







#### **DIPLOMARBEIT**

Das Museum des 20. Jahrhunderts und seine städtebauliche Einbindung

ausgeführt zum Zwecke der Erlangung des akademischen Grades eines Diplom-Ingenieurs unter der Leitung

O.Univ.Prof.Dipl.-Ing.
William Alsop

E253/4

Institut für Hochbau und Entwerfen

eingereicht an der Technischen Universität Wien

Fakultät für Architektur und Raumplanung

von

Andreas Hugo Reuter

1328459

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#### abstract english

the design deals with the museum of the 20th century and its urban integration into berlin's kulturforum parallel to the announced ideas competition. within the context of a an ambitious ensemble and an urban situation which involves both positive and negative qualities the task is to create an adequate structural addition. the new museum is to serve as a center and distributor for the whole quarter and should generate additional benefits for the surrounding edifices.

i have set my focus on creating a well functioning, fascinating and aesthetic museum building as well as a situation where people like to be. a museum has a special drawing power which, if applied distinctively, can create vivid places of inspiration and exchange. the displayed art works deserve to be accommodated in a lively and curious environment - to be a part of berlin's everyday life.

the potential of this place is enormous. the contextual situation is matchless.

the museum of the 20th century is a unique challenge. i want to face it!

#### abstract german

der entwurf befasst sich parallel zum ausgeschriebenen ideenwettbewerb mit dem museum des 20. jahrhunderts und dessen städtebaulicher einbindung in berlins kulturforum. im kontext eines anspruchsvollen ensembles und einer urbanen situation, die unterschiedliche qualitäten birgt, gilt es eine angemessene bauliche addition zu schaffen. das neue museum soll dem quartier als zentrum und verteiler dienen sowie mehrwerte für die umliegenden gebäude generieren.

ich habe es mir zum ziel gesetzt, sowohl ein funktionierendes, spannendes und ästhetisches museum zu erschaffen als auch einen ort, an dem man gern ist. ein museums hat eine spezielle anziehungskraft, die orte der inspiration und des austauschs entstehen lassen kann. die ausgestellte kunst verdient es, in einem vitalen, interessierten umfeld beherbergt – ein teil des berliner lebens zu sein.

das potential dieses ortes ist enorm. die kontextuelle situation ist beispiellos.

das museum des 20. jahrhunderts ist eine einzigartige herausforderung.

# 

+directory

1 analysis2 design3 appendix

+ 1 analysis

1.1 localization
1.2 urban analysis
1.3 buildings
1.4 artworks
1.5 visitors

a museum is a place where one should lose one's

head.

+1.1 localization











berlin 891,68 km² 3.490.105 people 12.369.300 tourists p.a.

175 museums

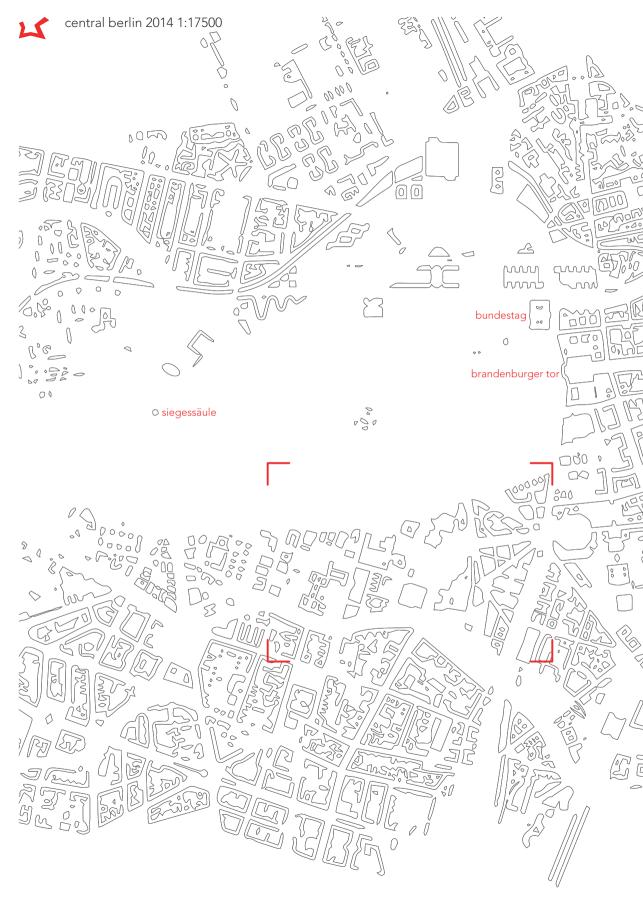


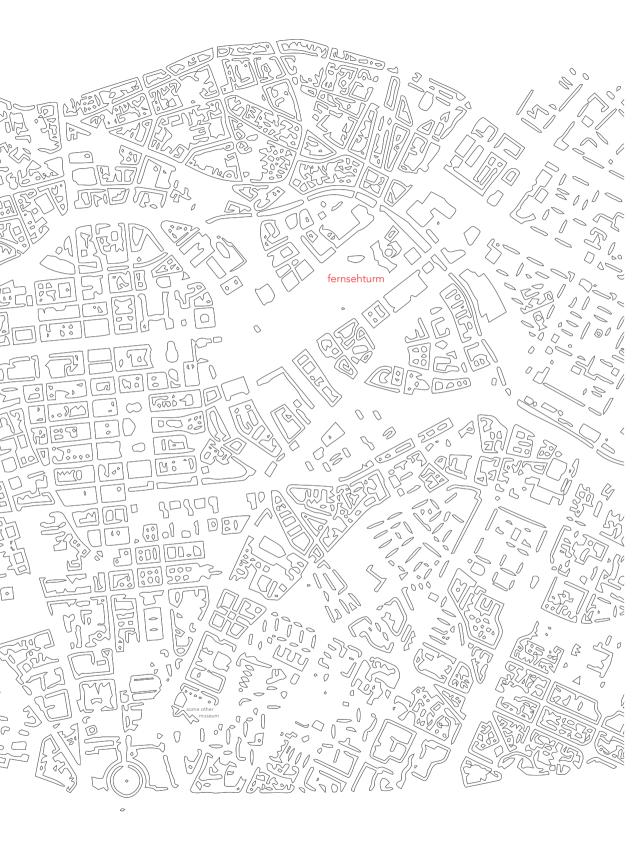










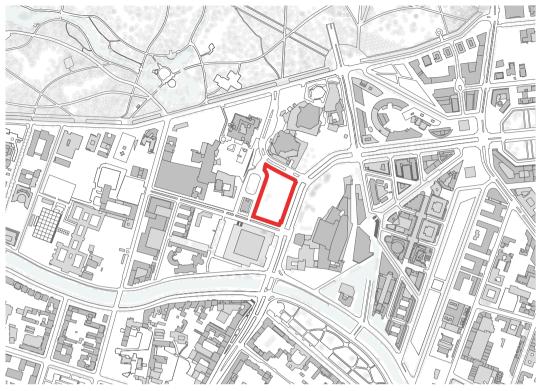


1.2 urban analysis

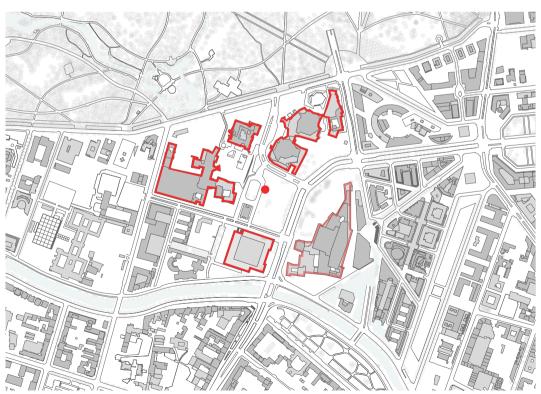
## urban analysis

the site is located in berlin's heart district mitte. the tiergarten area features many attractions that are popular destinations for millions of tourists every year. so is the kulturforum at the southern end.

despite of its location the area is a rather negative example of urban planning. it is crossed by a highly frequented street which makes it dangerous and loud. the kulturforum is exposed to a number of external influences. welcoming gestures are missing. towards tiergarten there is no exact entrance as hans scharoun had in mind. from potsdamer platz it feels like being let go into a no man's land. there does not seem to be a dedicated center at this rather spacious ensemble of quiet famous buildings. the piazetta is not able to adopt the role of an inviting pivot that makes visitors want to stay. the area's mono-functional use causes a sort of inanimate situation when the museums are not operating, there is also a lack of diverse amenities and proper gastronomy, the potential of the site however is enormous.

