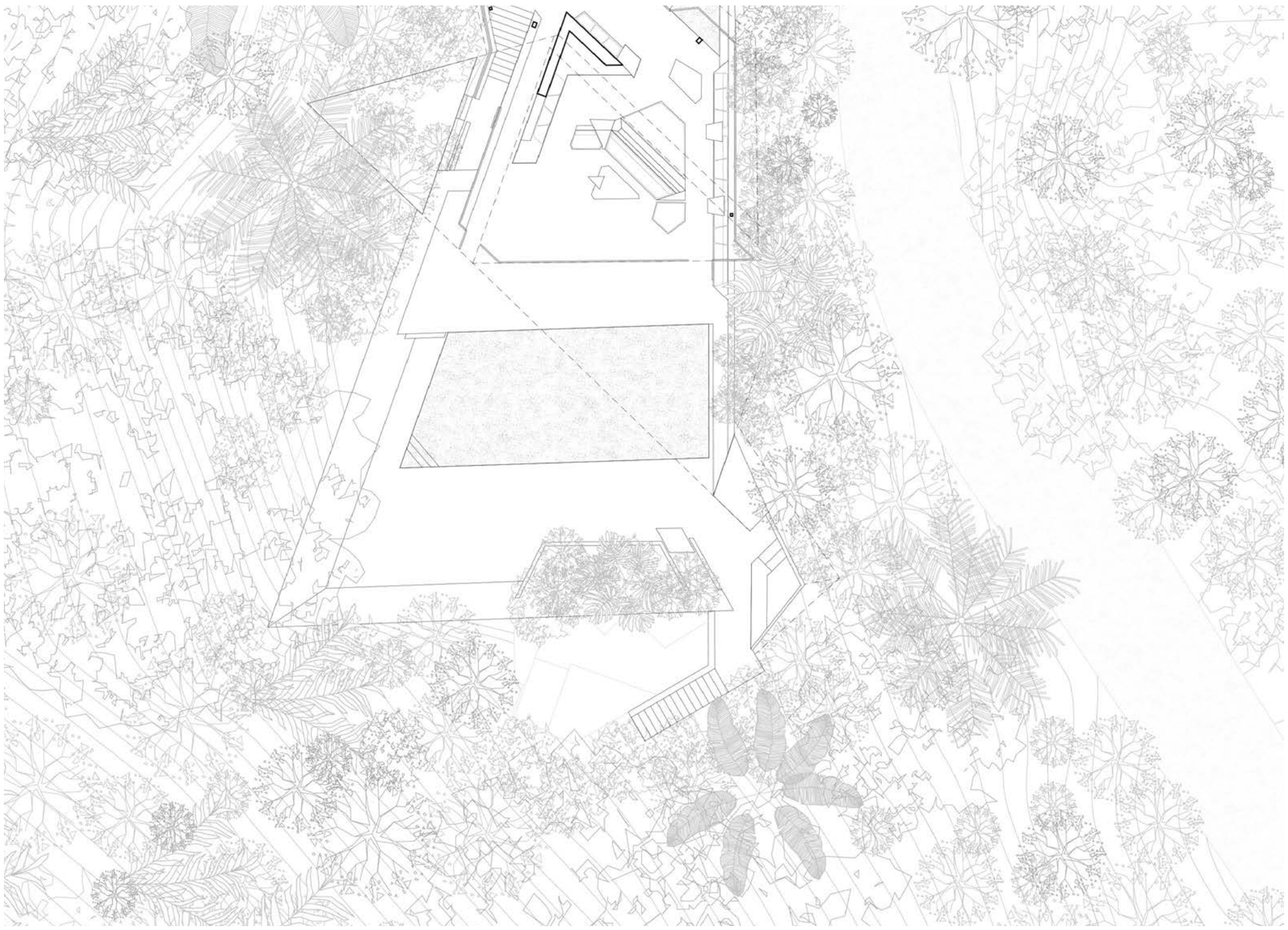
48

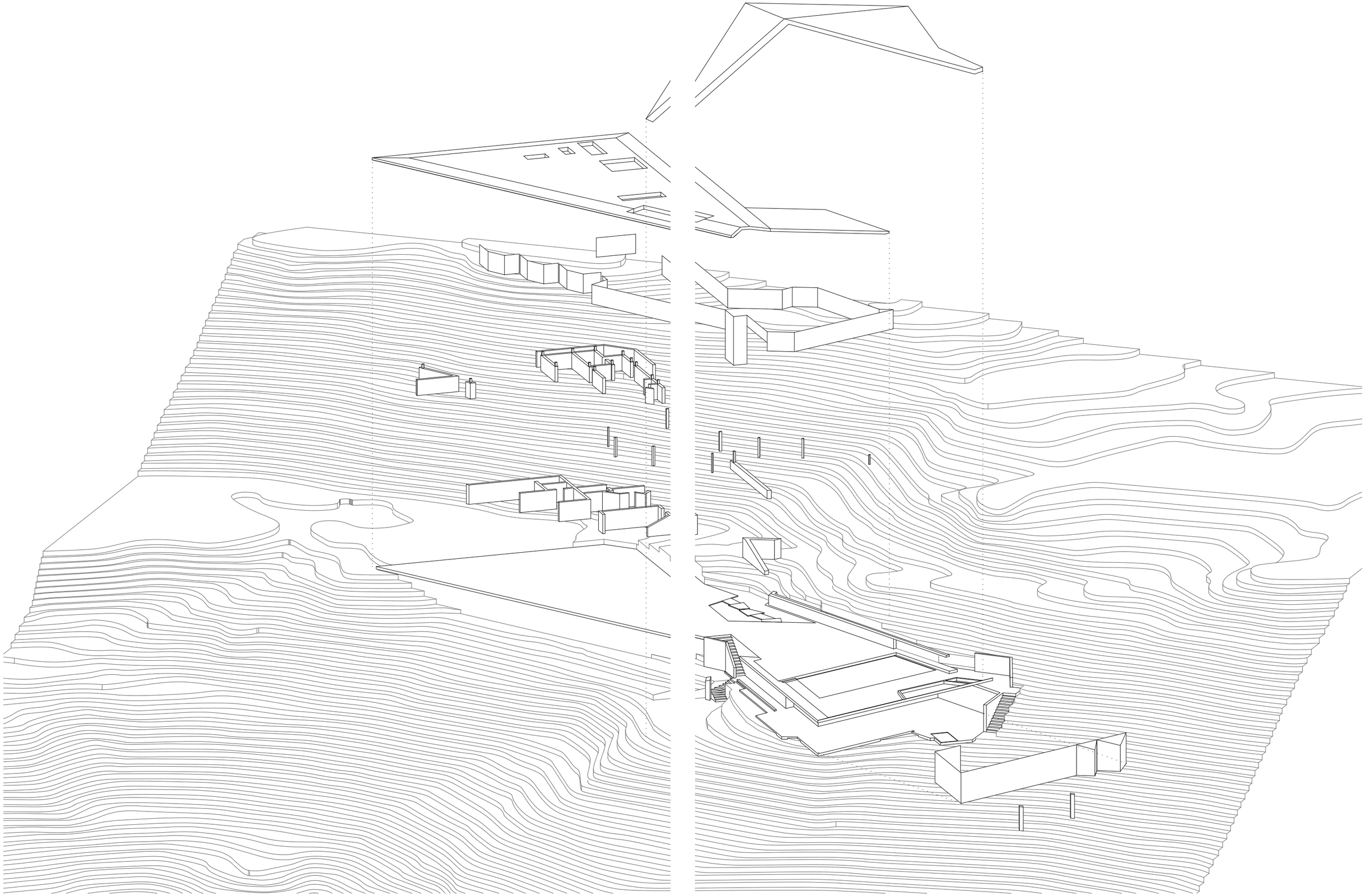


SCHEMATIC DRAWING OF THE VIEW FROM DIFFERENT SPACES ON THE
BASEMENT LEVEL

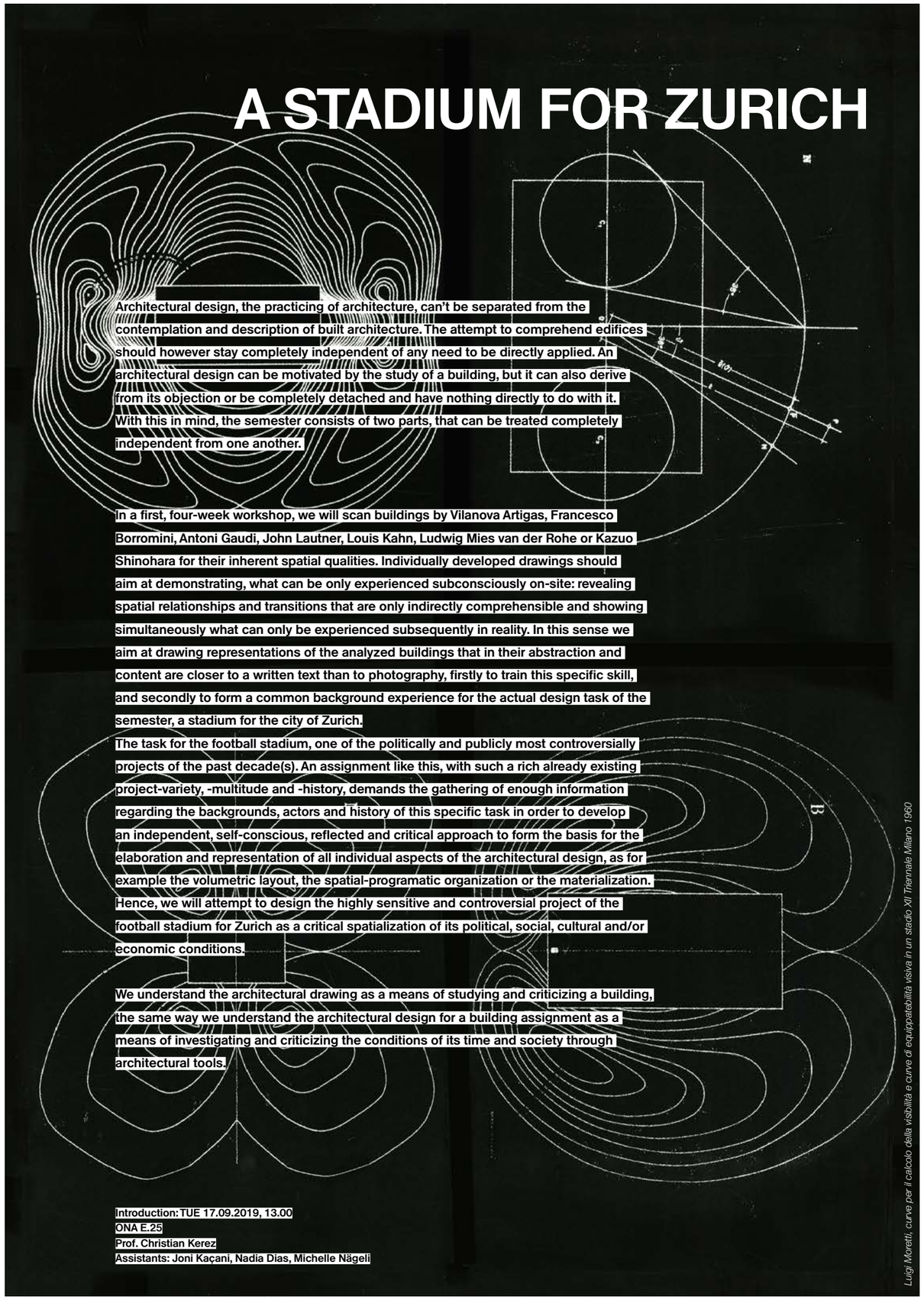
49







A STADIUM FOR ZURICH



Architectural design, the practicing of architecture, can't be separated from the contemplation and description of built architecture. The attempt to comprehend edifices should however stay completely independent of any need to be directly applied. An architectural design can be motivated by the study of a building, but it can also derive from its objection or be completely detached and have nothing directly to do with it. With this in mind, the semester consists of two parts, that can be treated completely independent from one another.

In a first, four-week workshop, we will scan buildings by Vilanova Artigas, Francesco Borromini, Antoni Gaudi, John Lautner, Louis Kahn, Ludwig Mies van der Rohe or Kazuo Shinohara for their inherent spatial qualities. Individually developed drawings should aim at demonstrating, what can be only experienced subconsciously on-site: revealing spatial relationships and transitions that are only indirectly comprehensible and showing simultaneously what can only be experienced subsequently in reality. In this sense we aim at drawing representations of the analyzed buildings that in their abstraction and content are closer to a written text than to photography, firstly to train this specific skill, and secondly to form a common background experience for the actual design task of the semester, a stadium for the city of Zurich.

The task for the football stadium, one of the politically and publicly most controversially projects of the past decade(s). An assignment like this, with such a rich already existing project-variety, -multitude and -history, demands the gathering of enough information regarding the backgrounds, actors and history of this specific task in order to develop an independent, self-conscious, reflected and critical approach to form the basis for the elaboration and representation of all individual aspects of the architectural design, as for example the volumetric layout, the spatial-programatic organization or the materialization. Hence, we will attempt to design the highly sensitive and controversial project of the football stadium for Zurich as a critical spatialization of its political, social, cultural and/or economic conditions.

We understand the architectural drawing as a means of studying and criticizing a building, the same way we understand the architectural design for a building assignment as a means of investigating and criticizing the conditions of its time and society through architectural tools.

Introduction: TUE 17.09.2019, 13.00
ONA E.25
Prof. Christian Kerez
Assistants: Joni Kaçani, Nadia Dias, Michelle Nägeli

Luigi Moretti, curve per il calcolo della visibilità e curve di equipaccabilità visiva in un stadio XII Triennale Milano 1960

AREAL HARDTURM

Zürich-West

Investoren-Studienauftrag im selektiven Verfahren

Studienauftragsprogramm

Inhalt

1	**Einleitung**	**5**
1.1	Ausgangslage	5
1.2	Aufgabe	6
1.3	Investoren-Studienauftrag	6
1.4	Studienauftragsprogramm	7
1.5	Studienauftragsziele	7
2	**Allgemeine Bestimmungen**	**8**
2.1	Allgemeines	8
2.2	Beurteilungsgremium	9
2.3	Expertinnen und Experten	10
2.4	Präqualifikation	11
2.5	Selektierte Teams	12
2.6	Beurteilung Studienauftragsresultate	13
2.7	Entschädigungen	13
2.8	Weiterbearbeitung	13
2.9	Urheberrecht	13
2.10	Termine	14
2.11	Unterlagen Ausgabe	15
2.12	Anforderungen Abgabe	16
2.13	Art der Darstellung	18
2.14	Nicht öffentliche Projektpräsentation / Beurteilung	18
2.15	Veröffentlichung und Ausstellung	19
3	**Grundlagen**	**20**
3.1	Perimeter	20
3.2	Städtebaulicher Kontext	20
4	**Stadion**	**22**
4.1	Allgemein	22
4.2	Projektierungsgrundsätze	22
4.3	Betriebszustände	23
4.4	Zuschauerkapazität	23
4.5	Hindernisfreies Bauen	23
4.6	Sicherheit im Stadion	23
4.7	Umgebung	24
5	**Gemeinnütziger Wohnungsbau**	**25**
5.1	Allgemein	25
5.2	Wohnungsschlüssel	25
5.3	Raumprogramm Wohnungen	26
5.4	Raumprogramm Erdgeschoss	28
5.5	Parkierung	28
5.6	Doppelkindergarten mit Betreuungsräumen (Hort)	28
6	**Investorenprojekt**	30
6.1	Allgemein	30
7	**Businessplan und finanzielle Rahmenbedingungen**	**31**
7.1	Allgemein	31
7.2	Betriebsmodell	31
7.3	Business- und Finanzplan	31
7.4	Baurechtsvertrag für Investoren- und Stadiongrundstück	32
7.5	Baurecht für den gemeinnützigen Wohnungsbau	33
8	**Rahmenbedingungen**	**34**
8.1	Massgebende Bauvorschriften	34
8.2	Ökologische Nachhaltigkeit und Gebäudetechnik	38
8.3	Verkehr	39
8.4	Erschliessung	39
8.5	Fuss- und Velowegnetz	41
8.6	Parkierung	41
8.7	Umweltverträglichkeitsprüfung (UVP)	42
8.8	Lärm	43
8.9	Freiraum / Quartier	45
8.10	Umgebungsgestaltung	46
8.11	Baugrund	47
8.12	Altlasten	47
8.13	Sicherheit ausserhalb Stadion	48
9	**Weiteres Vorgehen und politische Rahmenbedingungen**	**50**
9.1	Weiteres Vorgehen	50
9.2	Volksabstimmung	50
10	**Schlussbestimmungen**	**51**

1 Einleitung

1.1 Ausgangslage

Das Areal Hardturm hat eine lange Fussballtradition – das erste Fussballstadion wurde im Jahr 1929 eröffnet. Bis ins Jahr 2007 wurde auf dem Areal Spitzenfussball gespielt. Das Hardturmstadion war lange das Heimstadion des GC Zürich. Das andere Zürcher Fussballstadion “Letzigrund“ hat als langjährige Spielstätte des FC Zürich ebenfalls eine Fussballtradition. Der Ersatzneubau wurde 2007 vor allem als Leichtathletik- und Eventstadion konzipiert. Seit der Saison 2008 tragen beide Zürcher Fussballclubs ihre Heimspiele im “Letzigrund“ aus. Die Stadt Zürich ist seit vielen Jahren die einzige Schweizer Stadt, welche mit zwei Clubs in der höchsten Liga vertreten ist.

Die Stadt Zürich und die Stadion Zürich AG planten ab der Jahrtausendwende auf dem Hardturm-Areal ein neues Fussballstadion. Unter dem Projektnamen “Pentagon“ sollten dort künftig die beiden Stadtvereine beheimatet sein. Weiter war eine Mantelnutzung geplant. Von verschiedenen Seiten war jedoch Widerstand gegen das Projekt auszumachen, der sich vor allem gegen die Mantelnutzung des Stadions mit einem Einkaufszentrum und die damit verbundenen Auswirkungen auf die Gebäudeabmessungen und den Verkehr richtete. Die privaten Partner entschieden, das gemeinsame Projekt eines multifunktionalen Stadions nicht mehr weiterzuverfolgen. Die Stadion Zürich AG verkaufte schliesslich im Jahr 2010 ihre Grundstücke auf dem Areal an die Stadt Zürich – mit einem Rückkaufsrecht, falls das Areal nicht für den Bau eines Sportstadions genutzt wird.

Die Stadt lancierte daraufhin das Projekt neu: Im Herbst 2011 starteten zeitgleich die beiden Architekturwettbewerbe “Stadion Zürich“ und “Wohnungsbau“. Parallel dazu wurden die Sonderbauvorschriften für dieses Areal erarbeitet. Diese sollten den bestehenden privaten und noch heute gültigen Gestaltungsplan “Stadion Zürich“ ersetzen. Die Sonderbauvorschriften wurden bis dato jedoch nicht in Kraft gesetzt.

Das Büro Burkhard Meyer aus Baden (“Stadion Zürich“) sowie das Büro Bob Gysin aus Zürich (“Wohnungsbau“) gingen als Sieger aus den beiden Architekturwettbewerben hervor und wurden mit der Weitererarbeitung der Projekte beauftragt. Zu diesen Projekten wurden Vorprojekte erarbeitet, vgl. [5] und [6].

Im Herbst 2013 sagten die Stimmberechtigten knapp Nein zur städtischen Finanzierung des Fussballstadions, die Finanzierung des Wohnungsbaus hingegen wurde angenommen. Der Wohnungsbau selbst war jedoch an eine Annahme der Finanzierung des Stadion-Projektes gekoppelt, weshalb beide Projekte nicht weiterverfolgt werden konnten.

Nach dem Nein der Stimmberechtigten zu einem städtisch finanzierten, neuen Fussballstadion setzt der Stadtrat nun auf die Initiative von Privaten und schreibt einen selektiven Investoren-Studienauftrag aus. Mit dem gewählten Vorgehen bekräftigt er seine Haltung, die er nach der Abstimmung zum Ausdruck gebracht hat: Die Stadt selber plant kein neues Fussballstadion. Sie ist jedoch bereit, privaten Investorinnen und Investoren den Weg zu ebnen – nicht zuletzt deshalb, weil viele Gegnerinnen und Gegner der Vorlage betont hatten, sie seien nicht grundsätzlich gegen ein neues Fussballstadion, sondern lehnten dieses wegen der aus ihrer Sicht zu hohen Kosten ab.

Der geplante Investoren-Studienauftrag soll neben der Auswahl eines Projektes auch ein Konzept für dessen Finanzierung sicherstellen. Auf dem Areal Hardturm muss nicht nur ein Fussballstadion, sondern auch ein gemeinnütziger Wohnungsbau und ein Investorenprojekt entstehen.

Für das Areal erhält der/die Investor/in von der Stadt Zürich ein langjähriges Baurecht (92 Jahre).

1.2 Aufgabe

Der gesamte Bearbeitungsperimeter (Kat.-Nr. IQ6994) von 54'619 m^2 steht für die folgenden drei Teilprojekte zur Verfügung:

- Ein **Fussballstadion** für 18'000 Zuschauer/innen bei nationalen und 16'000 Zuschauer/innen bei internationalen Spielen: Die neue Arena wird das Heimstadion sowohl für den FC Zürich als auch für den Grasshopper Club Zürich. Es wird empfohlen, dass der Betrieb des Stadions durch eine den beiden Fussballclubs gehörenden Betriebsgesellschaft geführt wird.
- Die vom Stimmvolk bewilligte **Wohnsiedlung** (gemeinnütziger Wohnungsbau) oder ein adäquater Ersatz mit 14'700 m^2 Hauptnutzfläche. Eine Abparzellierung dieses Objektes muss möglich sein, die Wohnüberbauung muss spätestens nach Bauvollendung in das Eigentum einer anerkannten gemeinnützigen Trägerschaft übergehen. Für dieses Grundstück wird ein separater Baurechtsvertrag zwischen der Stadt Zürich und der gemeinnützigen Trägerschaft ausgearbeitet.
- Ein **Investorenprojekt**: Der/die Bieter/in hat die Möglichkeit auf dem Bearbeitungsperimeter ein Investorenprojekt nach seinen Bedürfnissen zu erstellen und zu nutzen. Mit diesem Projekt hat der/die Bieter/in die Möglichkeit, die notwendige Rendite zu erwirtschaften.

Der/die Bieter/in ist frei, die Teilprojekte als mehrere freistehende Bauten zu realisieren, oder gewisse Bauten zusammenhängend zu konzipieren. Ebenfalls ist im Grundsatz die Lage der verschiedenen Bauten frei (vgl. städtebaulicher Kontext Kapitel 3.2).

Das gesamte Projekt soll quartierverträglich sein und dem Ort und seiner Bedeutung als Stadteingang angemessen gestaltet und eingepasst sein. Sämtliche kantonalen und kommunalen Vorschriften sind einzuhalten.

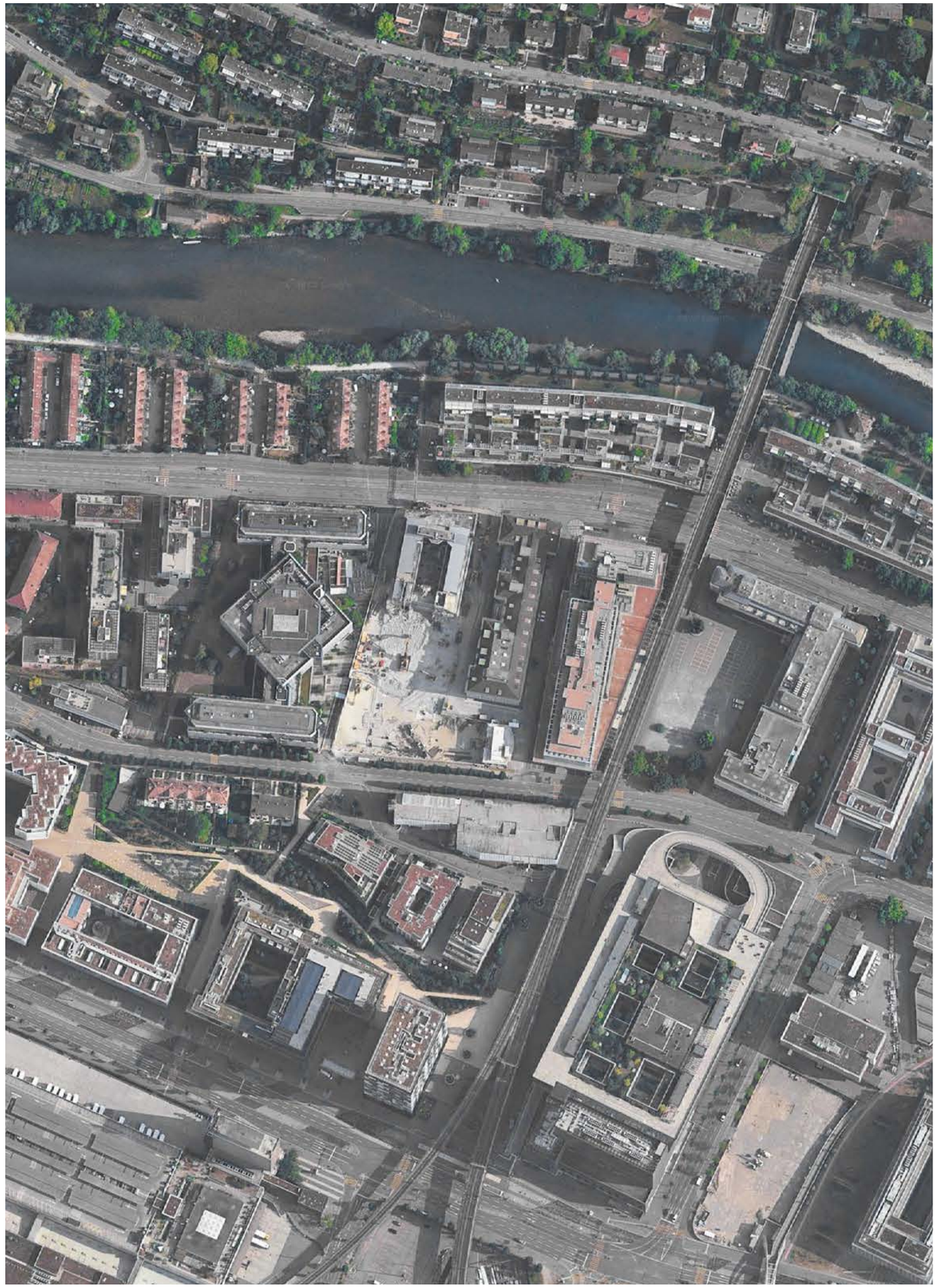
Der/die Investor/in plant, baut, und finanziert die Gebäude auf eigene Rechnung und Risiko. Die Umsetzung des Lebenszyklusgedankens mit einer einhergehenden Gesamtkostenoptimierung steht damit im Vordergrund.

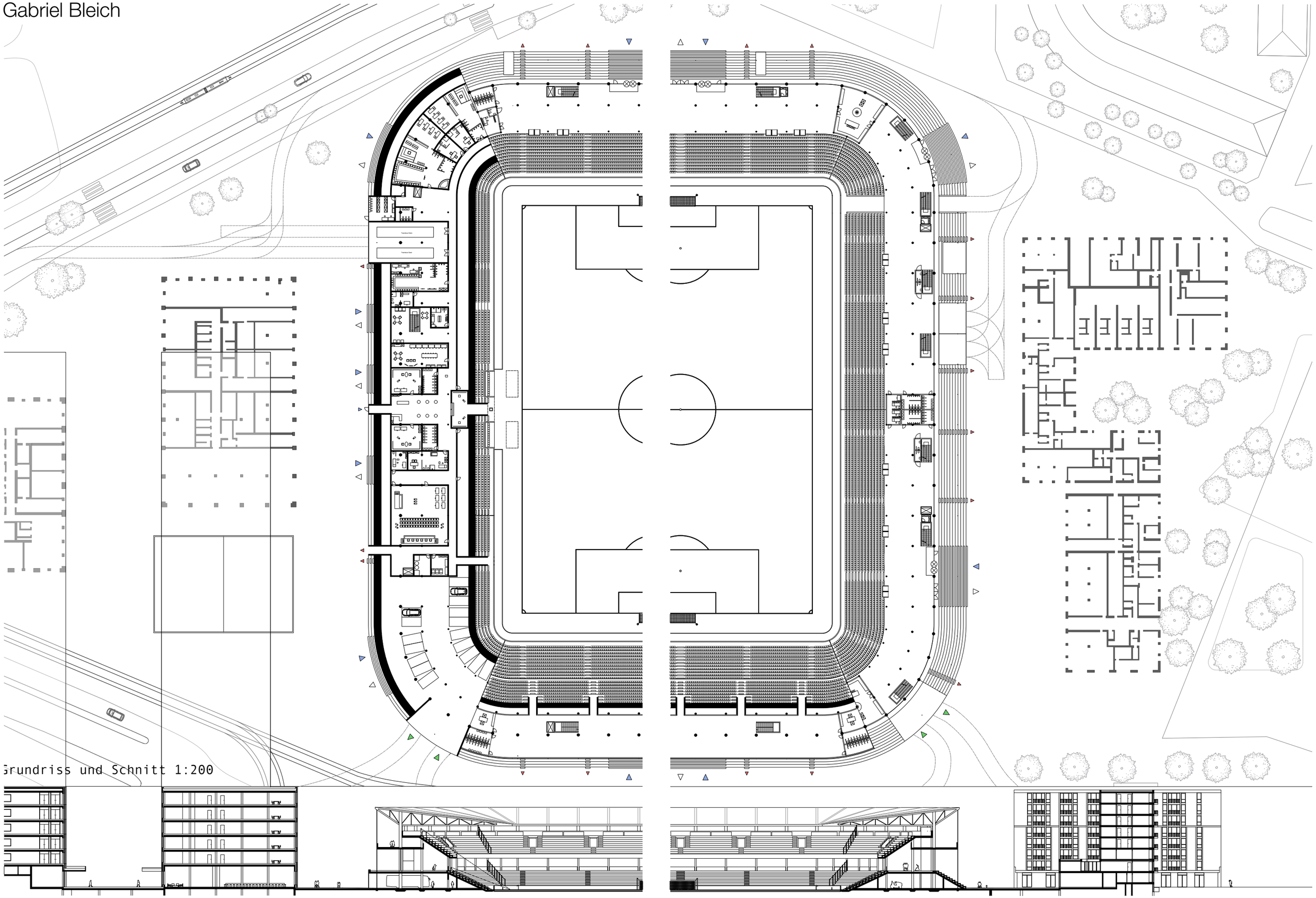
1.3 Investoren-Studienauftrag

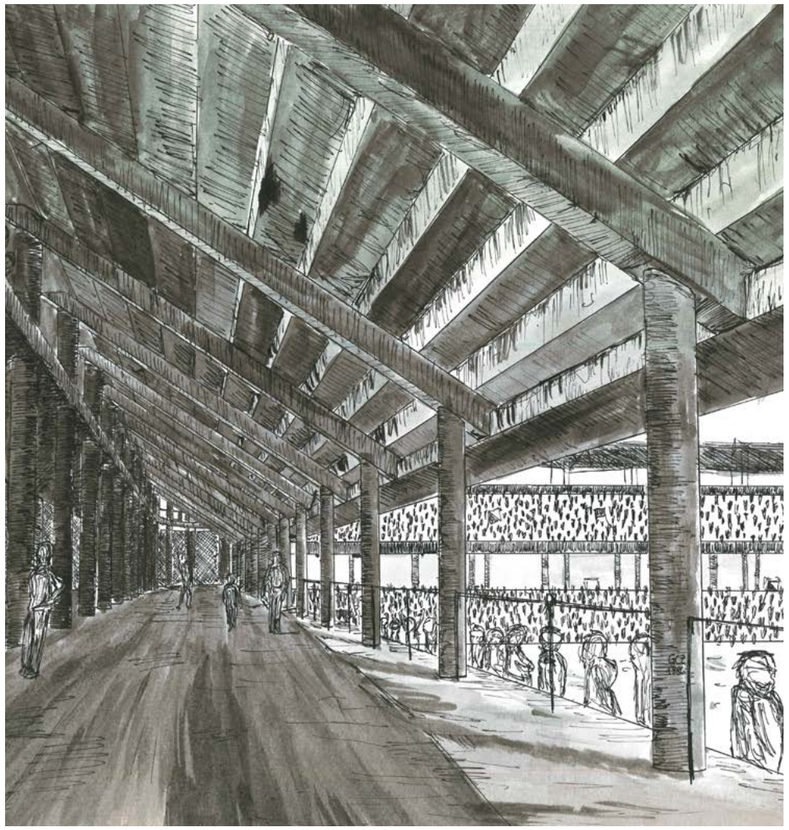
Die Stadt Zürich hat entschieden, den Investoren-Studienauftrag im selektiven Verfahren durchzuführen. Nach der Präqualifikation werden maximal sechs Bieterteams bestimmt, welche im nicht anonymen Verfahren die Projekte ausarbeiten und dem Beurteilungsgremium im Juni 2016 vorstellen dürfen.

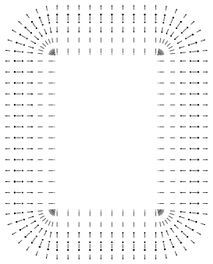
Beim Investoren-Studienauftrag wird auf die folgenden Punkte Wert gelegt:

- Städtebau / Architektur
  Das städtebauliche Konzept und der architektonische Ausdruck sind auch im Fokus von wirtschaftlichen Überlegungen im Rahmen des Investoren-Studienauftrages Schlüsselaspekte, welchen grosse Aufmerksamkeit zu schenken ist. Das grosse Prestige sowie die starke öffentliche Exposition des Projekts verlangen nach einem dem Ort entsprechenden Gesamtkonzept mit klarer Identität. Dabei muss sich das Projekt als Einheit in die Umgebung einfügen und hochwertige Freiräume schaffen, welche urbane Zwänge wie Verkehr und Emissionen in hohem Masse berücksichtigen. Räume, Konstruktionen und Materialien zeichnen sich durch architektonische Qualität und Dauerhaftigkeit aus. Immissionsgrenzen, technische Standards sowie baugesetzliche Rahmenbedingungen sind einzuhalten und umzusetzen.
- Betrieb / Umwelt
  Ein einwandfreier Betrieb soll durch hohe Ansprüche an die Funktionalität gegeben werden. Die Gebäude und die technischen Anlagen müssen nach modernstem Standard ausgelegt werden. Dem Sicherheitsaspekt ist gerade bei der grossen Personenbelegung besondere Aufmerksamkeit zu schenken. Die Akzeptanz des Projekts hängt ebenfalls stark vom Umgang mit potentiellen Emissionen ab. Als eine zentrale Einflussgrösse auf die Umwelt werden die urbane Verkehrssituation und die wachsende Belastung durch Mobilität angesehen. Die verschiedenen Aspekte betreffend Betrieb und Umwelt müssen aus den Plänen oder den verschiedenen Konzepten nachvollziehbar hervorgehen.
- Baurechtszins
  Das Grundstück wird dem/der Bieter/in zu einem Baurechtszins übergeben. Ziel der Stadt Zürich ist, dass sie sich weder bei den Investitionskosten (Erstellungs- und Unterhaltskosten) noch bei den jährlich wiederkehrenden Bewirtschaftungs- und Betriebskosten beteiligt.
- Businessplan
  In dem durch den/die Bieter/in zu erarbeitenden Businessplan (Gesamtfinanzierungsplan), müssen die Bewirtschaftungs- / Nutzungskonzepte für sämtliche Baukörper abgebildet sein. Die Nachvollziehbarkeit des Businessplanes muss gegeben sein. Der wirtschaftlichen Tragfähigkeit des Gesamtprojektes ist zwingend Rechnung zu tragen - diese wird bei der Beurteilung einen grossen Stellenwert haben.

