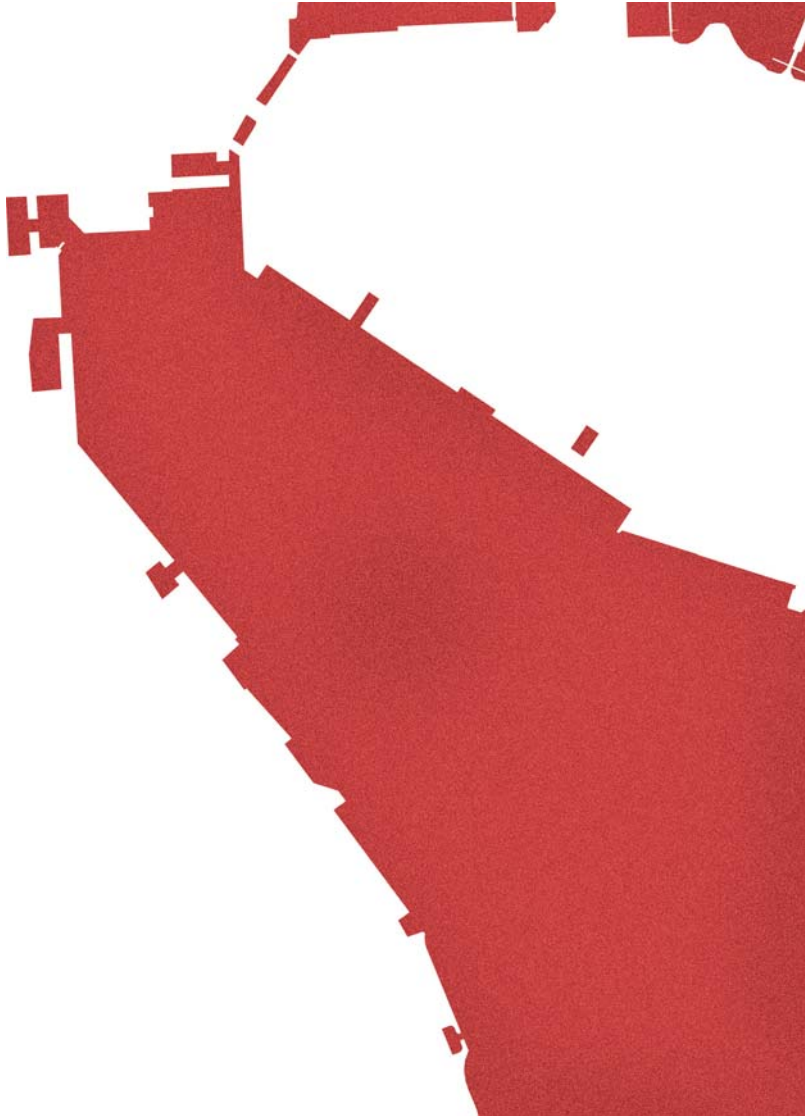

BOOK OF RESEARCH
AND PROCESS



NORWEGIAN UNIVERSITY FOR SCIENCE AND TECHNOLOGY,
FACULTY FOR ARCHITECTURE AND FINE ART

BOOK OF RESEARCH AND PROCESS

BY ATIR KHAN

TUTOR: ØLE MOYSTAD

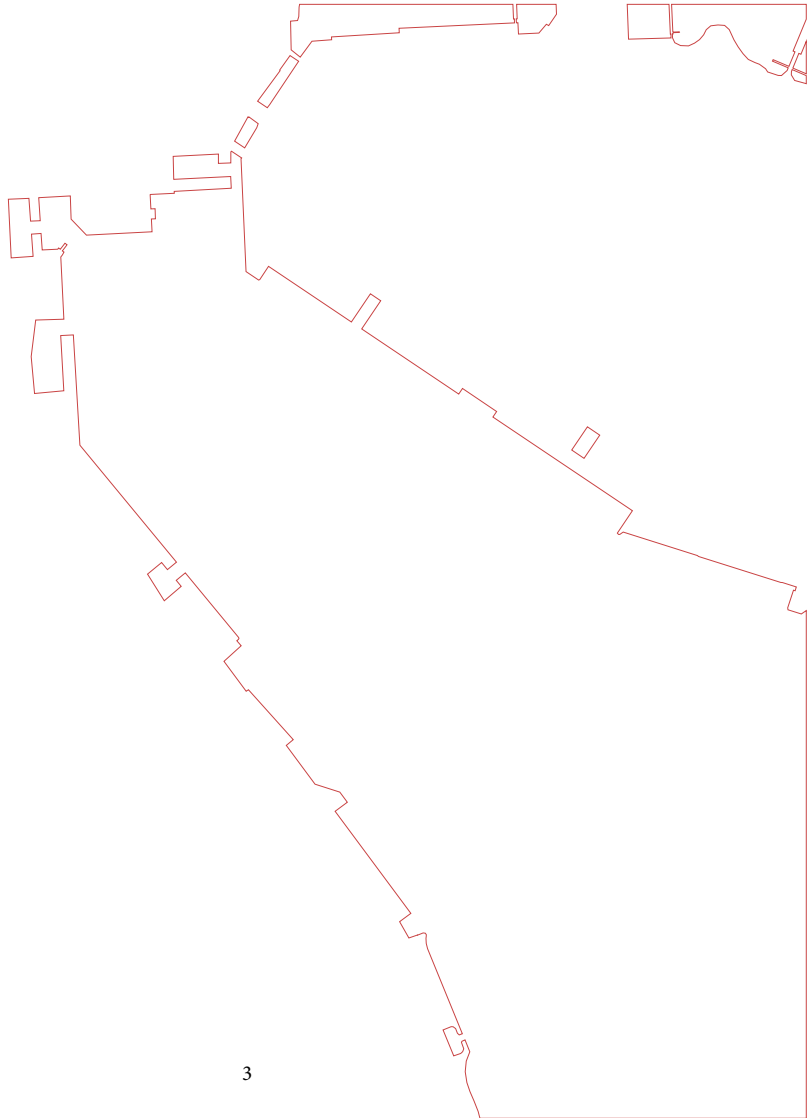


TABLE OF CONTENT

7	// APPROACHING ETELASATAMA
35	// PHASE 1: PROCESS <i>'NEXT HELSINKI'</i>
85	// PHASE 2: PROCESS <i>FEASIBILITY STUDY</i>
121	// REFERENCES & INSPIRATION



THE DIARY

MEETING HELSINKI

*APPROACHING THE SITE OF
ETELASATAMA*



05.01.15

Arriving late 5th of January, the first thing that hit me was the cold breeze in the weather of -15 C. Whilst sitting on the bus into the town, I observe the suburban parts within the regions that surrounds Helsinki. As we approach the central station, I begin to recognize places. During the summer of 2012 I participated in EASA (European Architecture Student Assembly). With the theme of 'Wastelands', that year's EASA workshops was held in Helsinki, in the former industrial area of Suvilathi. This had an impact of me choosing my theme, as I already was familiar with the city, and been reflecting on the different aspect connected to the question of how to deal with such spaces that are left over; now without use and cause, with potential to bring qualities to the inhabitants.

My impression as I walk through the city center the first day is surprisingly positive, and three words come to mind: Ordered, proper and monumental. The clear structure and the classic architecture spiced with Finnish Art Nouveau style is inspiring, with a pleasing cohesion.

As I hit my friend's place home, where I am staying at for the week, I got a pleasant surprise: Monday is "sauna day". In older housings in Finland, each block has at least one sauna that the

inhabitant's share. And today was our apartment's turn. The culture of the sauna have historically been an important aspect of their daily routine and not seen as luxury, but as a necessity. It is said to be over three million saunas overall in Finland with population of five millions in total. And I understand why: The relaxing and the almost ritual act of being in a sauna is very special. As we discuss while sharing a sauna, this is one of the few places where you can feel disconnected from the outer, hectic world. Places for neutering your thoughts and body, a place where you even have to leave your smart phone out. Perhaps my intervention at the site of Etälasatama should include one?

06.01.15



Today I woke up to the sun, lighting up the snow covered Helsinki. After a quick breakfast I had one thing in mind: To visit the harbour of Eteläsatama. On my way to the site, I walked by the Museum of Finnish Architecture, and looked especially into the section of Wooden Architecture. Surrounded by woods, Finland has an old culture for building in timber, which is reflected in both the traditional and the contemporary architecture. The Wood Program at Aalto University is quite well known, and their work of pavilions is also presented at the museum. The experimental use of wooden construction is fascinating, and the means of new technological innovations and manufacture is inspiring. Is this something I can investigate in my project?

Afterwards I approached the site for the first time. While going through the park of the Helsinki Observatory, I get to see the harbour from the height; viewing the huge cruise ships meeting the harbour, with the city in the backdrop. I notice the big difference in scale, as I climb down the small hill. I reach the Laivasillankatu and observe car passing by, interfering with the view to the Makasiini Terminal, where the express ships to Tallinn depart from during the open water season. The clear weather with open blue sky offers very low temperature, which is even more noticeable as I am standing on the open field within the terminal buildings. I reach the square of Kauppatori and gaze around: I register on one side the very classical rows of building - including the Presidential Palace and Swedish embassy – overlooking, on the other side, the market square which opens up towards the port of Helsinki.



Looking towards Makasiini Terminal, the site proposed for Guggenheim Museum

Overlooking the city from the Observatory Hill



v On my way I walk by the Market Hall, which is built in the late 19th century. It is the oldest one in Helsinki and still in use.

As I walk further around the city, what I especially notice is the grand figures of the two churches which can be seen from various places; Helsingin Tuomiokirkko – the Helsinki Cathedral – and the Uspenski Orthodox Cathedral. Each designed so they are standing on a pedestal, watching over the city whilst also competing against each other. Their

visual dominance is very interesting, and historically important to claim power and centralization of the role of the religion. But how do we read them today in the cityscape? They both function as important landmarks and orientation points in the city center, with great scenic value.



The Market Hall



The Uspenski Cathedral

07.01.15



Today I started off by paying a visit to the Helsinki Planning Department's exhibition spaces, where they showcase different plans for future development. Especially is the major process of renewal of former industrial and harbour areas highlighted. The completion of the new harbour at Vuosaari has liberated the largest amount of space in a hundred years, and the ambitions is to transform and find new uses for these left over spaces; such as housing and workplaces. Here focused mainly on the areas of Kalasatama, Kruunuvuorenranta and Länsisatama.

In the report of Helsinki City Plan done in 2012, the population is expected to be growing by 265 000 in the next 30 years. This asks for a major realization and change of the way the city is expanding – a new way of planning, changes have to be made. In the new draft of master plan for Helsinki 2050 shows how the city can grow by 250 000 new residents, by exploiting both the former harbours/industrial areas, and also by densification and expanding of the inner city. But is the quality there? Perhaps there is need to look in a total new means of thinking housing and their relation to the city? This issue is urgent, and relating to many capitals around the world. Perhaps this issue should be reflected in my proposal for development of Eteläsatama?

I approach the South harbour Eteläsatama for the second time, this time through the Esplanadi, an esplanade consisting of the Esplanadinpuisto





The Market Square



park and two parallel streets on each side which connect Erottaja Square to Kauppatori (Market Square). Going through the esplanade I was gradually feeling the transition of the denser city structure into the open square facing the South Harbour – connecting the city to the water. As there was a holiday in Finland yesterday, the market scene was closed – although today there were people selling souvenirs, Finnish traditional clothing and small items, even in the cold, windy weather. From there I walked on the west part of the harbour, and was welcomed by a small food center by name Kultasuklaa Oy. Walking through the building, while being warmed up in my

frozen fingers, I was smelling fish, freshly made bread and Finnish traditional food courses. Exiting the South side of the building, I found myself in a big parking lot in front of the Makasiini Terminal. This part, including the site of terminal building, is the area where Guggenheim Foundation has proposed a museum. Continuing south, the bigger parts of the waterfront are closed off for both security reasons and storage facilities for the port. The next building I meet in this open space is the Olympia terminal. This is the regular passenger ship link to Stockholm, where Silja Line comes and goes almost daily.



A view from South of the Harbour



Walking the street of Laivasillankatu towards the Olympia Terminal



Looking back on street of Laivasillankatu

Approaching the Olympia Terminal



The lower level of The terminal



Walking back to the market square I was reflecting on the whole harbour situation. As being one of the historical entrances to the capital, I could easily (despite the cold weather) imagine the life that once used to flourish alongside the water. Being the main entrance to the capital of Finland, there are scenic and cultural values that must be taken in count. Also there is already activity in the area, such as the food center and the Market Square proving the steady flow of people (even in the winter time). But how to add new qualities, making a greater connection to the water and using the spaces in a more efficient way?

Being frozen in every inch of my body, I headed for a cup of coffee and to write down some thoughts that had been circling around my head the last couple of days. My starting point of the thesis, as I wrote it in my thesis proposal, was a reaction towards Guggenheim Foundation's proposal for a new museum, as an answer to how to create new purpose and activity at the site of Eteläsatama. As a very top-down approach, and seemingly a commercial way of forcing a renewal with the brand name of Guggenheim, I ask if there is other ways that would include the inhabitants in a greater way. Rather than just visiting and consuming art in the silence of a museum, could the people take part of the processes happening inside?

While focusing on the people's processes within the city of Helsinki, I began to draft different

ideas. Could the built environment be seen as a machine or an organism – that could act or change after the user's needs and action – an interactive platform? Could this be linked to the existing cargo/transportation with ships and boats, with easy accessibility of materials etc.

The process of making – both with and without function: Call it a factory, industry, workshop or atelier; how to create a framework that enables different processes? With this a notion about the discussion about the industrialized vs. handcrafted arises. Today's reality of modules, standard sizes and mass production has lead to an efficient system of building and manufacturing. However the issue of sustainability screams for a different relation; the Consumerism that perhaps is a result of our distance from the process of making, the value decreased to something you use and throw without a blink.

I also reflect upon the historical role of harbours and industry, and their relation to the city. Today they are all moved away from the central to the periphery, resulting in new isolated industrial areas. Should we rather find a symbiosis of both the city and the industry, a symbiosis that could of gain for both?



Looking back to the city

HELSINKI 7.01.2015



Brainstorm

Today I joined my friend, whom also studies architecture, to the Aalto University. Arriving the Faculty of Architecture I decided to join the course presentation for the coming semester, to get an idea of aspects they were focusing on. There were two courses that especially caught my interest, and felt relevant for my theme; the first one called “water city”, focusing on the rising water levels and how the waterfronts will be affected by the future changes. How to deal with it, and design to make use and quality out of it?

The second one by Toumas Toivonen and Nene Tsuboi, who wants the students to explore different kind of “factories”, and investigate the full spectrum of theoretical, historical, technical, environmental, economic and aesthetic issues that accompanies it. Their aim is to investigate the production and the related activities and equipment, the labor and life of the workers, and the architectural implications of a contemporary and future set of values – resulting into a project that synthesizes the building as a machine for working and also living. Although, as Toumas Toivonen points out, some of the types of production seem to have already disappeared from our economies and especially from the fabric of the city. Could these be reintroduced? Could we reconsider production and work as an integral part of both the city and the landscape?

Being spot on with my train of thoughts, listening to Toumas and Nene was very interesting and exciting. Rather than a nostalgic return to the past, is it possible to imagine a near future that

combines contemporary knowledge, techniques and technologies with a critical understanding of economic, environmental and cultural conditions in relation to the urban context?

They also introduce the thought of working and living together: Something I realised while being on exchange in Amsterdam is the decline of the office typology, as the city was struggling with empty office blocks. Looking at major European cities today, vacant office spaces becomes increasingly visible and can perhaps be explained by the emergence of new forms of labor where the distinction between living and working is increasingly blurred. The traditional 9 to 5 schedule in a office cell is not keeping up with the contemporary forms of working, here especially for creative working environment. Work but also living is thus more mobile today, and perhaps not containable within rigid typologies anymore?

09.01.15



This morning I decided to explore the East part of the South Harbour, and find myself on the South part of the Uspenski Cathedral. I notice the vastness in the street of Katajanokanlaituri, which faces the water. Although you are never allowed to actually reach the edge. There are fences blocking both view and access, and there are no walkways for pedestrians.

Walking across the big parking lot, I meet the buildings named K5 and K6 which is used for storage and office purposes connected to the harbour traffic of cargo. These buildings have been discussed moved, and M4 that used to stand closest to the market square, is already demolished.

Due to ISPS (International Ship and Port Facility Security) that was introduced in 2002, the water edge in this area is completely covered by fences, making a very visual barriers to the waterfront. In the far end of the Eastern part of the harbour I meet the Katajanokan Terminal, which regularly receive ships from Stockholm and Tallinn. Also this area is inaccessible. Is there a way to change these conditions?



I decided this morning to look into parts of the city that were both new and old to me: I headed to Suvilathi. Being the hosting place for the workshops of EASA 2012 Wastelands, this site was my home for two weeks, where over 500 architecture students used as a place to experiment, learn and interact with both each other and the environment. Suvilahti power plant produced gas and electricity for the city's residents throughout much of the 20th century, but after lost its purpose. Being a place without use or value, new type of energy started to erupt in the form of culture. Today several buildings on the site are renovated and hosts activities like music festivals and circus.

The parts around Suvilathi is also in change. Looking into Katalasatama, which used to be an industrial and harbour area, the construction of this 175-hectare waterfront district is clearly in transformation. New residential and commercial district is establishing, and is supposed to become home for approx. 20 000 residents and 7000 workplaces. Walking around in the

area, it is very interesting to see something that is not yet. Especially is the area of Sompassaari intriguing, as being a bit cut off from the rest and representing the horizontal scale. Being in between the openness of the water and the bare man made sediment. Here traces of temporary activities can be found, including graffiti walls and the Bermuda Helsinki Container Square.

Afterwards I joined my friend to the Kuultuurisauna, a public sauna placed not far from Suvilathi, alongside the waterfront. We approach a small and isolated building, which is designed by Toumas Toivonen and Nene Tsuboi – the lecturers at the Aalto University. As a couple, they themselves receive their guests. With special rules of how you are supposed to behave, you are brought into the experience of the sauna. Both the architecture and the atmosphere gives you a very calm and ritual-like feeling, with the primal acts and articulations. The public saunas in the city, which there used to be many more of in the past, is a place for democracy, where everybody is participating in plenary, being one community. This is a feeling I would like to strengthen in the city of Helsinki.



The power plant of Hanasaari



Suvilathi

11.01.15

By a new Finish friend, I was recommended to take a walk around the Kaivopuisto Park along side of the water edge - supposed to be one of the most important pedestrian and cycling routes in Southern Helsinki.

I started from the west end of the pedestrian route, approaching the South Harbour walking North-East. On my way I register the the calm feeling in the openness of the ocean, and watch people running or taking their Sunday walk with their children. You feel close to the water, and there are no fences or railings blocking your way.

Halfway I cross a café which is full of people, which witnesses the popularity of the place. Is it possible

to create a similar relation to the water in the South Harbour?

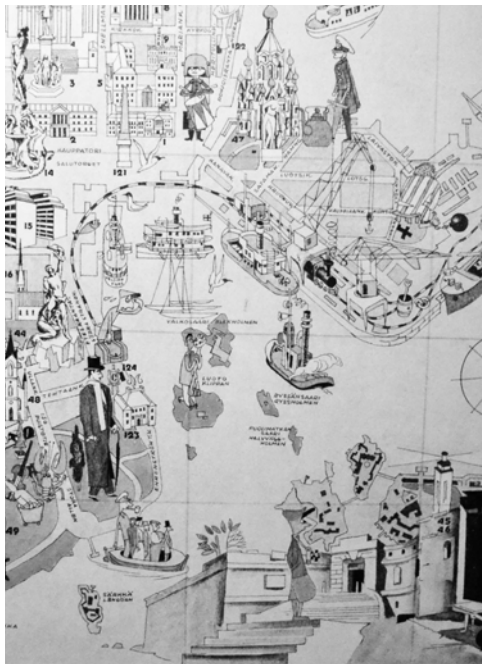
As I turn a corner and start to reach the South Harbour, the first thing I see is the giant cruise ship which seem to be leaving the Olympia Terminal. Coming closer to the terminal, the pedestrian route is having a sudden end. At a sudden point I am standing in front of a fence, and told to walk around the terminal building. Is there a way to allow a continuous circulation of pedestrians and bicycles all around South Harbour? This could be of a new value, as a safe, functional and pleasant experience.

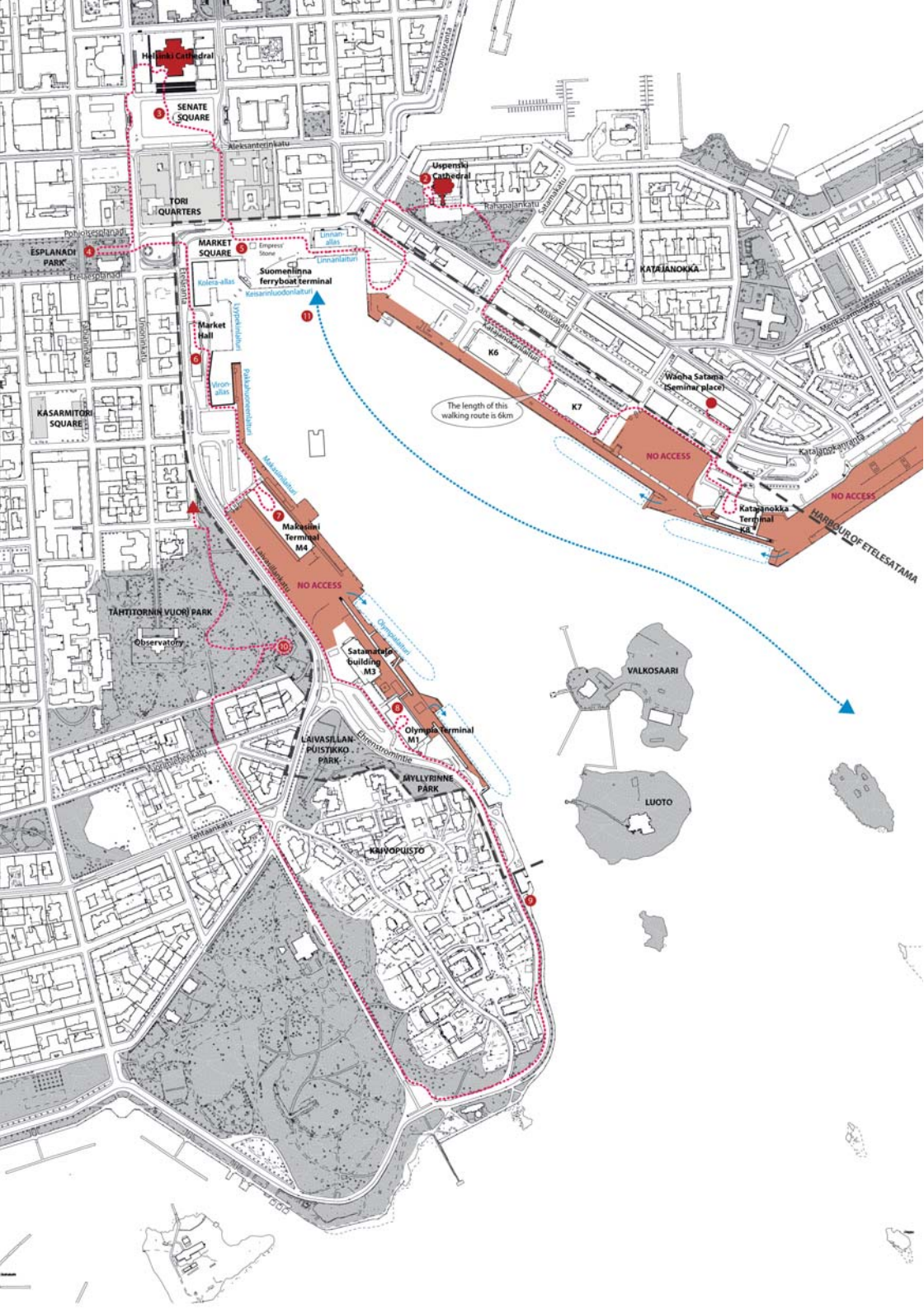




I walk again through Etelasatama, heading towards the Helsinki City Museum to connect with the history of port and harbour of Etläsätama. The exhibitions is brief but informative, and gives a picture of how the life used to look like in the past. I am in particular interested in the social aspects, in how the people and the inhabitants used the water. These values and meanings is lost in today's picture. Can I through my project introduce new qualities that could bring some of the lost relations back - but with new meanings?

The City museum also have a an archive of maps and materials, showing the emergence of the South Harbour as a man made construction, ideal for shipping, terminals and cargo. Is there ways of transforming it again, making new means to fit today's and tomorrow's need? Can both economical needs and social aspects be connected, and generate activity suitable for both people and infrastructure? This is something I want to investigate in my thesis.





Helsinki Cathedral

SENATE SQUARE

TORI QUARTERS

Uspenski Cathedral

ESPLANADI PARK

MARKET SQUARE

Suomenlinna ferryboat terminal

Kesärantaaukio

KASARMI TORI SQUARE

TÄHTITORNIN VUORI PARK

Observatory

Satamajohto Guilding M3

LAIVASILLANPUUSTIKKO PARK

Olympia Terminal M1

AVYLLYRINNE PARK

KANVOPUISTO

Wahja Satama (Seminar place)

Katajanokka Terminal

VALKOSAARI

LUOTO

HARBOR OF ETELESATAMA

The length of this walking route is 6km

NO ACCESS

NO ACCESS

NO ACCESS

SUM-UP MAP

1 Katajanokka Terminal and its surroundings

The Katajanokka Terminal was built in the 1930s and is listed. It's surrounded by parking places and closed port areas, but the building itself is open to the public. A view to the east opens from the windows of Café Terminus on the 2nd floor.

2 Uspenski Cathedral

The Eastern Orthodox church is an important landmark and the view from the hill is worth checking out.

3 Senate Square

This was the heart of historical Helsinki during the Russian rule. The cathedral is the most important landmark in all of Helsinki and it is also visible from almost all parts of the South Harbour

4 Esplanadi Park

The axial view through the park is important for the harbour area.

5 Market Square

The Market Square is one of the best known places in Helsinki and it's teeming with tourists who relax on warm summer days.

