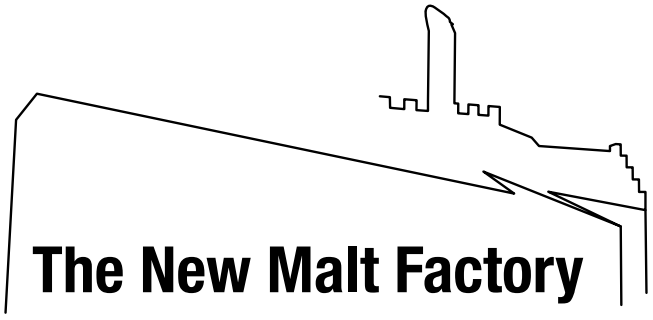

The New Malt Factory

TECTONIC AND TRANSFORMATION // MSC04 ARCH // A&D // AAU // GROUP 14 // MAY 2017
BRAGE MÆHLE HULT // ASGER SKJØDT JACOBSEN // PELLE JIN-WOO ZIERSEN

ABSTRACT

This Master thesis, developed at The Departments Architecture and Design at Aalborg University, Denmark, is conducted in regards to the study guide of MSc04 2017. As a finalizing project, the thesis aim create an integrated design proposal for the transformation of the Malt factory in Ebeltoft, which will include knowledge, skills and methodologies, acquired through the Master degree at Aalborg university.

The transformation of the Malt factory, is based on the competition brief from 2016, and portraits relevant issues in the society of today. Depopulation, a serious struggle for many smaller communities, course a downfall in local economy, social communities and cultural heritage. Through the theories of the integrated design process at Aalborg university, skills to analyse and react to complex problems are at the core and therefore been central in this thesis, to argue the role of architecture as a catalyst for life and cultural growth.

The Malt factory in Ebeltoft set the frame of these studies and propose relevant challenges, in regards to shaping a new social community, through the transformation of the existing structure. The final design, weight life as a central quality and investigate how tectonic perception and architectural design of the new malt factory, can enhance and redefine the identity of the Ebeltoft.

TITLE PAGE

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READING GUIDE

This report presents the material of the project and has been arranged to give the reading a thorough insight in the different stages the project has gone through. First, the reader is taken through the program, concerning different analysis, theories and investigations used by the project team to develop the strategy for the project. The program will end in a vision and statement of the strategy, which will be followed by the presentation of the design proposal.

The last part of the report contains a description of the processes the project have gone through along with the final conclusion and reflections of the thesis. The different chapters have been arranged, as going form the larger scales and zooming in to the details. This has been done go give the best flow of argumentation and clarity for the reading.

01

PROLOGUE

This first chapter will aim to introduce the project at its root and the process as to how the project will develop itself, through the given stages.

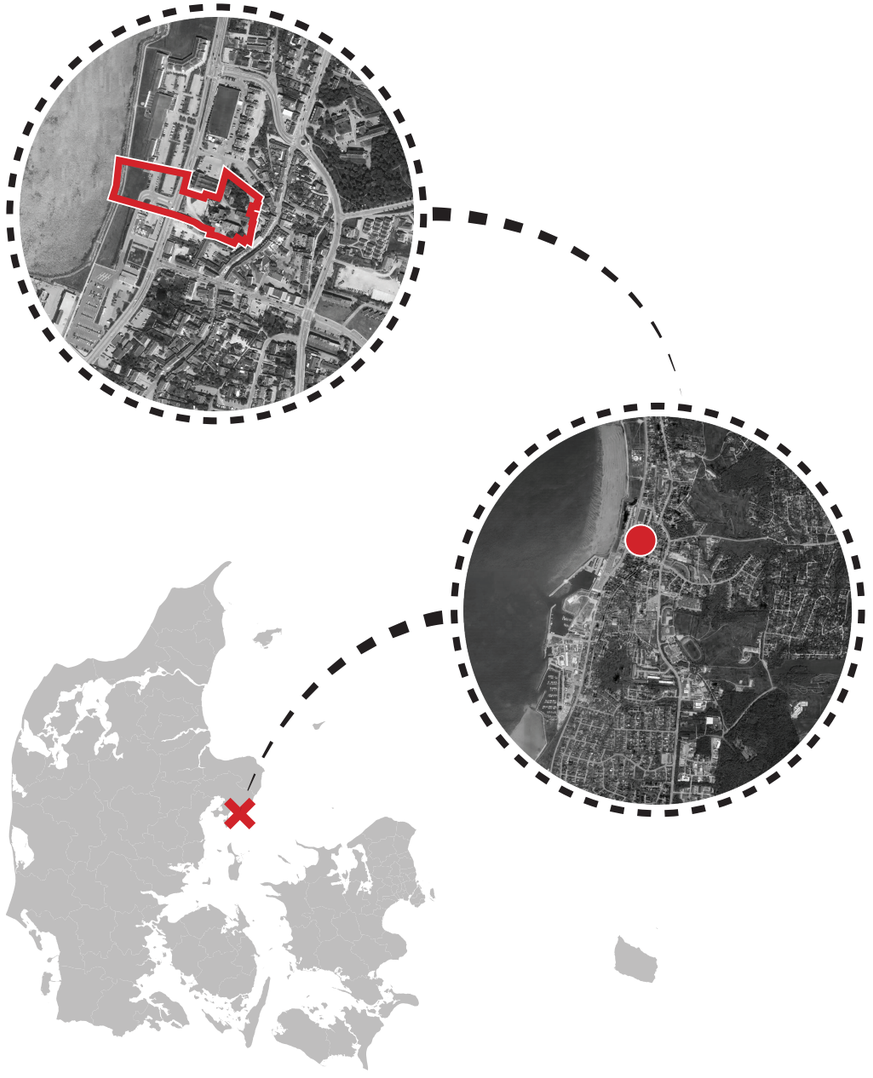
INTRODUCTION

Ebeltoft, the central tourist town of Djursland, situated in the National Park of Mols Bjerge amongst a distinctive landscape of the glacial period. A seemingly stable town characterised by its narrow, cobblestone paved streets and old historical town centre filled with timber frame houses and preserved merchant houses, and attractions as the glass museum and the "Frigate Jutland", face a series of challenges that requires a rethinking of the towns role and new strategies for development. New societal tendencies, stagnating population, challenging commercial life, new demands for urban spaces and urban life, as well as new sorts of tourism, force Ebeltoft to explore new possibilities to modernize and renew itself. (Ebeltoft town and Harbour 2015)

The new Malt factory will in the coming years become the focal point in the development of Ebeltoft's historical town centre and its connection to the coast and harbour. In its time, the Malt factory was a proud manufacturing company and an important workplace of the town. The factory's spirit, the noise of the machineries, and the chatter of labourers has for some time been ceased and now awaits new life and new sounds to captivate the buildings. (Rambøll 2016)

With a wide range of cultural and experiential functions, the Malt factory will become the cultural centre of Syddjurs. A variety of functions such as, a library, museum, cultural center, café, youth center, creative workshops and offices will help create a dynamic and vibrant meeting place with a central location in Ebeltoft. With the diversity in functions, the buildings will provide a framework of different activities and attract a wide range of user groups. Creating an environment where both work, cultural and creative activities can be experienced, will ensure the place to become vibrant, both during day and through the evening. Besides being a central destination, the new Malt factory will also create a spatial and functional link between the town centre and the harbour front. Today, there are only a few natural connections between the two parts of town, but thanks to the many new functions, that in the future will form the new Malt factory, it is anticipated that the site will form both a physical and functional connection between the town centre and the harbour front. (Room program 2014)

The architecture should understand and reflect upon the history. New additions to the projects whole and new use should preserve and develop the atmosphere, magic and the spirit that is in the existing and convey a worthy transition between existing and the new. (Competition Brief 2016)



ill. 01: Site location

METHODOLOGY

Being a 5-phase method for forming a synthesis between problem-based learning and professional knowledge, IDP or rather, the "Integrated Design Process" (Mary-Ann Knudstrup, 2004), is meant to combine knowledge and insight from the fields architecture and engineering to define a complete design. As such, this master thesis will move through the 5-phases: problem, analysis, sketching, synthesis and presentation. All of which contribute to optimize and quality check the design through an iterative process.

In the initial phase, a problem is approached or an idea is sparked and established, through which the thesis intends to be approached.

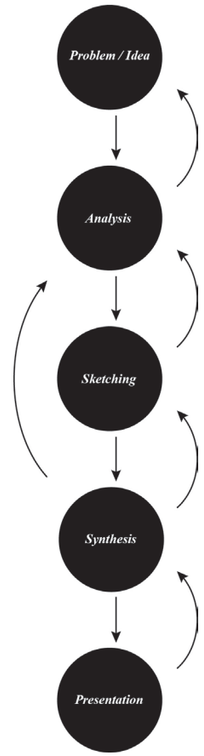
Following the initiating phase, knowledge and understanding will achieved through analysis and research, upon which the most suitable solution for the problem can be reached, also known as the analysis phase. The results will then be processed, leading to data, which constitute the basis of the thesis.

Thirdly, known as the sketching phase, creative ideas and solutions are produced and tested through trials, with data acquired through the prior phase, as foundation. Being a complex process, this should ideally, be visualized through drawings, 3D software or physical models to explain and solidify intentions or thoughts to parties involved with the project.

The project will then, through the synthesis phase, take on its final form and expression, compiling and merging that which have been produced as a result the earlier phases. Unclear thoughts and gained knowledge are made precise and definite, laying a foundation for the following and final phase.

Finally, the completed project is materialized, refined and presented as a whole, highlighting qualities and how aims, design criteria of the project have been fulfilled throughout the process.

Although it may graphicly look like it, it is important to underline that IDP is a not linear process, but iterative, allowing for the project team to move back and forth from one phase to the other, in order to unravel necessary data, to repeat and polish the design, in order to reach an optimal solution, without compromising the end result.