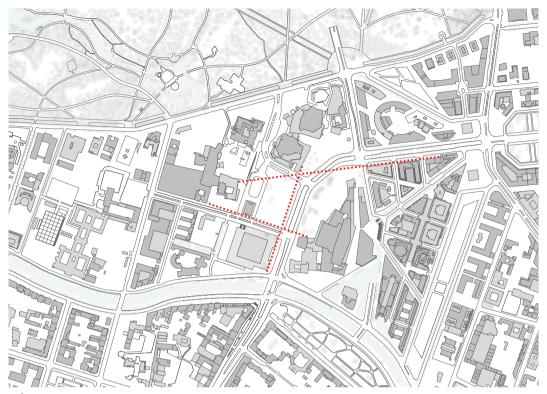


construction site

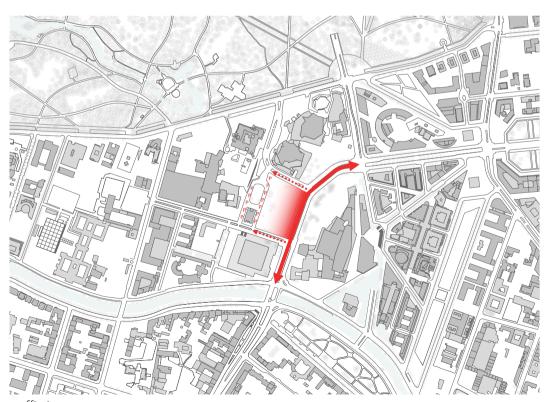


kulturforum

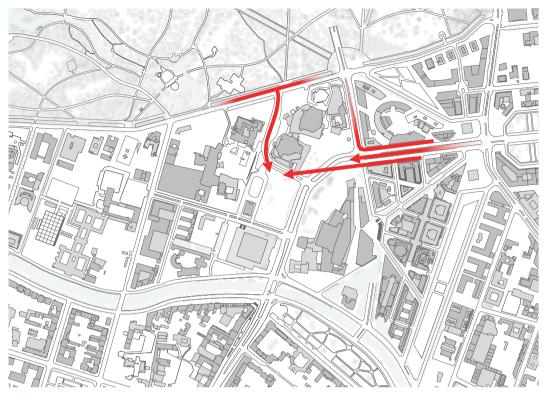




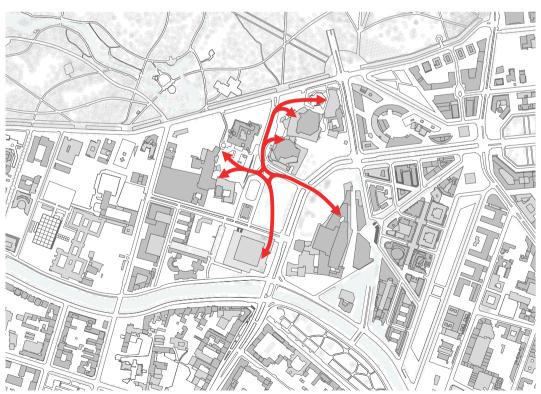
relevant axes



traffic impact



visitor streams



visitor distribution

+1.3 buildings



# buildings

the museum of the 20th century is to be erected within an ambitious setting of iconic structures. the whole area of the kulturforum is a protected ensemble with the neue nationalgalerie, the neue staatsbibliothek, berlin's philharmonic orchestra and st. matthew's church as listed historical monuments. the unique combination of buildings by architects like mies van der rohe or hans scharoun makes this environment a very special place to contribute to.



fig. 1





#### st matthew's church

this listed church was build in 1846 by august stüler. the student and follower of karl friedrich schinkel was one of the most influential architects of berlin at that time. he is commonly known for the 'neues museum'.

built in a neo-germanic style the church counts as one of berlins last relicts of the 19th century. after being rather heavily damaged during the second world war it was rebuilt under the direction of the architect jürgen emmerich in 1960. even though it is largely renewed it is listed as a historic monument. next to its churchy purposes it is today also being used as exhibition space.

the tower is accessible to the public







### philharmonic orchestra & chamber music hall

after winning the competition in 1956 the building was completed by hans scharoun in 1963. the concert hall still counts as an example for other ones and the acoustics are considered perfect. it is a historic monument.

scharoun was not able to witness the erection of the chamber music hall as it was build 15 years after his death by his former employee edgar wisniewski. he created the design based on sketches by scharoun. it was completed in the year 1987, three years before wisniewski also built the institute for music research and the musical instrument museum based on his former boss' designs.

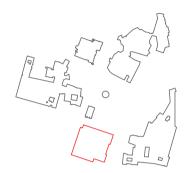
the buildings today seem to face the wrong side with their entrances towards tiergarten. since the area was fallow land and in the back of the buildings was not much but the berlin wall this was obviously the right direction to orient to. it now appears rather repellent towards the new potsdamer platz area.

# 'konzertschachtel'

people call it 'concert-box' referring to a box of chocolates







## neue nationalgalerie

this is the last structure solely created by ludwig mies van der rohe. moreover it is the only mies-building that was actually completed in germany after he fled nazi-germany. the fact that he was also assigned directly with the design makes the building a political statement. today it is considered an icon of modern architecture and a historic monument.

since the opening in 1968 it displayed only parts of the collections of the 20th century art which is supposed to be accommodated in the new museum.



the roof 64,8m x 64,8m x 2m 1.260 t







### new berlin state library

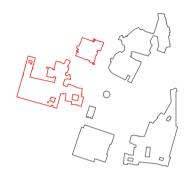
hans scharoun won the competition to build the new berlin state library. even though there are a few problems with the buildings design it is still considered as an example of library architecture especially because of the inner structure. the ibero-american institute is also part of the complex. the new berlin state library is listed as a historic monument.

unlike the philharmonic orchestra and music chamber hall it orients towards the east because there were plans to realize a motorway on the western side of the building. this makes it turn away from the kulturform. there is however the big street which makes it very hard to connect.

scharouns biggest it cost 226.500.000 DM has its own letter shoot







### european art museums

this complex accommodates several components. the museum of decorative arts was completed in 1985 by plans of german architect rolf gutbrod. he also designed the museum of prints and drawings as well as the art library which both were completed in 1992 by hilmer & sattler and albrecht. this architecture office again designed the connected picture gallery that opened to public in 1998. the hall for special exhibitions in the middle of these buildings works as both entrance and connector for all the other museums and the art library. the center of the complex is a sloped piazetta. it is so far the only real public open space at the kultuforum.



moving in the museum of prints & drawings and the art library will move into the museum of the 20th century





# the old plane tree this is a protected natural monument.



+1.4 artworks

### artworks

the neue nationalgalerie was never able to show all the gathered collections at the same time nor the same place permanently. there is a broad variety of artworks with a special relevance which is quiet critical of society. it depicts the historical turbulences during the 20th century.

the inventory mainly consists of own assets supplemented by the important collections marzona, marx and pietzsch. they cover every artistic period in north america and europe during the century. it contains works of iconic artists like ernst ludwig kirchner, pablo picasso, barnett newman, sol lewitt, max ernst, jackson pollock, andy warhol and roy lichtenstein to name but a few.

in addition to that parts of the museum of prints and drawings as well as the art library with one of the worlds largest private archive collection of arts of the 20th century will be on permanent display at the in the new museum.



fig. 8

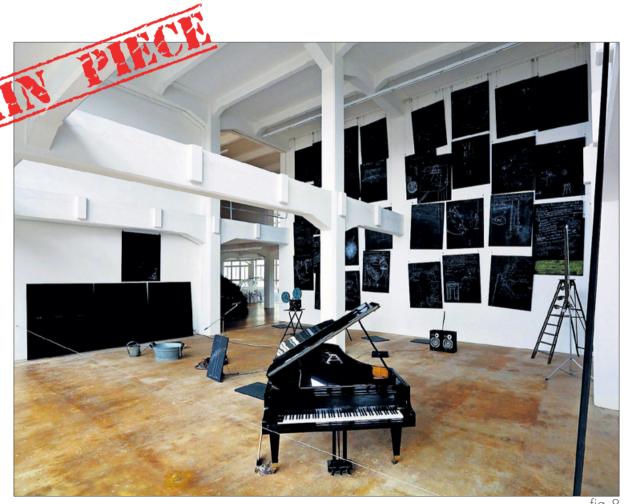
### das kapital raum

originally created for the 1980 biennale in venice this artwork is a permanent loan by collector erich marx who was friends with joseph beuys. it consists of 27 objects and 50 chalk boards. there are projectors and a screen which depict the visual memory, microphones and speakers stand for the acoustic memory. they don't do anything but virtually wait for their use. they all hold an available potential, the 'kapital'. also objects like ladder, spear, axe, watering can, soap and bowl are all tools with which one can create certain results by using, by acting. the chalk boards which rather symbolize the linguistic medium also represent collective creativity whereas the objects are items of an individual creativity, so this brings society and the individual in context. arts scientist hans dieter huber once interpreted it as 'the creative transformation of individual human energies into collective social processes for the benefit of the advancement of the whole social structure'.