6 The Old Market Hall

Built in the late 19th century this Market Hall is the oldest in Finland and still in use.

7 Makasiini Terminal

This terminal serves the traffic going to Tallinn and St. Petersburg - this is where Guggenheim is proposing a museum

8 Olympia Terminal and its surroundings

The terminal is best known for its passenger traffic to Stockholm.

9 Tour around Kaivopuisto Park

The route around the Kaivopuisto park area is one of the most important pedestrian and cycling routes in Southern Helsinki.

10 Tähtitornin vuori Hill

This vantage point at 25m above sea level offers panoramic views over the competition area.

11 Ferryboat to Suomenlinna

The waterfront of the South Harbour can be seen on the boat during the first part of the trip. Suomenlinna with its 18th century fortifications is a popular attraction.

Green/Recreational area

*Area of no access/restricted by ISPS
(International Ship and Port Facility Security)*

PROCESS

PHASE 1

TOWARDS COMPETITION
“NEXT HELSINKI”

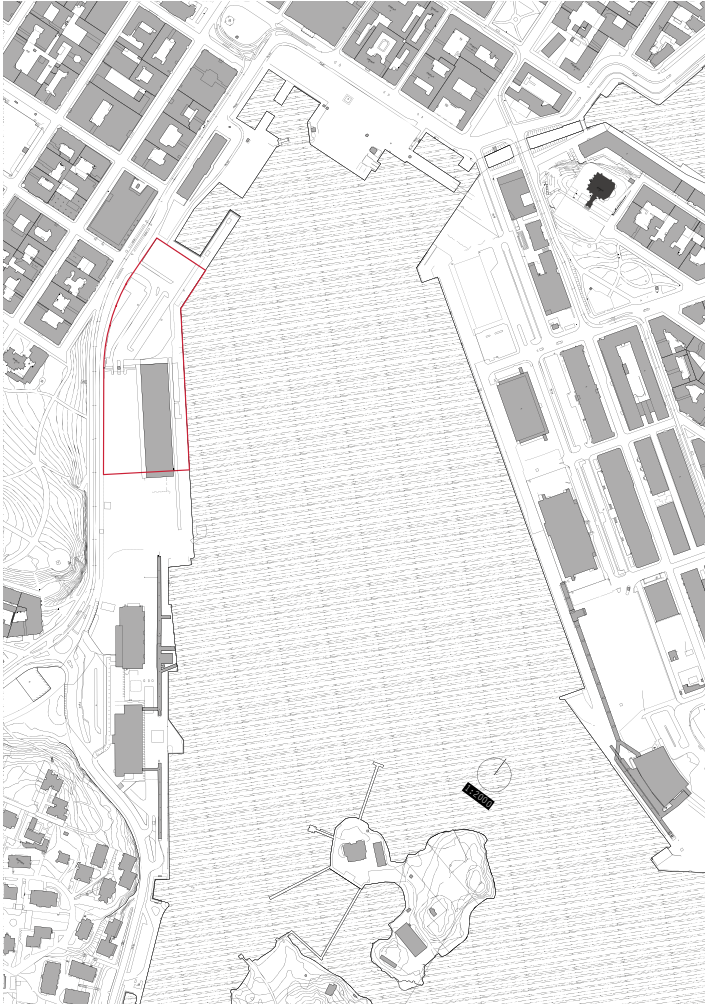
Ved første veiledning med Ole Møystad, har jeg allerede vært i Helsinki og gjort meg tanker om både sted og tematikk. Med Guggenheim Foundations ønske om nytt museum i Sør-havna Eteläsätama som utgangspunkt for diskusjon, resonerer vi oss frem til hvorfor Guggenheim mest sannsynlig ikke er det beste valget for Helsinki.

Hva/hvem er Guggenheim?

Guggenheim Foundation utreder i 2012 en rapport som presenteres for kommunestyret i Helsinki, men blir nedstemt grunnet for store kostnader relatert til utbygging og drift. Guggenheim presenterer i 2013 en ny, noe modifisert rapport med endringer i kostnadsrammer og blir innvilget: De får med denne lov til å lansere en tuestegskonkurranse på tomten på og rundt der Makasiini-terminalen står i dag.

Selv om politikernes ønske om økt turisme og nytt næringsgrunnlag i Sør-havna gir klare paralleller til Bilbao-effekten, blir ikke nødvendigvis det samme resultatet i Helsinki. Bilbao var i sin tid i en helt annen situasjon, med fraflytning og nedgang i næring, hvor et Guggenheim-museum kunne gi byen den løften som trengtes for å bryte den onde sirkelen. Helsinki står derimot i dag som en hovedstad rik på både kulturinstitusjoner og en næring i vekst. Hvorfor skulle byen trenge Guggenheim? Kanskje Guggenheim Foundation i større grad trenger Helsinki? Situasjonen er snudd; det er tilsynelatende store mengder med kostander i bildet ved å introdusere Guggenheim til Helsinki, men med uten større bevis på at det faktisk vil skape den løften Helsinkis politikerene er ute etter.

Tomten som historisk sett er hovedporten for havtransport, som bringer deg rett inn til hjertet av Helsinki, er av meget stor kulturell og visuell verdi. Ikke bare vil museet koste byen store summer, men vil også kapre en av de mest verdifulle tomten i Sørhavna. Og for hva? For å gi plass til et impotent merkevarer som skal reklamere Helsinki utad? Hvorfor ikke heller tilrettelegge og planlegge i større grad til nytte for Helsinkis beboere?



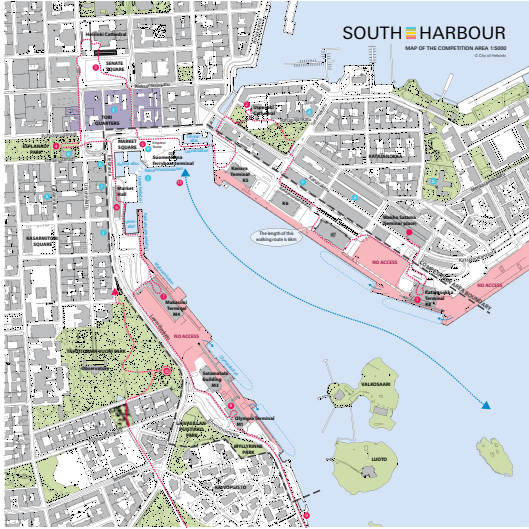
Ut ifra tanker jeg gjorde opp mens jeg var i Helsinki, gjør jeg opp mitt eget ståsted i diskusjonen: Helsinki kan fint klare seg uten et Guggenheim museum, og klare å skinne fint selv på egenhånd. For hva er det Helsinki er kjent for i dag? Blant de mange innsjøer, øyer og saunar, finner vi et hav med merkevarer som står som Finlands ansikt utad. Etter selvstendigheten fra Russland i 1917 har finnene vist stor arbeidskapasitet og en vilje til å se og gripe nye muligheter, og ved sammenslåing av både kreativitet og teknologi dukker merkevarer som Nokia, Marimekko, Aalto og Arabia opp og annonserer et nytt næringsgrunnlag for landet. Er ikke Helsinki et større merkevarer i seg selv enn Guggenheim?

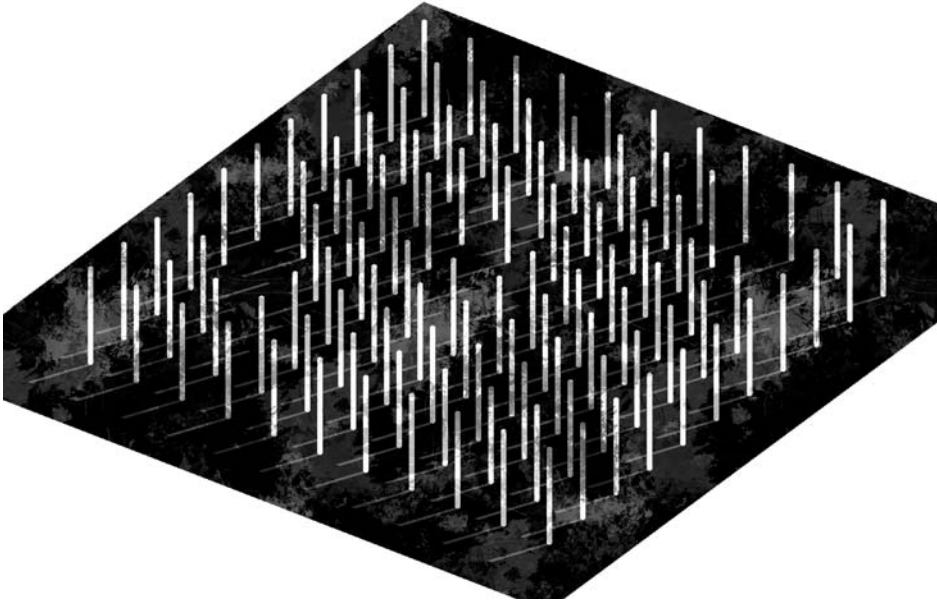
Ved å fokuierer på prosessene som skjer mellom byen, beboere og besøkende, kan vi reintrodusere industri i havneområdet? Kan vi fokusere på å skape rammeverk for nye prosesser til å skje, og tilrettelegge for inkubatorer, co-working, og produksjon av gjenstander med både og uten funksjon? En sammensmeltning av kulturell og kommersiell næring, som inviterer til nye ukjente relasjoner og prosesser til å blomstre.

Jeg ønsker med en slik vinkling på oppgaven å ta økonomiaspektet på alvor, og ønsker å se dypere på ulike strategier og investeringer. Hvordan kan man skape rammeverk som generere både god byplanstrategi og økonomisk utbytte for byen?



"Not everything that is good for business is good for society, but everything that is good for society is good for business"
Michael Porter





LESNING: Museum of the future

UNDERSØKELSE:

- *Budsjett/regnskap og kostnader, inspirasjonsbibliotek*
- *Skissert ideer og konsepter*
- *Intuitiv undersøkelse gjennom collage*

UKE 2

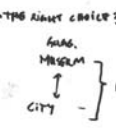


a collage for expressing my image of the site connected to my train of thoughts. What is the character of the site, and how will my intervention fit or contradict?

The harbour as melting pot of different scales, functions, urban tissue and typologies. Can this trigger a diversity that can benefit the social content of the city?



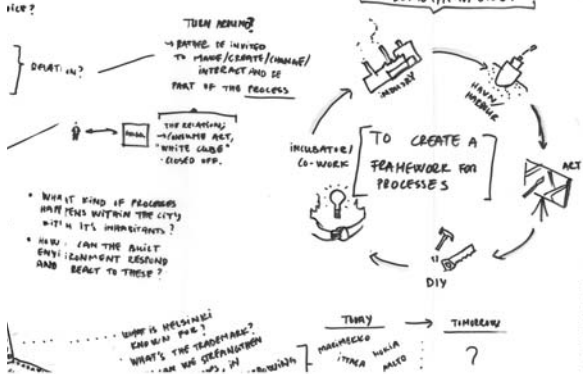
GUGGENHEIM?



- A BOX, CONTAINER VESSEL FOR ART, ANOTHER EXAMPLE OF A WELL-KNOWN MODEL.
- DO HELSINKI NEED GUGGENHEIM?
- $R1 @ 12 @ 10 @ 8$ WHAT DOES THE PEOPLE OF HELSINKI WANT?
- \$ INVESTMENT: IS THIS A GOOD BRANDING OPPORTUNITY FOR HELSINKI?
- BUT ISN'T HELSINKI MUCH



WHAT IF FINLAND SPENDS THE MONEY ON SOMETHING ELSE?

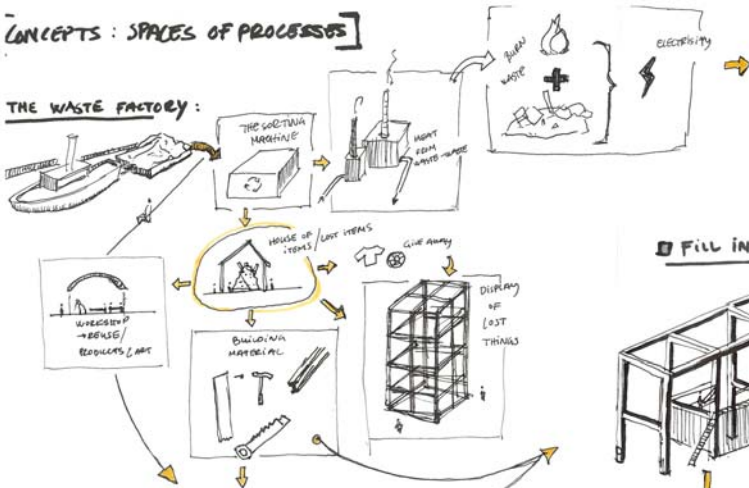


DISEASES: PROGRESS

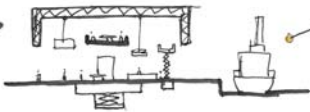
- BUILDING AS A MACHINE/ORGANISM, CHANGE AFTER NEEDS/PRESENT PROGRAM → INTERACTION
- SHIPS/BOATS, PART → CARGO → TRANSPORTATION, PEOPLE → GOODS
- LEASE/WORKSHOP → OLD → KNOW
- CREATE ART ↔ INDUSTRY
- HANDCRAFTED VS. INDUSTRIALIZED
- MODERN/ELEMENTS → SUSTAINABILITY → CONSUMERISM
- INVESTMENT/PROFIT → FEAR OF URBAN ENVIRONMENT
- NO RELATION TO THE PEASANTS IS MAINTAINING/PRODUCING → LESS CONSCIOUSNESS FOR THE VALLE

CONCEPTS : SPACES OF PROCESSES

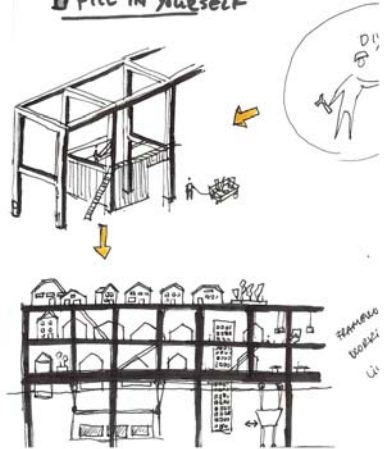
THE WASTE FACTORY :



THE WORKSHOP



Fill in Yourself



GRID SYSTEMS

create a grid that the inhabitants themselves can fill in, after wish and need. The vertical street. Public spaces in several floor, allowing denser cities, as well as a place for greater participation and bottom up approaches

CREATE A FRAMEWORK FOR PROGRAMS:

TO CREATE ENVIRONMENT
- INVITE FOR PARTICIPATION?

1: MACHINERY/Organism (user)
THAT REACTS TO THE USERS.

2: SPACE-UP, LAUNCH / REARME IDEAS

TECHNICAL, ELECTRONICS, CREATIVE INDUSTRIES,
FILM, ARTS, CONSTRUCTION

THAT SPACE OF THE PROJECT ARE MIXED
"PROJECTS"

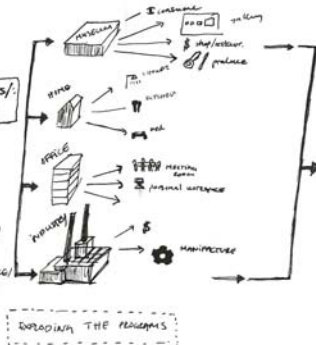
BREAKING THE BOUNDARIES/ BARRIERS

• THE LEGAL HETEROGENEITY OF A MUSEUM:
→ ISOLATED, NOT CONTEXTUAL?
→ CASUALTY IS. PEOPLE

• RETHINKING THE OFFICE TYPOLOGY
→ URBAN AFFABLE SPACES
→ UNTEMPERED FORMS OF URBAN BOUNDARY DIFF. VARIOUS / SCALE

• THE URBAN HOME
→ TRENCH, WINDING IS LACINA?
"THE EXPANDING HOME"

• THE DISTANCED INDUSTRY
→ REINVENTING A UNCONVENTIONAL URBAN INDUSTRY



• DENSIFIED URBAN, COMMUNITY THAT CREATES POSSIBILITY BARRIERS/ PROCES APPEAR.

• AN ENVIRONMENT THAT A TEMPORARY CONDITIONS FLEXIBLE, MOVABLE

• MIXTURE OF ACTIVITIES THE SET OF RULES: THE LABEL → POLICED

↓
• BREAKING THE HETEROGENEITY

WHAT KIND OF PLACES/SPACES FOR
WORK/CREATING/MEETING/LIVING: LANDSCAPE TYPOLOGIES

IN SPACE:



THE PLACES



THE GRID



AS:



THE WATER



RAIN:



THE WATERFRONT

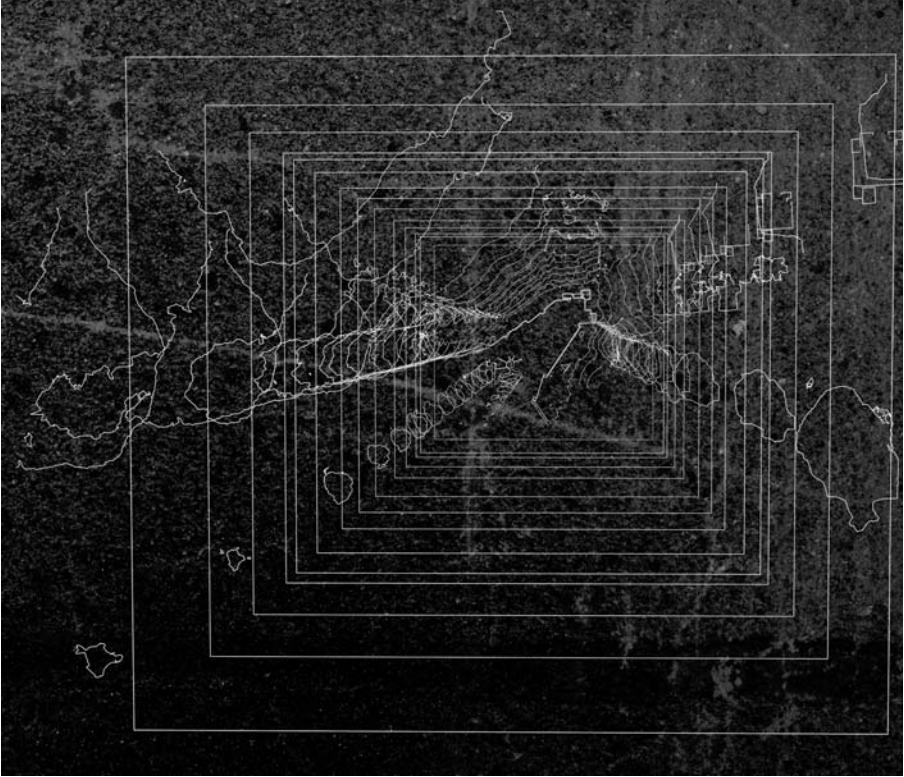


THE LABYRINTH

THE CLOSED BOX

THE TUNNEL

TO:



deconstructing landscape

VEILEDNING: Ole Møystad

- *diskurs rundt problematikk og investeringsanalyse*

UNDERSØKELSE:

- *analysearbeid av tomt; undersøke infrastruktur*
 - *finne kartmateriale*
 - *Funnet rapporter, tall*

PRODUKSJON

- *Sammenstilt informasjon til enkle diagrammer*
 - *Kartbibliotek*

MITT BIDEAGN

ESTIMERE KOSTNADER



HOUSING
→ HVA SLAGS
KONTORER:
→ BYGGJE



INDUSTRY/
FACTORY



OFFICES

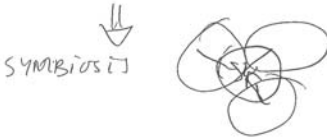


⇒ HVOR LANGT
KOMMER
VI M / POKKENG.

ANALYSER(?)
FINISK
DRIFT, EIGENDOM

→ COSTANALYSE PER ENHET.

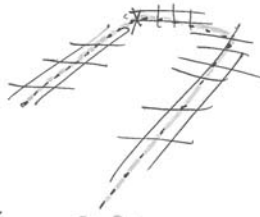
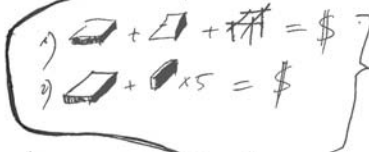
• HVOR MYE BOIGER/KONTORER/ETC.??



MERKE ⇒ HOW DOES IT
LOOK LIKE?

→ DEFINE NEW TYPOLOGY
NEW WAY OF DAILY
ROUTINE,
NEW TYPE OF COMMUNITY

VALG BRICKER (PARCIS)
IFØR KOSTNAD



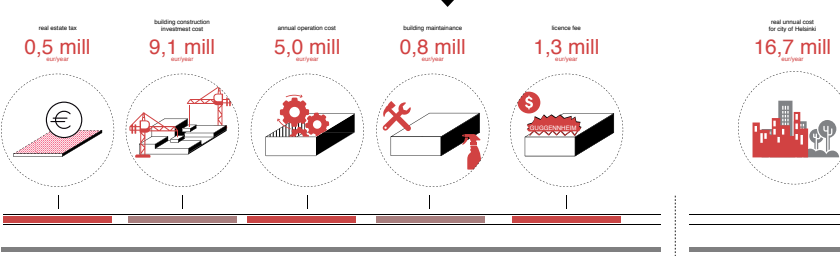
TH RED THREAD.

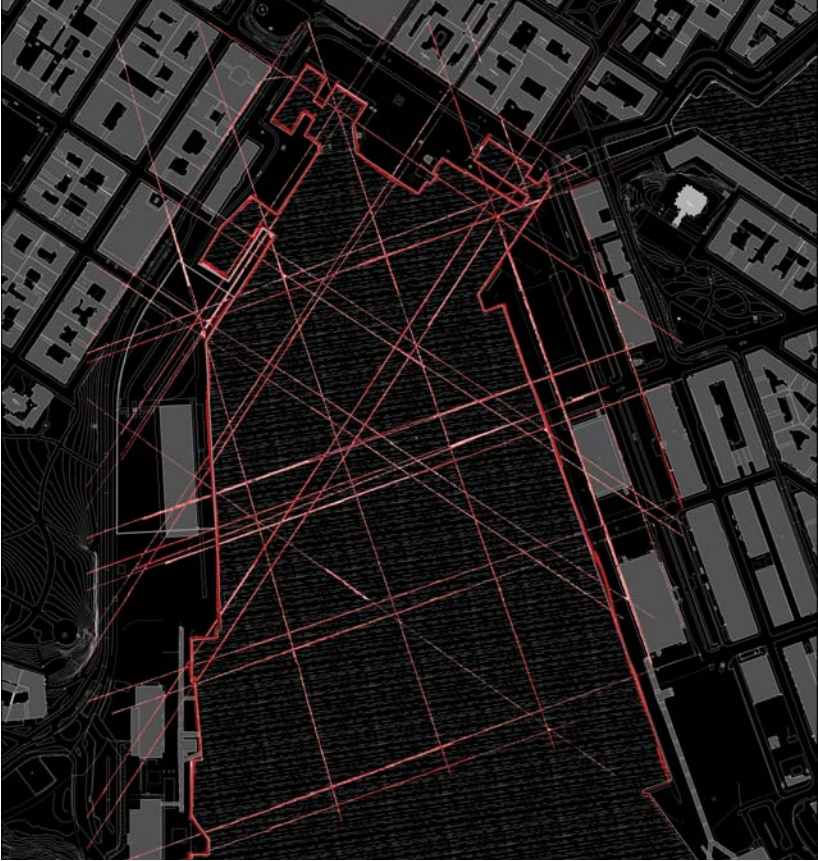
MOBILITY/
TRANSPORTATION.

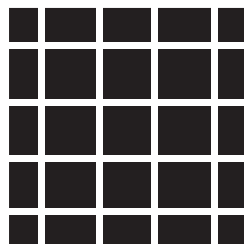
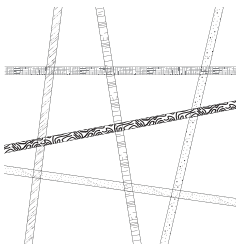
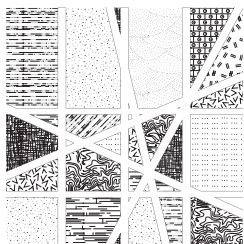
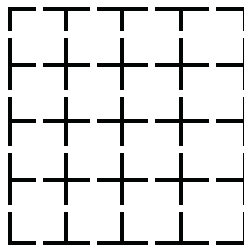
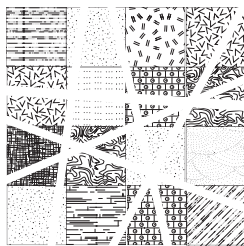
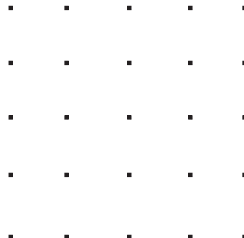
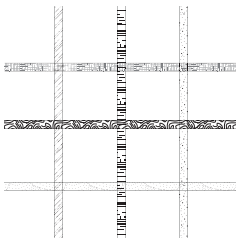
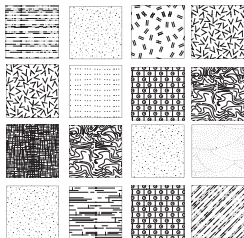
ANTJE
GRO RØDNE
SVEIN BJØRBECH.

BIBLIOTEK
BRICKER.