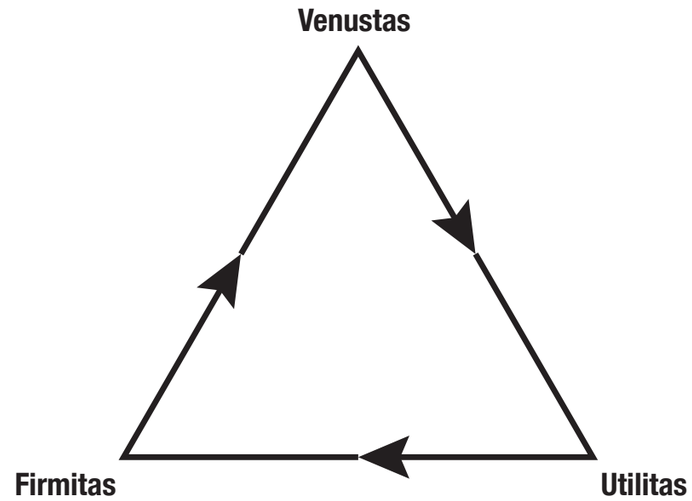


ill. 02: IDP process

VITRUVIUS

With the main subject of the master thesis being tectonics, it is essential to understand what makes good tectonics. Marcus Vitruvius, a 1st century(BC) roman architect and engineer described and developed the idea of three fundamentals; firmitas(strength/stability), utilitas(utility) and venustas(beauty/attractiveness), which, still, in modern times are considered an accurate explanation of what good tectonics, architecture and design entail. However, the three fundamentals cannot be considered individually, only as three parts that together achieve and define a gradient interplay to achieve harmony in the final design.
[O'Gorman, 1998]

This thesis will therefore use the principle of the Vitruvian triangle when approaching the constructional design to assure a detailing of balanced proportions within the three fundamentals.



ill. 03: Vitruvius triangle

02

ANALYSIS

For a project to evolve, thorough analysis regarding the subject at hand, is of utmost importance. As such, the following chapter will contain a collection of analysis regarding contextual information, issues and historical background attached to the project, starting with a regional and general overview while gradually focusing down to town scale and finally the project site and buildings.

ill. 04: Ebeltoft cove

ill. 05: Mols Bjerge

ill. 06: Adelgade street

HISTORY OF EBELTOFT

Located in the middle of Mols Bjerge national park, famous for its curved terrain and large variation of nature that shifts from lush forests and fields of moss, to grasslands and beaches of fine sand. Ebeltoft has become the central tourism city in Djursland, and is in general one of the most visited tourism spots in Denmark.

Today, with its close to 7500 inhabitants, the town of Ebeltoft is known for its small, winding cobblestone streets, lined with rows of idyllic and traditional timber frame houses and are characterized by the many former merchant's houses that testifies of the old style of building and of the life that has occurred. Glass blowers, artists and museums are scattered throughout the town and the well-known warship "The Frigate Jutland" is located in the harbour. During the warmer season, the inhabitants more than double, seasonal residents fill the nearly 8000 summer houses located throughout the area, and tourists come in thousands.

Because of its geographical location along the covered bay, the foundation of Ebeltoft, in year 1200, set the natural basis for the town to contain a westward-directed harbour, which was to be its main vein for trade, commerce and income, and so it has been, for many years. With a central location in Denmark, the harbour has been a busy location for trade, which made the town flourish in the Middle Ages and especially trough the 16th and 17th century. However, the town experienced a downfall in the 18th century, when an expansion of the harbour failed. This meant the town could not keep up with the technological development on sea travel and trade, which it would not recover from, for many decades. Not until the town became port for the ferry line to "Sjællands Odde" in 1960.

As such, Ebeltoft has historically been economically dependent on its harbour and trading, but tourism has also been a part of Ebeltofts backbone since around 1880. With the ferry line, the access to the town was made easy from the whole country and post war growth made the town of Ebeltoft and the beautiful nature an attractive spot. With a boost of summer/vacation houses since the 1960's, the town's economy has gradually turned to be based on tourism alone.

(Dansk Bygningsarv A/S,2015)

Today, however, the town is experiencing a drop in, both, visitors and residents. This is a result of "Storebælts Broen" constructed I 1999, which opened a faster route between Aarhus and Zealand, and also a change in tourism preferences, for easy travel to international destinations. This tendency justify that Ebeltoft must seek to revitalize and rethink its image as a town and tourism centre in Mols Bjerge.

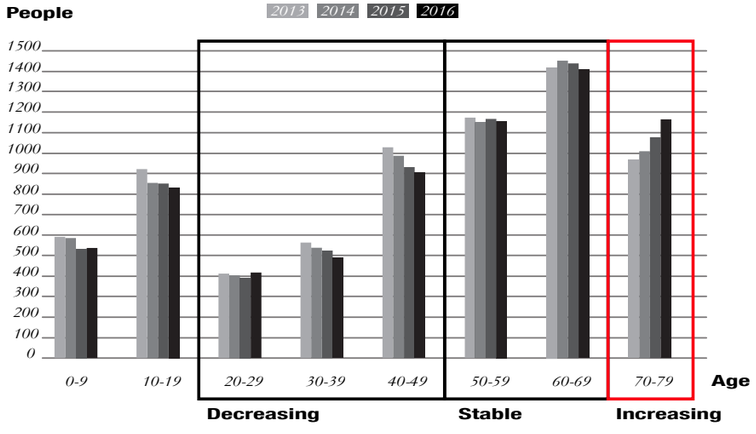
REGIONAL CHALLENGES

As a result of the infrastructural changes brought on by "Storebælts Broen" and general urbanization, the priorly mentioned increase in the depopulation of Ebeltoft has been noticed by the municipality. Specifically described, all-year-residents are migrating and relocating in larger cities. An effect believed to be rooted in the static evolution of the town; striving to keep up with modern times, while simultaneously holding onto its traditional characteristics and heritage.

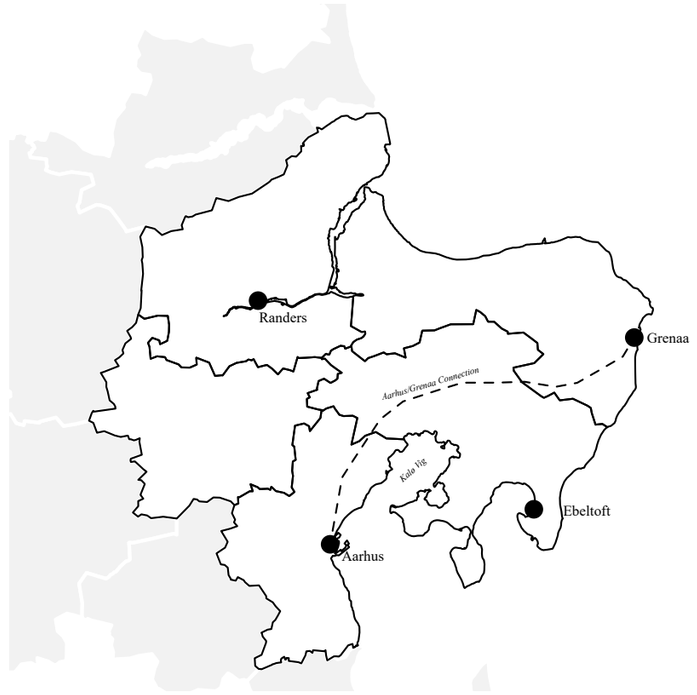
And while Aarhus and other surrounding cities in the region have experienced an increase in growth for many years, Ebeltoft has not been geographically connected to this growth, being located more than 50 kilometres from Aarhus and Randers, the closest of larger cities in Djursland. (Dansk Bygningsarv A/S,2015)

Although, Ebeltoft is one of three primary areas of development in Syddjurs municipality, the other two being the coastline of Kalø Vig and the stretch along the new light rail from Aarhus to Grenaa, the town does not seem connected to the growth affecting the rest of the region. This is highly related to a weak infrastructure connected to the town. Travel time with public transport from the larger cities in the area are, all, more than an hour and there is no connection by train. Respectively 1 hour and 20 min from Aarhus and Grenaa and two hours from Randers. (Rejseplanen 2017) Also, because of the financial downfall of "Mols linien" in 2008, the connection between Ebeltoft and Sjællands Odde runs exclusively on weekends and holidays. (Danmarks Radio 2016)

This has exhausted Ebeltoft of companies with multiple employees, which generally have been declining since the 1970's. The reason why the population has not seen a dramatic drop in correlation to this, is reasoned the large number of elderly



ill. 07: Population diagram



ill. 08: Ebeltoft and surrounding towns

who convert their summerhouses to all year residences. However, the stagnation means that a high number of citizens commute to other parts of the municipality or region for work. (Dansk Bygningsarv A/S,2015)

And although Ebeltoft is a home for its all-year residents, it is also a tourism town during the summer season. As such, there are two main groups involved in the development of future Ebeltoft, that both must be considered in initiatives concerning future prospects. This is rooted in the town and municipalities realisation of the potential, regarding interaction between the tourist and resident, as well as the concept of "tourist residents".

To start the revitalization of Ebeltoft, the town face a series of challenges. Whereof the primary issue, is the lack of a clear and coherent identity, to which both its tourists and residents can relate and portrait its history.

LOCAL CHALLENGES

Through the last millennium Ebeltoft has experienced tree major periods of growth based on the influence of its harbour, its status as a borough and the increase in population coursed by the ferry line to Zealand. These three periods are clearly indicated in the towns building typology and layout. The central part of Ebeltoft is physically divided in three north-south spanning areas; the harbour, the old town centre and the residential areas towards the east, whereof none of the areas has a strong relation to the other.