das kapital raum joseph beuys 1970-1977 permanent loan, collection marx



#### census

german painter and sculptor anselm kiefer created the large artwork in 1991. it shows two steel-shelfs containing 500 books made out of lead. within their pages there are about 60 million hard peas which appear like letters.

naming it census reveals that the peas also stand for people. the number is roughly the population of west germany during that time. kiefer brings the book, the symbol of knowledge, language and tradition into focus. through reminding people of the durability of books (which the material lead only emphasizes) during the past and in the future he also raises concerns over the power of the states authority. the collection of data was an important topic for him 25 years ago which was worth creating a 32 ton sculpture. it is today more present then ever.

census anselm kiefer 1991 loan, collection marx



## a few free years

this art work by jason rhoades consists of not less than 18 gaming machines, 36 speakers, 18 motion detectors, 6 monitors with video players and vhs, transformers, aluminum pipes, timber, cables, a cleaning cloth, one chair and digital prints. it came to existence at the vienna secession building. above hung the beethoven frieze by gustav klimt. this is what the digital prints now show. connecting to this the gaming machines play a distorted version of ludwig van beethovens 'ode to joy'.

the piece shows the encounter of the high cultures, represented by klimt and beethoven, and the entertainment industries of modern times in the form of machines that actually make a lot of noise.



a few free years jason rhoades 1998 donation, collection flick



+ 1.5 visitors

### visitors

a frequently high number of visitors is expected at the museum of the 20th century. every year the museums at the kulturforum process far more than half a million people. almost half of them come because of the exhibits at the neue nationalgalerie. since the new museum will be an extension of this exposition the numbers are very likely to increase clearly.

visitors often have various but distinct expectations towards a museum. just going inside a building and walking in a circle to see some art is not sufficient anymore. people expect more from the place itself and its surroundings. some want to stay the whole day and be taken care of during that time, others prefer straighter schedules. anyway all of them want a fascinating place, packed with exciting things but also options to step aside the stream and take a breath for a moment in order to process what they have seen or simply to recover.

some visitor stereotypes and their needs will be examined in detail.



attendance figures 2014
kulturforum museums 610.000
neue nationalgalerie 257.000



### the school class

whole school classes will take day trips to the kulturforum. they will stay in the area all day which calls for a place that is able to deal with this situation and provide an adequate environment for the children. next to the other facilities they will spend a majority of their time at the museum of the 20th century since it will be the biggest one.

equipped with only limited time and an ambitious time schedule the classes will have to move through the exhibitions efficiently. a fluent course is helpful and necessary in that particular case.

being on a school field trip also means studying even though it sometimes feels more like free time for them. therefore it is very beneficial if the place itself helps to stimulate the children's concentration and curiosity.

every now and then the classes have to take breaks as a group. there is a need for space to gather and stay for a while without disturbing other visitors.





little time



fluent course



vivid education



exciting stuff



group breaks



break areas

### the artsy couple

everyone knows the artsy couple. they spontaneously decide to spend their quiet sunday afternoon at the museum. they expect to be entertained as well as left alone. maybe they want every single option available to arrange their day together - only to decide for one or two after all.

since they are not in a hurry and want to engage with the exhibition and the artworks little detours are welcome. in order not to swim with the tide they try new paths even though this is not the most efficient.

furthermore they seek inspiration. while walking through the museum and at the end of the day they want to talk about what they have seen. the rooms and their surroundings can support their perception and not least help process new impressions.

after all the artsy couple needs a little time off the crowd every now and then. the premises should therefore provide space to retreat.









not in a hurry

alternative detours







inspiration

encouraging space







alone time

retreat areas

### the elderly

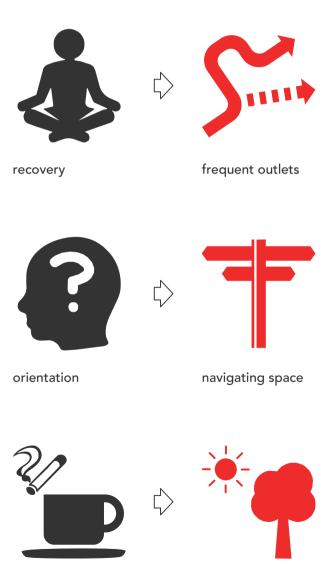
the needs of older people always deserve special attention when planning public buildings and public spaces. of course it is absolutely inevitable to keep the place as barrier-free as possible.

it is also important not to disregard the fact that the elderly need more chances to recover every now and then. they are willing to see the whole exhibition but need to take smaller steps in order to keep up. providing them with frequent options for little escapes and off-time will make a big difference to them.

maybe they will also have to reorientate more often. especially large exhibition rooms and diverse temporary structures can be a little bit irritating, the rooms themselves are able to take on the role of navigating appliances when they are self-explanatory.

sometimes the people, the noise and all the new impressions can be too much. everyone should be able to take little breaks. just to have a smoke or a coffee and carry on.





rest areas

little breaks

wow, you really read all that. have a cookie!

⊢ 2 design

2.1	derivation
2.2	floor plans
2.3	elevations
2.4	sections
2.5	perspectives

2.1 derivation

### horizontal shape

due to the exposed situation towards the highly frequented street in the east the building forms a protective structure. this encloses a large court yard which faces the piazetta in the west in order to complete the square-like situation.

a pretty large roof directed towards tiergarten clearly marks the entrance of the building and works as a welcoming gesture for the whole kulturforum. there is also a signal towards potsdamer platz by adopting the boulevard's axis. this implies a continuity and creates a visual connection of these two areas.

in order to give pedestrians more space when passing the building the structure offers more space by folding inwards. this pulls people away from the noisy street and leaves space for noise- and dirt-reductive planting.

a similar deformation is then performed on the southern boundary which will also create proper space for deliveries.











## vertical shape

along the eastern side the museum will complete the sequence with the neue nationalgalerie and the chamber music hall, this is a prominent elevation view along the street and from the neue staatsbibliothek across.

the difference between the altitude of approximately 13 m and 29 m will be compensated continuously by the new museum.

the buildings roof will take on a zigzagshape which will emphasize towards the north accordingly to its inner use. next to the church it will remain restrained and increase towards the signaling parts of the building.

the actual exhibition areas are entirely put underground since they do not need sun light.

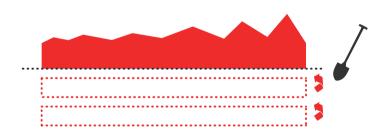
the over- and underground structures are connected by a three-story atrium. this will also bring sun light into the museums resting areas.

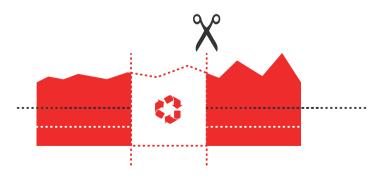












# composition

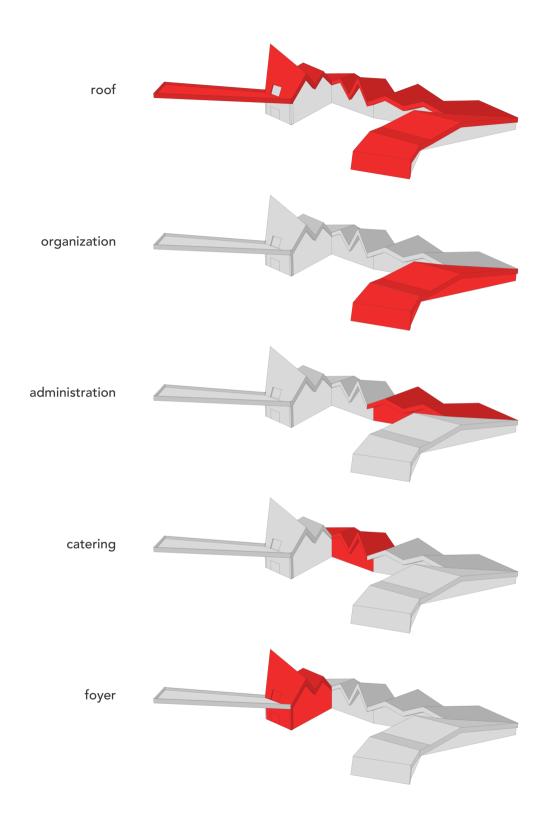
the overground structure is connected by its characteristic zigzag-roof. it seems to derive from the ground at the lowest point and grows and becomes more dramatic towards the north where it ends in a large accessible roof. this part clearly marks the entrance and gives a lot space to arrive at the kulturforum. on top it creates a viewing platform for the whole area.

the southern parts will accommodate the uses of delivery and restoration

in the south east there are the offices for scientific administration and building management.

the north-eastern part offers space for a welcoming restaurant and bar including an upper floor terrace.

the largest part in the north will be the entrance to the museum. there is also an auditorium and the kulturforum's info point.