INSTRINGSMODEL:

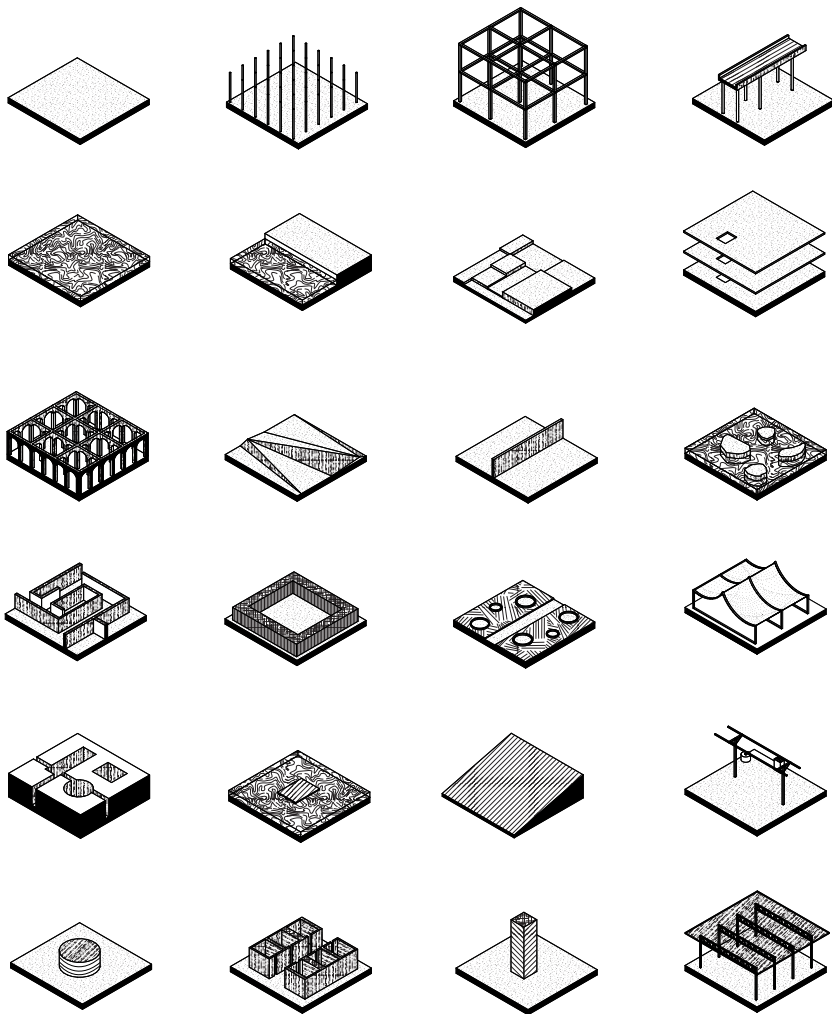






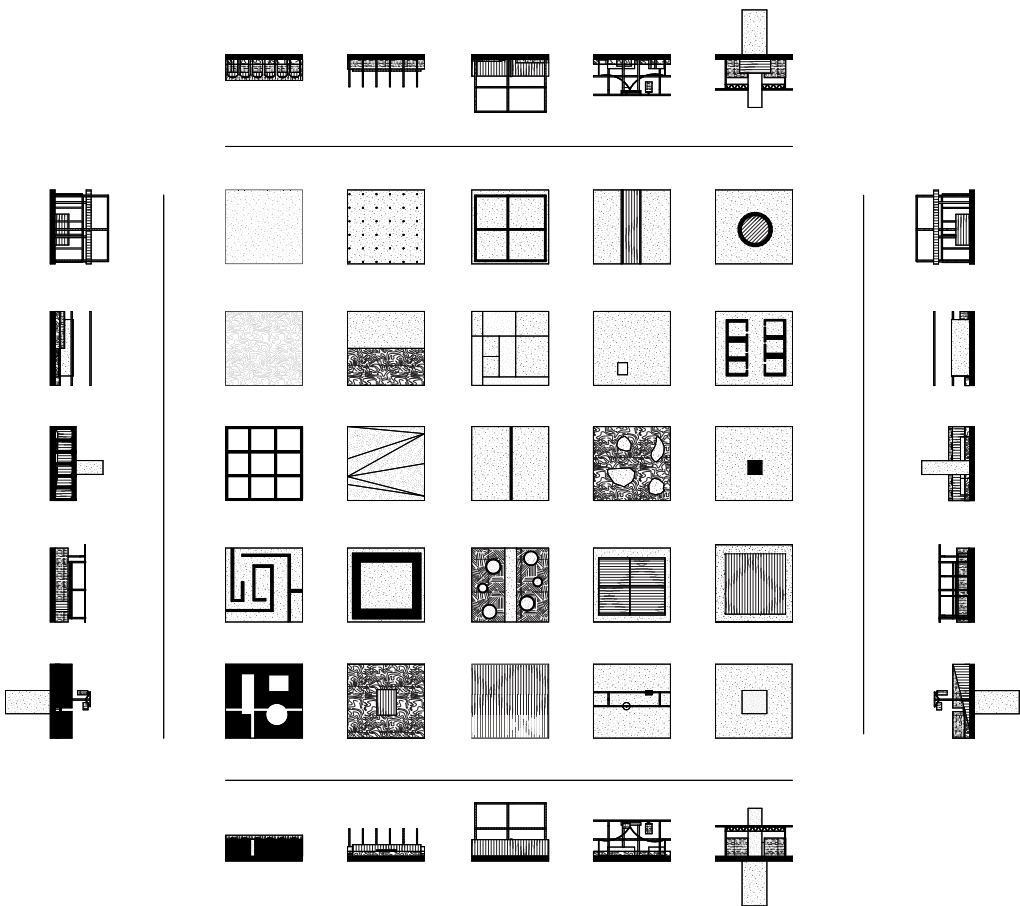
GRID STUDIES

*The grid as a tool, set of rules applied by planners.
How to turn the top-down to bottom-up? What is the perfect
situation for both the planned and unplanned; creating spaces for
participation, coincidence and for new processes to appear*



TYPOLOGIES

How to create spaces for living, working, creating, meeting? A study of typologies related to the urban landscape; what does the city contain today? How to organize tomorrow?

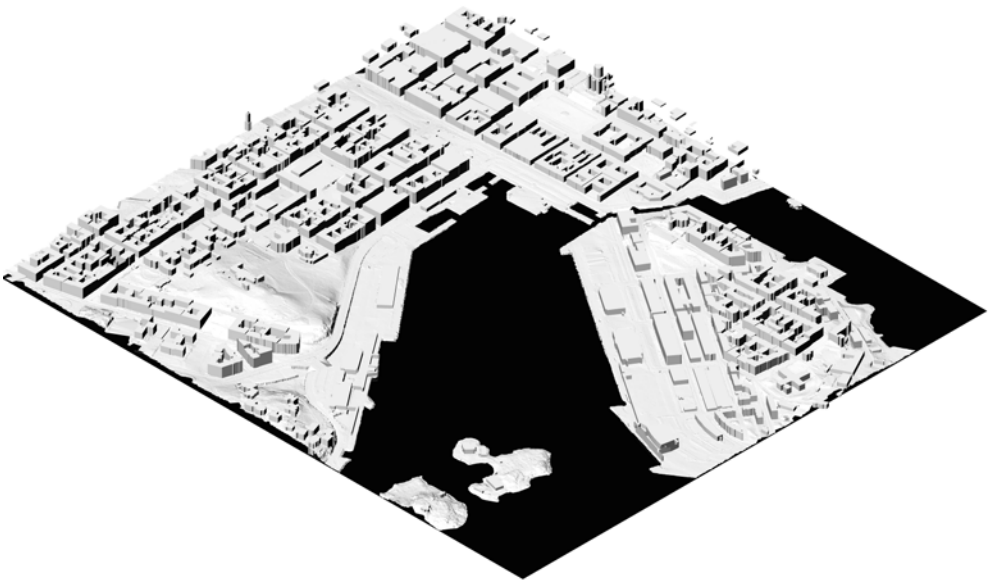


UNDERSØKELSE:

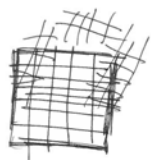
- *Organisering langs havna*
- *Utprøving av ulike strukturer;*
 - _grid*
 - _typologi*

PRODUKSJON

- *Sammenstilt informasjon*
- *Laget piktogrammer for å visualisere tanker*
 - *laget 3D modell*

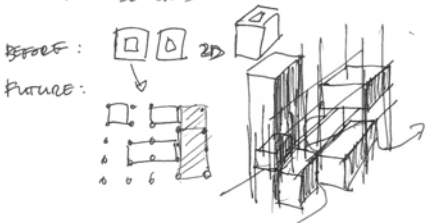


THE NEW GRID

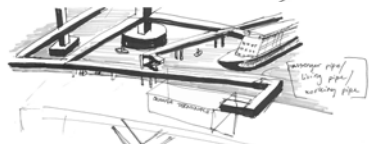


3mm = 30 000 mm
1: 10000
60m = 600m

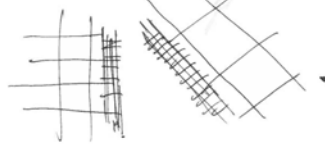
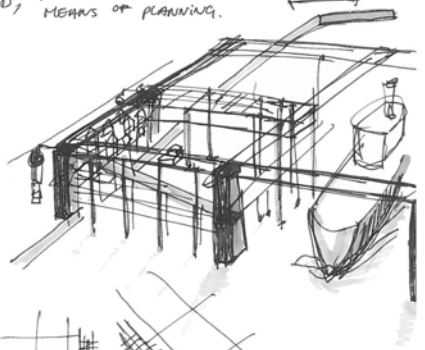
↳ THE 3D GRID



THE ADDED GRID, FOR NEW MEANS OF PLANNING.



THE 3D GRID



TO CREATE A FRAMEWORK,
THAT CAN BE FILLED.



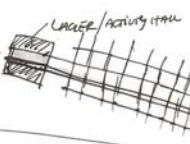
THE TOWERS
→ VERTICAL
COM.
→ PUBLIC
→ WATER (RAIN)

• THE GRID;
TOP DOWN → SET OF
RULES APPLIED
BY PLANNERS
↳ WHAT IS THE PERFECT SITUATION
FOR BOTH PLANNED & UNPLANNED,
CREATING ROOM/SPACE FOR
COINCIDENCE, PARTICIPATION
AND NEW PROCESSES TO APPEAR?

OVERORDNET STRATEGI

STEP 1:

- THE TRANSPORTER
- PLOT GUIDES / THE GRID.



PLANNED + UNPLANNED



THE EMPTY GRID

SYSTEMS :

- GRID OF LANDSCAPE



- GRID OF STRUCTURE



- GRID OF FUNCTIONS





The two scales divided, connected by the ever changing grid structure that combines the both.



the city grid, how should the new urban grid fit into the existing one?



*the new grid, as a new layer to the existing one.
The alternative, everchanging, interactive grid.*



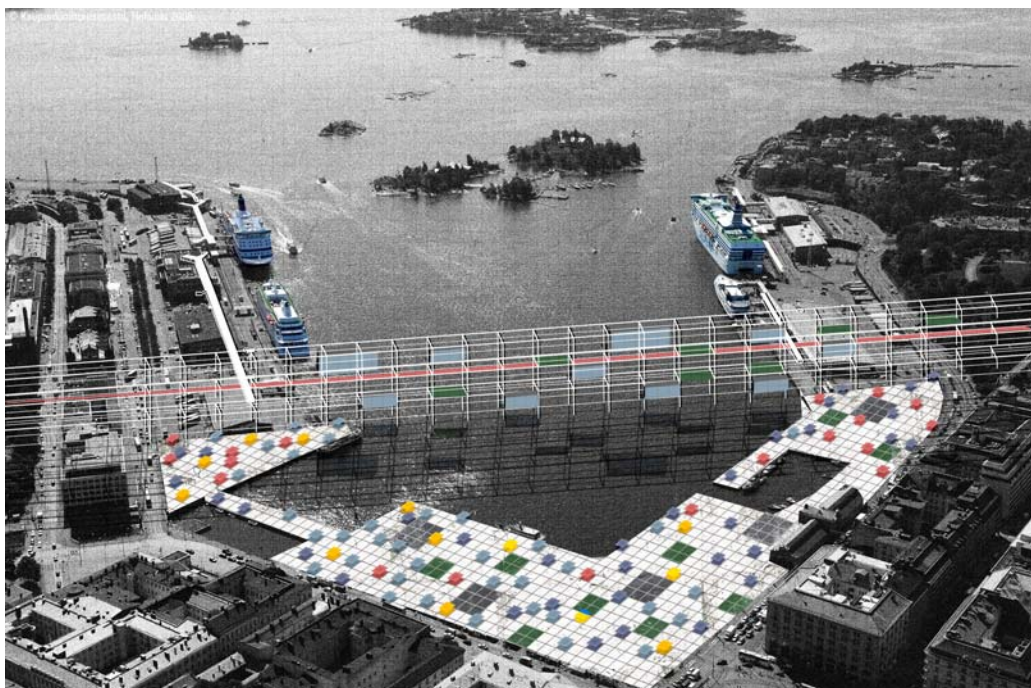
*the framed harbour, a new community arises.
The bottom-up approach.*





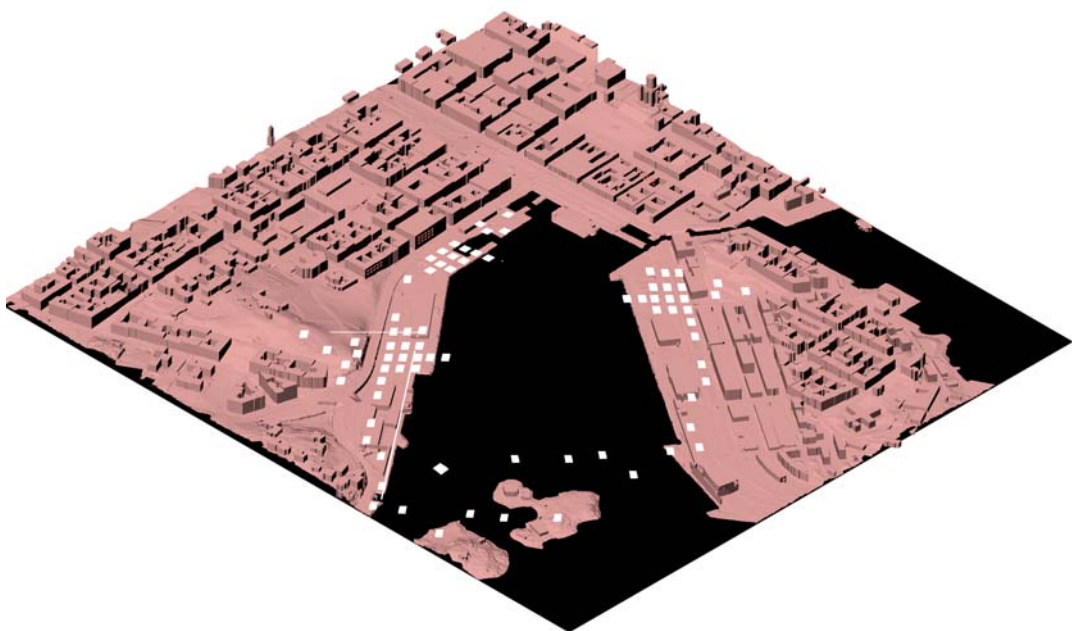
STACK IT

the framework that enables merge of layers through the vertical grid; that have streets not only horizontally, but also vertically.



VERTICAL GRID

framework for bridging, connecting, seperating, densifying, working, living, playing, meeting, watching, making, walking, changing, creating





THE NEW LAYER

Could we introduce a new layer: Add a new grid to the existing one, allowing the inhabitants themselves to shape fill it, shape it, create it. A new community arises, asking to take responsibility for the this new structure that becomes their home, work and leisure.

VEILEDNING:

- *Markus Schwai; Oprette bibliotek, undersøkelse av fleksibilitet*

UNDERSØKELSE:

- *Retoriske diagrammer*
- *Skissering av fleksibilitet*

PRODUKSJON

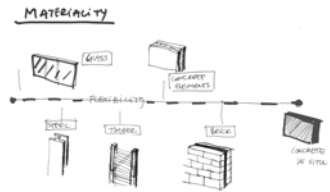
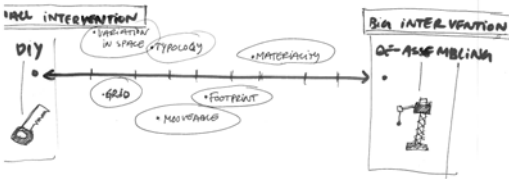
- *Volumer i 3D-modell*
- *Dypere inn i investeringsanalyse*

UKE 5

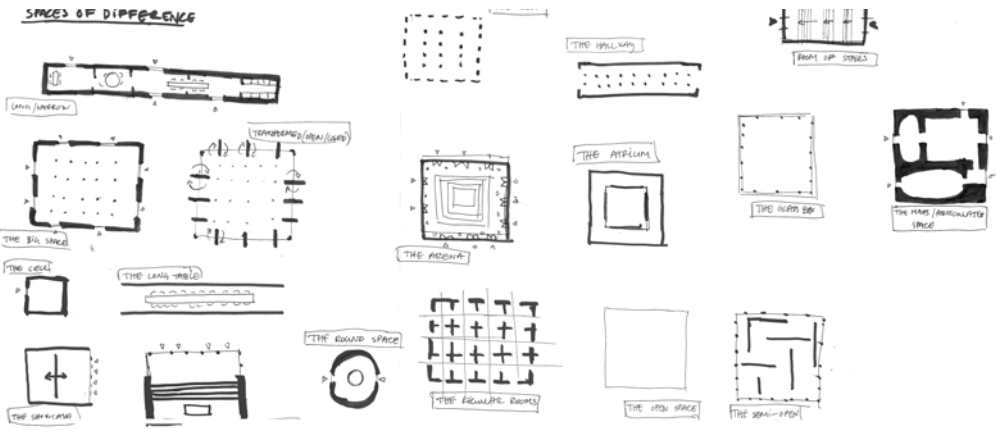
FRAMEWORK FOR UNKNOWN PROCESSES.

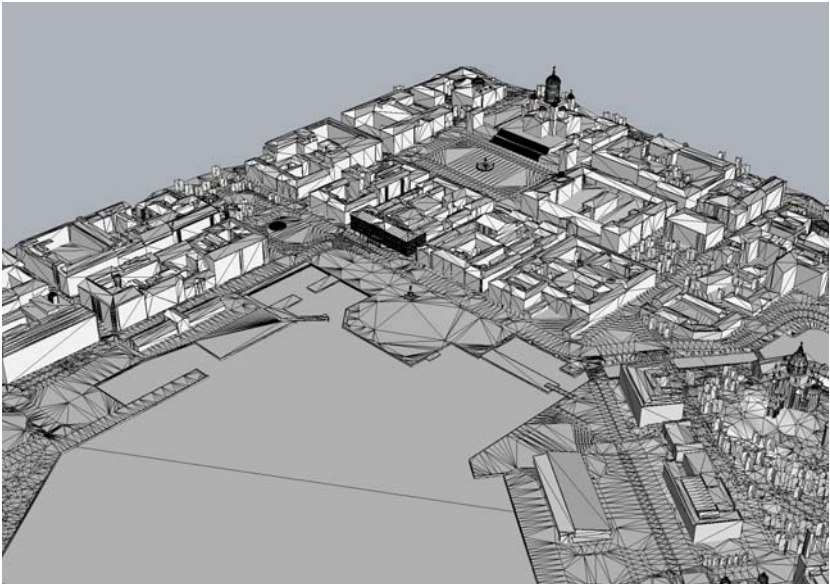
• BOTTOM-UP: BY FLEXIBILITY

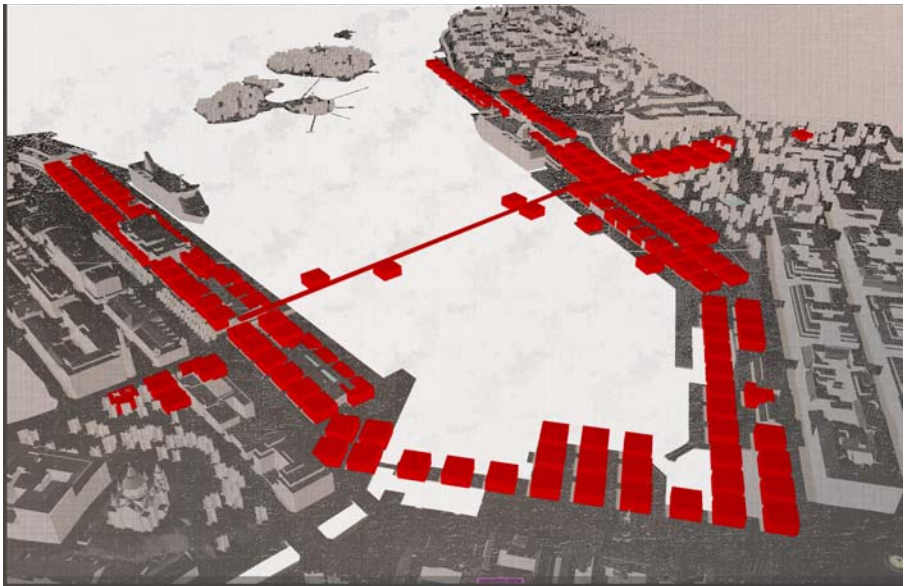
• SCALE OF FLEXIBILITY:

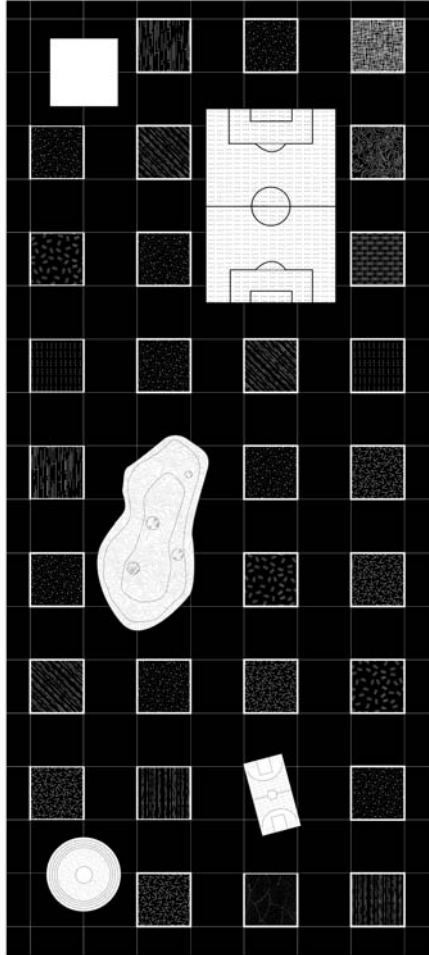


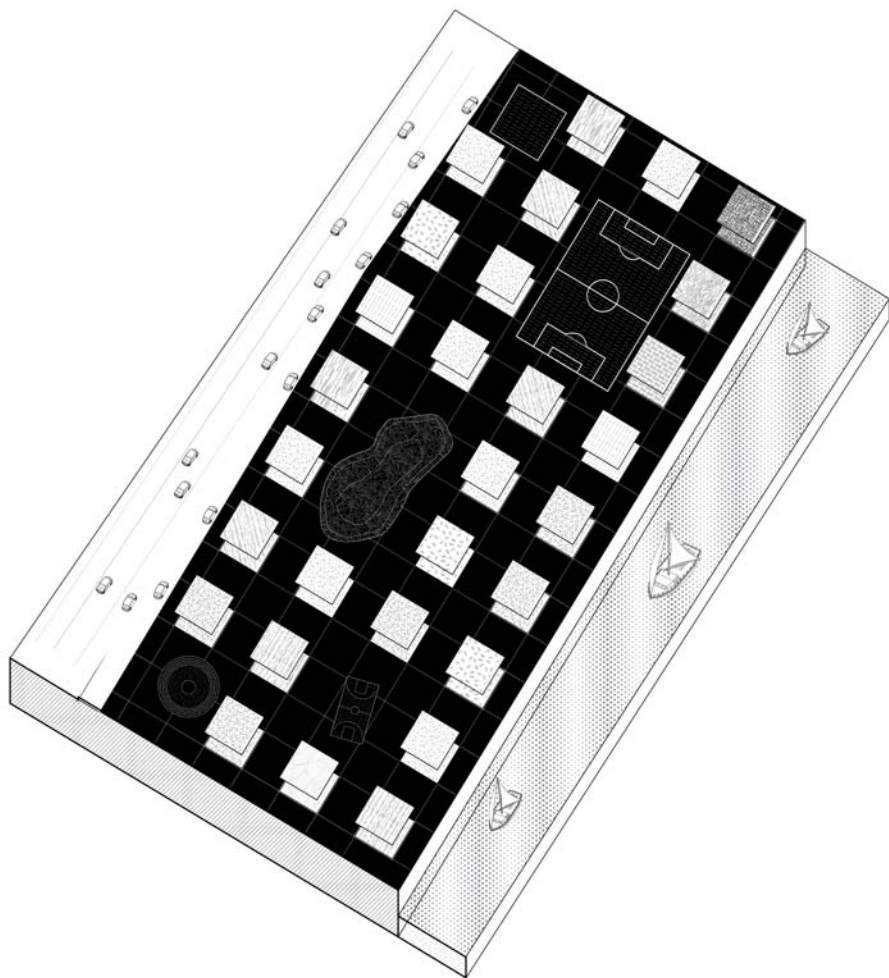
SPACES OF DIFFERENCE





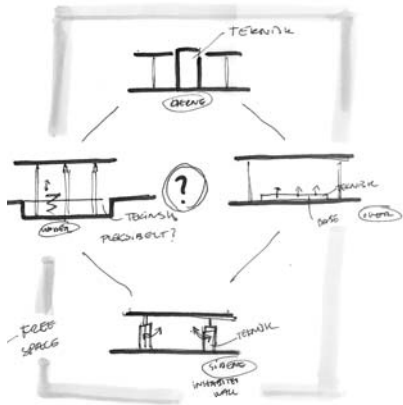
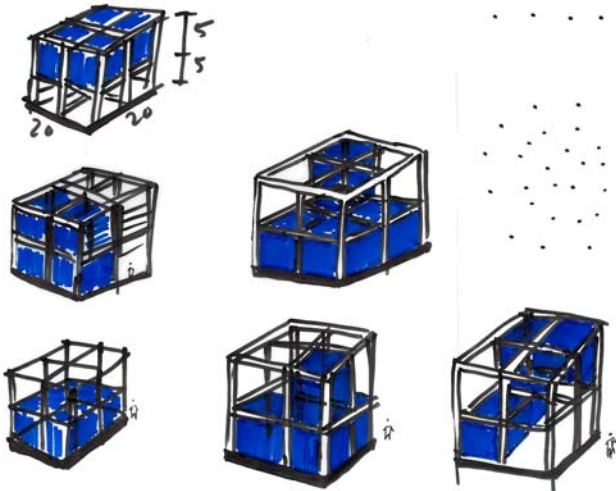




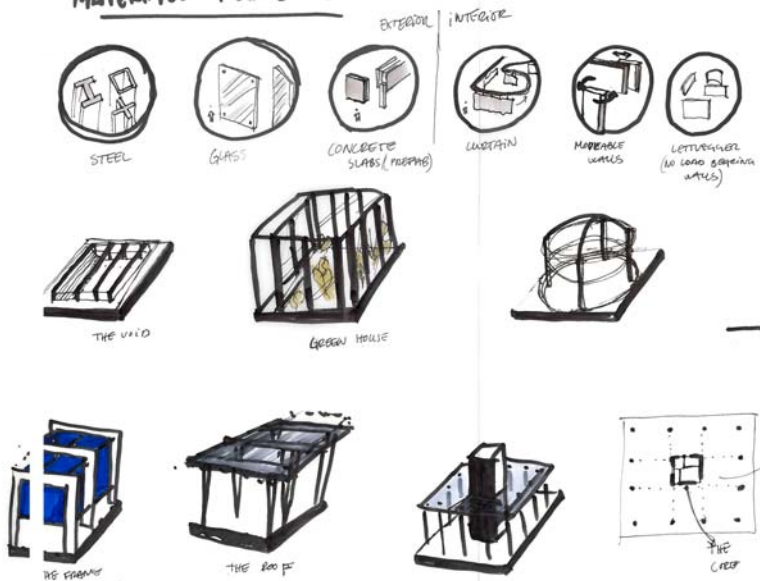


OPEN, EMPTY,
FLEXIBLE BOX:

HEAD IN
LEAD.