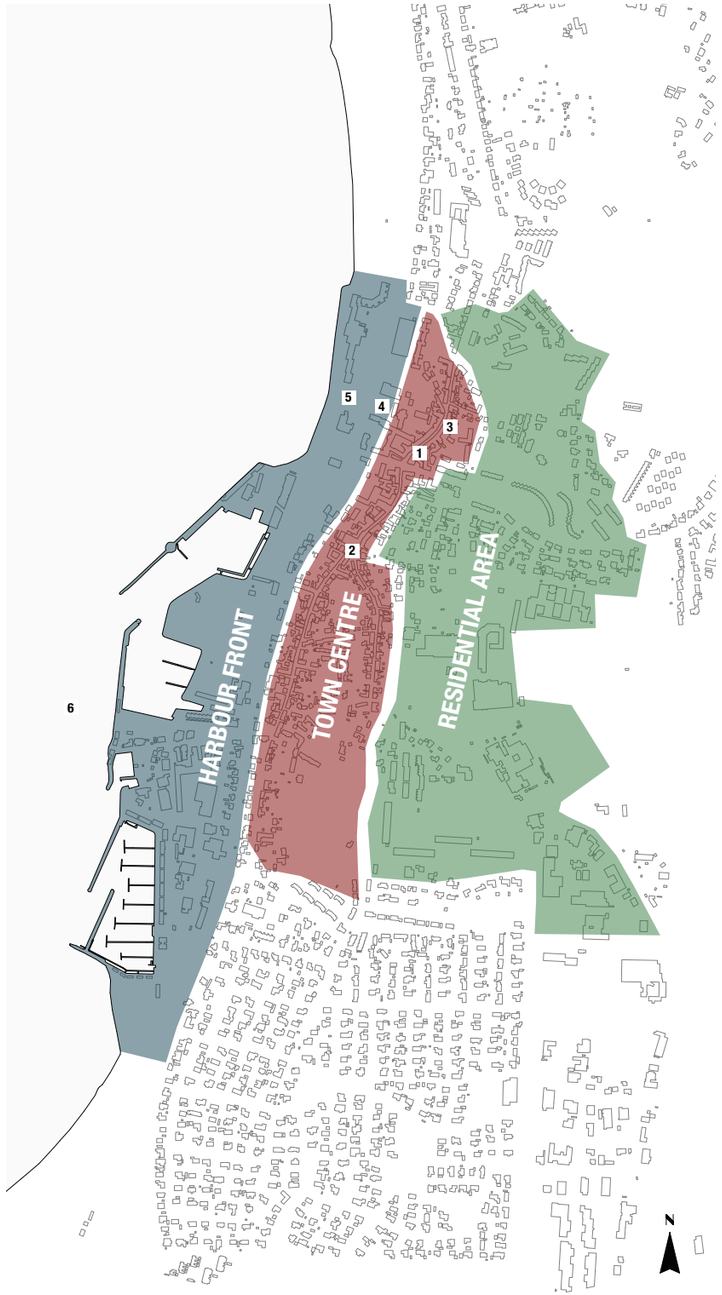
The town centre is characterized by it old houses and cobblestone roads, which hold a strong relation to the history of the town. Compact, yet comfortable in scale, along its streets and yards. It offers well-hidden nooks and crannies, which in many cases are used by the museums and cafés to outdoors service and exhibitions. The northern section of the central street is the primary shipping street. It used to be a mix of small stores, for the citizens and tourists, but is today primarily branded for tourism, resulting in making the centre vacated and empty during the winter season. The small spaces make development difficult, and the community fear that large changes might damage Ebeltofts characteristic borough environment and spirit.

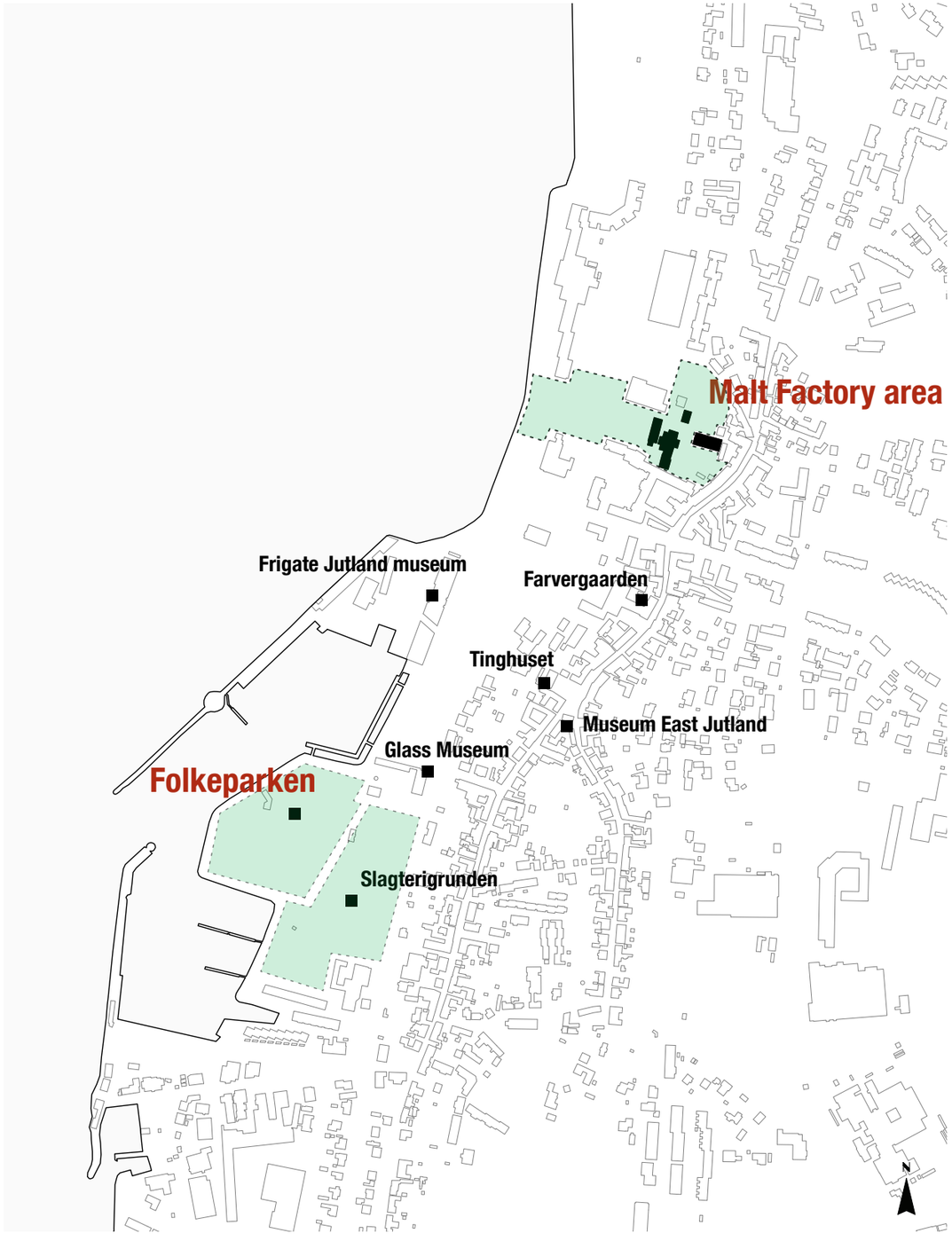
The harbour has been developed and expanded through a plural of periods and appear in a series of different areas, which have been built to accommodate the functions deemed necessary at the time. Today, although, with a history of industrial focus and efficiency, the harbour is not integrated with the atmosphere, nor the flow of the town centre. One of the reasons being, Strandvejen, the "gateway" to and through Ebeltoft. To the north, the road leads to areas of summer houses and Aarhus, while the ferry docks are located to its south. Being the central vein of traffic through Ebeltoft, it carries a high amount of traffic during the summer periods, at which point the road turns into a barrier, physically and mentally. Because of the lack of attractive daily activities on and along the water edge, the harbour is instead highly influenced by parking areas and daily grocery stores. And even though museums are popular amongst the tourists, the main attractions "The Frigate Jylland" and the glass museum appear introvert and do not unify the harbour front or form a connection to the town core.

The residential areas located east of Ebeltoft was developed through the 1960's and 70's, as welfare towns, with a high focus on the infrastructural organisation. Parcel houses, schools and institutions mainly occupy the eastern part of the town, which fulfil the immediate needs for the permanent citizens of Ebeltoft. Many people commute to work, while the children use schools, sports facilities and daily groceries are acquired in the shops along "Strandvejen". The daily life are exhausted from the town centre and the citizens and tourists does not experience natural unexpected encounters. (Dansk Bygningsarv A/S, 2015)

On this page from the top:
ill. 08: Adelgade
ill. 09: Adelgade near city hall
ill. 10: Entrance into Malt factory site from Adelgade street

On this page from the top:
ill. 11: View from Malt factory
ill. 12: View against Malt factory
ill. 13: Birdperspective of Ebeltoft harbour
ill. 14: Area diagram





URBAN SPACES & BUILDINGS

To form a stronger unification of the town, two urban spaces which show potential to increase the urban environment in Ebeltoft have been highlighted. These areas are the Malt Factory and the open space next to the glass museum and "the Frigate Jutland museum", named "Folkeparken". The location of the two areas ensure development in both end of the central part of town, which will bring balance to the overall development of Ebeltoft.

Ebeltoft is in need of urban spaces, where the people can congregate and have informal and non-commercial interaction. "Folkeparken" will be a recreational area and be a key element in the development plan for the harbourfront.

Along with the urban spaces, the town strategy introduces a focus on selected key buildings in Ebeltoft, which will form a synergy and increase the common identity of the area. This strategy involves both existing and new buildings, including the museums and activity clubs on the harbour and in the town, which shall open up and support the new urban life.

To the left:
ill. 15: Diagram of urban spaces and buildings

INFRASTRUCTURE

To unite the areas of the Ebeltoft, it is essential to form stronger connections, through contrast and strengthening of existing and new pedestrian infrastructure.

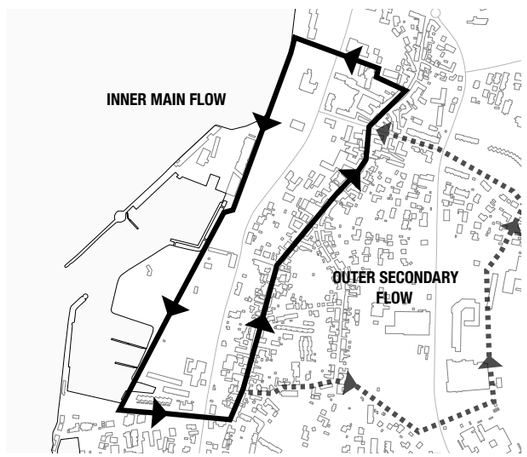
Today, "Strandvejen" and "Østerallé" acts as the main spines, stretching from north to south, through the town. These two roads are mainly for motorized traffic, which, underline the separation of the town areas. As such, the merge that is needed, will rely on a stronger focus on soft traffic and better connections for pedestrians and bikes.