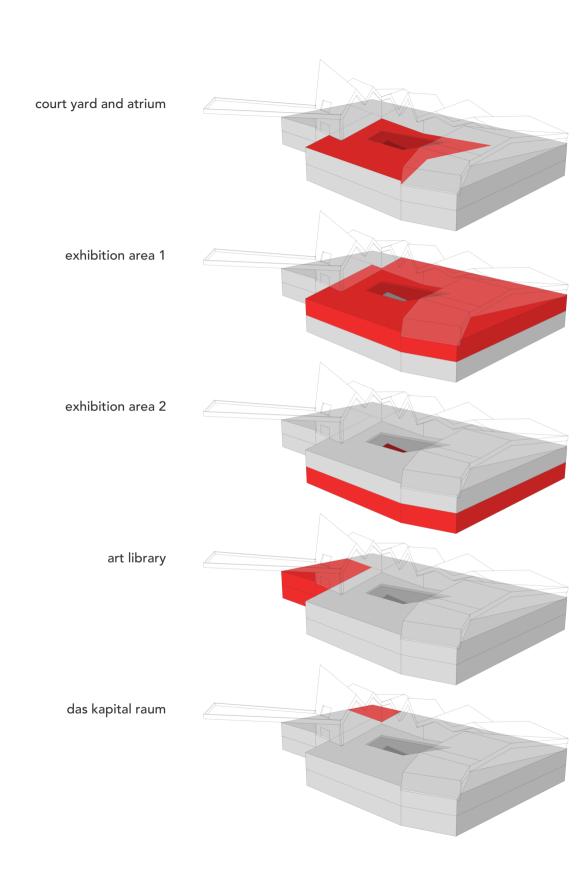
## the museum

the connection between the overground structures and the museum which is all underground is accomplished by an atrium through the whole building, you can see into parts of the museum from the court yard that is a new public space for everyone.

the exhibitions areas are subdivided in two levels and arranged circular around the atrium. the upper level will feature the collection marx, the museum of prints and drawings, arts before 1945 and the temporary exhibition. the lower level will contain solely art works from the second half of the 20th century.

the art library will be included into the exhibition area but able to be operated separately from the foyer.

being the main piece at the museum joseph beuys' work das kapital raum will have an especially exposed position. the visitor will be confronted with it at the end of the staircases below the foyer on both lower levels.



## elements

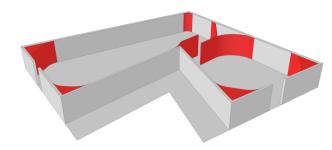
the exhibition spaces throughout the museum are shaped fluently. this makes the visitors stream through the rooms almost seamlessly. it also guarantees an easy orientation for everyone.

according to this fluent structure there are several optional outlets provided. it allows to retreat from the exhibition if necessary and take a breath of fresh air at the atrium.

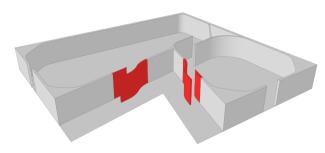
the atrium also features two trees which are planted on the museum's lowest floor. they reach all the way into the ground floor's court yard connecting all three levels. visitors can walk between these trees on bridges. this provides an even more recreative counterbalance to the long exhibition course.

the glass facade is equipped with solar shading panels. the different expanded metal meshes adapt to the particular use inside. overall the building steadily becomes more transparent from south to north following the emphasis of the roof.