MATERIALS : FLEXIBLE SOLUTIONS



VERTICAL GRID

framework for bridging, connecting, separating, densifying, working, living, playing, meeting, watching, making, walking, changing, creating

UNDERSØKELSE:
-knytte alle tråder, lage historie
- prøve ulike visuelle metoder

PRODUKSJON:
- Ferdigstilling av materiale;
_Visuell formidling

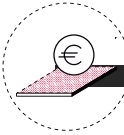
and imagine how much we could build with that money...

true! enrich the city with new processes, for the inhabitants

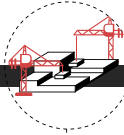


THE THEORETICAL INVESTMENT COST OVER 20 YEARS

0,5 mill eur/year
REAL ESTATE TAX



9,1 mill eur/year
BUILDING CONSTRUCTION

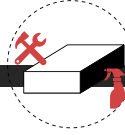


*investment cost 130 million EUR, 20 years, 4% interest

5,0 mill eur/year
OPERATION COST

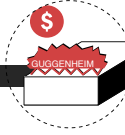


0,8 mill eur/year
BUILDING MAINTENANCE



*fee to Guggenheim: 30 million USD over 20 years

1,3 mill eur/year
GUGGENHEIM LICENSE FEE



COST ESTIMATION^[1]
GUGGENHEIM MUSEUM

REAL ANNUAL COST FOR THE CITY OF HELSINKI



16,7 mill eur/year

what if we used the same amount Guggenheim is planning to spend, but on something else?

yeah, imagine! We can name it the Bricks of Possibilities...



"BRICKS OF POSSIBILITIES" ANNUITY DEVELOPMENT

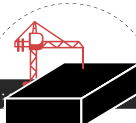
9,1 mill eur/year
ANNUAL BUDGET FOR CONSTRUCTION



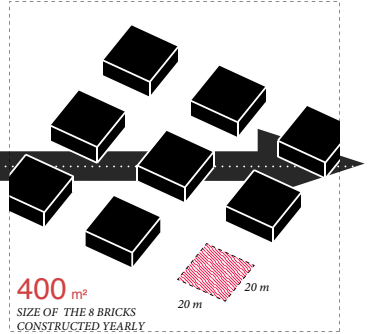
2800 eur/m²
COST OF BUILDING PER SQUARE METERS [2]



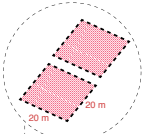
3200 m²
POSSIBLE AMOUNT OF ANNUALLY CONSTRUCTED STRUCTURE



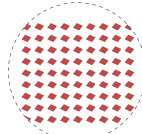
400 m²
SIZE OF THE 8 BRICKS CONSTRUCTED YEARLY



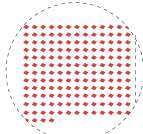
EACH QUARTER
2 bricks
800 m²

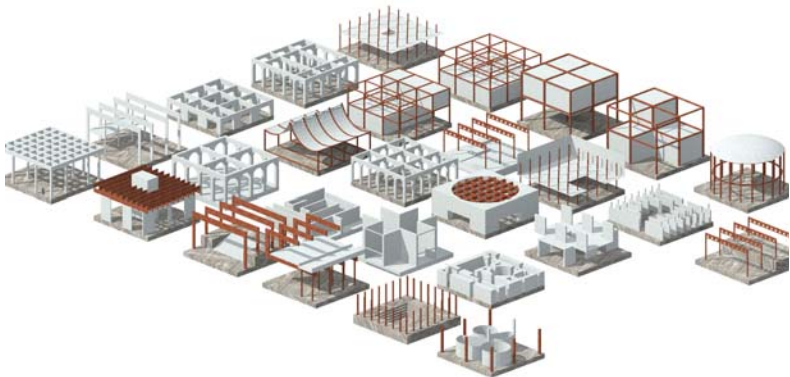
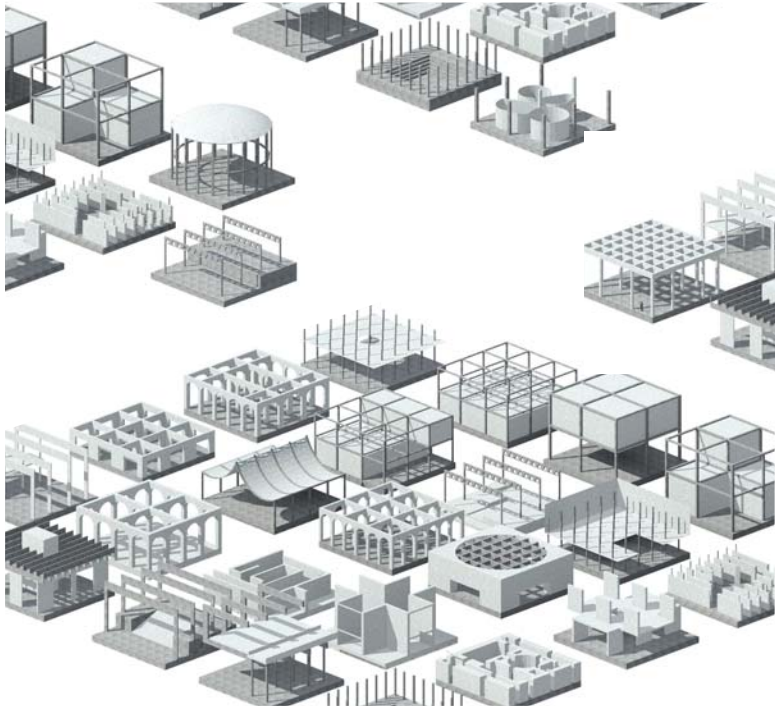


AFTER 10 YEARS
80 bricks
32 000 m²



AFTER 20 YEARS
160 bricks
64 000 m²

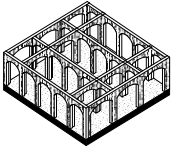




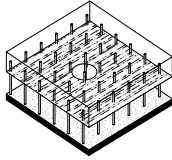


DELIRIOUS HELSINKI

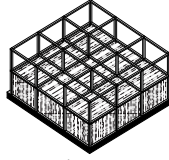
*the many entities that offer and encourage diversity,
within the portals into the unknown possibilities of
different processes*



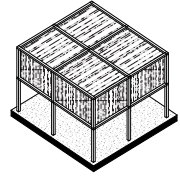
the Sibelius



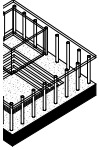
the Linux



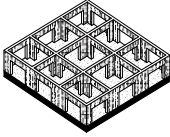
the Marimekko



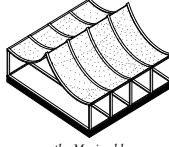
the Supercell



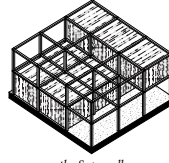
the Kaurismäki



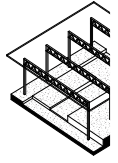
the Arabia



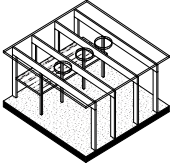
the Saarinen



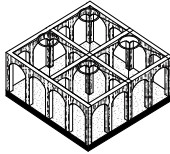
the Jansson



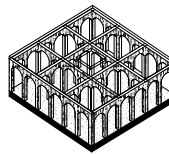
the Fiskars



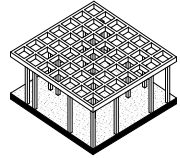
the Tom



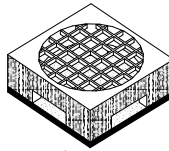
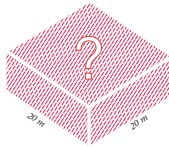
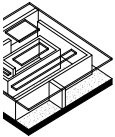
the Edelfelt

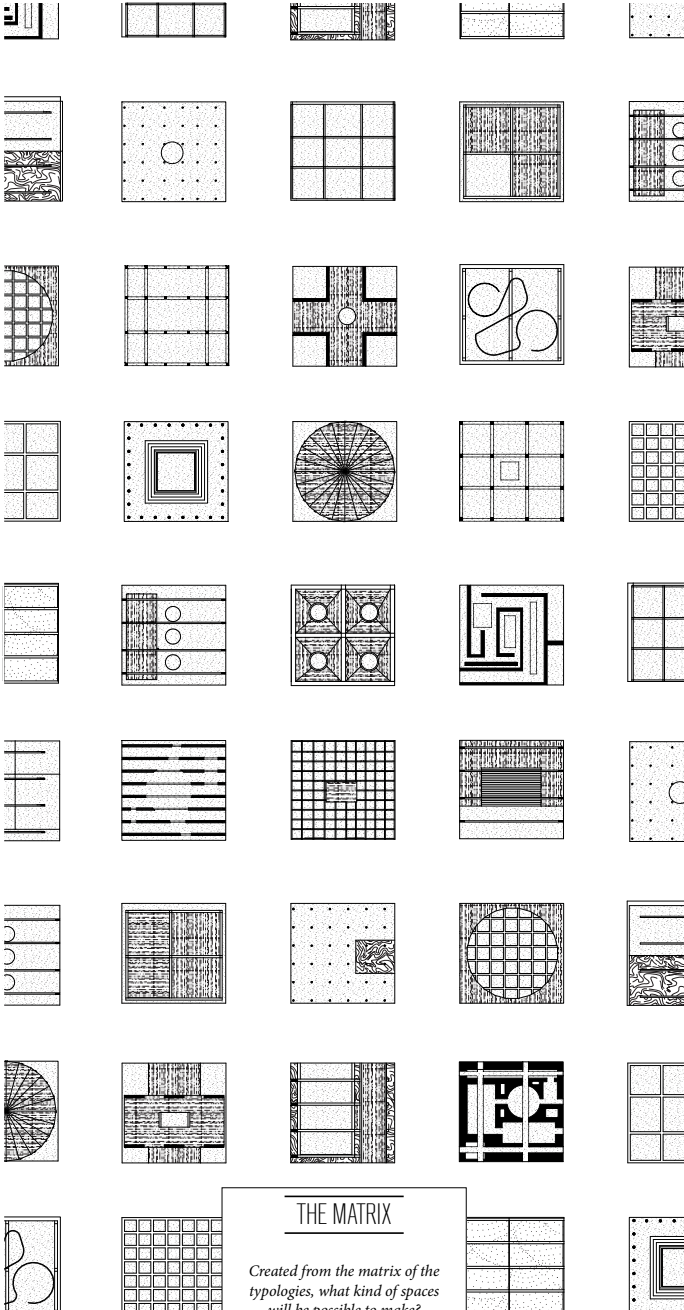


the Aalto



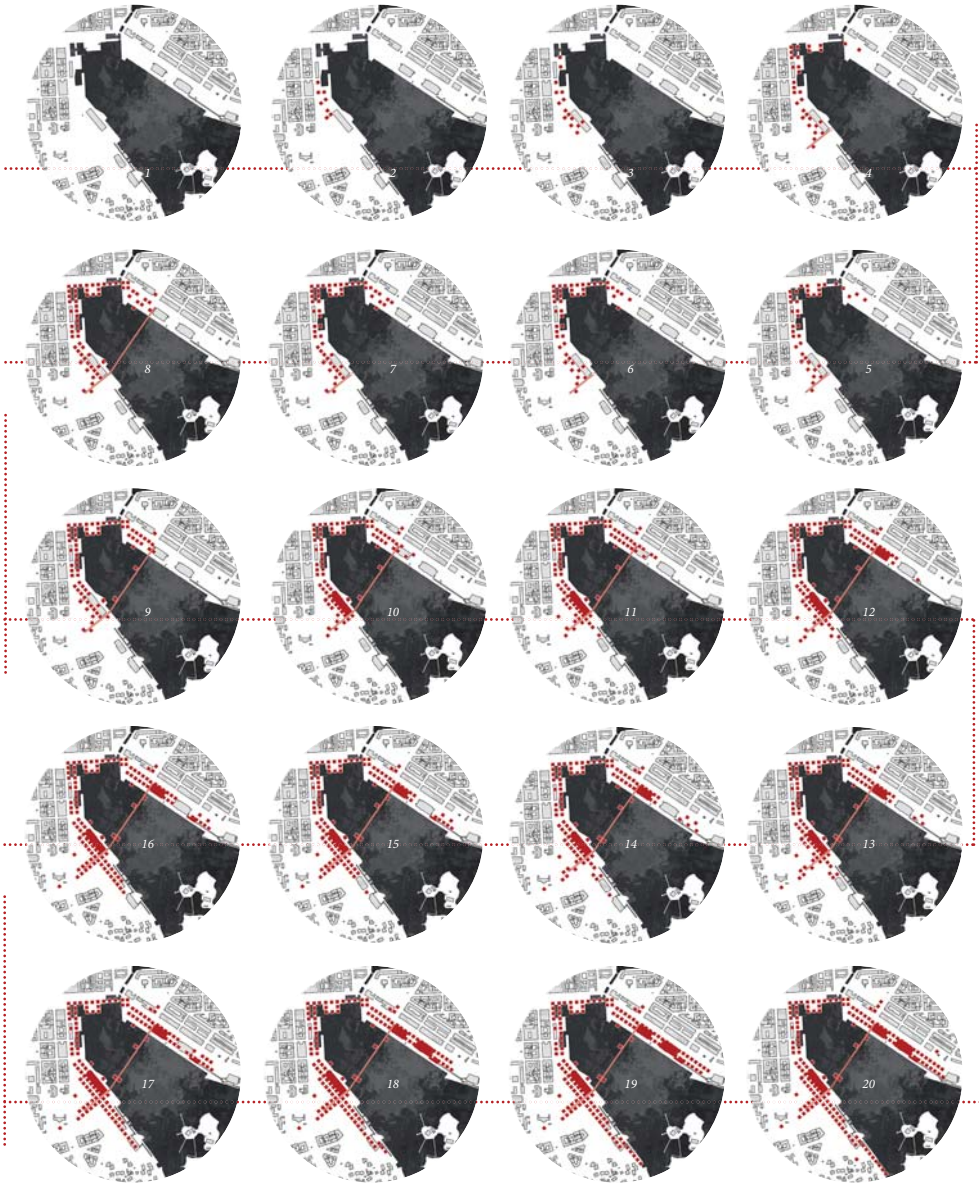
The Hämmänen





THE MATRIX

Created from the matrix of the typologies, what kind of spaces will be possible to make?



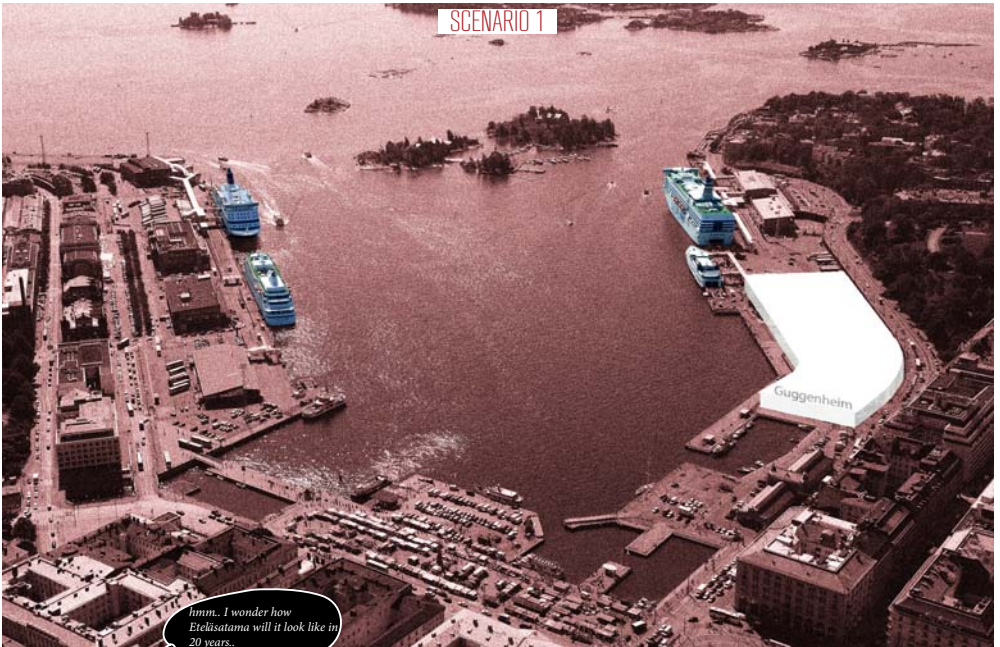


THE NEW LAYER

Within 20 years, could we introduce a new layer: Add a new grid to the existing one, allowing the inhabitants themselves to fill it, shape it, create it. A new community arrives, asking to take responsibility for the this new structure that becomes their home for work and leisure.

YEAR 2035

SCENARIO 1



hmm.. I wonder how
Eteläsatama will it look like in
20 years..



GUGGENHEIM MUSEUM

*20 years has passed. The licence money is finally paid
down. The museum used to be the most modern.
But those days has passed. What now?*

YEAR 2035

SCENARIO 2



... just imagine the possibilities...



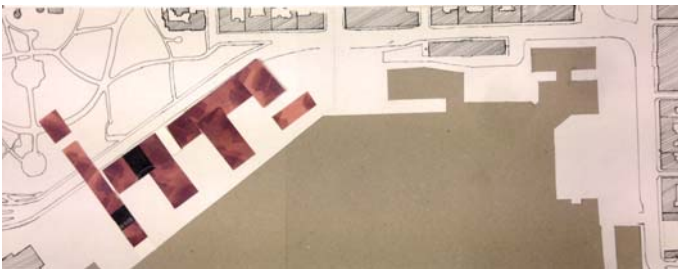
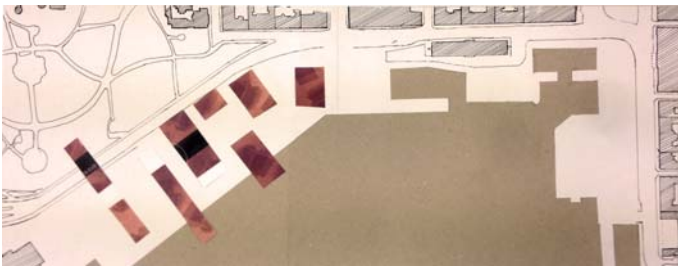
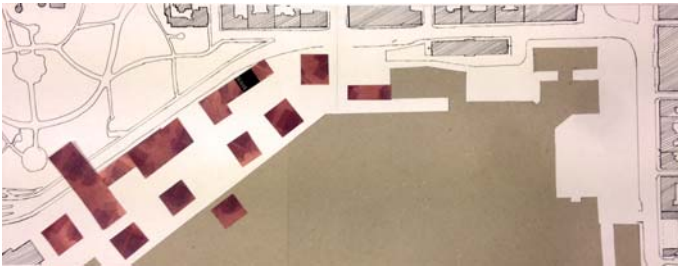
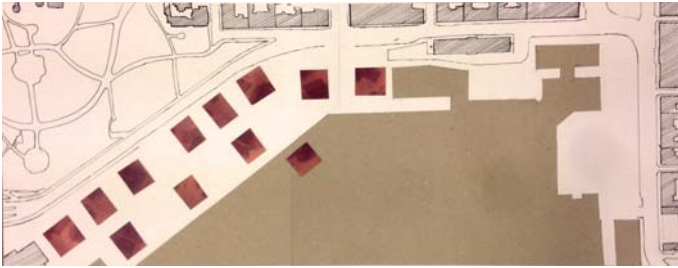
BRICKS OF PROCESSES

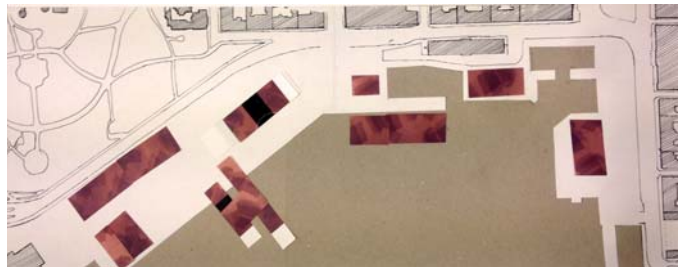
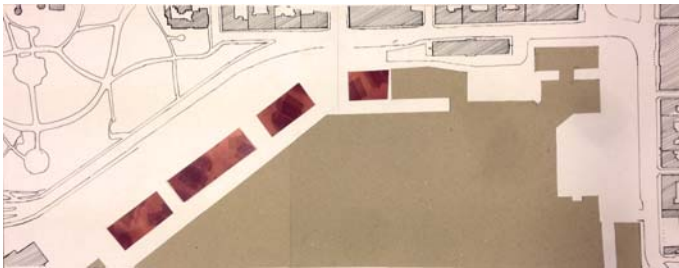
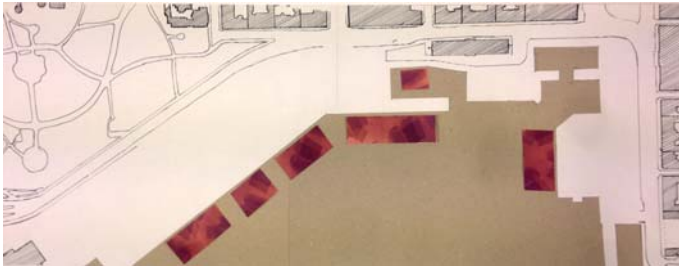
growing freely inside a given grid, adding a new layer to Eteläsatama. With this, can we achieve both variety and order? A kind of organized complexity which will develop with time after need, wishes and demands of the inhabitants

PROCESS

PHASE 2

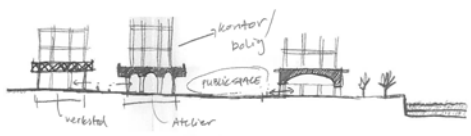
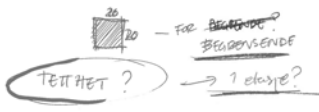
*A FEASIBILITY STUDY
OF THE SOUTH HARBOR
ETELASATAMA*





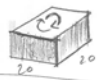
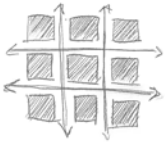
VOLUMSTUDIER

Hvordan plassere volumene? Strategien tok utgangspunkt i et utbyggingsgrid på 20 x 20 meter. Men i virkeligheten vil det ikke nødvendigvis bli bygd slik. Hva slags rom ønsker man, og hvordan foregår utviklingen?



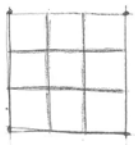
FEKSIBILITET?

WHIARSK — ALLE GATER LIKE STØRE?

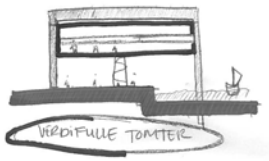


→ SOM TYPE?? Å UTFORSKE DEN?
TEGNE UT 1/2/3?
VISE TIL SYSTEMER
↳ ARBEID/KULTUR/KOLEKTIV/
NÆRING

HVA ER STYKKE I PROSJEKTET?



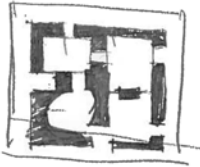
HVORDAN?



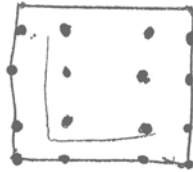
↳ STATEN BYGGER
"MULIGHETENS KLASSER"
OR GIR GRID

BYEN TRENGER: TETHET | BOLIGER | NÆRINGSGRUNNLAG..

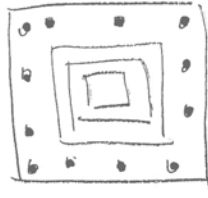
THE ARTICULATED SPACE



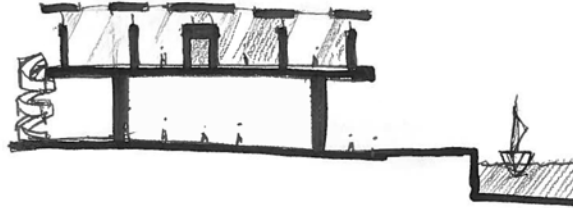
THE OPEN SPACE



THE AMFI

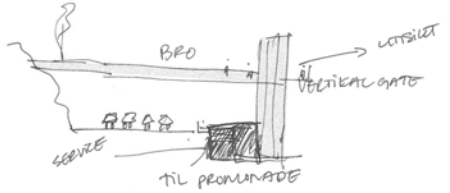


- PÅ LAND
- PÅ VÄNDBAST
- PÅ VÄNN
- I LUFTA

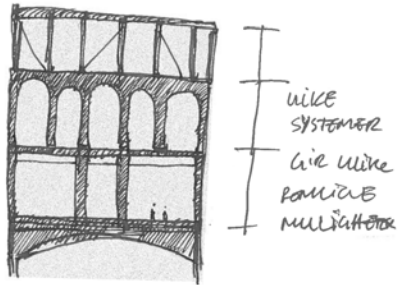
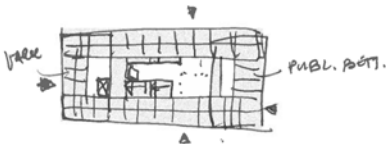


"PARK + FOLLIES" ⇒ DET OFFENTLIGE ROM

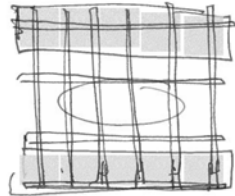
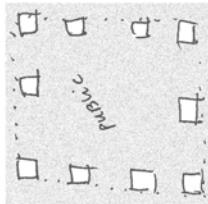
STACKED — FOR DENSITY.
 FOR NEW RECREATIONS,
 PUBLIC SPACE IN 3RD DIMENTION.