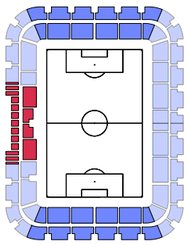



Grundriss und Schnitt 1:200

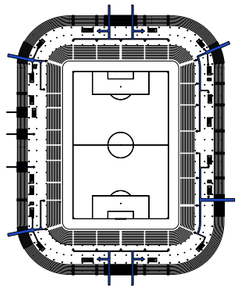




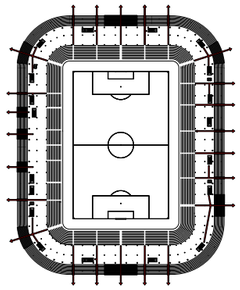
Stützenraster



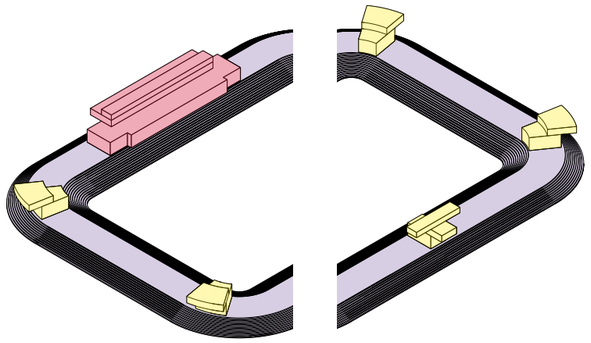
Sektoren



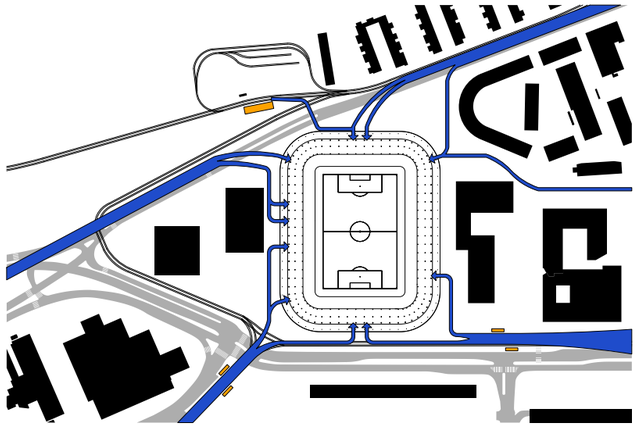
Zirkulation



(Not-)Ausgänge

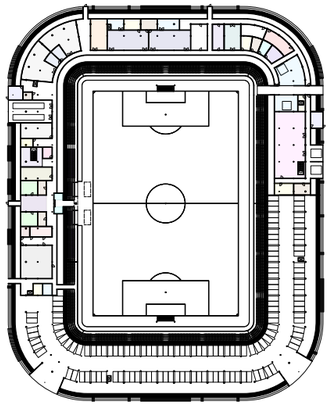


Axonometrie - Programmverteilung

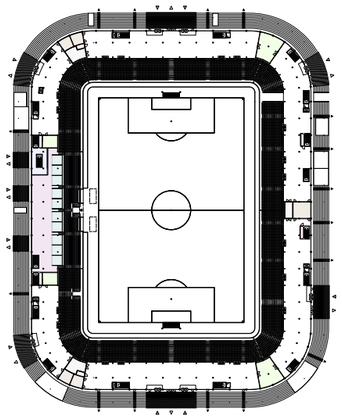


Erschliessung

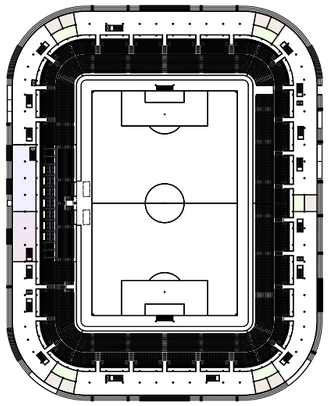
Grundrisse 1:666



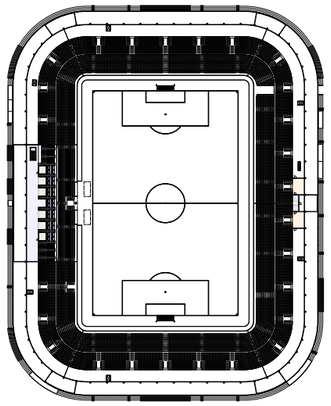
Sockel



EG

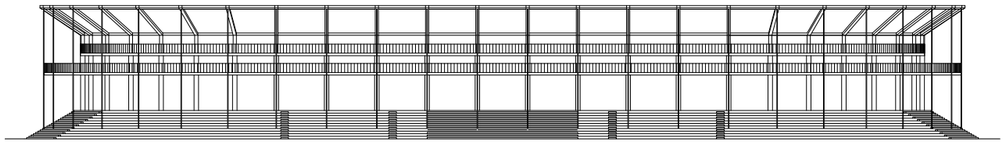


1.OG

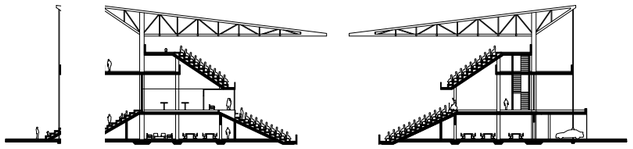


2.OG

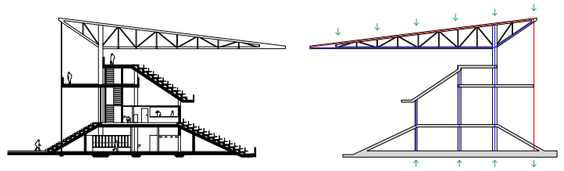
Ansicht Süd 1:200



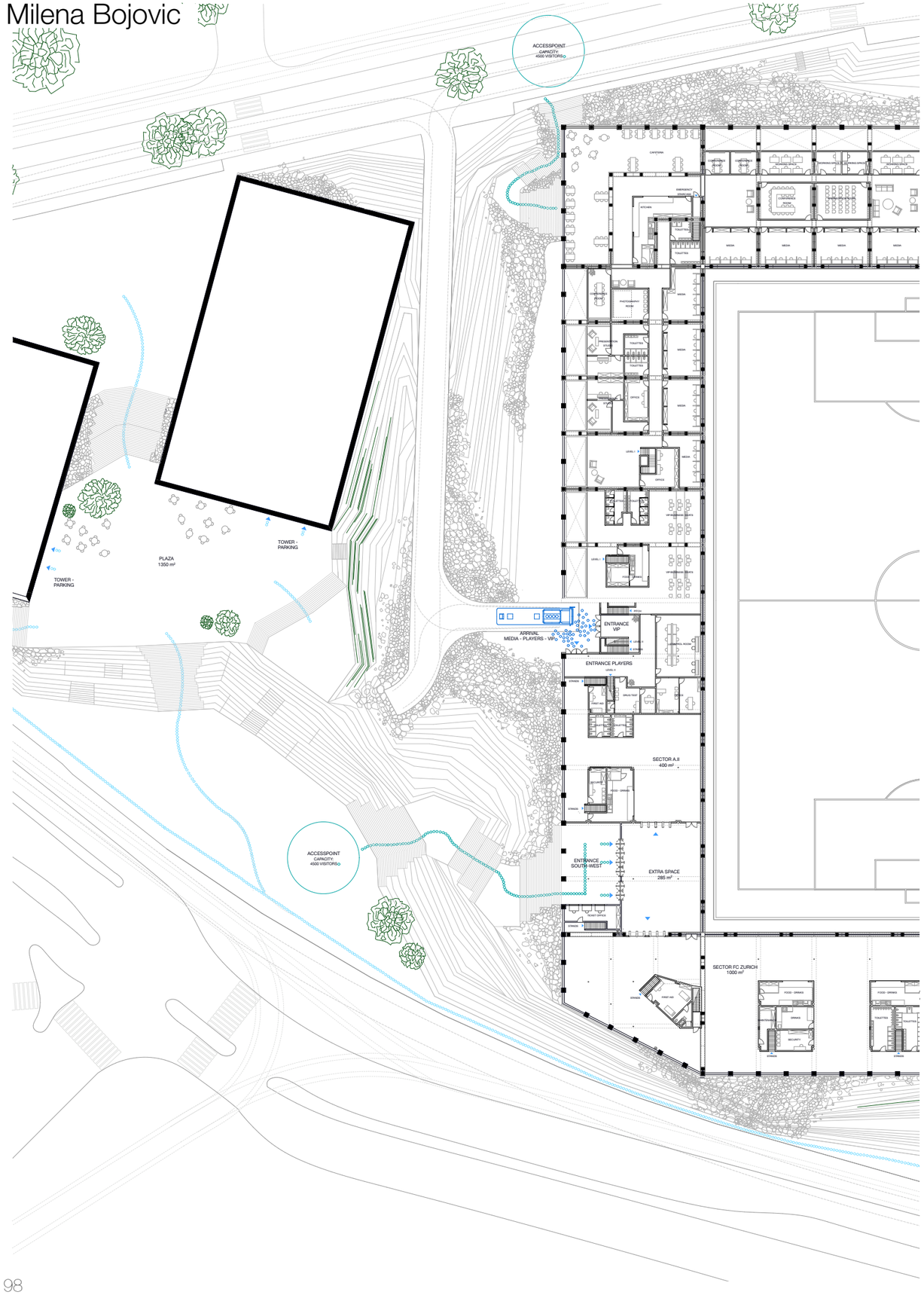
Schnitte 1:200

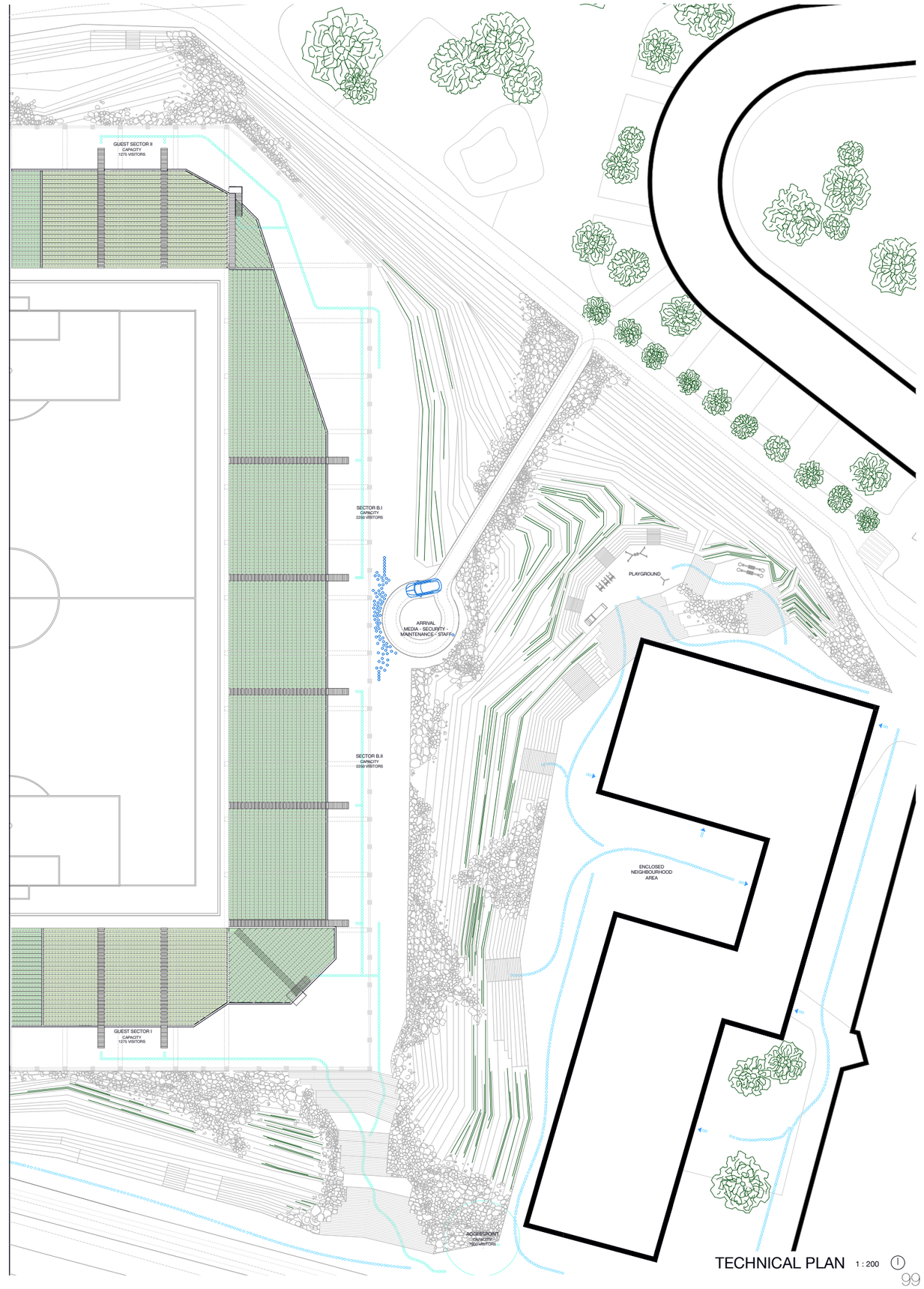


Tragstruktur



Milena Bojovic

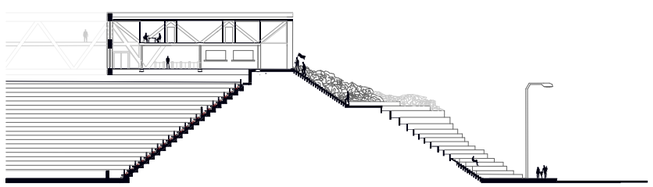




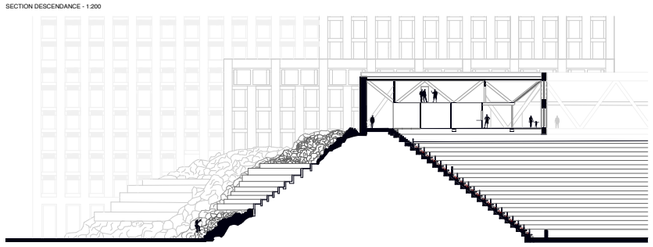
TECHNICAL PLAN 1 : 200 (I)

A STADIUM FOR ZURICH

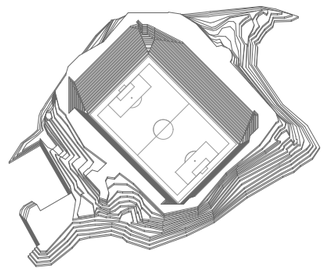
SECTION ASCENDENCE - 1:200

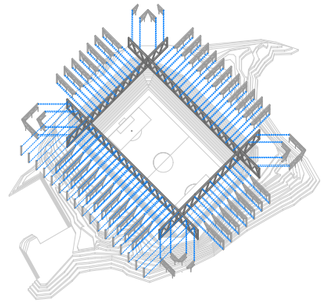


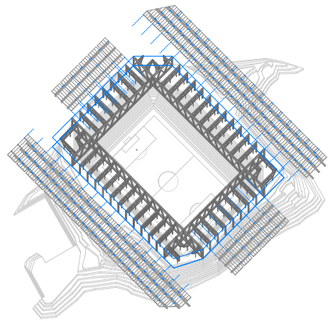
SECTION DESCENDANCE - 1:200

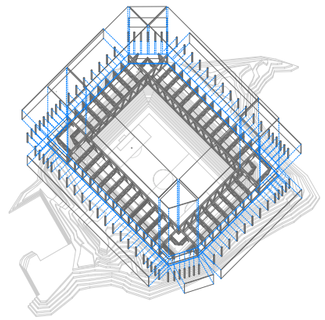


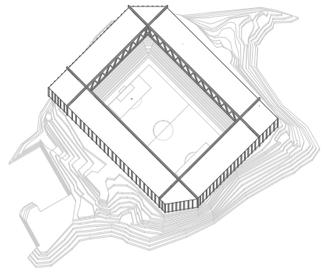
STRUCTURAL DEVELOPMENT OF THE ROOF



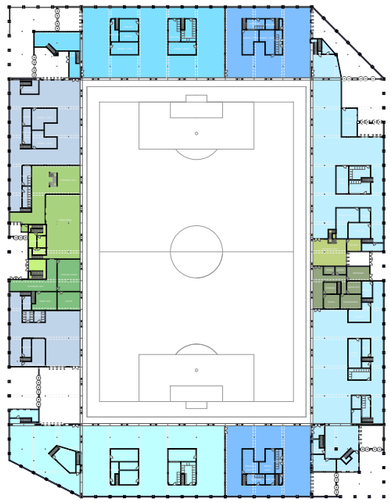


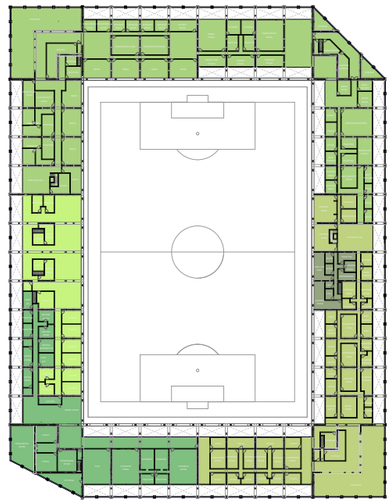




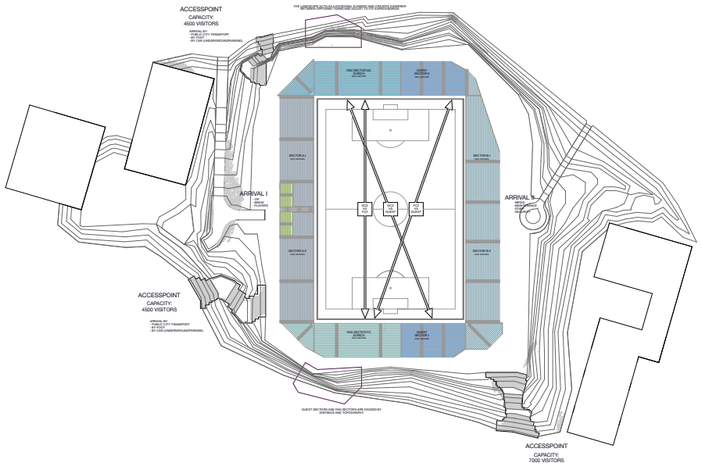


DISTRIBUTION OF FUNCTIONS

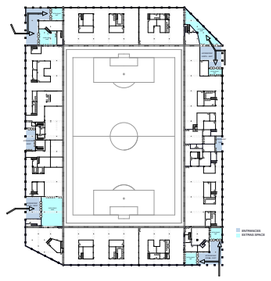


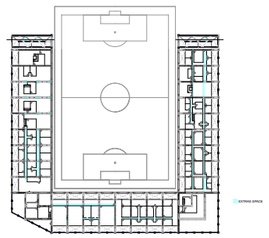


LANDSCAPE DEVELOPMENT - SITE - ACCESS - HEIGHT

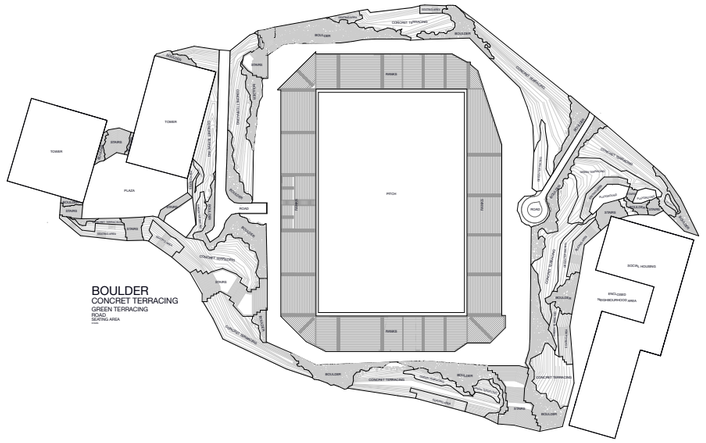


SAFETY MEASURES

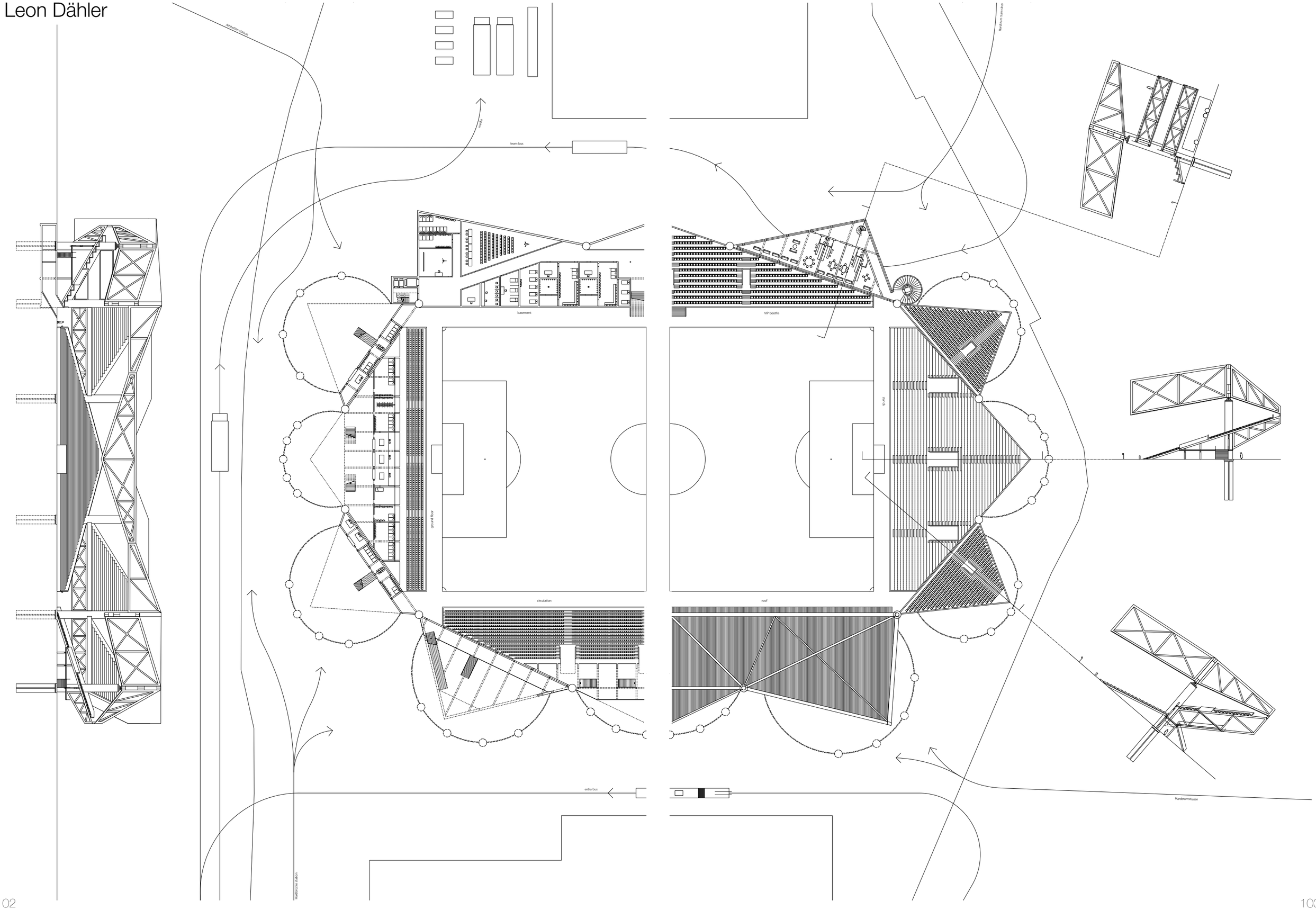


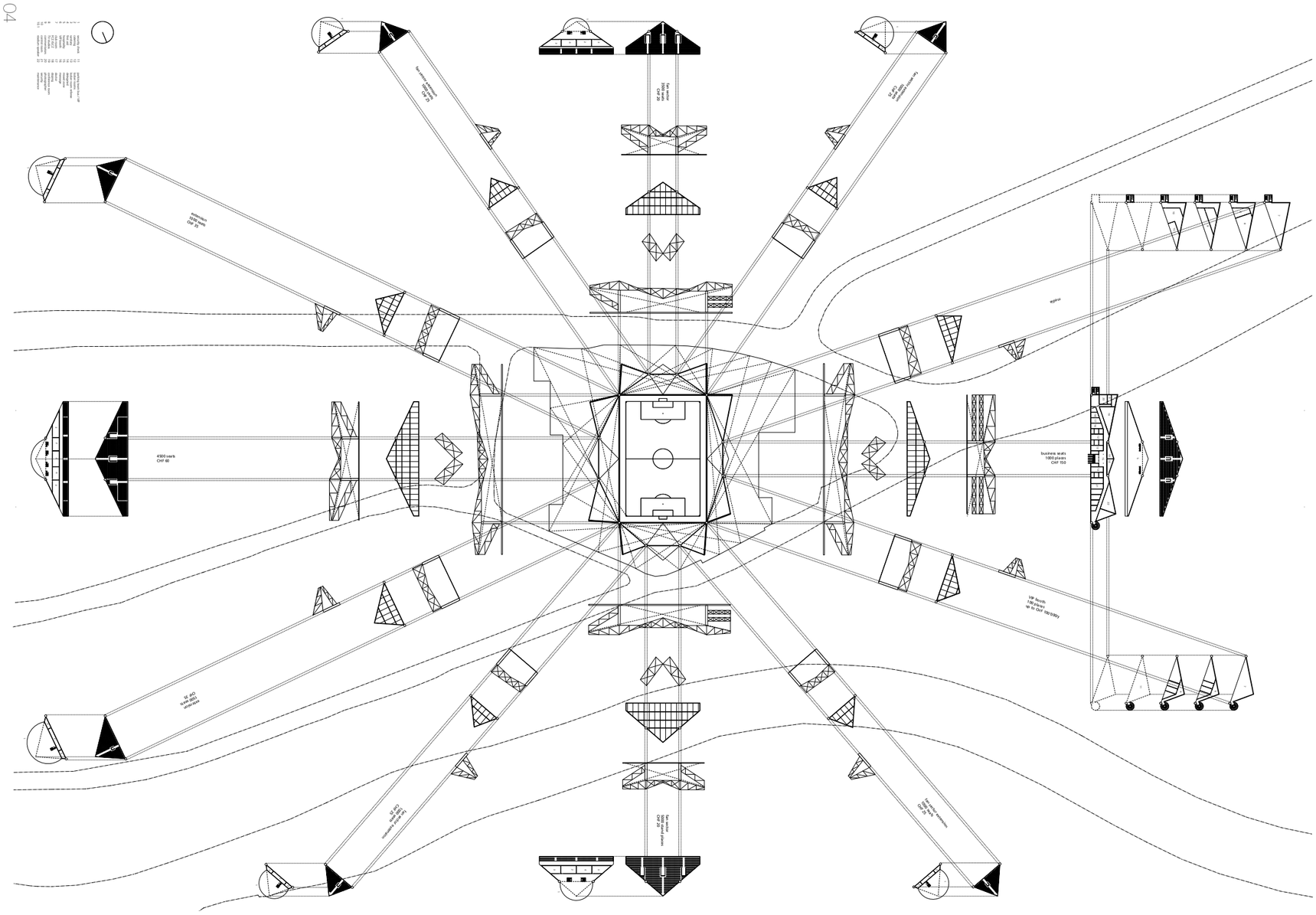


DISTRIBUTION OF ACTIVITIES - PURPOSE

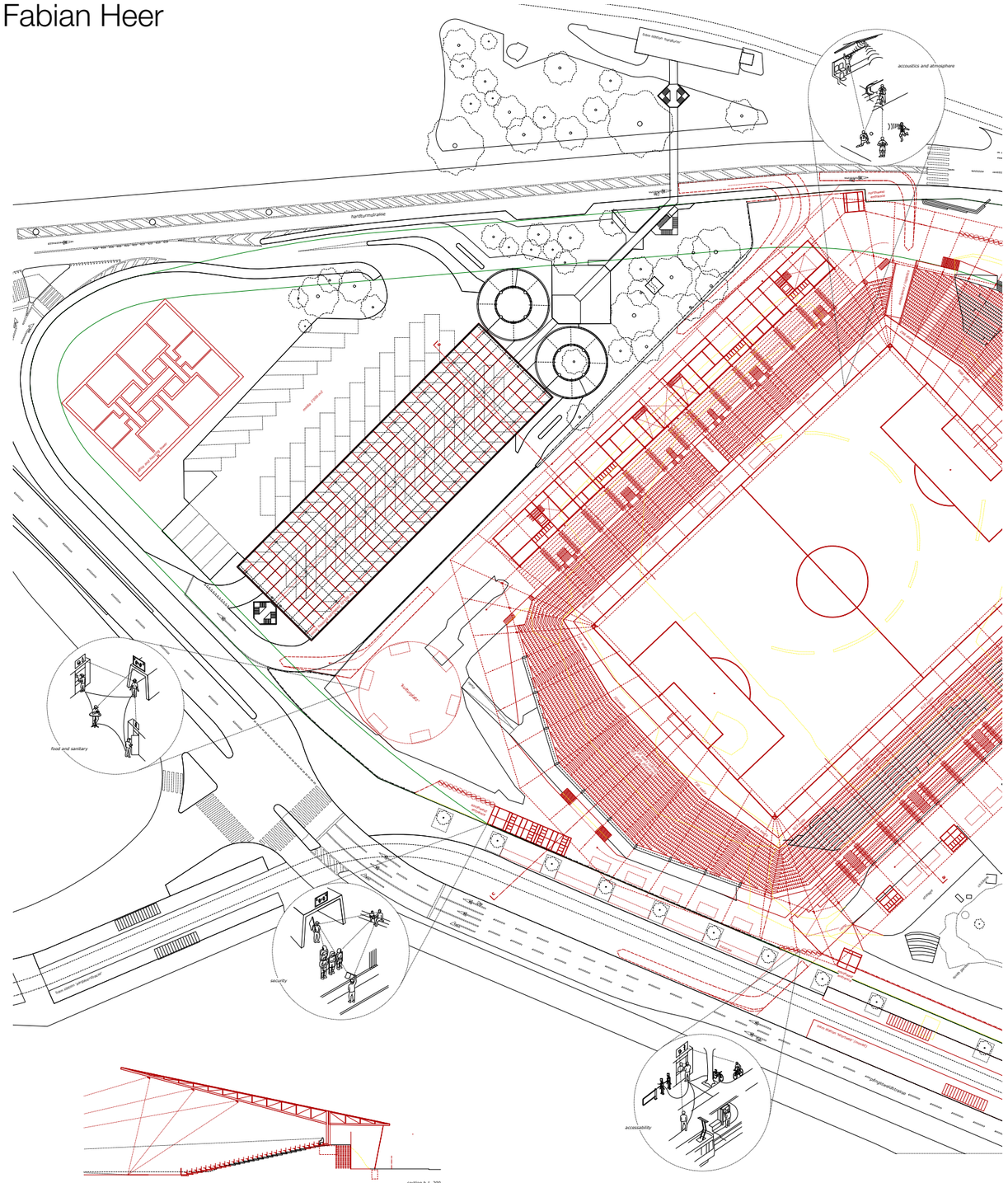


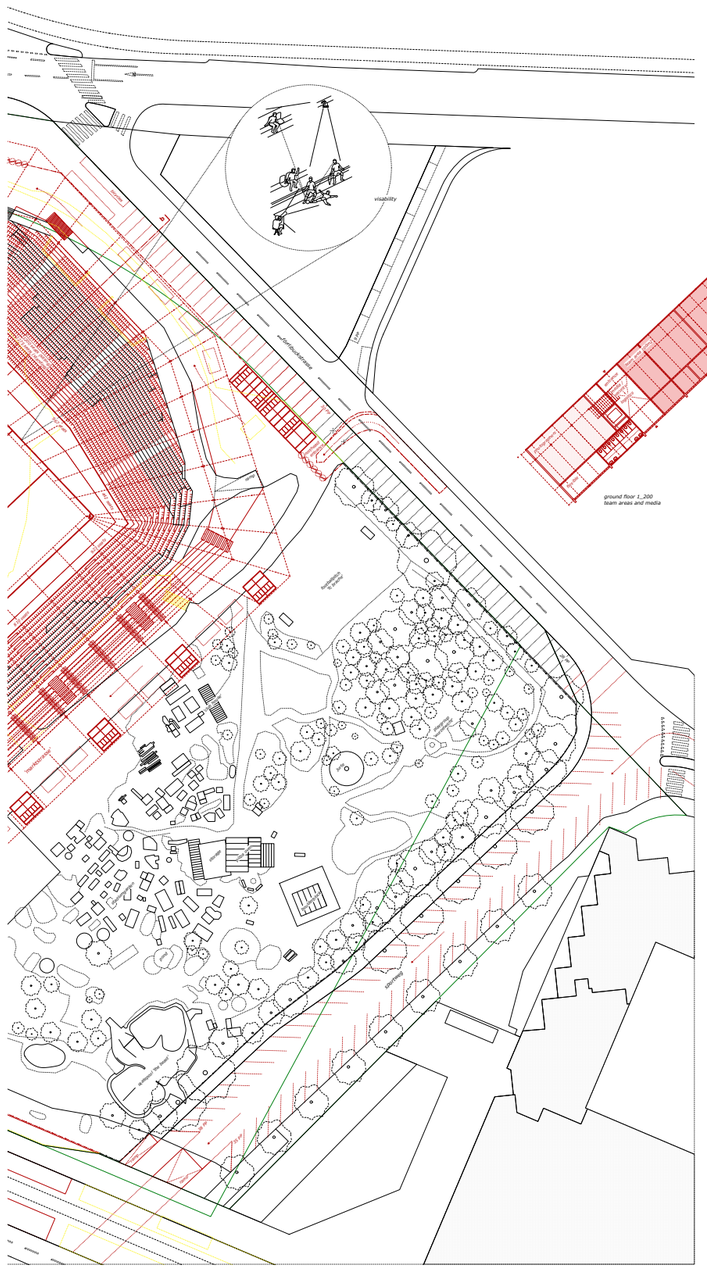
Leon Dähler

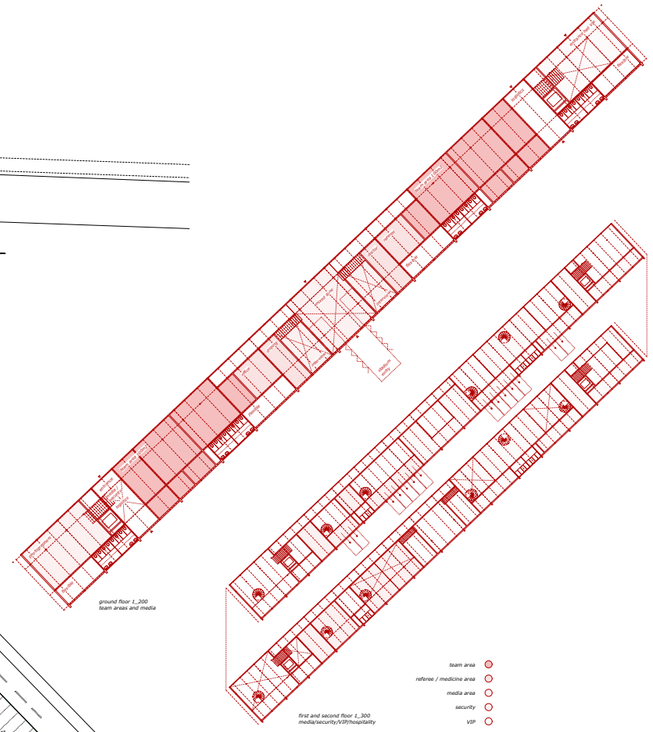

Altstetten station
media
team bus
basement
ground floor
circulation
extra bus
Hardbrücke station
VIP booths
roof
Hardturmstrasse

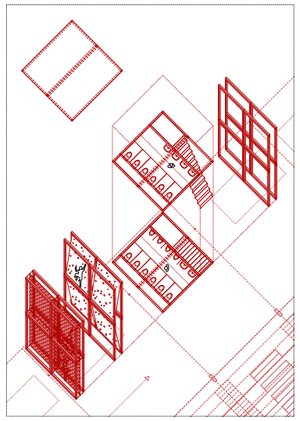

4300 seats
CHF 60
business seats
1000 places
CHF 150
VIP Boxes
148 places
up to CHF 100 Entry
Roof
Roof
Roof

Fabian Heer



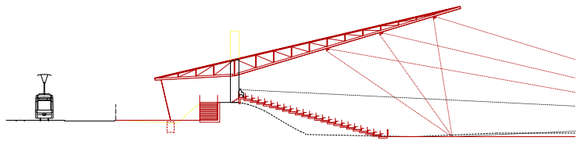




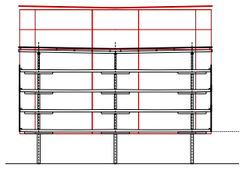


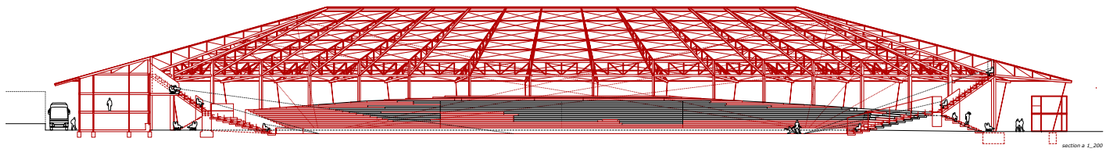
furniture 1_100

section b 1_200

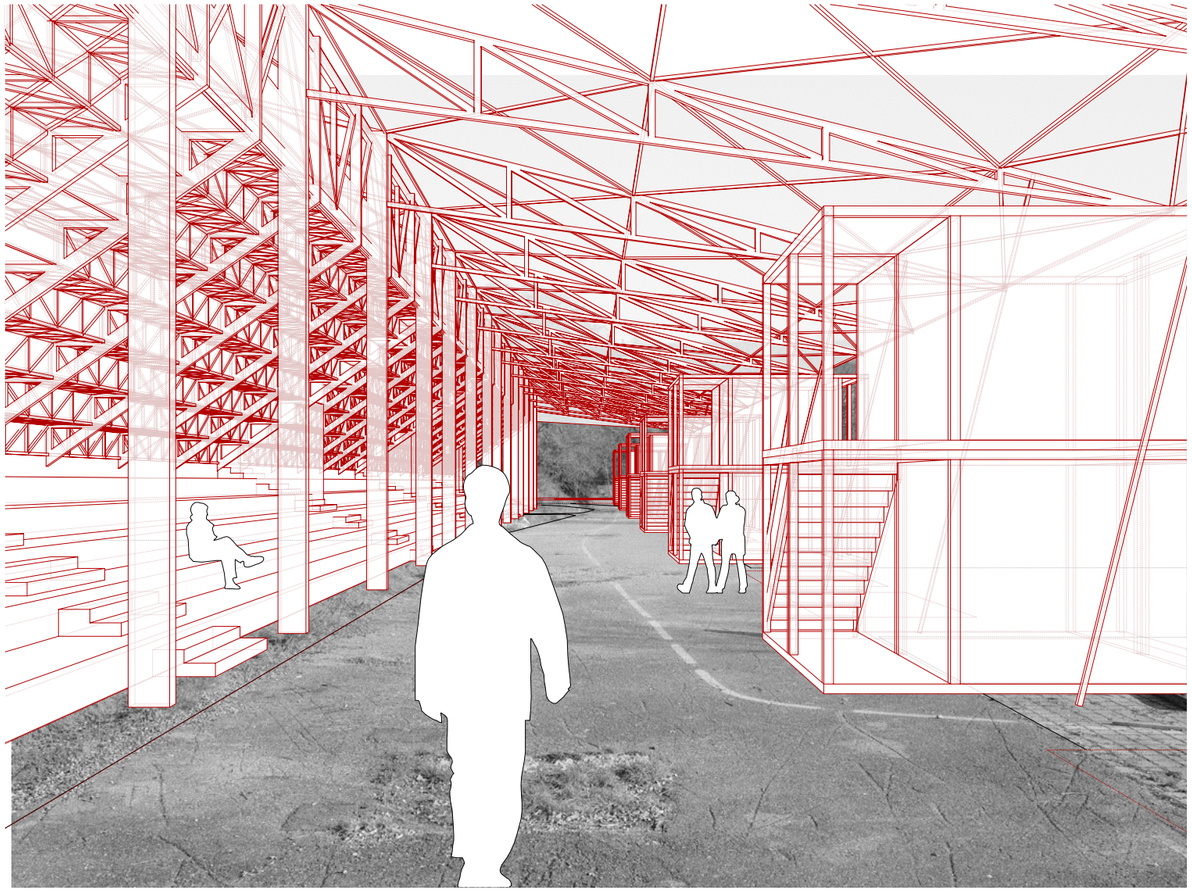


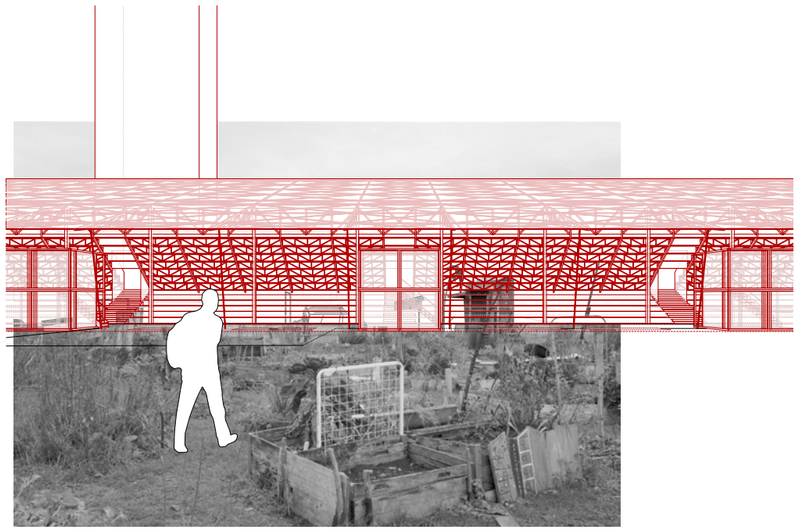
section c 1_200





section a 1_200





a stadium for zurich | professur christian kerez | hs19 | fabian heer

hardturm stadium 1983

1983

hardturm stadium 1960s

2002

hardturm area 2002

Die Tribünen sahen schon kurzy Zeit nach Beginn der Arbeiten aus wie nach einem Tornado. zvisa.com

Das Projekt für ein «Stadion Zürich» ist gescheitert

Die Credit Suisse (CS) lässt das Projekt für ein Stadion mit Zusatznutzungen auf dem Hardturm fallen. Nach jahrelanger Verzögerung und Kostensteigerungen sei das «Stadion Zürich» in der gegenwärtigen Situation «kein wirtschaftlich interessantes Projekt mehr». **Zusammen mit der Stadt will die CS nun ein redimensioniertes Fussballstadion realisieren helfen.**

Die Idee der «Volks-Aktiengesellschaft»

Die Stadt wird sich auf die Planung des Stadions konzentrieren, das rund 100 Millionen Franken kosten dürfte. Stadtrat Martin Vollenweyder will zur Finanzierung eine gemischte Gesellschaft gründen, an der Stadt, Sportvereine, Investoren und später auch die Fans beteiligt werden. 20 bis 25 Millionen Franken sollen 20 aufgebracht werden (davon 5 Millionen aus der Stadtkasse), der Rest wären Fremdmittel. **Die Stadt will den Dialog mit den Anwohnern suchen, rechnet aber nicht damit, dass der Widerstand gegen das verkleinerte Projekt riesig ist.** Im besten Fall könnte das neue

NZZ, 05.06.2009

Bald ist der Hardturm definitiv Geschichte

Abbrucharbeiten an den Stadiontribünen haben begonnen

NZZ, 12.05.2008

Alle Stadionprojekte sind viel zu teuer

NZZ, 24.12.2012

first competition

2012

Zürcher Stadionprojekt ganz knapp gekippt

Mit 50,8 Prozent Nein lehnen die Zürcherinnen und Zürcher den Bau eines neuen Fussballstadions ganz knapp ab. Mit überwältigendem Ja-Anteil wird hingegen die geplante Wohnsiedlung neben dem Stadion angenommen.

NZZ, 22.09.2013

Privatinvestoren für ein Stadion stehen bereit

Fieberhafte Suche nach einer Alternative zum abgelehnten Projekt auf dem Stadtzürcher Hardturmareal

der Stadt sprechen und schliesslich – in einigen Wochen – mit einem konkreten Projekt für das Hardturmareal an die Öffentlichkeit treten. **Als günstige und machbare Alternative erachtet Peter nach wie vor ein von der Stadt finanziertes Stadion im modularen Stahlbau.**

Darüber hinaus geistern auch noch andere Ideen herum. Nicht alle davon haben jedoch Hand und Fuss und sind zum Teil schon angejahrt. So wurde zum

NZZ, 24.09.2013

Hochhäuser könnten Hardturm-Stadion ermöglichen

Die Chancen für ein neues, privat finanziertes Fussballstadion auf dem Zürcher Hardturm-Areal steigen. Denn Investoren dürfen auf einen Teil des Areals lukrative Hochhäuser hinstellen und müssen nicht mehr zwangend das an der Urne abgelehnte städtische Projekt weiterverfolgen.

Watson, 05.11.2014

Hardturm project sketch by Nena1 – Tagesanzeiger, 22.05.2014

Auch Mietwohnungen stehen leer im «Trendquartier»

In Zürich-West wird weiterhin kräftig gebaut – vor allem hochpreisige Eigentums- und Mietwohnungen. Offenbar entspricht dies aber nicht der Nachfrage. Viele Wohnungen stehen leer.

NZZ, 25.01.2014

Die Brache des früheren Hardturmstadions ist ein kleines Paradies. Die Erfolgsgeschichte begann mit einem Ofen. Mit dem Stadion-Bau droht ihr nun das Ende.