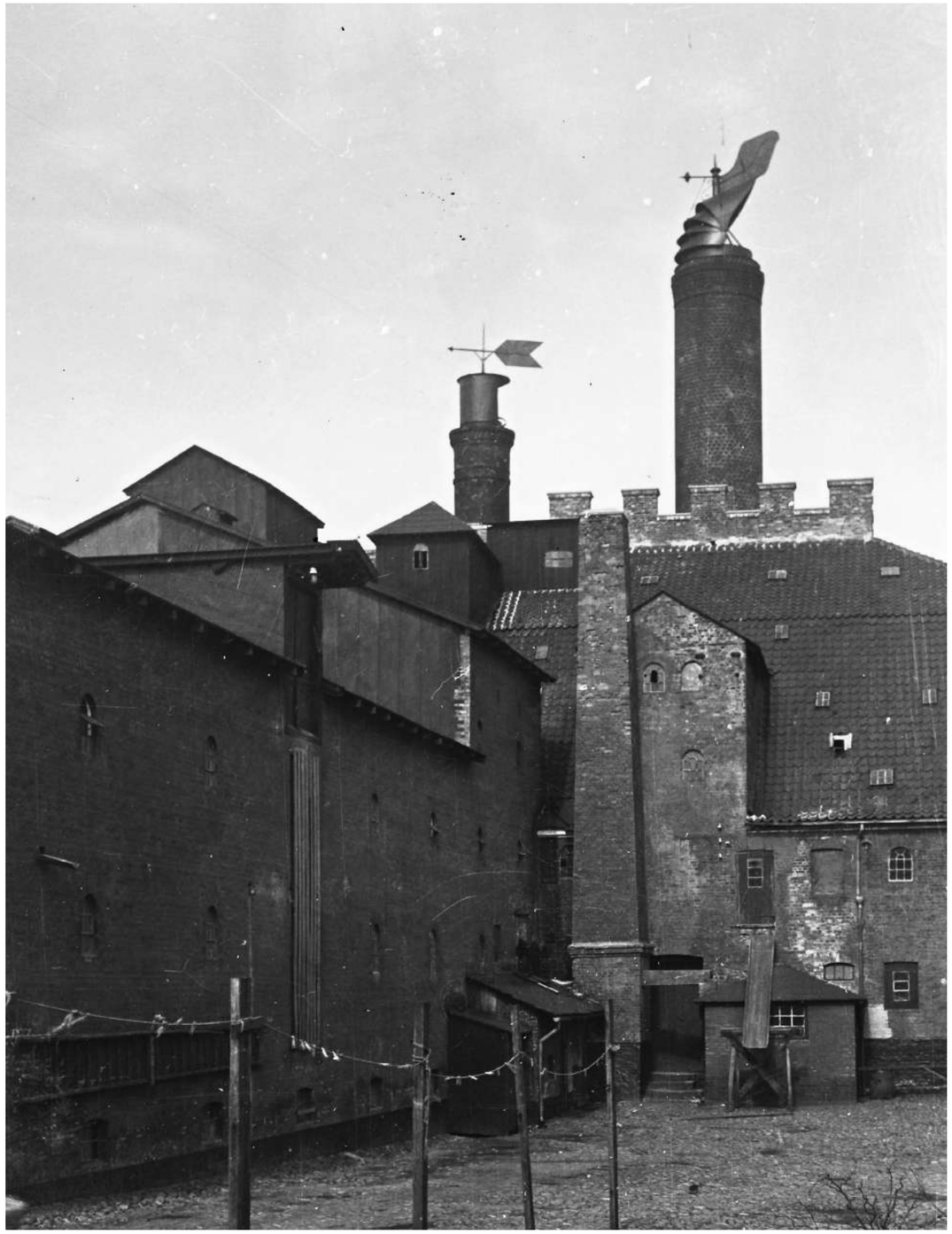
One strategy is the creation of a clear harbour promenade, a nerve of experiences, connecting existing and new urban spaces and attractions. The promenade will unite the landscape on both ends of the town, but mainly concentrate on the connection between the Malt factory in the north and "Havnevej" in the south.

A secondary strategy will be the strengthening of "Strandvejen". This is the gateway to the town, but is at the moment characterized by the many grocery stores and their parking spaces, which form unidentifiable spaces and openings along the road. The municipality has suggested to define an edge along the road, strengthening the identity of urban spaces along the harbour, thereby achieving a visually clear entrance to the town.

Together with "Adelgade" in the town centre, these passages will form the north south connections in Ebeltoft, and define the spines for the connections across. These smaller connections are important to form the clear common identity of the town centre and harbour front, as well as, establish a flow between the new and existing urban spaces and functions.

On this spread from the left
ill. 16: Main roads through Ebeltoft
ill. 17: Loop flow in Ebeltoft
ill. 18: Flow connections





To the left
ill. 19: Historical picture of Malt factory

THE MALT FACTORY HISTORY

The story about S.B. Lundbergs Malt house is also a story about the industrialization of the Danish malt production and the development of the Danish brewing culture. Most of the Danish breweries was founded between 1850 and 1950. The characteristic for the majority of the Danish malt houses and breweries were that their architectural expression appears to have been built over time in several stages. There are many examples amongst breweries and malt houses of an "almost grandiose industrial architecture" where the factory owners could display their financial capacity through the design of their buildings. This was also characteristic for S.B. Lundbergs Malt house, which today stands as an iconic building of Ebeltoft, and a symbol of the towns history and future.

In 1857 merchant Søren Buchstrup Lundberg rented a merchant's house in Ebeltoft by the merchant Peter Julius Ørting. When P.J. Ørting went bankrupt in 1861, S.B. Lundberg took over the merchant house and started a malt production. Around this time, beer was increasingly being produced by industrial methods, which created the basis for S.B. Lundberg to make an actual malt factory with industrial production. Over the next 140 years, the factory was continuously expanded and modernised as the malt production increased. During that period, the Malt house was an economic and social focal point for the community of Ebeltoft, with its production that secured several hundreds of local citizens' employment. At its highest, it became the second largest malt factory in Denmark.

In the 1990's the competition from foreign malt houses became too high, which caused a decrease in production at Lundbergs Malt house, as well as employment reductions. At the same time, an increase of taxes on water and drainage, meant that the production was no longer profitable for a factory the size of Lundbergs Malt house. The production stopped and was finally closed in 1998 and have been out of function for nearly two decades.

In spite of the non-functional buildings that are today, the Malt Factory still remain an important landmark for the towns history and identity and will play an important role in the revitalizing of Ebeltoft. The former function of the shutdown factory will be transformed and once again re-emerge as an economic and social focal point in a hub of commercial, service and cultural functions. The Malt Factory's spirit will once again breath and become the new meeting place of Ebeltoft.

THE FACTORY SITE

The project area is located in the northern part of Ebeltoft centre. The site consist of four urban spaces which together will form a connection between the central market lane "Adelgade" and the cost line. The areas 1-3 are located around the existing buildings and will have directly interaction with the transformation of the buildings.

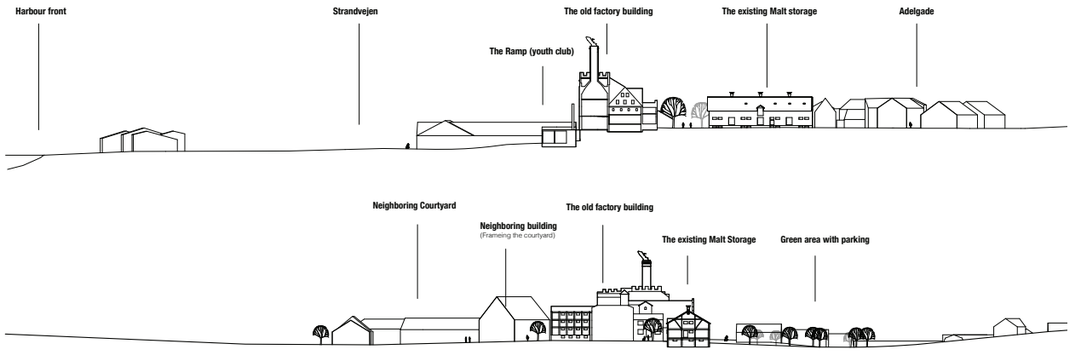
Area 1 forms the connection to "Adelgade" through gateways in the old buildings along the street. The space in enclosed by the old context and the malt factory and malt house. This old factory building hinders the view towards the coast, which ensures the intimacy of the space, but could also potentially, be an obstacle for the direct connection between the old town and the harbour.