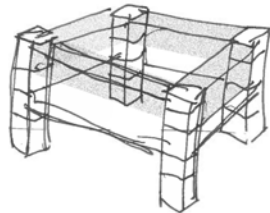
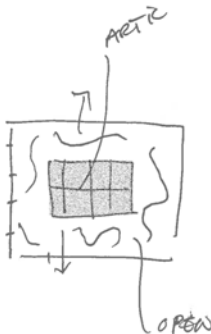
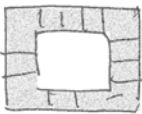
WHAT KIND OF ROOMS?

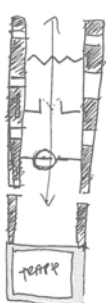


HALLWAY?

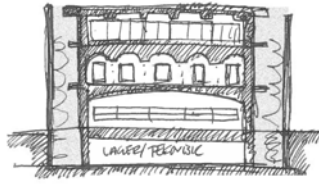


INDUSTRY TOOTH

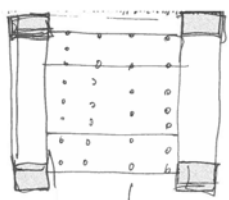




↓
 LI BIBLIOTEK
 AN HUBUNGAN
 DISEG KAN SE UT

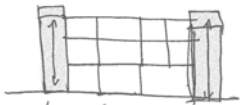


— MARKEDS FORING?
 — TEKUNIC ROM?



SACK
 INSTITUTE

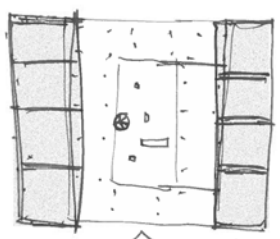
Capid
 SPACE



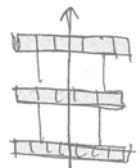
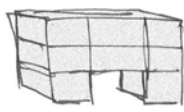
ut/inn etc.



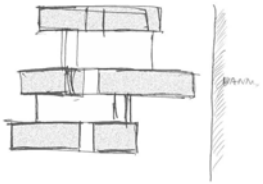
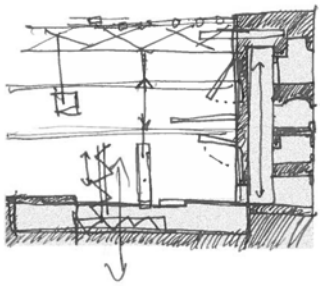
THE GENERAL / THE SPECIFIC

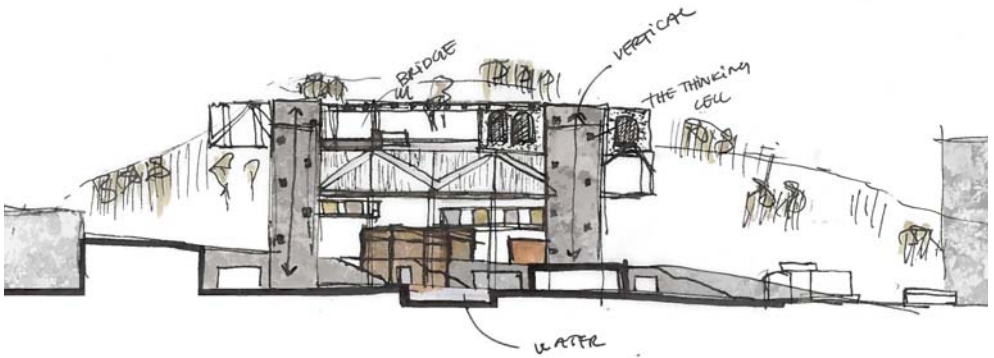
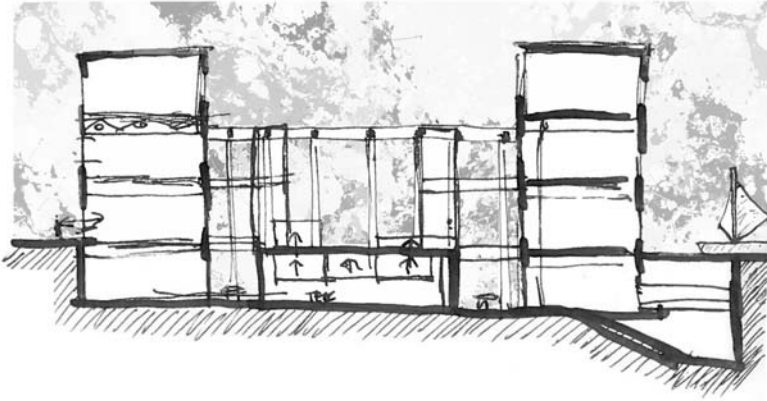


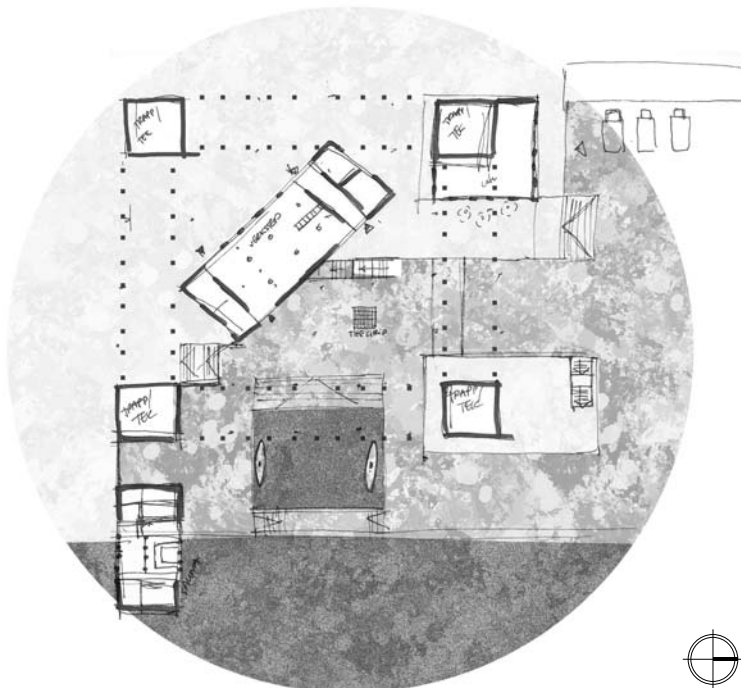
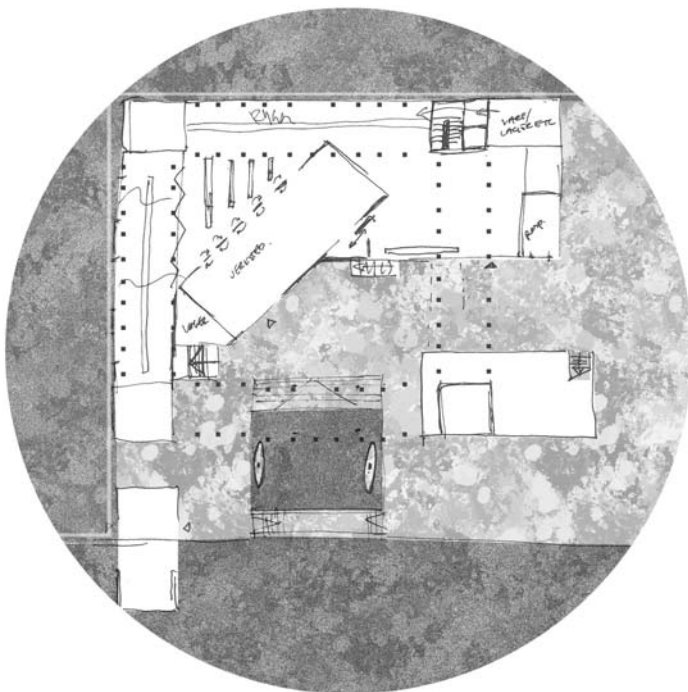
fast open fast

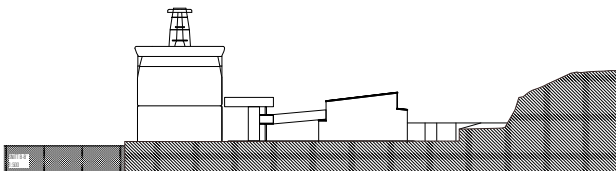
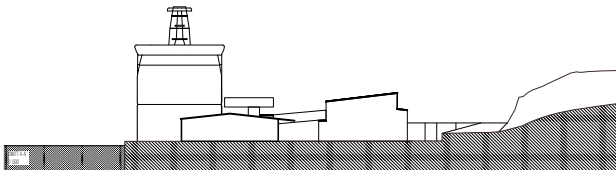
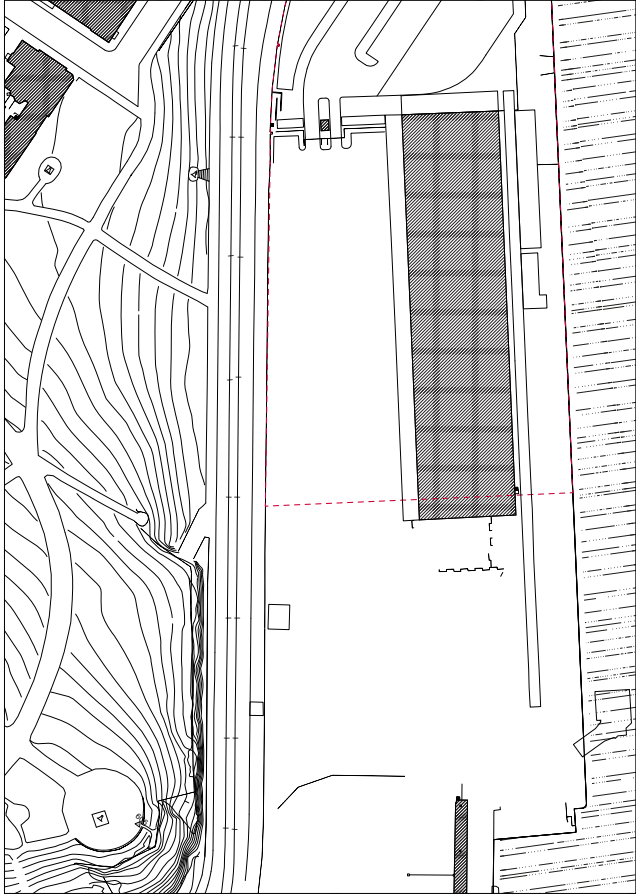


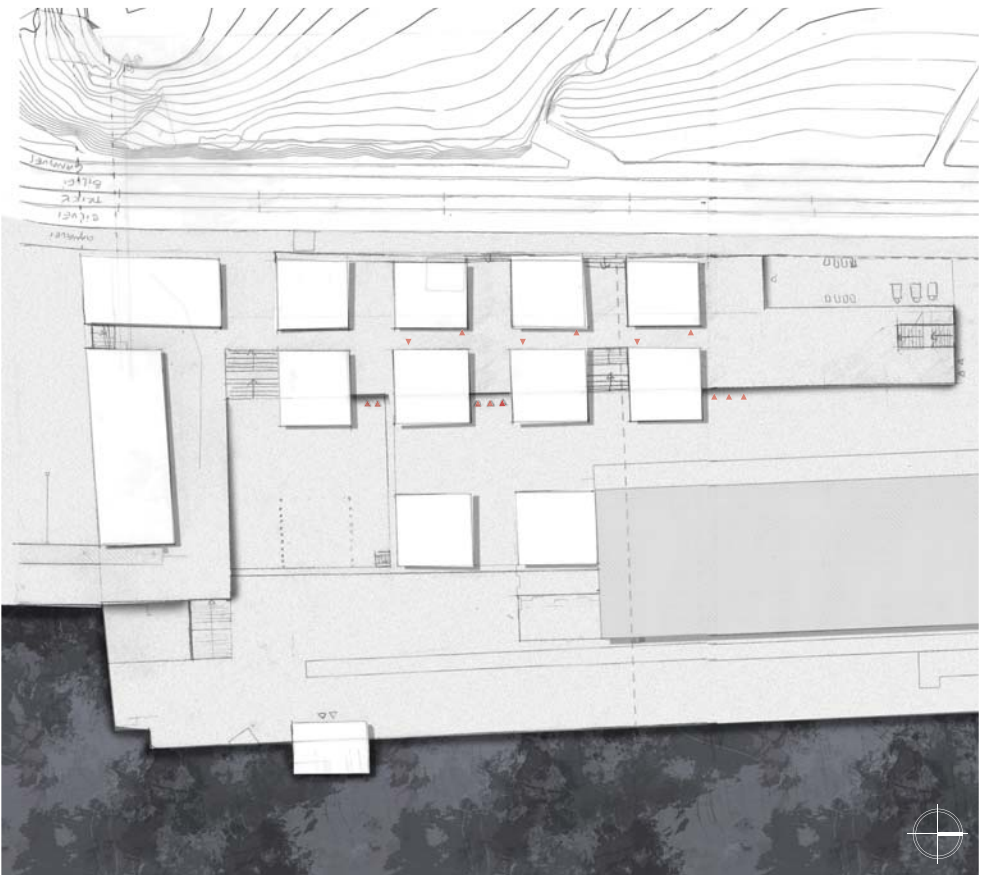
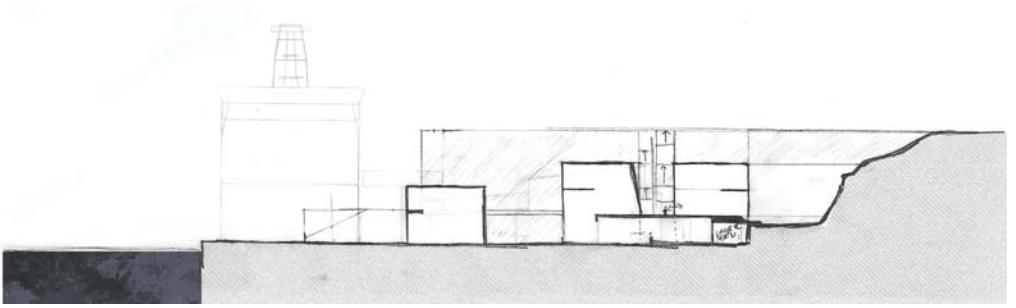
KAN WINDOT
 ETHER BERTOV/utruking



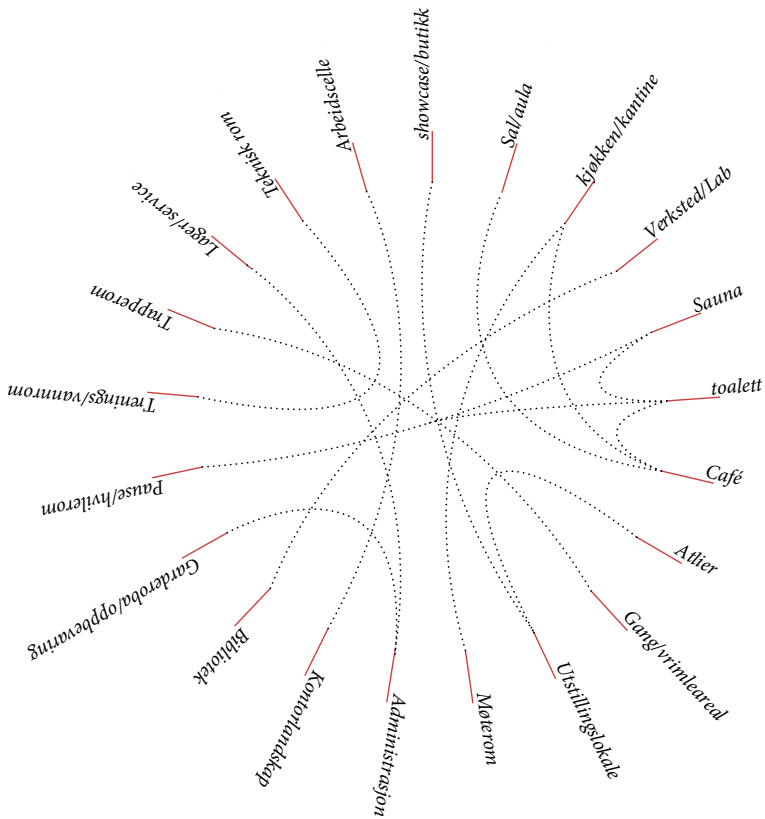








ROM	PREMISSER/MULIGHETER	STØRRELSER
Showcase/butikk	(U+I) Åpen fasade, gaterelasjon	
Sal/aula	(U+I) Åpent rom, landskap, retning	
Kjøkken/kantine	(U+I) Et større, delt?	
Verksted/Laboratorium	(U+I) stål, tre tekstil, 3d, audio/visuell	
Sauna	(U+I) Mot vannkant, skjermet	
Toalett	(I) Skjermet, privat + offentlig	
Café	(U+I)Gaterelasjon, åpen fasade	
Arbeidsrom	Uleie, kjøpt av bedrifter, åpne plasser	
Arbeidselle	(I) Skjermet, intimt	
Atlier	(I) Stor høyde, bredde, åpent	
Møterom	(U+I) Variert størrelse, åpent/lukket	
Kontorlandskap	(I) Akkustikk, åpent	
Gangareal/vrimleareal	Utstilling, pauseareal, ventareal	
Utstillingslokale	(U+I) Åpne, fleksible, lys	
Administrasjon	(I) Nær inngang	
Lager/Service	(I) Base, kjerne, rygg?	
Bibliotek (materialer/bøker etc)	(I)	
Teknisk rom	(I) ventilasjon?	
Trapperom	(I+U) Kjerne, slange, rett?	
Trenings-/vannrom	(I+U)	
Pause/hvile/soverom	(I+U)	
Garderobe/oppbevaring	(I) Låsbare	



PROGRAMANALYSE

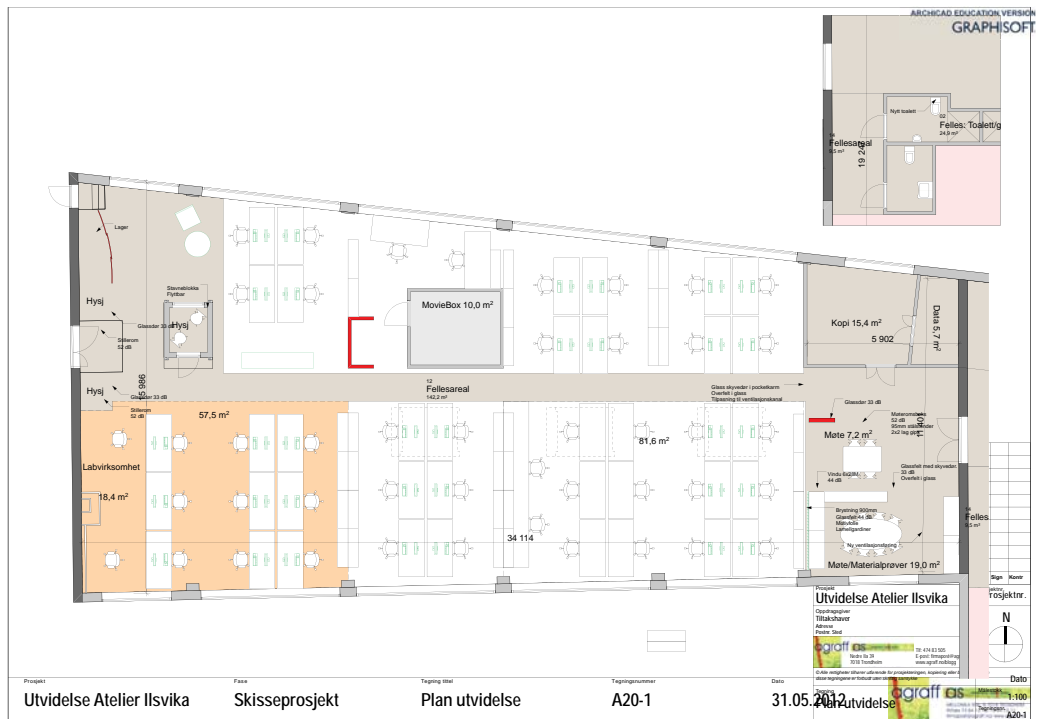
Hva slags rom er nødvendig i byggene? Hvilke premisser har de, og hvilke type rom kan knyttes sammen?

Rooms by categories

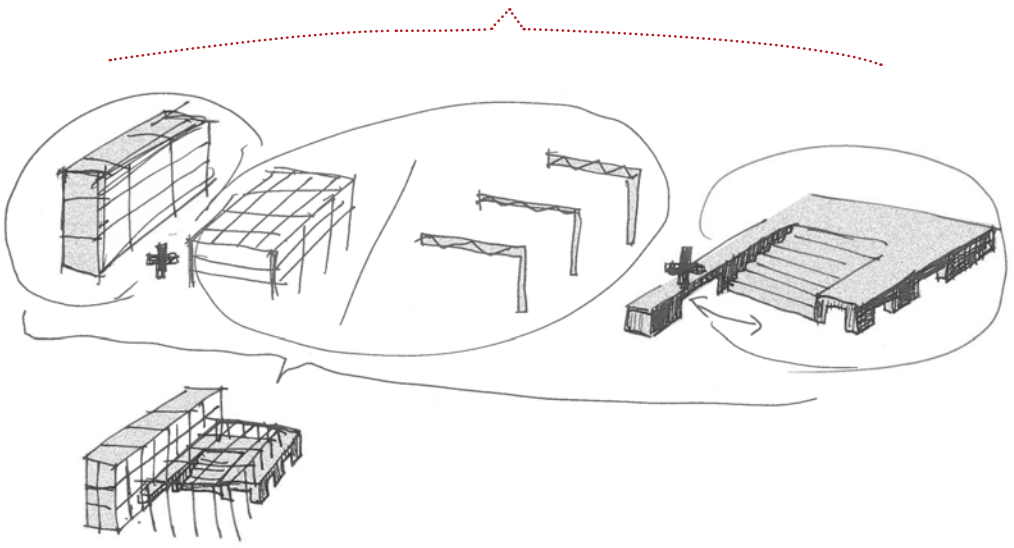
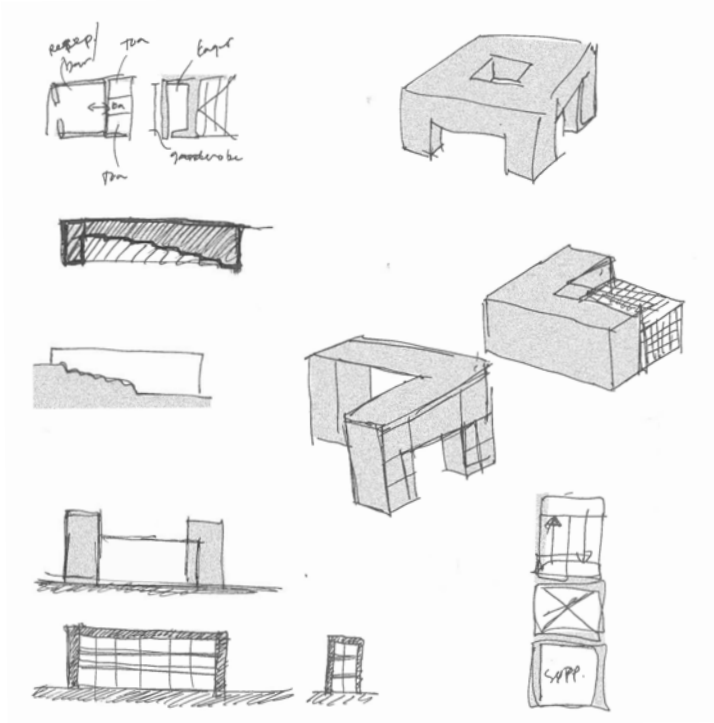
17/03/15