Was ist das Erfolgsrezept der Brache? «Der Ort ist langsam gewachsen», sagt Lisa Kromer. «Er ist nicht von Anfang geplant und fertiggestellt worden.» **Sie bezweifelt, dass das neue Stadion und die zwei Wohntürme ein Gewinn für die Quartierbevölkerung werden.** «Statt Massen, die zu den Spielen pilgern und wieder verschwinden, wäre mir natürlich lieber, die Kinder hätten weiterhin diesen schönen Spielplatz.» Doch das sei ihre persönliche

Meinung, nicht die des Vereins. **Der Verein sei neutral, was die Stadionpläne angehe.**

Die Zurückhaltung kommt nicht von ungefähr. Nach der letzten verlorenen Stadion-Abstimmung stürmten Fussballhooligans auf die Brache, bedrohten deren Bemaler und beschädigten die Einrichtung. Kommt hinzu, dass der Verein ein gutes Verhältnis zur Stadt pflegt und ihm von Anfang an klar war, dass die

Designte Parks, die leblos sind

Heuberger kritisiert, dass die Anwohner nicht in die Pläne einbezogen wurden. **«Heute kann man Städte nicht mehr bauen, ohne die Direktbetroffenen einzubinden»,** sagt der Journalist. Was sonst passiere, sehe man auf der Pfingstweid, dem Turbinenplatz oder in der Europaallee. Designte Parks und Stadtmöle, die Millionen kosten, aber nicht ankommen würden. «Hier dagegen», ergänzt Stefan Mindler, «haben wir einen Lebensraum mit einer viel höheren Qualität – und er kostet die Stadt fast nichts.»

Letzteres habe ironischerweise einen Nachteil, findet Heuberger: **«Eine Zwischennutzung, die nichts kostet, erweckt bei Investoren und Beamten den Eindruck, dass sie wertlos ist. Dass sie ja gar nichts zerstören, wenn sie die Brache überbauen.»**

Zürcher Landeszeitungen, 29.09.2017

STADIONBRACHE HARDTURM

Grüne Gärten gegen grünen Rasen

[illegible] wagt sie einen neuen Versuch. Aber der Widerstand dagegen hat sich bereits formiert.

«Wir sind nicht grundsätzlich gegen ein Stadion», sagt Jean-Marc Heuberger vom Vorstand des neu gegründeten Vereins IG Freiräume Zürich-West. «Aber wir können das Projekt in dieser Form nicht akzeptieren.» Die Forderung seines Vereins: Die Hardturm-Brache soll erhalten bleiben. **Die Mitglieder des Vereins, darunter Landschaftsarchitekninnen und Stadtplaner, glauben, dass auf dem ehemaligen Stadionareal ein Stadion gebaut werden könne, ohne den Grünraum zerstören zu müssen.**

WOZ, 12.10.2017

2015 — second competition

Einfaches Stadion vor grossen Türmen

[illegible] zahlen müsse. Dieser Preis nennt sich «Investorenprojekt». **Der Investor, muss man dazu wissen, darf auf dem Bearbeitungsperimeter ein Projekt «nach seinen Bedürfnissen erstellen und nutzen», um damit «die notwendige Rendite zu erwirtschaften.** Was heisst das konkret? Wie bei der heutigen Präsentation des

seltsam verloren in der Landschaft, der «Plaza» zu ihren Füssen fehlt der stadträumliche Zusammenhang. **Auch die Jury hätte sich die beiden Bauten «schlanker, mit einer weniger gewichtigen Erscheinung» gewünscht. Die Aufenthaltsqualität auf der Plaza wurde «kritisch beurteilt».**

Hochparterre, 12.07.2016

football game organized by GC-fans 2015

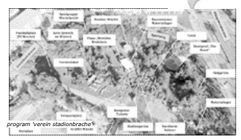
2018 — vote

Man kann sie drehen und wenden, wie man will: Die dreiteilige Zürcher Stadion-Vorlage hat auf jeder Seite einen Tolggen. Trotzdem empfiehlt Hochparterre ein Ja zum Stadion und seinen flankierenden Massnahmen.

Städtebaulich betrachtet stehen die Türme richtig im Limmattaler Hochhausfeld – aber nicht dort, wo man auf Anhieb wohnen möchte. Und es wird auch nicht einfach, dort Stadt zu schaffen. Dazu aber müssen die Bauträger verpflichtet werden, **500 Wohnungen und viel Gewerberaum** beisammen zusammen mit dem Stadion einigen Publikumsverkehr. Doch **damit ist nicht automatisch ein Ort entstanden, wo man auch gerne hingeht.** Die Bauträger sollen einen belebten und schönen öffentlichen Raum (inpunt Hochhäuser und Stadion schaffen, und die Stadt als Bewilligungsbehörde dies einfordern.

Und dann sind da noch zwei Trümer: Die grosse der Höngger, die um ihre Aussicht bangen und über die man nur lachen kann; Willkommen in der Stadt – eure Kinder werden noch ihr helle Freude an der Hochhaus-Skyline haben. **Und die wehmütige der Stadion-Brache, dieser Ort für viele und für viele Fantasien, der in dieser Form verschwindet. Doch – wur Brade nicht das, was sich stets verändert?**

Hochparterre, 05.11.2018



program 'verein stadionbrache'
Kerstin Wenzel

'stadiongarten' urban gardening

present

long-term projects

Verein 'Brotoloco'
meeting point with shelter, furniture and fireplace
lunch table (common lunch on monday)
playground (supplied by the cities social department)

toddler group (Jurtenverein)
playgroup 'Wurzelwicht'

skatepool 'The Beast'
boulderblock
FC Brache with annual 'Grümpelturnier'

'stadiongarten': 70 plots, 100 gardeners, composting plants
permaculture pilot plants
association 'Hardturmhühner'
composting toilette – pilot plant
beekeeping
mushroom garden
eatable insects

current short dated guest projects

duckweeds ('Nahrossen Forschung und Kunst')
further education for teachers (WWF)
research project from the institute for robotics of the ETH (drone flights)

current cultural happenings

Living Room (art festival, annual)
Les Digitales (music festival, annual)
Autokino (art project)
Cirque de Loin
Rosis Wirbelwind (theater)

regularly users

various schools

quelle_www.zukunfthardturmareal.ch

'brachen'-calendar 2019

31st march
start 'stadiongarten'

6th of april to 8th of may
'riguneriikulturtage'

13th of may to 16th of june
street food festival

20th to 23th of june
italian food festival

29th to 30th of june
ALBA-festival

7th of juli
'brachengrümpi'

27th of juli
'stadtsommer' concert

3rd to 4th of august
'klimafestival'

8th to 20th of august
cirque de loin

24th to 31st of august
living room festival

11th to 30th of september
'spiel und spass im quartier'

16th of september
ETH robots

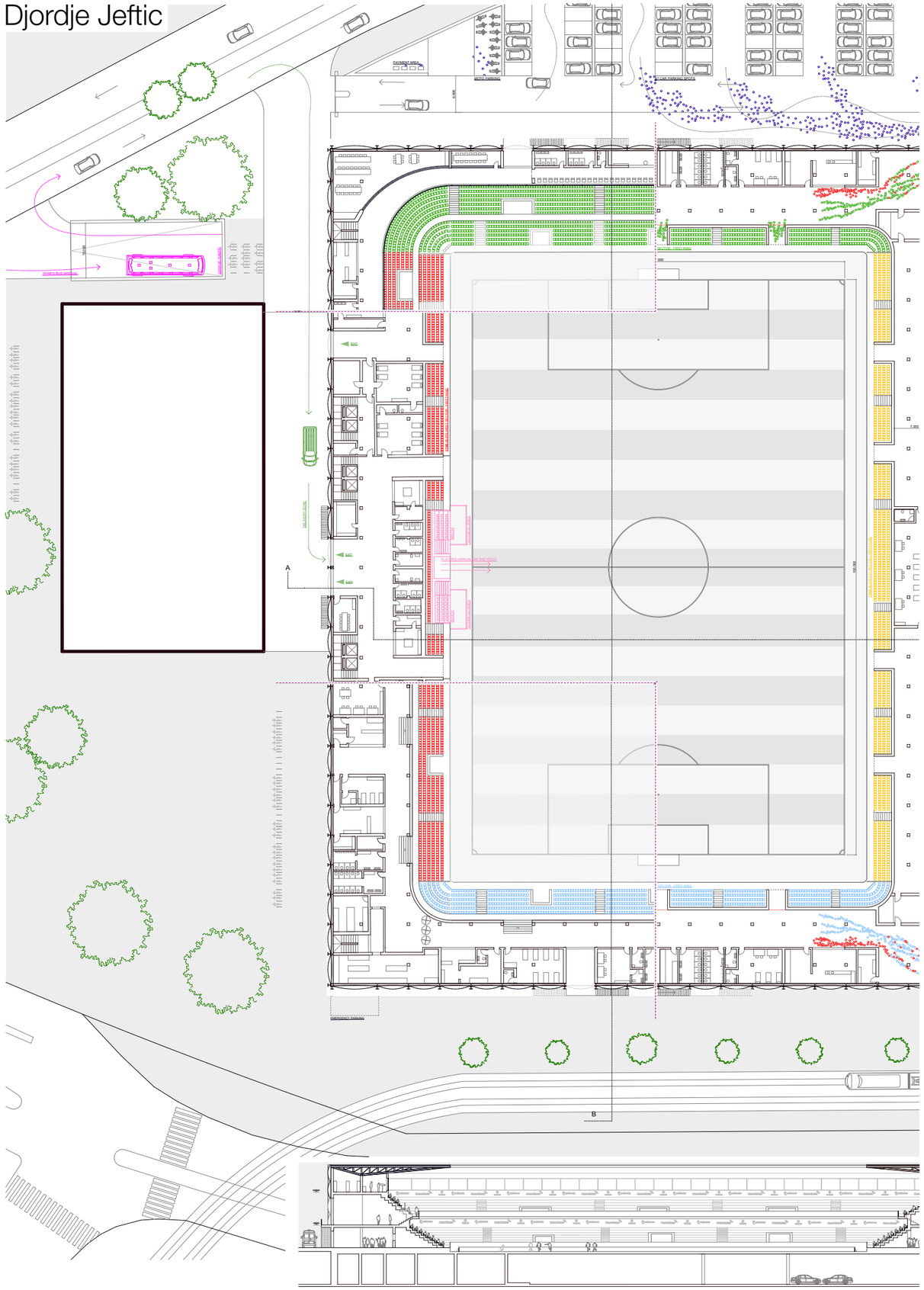
19th of september
vernissage trans magazine

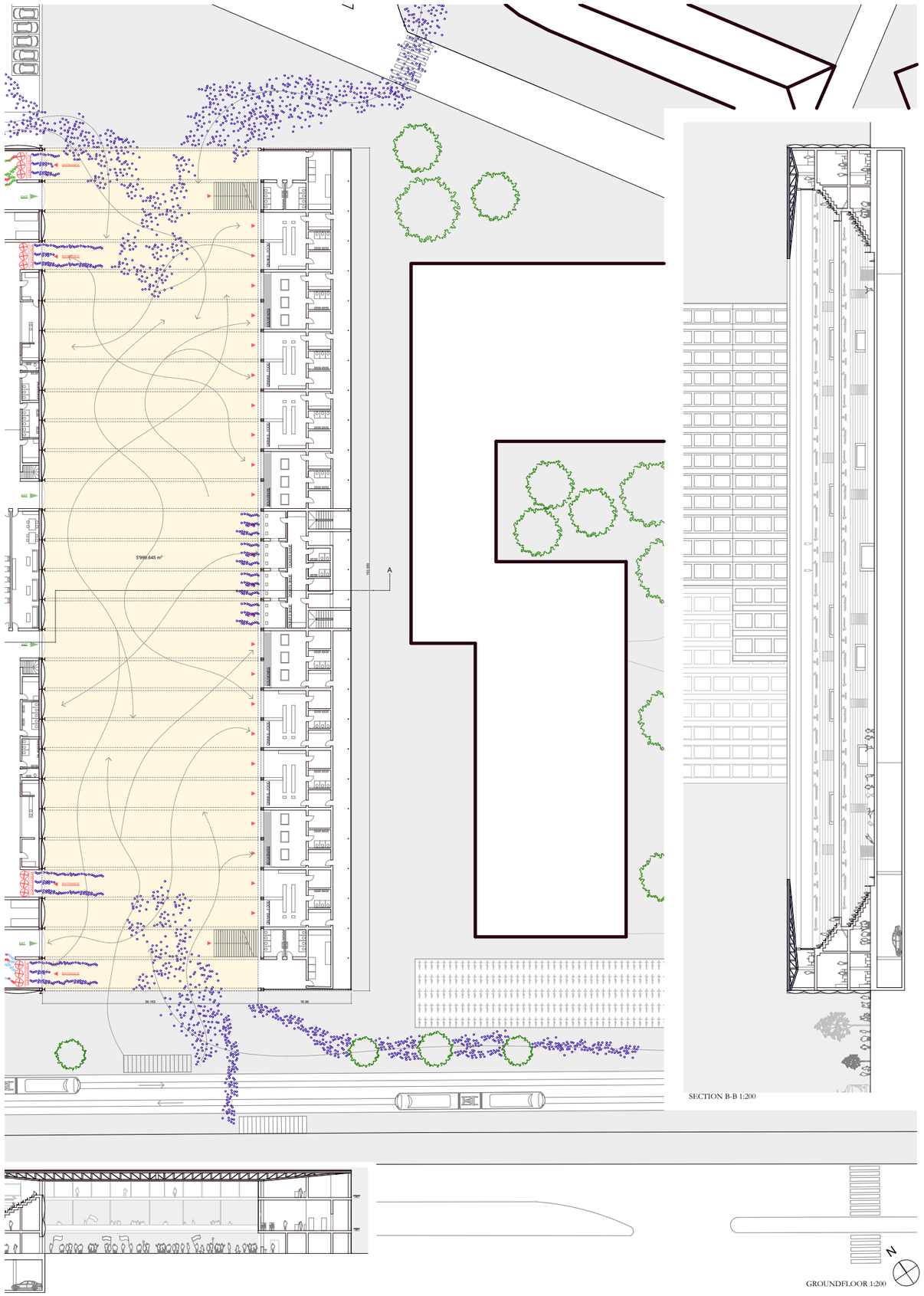
and more

culture
social
research | education
sport
environment

annual street food festival

Djordje Jeftic





SECTION B-B 1:200

GROUNDFLOOR 1:200

OUTSIDE VISUALISATION

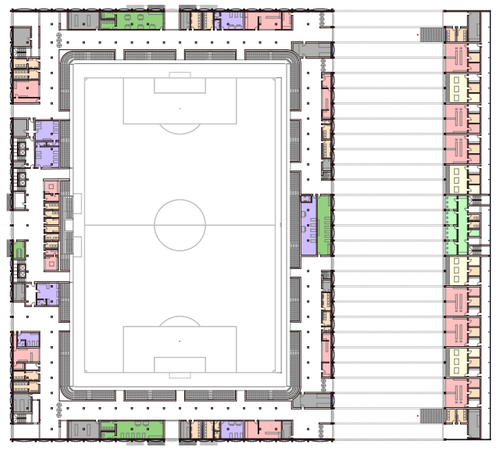
INSIDE VISUALISATION

TURK TELEKOM ARENA, ISTANBUL

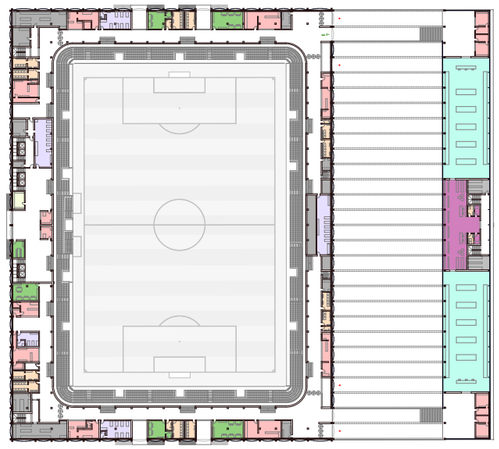
SAN SIRO, MILANO

LEGENDE

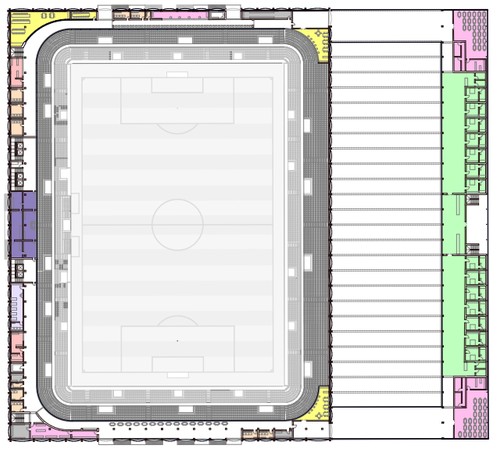
- BOUVETTE
- SECURITY
- TECHNICAL ROOM
- TOILETTE
- MEDICAL HELP
- MUSEUM
- ROOMS
- STORE/ FAN SHOP
- REUNION ROOMS
- RESTAURANT/LOUNGE



GROUND FLOOR 1:500



1ST FLOOR 1:500



2ND FLOOR 1:500

STATISTIK FANS AVARAGE PRO GAME - FC ZURICH

2019-2020	9'428 fans
2018-2019	10'660 fans
2017-2018	10'726 fans
2016-2017	10'660 fans
2015-2016	8'701 fans
2014-2015	9'389 fans
2013-2014	9'564 fans
2012-2013	10'741 fans
2011-2012	10'512 fans
2010-2011	11'750 fans
2009-2010	10'700 fans

STATISTIK FANS AVARAGE PRO GAME - GRASSHOPPERS

2019-2020	3'000 fans
2018-2019	5'633 fans
2017-2018	7'000 fans
2016-2017	5'011 fans
2015-2016	6'461 fans
2014-2015	6'176 fans
2013-2014	7'268 fans
2012-2013	8'600 fans
2011-2012	5'660 fans
2010-2011	6'789 fans
2009-2010	6'778 fans

AVARAGE OF FANS PRO GAME IN LAST 10 YEARS

FCZ = 10'300 fans/game

GC = 6'537 fans/game

WILL OF CREATE FULL DENSITY OF PEOPLE

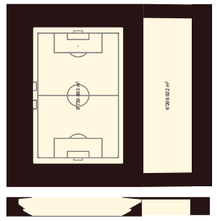
INCREDIBLE SPORT ATMOSPHERE

STADIUM FOR 12'000 FOOTBALL FANS

PARAMETER: 2p/m²

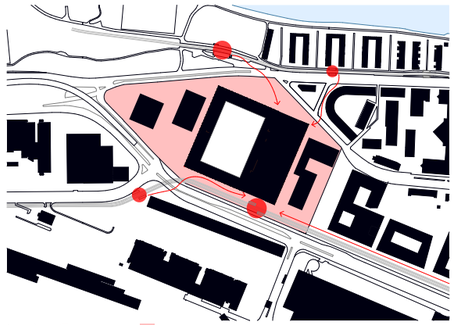
12'000 CAPACITY = 6'000 m²

CONCEPT FLEXIBLE FRONT SQUARE



PLAN AND SECTION - CONCEPT
1:1200

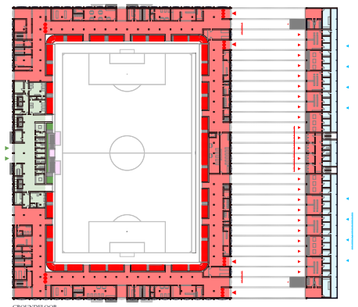
STADIUM ALWAYS FULL
&
TICKET PRICE HIGHER AND MORE PROFIT



SITUATION
1:2500

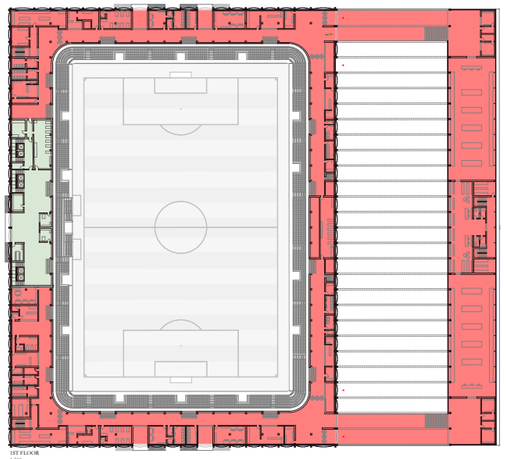
TRAM STATION

PROJECT AREA

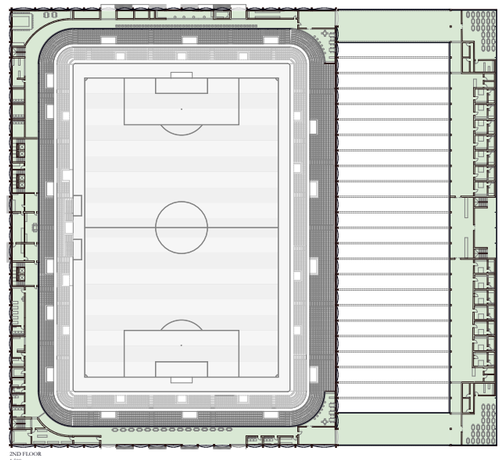


GROUNDFLOOR
1:750

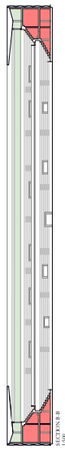
SECTORS SCHEME
1:750



1ST FLOOR
1:500



2ND FLOOR
1:500

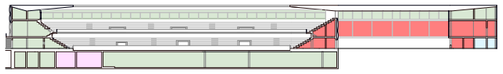


SECTION B-B
1:500

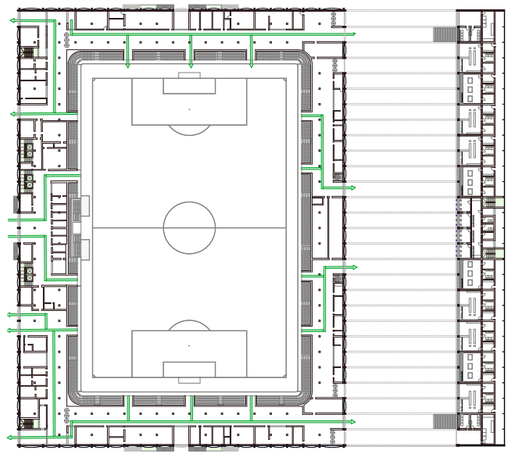
FANS/VISITORS AREA

VIP AND MEDIA AREA

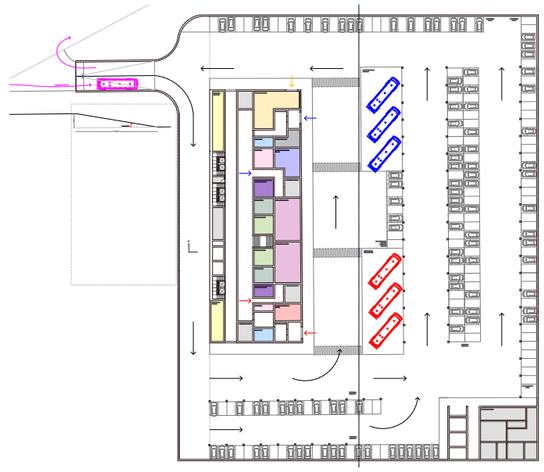
TEAMS AREA



SECTION A-A
1:500

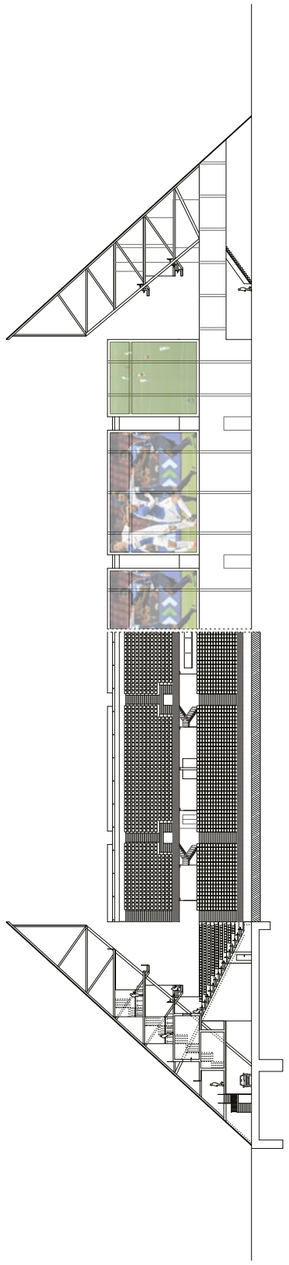


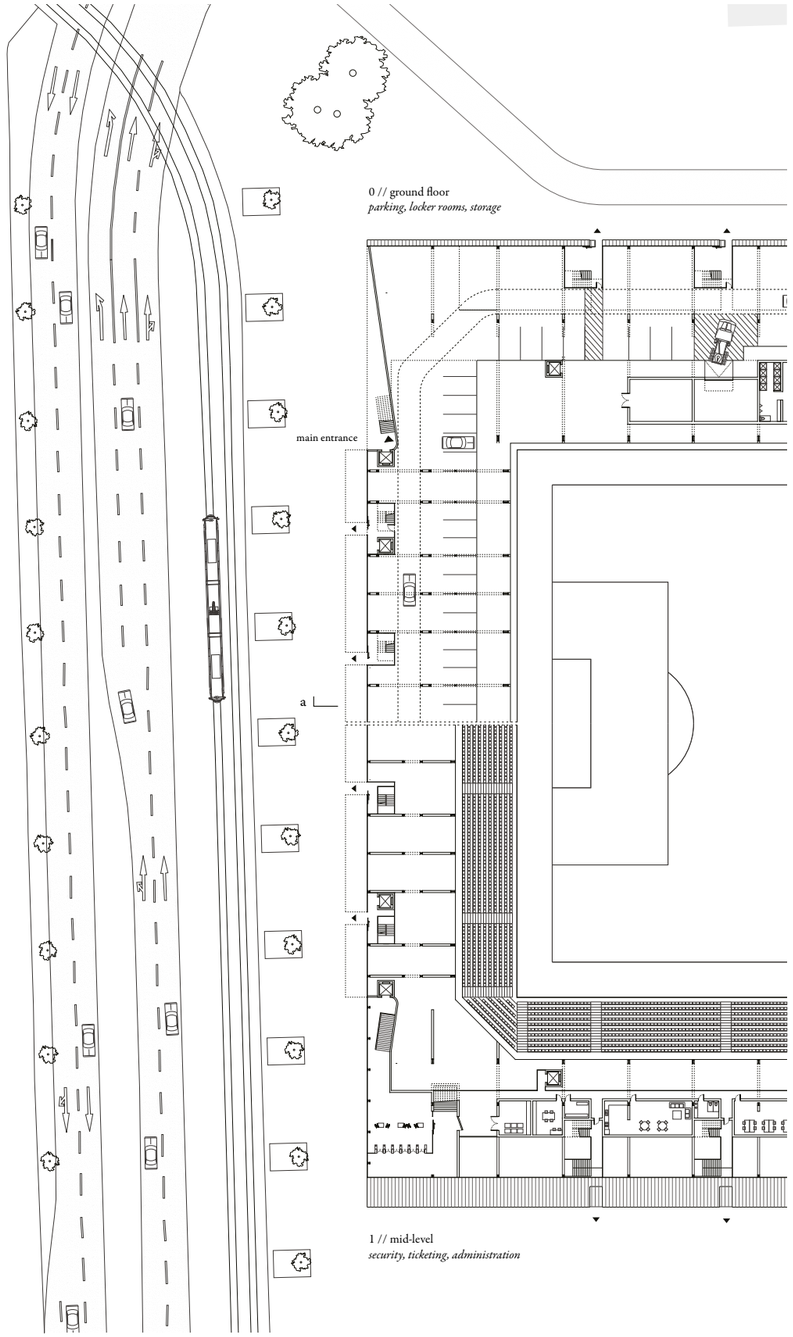
GROUNDFLOOR - ESCAPE PATHS SCHEME
1:500



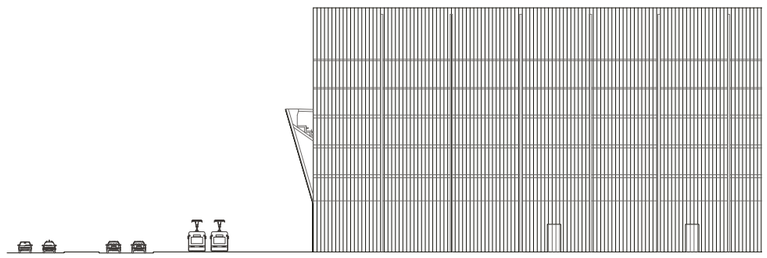
UNDERGROUND FLOOR - PARKING AND TEAMS FUNCTIONS
1:500

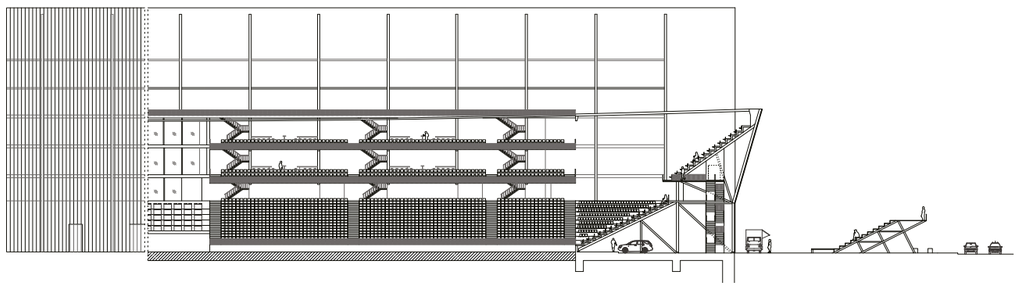
Lisa Kusaka

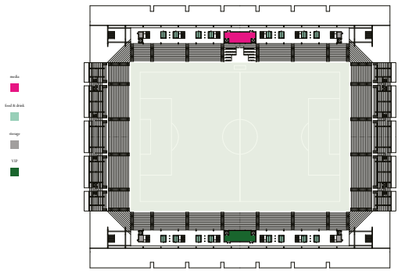



0 // ground floor
parking, locker rooms, storage
main entrance
a
1 // mid-level
security, ticketing, administration

b
2 // main floor
seating, food and drinks, toilets
a
3 // gallery
seating, bars
b

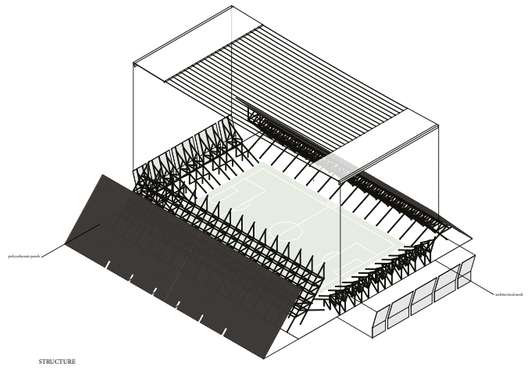




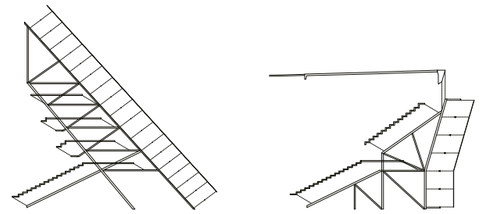


3 // GALLERY

1 : 750

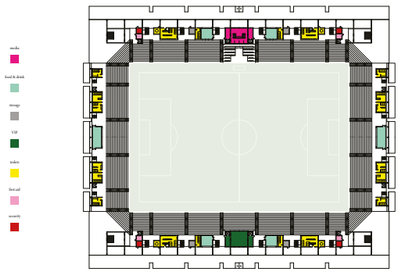


STRUCTURE



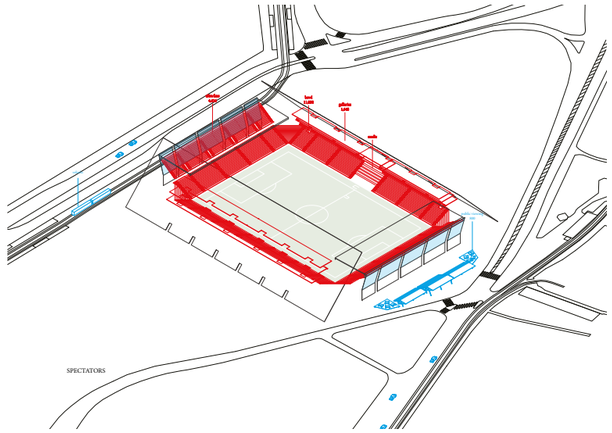
TRUSS SYSTEMS

1 : 250



2 // MAIN FLOOR

1 : 750

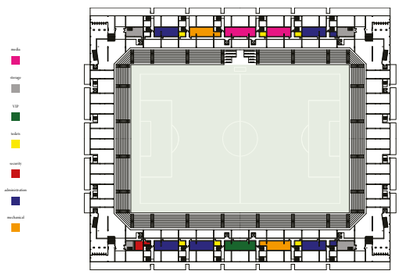


SPECTATORS

A STADIUM FOR ZÜRICH

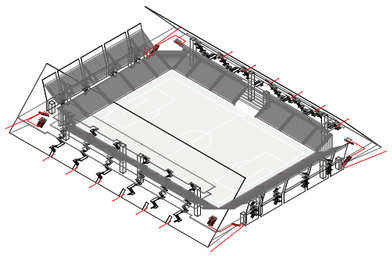
Chair Professor Christian Kerez, Autumn Semester 2019
Assistants Joni Kacani, Michelle Nägeli, Nadia Dias