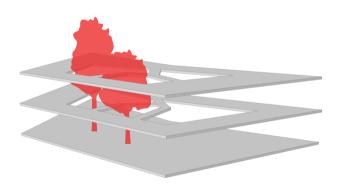
#### fluent space



### optional outlets



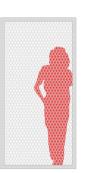
#### trees and bridges



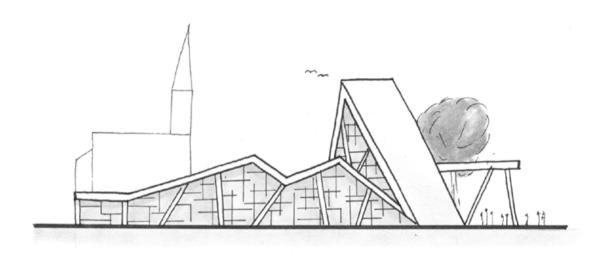
### diverse solar shading

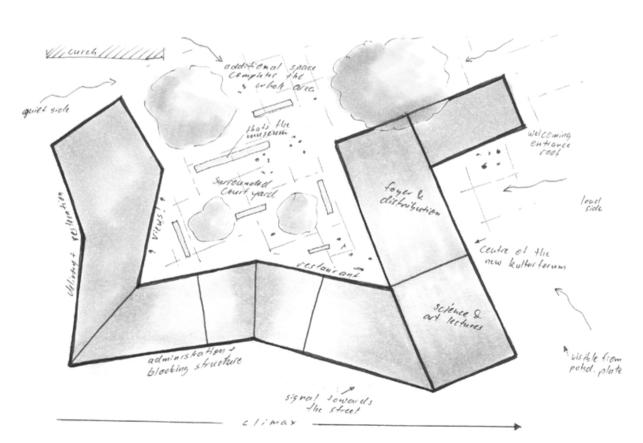












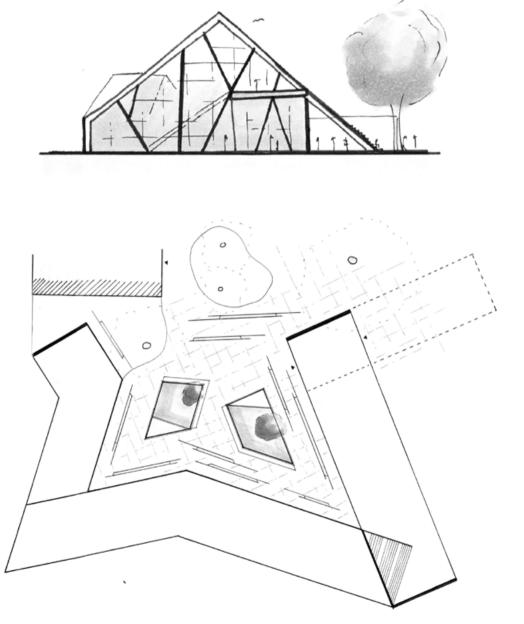


fig. 13

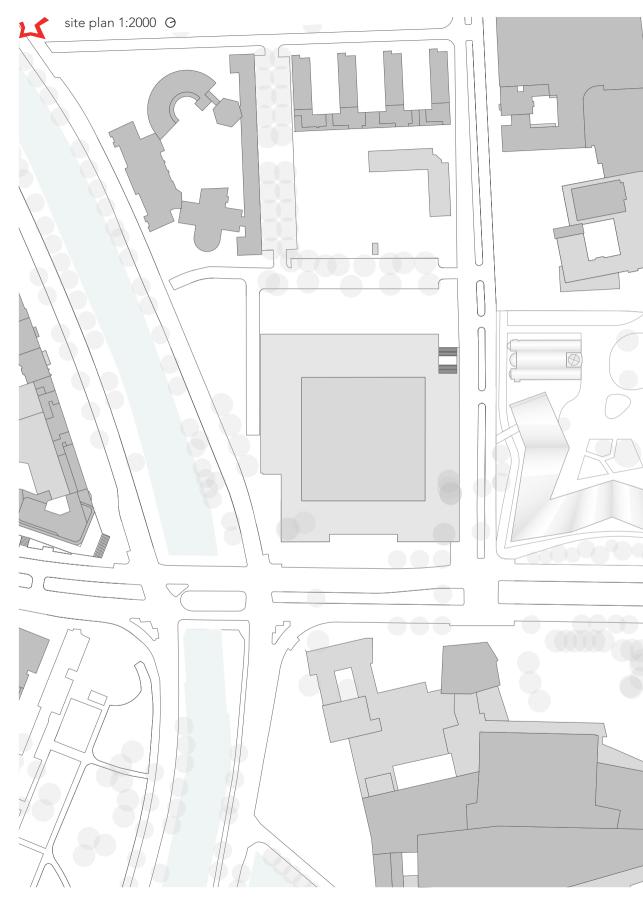
 $\frac{\perp}{2.2}$  floor plans



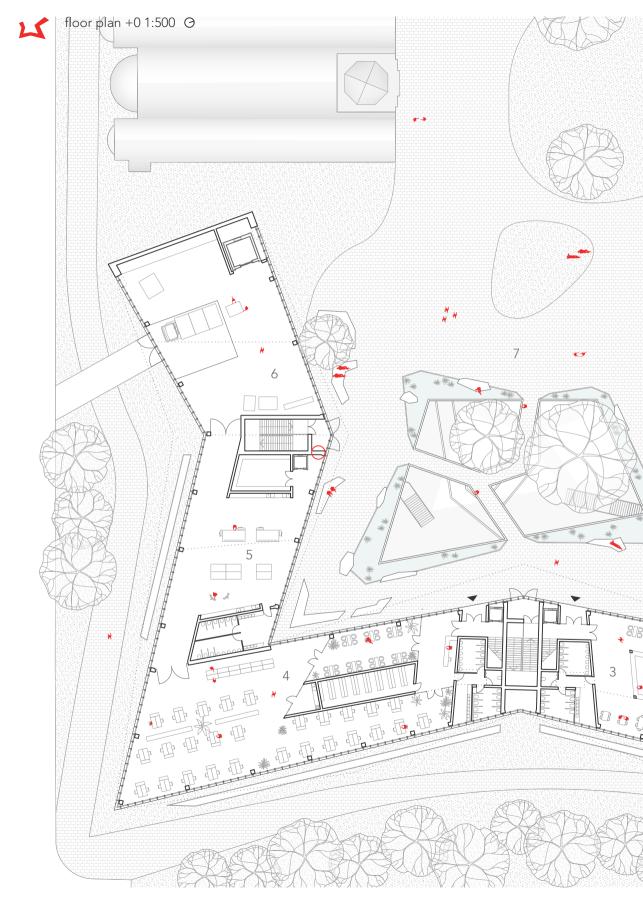




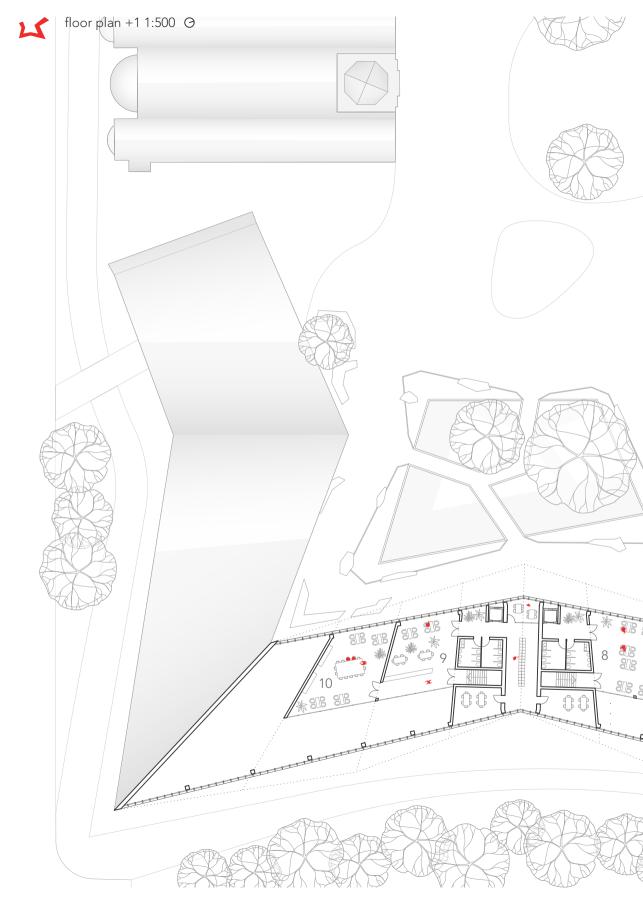


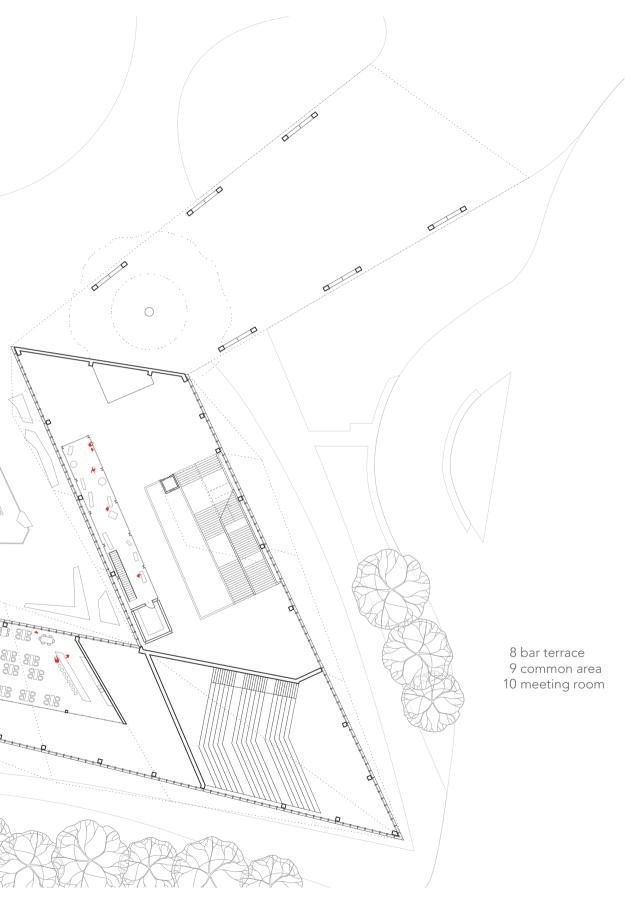


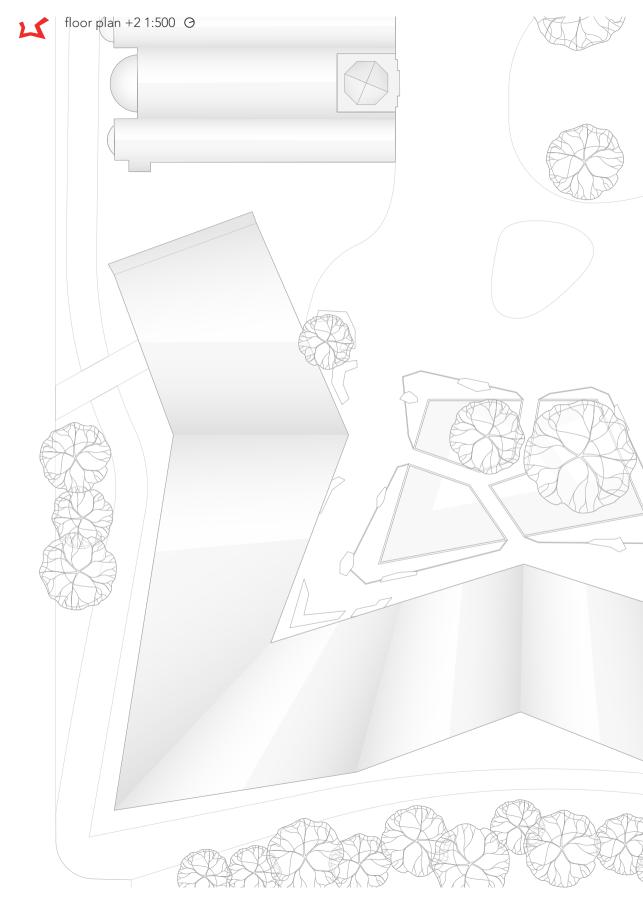


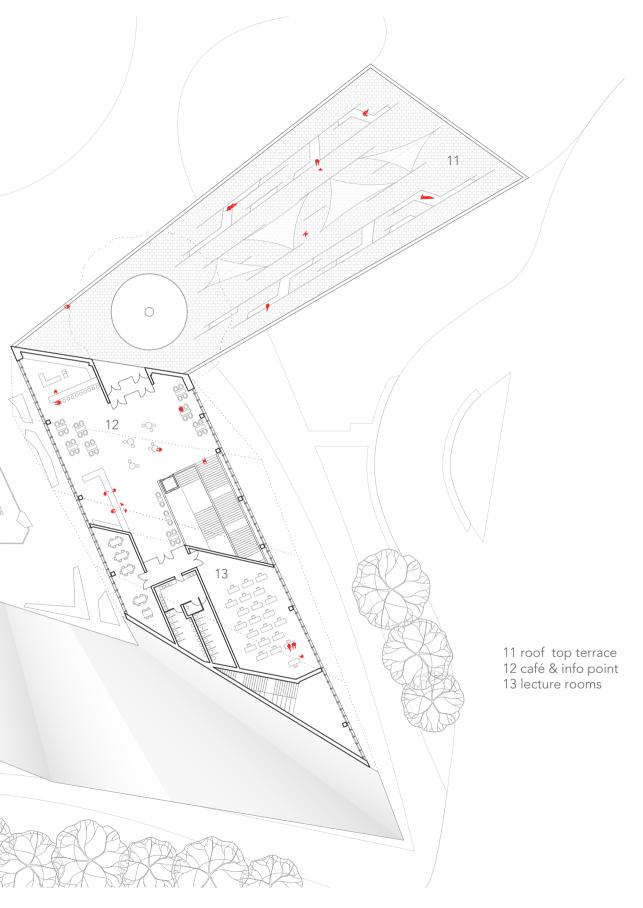