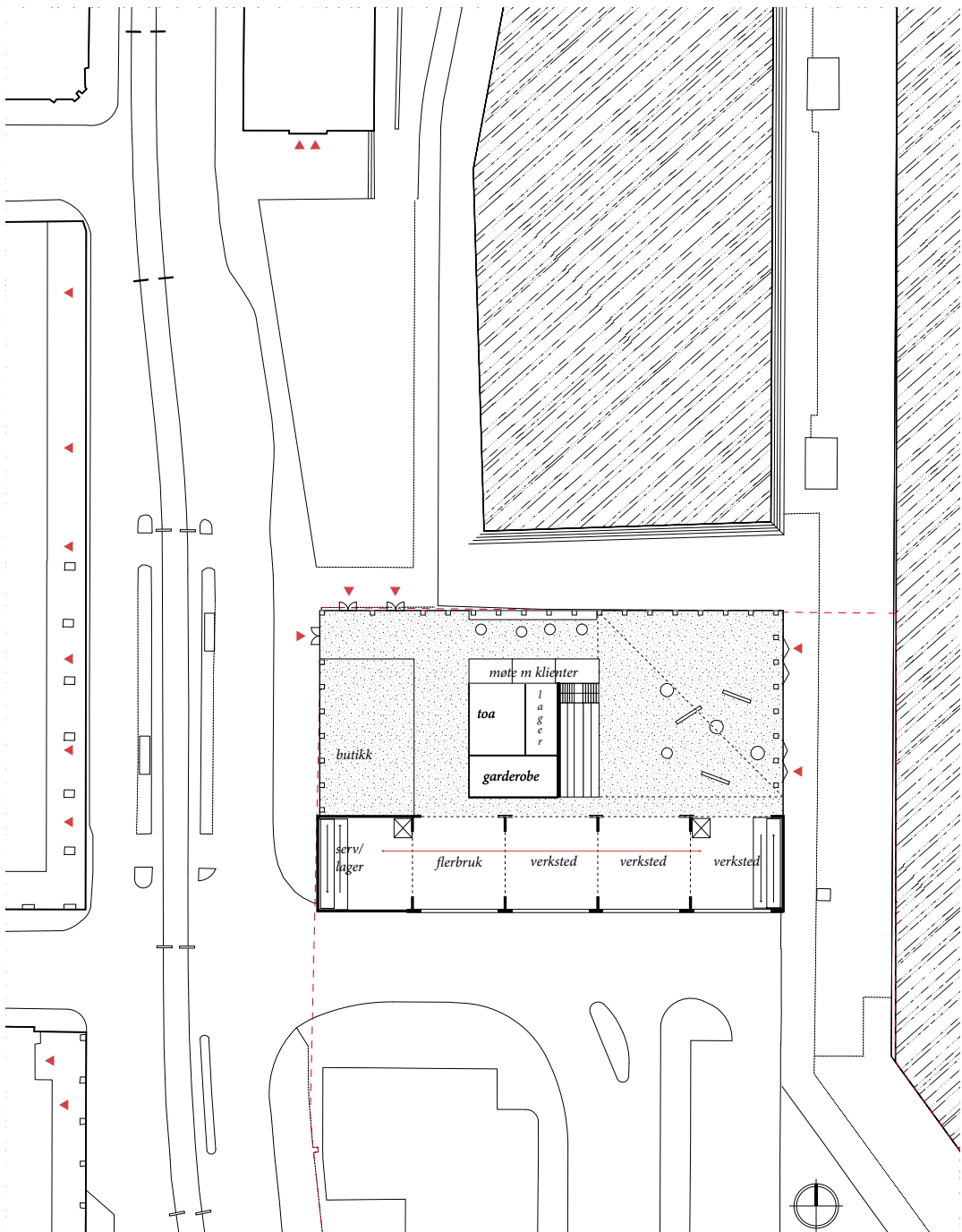
Zone categories	Story	Room	Floor Type	Room height	Perimeter	Wall surf.	Measured Area
Kontor/foretn. Butikk	2. Etasje	Snekkerverksted		2 400,00 mm	23 849,09 mm	57,20 m2	35,45 m2
	2. Etasje	Keramikerverksted		2 400,00 mm	13 787,22 mm	33,07 m2	11,72 m2
	2. Etasje	Malerverksted		2 400,00 mm	13 637,26 mm	32,71 m2	11,43 m2
	2. Etasje	Gipsverksted		2 400,00 mm	12 315,20 mm	29,54 m2	8,88 m2
	2. Etasje	Fotostudio		2 400,00 mm	33 330,94 mm	44,37 m2	64,23 m2
Kontor/foretn. B...	2. Etasje total				96 919,70 mm	196,89 m2	131,71 m2
Kontor/foretn. Butikk total					96 919,70 mm	196,89 m2	131,71 m2
Kontor/foretn. Kantine							
	2. Etasje	Kantine m kjøkken		2 400,00 mm	43 344,06 mm	6,48 m2	94,66 m2
Kontor/foretn. K...	2. Etasje total				43 344,06 mm	6,48 m2	94,66 m2
Kontor/foretn. Kantine total					43 344,06 mm	6,48 m2	94,66 m2
Kontor/foretn. Korridor							
	2. Etasje	Felles: Toalett/gar...		2 400,00 mm	31 193,63 mm	64,73 m2	24,92 m2
	2. Etasje	Motelounge m/te...		2 400,00 mm	28 990,22 mm	41,86 m2	49,65 m2
	2. Etasje	Fellesareal		2 400,00 mm	112 821,8 mm	38,26 m2	142,15 m2
	2. Etasje	Fellesareal		2 400,00 mm	91 546,21 mm	5,27 m2	89,03 m2
	2. Etasje	Fellesareal		2 400,00 mm	13 443,99 mm	7,16 m2	9,47 m2
	2. Etasje	Fellesareal		2 400,00 mm	12 661,19 mm	0,00 m2	8,84 m2

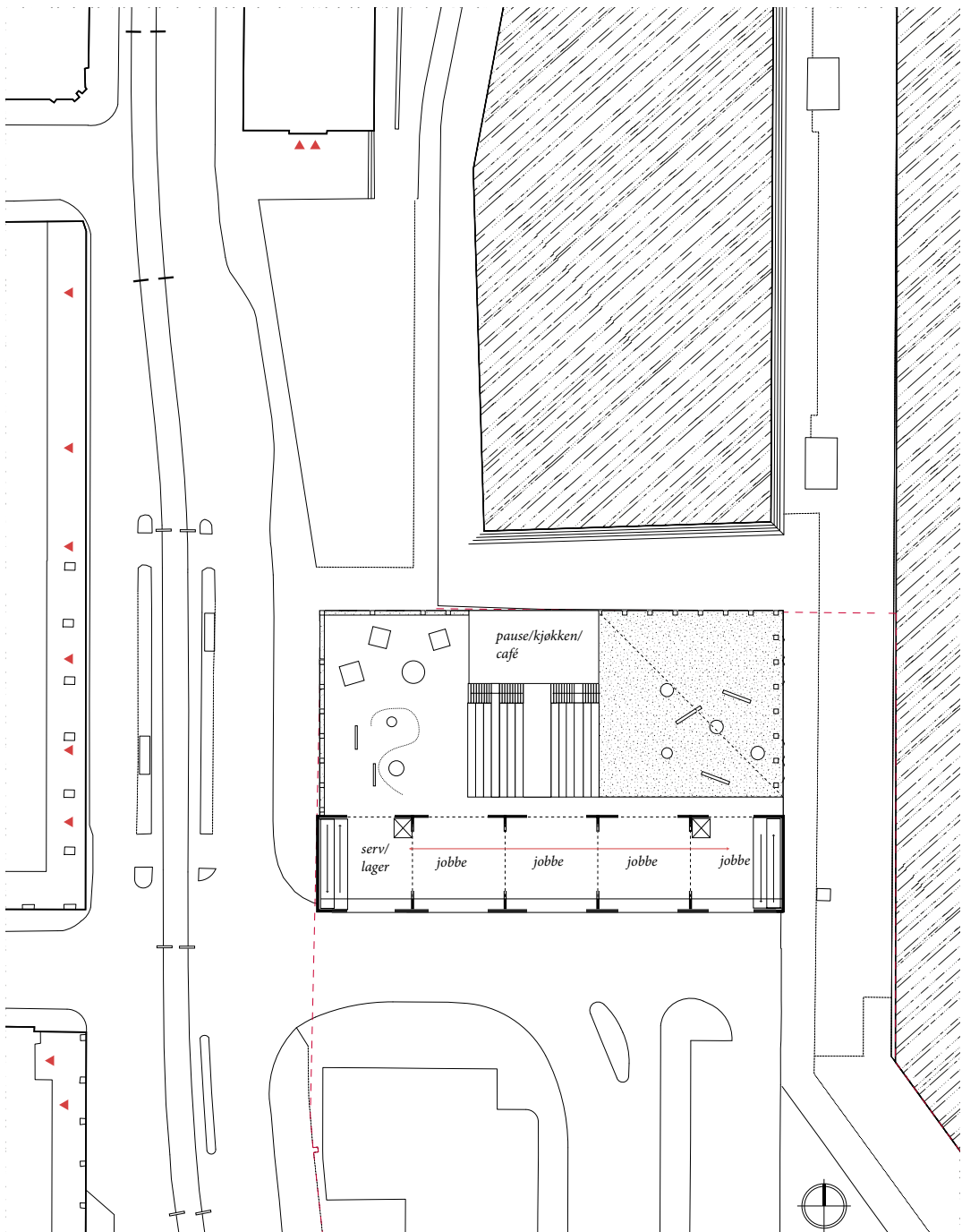
page 1

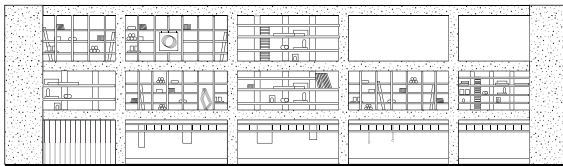
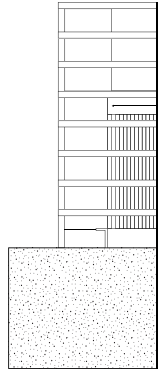
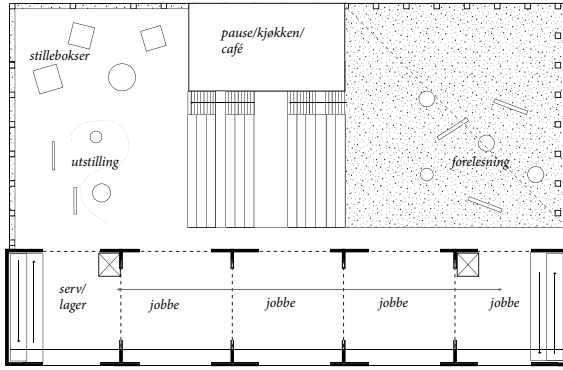
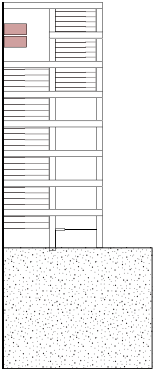
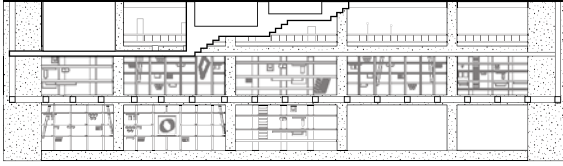


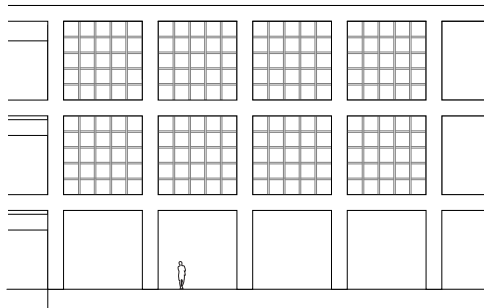
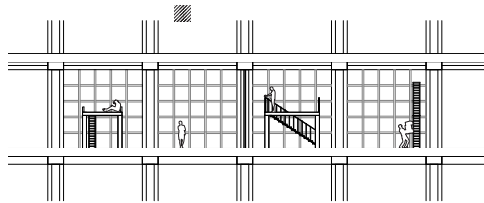
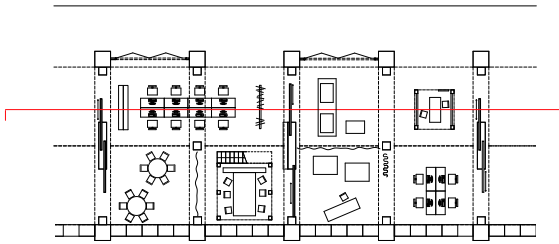
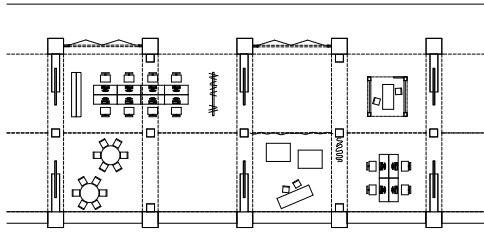
REFERANSE:
 ATELIER ILSVIKA



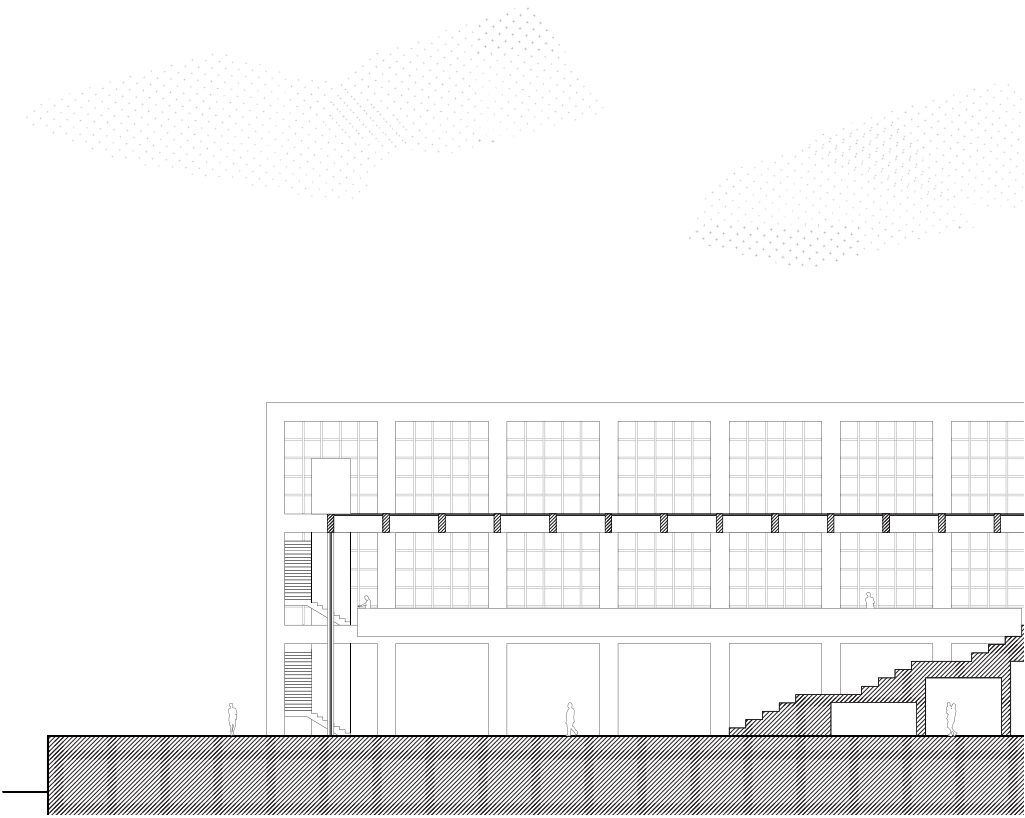


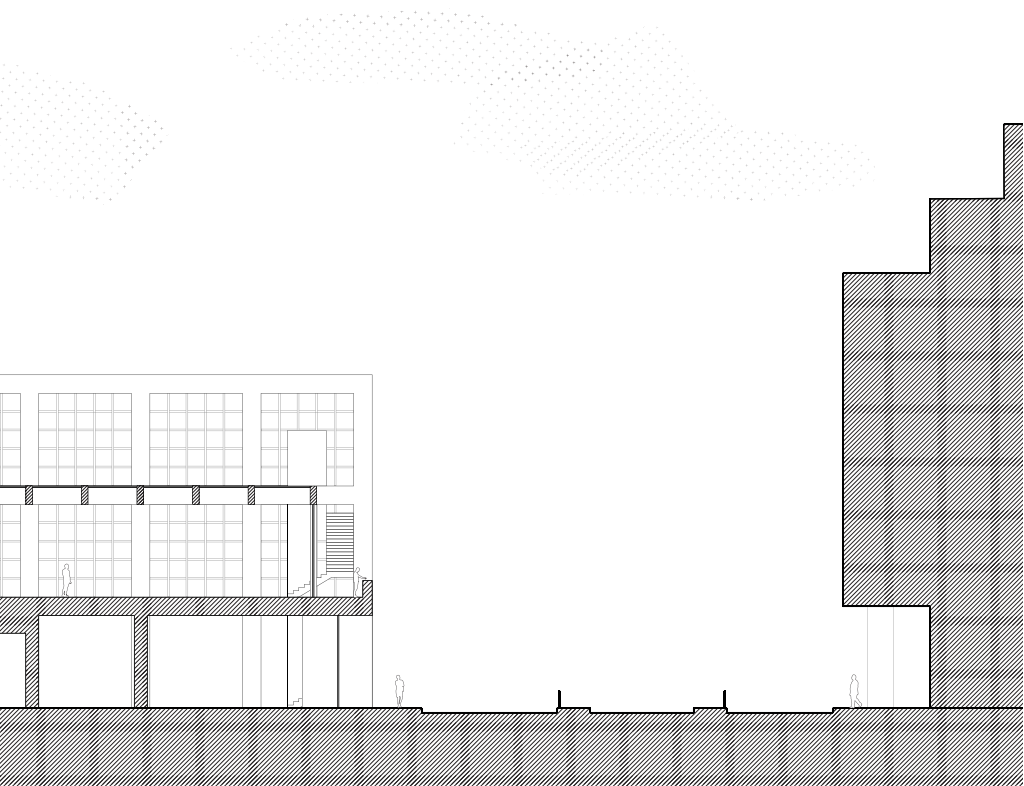


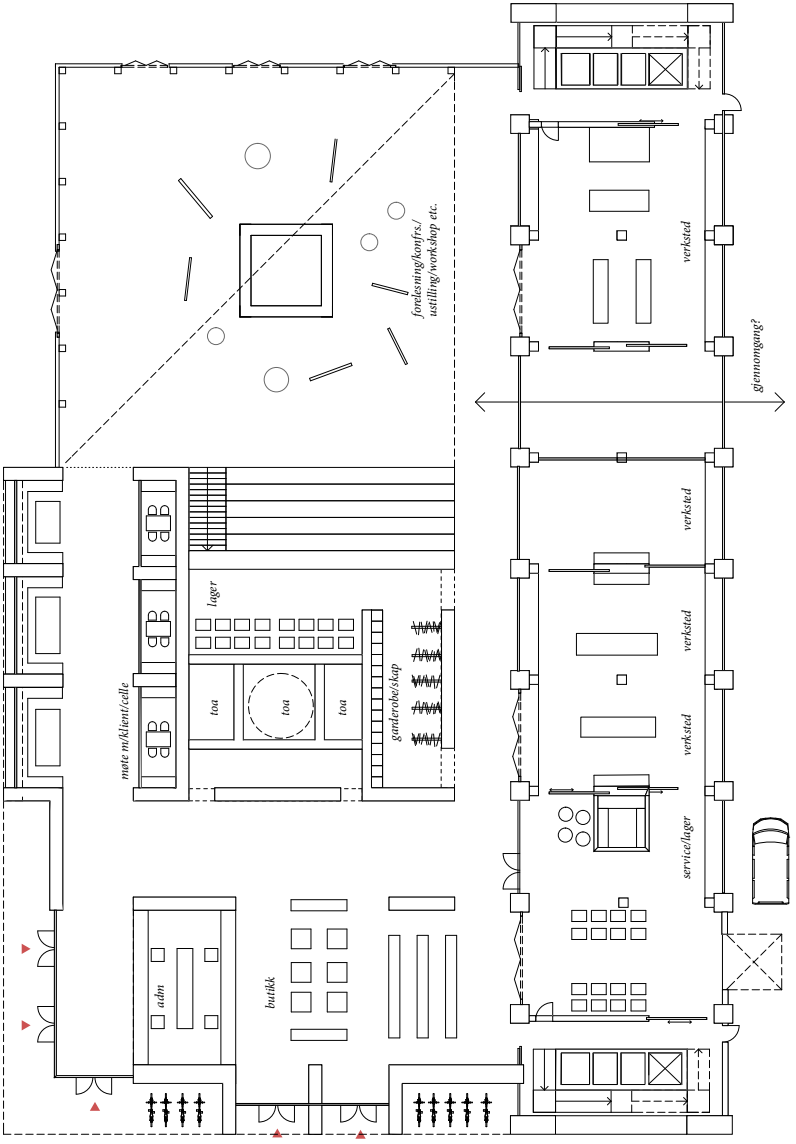
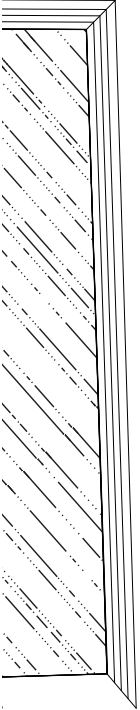


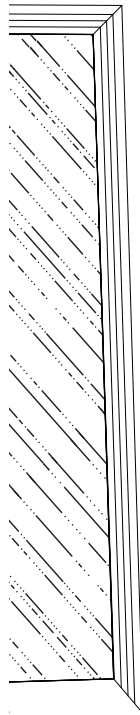
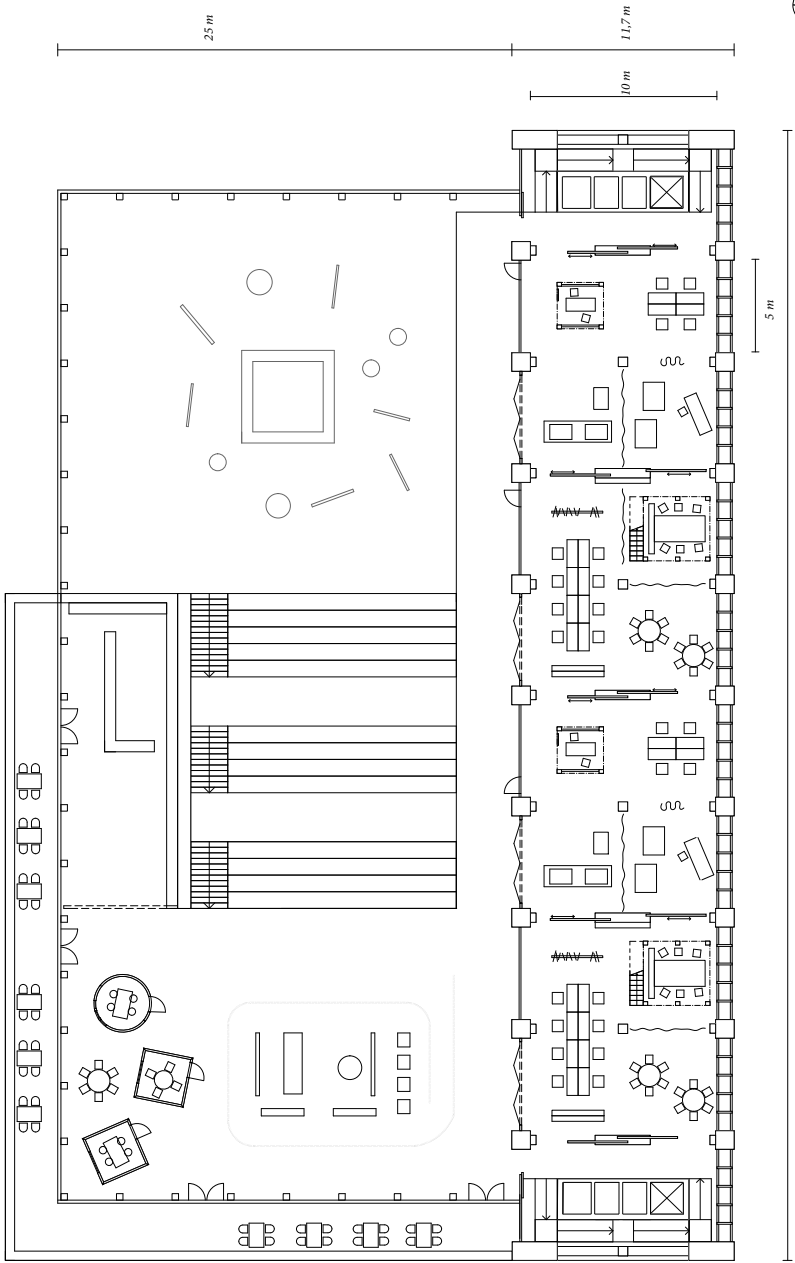