Student Lisa Kusaka



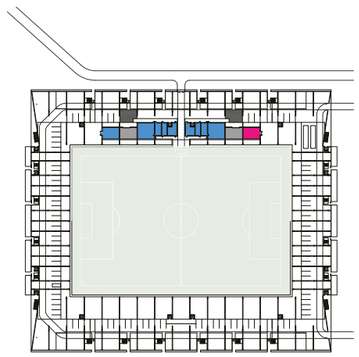
1 // MID-LEVEL

1 : 750



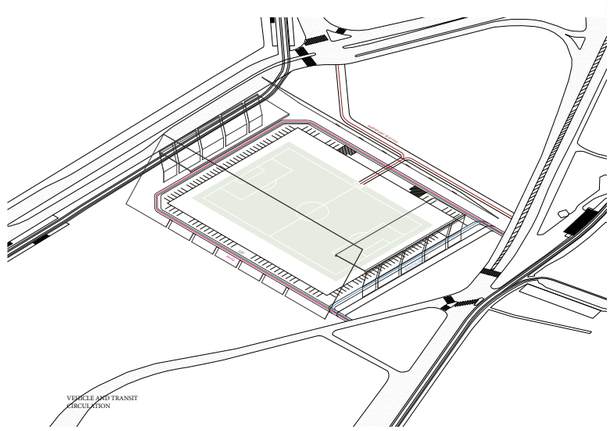
ENTRANCES & EXITS

PUBLIC VIEWING

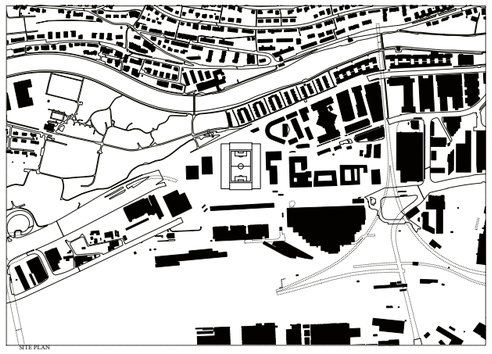


0 // GROUND FLOOR

1 : 750

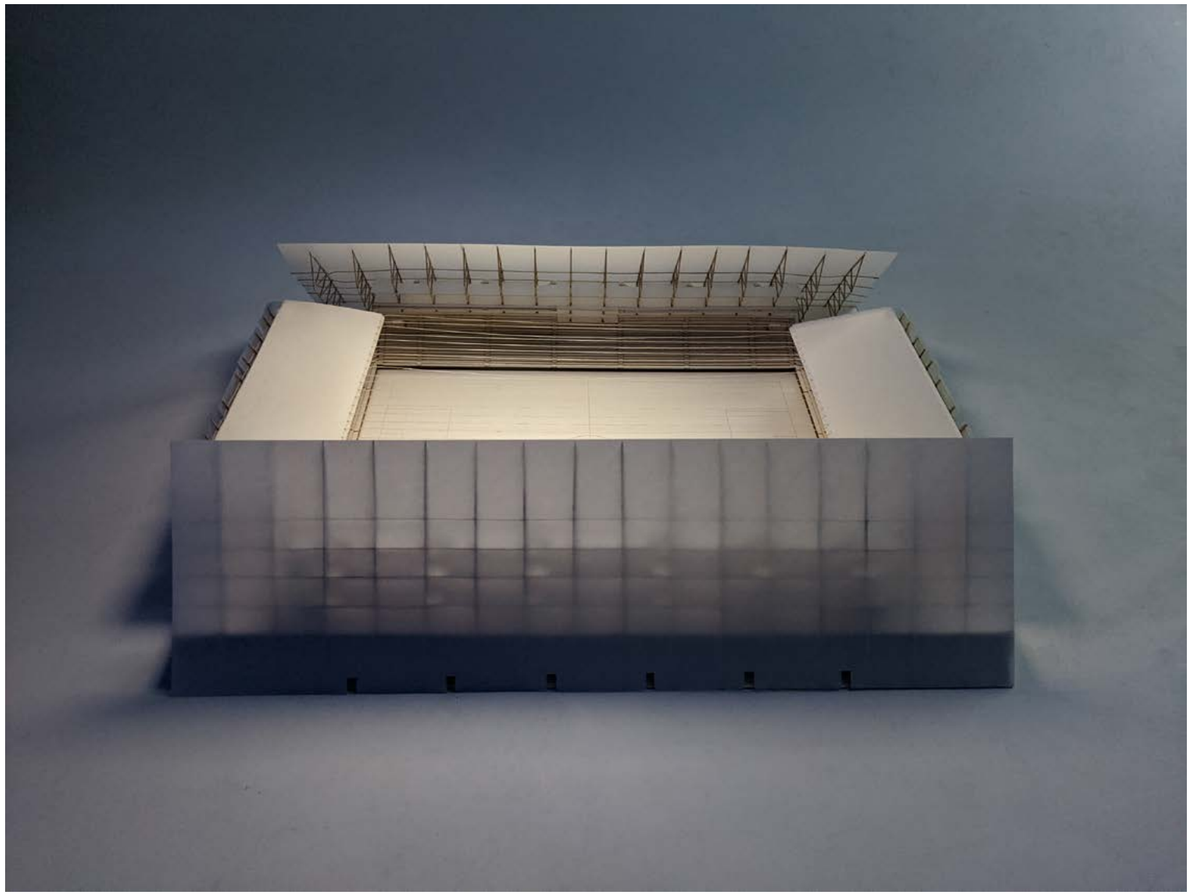


VEHICLE AND TRANSIT CIRCULATION



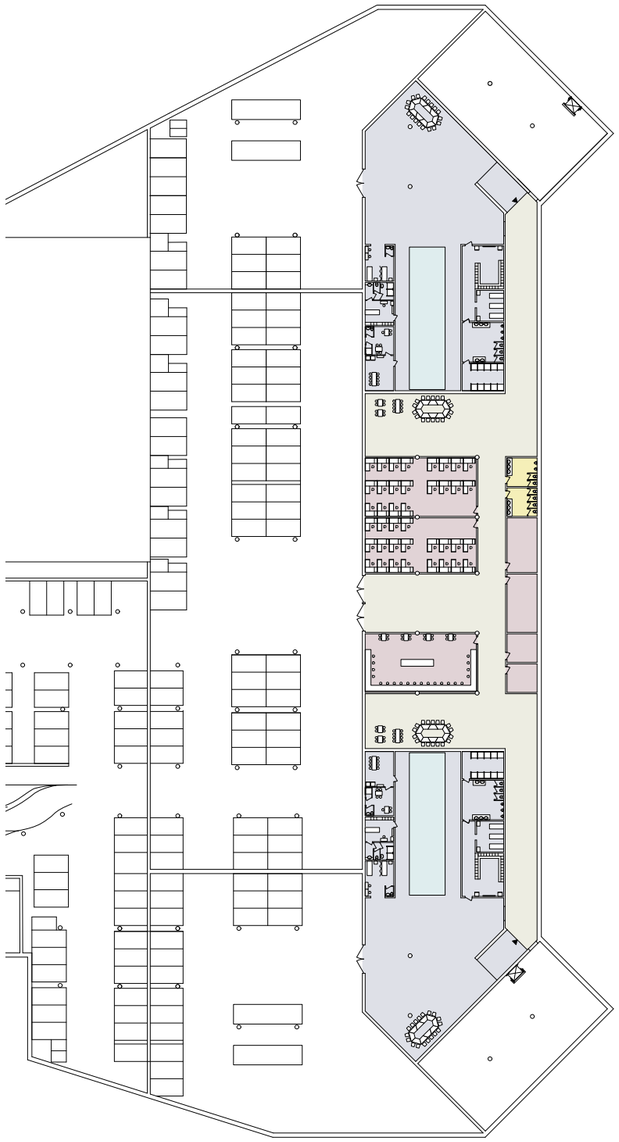
SITE PLAN

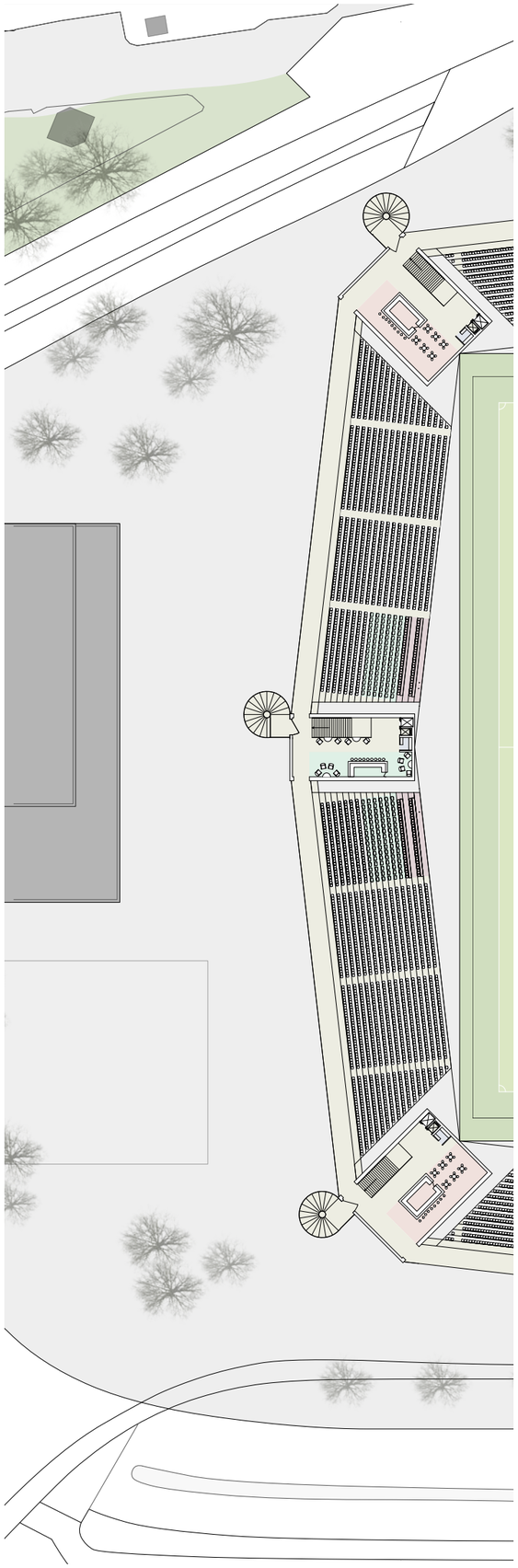
1 : 5000

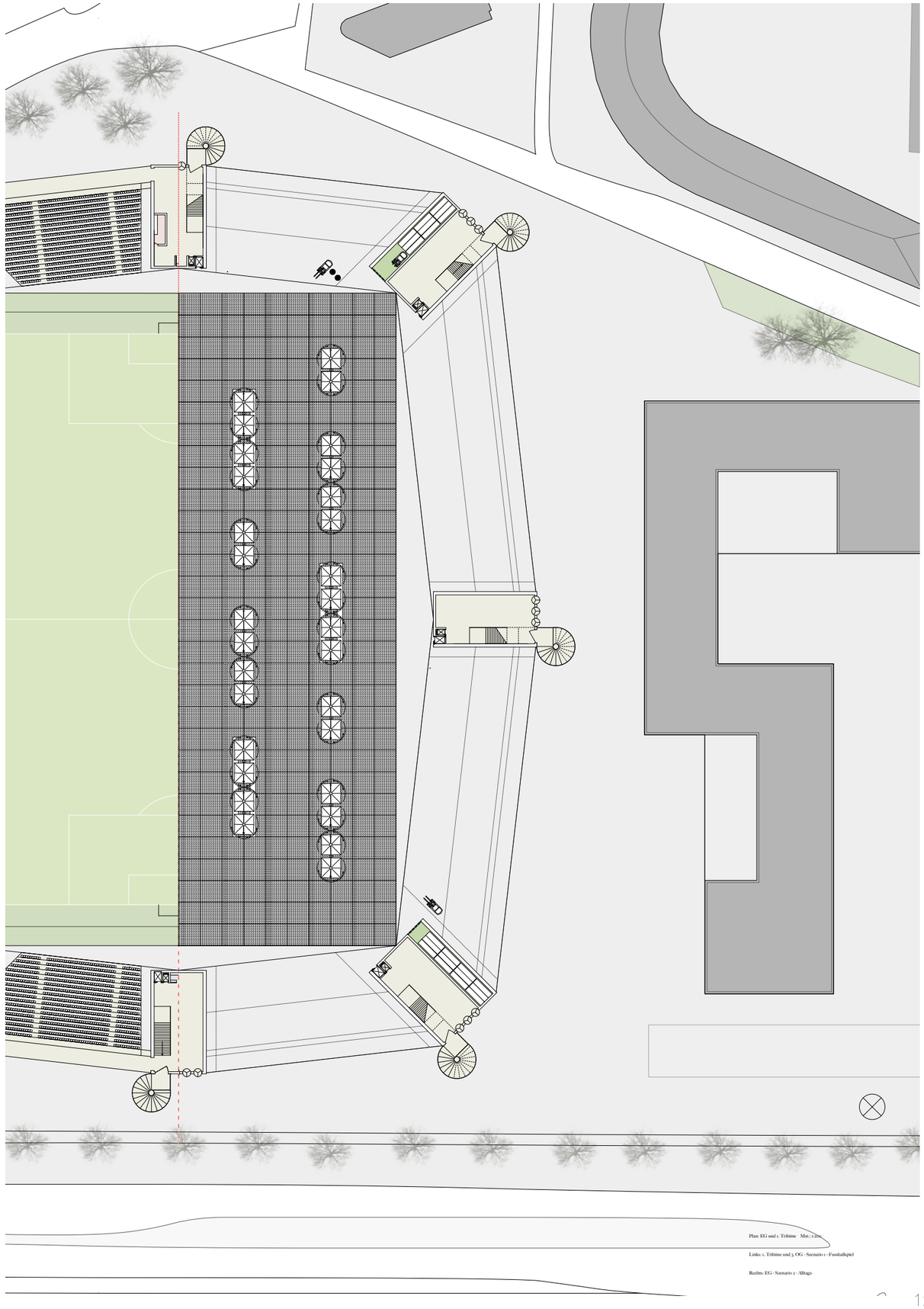


Tu Lan

Ein Stadium für Zürich







HS 19 - Entwurf V - Prof. Christian Kerez - ETH Zürich

Assistanten: Joni Kacani, Michelle Nägeli, Nadia Marisa Cristelo Dias

Studentin: Tu Lan

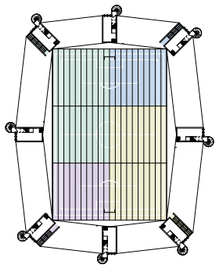
Plan: EG und 1. Tribüne Mut. 1:250

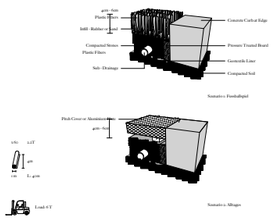
Links: 1. Tribüne und 3. OG - Szenario 1 - Fussballspiel

Rechts: EG - Szenario 2 - Alltags

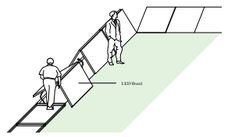
Spielplan vom FCZ und GHZ im Jahr 2018

Lageplan

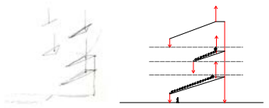




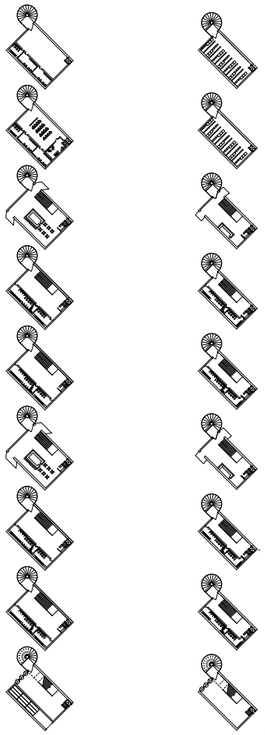
Scheme - Pitch - Storage
- Turf Row Dimensions
- Pitch Sections



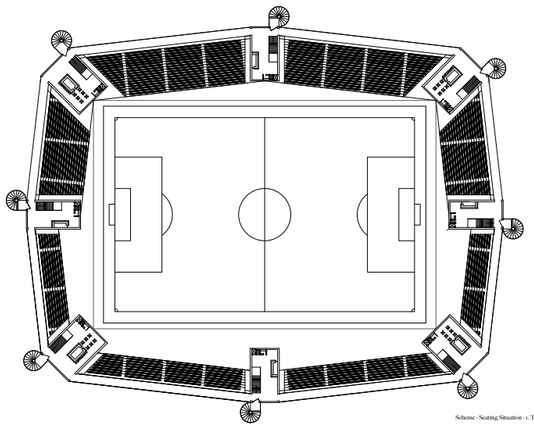
Scheme - Security - LED Advertising Board
- Impenetrable during match



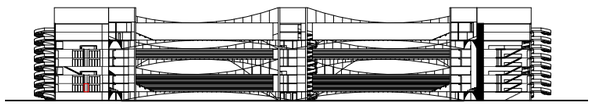
Scheme - Structure - Sketch
- Force Diagramm



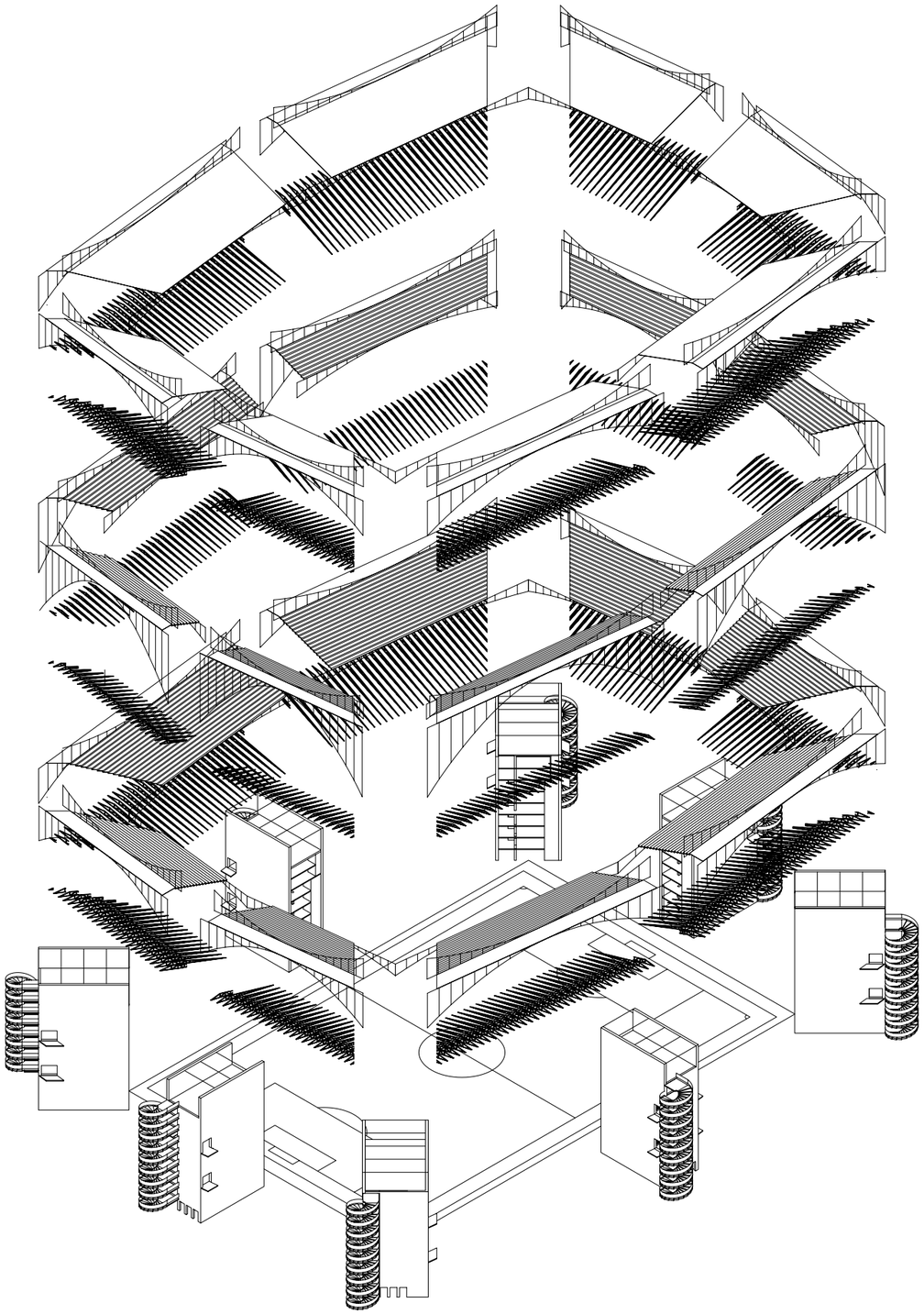
Scheme - Funtion - Plans



Scheme - Seating Situation - 0. Tier and 1. Tier



Scheme - Section - 1:500



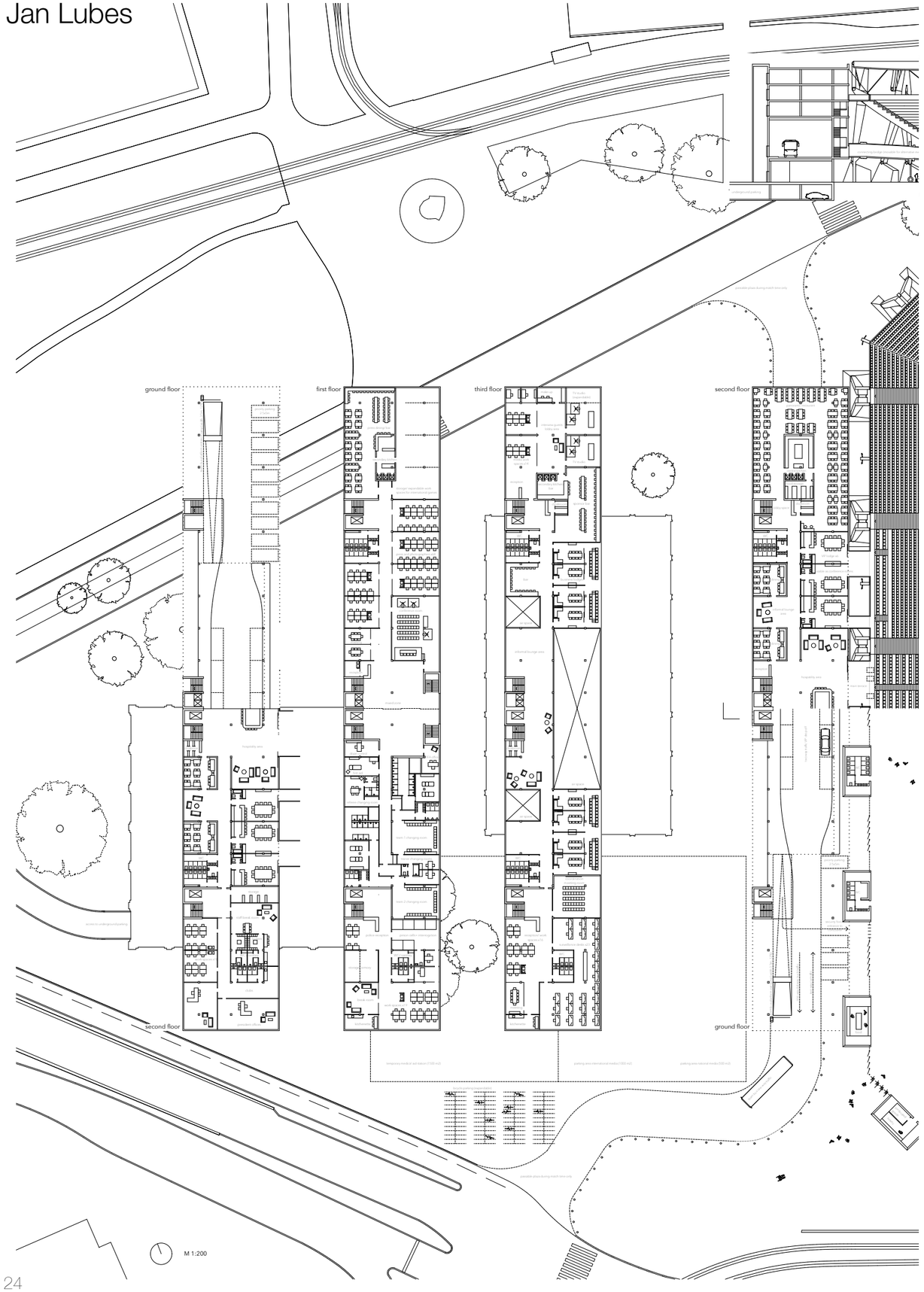
Scheme - Structure - Exploded View

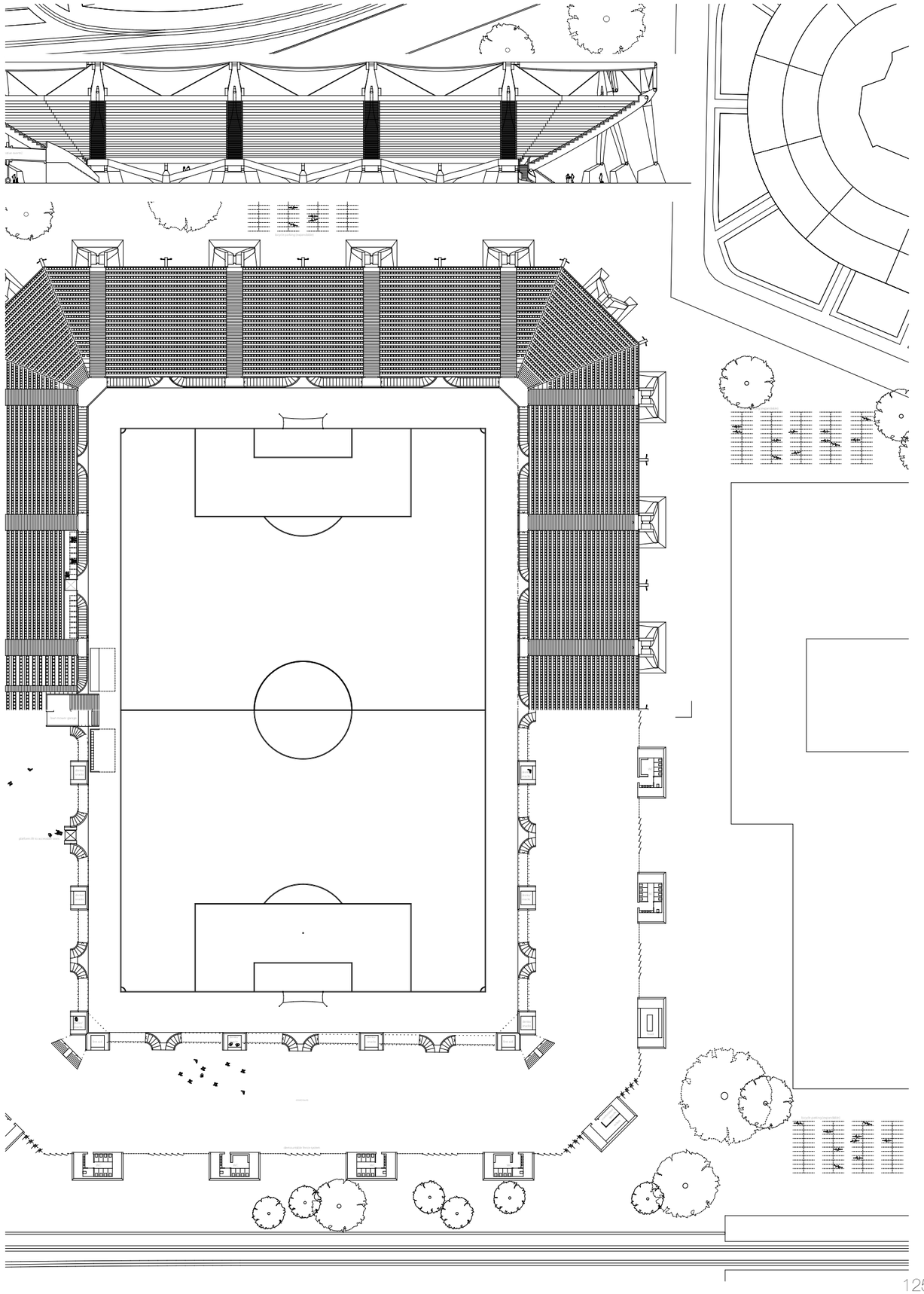
HS 19 - Entwurf V - Prof. Christian Kerez - ETH Zürich

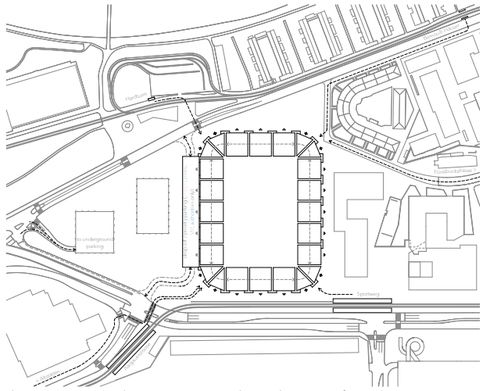
Assistanten: Joni Kacani, Michelle Nägeli, Nadia Marisa Cristelo Dias

Studentin: Tu Lan

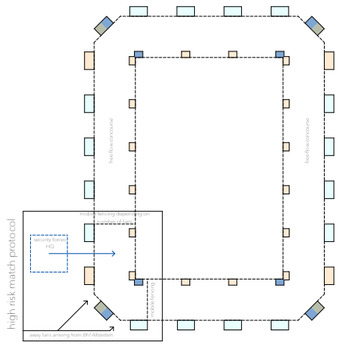
Jan Lubes


ground floor
first floor
third floor
second floor
second floor
ground floor
M 1:200

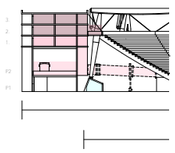




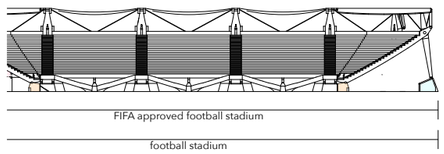
urban positioning and entrance situation due to directions of arrival



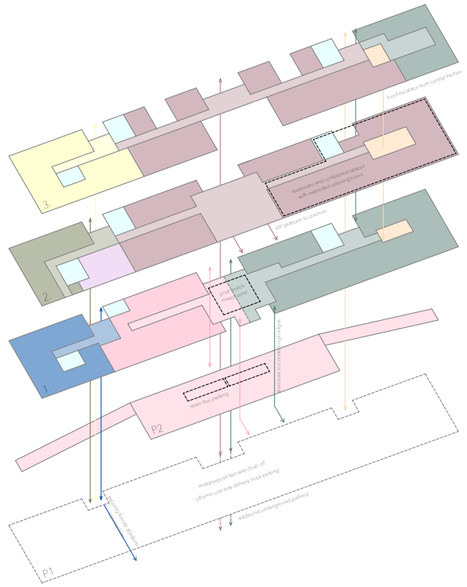
stadium's organization/ security concept



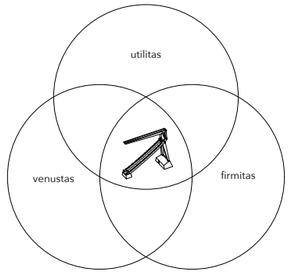
two buildings resulting fro



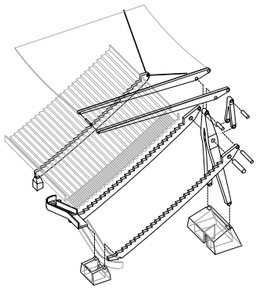
from an assymetrical need of infrastructure



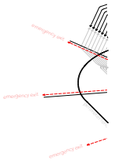
- FIFA/ player facilities
- press and media
- hospitality area; VIP
- gastronomy
- surveillance/ match coordination
- staff area
- security forces
- sanitary facilities
- club management



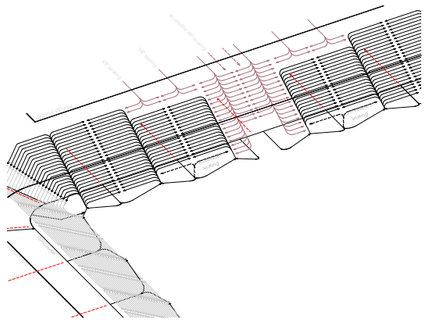
the stadium's underlying structural element



reinforced concrete components joined with steel bolts

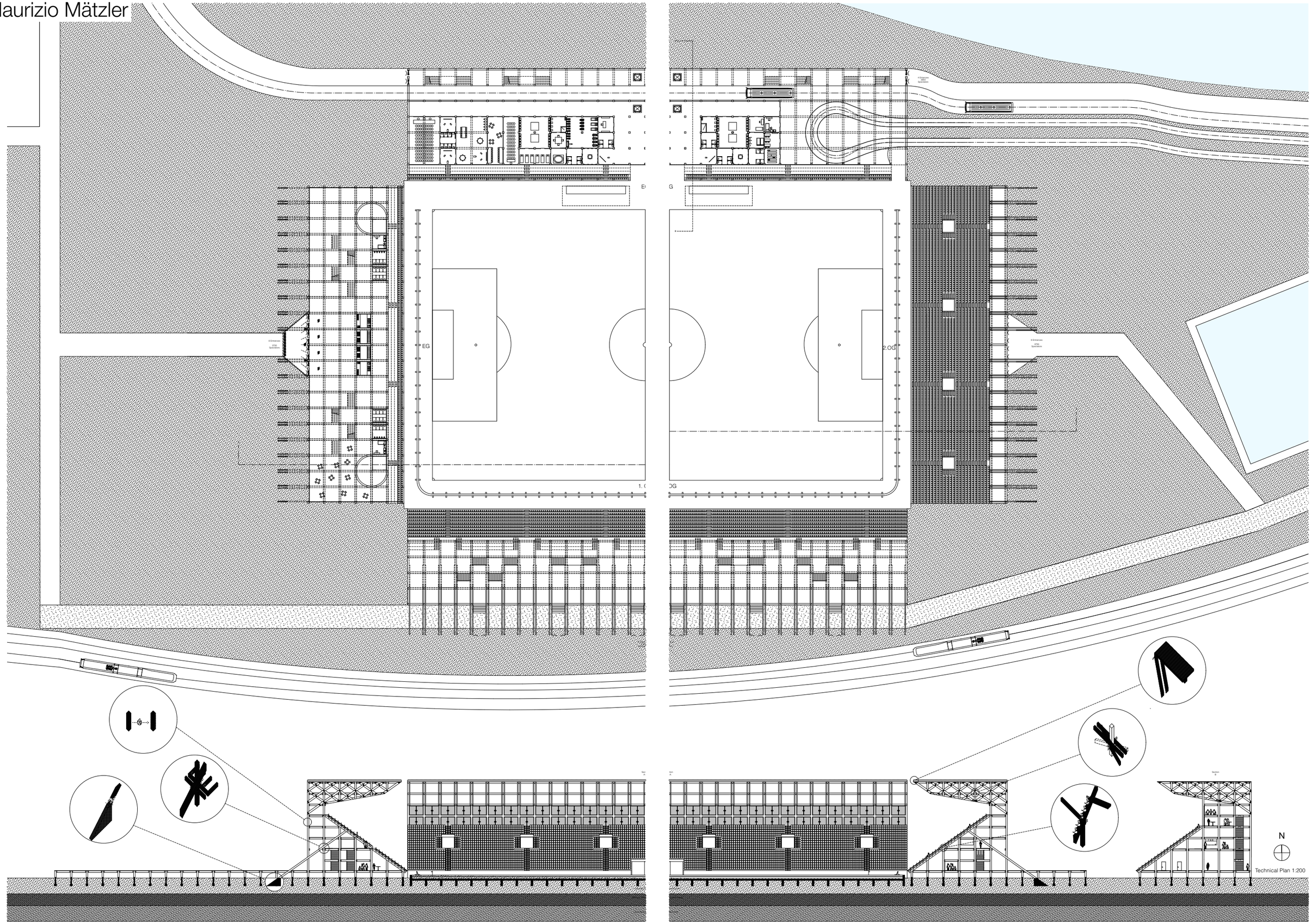


seating circulatior



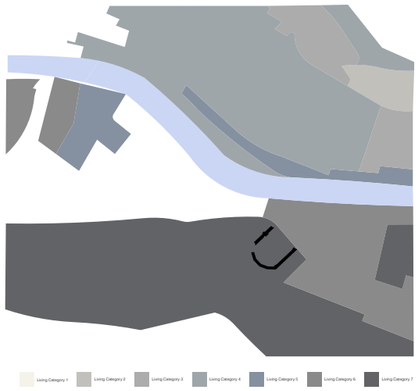
tion from below and above

secondary buidling's organization

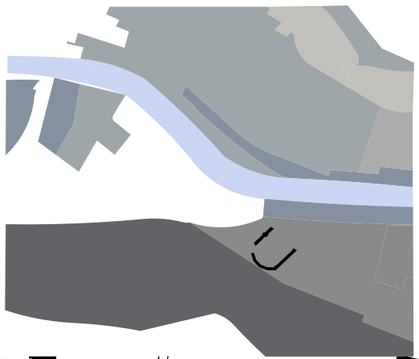

EG
2.OG
N
Technical Plan 1:200

Housing

Living Categories 2003

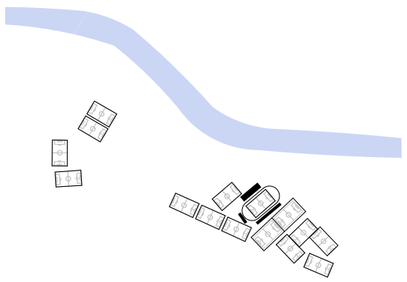


Living Categories 2019

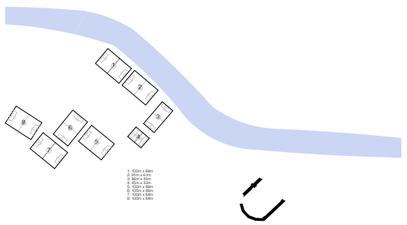


Sport

Footballpitches 1965

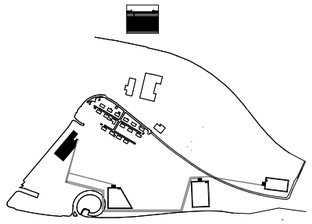


Footballpitches 2019

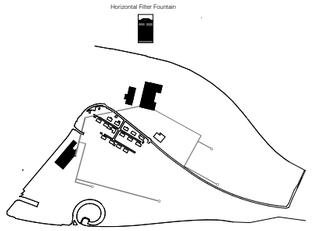


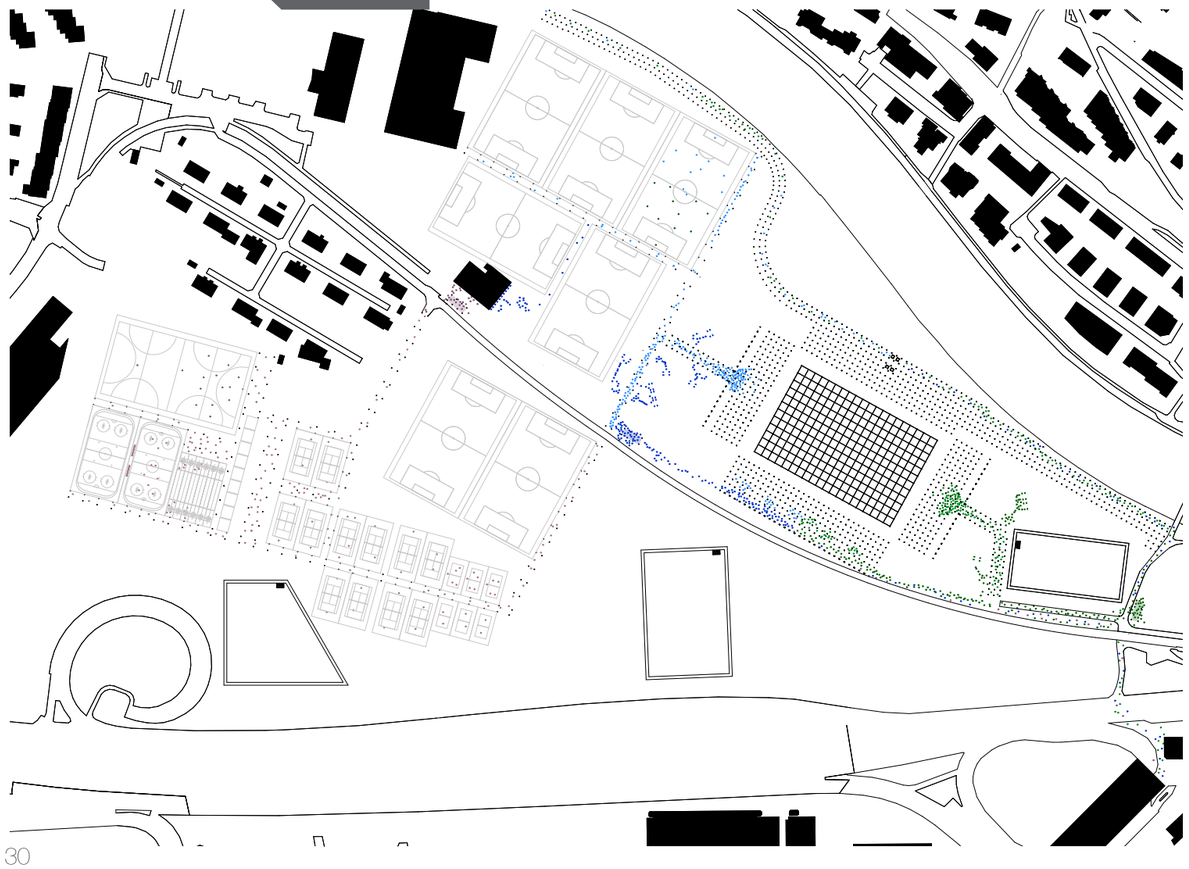
Water

Enrichment Pools

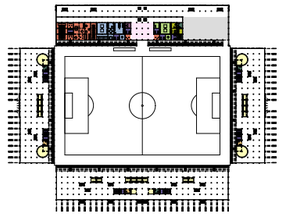


Horizontal Filter Fountain

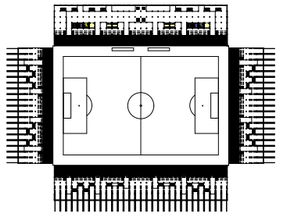




Groundfloor 1:1000

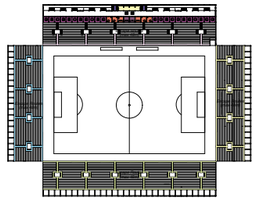


1st Floor 1:1000

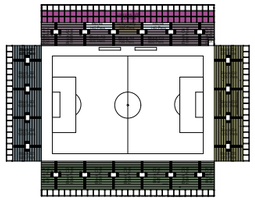


Media | Toilets | Wardrobe Guests | Wardrobe Home | Doping Check | Mixed Zone | Turning Point Media | Medical Service | Food and Beverages | Security Rooms