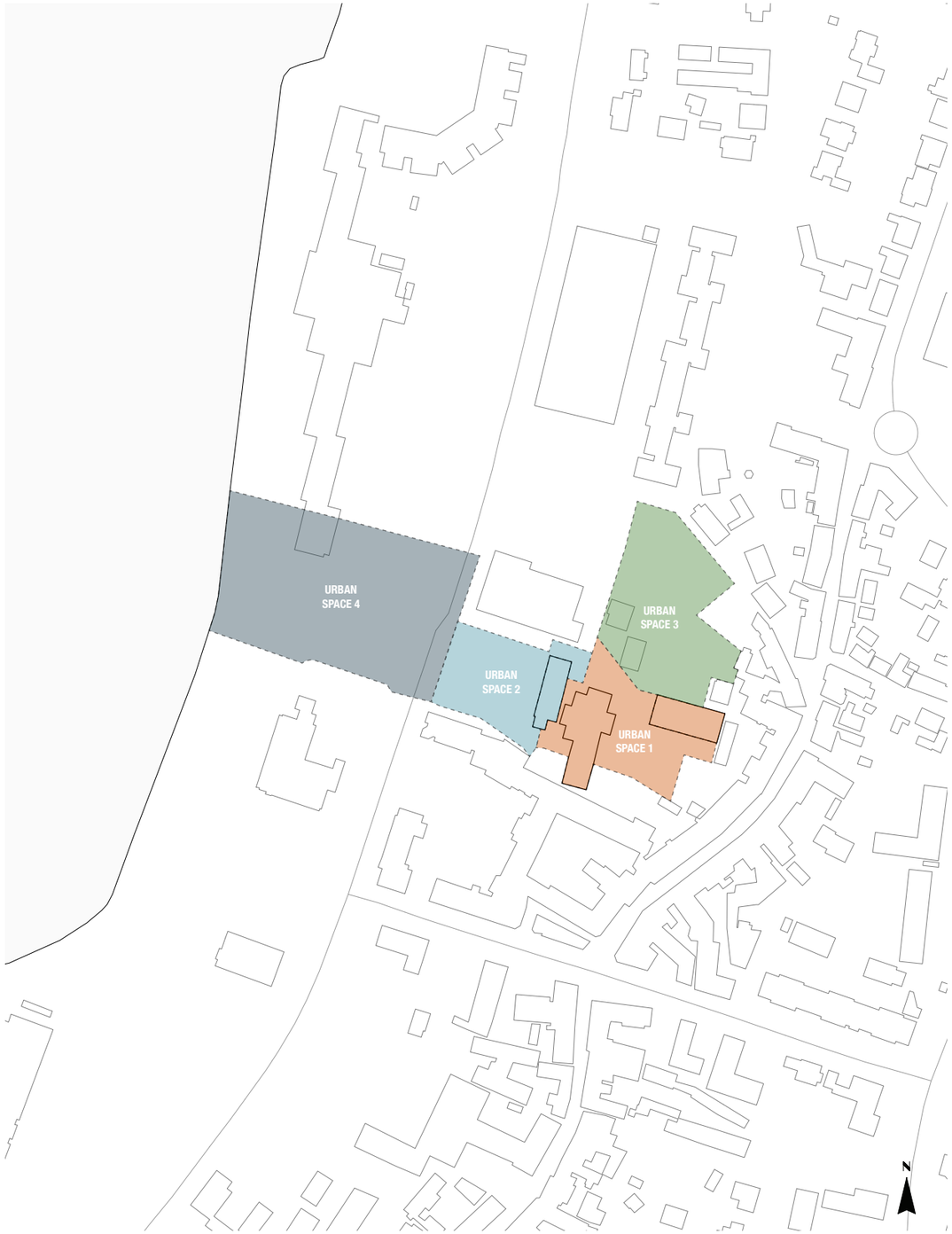
Area 2 is located on the other side of the old factory building. In comparison to area one, this space is open towards the cost and with a large difference in terrain the architecture of the factory house is highlighted and clear, when coming along "Strandvejen". Area 2 have a clear direction from the factory building towards the coastline, because of the terrain difference and the closed façade of the neighbouring buildings.

Like area 1, area 3 is an enclosed space. However, area 3 is primarily used for parking, and does not form any clear relation to the old town atmosphere.

Area 4 form the connection between area 2 and the coastline. Currently the area is considered empty, and only dominated by parking areas. This space will be key to the future infrastructural strategies. Central to this area will be to form the start of the promenade of the harbour front and make it part of the connection with the malt factory. This area also involves "Strandvejen", which separates the area with area 2. This separation will be essential to the connection of the old town, the factory and the harbour front.

On the spread from the left:
ill. 20: Site section A-A
ill. 21: Site section B-B
ill. 22: Urban areas at site location





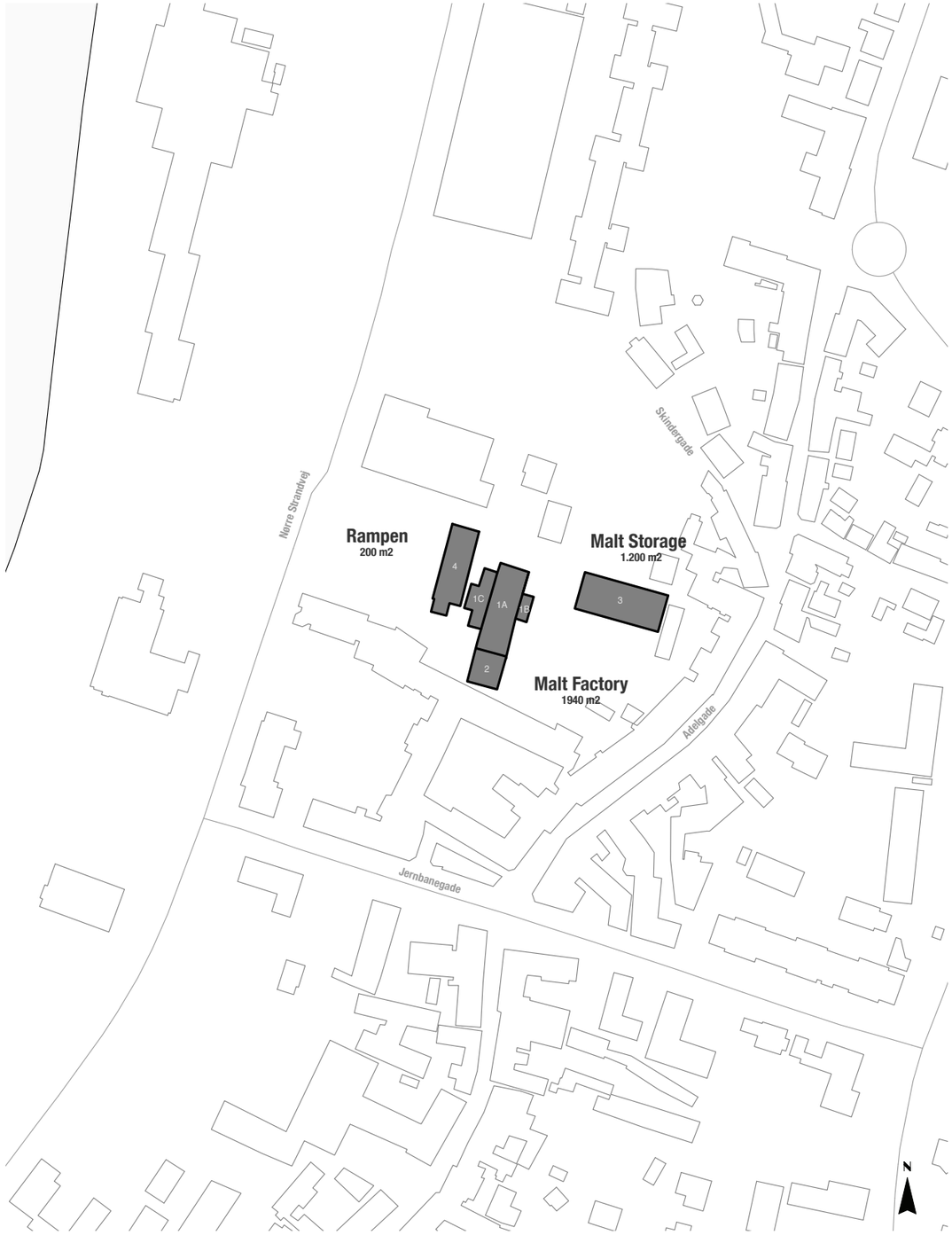












THE FACTORY BUILDINGS

1A: Storage Building
1B: Entrance House
1C: Malt Kiln
2: Extension
3: Malt House
4: The Ramp

Previous spread from the left and down
ill. 23: Malt factory view courtyard
ill. 24-33: Atmosphere pictures

To the left:
ill. 34: Malt factory buildings

The old malt factory consists of three building masses. The main building is the original storage house, forming the centre of the site, which the other buildings related to when constructed. Connected to this building is the malt kiln, with the characteristic chimney, the entrance house and an extension from 1952. There are two buildings on the site, which are not connected to the old storage house. This is the malt house and "Rampen".

The malt house was built in 1946, and is a regular building volume, with steel columns on the ground floor and with a temple like visible wooden construction on the top floor.

"Rampen" is the old receiving building which were connected to a group of large silos, which have been demolished in 2004. Compared to the rest of the factory building, this building were only functional and have therefore been constructed in grey concrete, which contrasts the characteristic red colour of the other factory buildings.

The terrain decline between the old storage house and "Rampen", so the roof of "Rampen" becomes a terrace towards the cost. This gives the main building an iconic appearance on an elevated base, which translates the threshold between the old town and the harbour.

PRESERVATION

Stylistically and historically the buildings are very much an expression of use, contemporary building techniques and tradition, rather than a striven aesthetic or spread architectural trends. There is however deliberately used crenelated forms on the primary buildings as a general aesthetic element on gables and battlements. A feature that derive from the original storehouse, and that emphasises the buildings monumentality and brings a significant historical expression to the factory.