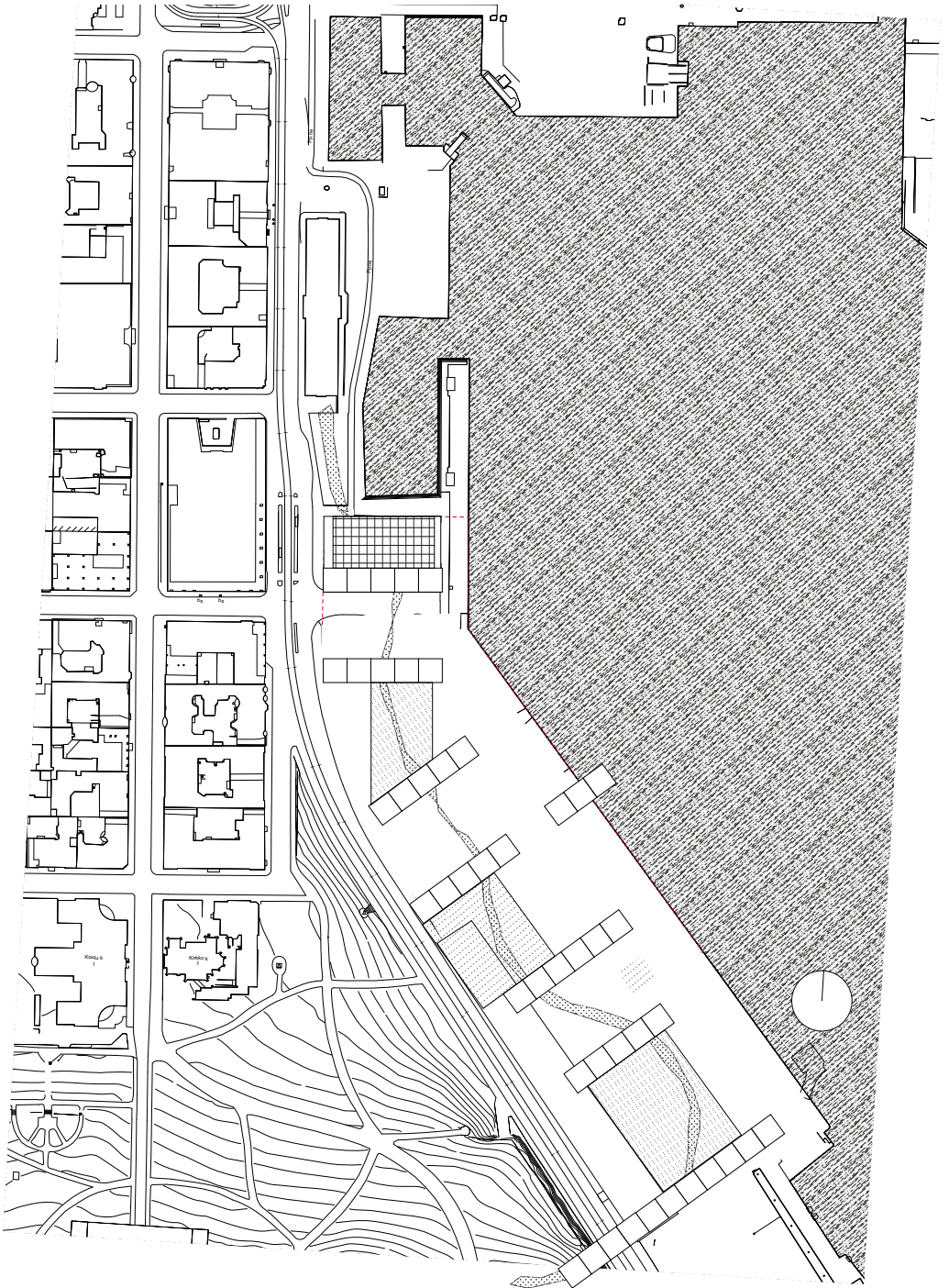
1:200

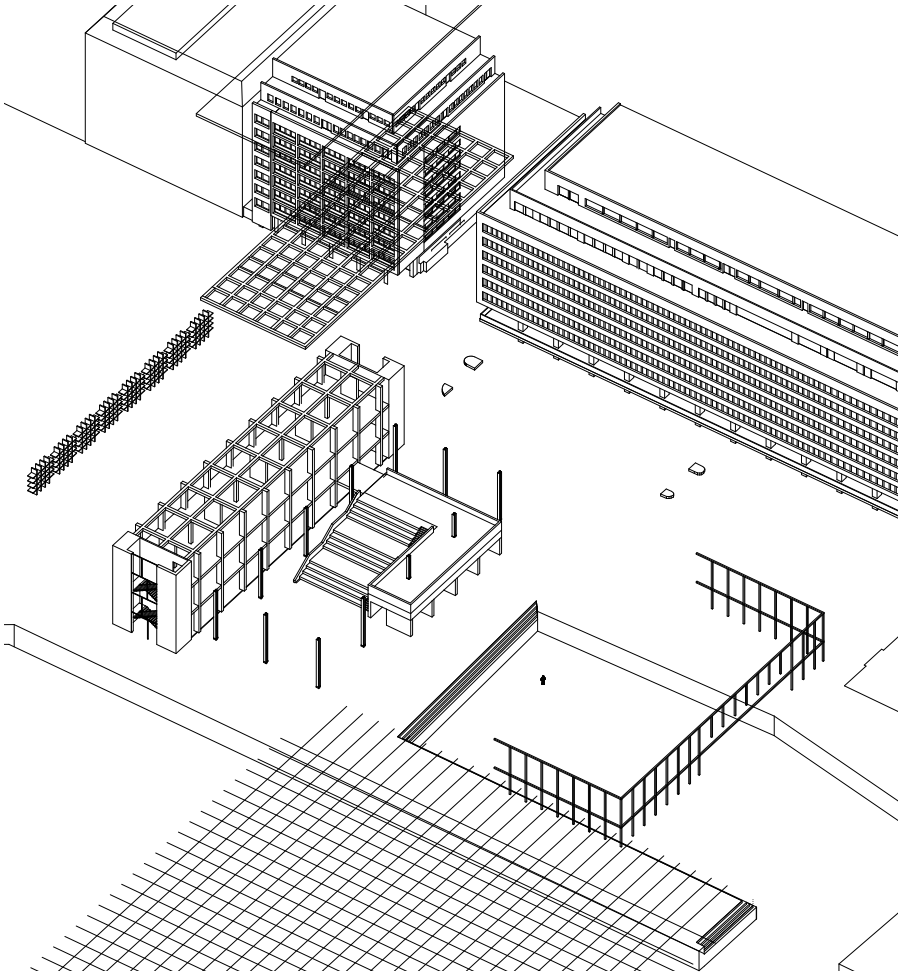


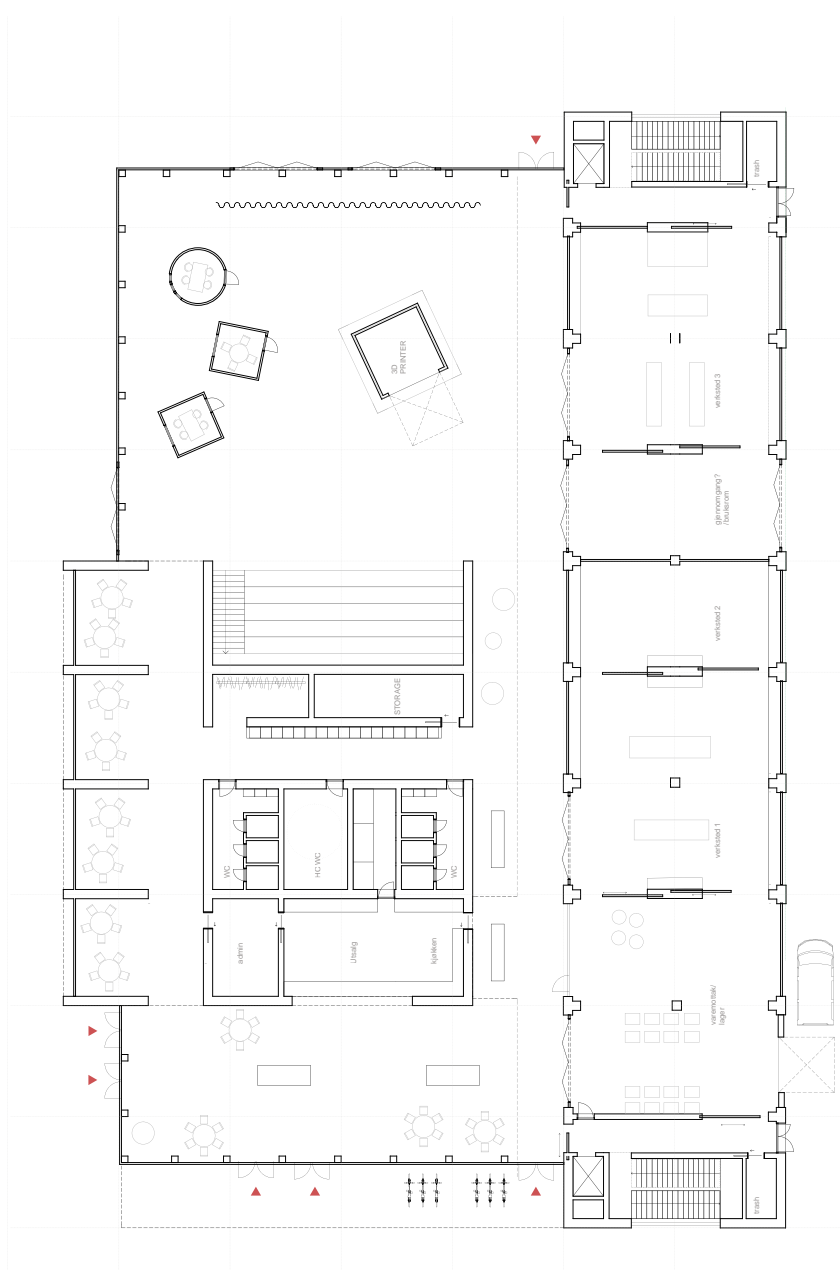
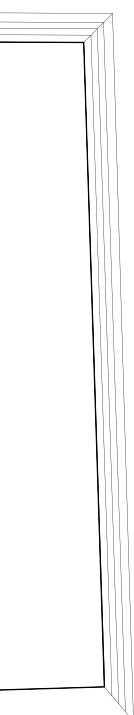


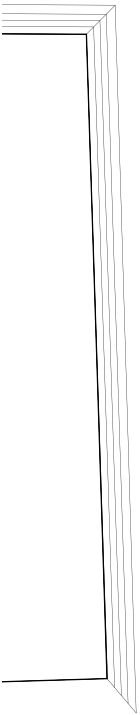
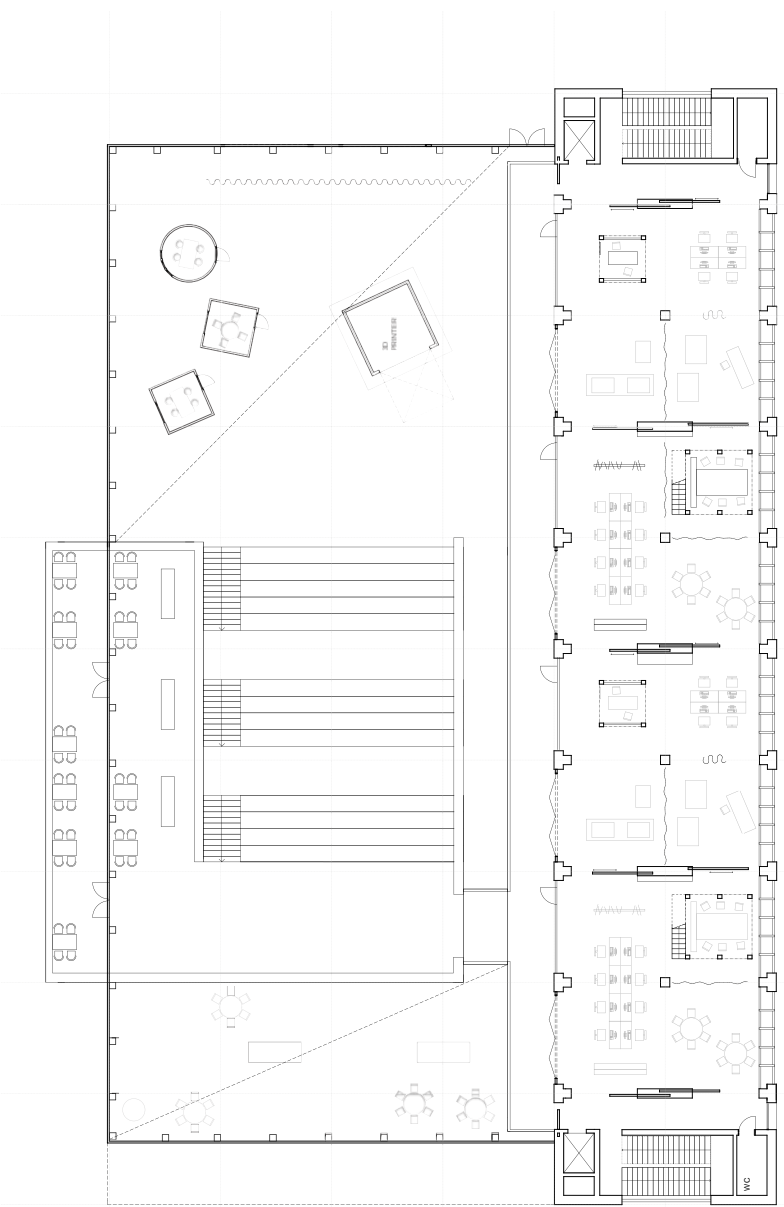






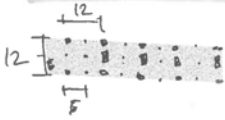






STRAT MODUL & STRUKTUR

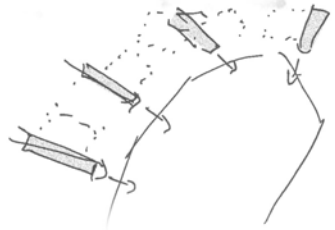
• MODUL FOR PROSESSER;



KAN VOKSE OG KRUMPE;



TO RETNINGER?

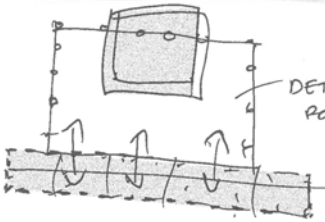


MYTER VERTIKALT PÅ VANNET;

- SIKKER SIKTLINJER (HØYERE ELEMENT)
- RETNING MOT VANNET

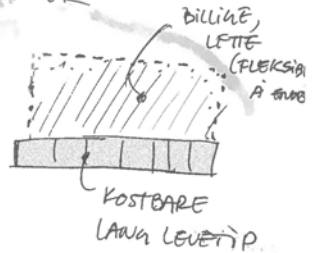
↳ MULIGHET FOR ROM MELLOM ELEMENTER

• STRUKTUR GLASSBOKS;

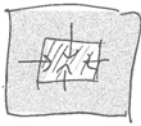


DET ÅPNE ROMMET } FLEKSIBELT, ARBEID + SHOWCASE + UTSTILLING.

DET ÅPNE "HAUNELAGRET" - VISER INNHOLD OG INVITERER.



TODAY'S FACTORIES



ISOLATED, OUT OF CITY



TOMMORROW'S FACTORY

UBRUNT;

SHOWS ITS CONTENT

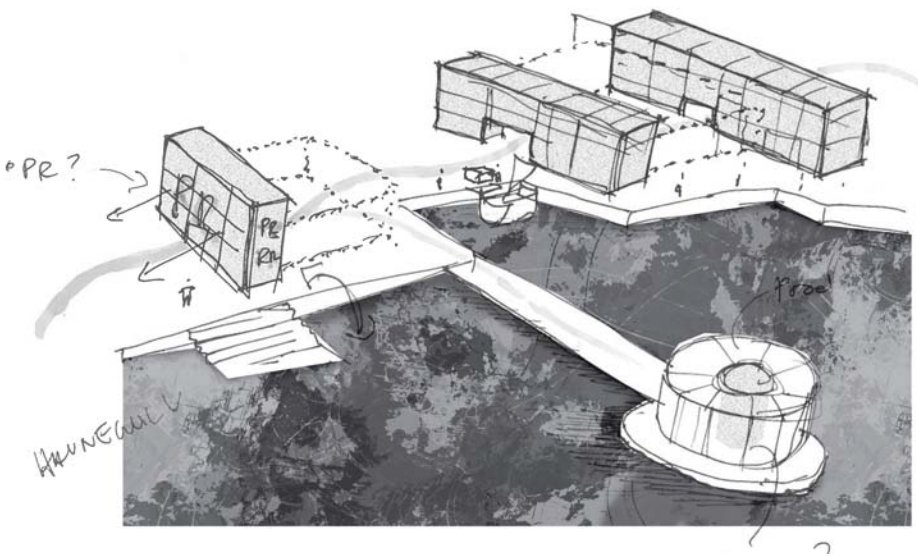
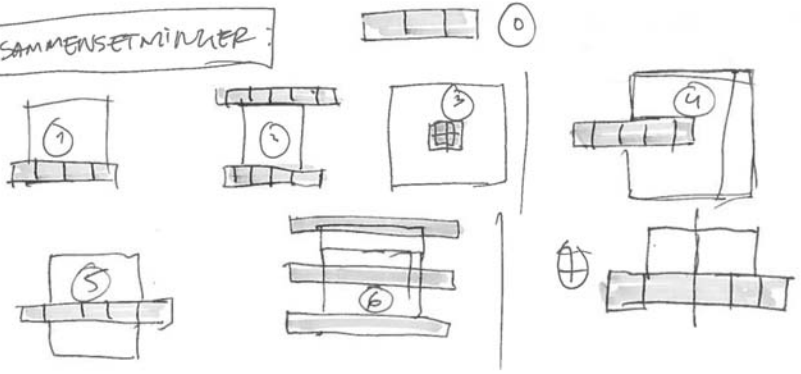
TRANSCATED INTO OFFICE, ATELIER, SHOP, SHOWCASE, MUSEUM, LECTURE, SHOWS, PLAYS, EXHIBITIONS ETC.

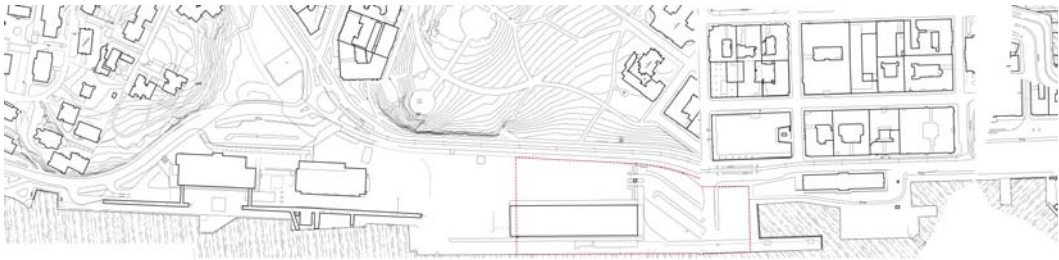
"EXPLODING THE BOUNDARIES OF THE MUSEUM"

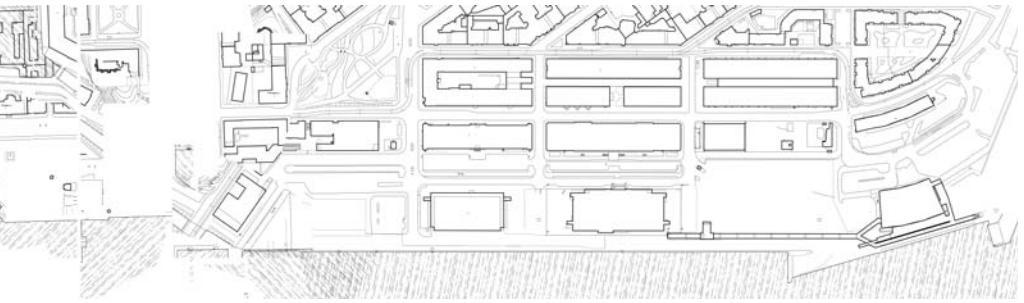
↳ THE MELTING POT / INTERVING OF DIFFERENT ASPECTS OF CREATING & MEETING & MAKING & INTERACTING.

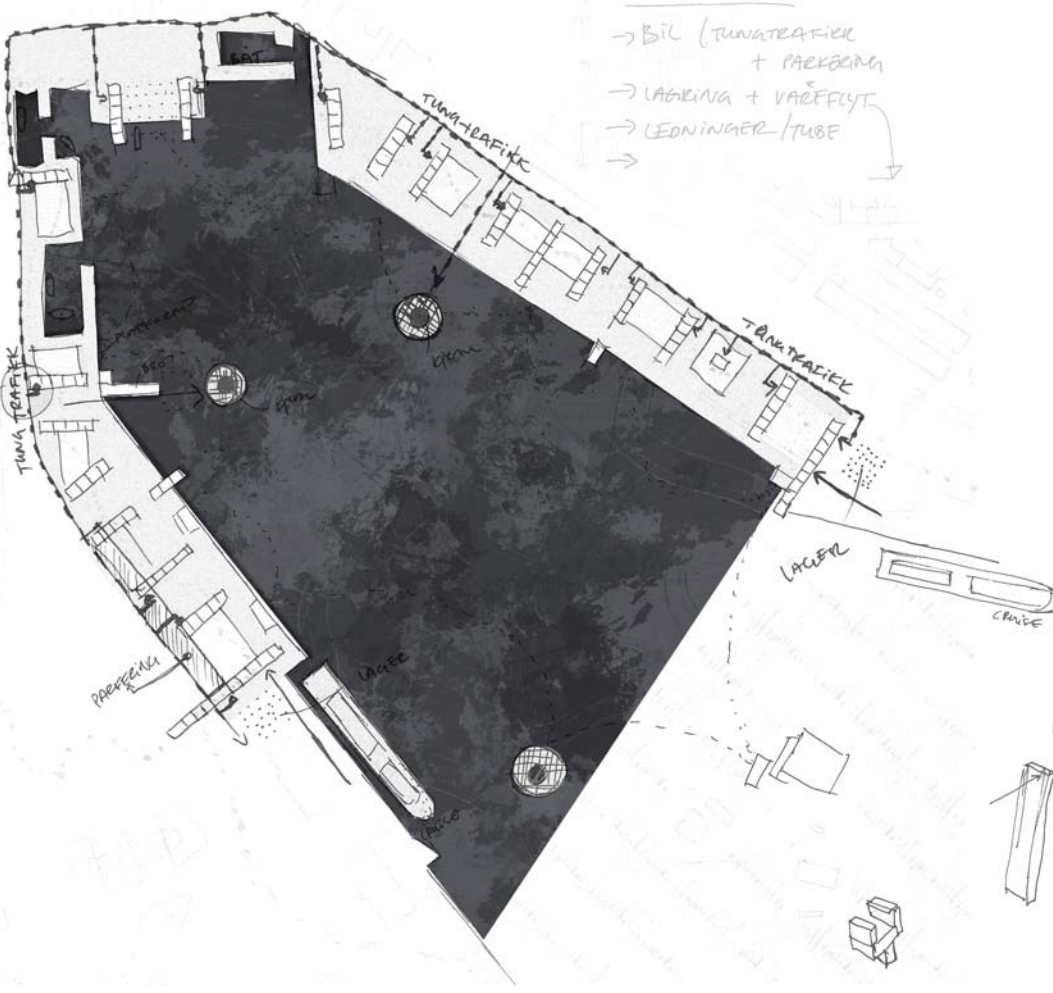


SAMMENSETMINNER



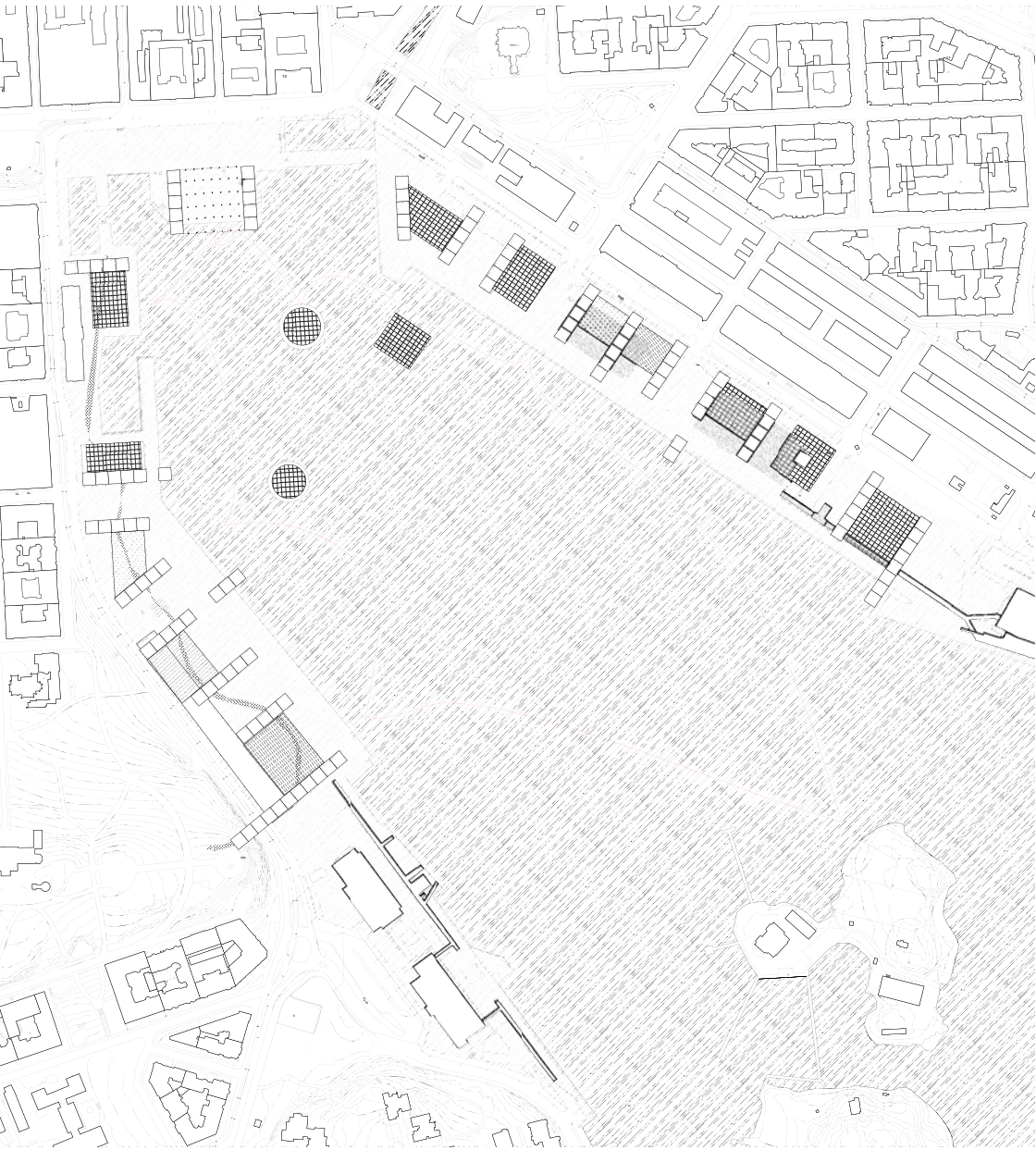






INFRASTRUKTUR

- BIL (TUNJA TERAFIK + PARKIRAN)
- LAGER + VAREFLYT
- LEDNINGER/TUBE
-



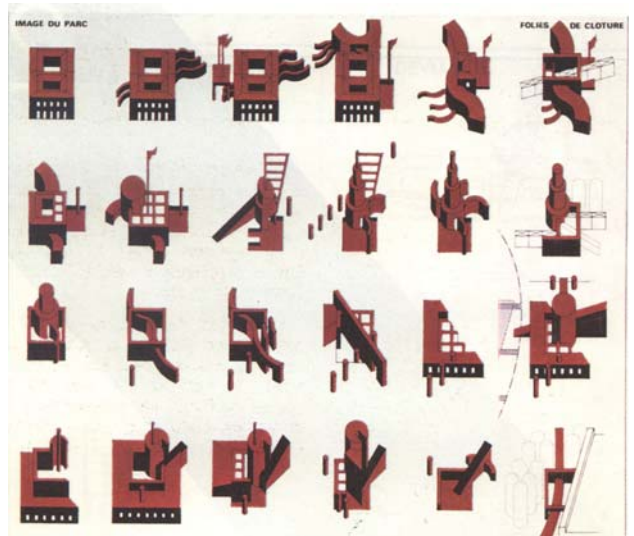
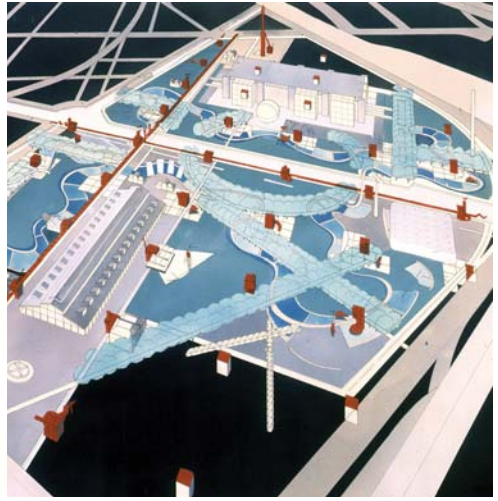
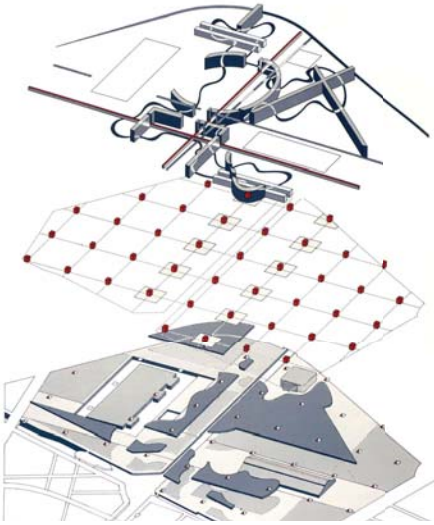