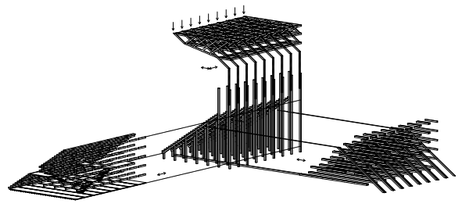
2nd Floor 1:1000

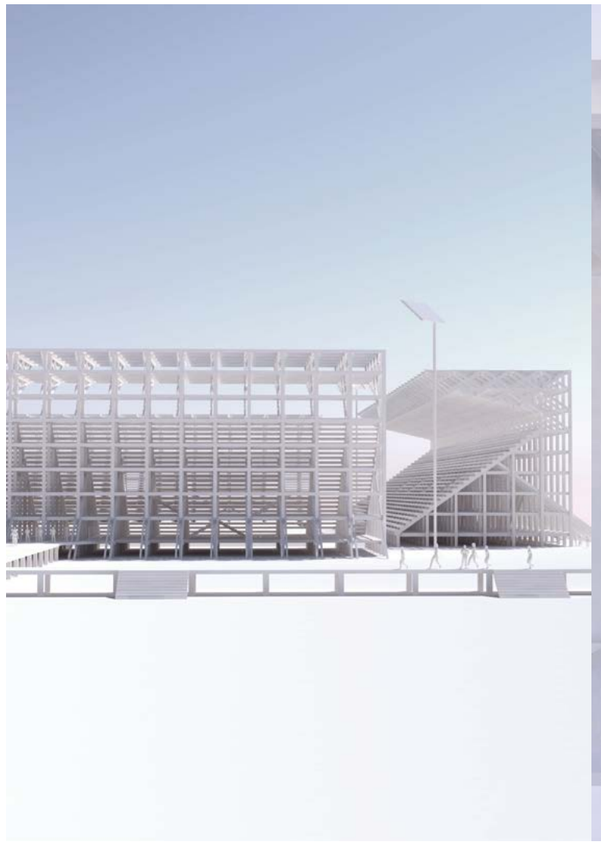


Tribune 1:1000

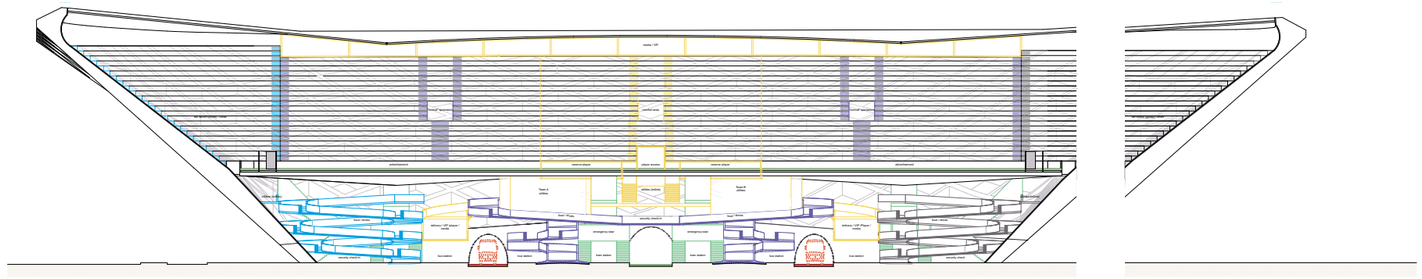


Construction 1:500

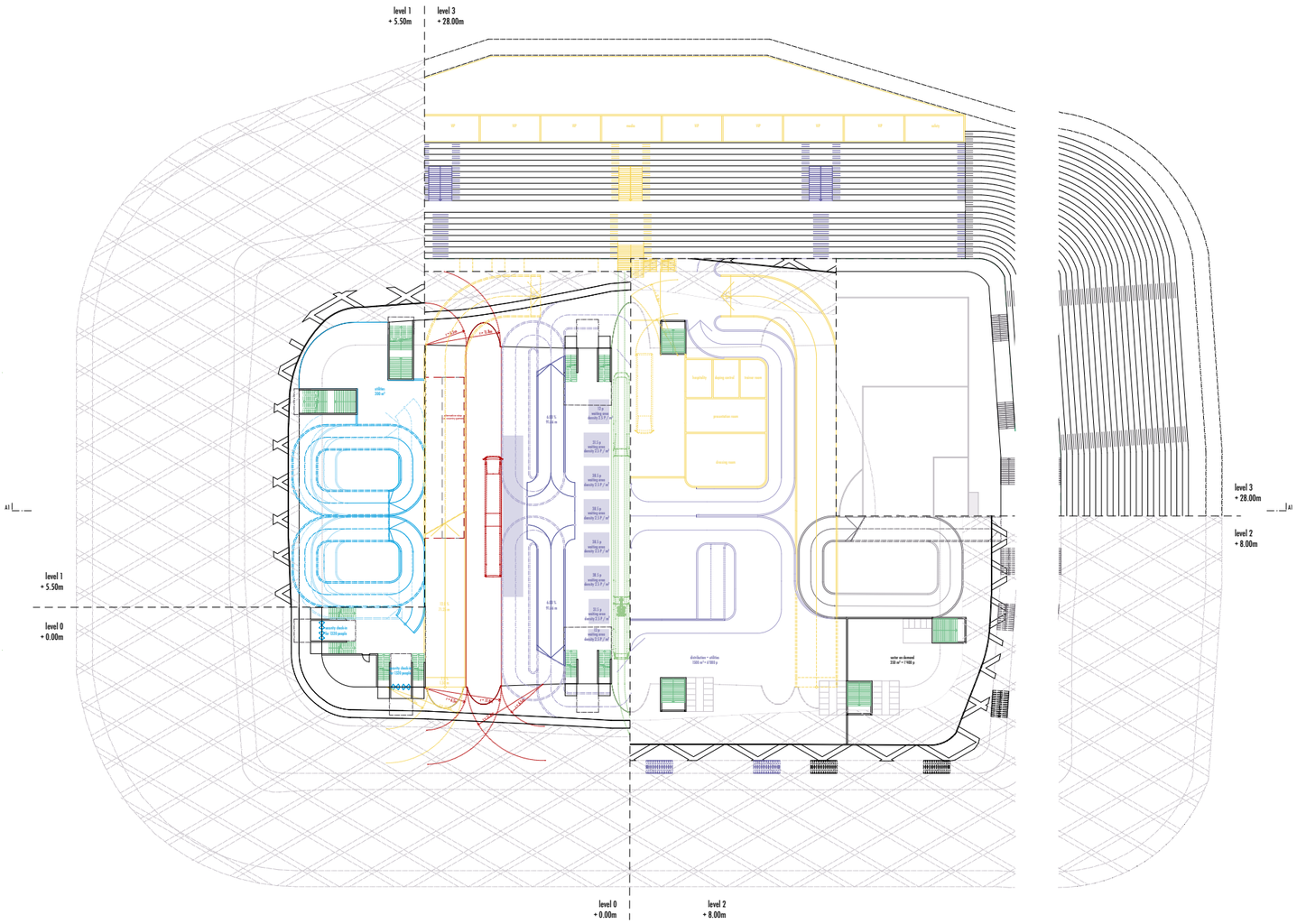




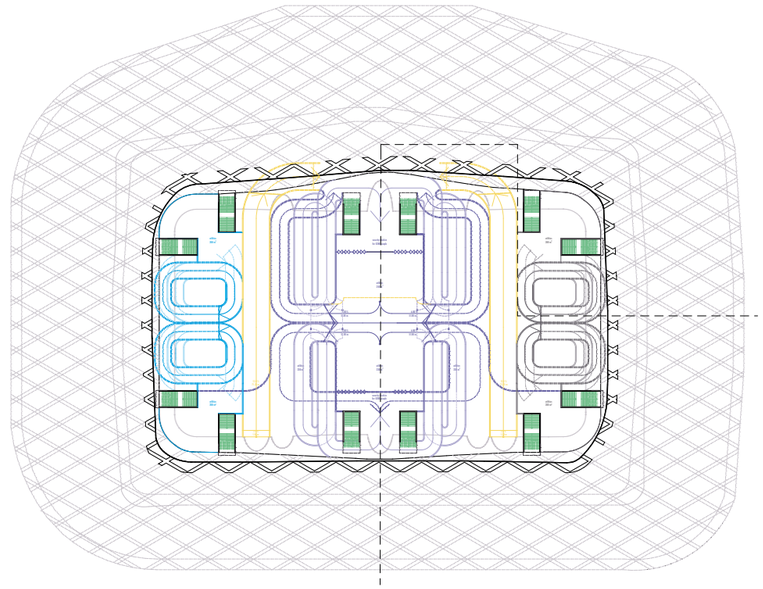
stadium for Zürich



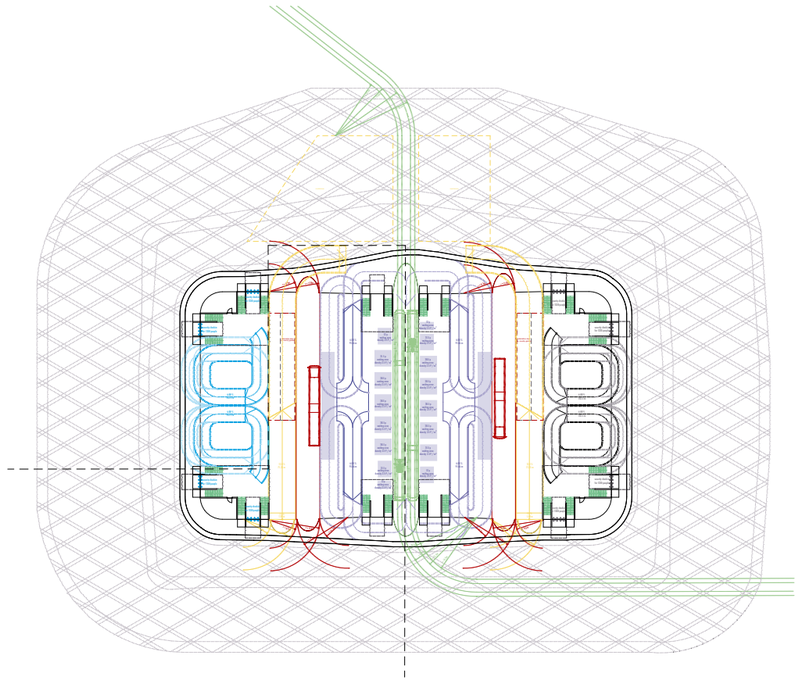
section A 1:200



floorplan A 1:200

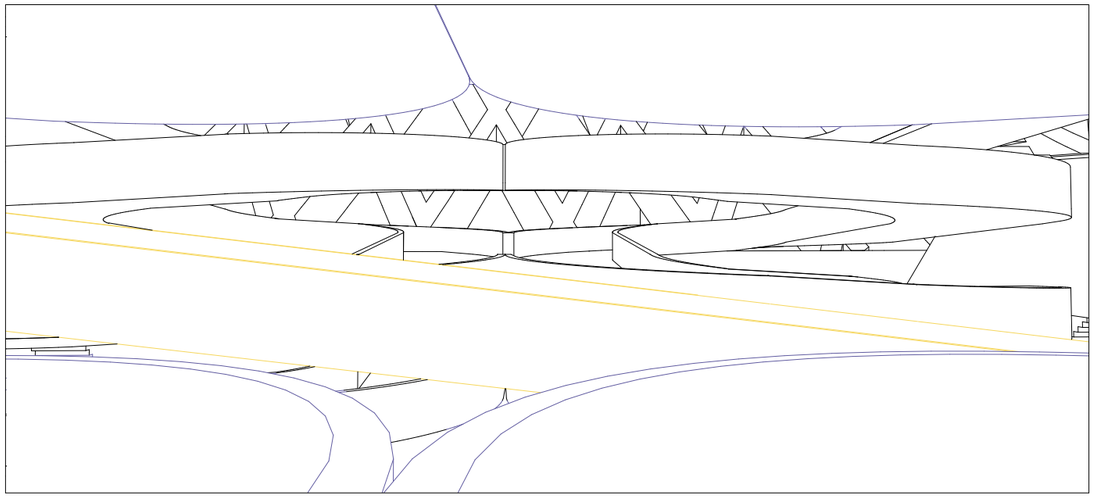


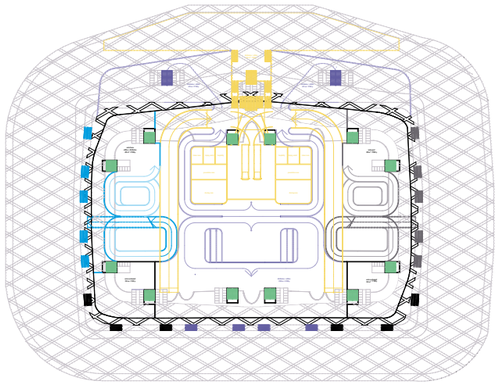
floorplan level 1 (+5.50m)
1:333



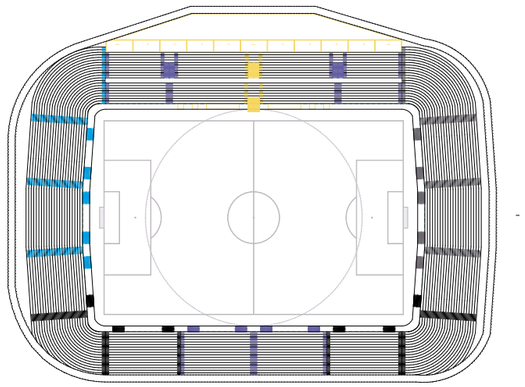
floorplan level 0 (+0.00m)
1:333

ARCHICAD STUDENTENVERSION

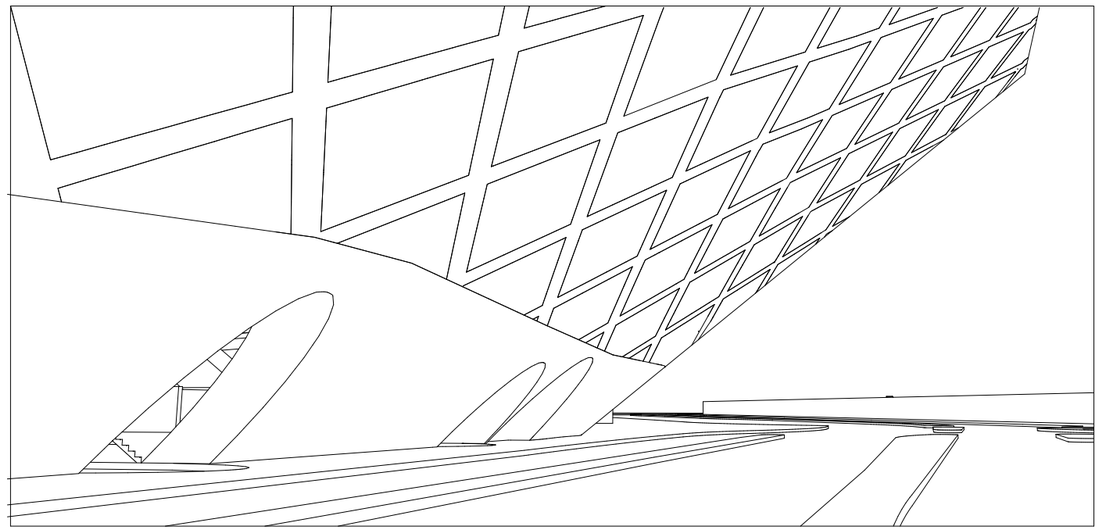


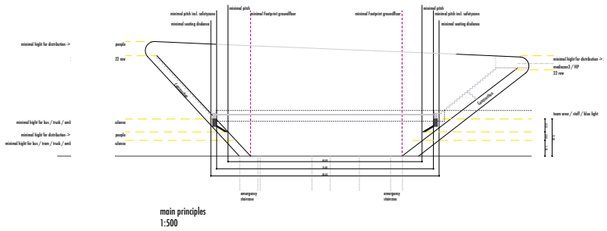


floorplan level 2 (+8.00m)
1:500

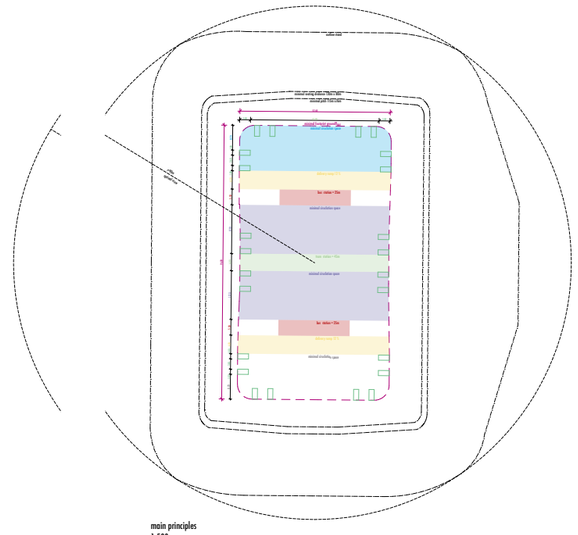


floorplan level 3 (+28.00m)
1:500





main principles
1:500



main principles
1:500

Dimensionierung der Fussgängerflächen von Haltestellen des strassengebundenen öffentlichen Verkehrs

Forschungsauftrag Nr. VSS1999/187 auf Antrag der Vereinigung Schweizerischer Strassenfachleute (VSS)
12. Mai 2005

Qualitätsstufen
Wartefläche [Pers./m2]

A Keine Beeinträchtigungen	≤ 1,0
B Nur sehr geringe Beeinträchtigungen	≤ 1,5
C Mäßige Beeinträchtigungen durch andere Personen (jedoch ohne Körperkontakte	≤ 2,0
D Deutliche Beeinträchtigungen durch andere Personen (Körperkontakte	≤ 3,0
E Körperkontakte zu anderen Personen sind nicht zu vermeiden	≤ 4,0
F Unhaltbarer Zustand	> 4,0

Qualitätsstufen der Fussverkehrsdichte bei Fussgängerbewegungen nach: Transportbetrieb der Fussgänger [12]
Personendichte beim Gehen [Pers./m2]

A Keine Geschwindigkeitsmerkmal :	≤ 0,30
Keine Fussgängerbewegungsbeeinträchtigungen mehr Überholmanöver fussgänger nicht erforderlich Gehgeschwindigkeit nicht beeinflusst Gewerbetätigkeiten/Werbungen/Fussgängerzonen ... Keine Behinderung bei zügigem/ungestörtem Bewegungsablauf Gewerbetätigkeiten, Werbeflächen, Kioske unbeeinflusst/kaum Behinderungen	
B Beeinflussung anderer Fussgänger erforderlich :	≤ 0,30
C Geschwindigkeitsmerkmal bei Gegenverkehr: leicht eingeschränkt Gehgeschwindigkeit wird, v.a. bei Gegenverkehr:	≤ 0,45
Keine ungestörten Bewegungen eines Fussgängerstromes aufgrund entgegenkommender Fussgänger/Kreuzungen/Überholmanöver/Ausweichmanöver Gewerbetätigkeiten/Werbungen/Fussgängerzonen ... Gewerbetätigkeiten, Werbeflächen, Kioskeinschränkungen	
D Geschwindigkeit wird mehr/ weniger eingeschränkt	≤ 0,60
Gewerbetätigkeiten/Werbungen/Fussgängerzonen ... Gehgeschwindigkeit stark eingeschränkt Keine ungestörten Bewegungen eines Fussgängerstromes aufgrund entgegenkommender Fussgänger/Kreuzungen/Überholmanöver/Ausweichmanöver Gewerbetätigkeiten, Werbeflächen, Kioskeinschränkungen	
E Geschwindigkeit deutlich eingeschränkt	≤ 0,75
Gewerbetätigkeiten/Werbungen/Fussgängerzonen ... Gehgeschwindigkeit stark eingeschränkt Keine ungestörten Bewegungen eines Fussgängerstromes aufgrund entgegenkommender Fussgänger/Kreuzungen/Überholmanöver/Ausweichmanöver Gewerbetätigkeiten, Werbeflächen, Kioskeinschränkungen	
F Massiv eingeschränkte Geschwindigkeitsmerkmal :	≤ 1,00
Gewerbetätigkeiten/Werbungen/Fussgängerzonen ... Gehgeschwindigkeit stark eingeschränkt Keine ungestörten Bewegungen eines Fussgängerstromes aufgrund entgegenkommender Fussgänger/Kreuzungen/Überholmanöver/Ausweichmanöver Gewerbetätigkeiten, Werbeflächen, Kioskeinschränkungen	
G Keine freie Geschwindigkeitsmerkmal :	≤ 1,50
Gewerbetätigkeiten/Werbungen/Fussgängerzonen ... Gehgeschwindigkeit stark eingeschränkt, gegenseitige Behinderungen entstehen Gewerbetätigkeiten, Werbeflächen, Kioskeinschränkungen Gewerbetätigkeiten/Werbungen/Fussgängerzonen ... Gehgeschwindigkeit stark eingeschränkt, gegenseitige Behinderungen entstehen Gewerbetätigkeiten, Werbeflächen, Kioskeinschränkungen Gewerbetätigkeiten/Werbungen/Fussgängerzonen ... Gehgeschwindigkeit stark eingeschränkt Gewerbetätigkeiten/Werbungen/Fussgängerzonen ...	
H Keine freie Geschwindigkeitsmerkmal; Gehtempo: Gehmöglichkeiten Bewegungen behindert	≤ 2,00
Gewerbetätigkeiten/Werbungen/Fussgängerzonen ... Gehgeschwindigkeit stark eingeschränkt Keine ungestörten Bewegungen eines Fussgängerstromes aufgrund entgegenkommender Fussgänger/Kreuzungen/Überholmanöver/Ausweichmanöver Gewerbetätigkeiten, Werbeflächen, Kioskeinschränkungen	
I Keine freie Geschwindigkeitsmerkmal; Stillstand bei einer 1 Pers./m2	≤ 3,00
Gewerbetätigkeiten/Werbungen/Fussgängerzonen ... Gehgeschwindigkeit stark eingeschränkt, Gewerbetätigkeiten/Werbungen/Fussgängerzonen ... gegenseitige Behinderungen entstehen Gewerbetätigkeiten, Werbeflächen, Kioskeinschränkungen Gewerbetätigkeiten/Werbungen/Fussgängerzonen ... Gehgeschwindigkeit stark eingeschränkt Gewerbetätigkeiten/Werbungen/Fussgängerzonen ...	

Formeln
Wartefläche = f_w = wartende Fahrgäste / Wartefläche

Breite der Wartefläche = B_w =Wartefläche / gewonnte Länge der Wartefläche

Leistungsfähigkeit = Gehdichte * Zulässigkeitsfähigkeit

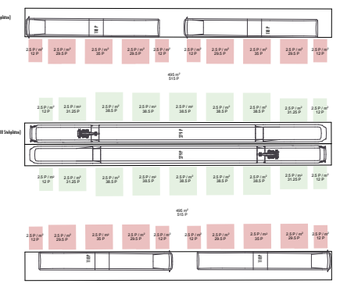
Zulässiges Gehdichte: $K = \phi$ [Pers./s] / [Pers./m*s]

Annahmen:
- Fussmarschzeit (Zwischen Haltestellen): 0,5 Pers/m/s
- durchgangsfähigkeit pro Tür: 0 Pers/m/s (Drängeln)
- Wartefläche beim Wartezeit: 2,5 Personen / m²
- Gehdichte (Gehgeschwindigkeit): 0,75 Personen/ m/s
- mittlere Gehdichtegleich: 0,37 m/s * 1,65 m/s
- Faktor Einstiegsgrundwert:

durchgangsleistungsfähigkeit (Dimensionierung der Haltestellen)
Time emptying: 1,0 P/s
Time emptying: 0,7 P/s

Bus Switzerlandway plus
Anzahl Plätze (Auslastung bei 4 Personen/m²)
Länge
Breite
Höhe

150 (92 Sitzplätze, 76 Stehplätze)
16,90 m
2,50 m
3,4 m



Berechnung Flexcity
Wartende Personen = 275
Time emptying = (2.5) [Bus] in 28.5 [Personen/Tür=
Time emptying = 2.5) [Bus] in 28 Personen/Tür=

Einstiegszeit pro Tür emptying = 28.5 ' * = 28.5 s. > maxgeduldet
Einstiegszeit pro Tür emptying =26 ' * 0.7 = 18.2 s.

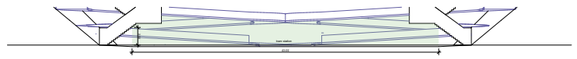
0 = (7200 /(60) / 0.6 = 2.9 m > maxgeduldet im Vergleich zu Bus Switzerlandway plus
K_p=279 / 1.65= 169.09 m²

Berechnung Bus Switzerlandway plus
Wartende Personen = 138
Time emptying = 2.5) [Bus] in 29.5 [Personen/Tür=
Time emptying = 2.5) [Bus] in 29.5 [Personen/Tür=

Einstiegszeit pro Tür emptying = 29.5 ' * = 29.5 s. > maxgeduldet
Einstiegszeit pro Tür emptying =26 ' * 0.7 = 17.5 s.

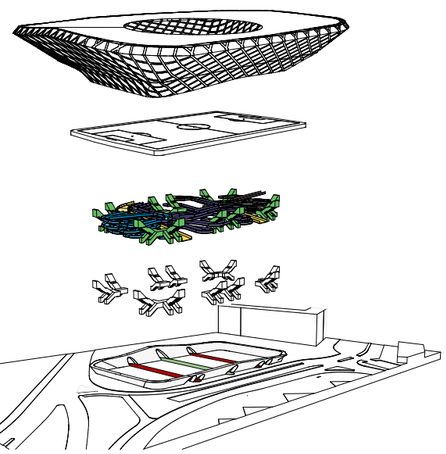
0 = (7200 /(60) / 0.5 = 2.4 m
K_p= 138 / 1.65 = 83.6 m²

rückwärtiger Wartearea total [Rückfläche Kerspun]
K_{total}= $K_{Bus\ Switzerlandway}$ + $2x\ K_{Bus\ Switzerlandway}$
K_{total}= 248.25 = 2x167.1 = 415.35 m²

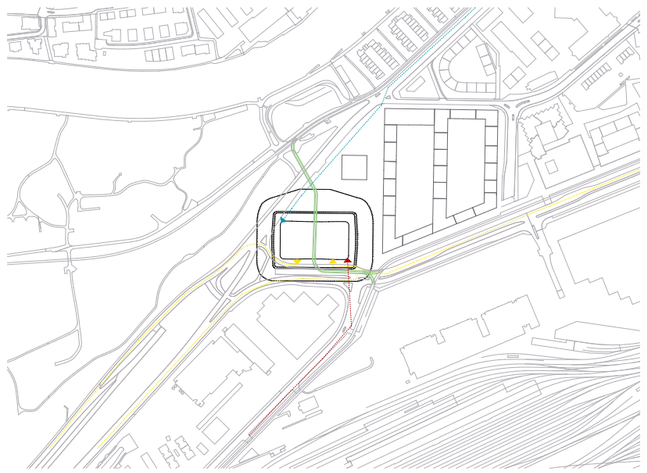


scheme: tram stop

scheme: bus stop

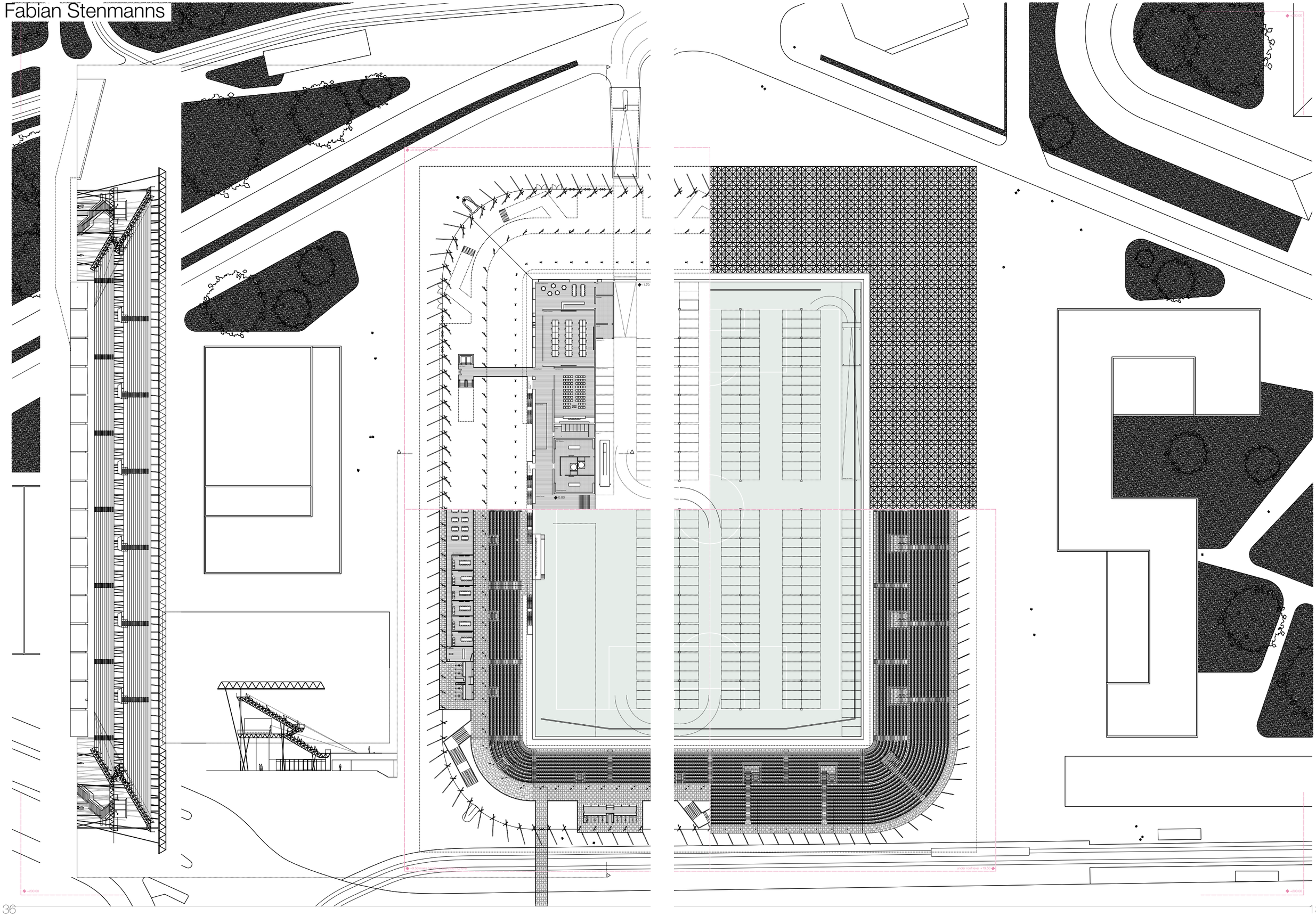


scheme: people flow

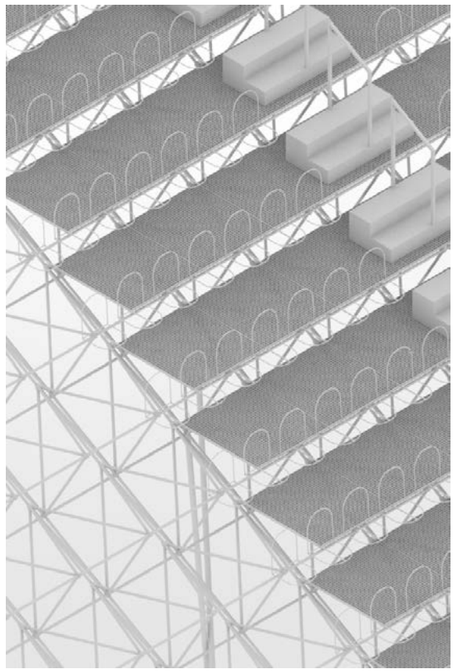


scheme: spectators /situation
1:2'000

Fabian Stenmanns

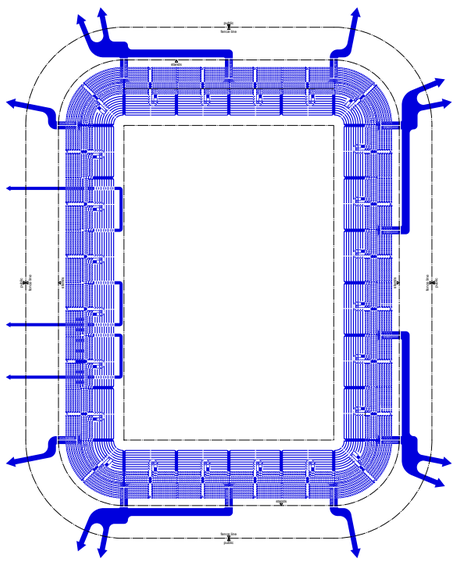


ISOMETRIC VIEW OF THE **SPACEFRAME**

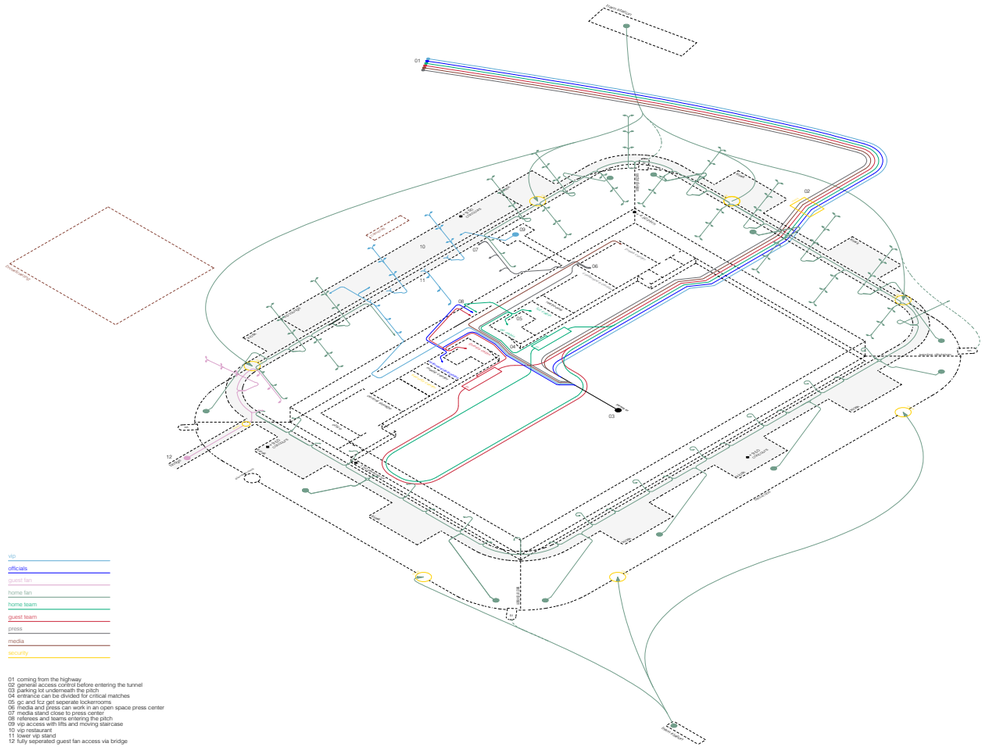


2D

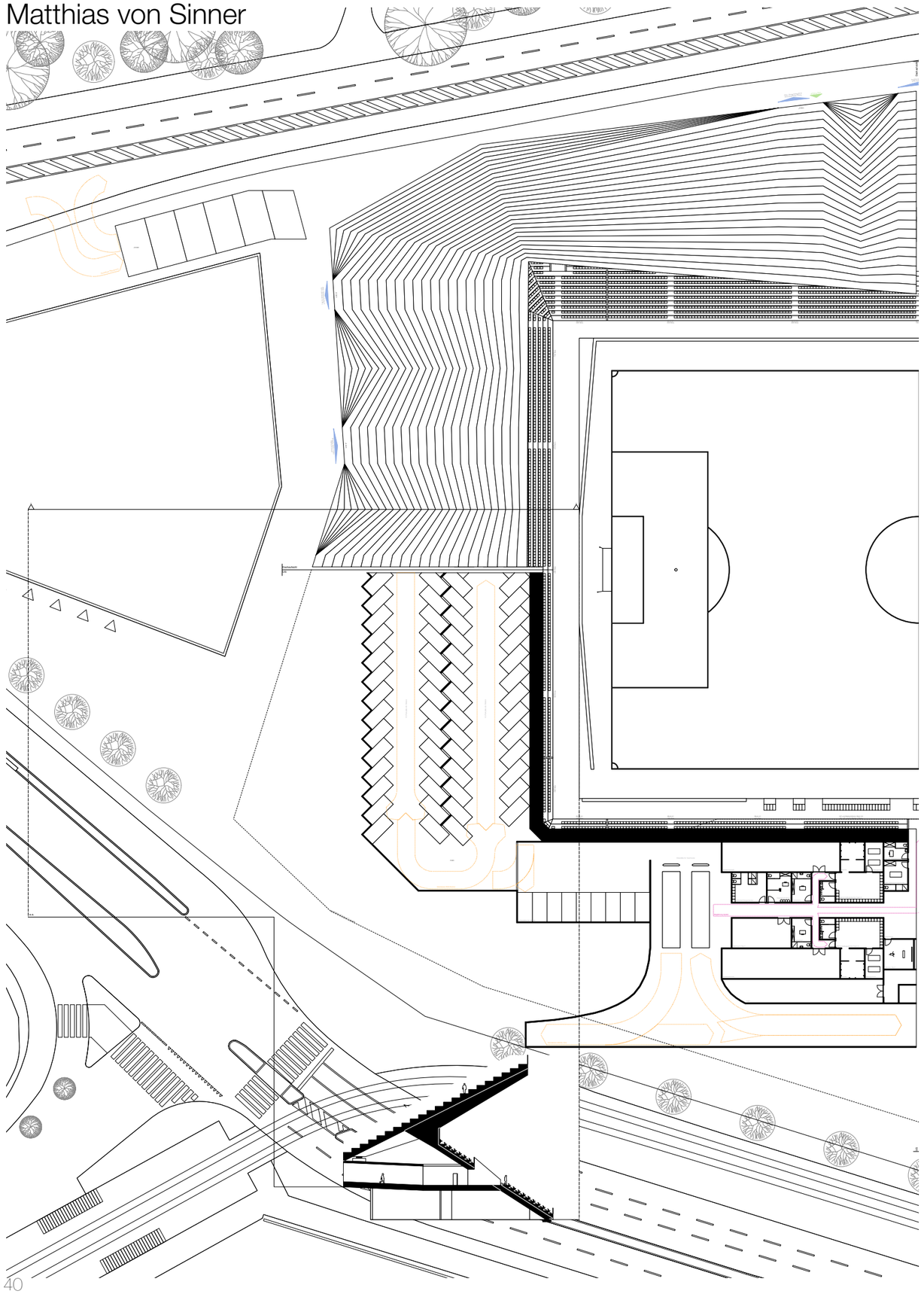
WIDTH OF **ESCAPE ROUTES**

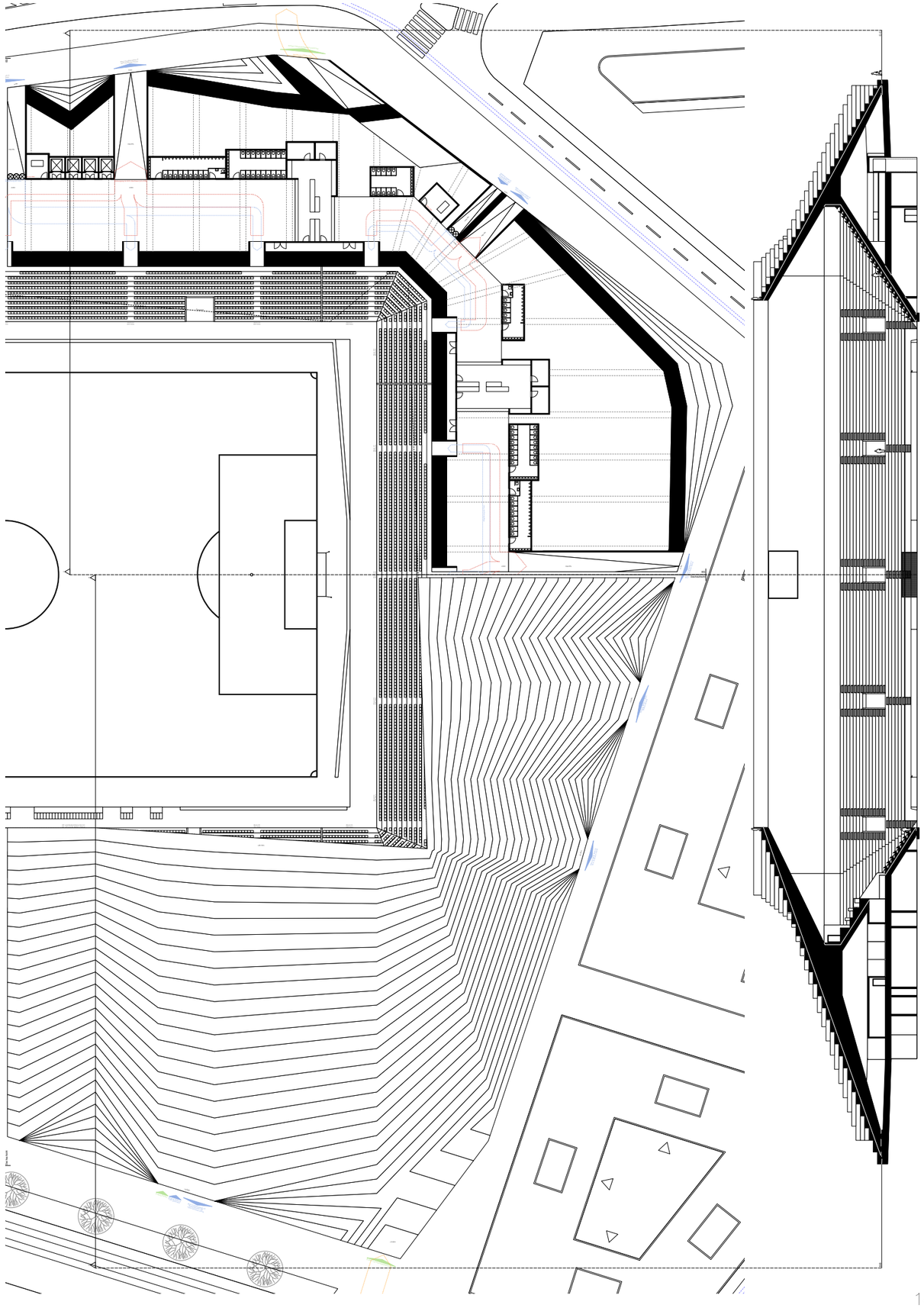


ISOMETRIC VIEW OF **MOVEMENT**


01
02
03
04
05
06
07
08
09
10
11
12
Rocade Sud
Rocade Nord
Rocade Ouest
Rocade Est
Sortie Sud
Sortie Nord
Sortie Ouest
Sortie Est
Tribune Ouest
Tribune Est
Tribune Sud
Tribune Nord

Matthias von Sinner





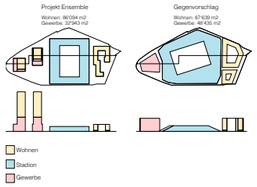
STADION FÜR ZÜRICH

Städtebau
Momentan ist auf dem Hardturm Areal das Projekt Ensemble mit deutlich separierten Bauten geplant. Das Projekt versucht auf die Forderungen der verschiedener Stakeholder (Stadt, Anwohner, Clubs, Investoren) zu reagieren und nutzt zudem die gegebenen Freiheiten aus, um mit den zwei Türmen, welche Fläche für Wohnen und Arbeiten bieten, das Stadion und die geforderten Genossenschaftswohnungen zu finanzieren.
Bei näherer Betrachtung fällt jedoch auf, das die geplanten Wohnungen in den zwei Investorenbauten deutlich vom Rest des Wohngebiets abgeschnitten wären. Die Wohnungen wären auf zwei Seiten von stark befahrenen Strassen umgeben und durch das Stadion an der Verbleibenden Seite vom bestehenden Wohngebiet abgespalten.
Zudem führt die Mischnutzung der Türme zu einer gewissen Ineffizienz in der Flächennutzung, da jeweils eine Erschliessung für die Wohnungen in den oberen sowie eine zweite Erschliessung für die Gewerberäumlichkeiten der unteren Geschosse eingebracht werden muss. Der Anteil der Verkehrsfläche (nach SIA 416) an der Geschossfläche liegt liegt somit deutlich über dem Durchschnitt mit 14% in den Wohngeschossen und 30% in den Gewerbegeschossen.

Städtebaulicher Vorschlag
Mein Vorschlag sieht nun eine Zusammenlegung der Genossenschaftswohnungen mit den Wohnungen der Investoren in zwei Blockrand Bauten auf der Seite des existierenden Wohngebiets vor. Dadurch können sich die neugebauten Wohnungen besser an das Quartier angliedern. Die Gewerbeflächen werden in ein Volumen Zusammengelegt, was zu einem Plus von über 12'000 m2 Gewerbefläche führt. Durch das Auftrennen des Programms können die Bauten zudem eine höhere Effizienz in der Erschliessung erreichen.

Stadion
Das Stadion selbst erhält durch diese Neuanordnung der Volumen eine grössere Freifläche, über welche es sich ausbreiten kann. Durch die Nutzbarmachung der Dachkonstruktion wird ein neuer öffentlicher Ort geschaffen, der das Stadion für die Leute der Stadt Zürich auch während den über 300 Nichtspieltagen im Jahr Nutzbar machen soll. Mit der Möglichkeit der Aneignung wird das Hardturm Stadion auch neben dem Fussball zu einem Teil des öffentlichen Lebens der Stadt Zürich.