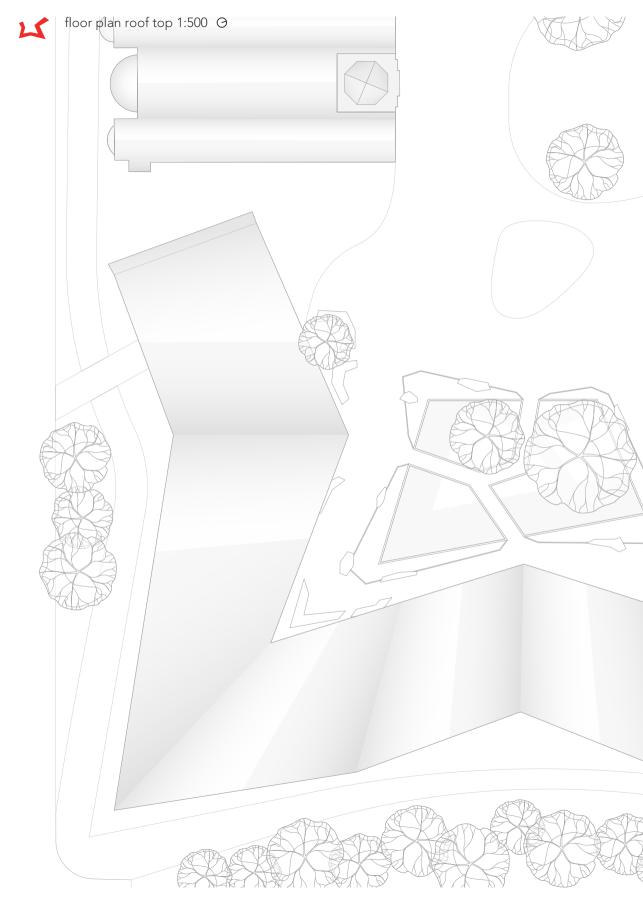


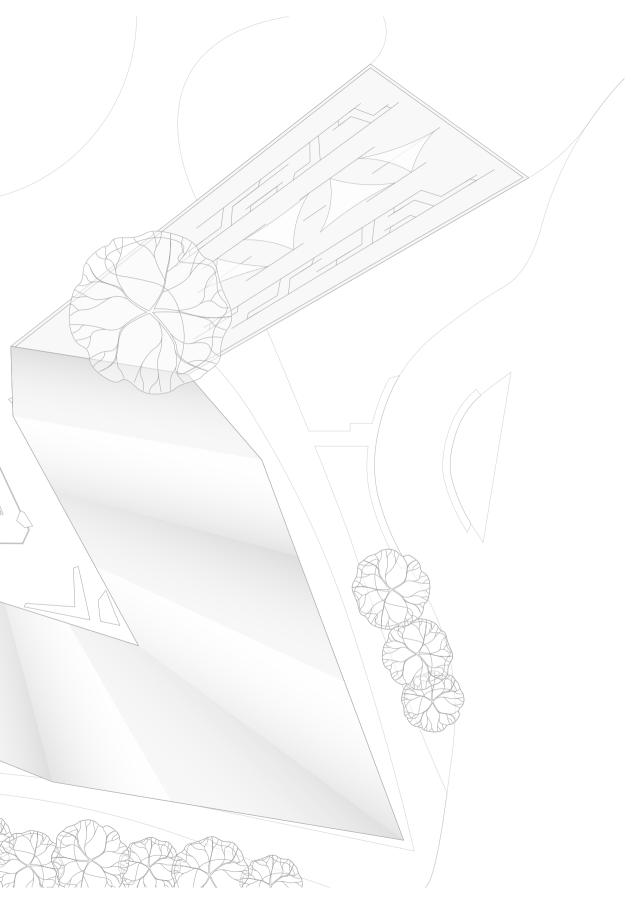








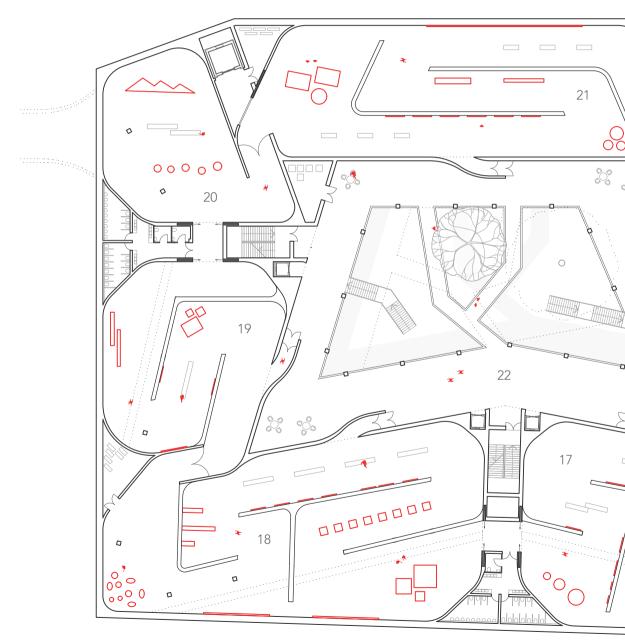


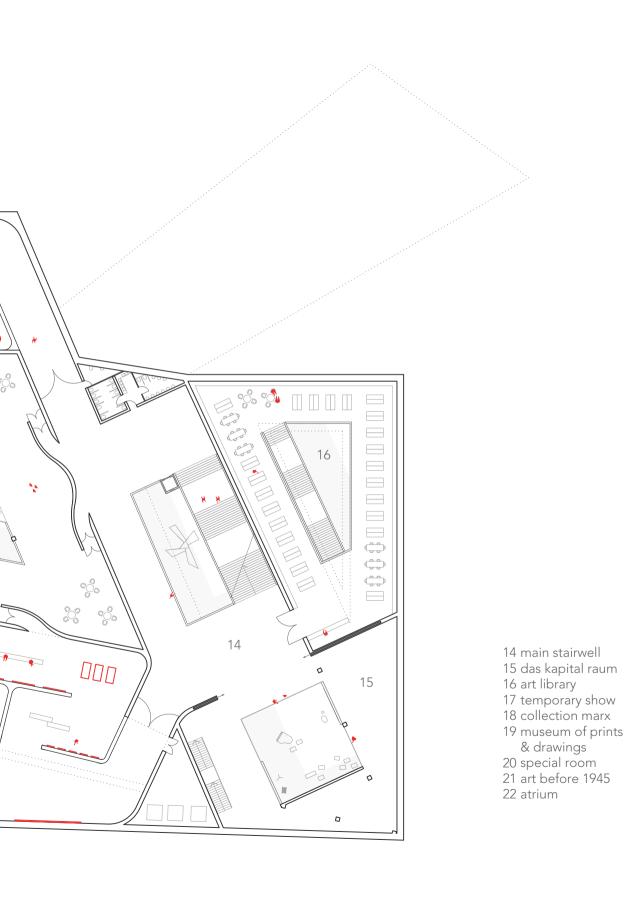


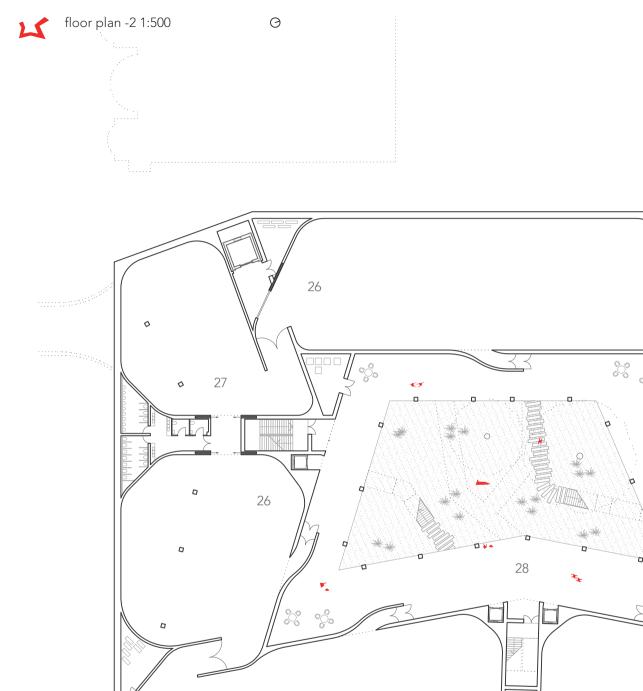




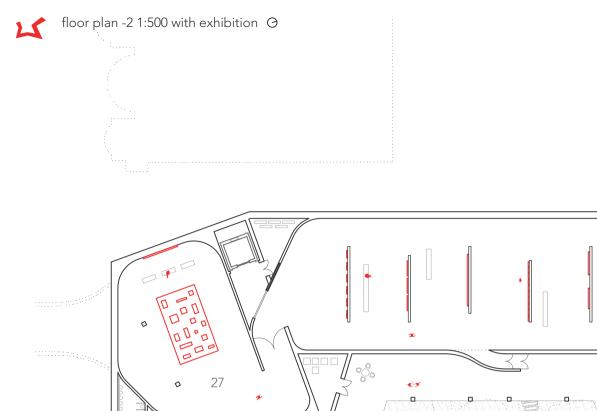


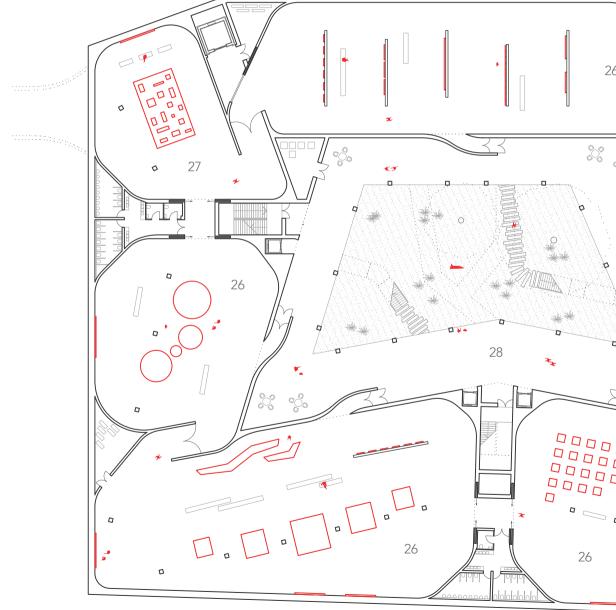


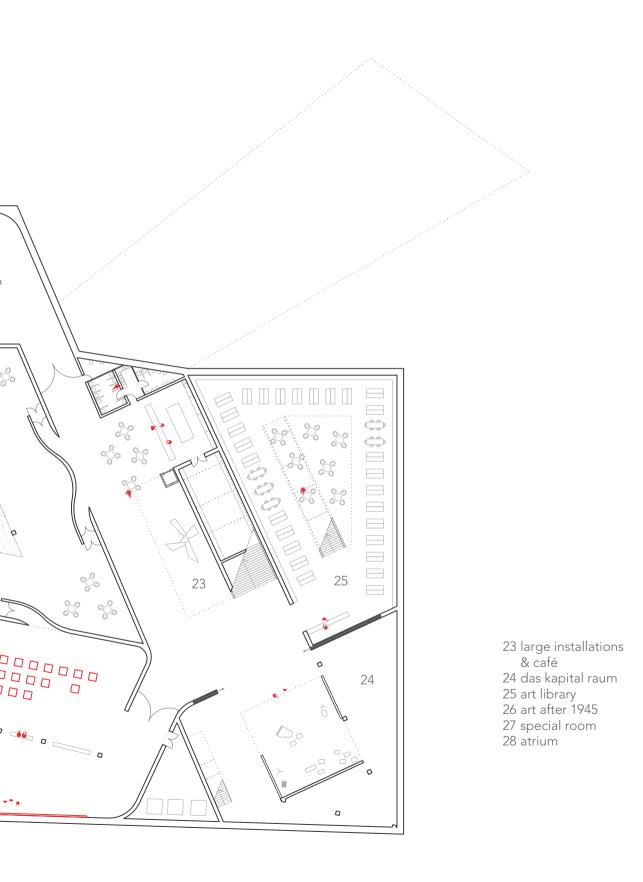




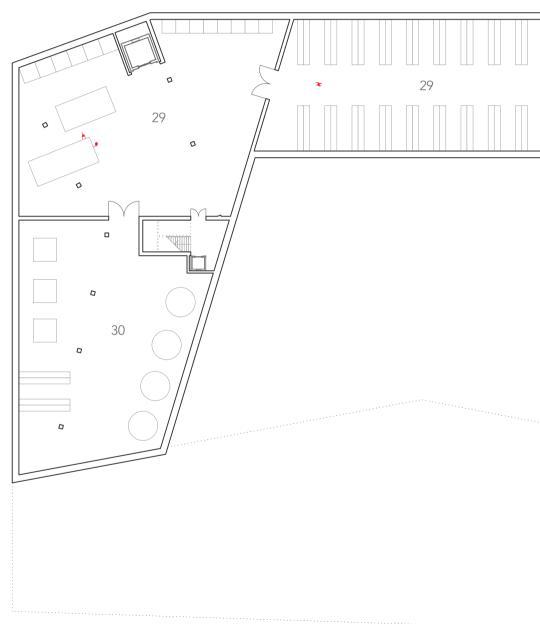


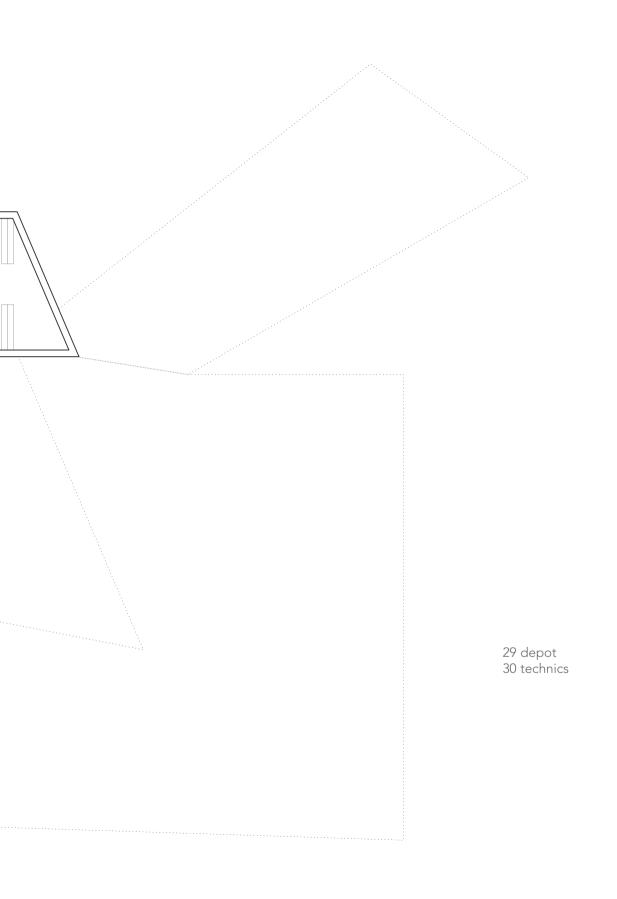
































2.4 sections









### roof system

concrete precast unit, white pigmented 100 mm sealing layer kemperol v 210, fiber reinforced