1 : 25 000

REFERENCES

*USED AS INSPIRATION AND
FOR REFERANCE DATA*

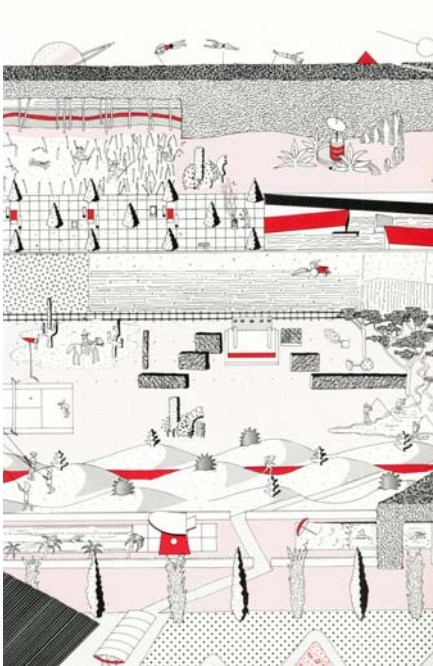


BERNARD TSCHUMI

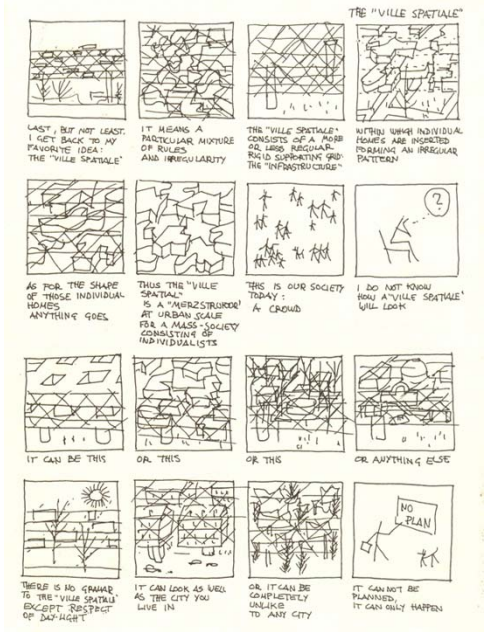
Park La Villette



Rem Koolhaas, *Delirious New York*



Rem Koolhaas



ville-spatiale

INSPIRATION



TEMPORÆRE PROG

SKUR 13, Tjuvholmen Oslo

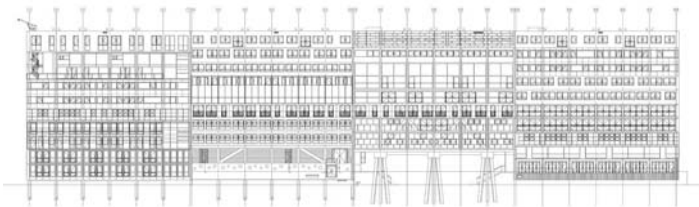
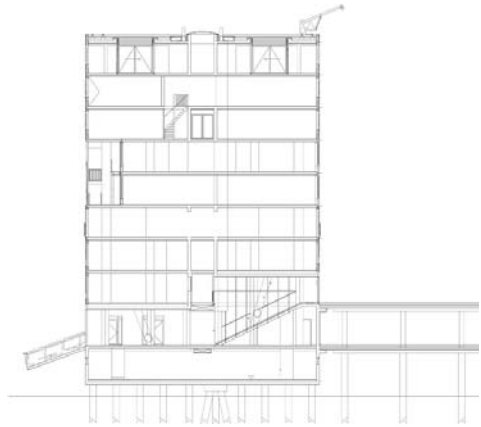


TEMPORÆRE PROG

FROSKEN, Tullinøkka Oslo
SUKKERBITEN, Bjørvika Oslo

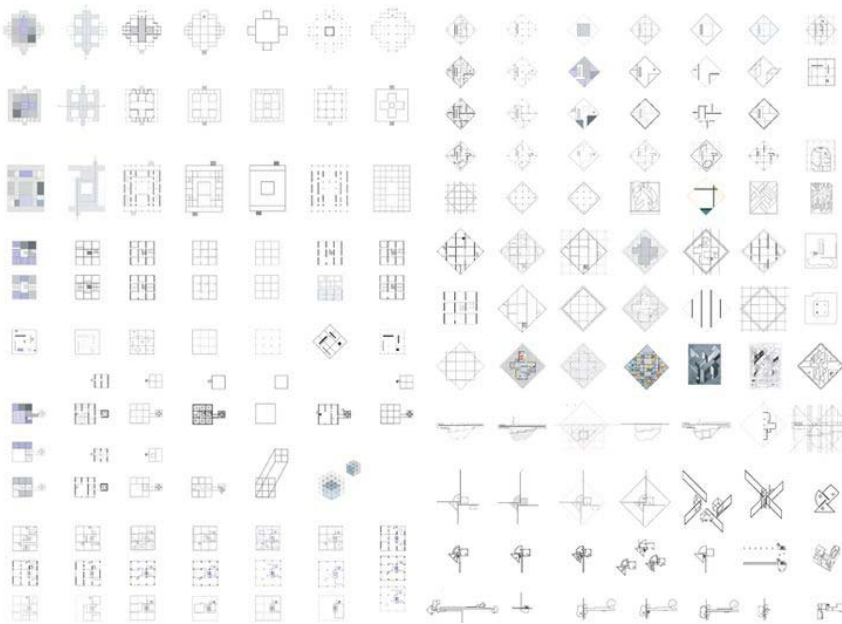
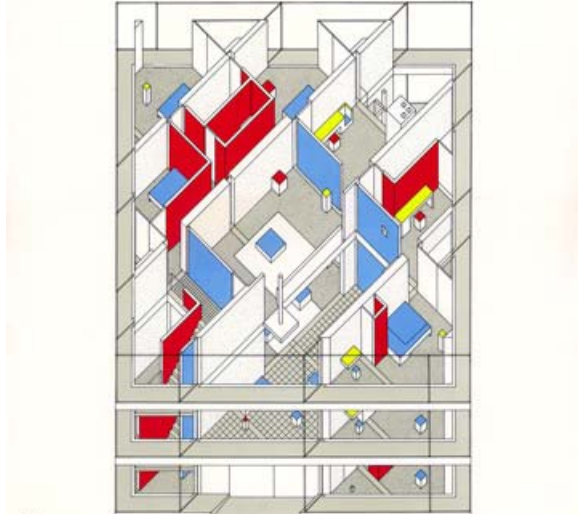
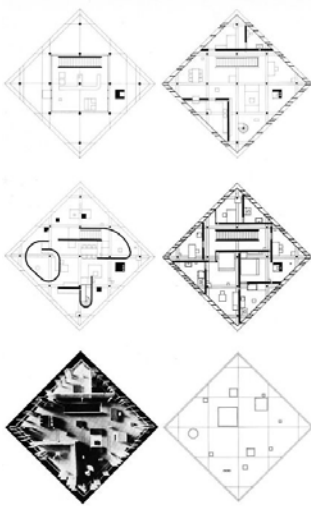


LOFTS	MULTI HOBBY	PATIO	MASONETTE
GYMNASIUM	UNITE	X-HOUSE	OFFICE/3 ROOM
PANORAMA		BALCONY	PANORAMA
PANORAMA	SENIOE	SENIOE	GARDEN HOUSE
HOBBY	STUDIOS	LIVE & WORK	CONDOZ
VALERIUS HOUSE	STUDIOS	WORK LOFT	3 BEDROOM FLAT
VENETIAN WINDOW	HALL & TRAY	MARINA	FAMILY HOUSE
	STORAGE		LIV. & WORK LOFT



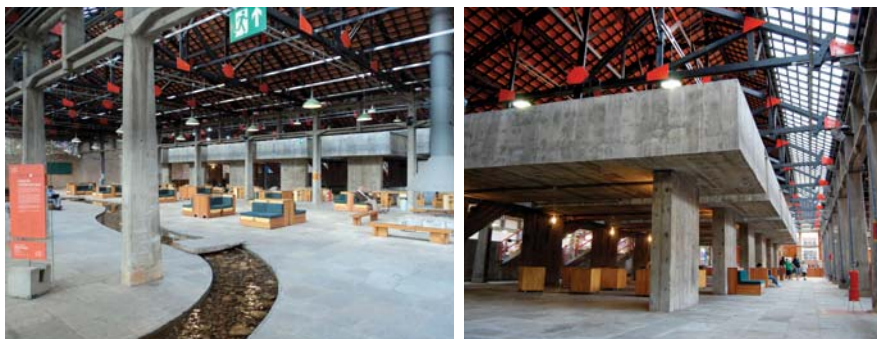
SILODAM

MVRDV, Amsterdam

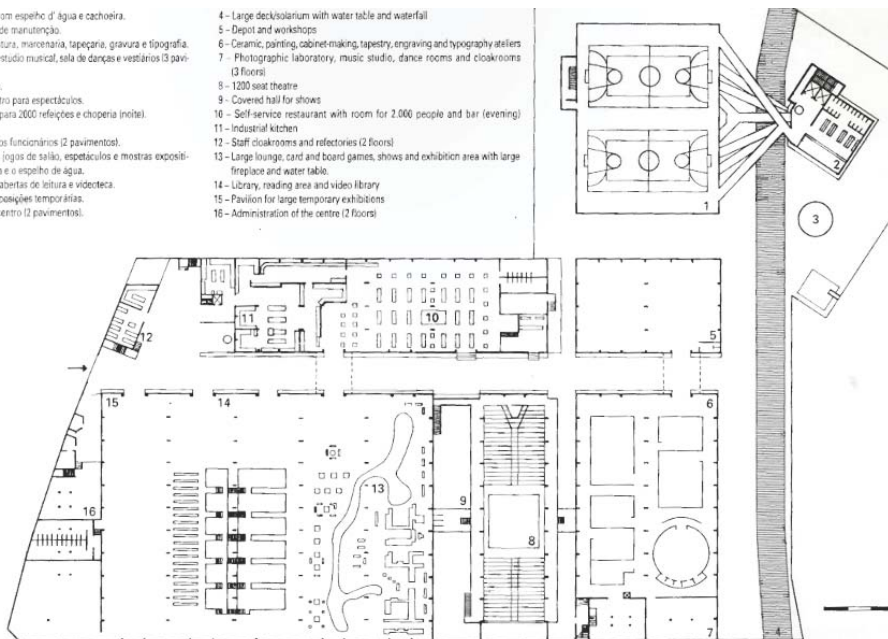


JOHN HEDJUK

Visual communication and representation



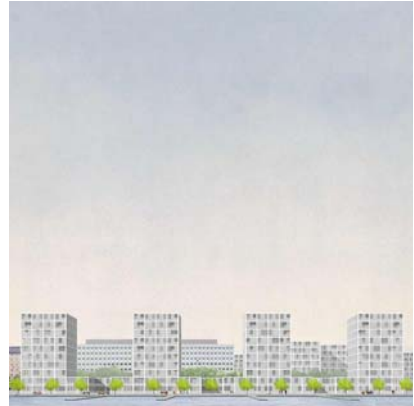
- 4 - Grande Deck/Solarium com espelho d'água e cachoeira.
- 5 - Almoxarifado e oficinas de manutenção.
- 6 - Ateliês de cerâmica, pintura, marcenaria, tapeçaria, gravura e tipografia.
- 7 - Laboratório fotográfico, estúdio musical, sala de danças e vestiários (3 pavimentos).
- 8 - Teatro com 1200 lugares.
- 9 - Vestiário coberto do teatro para espetáculos.
- 10 - Restaurante self-service para 2000 refeições e chopperia (inífil).
- 11 - Cozinha industrial.
- 12 - Vestiários e refeitórios dos funcionários (2 pavimentos).
- 13 - Grande espaço de estar, jogos de salão, espetáculos e mostras expositivas com a grande laneira e o espelho de água.
- 14 - Biblioteca de lazer, áreas abertas de leitura e videoteca.
- 15 - Pavilhão das grandes exposições temporárias.
- 16 - Administração geral do centro (2 pavimentos).
- 4 - Large deck/solarium with water table and waterfall
- 5 - Depot and workshops
- 6 - Ceramic, painting, cabinet-making, tapestry, engraving and typography ateliers
- 7 - Photographic laboratory, music studio, dance rooms and cloakrooms (3 floors)
- 8 - 1200 seat theatre
- 9 - Covered hall for shows
- 10 - Self-service restaurant with room for 2.000 people and bar (evening)
- 11 - Industrial kitchen
- 12 - Staff cloakrooms and refectories (2 floors)
- 13 - Large lounge, card and board games, shows and exhibition area with large fireplace and water table
- 14 - Library, reading area and video library
- 15 - Pavilion for large temporary exhibitions
- 16 - Administration of the centre (2 floors)



LINA BO BARDI

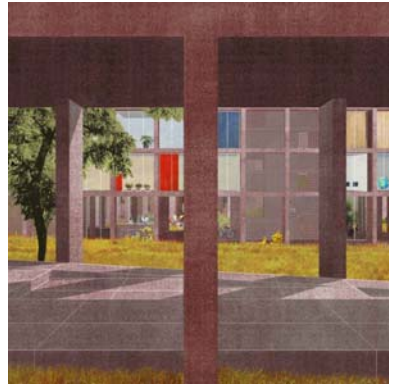
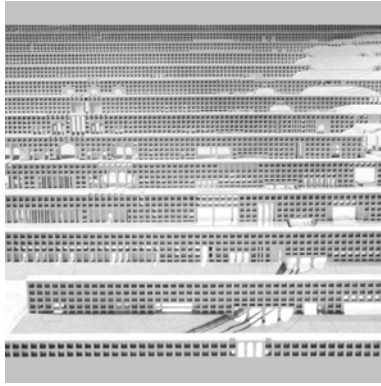
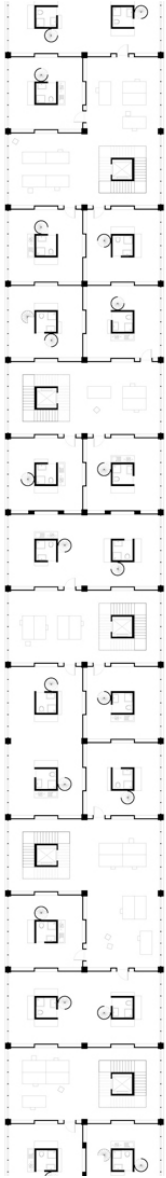
SESC Pompéia

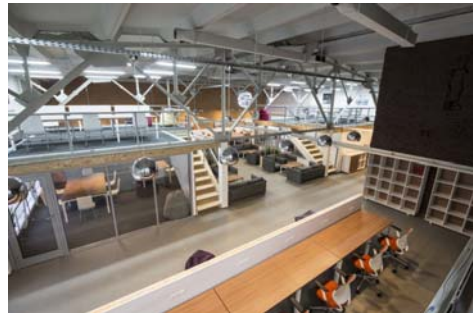




DOGMA

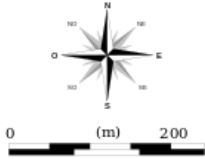
Tower and Plinth. Proposal for affordable working and housing in the Meritaka district







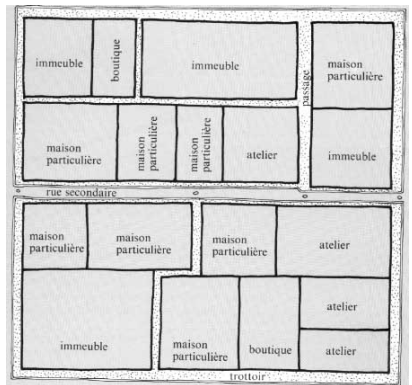
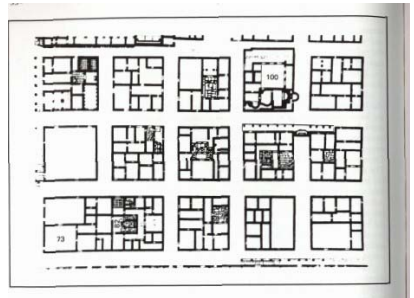
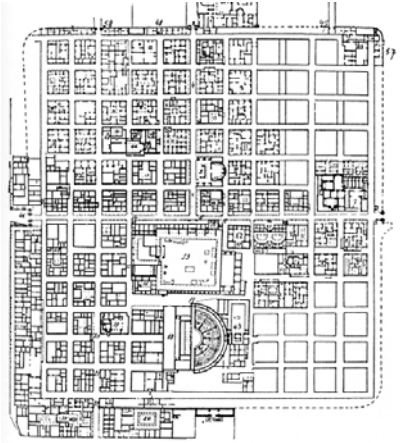
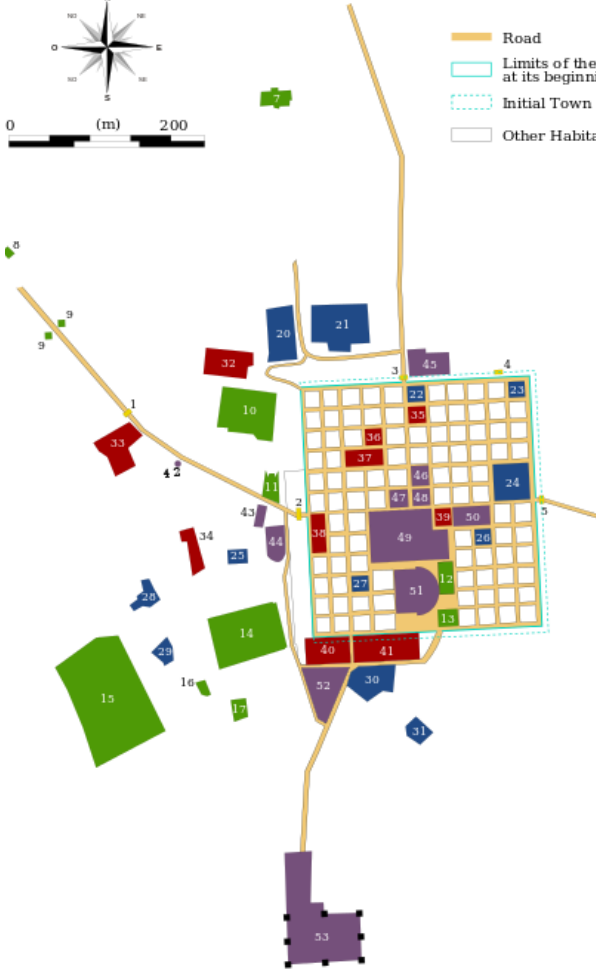


Nagatino

Coworking, Russland



-  Road
-  Limits of the town at its beginning
-  Initial Town
-  Other Habitat

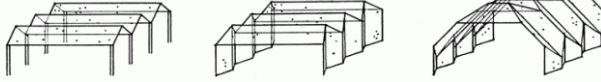


PLAN OF TIMGAD

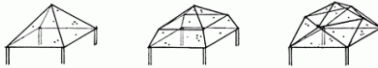
Roman colony, Algeria

4.2 Faltwerk-Systeme / Folded plate systems

Einachsige Faltwerke
One-way folded plates



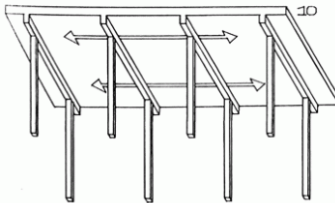
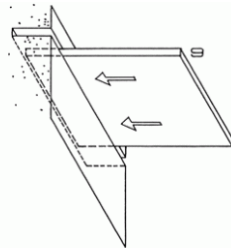
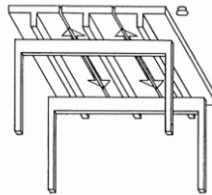
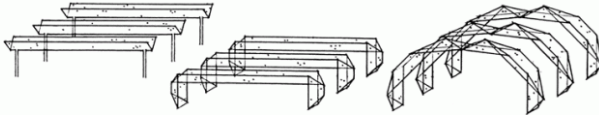
Polyeder-Faltwerke
Polyhedral folded plates



Durchkreuzende Faltwerke
Intersecting folded plates



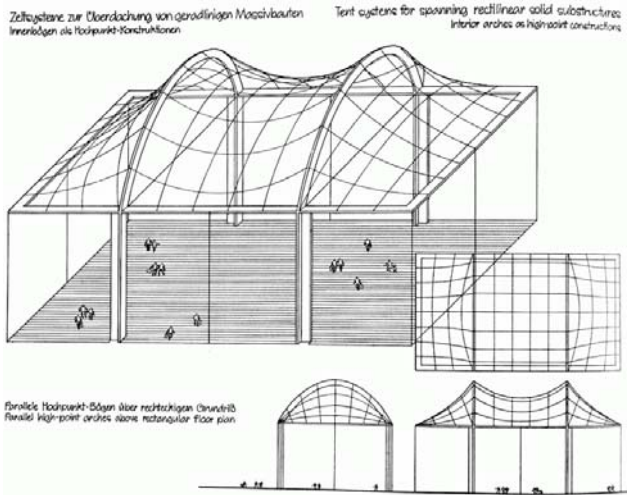
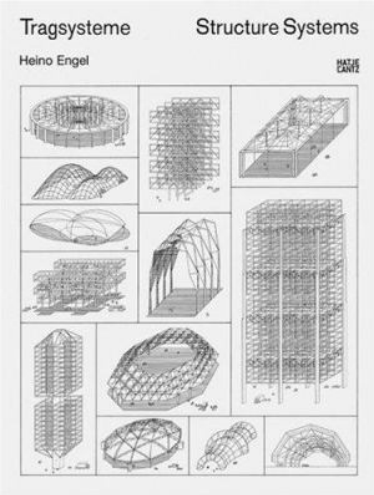
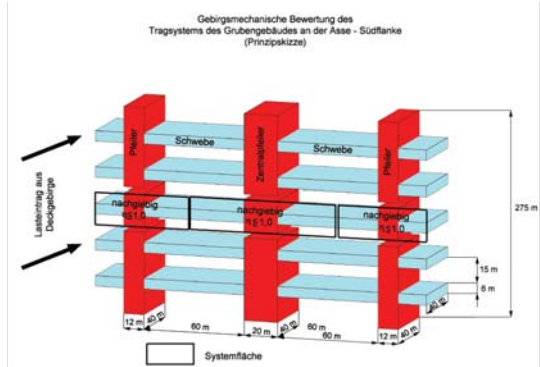
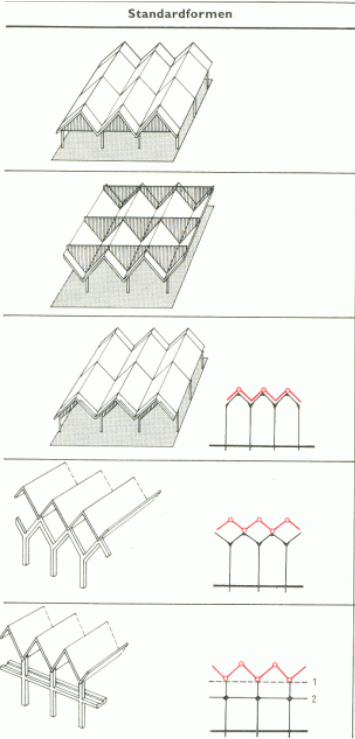
Lineare Faltwerke
Linear folded plates

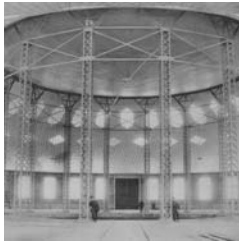
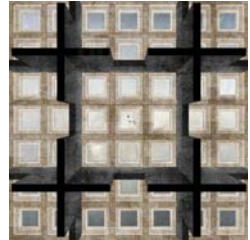
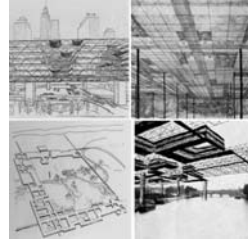


- | | |
|--|--|
| <ol style="list-style-type: none"> 1 Ebene, kreuzweise gespannte Platte / unterzweijsige Decke 2 Punktstützung gelagerte Platte / Pfostendecke (mit Auflagerstreifen) 3 Zweiseitig gelagerte Platte / einachsrig gespannte (bzw. bewehrte) Decke 4 Dreiseitig gelagerte Platte 5 Vierseitig gelagerte Platte / kreuzweise gespannte (bewehrte) Decke 6 Ribbendecke / Ribbenplatte 7 Kassetendecke 8 Plattenbalken 9 Kraagplatte / eingespante Platte 10 Mehrfeldplatte | <p>Flat, two-way spanning slab / beamless floor</p> <p>Point-supported slab / mushroom floor slab with strip panel</p> <p>Slab simply supported along two opposite sides / one-way slab</p> <p>Slab supported along three sides</p> <p>Simply supported slab / two-way (reinforced) slab</p> <p>Ribbed slab / ribbed floor</p> <p>Waffle slab / coffered slab</p> <p>T-beam floor</p> <p>Canvilevered slab / fixed-end slab</p> <p>Multi-span slab</p> |
|--|--|

STRUCTURES

Heino Engel (1997)





INSPIRATION