Einwohnerdichte in der Umgebung des Hardturm Areals

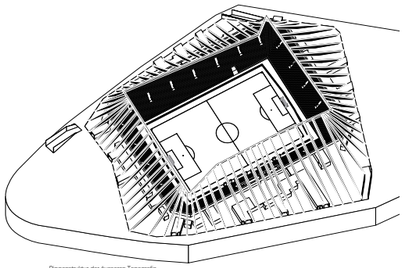


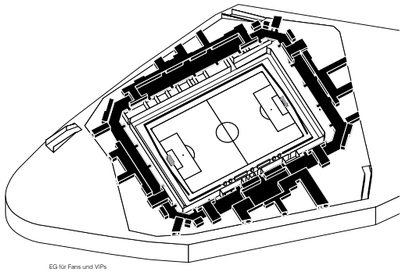
Aussen-Visualisierung [Eingang Sektor B]v

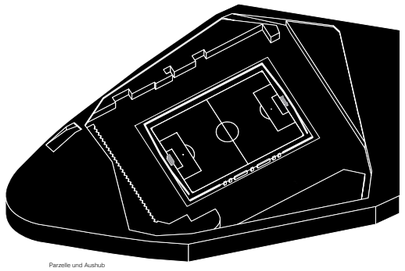
Innen-Visualisierung [Sektor E]

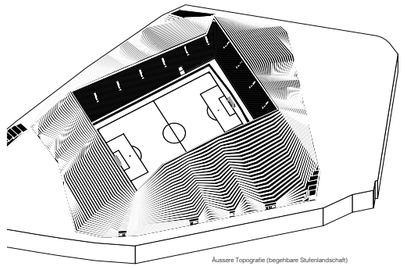
Strukturierung des Projekts:

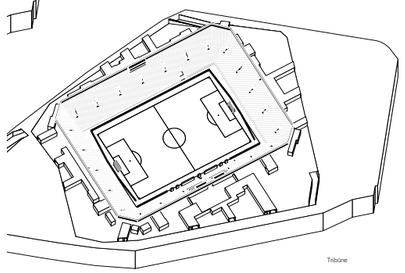
Das Stadion folgt zwei unterschiedlichen Logiken. Die Räumlichkeiten für den Spielbetrieb unter der Topografie sind auf die Funktion ausgelegt und durch ein Additives Prinzip um das Spielfeld angeordnet. Die äussere Topografie reagiert auf den städtischen Kontext und bindet das Stadion in die umgebung mit ein.

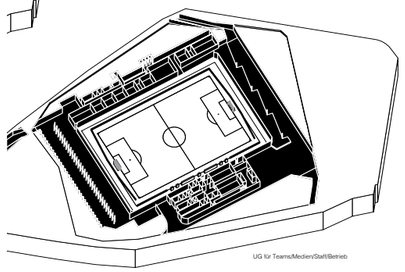

Rippenstruktur der äusseren Topografie

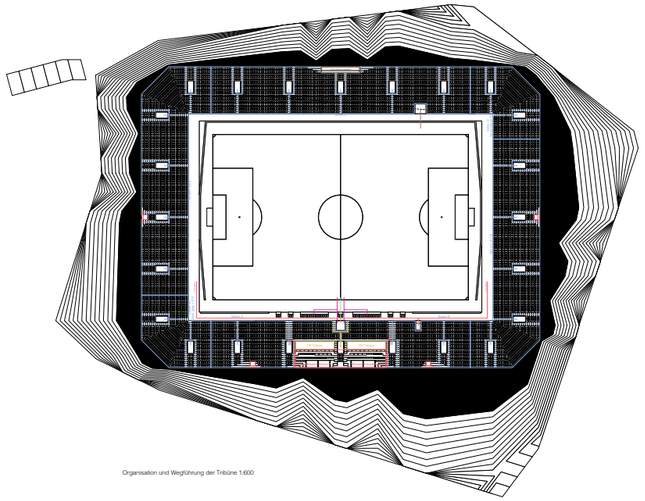

EG für Fans und VIPs

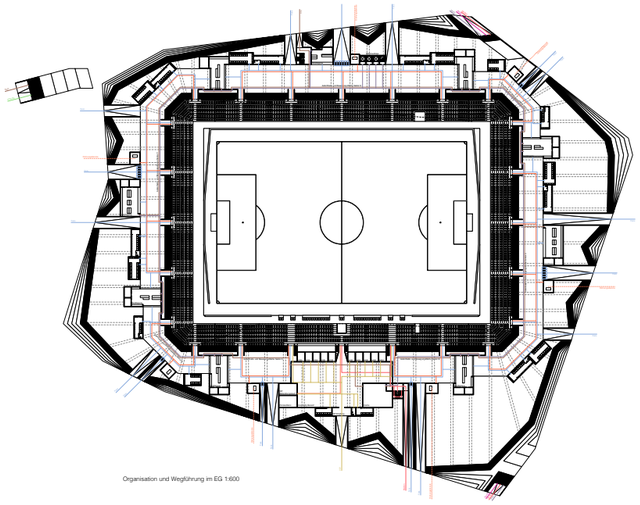

Parzelle und Aushub

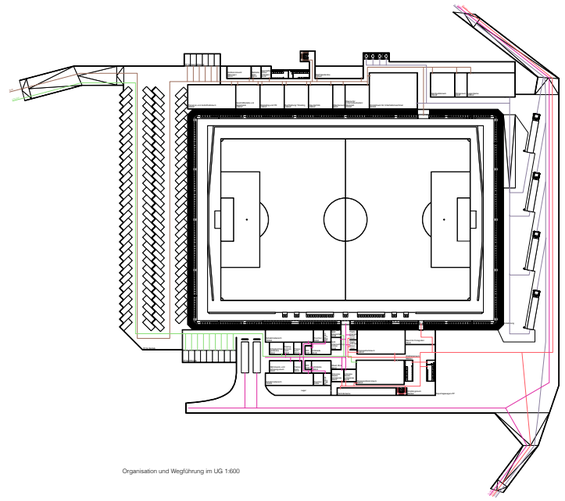

Äussere Topografie (begehbare Stufenlandschaft)


Tribüne


UG für Teams/Medien/Staff/Betrieb

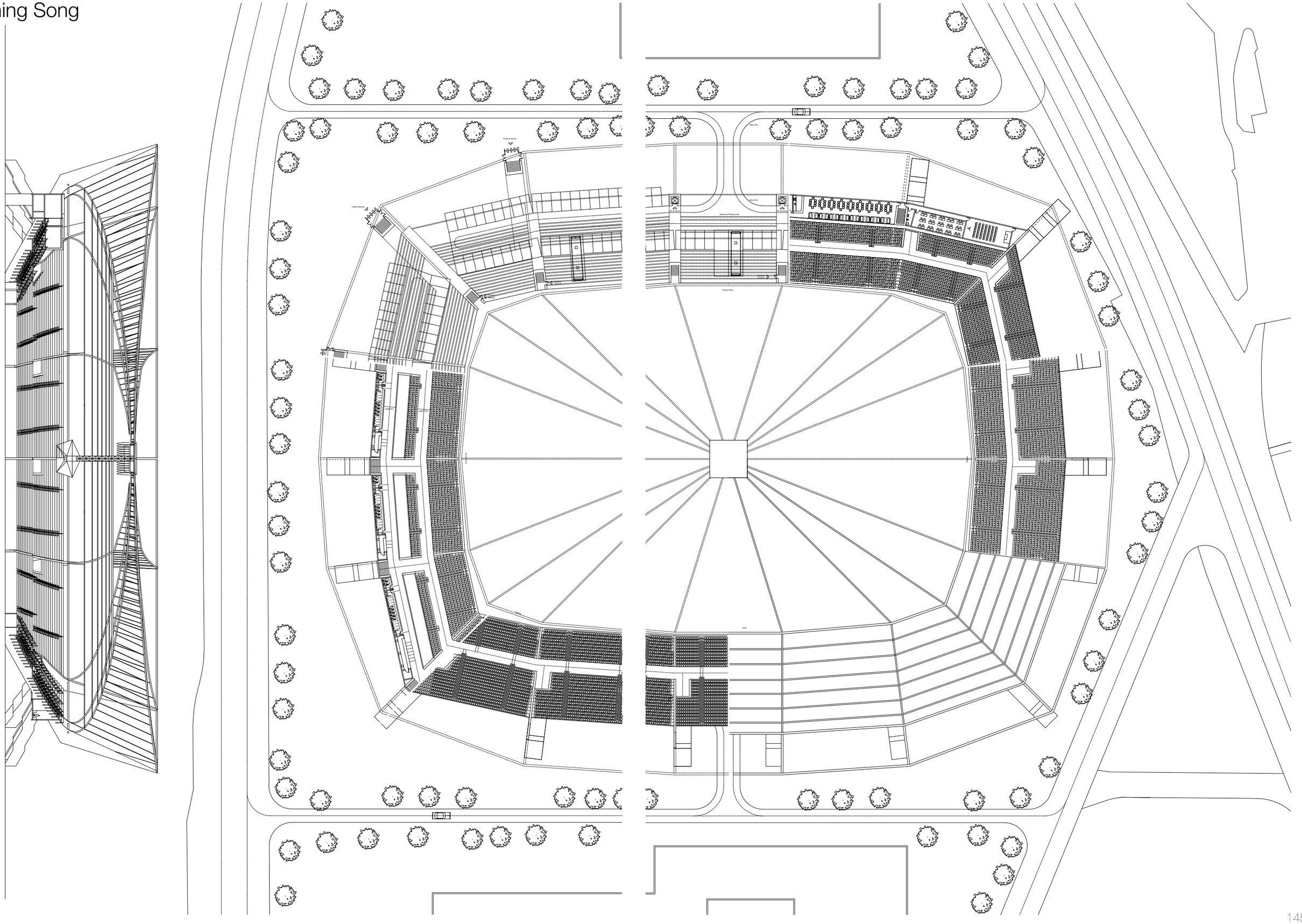

Organisation und Wegführung der Tribüne 1:600

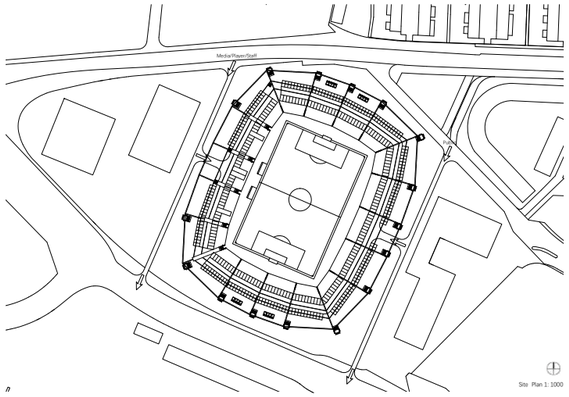

Organisation und Wegführung im EG 1:600


Organisation und Wegführung im UG 1:600

HS 2019/Studio Prof. Christian Kerez/ von Matthias von Sinner

Yuning Song


Public Entrance
Public Entrance
Reserved Parking Area
Ground Floor
Roof

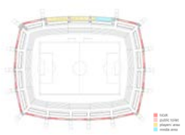


Site Plan 1: 1000

Structure and Concept

1. Inner columns support the stand and roof.
Five thicker columns contain staircase for reserved uses.

2. Outer columns support the inner columns.
Sixteen thicker columns provide public entrances to the bowl.



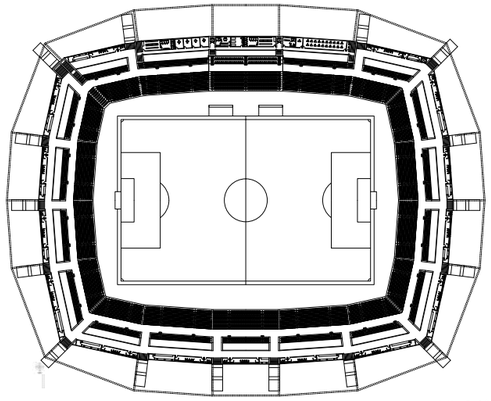
On the first floor, three blocks containing players and photographer working area are under the stand. Other fifteen blocks containing toilets and food stalls/bars are for the public

3.Large span between columns requires high beams (2m).
Beams between columns become seats for the stand.

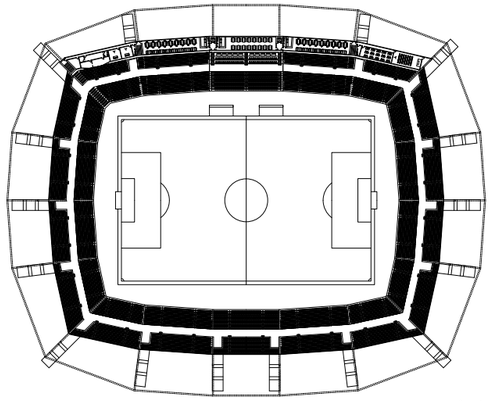
4. A ring of beams contains functional space.
This provides large public area on the ground.

On the second floor, five glass-fronted blocks containing media, VIP and security area are on the stand.

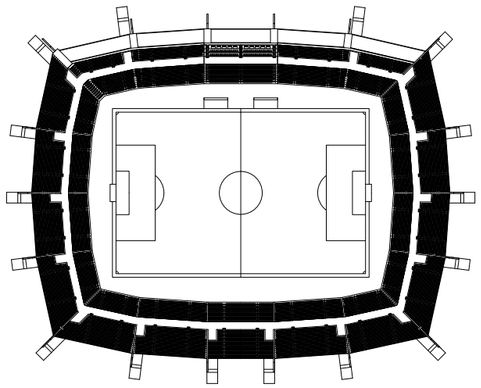
Function



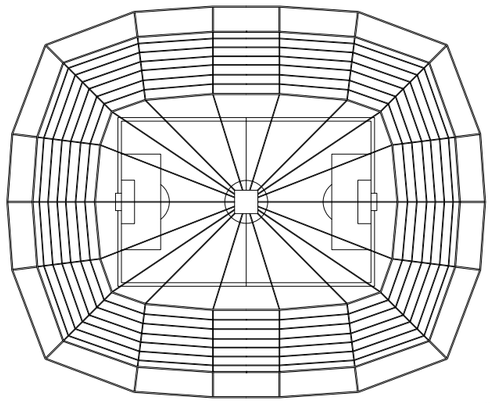
First Floor Plan 1: 600



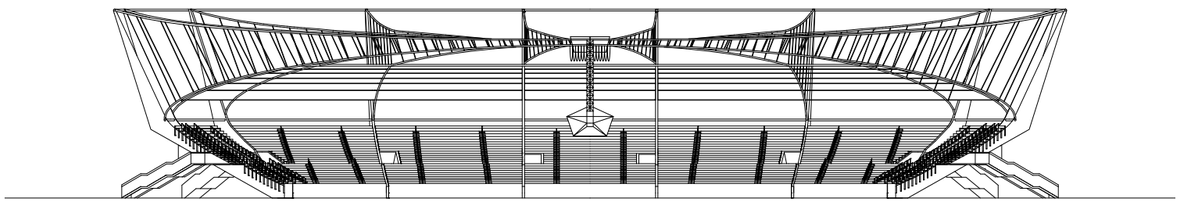
Second Floor Plan 1: 600



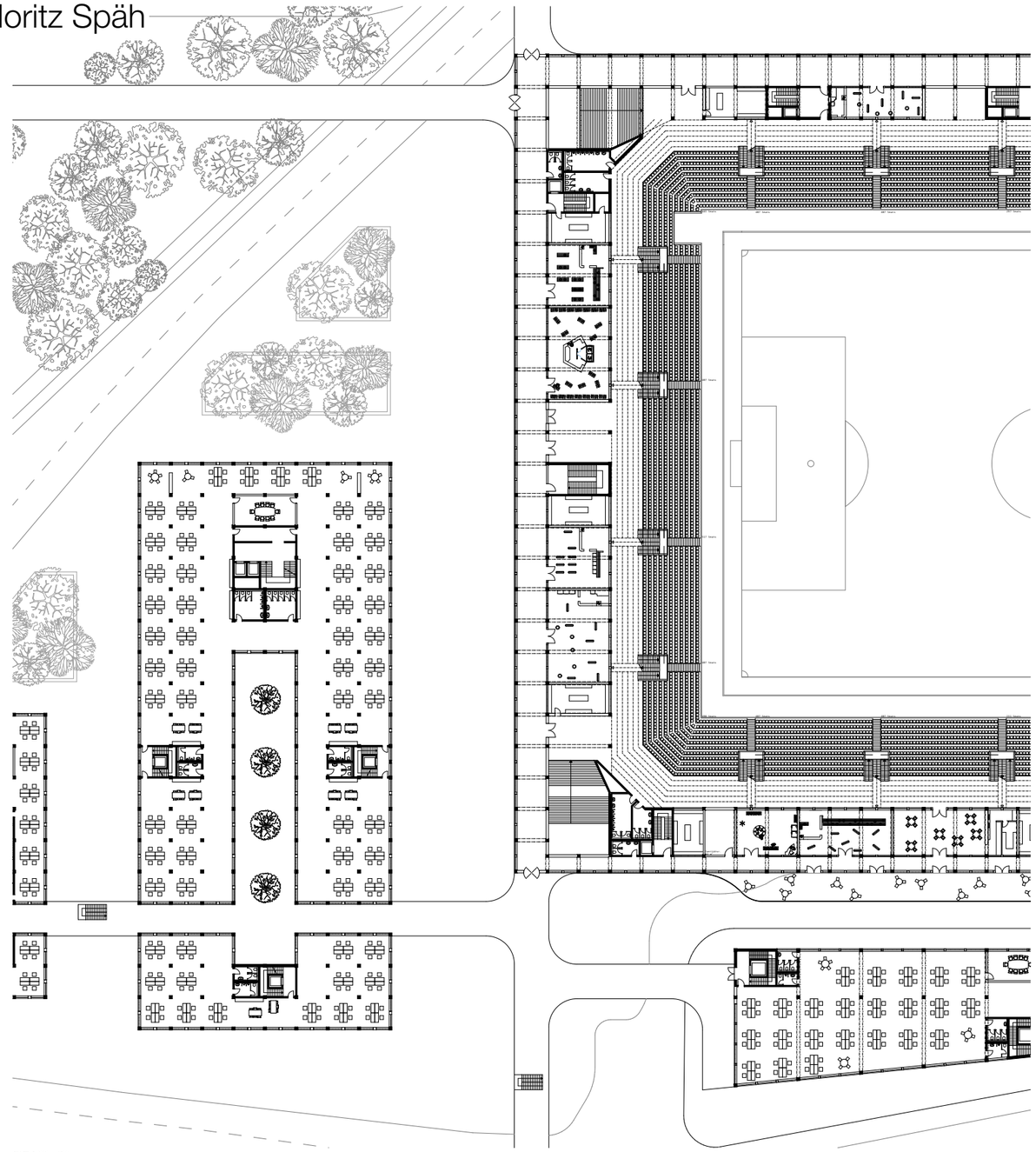
Seating Plan 1: 600



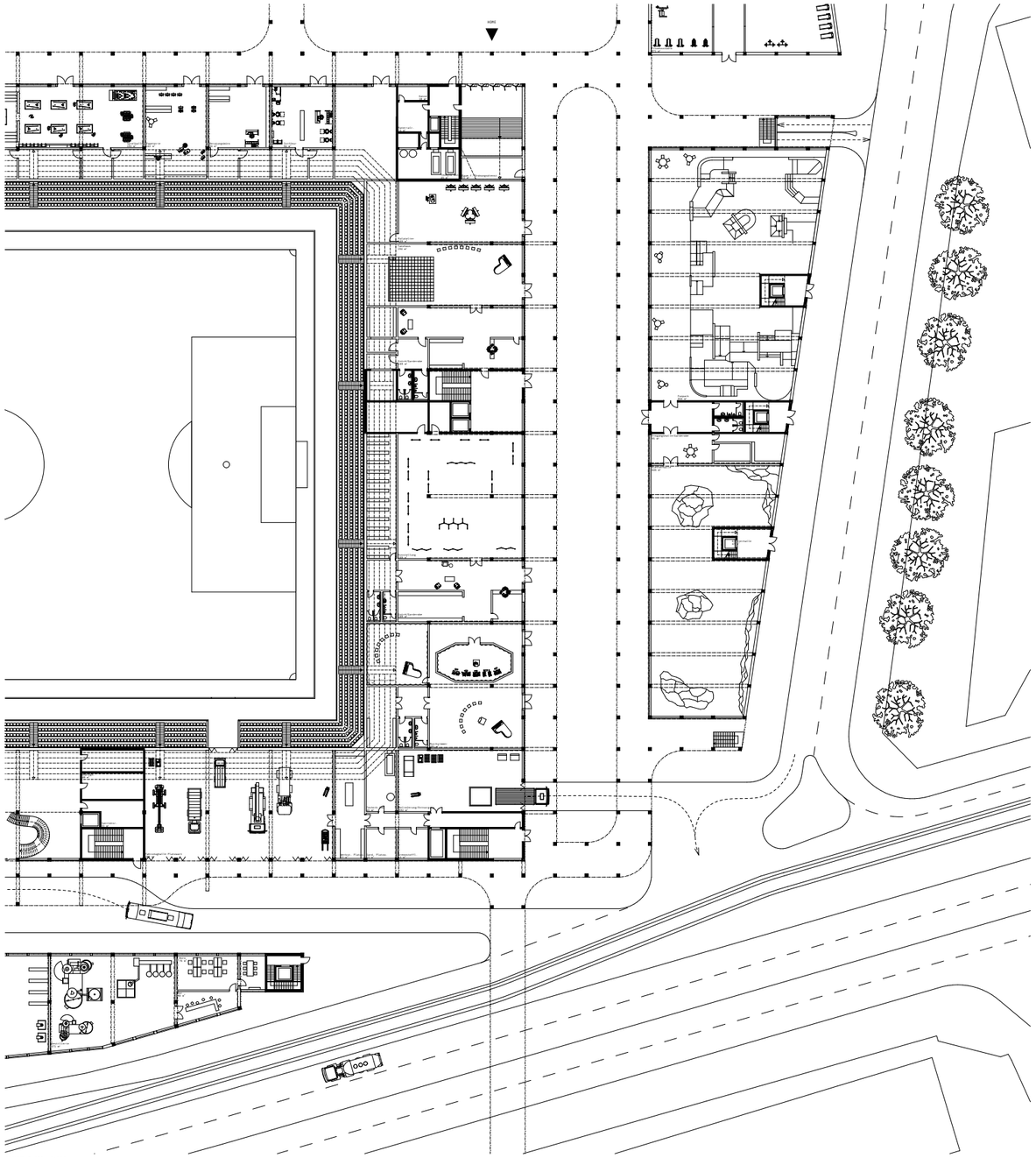
Roof Plan 1: 600



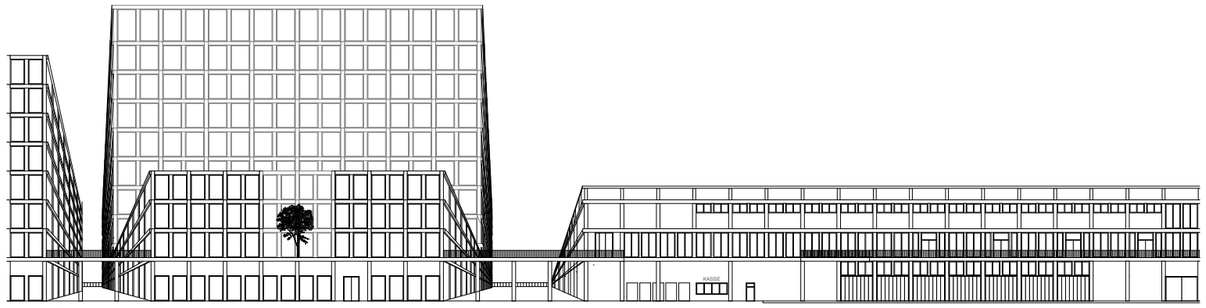
Long Section 1: 300



FIRST FLOOR, 1:200



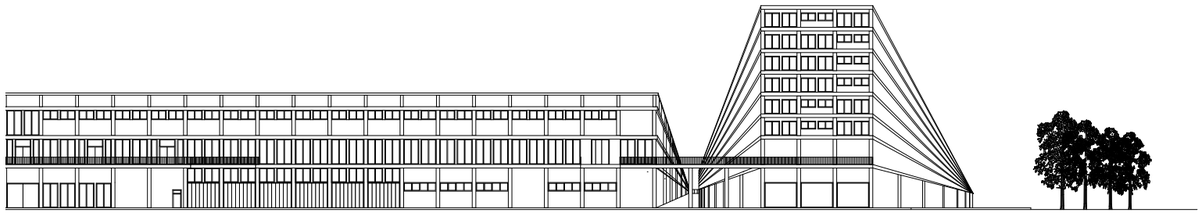
GROUND FLOOR, 1:200



ELEVATION, 1:200

HS19, CHAIR CHRISTIAN KEREZ

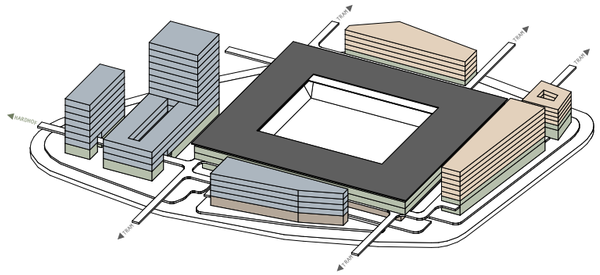
STUDENT: MORITZ SPÄH



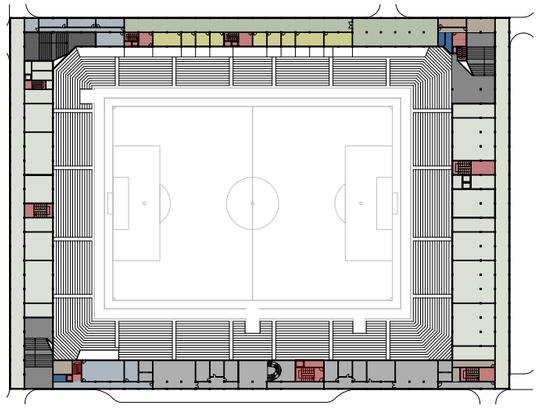
HS19, CHAIR CHRISTIAN KEREZ

STUDENT: MORITZ SPÄH

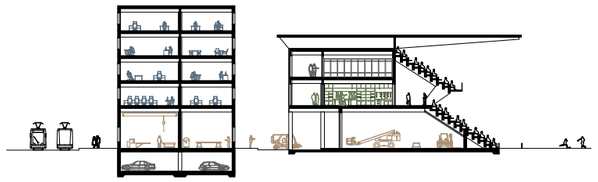
SITE PLAN 1:7500



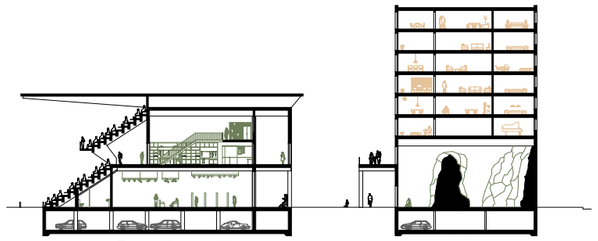
SCHEME OF USES, 1:1000 STADION HOUSING OFFICE COMMERCIAL INDOOR SPORT INDUSTRY



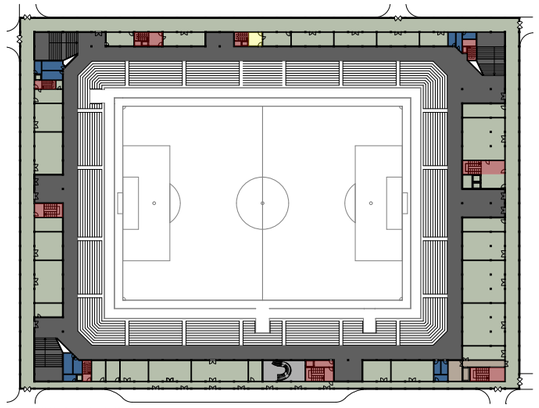
SECOND FLOOR SCHEME OF USE, 1:500



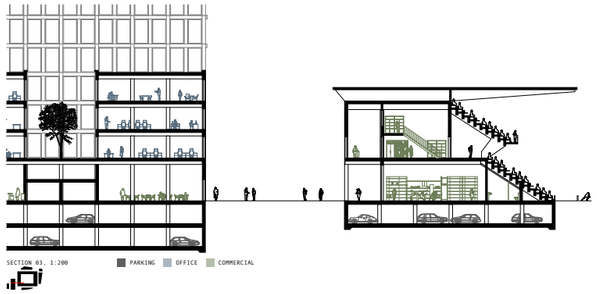
SECTION 01, 1:200 PARKING WORKSHOP OFFICE COMMERCIAL TEAM



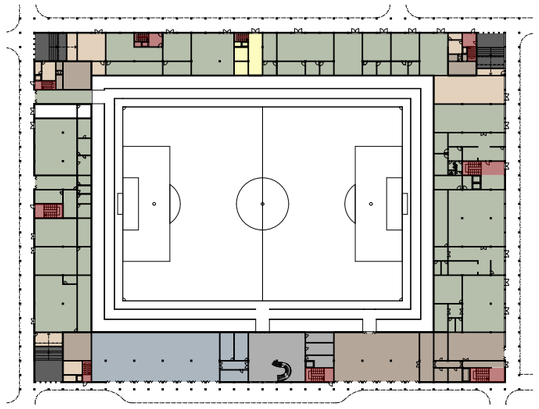
SECTION 02, 1:200 PARKING COMMERCIAL HOUSING



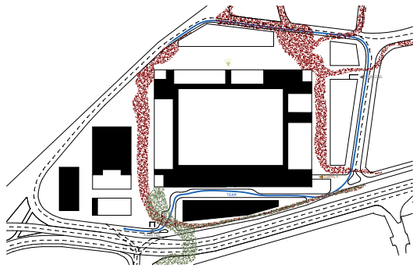
FIRST FLOOR SCHEME OF USE, 1:500



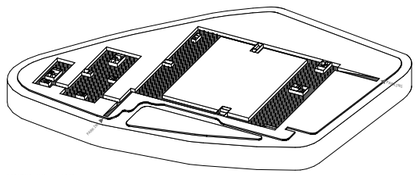
SECTION 03, 1:200 PARKING OFFICE COMMERCIAL



GROUND FLOOR SCHEME OF USE, 1:500

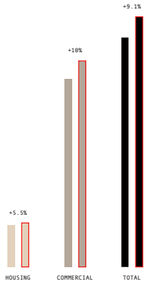


ENTRANCE, 1:1500



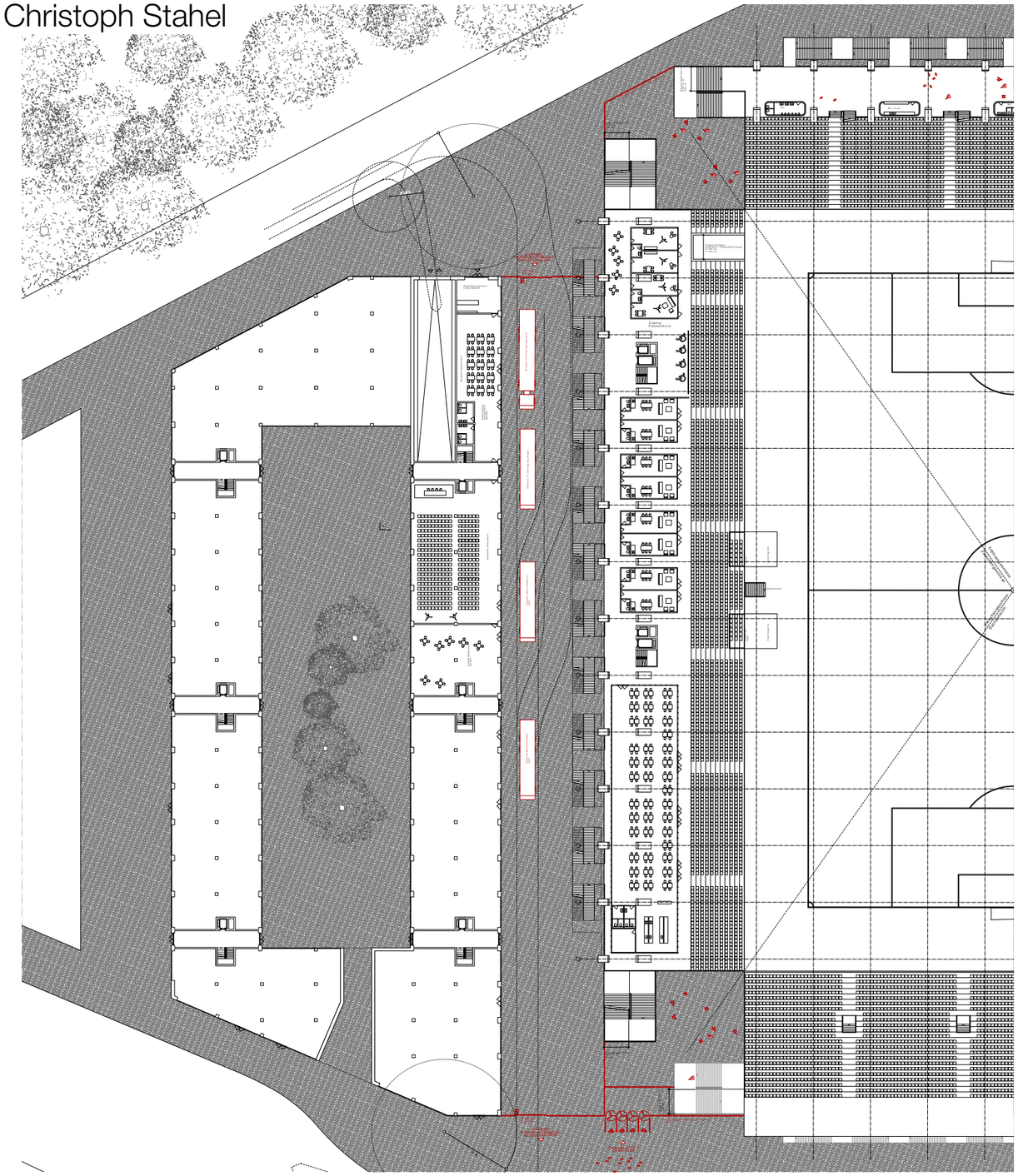
PARKING AXO, 1:1500

AUSNÜTZUNGSZIFFER = 1.64

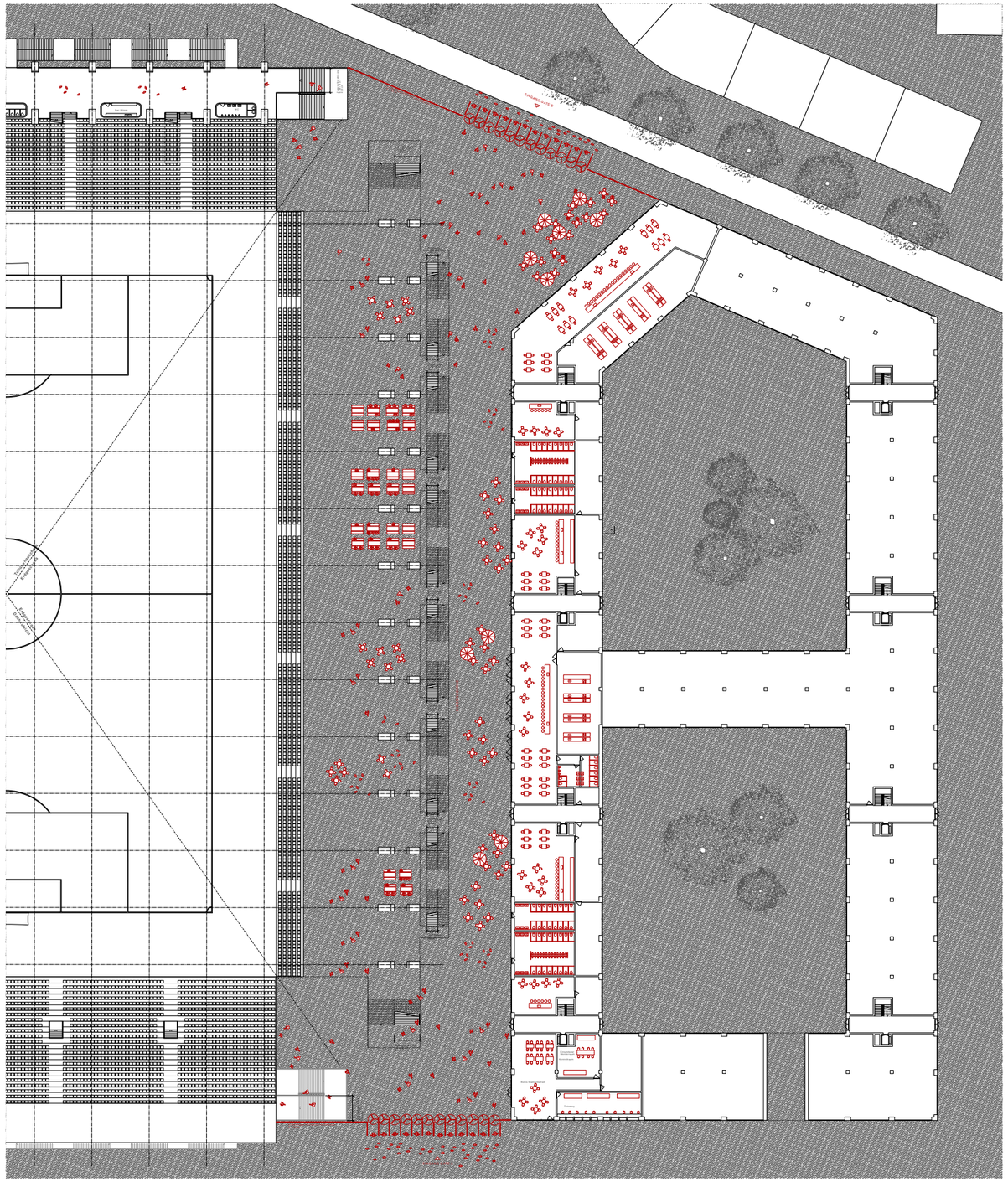


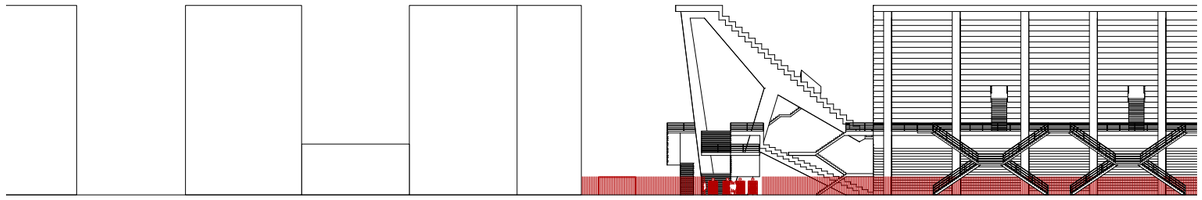
EFFICIENCY

Christoph Stahel

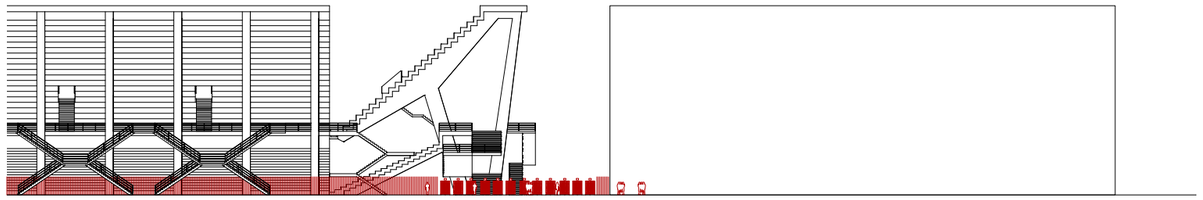


Grundrisse
1 : 200





Ansicht Süd
1 : 200



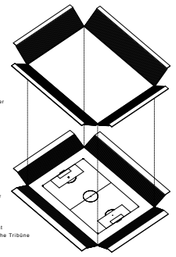
PROFESSOR CHRISTIAN KEREZ
A STADIUM FOR ZURICH - HS 2019
Christoph Stahel

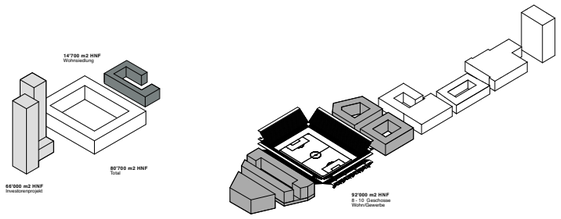
„EM 2020 in 13 Ländern"

NZZ 23.01.2013

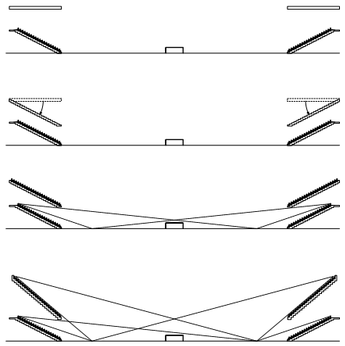
Die Fussball-Europameisterschaft 2020 findet in 13 Städten in 13 europäischen Ländern statt. Dies hat die Ufa im Anschluss an die Sitzung ihres Exekutiv-komitees in Nyon bekannt gegeben.

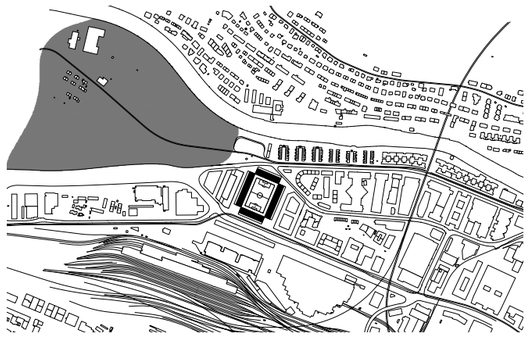
Die Fussball Europameisterschaft 2020 wird zum ersten Mal in mehreren Städten statt in einem Land ausgetragen. Damit sich zukünftig die Stadt Zürich ebenfalls als Austragungsort bewerben kann, reicht das geplante Stadion für 18'000 Zuschauer nicht. Das neue Hardtrum Stadion soll deshalb erweiterbar sein. Daher kann das Dach für die 18'000 Plätze als zusätzliche Tribüne genutzt werden und somit die Kapazität auf 36'000 Zuschauer verdoppelt werden. Die Neigung des Dachs gewährleistet die uneingeschränkte Sicht auf das Spielfeld.