thermal insulation to falls 160-360 mm vapour barrier bituminous sheeting ceiling slab reinforced concrete 350 mm

#### facade system

structural glazing thermal glazing (triple) 2x 8mm toughened glass + 10 mm cavity + 8 mm toughened glass + 10mm cavity + 8 mm toughened glass

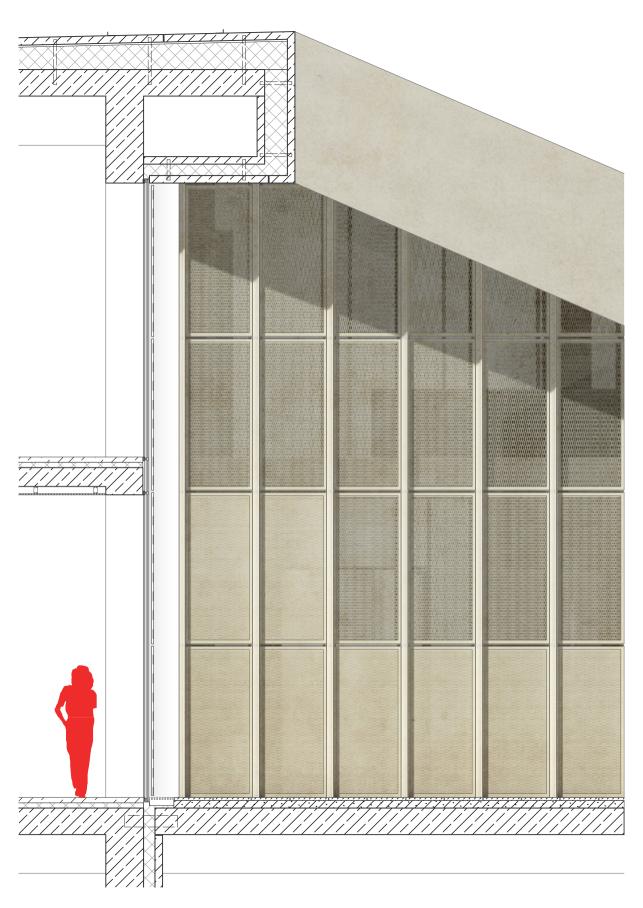
solar shading expanded metal (copper alloy) with support structure varying mesh size, hinged

#### ceiling system

cement screed with integrated heating system separating layer impact sound insulation 30 mm gravel layer ceiling slab reinforced concrete 250 mm suspended ceiling 110 mm