The entire Malt factory is stated with a total preservation value of high. The individual buildings architecture, history, condition, originality and adaption to surrounding environment is however variable, which makes it more reasonable to consider each building individually. (Dansk Bygningsarv 2014)

The preservation value has been analysed with the international SAVE-method, which is a tool for evaluating buildings and building environments preservation values. The evaluation is divided into 3 ranges. High preservation value (SAVE 1-3), Average preservation value (SAVE 4-6) and Low preservation value (SAVE 7-9)

Building 1A – Storehouse

The storehouse is built in red washed brick in a historical style with significant crenelated gables. Iron framed windows are distributed in a rhythmical system over the facades. The building is relatively intact in its basic shape and appear primarily in those materials and constructions of brick and wood originally built in. The storage house is the factory's most vital building as it forms the core of the joined whole that is today. Every other extension, except the separated malt storage, has been added to this building. The preservation value is high and has a grade of 2 on the SAVE-scale. (Dansk Bygningsarv 2014)

Building 1B – Malt kiln

The malt kilns are well-defined volumes that are built together. Buttress is used as a constructive stabilisation of the outer walls, which together with the crenelated gables creates a monumental effect that is strengthened by the vertical lines in the building. The malt kilns give the factory a distinctive profile, that can be seen from many places in the town and by arrival to Ebeltoft. The preservation value is high and has a grade of 3 on the SAVE-scale. (Dansk Bygningsarv 2014)

Current page from the top:
ill. 35: Old storehouse gable
ill. 36: Malt kiln
ill. 37: "Rampen"

Next page from the top:
ill. 38: Reception building
ill. 39: Reinforced concrete building
ill. 40: Malt Storage

Building 1C – Entrance building

The building stand in its design in continuation of the storehouse as it is also built with red washed brick walls and the same types of windows, although in different sizes. The entrance building submits to the main building, but also works as the primary arrival, when you're arriving from the town through the courtyard. The preservation value is high and has a grade of 3 on the SAVE-scale. (Dansk Bygningsarv 2014)

Building 2 – Reinforced concrete building

The building appear more or less in the original layout with regular, cast decks and columns. The storeys are connected vertically by a distinctive cast spiral staircase that should be emphasised as an architectural value in the interior. The building indulges both in scale and in mass to the rest of the building, but stands out by having a period architecture that is not inspired by the original storehouse. The preservation value is high and has a grade of 3 on the SAVE-scale. (Dansk Bygningsarv 2014)

Building 3 – Demolished sprout building

The former sprout building was demolished in 2014, but the imprint of the building is still visible.

Building 4 – Malt storage

The building form is plain, and the roof and gables are edged with noticeable woodwork, but without crenelates. The building appear roughly in the original layout on a high base with a distinctive south façade with small windows, trapdoors and hoist. The interior is primarily continuous spaces with column supported floors on each of the two storeys, as well as an open attic with wood constructions. The building is important in correlation to maintain the sense of the courtyard and urban spaces that the building defines on either side. The preservation value is high and has a grade of 3 on the SAVE-scale. (Dansk Bygningsarv 2014)

Building 5 – Reception building for siloes

The building has its own modernistic character and has neither physical or visual coherence with the remaining factory. It appear almost in its original layout and in a relatively good condition. The building works well as a transition between the elevated and the low-lying terrain, were its roof forms a terrace. The preservation value is average and has a grade of 5 on the SAVE-scale. (Dansk Bygningsarv 2014)

HISTORIC IDENTITY

The Malt factory site is intended to be a central place in all aspects of the future development strategy for Ebeltoft town. The main agenda for the malt factory will be as an anchor point within the town and form a strong connection between the historic town and the harbor front. This is a reaction to the divided structure of the townscape, but also a clear indication of the importance history play for a towns identity.

Three aspects are relevant when characterizing a place; one being the geographical location on the map, second the physical appearance, relating to houses, roads and vegetation as well as the function of the space as a town square or remote bus stop but most of all the personal experiences and connections which is formed to the place. A place is defined by these relations and stories, which are tied to the space, whether it is historical or personal. This is what gives a location its genius loci, and what makes a rememberable place and to which we want to return, or not. (Stedets Betydning)

The identity of Ebeltoft is highly related to the historic past of the town as a busy harbor and market town, which is clearly indicated through the central part of town by the cobble stone streets and small pockets leading to the old courtyards of the merchant residences. During the prime years of the town, the central street was busy with local merchants trading and profiting on the shipping of goods, making the harbor and central town a vain for employment and activity. As described, the situation of today has changed dramatically and these areas are only busy in times of tourism. The lack of local activity in the historic town, makes the reputation highly reliant of the history and old identity, which might result in a trivial experience and expectation of the town, because of the lack of authenticity and public engagement with the historic identity.

"Through our activities and thoughts, we form spaces"…"We are reflected in the surroundings that we congregate, and that way the places identify us as people" (Stedets Betydning)

The people of Ebeltoft, have lost purpose in the historic centre, which contains the old identity of the town, the residents therefore lack the opportunity and reason to form relations in Ebeltoft and evolve its identity, to keep the authenticity and character. As the analysis show, this is amplified by the globalization and commuting, which drawing the daily life away from Ebeltoft. As there is a higher focus on the global world, it also threatens to make places identical and without character. But it also increases in interest for the local specialties, a local opportunity, which is present in Ebeltoft. The town have local enthusiast and small independent artisans, which represent the old merchant from history. They build on the existing identity and provide the authentic craftsmanship, sought by visitors.

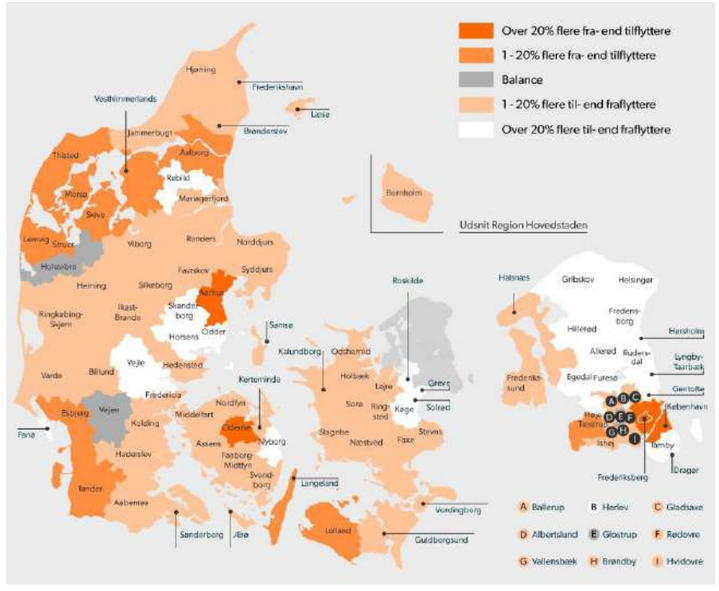
The malt factory has had significant influence in the history and economy in Ebeltoft, starting out as a merchant house like so many others in the town, but managed to expand with the town and become the second largest malt factory in Denmark. The factory employed many of the town's residents, and represents the period of growth in Ebeltoft. The bad infrastructure leading to Ebeltoft, does not support a notion of large companies returning or forming in Ebeltoft. However, the tendency described above suggest that the young families seek out of large cities to settle and commute from smaller communities with a strong local identity and close social connections. With a focus on the cultural community and creating possibilities for small businesses and independent developers, to explore their ideas and work in Ebeltoft, the growth of the malt factory could return as a cultural hub instead of an industrial factory. The factory will still be a working place, but with a new function, moving away from the closed private facility to an open and including culture house.

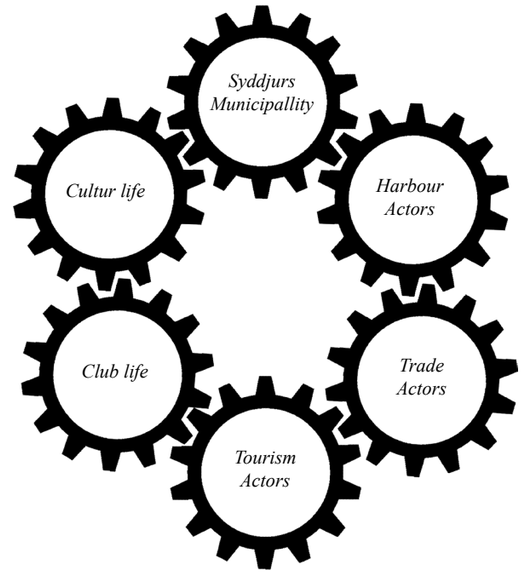
FOCUSGROUPS

In the process of revitalization, the greatest assets of Ebeltoft is its people. The people feel proud of their rich town history and the attractive surrounding nature. Ebeltoft thrives on a strong cultural life from the locals, with a large number of participants and enthusiasts in club activities, festivals and other events.

Ebeltoft is the culture centre in Syddjurs municipality, and attracts many tourists each year, for the history, the nature and the work of many local artists and artisans. The tourists and the summerhouse residents contribute to the economy of the municipality, through the commercial life and especially the retail businesses. This local attraction of artisans is a strong focus area in the revitalization of Ebeltoft. The local culture life must therefore be prioritized to engage with the tourists, and sharpen the identity of Ebeltoft. As previously mentioned the population in Ebeltoft is differentiated in ages, with a predominant elder and middle-aged group from 40 and above. In spite of the high amount of commuting. These people are also considered drivers in the growth of Ebeltoft. The summerhouse residents form local relations to the town. In many cases, they have the resources and value the engagement in the local culture community and club activities.

The large group of elderly people can also have a positive impact on the younger age groups. According to the development plan for Ebeltoft done by Dansk Bygningsarv A/S, 86% of the 0-5 year old children in Ebeltoft have at least one grandparent close by.





Previous page:
ill. 41: Statistic moving (DR 2016)

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ill. 42: Revitilazation strategy

By creating good environments for family activities, the young families might see qualities in the close connection to the elder generation and increase the possibilities for the families to stay in Ebeltoft. (Dansk Bygningsarv A/S 2015)

According to senior advisor Hanne Wittorff Tanvig at the department of landscape architecture and planning, there is an increasing tendency for younger families to move outside the big cities, to ensure safe neighbourhoods for their children, close to nature and social social environments. (Tanvig 2016)

The revitalization strategy will need better and more thoroughly organized cooperation, between the different participants within the town, to accommodate the different focus groups. It should be easier and more natural for the organizations and clubs to share knowledge and use each other. This requires a strong common understanding of the destination and vision for the town. (Dansk Bygningsarv A/S 2015)

03

THEORETICAL STUDIES

For a project to evolve, thorough analysis regarding the subject at hand, is of utmost importance. As such, the following chapter will contain a collection of analysis regarding contextual information, issues and historical background attached to the project, starting with a regional and general overview while gradually focusing down to town scale and finally the project site and buildings.