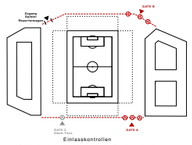


Stadion als Teil des Stadtgewebes

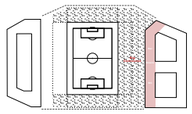




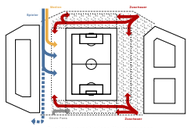
Situationsplan
1 : 4'000



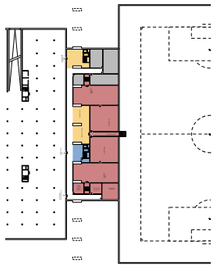
Einlasskontrollen
An Spieltagen werden die seitlichen Strassen gesperrt



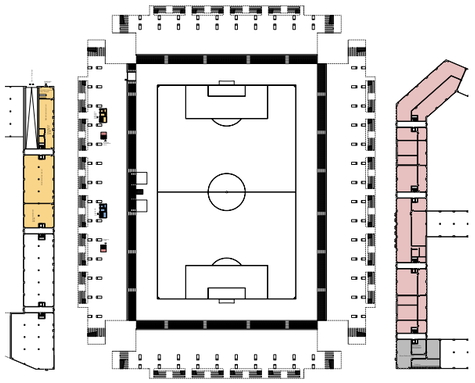
Big Concourse
Die gesperrte Strasse bildet den Concourse.



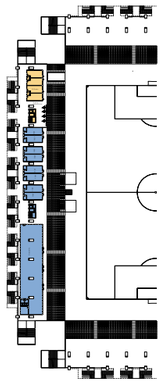
Zugänge verschiedene Nutzergruppen



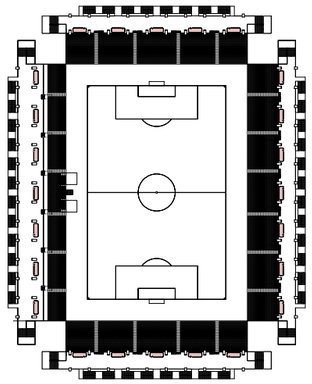
Grundriss UG
1 : 700



Grundriss EG
1 : 700



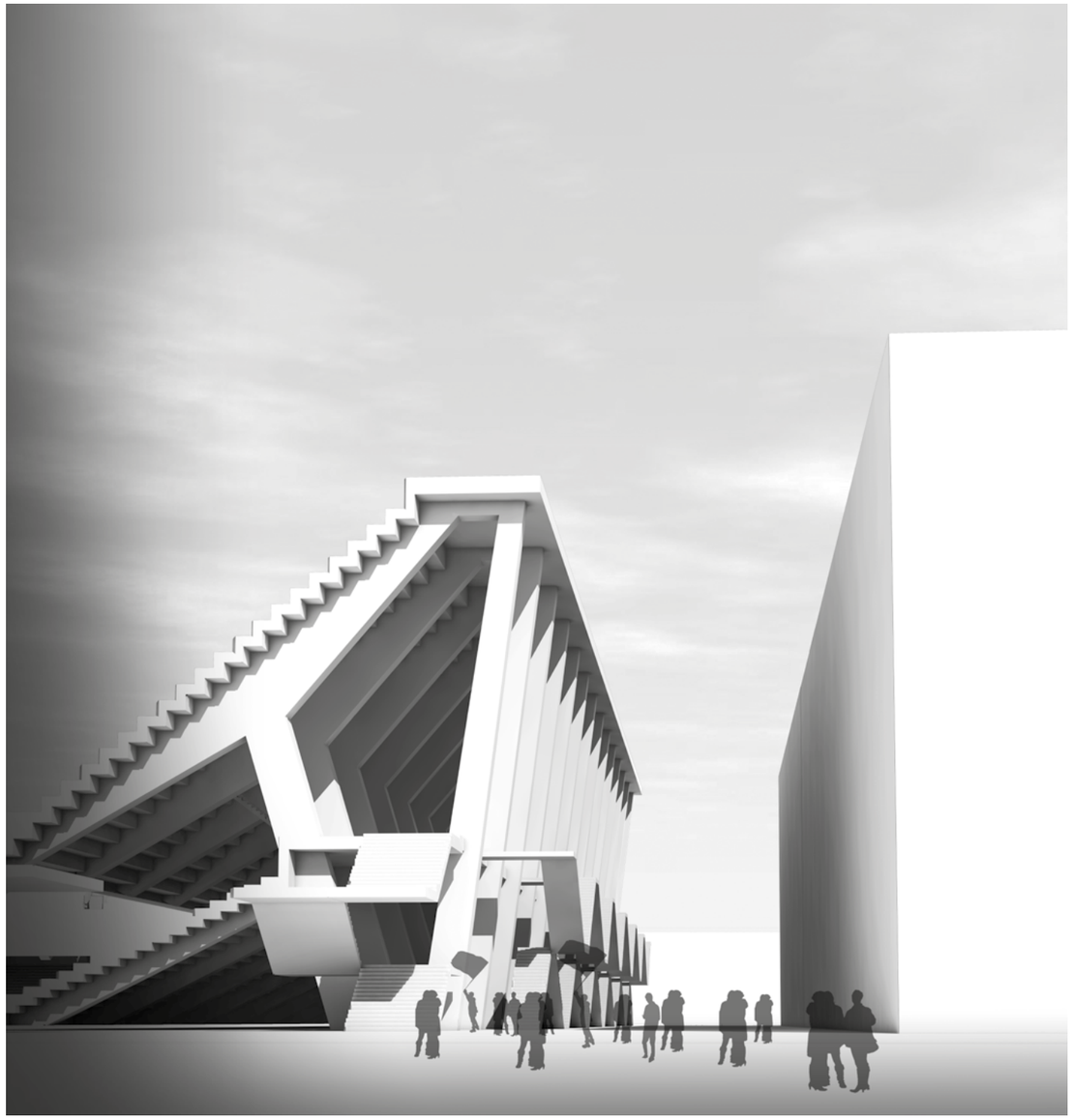
Grundriss Zwischengeschoss
1 : 700

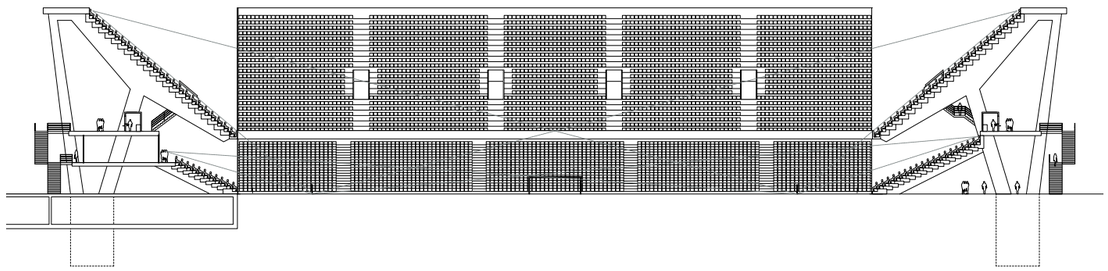


Grundriss Tribünengeschoss
1 : 700

Medien
Food / WC
Stadionbetrieb
VIP / Hospitality
Spieler / Schiedsrichter

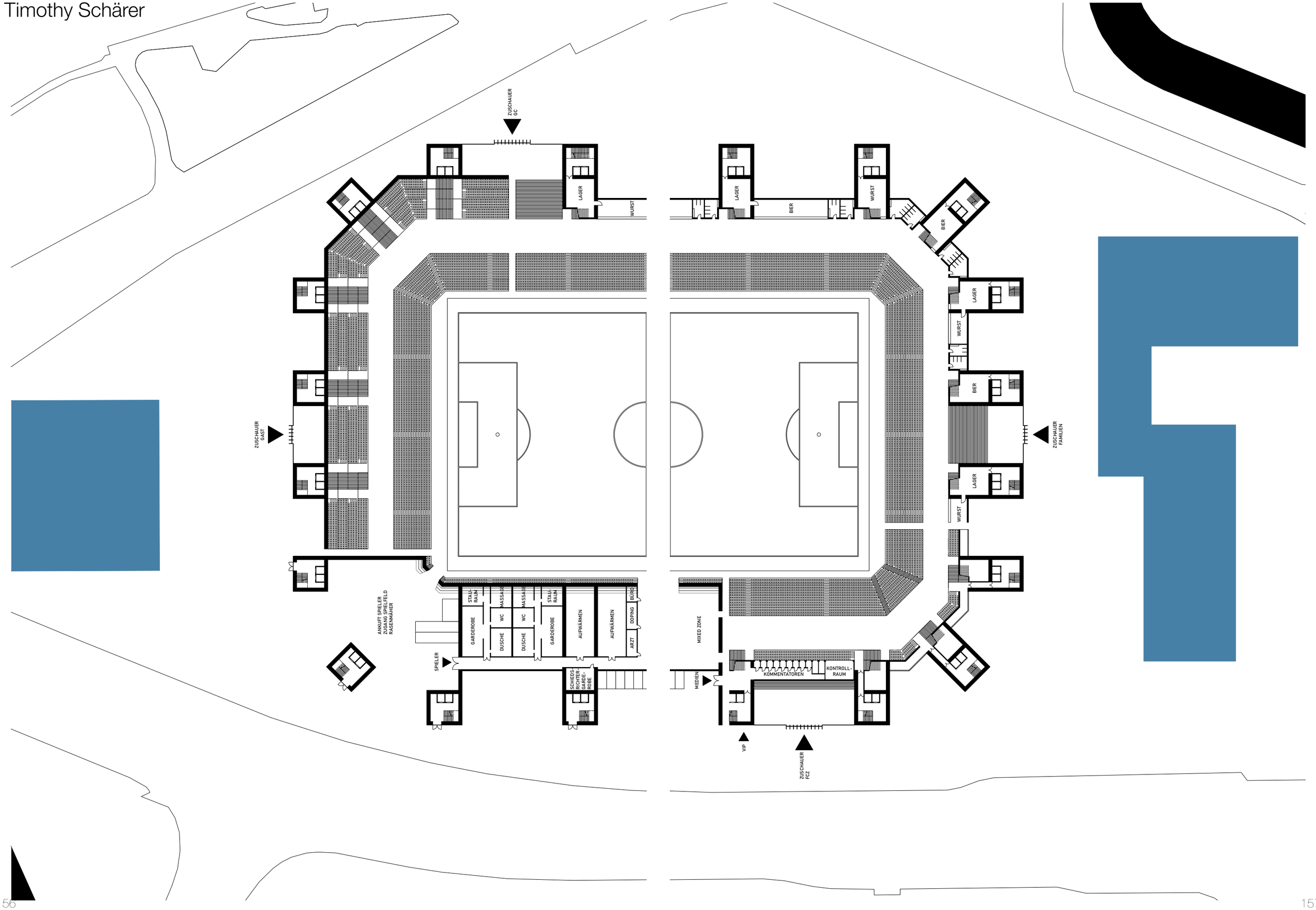
PROFESSOR CHRISTIAN KEREZ
A STADIUM FOR ZURICH - HS 2019
Christoph Stahel

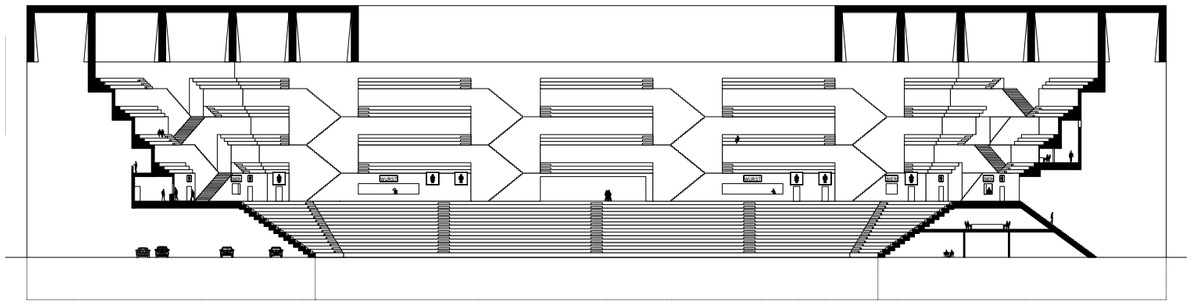




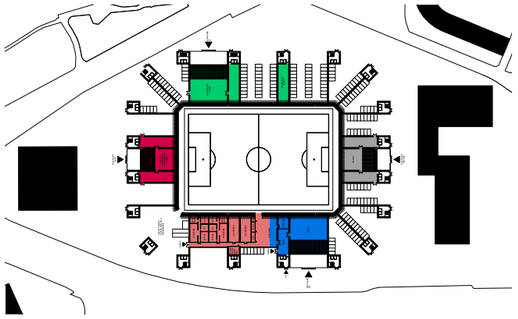
Schnitt A:A
1 : 200

PROFESSOR CHRISTIAN KEREZ
A STADIUM FOR ZURICH - HS 2019
Christoph Stahel

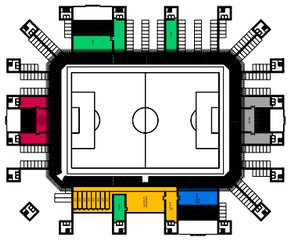

ZUSCHAUER GC
LAGER
WURST
LAGER
BIER
WURST
BIER
LAGER
WURST
BIER
LAGER
WURST
ZUSCHAUER GAST
ZUSCHAUER FAMILIEN
ANKUFT SPIELER
ZUGANG SPIELFELD
RASENMÄHER
STAU-RAUM
MASSAGE
MASSAGE
STAU-RAUM
BÜRO
GARDEROBE
WC
WC
GARDEROBE
AUFWÄRMEN
AUFWÄRMEN
DOPING
DUSCHE
DUSCHE
ARZT
SPIELER
SCHIEDS-RICHTER-GARDE-ROBE
MIXED ZONE
MEDIEN
KOMMENTATOREN
KONTROLL-RAUM
VIP
ZUSCHAUER FC2



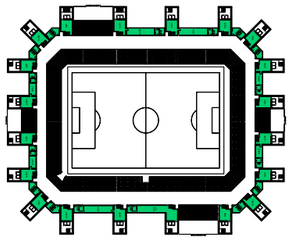
SCHNITT 1:200



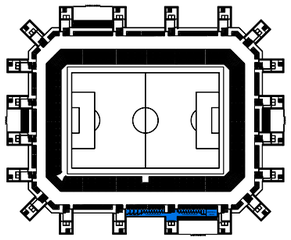
GRUNDRISS EG
1:1000



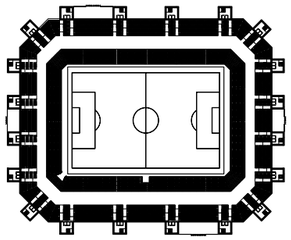
GRUNDRISS 1. OG
1:1000



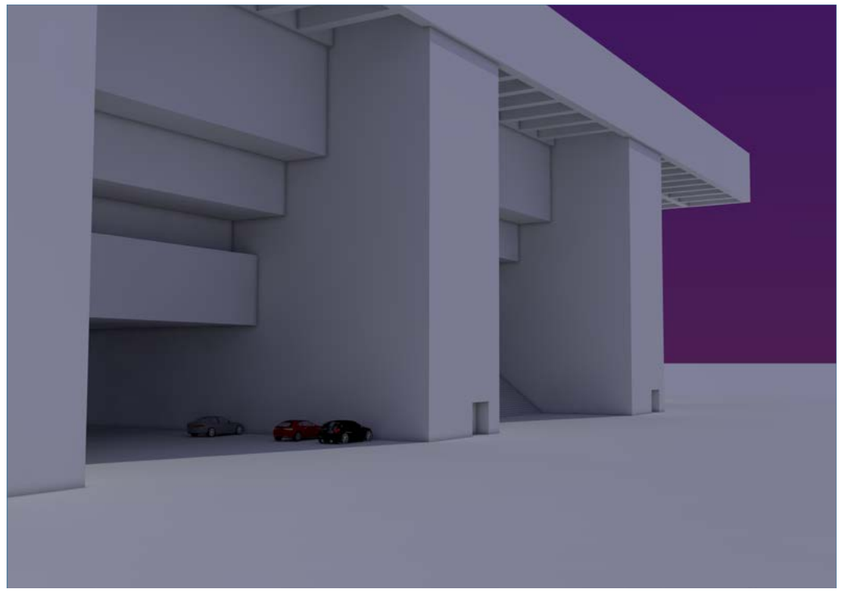
GRUNDRISS 2. OG
1:1000

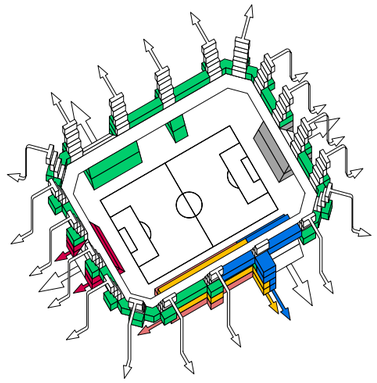


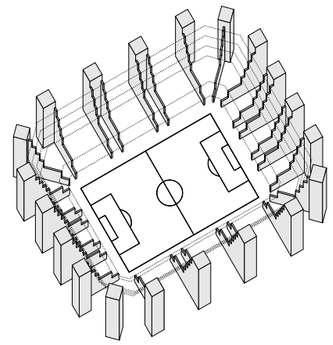
GRUNDRISS 3. OG
1:1000

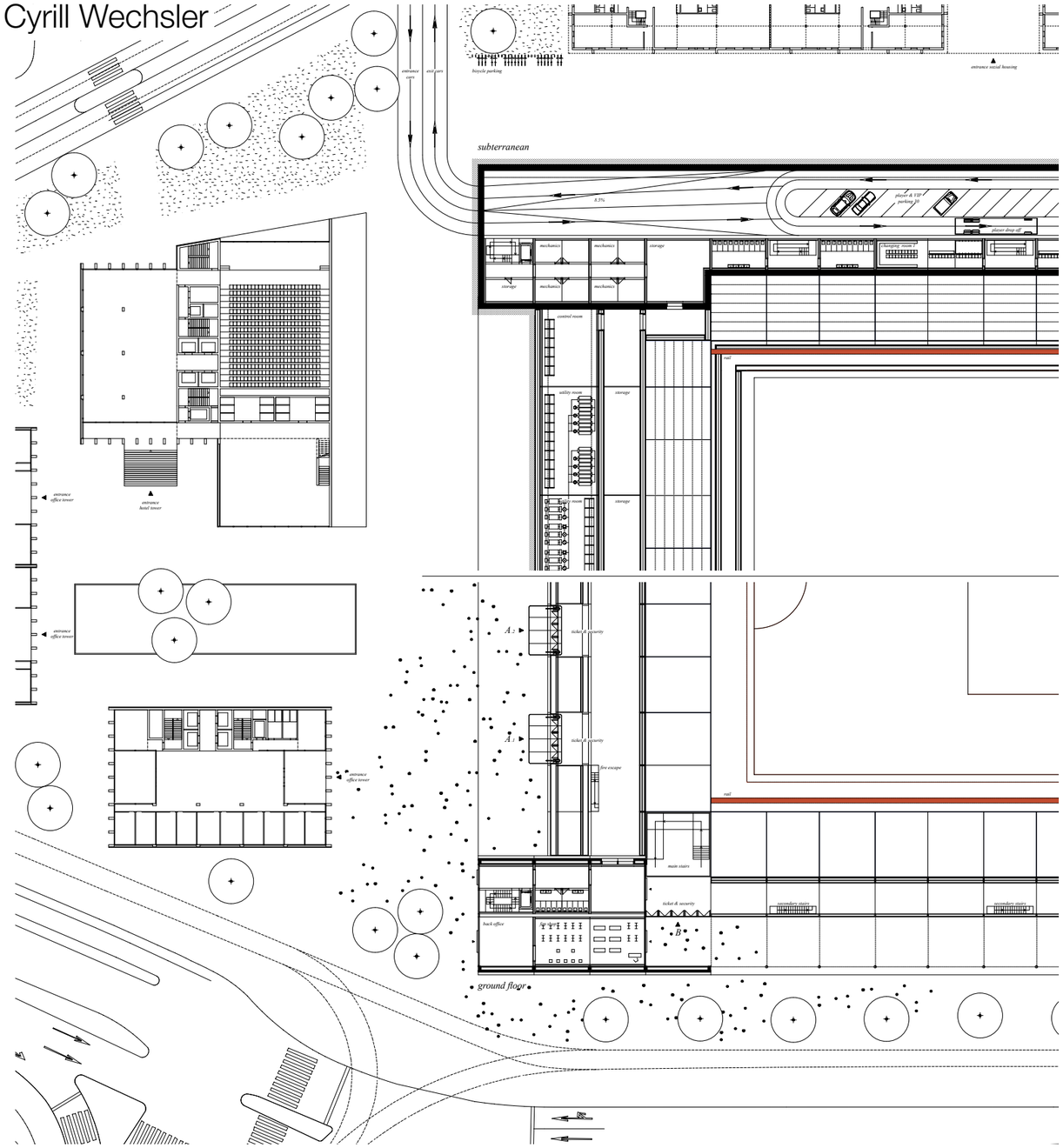


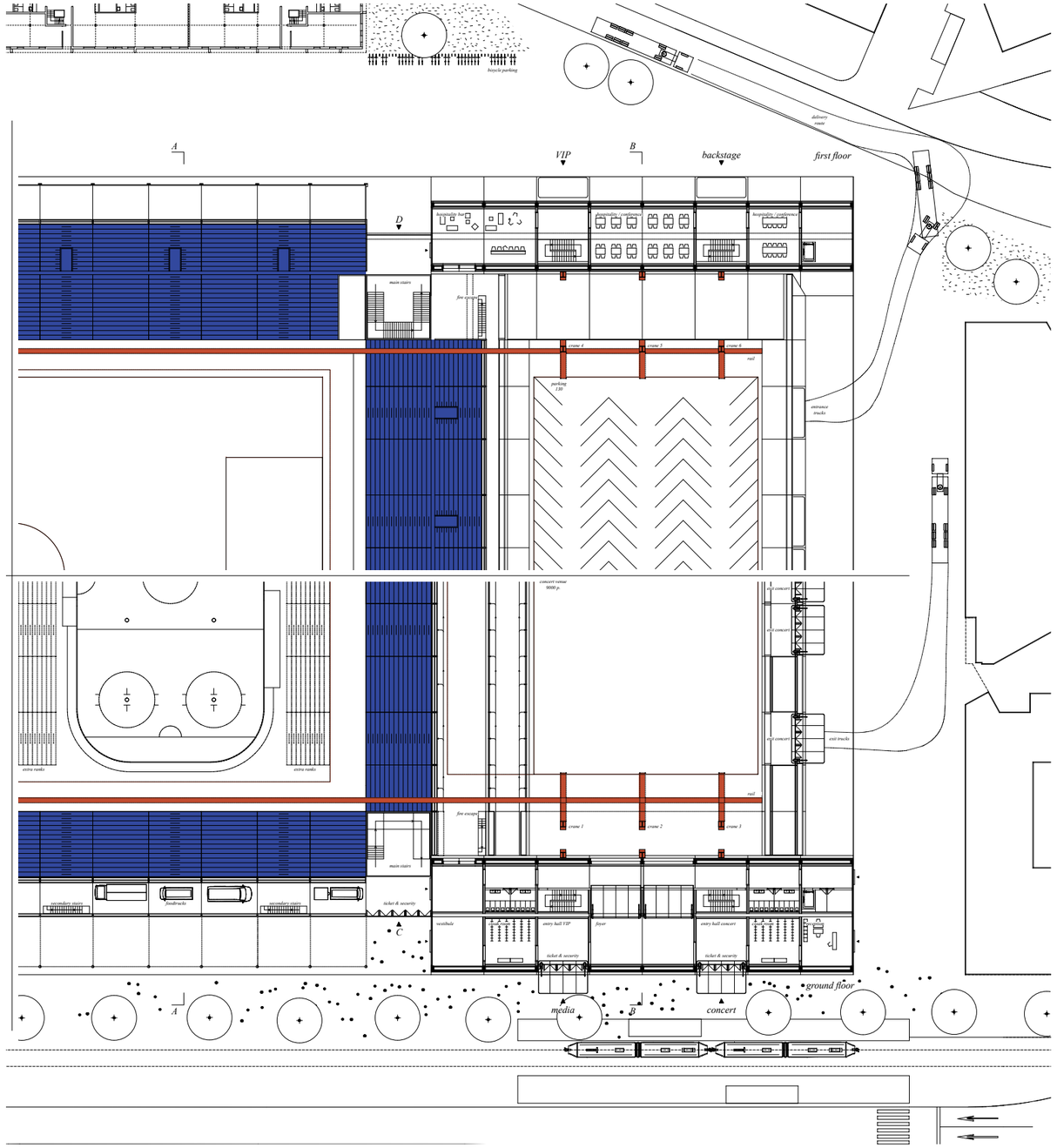
GRUNDRISS 4. OG
1:1000



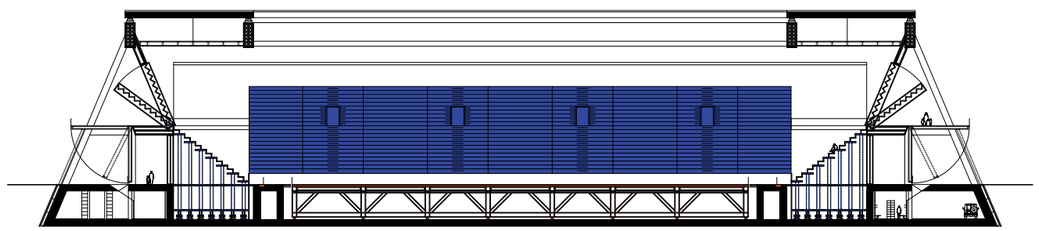




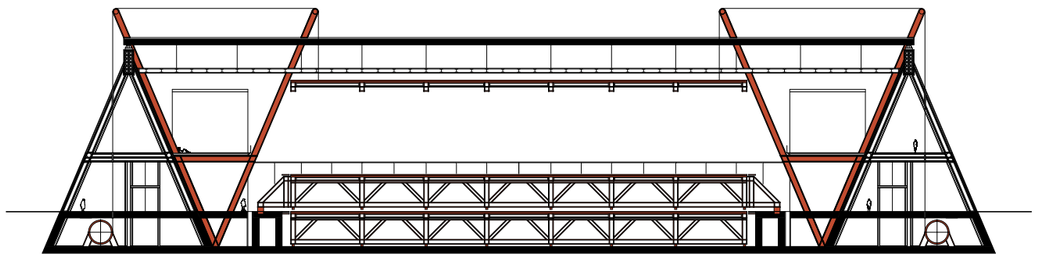




floor plan 1:200

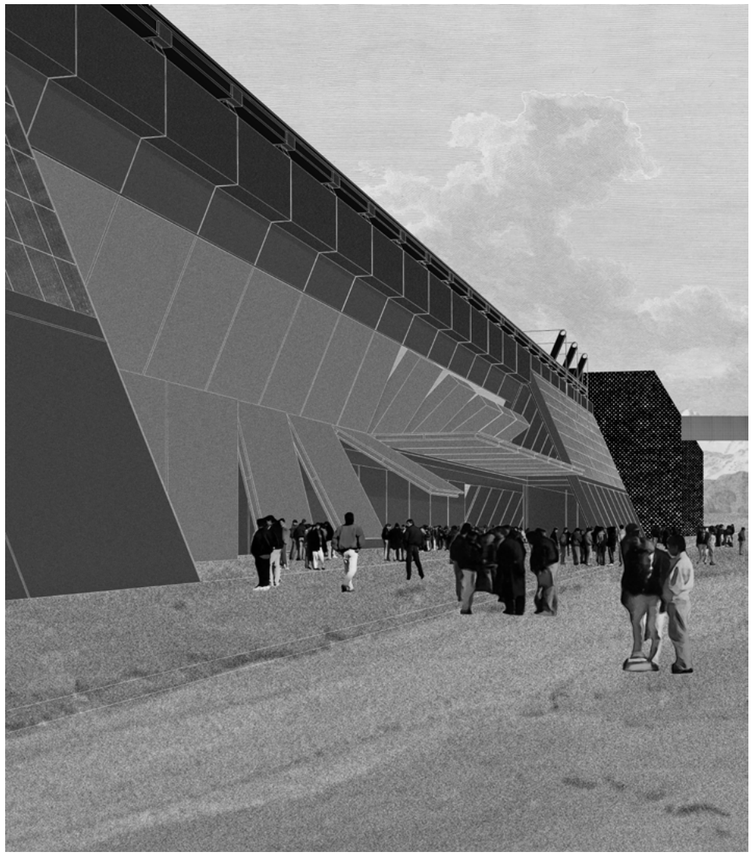


A



B

sections 1:200



a stadium for zurich

semester task by cyrill wechsler

concept

During the research on stadiums, I discovered a timetable for the Letzigrund- Stadium, which now hosts both football teams in Zurich, and read that the stadium is only used around twenty percent of days during a year. There lies the origin of my concept : to build a space that can be used flexible and allows for a much denser timetable.
I wish to design a space / building in Zurich that can host a variety of events already based in and around the city, bringing them to a site close to the centre.

program

Football is still part of the program, but it's not the focus point of the new space, rather one of many events that take place in the new Hardturm- Arena. For the other program points, I searched for events that need a larger scale event- space and have an existing connection to the city of Zurich. Events like : fairs, art exhibitions, design festivals, the Christmas market, street food festivals, smaller sports events like tennis and hockey, (etc.)
As a secondary program, I wanted to build a new concert venue for Zurich that can host big concerts as an alternative to the Hallenstadion.

flexibility

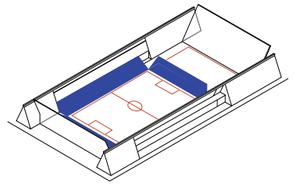
To host all these different events and provide the necessary infrastructure needed, I had to design a space that is not only flexible in program but also flexible by design. The idea of a flexible space is rooted to the core of the new space. Rooms have different functions, food trucks provide food and beverages.
I tried to avoid having spaces that are mono-functional. This also included the pitch of the football stadium. I wished to have the pitch to be removable and if possible completely stored away, allowing for the large scale event- space I needed.

transformation

This flexibility is achieved by two many mechanical aspects I added to the space. One being the movable pitch : with the reference of the "Stade Pierre Mauroy" in Lille (F), I found a solution that places the pitch on a truss structure, which then can be lifted and moved. The two half of the pitch can be stacked on top of each other or stored away in the back space.
The second aspect are the retractable ranks of the stadium : a system designed by "Gala Systems" called "Spiralift" is using extendable pistons and a clever folding mechanism to achieve flexible ranks. I use that system for the lower ranks and implement the upper ranks in to the outer wall, which is able to tilt and revile the seats.

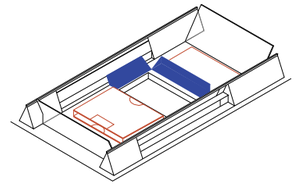
ETH - DARCH, chair christian kerez, hs19

football game



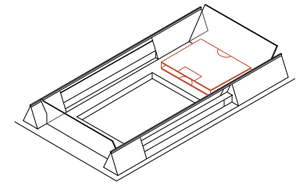
the space during a football game with all the ranks extended and the back space used as parking spots

sports event



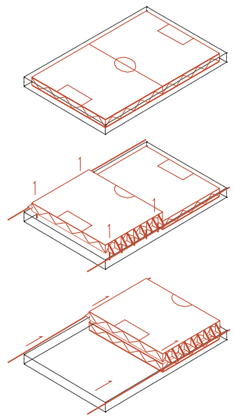
the space during a sports event with half the ranks extended and the back space used as a concert venue

event space



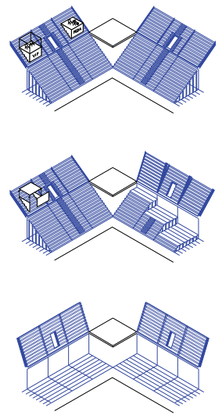
the space during an event with all the ranks retracted away and the pitch stored in the backspace

pitch



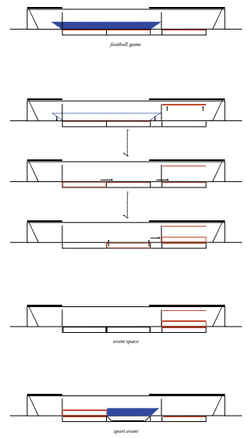
the pitch is placed on a movable truss that gets lifted up and rolled forward to be stacked or stored away completely

ranks



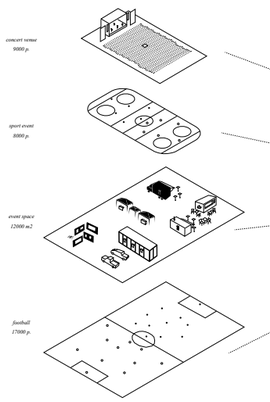
the lower ranks sit on a set of pistons, that allows the them to retract and extend, the upper part is built in to the tilting walls

transformation



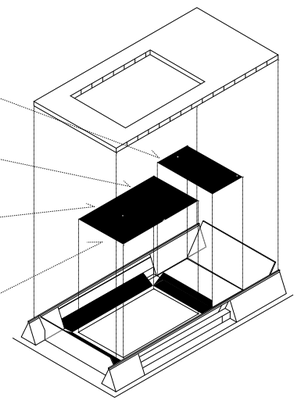
the transformation of the space in to the scenario needed to host the different events

program



there are many different events in and around zurich who could take place in the new space

organisation



the open space formed by the outer walls can be used in different ways, while the walls themself house closed spaces

timetable

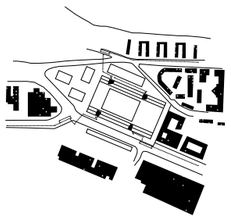
m	t	w	t	f	s	s
	1	2	3	4	5	6
		market		concert	football	football
7	8	9	10	11	12	13
firm meetings		sports event			fair	
14	15	16	17	18	19	20
				design exhibition		
21	22	23	24	25	26	27
	sports event		concert	football	concert	football
28	29	30	31			
firm meetings						

m	t	w	t	f	s	s
				1	2	3
				concert	football	
4	5	6	7	8	9	10
		art exhibition				football
11	12	13	14	15	16	17
				film festival		
18	19	20	21	22	23	24
			concert		football	football
25	26	27	28	29	30	
			light festival			

m	t	w	t	f	s	s
						1
2	3	4	5	6	7	8
		light festival				football
9	10	11	12	13	14	15
concert		concert		football	fair	
16	17	18	19	20	21	22
				christmas market		
23	24	25	26	27	28	29
	christmas market					
30	31					

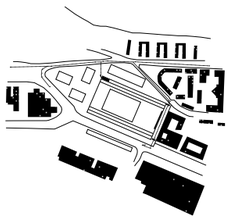
a schedule of events that could take place in the stadium over three months

distribution



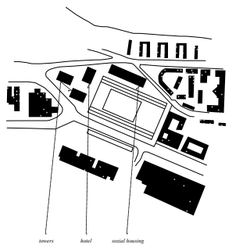
public transport

arrival

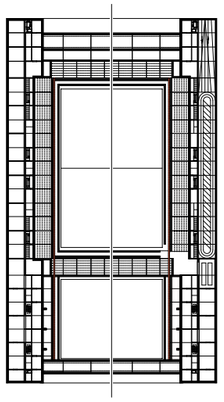


car and trucks

site

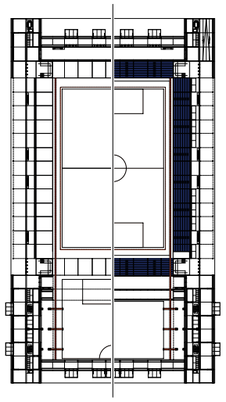


subterranean



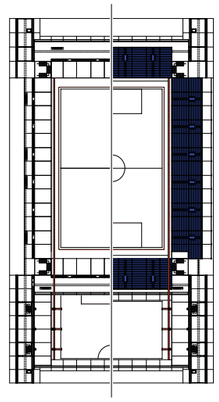
the lower level of the stadion houses the utility rooms, storage, VIP parking, changing rooms, media rooms and the toilets

ground floor



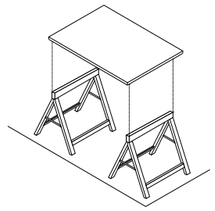
security and ticked controll are based on the ground floor, together with all other entrances to the space

first floor



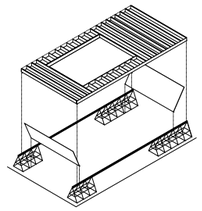
the first floor contains the hospitality rooms, which can also be used as convorence rooms and other concepts

structural idea



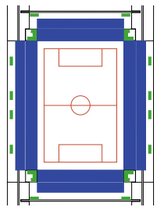
the idea for the structure comes from a very basic principal used in table construction, two sides holding up a tabletop

structure



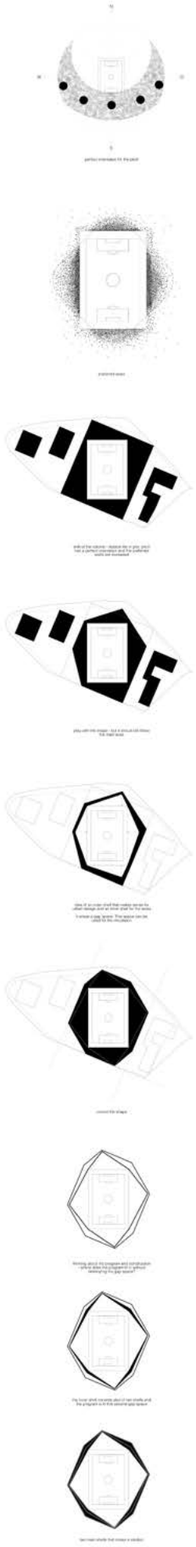
the four corners, shaped like triangular stands from a table, hold up the roof, which consists of several bridge like beams

fire escape



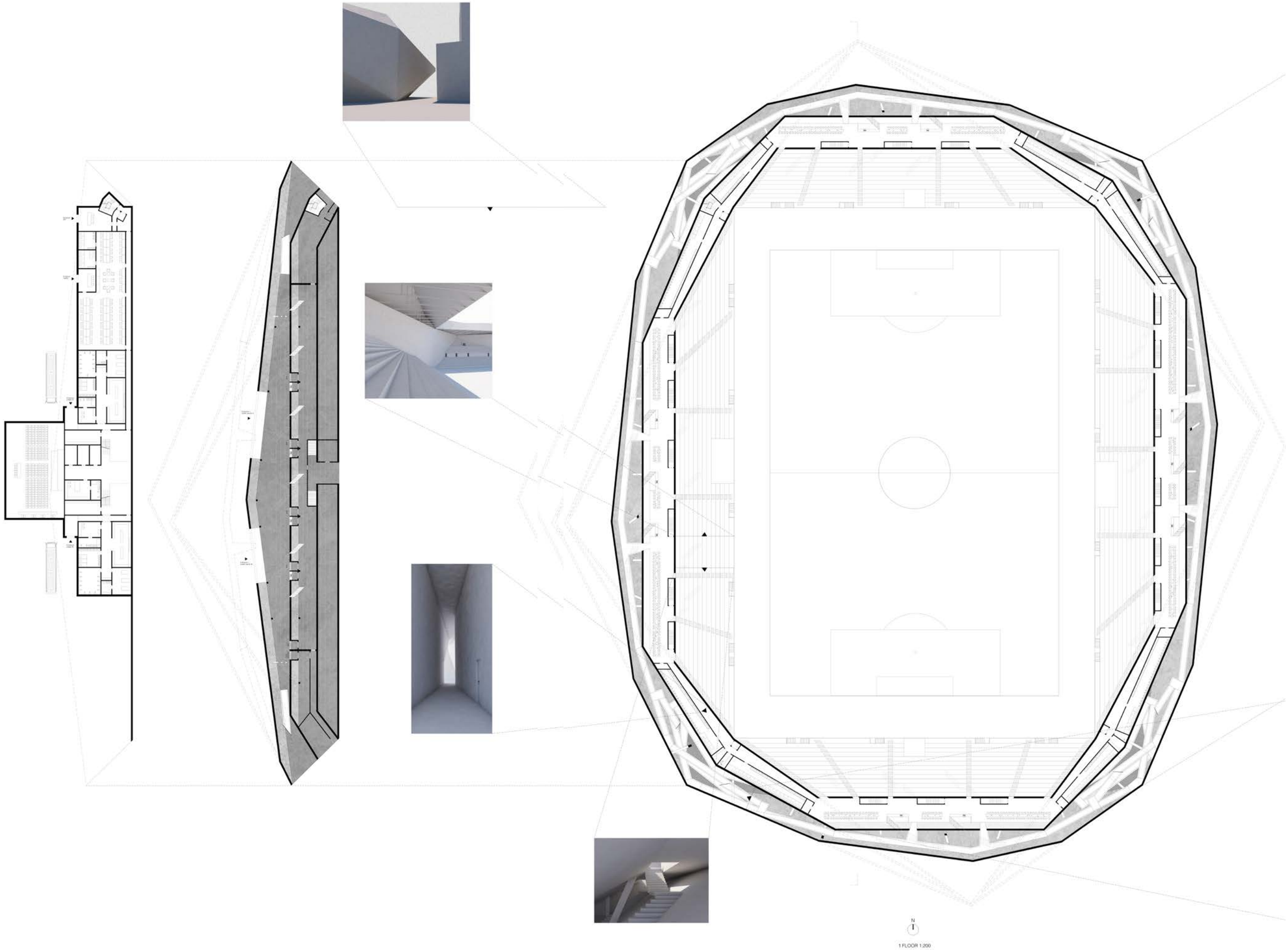
showing all the necessary fire escapes for the ranks