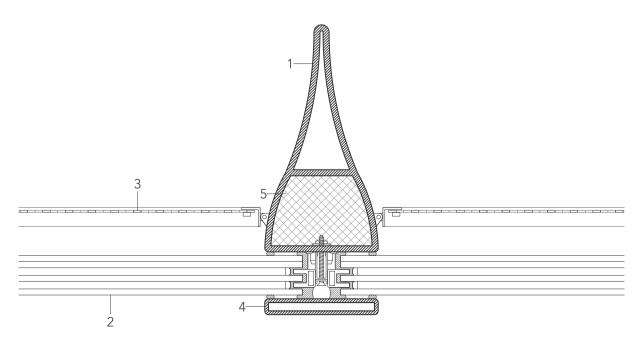
## floor system

reconstructed stone paving slabs 40 mm gravel layer 65 mm sealing layer ceiling slab reinforced concrete 350 mm



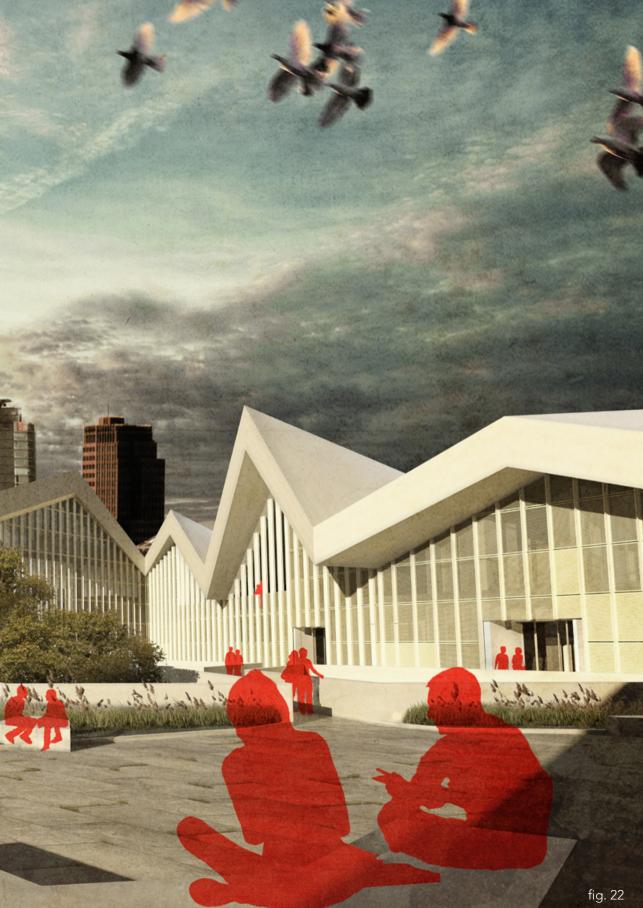
## facade system

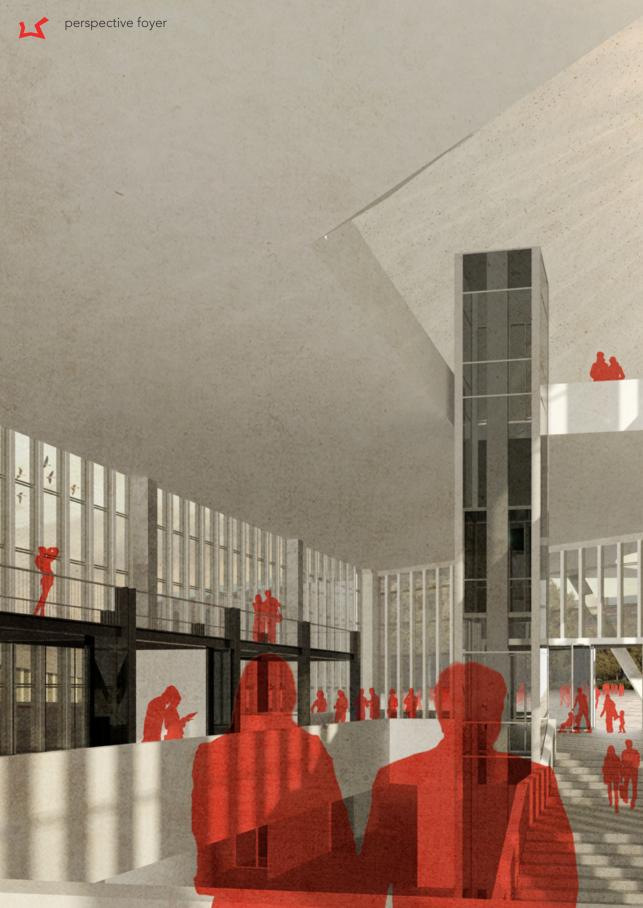
- 1 steel column, white coated 8 mm
- thermal glazing (triple)
   2x 8 mm toughened glass + 10 mm cavity
   + 8 mm toughened glass + 10mm cavity
   + 8 mm toughened glass
- 3 solar shading expanded metal (copper alloy) with support structure varying mesh size, hinged
- 4 facing steel profile  $150 \times 20 \text{ mm} / 5 \text{ mm}$
- 5 insulation



2.5 perspectives









did you find waldo? take a closer look!

+ 3 appendix



# resources

- 1 zeit online kulturforum platz für neue gedanken
- 2 stiftung preussischer kulturbesitz pressemitteilung 24.02.2015
- 3 stiftung preussischer kulturbesitz jahrespressekonferenz 2015
- 4 stiftung preussischer kulturbesitz jahrespressekonferenz 2016
- 5 hans dieter huber installation und modell systemanalytische interpretationen zum skulpturalen oeuvre von joseph beuys
- 6 kobi ben-meir dialectics of redemption - anselm kiefers angel of history - poppy and memory
- 7 www.preussischer-kulturbesitz.de
- 8 www.kulturforum-berlin.de
- 9 www.smb.museum
- 10 www.stadtentwicklung.berlin.de

# source of figures

- 1 model kulturforum private photo
- 2 st matthew's church private photo
- 3 **chamber music hall** private photo
- 4 **neue nationalgalerie** private photo
- 5 **new berlin state library** private photo
- 6 european arts museums private photo
- the old plane tree private photo
- 8 three elements sunnykat / inberlin.de
- das kapital raum vg bild-kunst, bonn'15
- 10 census courtesy of anselm kiefer, barjac
- a few free years estate of jason rhoades
- 12 visitors at the louvre jason scott
- 13 sketches own illustration
- 14 elevation south own illustration
- 15 **elevaton west** own illustration
- 16 **elevation north** own illustration
- 17 elevation east own illustration
- 18 elevation east long own illustration
- section north south own illustration
- 20 section east west own illustration
- 21 detail section own illustration
- 22 **perspective court yard** own illustration
- 23 perspective foyer own illustration

# curriculum vitae

1986	born in arnstadt
2005	a-level herder gymnasium arnstadt
2010-13	bachelor hochschule trier
2013-16	master technische universität vienna
2005-06	civilian service arnstadt
2007-08	au pair san francisco
2009	community service arnstadt
2009-10	work & travel australia and asia
2011-13	freelancer schmitt architekten trier
2015-	freelancer anna wickenhauser architektur
2d cad	vectorworks   autocad   allplan
3d cad	rhinoceros   3ds max   sketchUp
other	grasshopper
design	adobe photoshop   illustrator   indesign
audio	fruity loops   audacity   cubase sx
video	adobe premiere
german	native speaker
english	business fluent
french	basics
spanish	basics

recognition tu vienna merit scholarship 2015

# thank you

writing a diploma thesis is an exciting but tiring matter. one goes through ups and downs whereas the downs require backup and maybe more importantly a decent portion of human sympathy.

my years of study lasted about six years in which my family supported every (!) single step i took as far as possible for them. i know i am not an easy person to have as a son and brother but you never stopped believing in me. thank you for keeping on trying to understand what i am doing and why this is so important to me. even though that means that i disconnected over the years - i always felt you by my side. thank you sylvia, bernd and michael!

what it is worth working alongside with someone during these thrilling times i realized increasingly towards the end. we always made sure that no one is left behind. it is irreplaceable to share all these mixed feelings with a friend and mutual respect. but also a good portion of distraction has to be a part of it - did we have too much of it? no regrets! thank you sebastian!

having friends that are willing to put time and effort into truly helping you beyond their own needs is incredible. you stepped into the breach without hesitation. thank you simon!

towards the end when you realize that the days actually get less you exchange sleep for stress, trousers for joggers and slow for fast food. your attention span and social competences are low whereas testiness is high. to have someone by your side who is tirelessly coping with all of that almost every day and expects nothing in return is a true blessing. on top of that you helped to see things from different angles and supported me when others would turn away, thank you julia!

to feel that someone believes in you and encourages you on a professional and personal basis really gives a boost. your support gave me stability when i needed it. thank you anna!

finally i want so say thank you professor alsop for your lively inspiration and for reminding me to look beyond my own nose. that is what i needed and you knew.

the studio is between the people.

joseph beuys