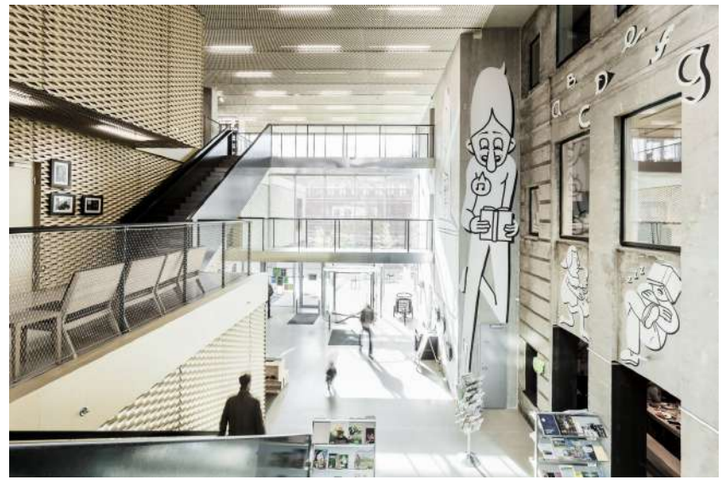
THE CULTURE HOUSE

Previously cultural institutions like museums, libraries, performance halls and sport facilities had their own buildings separately. Near the middle of the 1980's a growing tendency in Denmark began unifying these institutions into one building, contrary to the modernist culture and sports buildings, whose sole purpose where to create the setting for one function. Brandt's Cloth Factory in Odense were one of the first in doing so successfully and several other so called 'hybrid cultural projects' followed in the years to come. Many of them were arranged in old closed down factories, storehouses, power plants and schools for example 'Kødbyen' in Copenhagen and 'Nordkraft' in Aalborg. It seems that old industrial architecture in many cases have the spatial qualities that is needed to accommodate a diversity of cultural offers. The new hybrid cultural projects however need an architecture that is directly focused on the needs and purposes of today. There is increasingly a need for architecture that rethinks the modern culture house. (Marling, G. 2013)

The city of today can be seen as a network of relations from which the Danish culture house can function as a public meeting place, where the many relations are unified and different user groups meet. In contrary to modernisms idea of masterplan, the concept of 'urban acupuncture' has begun to gain ground. The idea is that by creating an architectural 'acupoint' the effect around it will scatter and influence the rest of the city positively. The acupoints should be placed in relation to existing resources of the city, which will be further strengthened and thereby scatter to other areas as well. The culture house is not predefined in its function, but works in the same way as an 'acupoint', whose influence and effect should spread across sectors to political, cultural and social initiatives, which generate growth in the local area.

Architectural acupoints should not be perceived as finished architectural spaces, but on the contrary as something that will develop and unfold itself over time, which make the 'acupoints' more open and dynamic. It is no longer a view that architecture alone, can change an urban space nor a building's interior space. The architecture can merely be a single element, that initiate tendencies or vibrations, that together with other initiatives, affect the experience of the city.

A nationwide study back in 2010 revealed that an establishment of a culture house is one of the most important interventions in urban regeneration, as the culture house can create the settings for local networking. In these houses, a diversity of social and cultural activities is mixed together, by which the houses become multifunctional. The new demand to integrate various functions in the culture houses affect the way these spaces are being designed. To make the culture houses adaptive to changes over time encourages an open programming, where the boundaries between functions are diffused, moving the architecture of the building. When the activities are unified in the same building, increased value is created for the activities that are integrated in the building. Studies show that the experiences in multifunctional culture houses influence each other, makes activities dependent on one another. Even though the culture house consists of many functions, it is still being perceived as one and the same place by its many users. The Culture house should not only be considered for its intended users, but also function as a gathering point for an entire local community. The culture house should be a destination, that the locals turn to, and thereby become the new social meeting place of the area. (Suenson, V. 2012)



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ill. 43: Nordvest Library - COBE

TRANSFORMATION

For many years, in the practice of restoration architecture, it has been a widely-acknowledged principle, that one must be able to read new interventions as new, and the original as old. This also applies for many new buildings were the contrast between new and old seems to be of an important principle.

Since the middle of the 19th century, a theoretical interest grew as to how one relates to old buildings. Two positions had significant impact in particularly. The French architect and theorist Eugéne Viollet-Le-Duc (1814-1879) and the English art historian John Ruskin (1819-1900) which historically symbolised two opposite approaches to the work with existing buildings from the most restrictive to the more permissive. Viollet-Le-Duc wanted to return the building back to its original form and style, were Ruskin's focused not on the style, but on the original substance and times mark. The most important document for the restoration practice of the modern architecture and the 20th century's is probably "The Venice Charter" (1964), in which the principle that in the modern thinking and practice, may have had the greatest influence in how the architect related to the existing, is being described as "Replacements of missing parts must integrate harmoniously with the whole, but at the same time be distinguishable from the original so that restoration does not falsify the artistic or historic evidence." For many restoration architect of the time, creating a clear contrast between the historical and the new architectural element were the general motive.

But maybe the question about new versus old is not that interesting at all. One can claim, that the dividing line is not between new and old, but between good and bad. If it is not about the building being as true as possible to its original expression and it is not a question about historical accuracy, the transformation architect is not just an interpreter of a historical object, of another architects' work, but an active co-creator of a new whole. In this way, the transformation become a question of building art.

The best examples of transformational architecture appear with readable historical marks, references and relations to the context, which result in a kind of inconclusiveness, giving a feeling of something unfinished. In this way, we are invited to continue the story ourselves. We can imagine what has happened in the past, and through the buildings experiential qualities form the architectural connection ourselves.

As a dynamic size the building is in a constant change process, constantly about to become something else. That does not mean that everything is allowed, and that you can do anything you want. If it has to make sense, the interference should be included as one in the row of a buildings many lives, the architects work must be driven forward with a high degree of knowledge of what has been in the past, a precise method and a clear building artistic approach.

The work with the existing, can with the assistance of a wide range of architectural strategies, modifications, approximations, connections, adaptions, reinterpretations, try to avoid a simplistic reduction and achieve a much higher degree of significant complexity. The interference can by establishing a certain experiential quality and building cultural significance, create a new form of whole, that in a forward movement connects the past and future.

Tectonic and transformation

The close relationship between material, construction, form and space seems under pressure in the present architecture. New construction types, materials and modern technologies have in many cases detached the character of the space and the building form from the material from which it is built of, and from the construction and the way the materials are joined together. The borderlines between the tectonic principles are being wiped out and the same applies to the architectural meaning.

It seems that much of the architecture today mainly focus on the visual appearance of the buildings. Moving away from the physical qualities, which has to do with the material properties and tectonic structure of the architecture. Juhani Pallasmaa criticises this reduction of the physical quality of architecture "As the buildings lose their plasticity and their connection with the body's language and experience, they become isolate in a cold and distant world of reason and clear vision." Pallasmaa explains how architecture of our time, has become the eyes "retinal art", without connection to the body's other senses.

Studies show that not only the tectonic, but also the historical and phenomenological aspects can be inspiring for the design, and that they can be transformed into a contemporary architectural practice. The parts can be synthesised into a new whole, were the individual parts are inextricably linked together. Technical, historical and phenomenon bound aspects can work together in the design process and in the experience of the building. It is not only the material in itself, or the tectonic as principle, but the architectural whole, that it is about.

Maybe that is the integrity of architecture, that Pallasmaa is searching for, very dependent on its correlation between material, construction, form and space. The material properties and the tectonic principles are not only about the visual, but also about the physical qualities, and an experience of the connection between parts and the whole.

METHODS OF TRANSFORMATION

By studying material properties, architecture history and existing building structures, one can identify a quantity of meaningful architectural characteristics, and thus secure, that cities and buildings worthy of preservation, are not ruined. The intention is that physical characteristics, historical marks and the space experiential qualities should contribute to a living building culture, consisting of varied, site-specific and present architecture.

One of the special relations, which characterizes the work with architectural transformation and restoration, is that there is always something existing: an urban context, an existing construction, a historic mark. It is therefore important to figure out if the substratum has quality worthy of preservation, before sketching or making changes. Even if the existing isn't worthy of preservation in an objective sense, it may still have strong architectural qualities that can serve as a source of inspiration for new interventions.

The book "Om Bygningskulturens Transformation" describe five architectural methods on the thoughts of transformation. All five methods are elaborated in Annex 1. In the following, two of the methods are described, which are considered relevant in the design process of the new malt factory (Harlang & Algreen-Petersen 2015).

Technical – historical – phenomenon bound

The technical - historical – phenomenon bound method is about the phases of a project, through which we try to understand the building intellectually and emotionally. The technical angle is based on an understanding that materials in form of building elements are connected in a certain order using building technology. The historical angle is used to describe the existing, and to place the existing situation into a greater architectural and cultural historic correlation. But just as important, the historical perspective can amount to an inexhaustible resource of inspiration for what is going to be. The phenomenon bound angle has to do with experiencing the architecture as it reveals itself to the user, a form of experiential realisation that can be experienced without a filter of what we think we know. The method makes it possible to deal with all three aspects simultaneously throughout the process and give it a direction. There is always something to start with, a trail to follow and a material to work with, whether it is a specific building material, historical or cultural marks. In this way, the architectural work become a question of identifying, changing, adjusting, developing and passing on.

Skin – Meat - Bone

According to the swizz architect Andrea Deplazes, architecture occurs when a material, through construction, gives form by the hand of the architect's intention.

The Skin – meat – bone method is about understanding a building as a tectonic constructed whole, consisting of three different, but mutual dependent elements: Facade, space and structure. Skin represents the facade, meat represents the space and bone refers to the structure.

Skin is about the membrane that separates outside from inside. The facade is crucial in a resource optimization, given that the buildings lifetime is dependent on the cultural recognition with the residents and appreciation of passers-by. The facades aesthetic expression is, in other words, crucial for a sustainable architecture.

Meat can be understood as the volume, the house shape and inner spatial organisation, the buildings inner organs. It refers to the house gestalt and inner connection, the spaces' mutual relation, as well as each separate room's special atmosphere. Meat can also constitute the plan drawing, which describe how the human body moves in the room.