Chantal Winiger

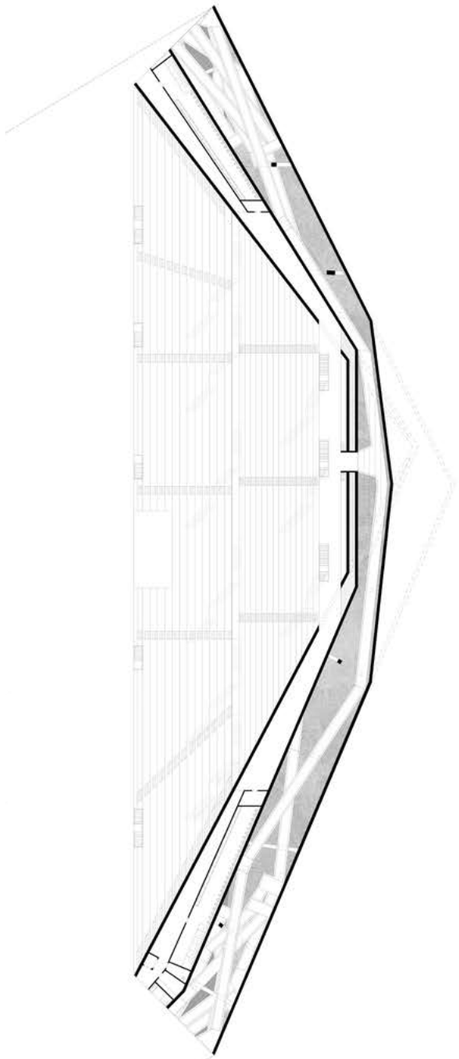


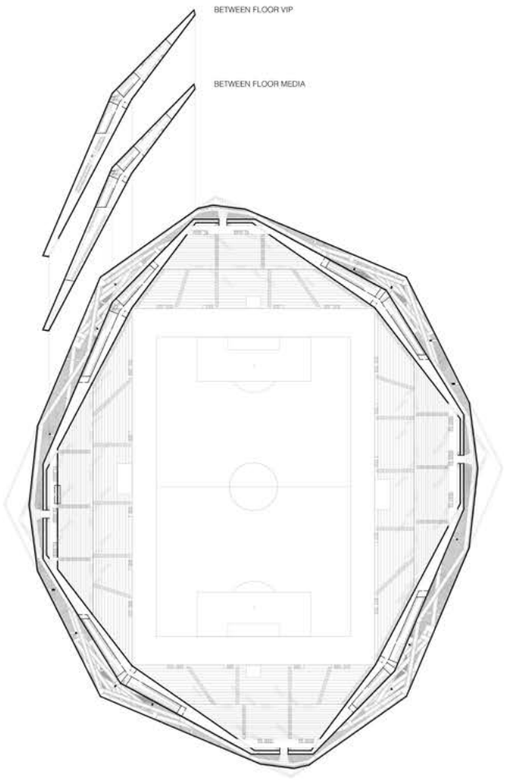
DEVELOPMENT

FINAL REVIEW STUDIO CHRISTIAN KERIZ
HAND IN CHANTAL WINIGER

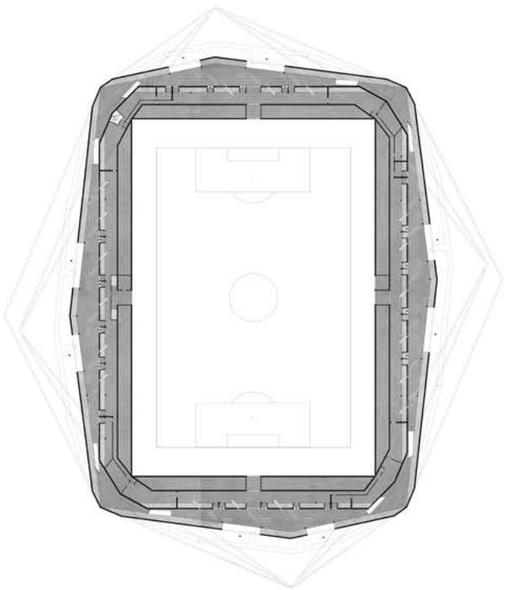


1 FLOOR 1:200

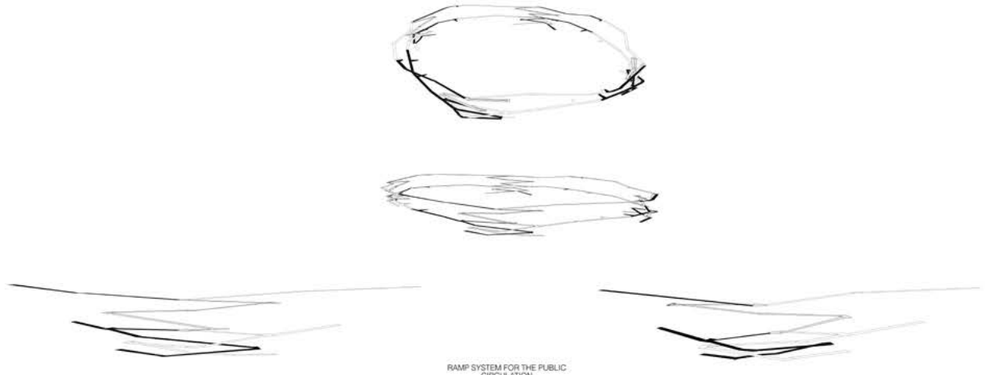




2 FLOOR 1:200



GROUNDFLOOR 1:200

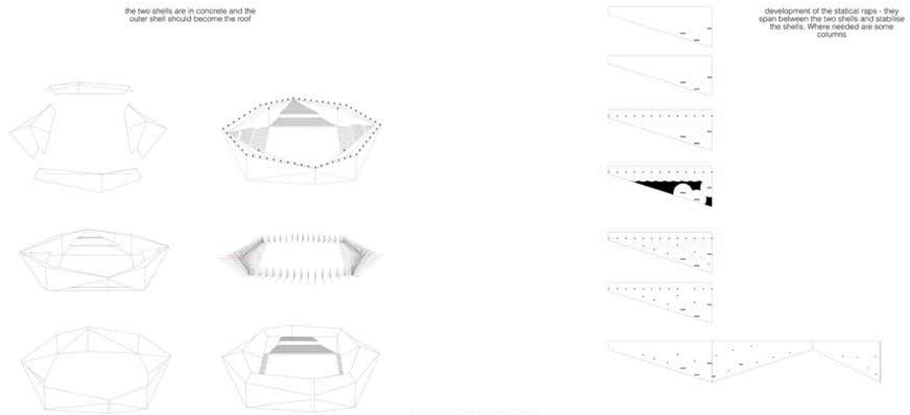


RAMP SYSTEM FOR THE PUBLIC CIRCULATION

STRUCTURE

the two shells are in concrete and the outer shell should become the roof

development of the statical raps - they span between the two shells and stabilise the shells. Where needed are some columns



SCHEME FOR MORE INFORMATION

security
the black boxes are the security checks and the whole stadion is divided in four parts to divide the fans

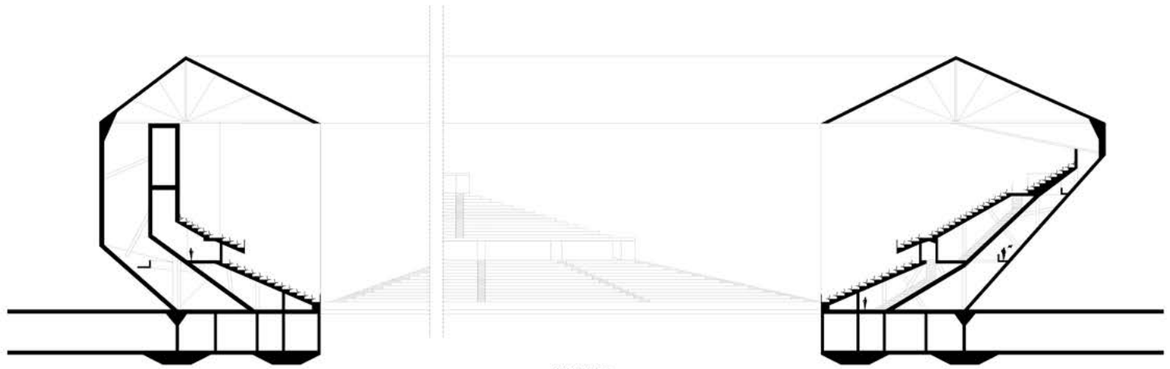
fire escape
over the pitch or with the stairs

VIP circulation

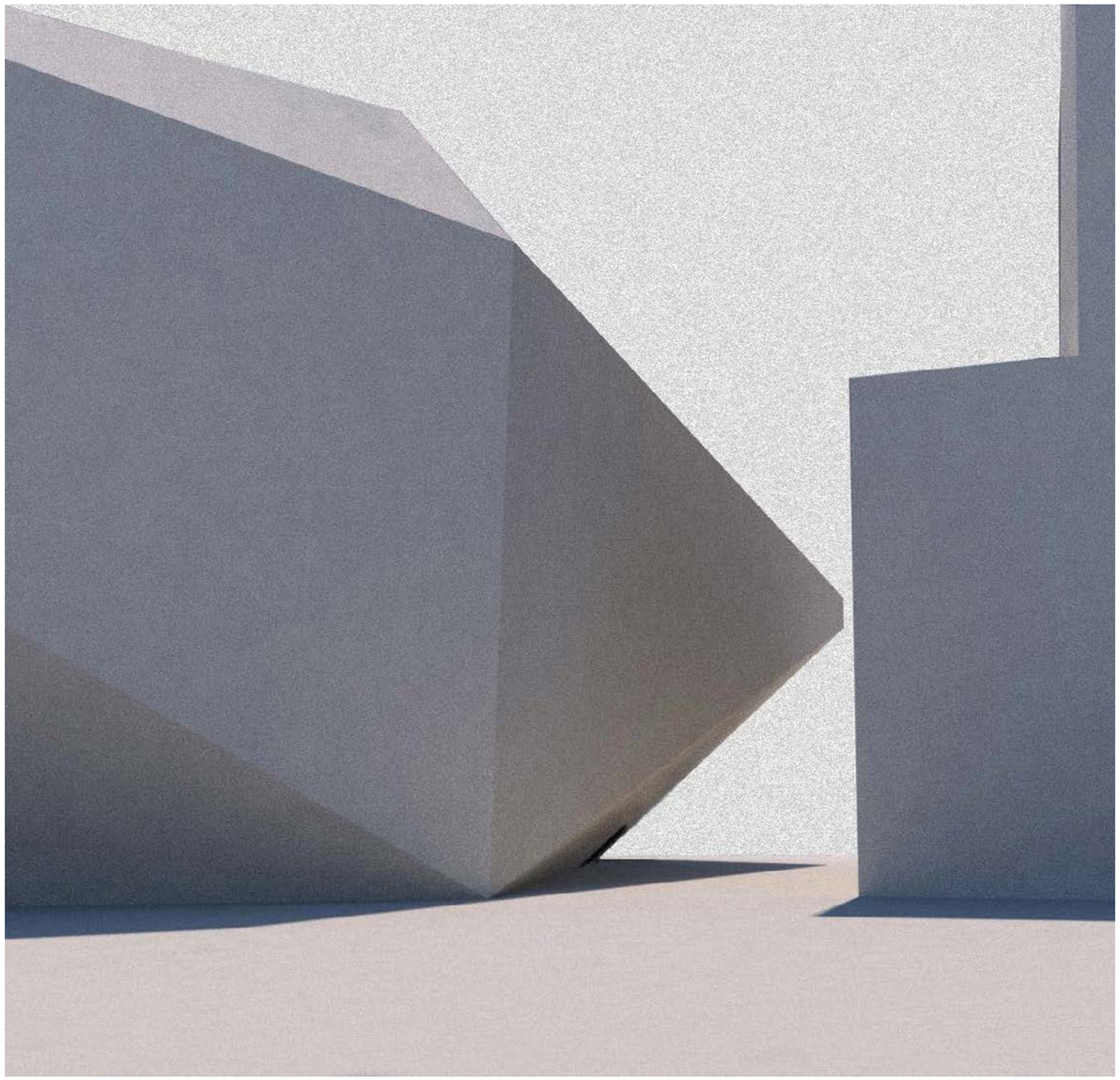
media circulation

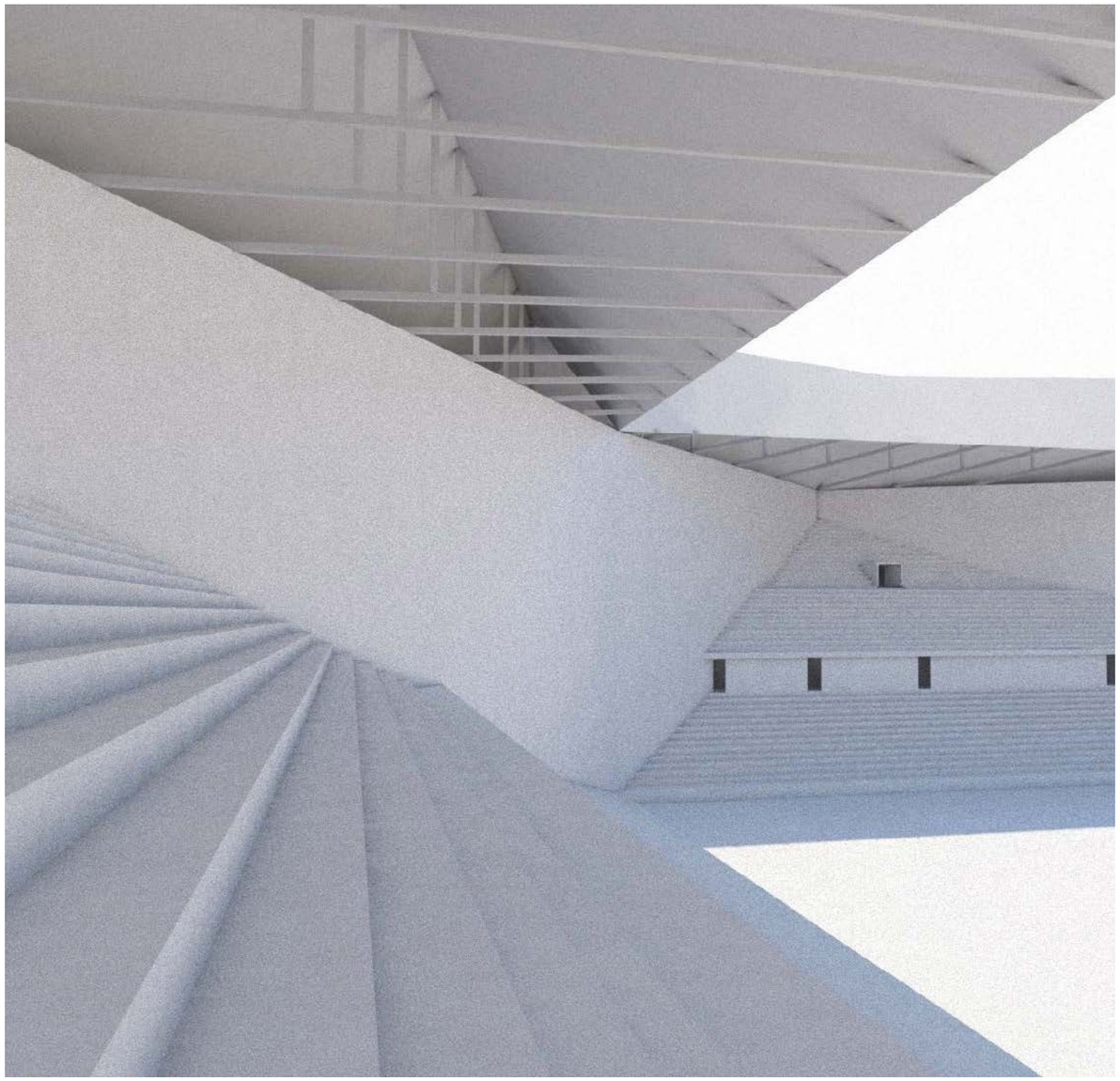
player circulation

public circulation

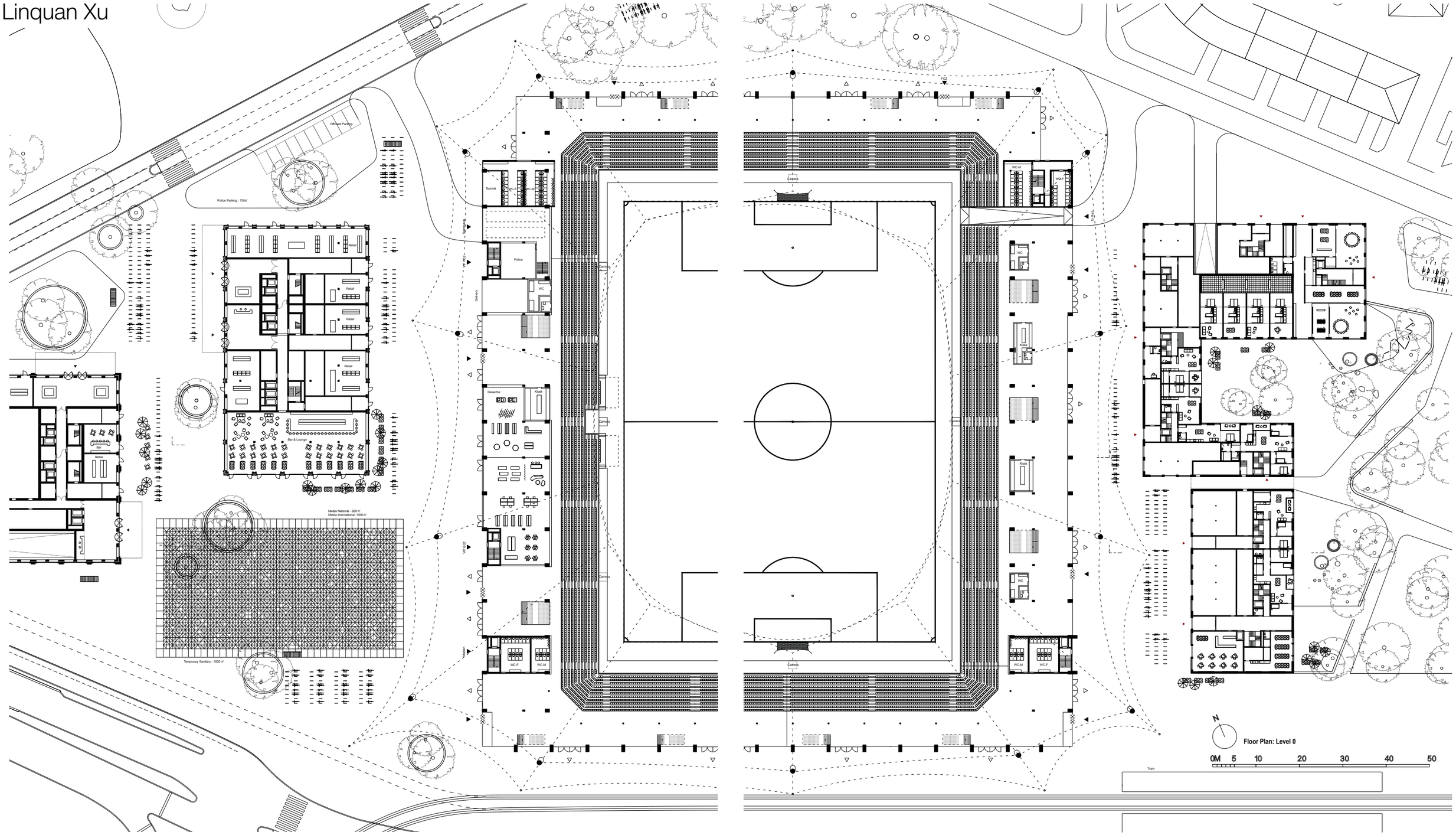


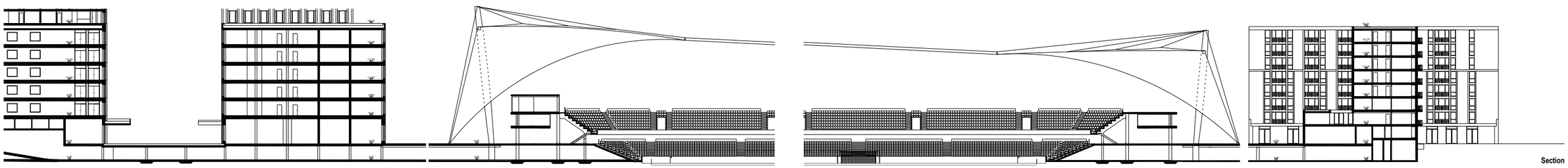
SECTION 1:200





Linquan Xu


Officials Parking
Police Parking - 700m²
Retail
Bar
Bar & Lounge
Media National - 500 m²
Media International -1000 m²
Temporary Sanitary - 1000 m²
Technik
WC
Police
Delivery
Gewerbe
Kiosk
Camera
WC-F
WC-M
Carpark
Tram
N
Floor Plan: Level 0
0M 5 10 20 30 40 50


Section

Tent | Research

Its simple structural principle—a supporting structure spanned with a textile tent skin—means there is a huge variety of tents available from frame tents through membrane-spanned supporting structures to self-supporting textile membrane structures.
Since tent can be transported easily and can be set up and taken down with little effort, they are commonly used for temporary weather protection, accommodation, and as venues. The tents used by nomads are special; they are used for permanent yet mobile dwelling and are always taken along when their inhabitants move.
Apart from mobile tents, there also exist tent construction that, although light and flexible, are made for permanent installation in fixed places. There are tensile and membrane structures in which the membrane is guyed using masts and guy wires.

Additional masts allow them to be extended to cover large arenas or exhibition areas.
Today the construction of large festival tents, exhibition tents, circus tent, and small tents remain largely unchanged. Increasingly large spans, greater safety, and weather resistance, and longer durability, have been achieved due to continuous improvements in tent materials.

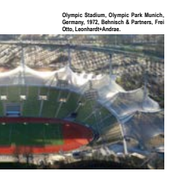
Tent Research | Temporary

"Tent village", Studio Dré Wapenaar, 2001
Individual modules with public and private areas have been combined on different levels to form a tent village, thus creating their own microworld. One of the tent built in 2001 was revamped in 2007 and can be rented for temporary events.

The Berber tent in the Sahara Desert, Tunisia, Africa

Wolfgang Meyer Sports Complex, Hamburg, Germany, 1994, Schlaich Bergermann and Partners
A tensile Membrane construction was chosen for the roof covering an existing Ice-skating and racing bike track. The Delicate supporting structure made of four main masts and eight flying struts, which are tensioned by interior cables, is ultimately spanned by a thin membrane made of polyester fabric anchored to the foundations by cables from the edges. Apart from acting as space-closing skin, the membrane is also part of the primary load-bearing structure.

Tent Research | Permanent



Campus Center, University of La Verne, USA, 1974, The Shaver Partnership
The 5600 square-meter space for use as a sports hall has been roofed over by combining four cone tents, each with a central mast, and a ring suspension. Teflon-coated fiberglass fabric was used as a membrane for the first time ever here.

"The Pink Project — Make It Right", New Orleans, USA, 2007-2008, initiated and designed by Brad Pitt, in conjunction with Graft
The project was launched as kick-off event to the "Make It Right" initiative to collect donations for the reconstruction of living spaces destroyed by Hurricane Katrina in New Orleans. The five-week installation extened over forteen blocks. The individual elements served as placeholders for later construction. As soon as donations had been collected to erect a house, some elements were combined to form a symbolic house.

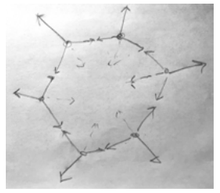
Stiles Oertchen, Fremdkoerper Design Studio — Andrea Mehlhose & Martin Wellner, 2005-2006

German pavilion at the 1967 world Fair, Montreal, Canada, Frei Otto and Rolf Gutbrod

Olympic Stadium, Olympic Park Munich, Germany, 1972, Behnisch & Partners, Frei Otto, Leonhardt+Andrae.

"Aux arbres, citoyens", Nantes, France, 2003-2006, Tetrarc and Concept Plastique
The mobile tent provided weather protection at various citizen's meetings in different districts of Nantes. Its supporting structure was offered by a giant oak which could be dissembled into individual parts.

Tent | Reflection

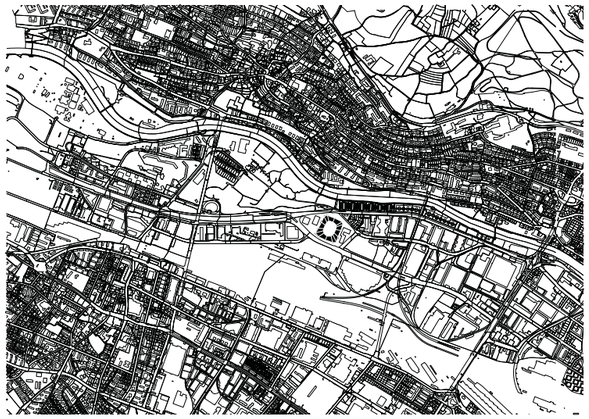


King Fahd International Stadium, Riad, Saudi Arabia, 1984, Ian Fraser Associates with John Roberts and Schlaich Bergerman and partners
PTFE fiber-glass membrane roofs suspended from cables and cable masts.

The Tent | A Stadium for Zurich

Chair Prof. Christian Kerez
Teaching Assistants
Kacani Joni
Nägeli Michelle
Cristelo Dias Nadia Marisa

Site Plan 1:3000



The new stadium by definition
A stadium is a place where spectators watch professionals play, collectively; namely, in a stadium people watch the ball game being seated or standing with or without cover (roof), with others. Thus, a stadium consists of three essential parts– the Playground (Pitch), the seating area and the roof.

1.1 the Playground
the Playground (Pitch) is not usually designed by architects; rather, the playground can only be placed on the site. Perhaps with the affiliated warming up pitch, the playground can therefore connect to the urban context.

1.2 the seating area
the seating area is accessible, touchable and is physically connected to the spectators. It enables the collective spectating experience. Together with the roof, it is of the essence of a stadium. The form of the seating area partially shapes the appearance of a stadium; this area also dictates how the pitch is surrounded by the spectator, controlling the relationship between spectators and the pitch; moreover, it regulates the flow of the spectators.

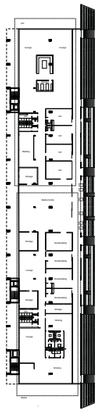
The maximum usage of the ground floor
The most common way to organize the passageway of fire exits. The ground floor is the start point of a journey in a stadium as well as the end point.

1.3 the roof
The roof is visual and figurative; it contributes to the visual attraction of a stadium. According to the Semperian formula, the equilibrium between the roofwork and the earthwork (the seating area) depicts the image of the stadium.

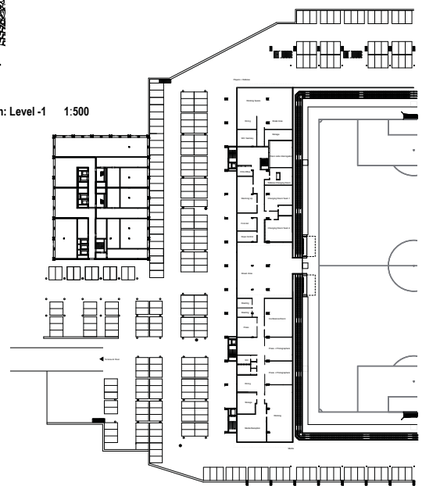
The roof of membrane introduces the openness and lightness; this effect brings the atmosphere of casualness to the park and symbolizes the motion of sport.

The Roof also contributes to the reverberation time which heavily affects the acoustic experience in the stadium.

Floor Plan: Level +2 1:500

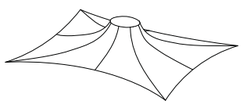


Floor Plan: Level -1 1:500

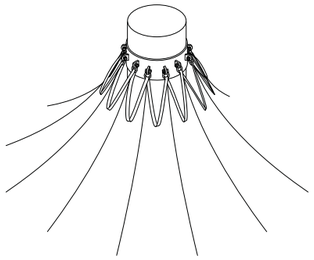


Corner details with cable connections

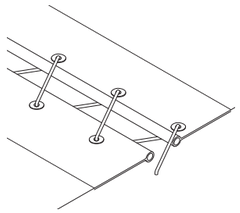
cutting pattern



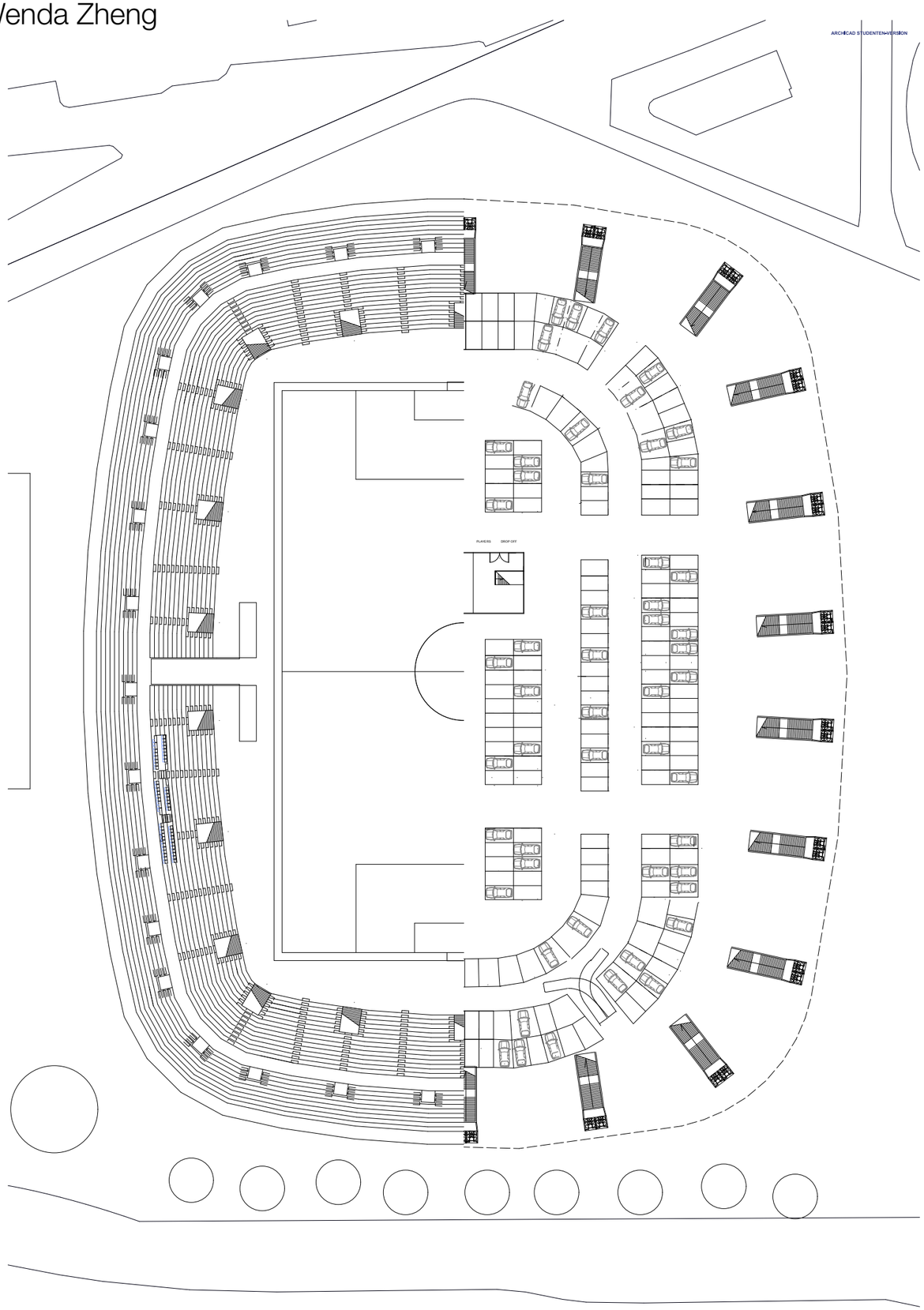
Detail - The High Point

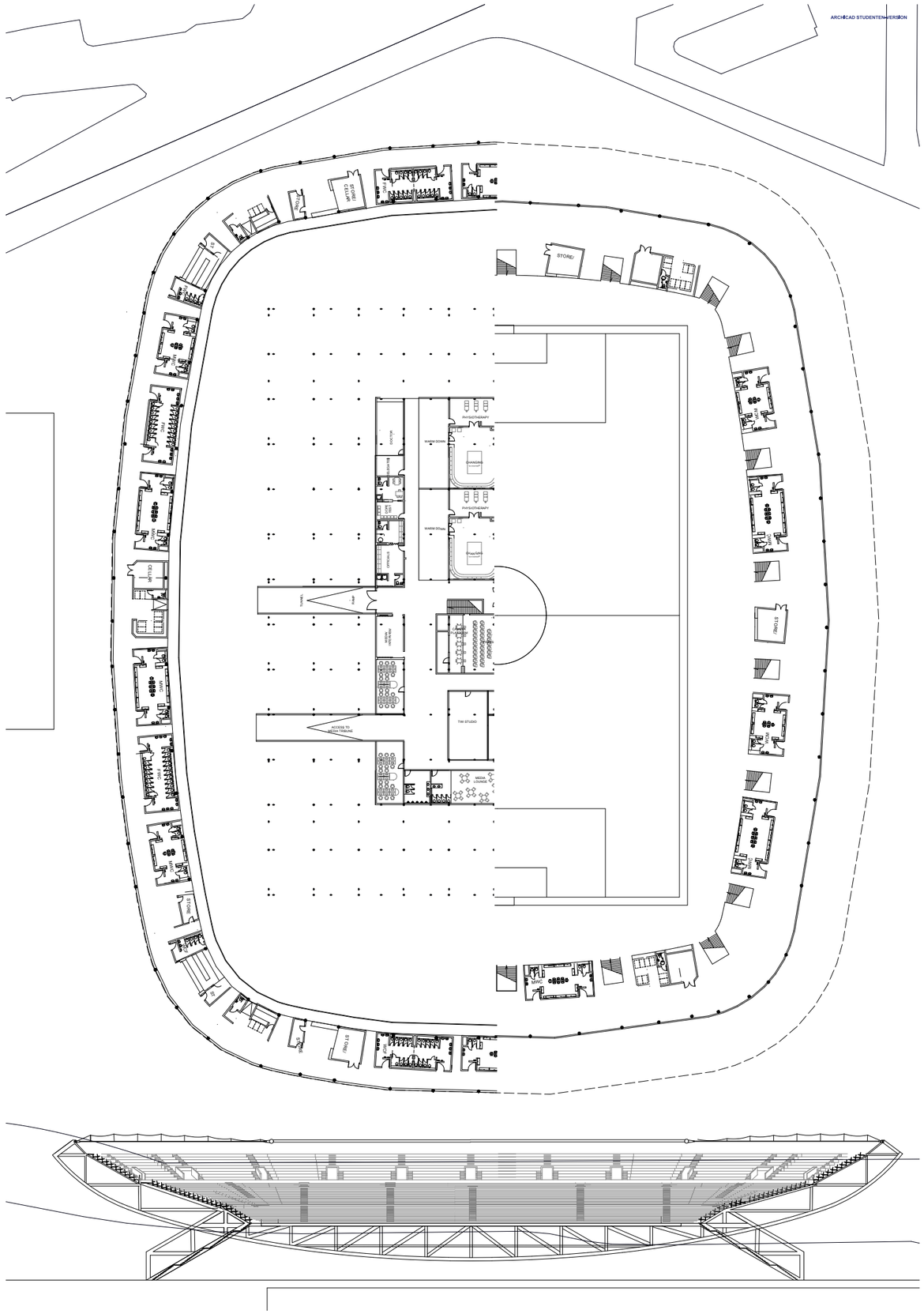


Detail - The Laced seam: like a shoelace

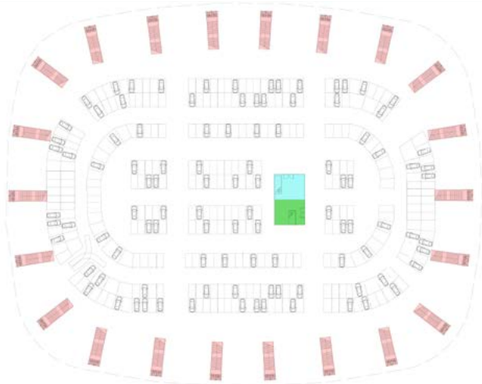


Wenda Zheng



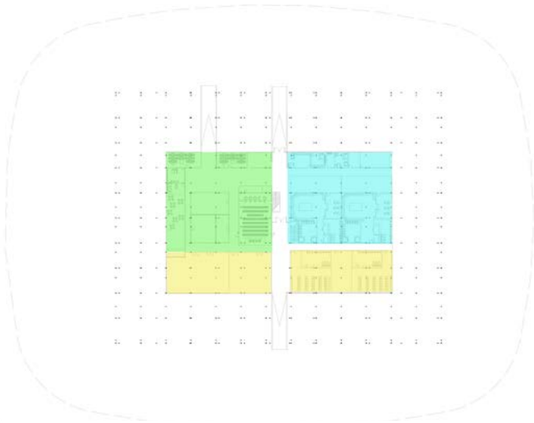

ARCHICAD STUDENTEN-VERSION
STORE/
STORE/ CELLAR
PHYSIOTHERAPY
WASH DOWN
CHANGING
PHYSIOTHERAPY
WASH DOWN
CHANGING
STORAGE
WASH DOWN
TWI STUDIO
MEDIA LOUNGE
ACCESS TO MEDIA TOWNLINE
STORE/
STORE/
WC
WC
WC

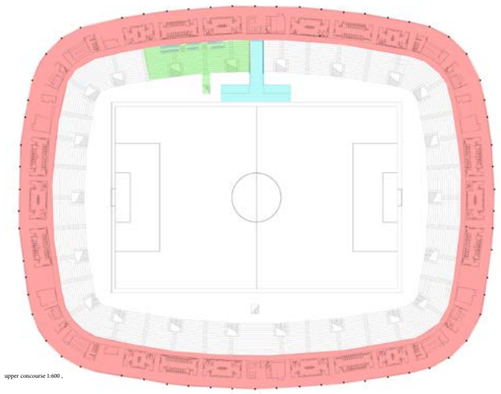
Upper concourse.



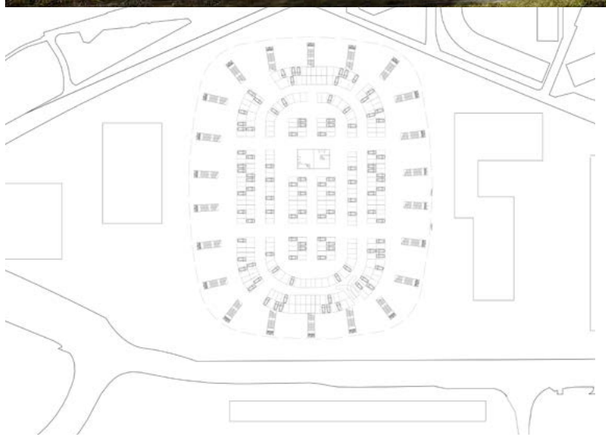
ound floor plan 1:600

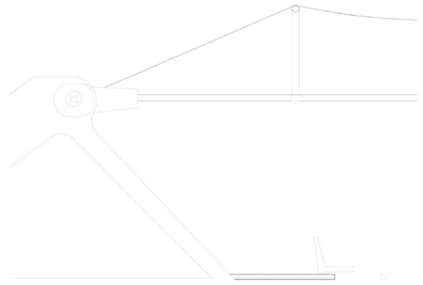
lower concourse plan 1:600 , Pitch level



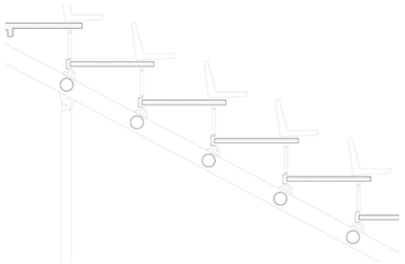


upper concourse 1:600 ,





Roof structure detail, 1:50



Seat installation , 1:50