Bone refers to the buildings construction and structure, the house framework. The construction can be independent and a character giving element, that constitute an important and meaningful part of the space and experience of the house atmosphere, or it can be a neutral part of the house construction. Bone can also embody the section drawing, describing how the house transmit gravity forces through the building parts and into the ground.

04

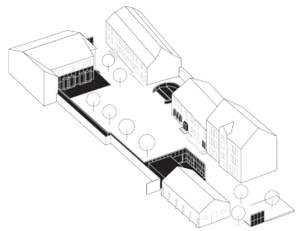
CASE STUDIES

As an addition to the program, with an intention to find inspiration and possible guidance, this following chapter is fitted with studies of selected architectural works that are representable for their good qualities.

CULTURE YARD

Location: Helsingør, Denmark
Year: 2010
Architect: AART Architects
Gross area: 13.000m²

Kulturværftet, won by AART in 2005 and finished in 2010, has today not only become a local success, but added a modern touch, new life and increased international identity to the city of Elsinore. From being an empty and unused building since 1983, it is now more popular than ever before. With a visitation number reaching 750.000 and hosting 600 cultural events a year, ranging from concerts and theatre pieces to conferences and exhibitions, all held within it's 13.000m², it has become a prime example as to how a culture center could and should be built. Today, the building is clothed in a prismatic glass and steel grid facade inspired by naval sails, contrasting and connecting the old buildings into one strong and coherent structure that acts as a hinge between past and future. Although the building has been brought up to date, its industrial past and feel has been kept throughout its interior by use of rough materials such as concrete, wrought iron, steel and untreated wood boards, which interact with the modern glass structures and interior design, contrasting past and future. Through the entrance, the foyer acts as the central node, leading onto an arcade that connects the buildings and hosts a cafe, the children library on the first floor and the 6000m² prestigious main library divided over the upper 3 floors, where visitors can relax while reading a book or just enjoy the view of the sea and Kronborg castle.



Previous page:
ill. 44: The Culture Yard - AART

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ill. 45: Saint Nicolai Culture Centre
ill. 46: Nordvest Library - COBE

SAINT NICOLAI CULTURE CENTRE

Location: Kolding, Denmark
Year: 2008
Gross area: 5.500 m²/ 11.000 m2(w. courtyard)
Architect: Dorte Mandrup Architects

Being the result of a competition based on conversion and reuse of cultural heritage, from 2002, the Sct. Nicoai Culture Centre, located in the middle of Kolding, was transformed from an unused school complex to a cultural centre. Out of the 5 buildings built in periods between 1856 and 1909, two were listed as cultural heritage. The transformation has given each building a unique functional programming: Cinema House and Café, Heritage House, Children's Culture House, Arts House and Music House. Throughout the process 3 main strategies were implemented in collaboration with the landscape architect. The first strategi were to use weathered corten steel sheets to connect the 5 building, each of which hosted different materials, expressions and volumes, thereby creating a sense of unity and consistency throughout the project. The second strategy was to preserve the asphalt courtyards informal character as the as the primary surface within the site, though allowing for upgrades of special defining objects and shapes. The third strategy were to keep a tight budget, by utilizing collage-like strategies for changes and renovations. Leaving some areas more detailed than others. Intertwining the different programming and architecture to a unity, has made sure that the new frame set by Sct. Nicolai, creates life through the center of Kolding. The project also proves how to conserve cultural heritage by rethinking their function in a contemporary context and use, while also solving an issue of city development in historical context.

05

SUMMARY

In the following part a summary of the prior phases will be compiled and a set of design parameters will be concluded, leading up to the projects vision.

A NEW IDENTITY

Through the studies explored in the theoretical chapter, we have gained knowledge necessary to express a new identity for the Malt Factory, that will set the basis for a contemporary architecture.

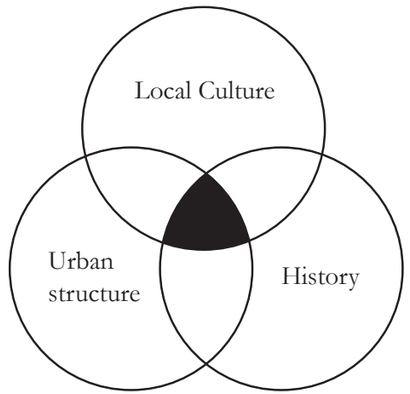
In order to revitalize itself as an old harbor and borough, and to modernize towards a contemporary context, the municipality of Syddjurs has decided that Ebeltoft is to adapt a new identity as the cultural city of Djursland, where the old Malt Factory will play an important role as a focal point for culture and creative profession. Today cultural institutions are not necessarily considered separate functions, but are increasingly unified as multifunctional cultural hubs, with a diversity and multiplicity that set the framework for people to meet and create networks across age and background. This will create the settings for attracting new resources that can contribute with an increased value to the town and scatter its affects to nearby areas. The factory buildings now stand as abandoned and dilapidated sculptures, awaiting to once again feel the atmosphere of a bustling and vibrant environment. Still, the iconic building has a great deal of meaning for the citizen's sense of place and serve as an important symbol for the history of Ebeltoft.

Where the town previously relied on its trading and industrial growth, it will now depend on culture as a generator of growth across its sectors. Instead of a private plot, solely functioning as a workplace for the working-class people in the past, the area will now stage the setting for a new public meeting place and a community that welcome the varied and the diverse and will contain functions that encourages for creative and cultural initiatives. The old single purposed function as a malt production and its very rational and functionally divided building volumes will now be captivated by floating and multifunctional spaces, which creates an architecture that are intended to develop and unfold itself through time and space and adapt to new societal trends. For many years, our society have been affected by globalization in the way we think about the world and how we manage around it. People no longer feel at home and as attached to one place as earlier but to several places as you move and travel around for studying, working and experiencing. But even though we have become more oriented towards a globalized world, there is also a growing interest for the local happening today, for the unique and distinctive that in the local underlines the varied and diverse. These values will be the soul and the driving force of the New Malt Factory.

Just as places shapes us as humans, as we mirror ourselves in the surroundings that we go to, so can we as people create the settings for places. We are mutually connected to places and through our activities and thoughts, we help to shape places. We go to places where others go and that we can identify ourselves with. It is therefore of great importance as an architect to be able to identify the sense of place, in this case, it was essential to clarify the identity of the place before starting to design.

The majority of the remaining buildings volumes on our site are evaluated high in terms of preservation as stated in earlier analysis. Although this necessarily doesn't mean that significant changes can't be made to the existing, one must still have to be delicate in the way to intervene. The new identity will set the settings for a place and an architecture were the new meets the old, but in a way, that will not be weakening the historical identity and atmosphere of the place, but at the same time still creates a sort of contrast in between. The site is very much characterized by undefined urban spaces that were very practically arranged to create a logistic flow throughout the site. These urban spaces will play a vital part to connect the old town center to the new harbor front and will consist of various recreate and characterful experiences. This form a holistic approach to the realization of the new identity, where the existing building must stay for their symbolic value to the people of Ebeltoft, but equally be evaluated on the cultural experiences and the strengthening of the urban structure.

The buildings that seem closed and massive without many openings needs to be rethought into modern times I order to fulfil current living norms in terms of ceiling heights, daylight conditions and indoor environment. It will need to open op for its surroundings and work with transparency in order to achieve a relation between inside and outside. Today there is a growing focus mainly on the visual appearance of the buildings, but we must also consider the rest of the human body's senses acting together with the physical qualities, which has to do with the material properties and tectonic structure of the architecture. Focusing on the physical characteristics, historical marks and phenomenon bound aspects will contribute to a living building culture consisting of varied, site-specific and present architecture.



ill. 47: Holistic diagram of new identity

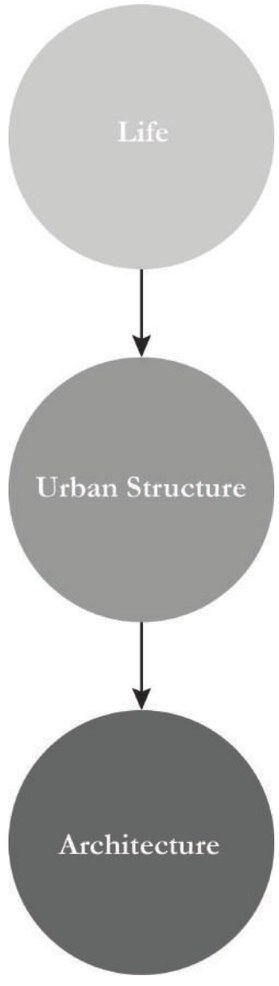
VISION

The transformed Malt Factory is to become the new catalyst in Ebeltoft, providing a frame for multiple cultural offers, that in unison will build on the old identity and form a community that will set foundation for the new town centre. Inspiring to social interaction between the different user groups, the Malt Factory shall encourage and provide multiple atmospheres and levels of intimacy to become a place where everyone feel welcome.

To form a diverse community, the project will put life and social interaction first, as life generates more life, and unfold in many forms. Therefore, this will be the main catalyst, behind the design of the cultural hub.
The life in the old factory site will be enhanced through the urban structure, forming a connection from the old borough to the harbour front. Ensuring a plethora of experiences when transiting through the area.
The architecture shall submit to the life and become the frame for interaction. The design must therefore appear with an inviting and informal character.

DESIGN PARAMETERS

- The transformation shall frame the old identity of the site, and form a foundation for the new.
- The flow through the site must form a connection between the borough and the harbour front.
- The buildings shall open up for interaction with the urban spaces.
- The urban spaces must have different characters to ensure diversity in experiences.
- The buildings must have a diverse programming, where different functions invite new experiences and relations.
- The buildings must be formed by and frame the different experiences on the site.
- The design should be of an informal character.
- Entrances and passages must be clearly defined.
- The building structure must be functional and put focus on creating life in the different spaces.
- Life in the urban areas shall determine the structure and flow, which together will shape the architecture.



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ill. 48: Design Strategy

07

PRESENTATION

In the following part a summary of the prior phases will be compiled and a set of design parameters will be concluded, leading up to the projects vision.

ill. 49: Courtyard render

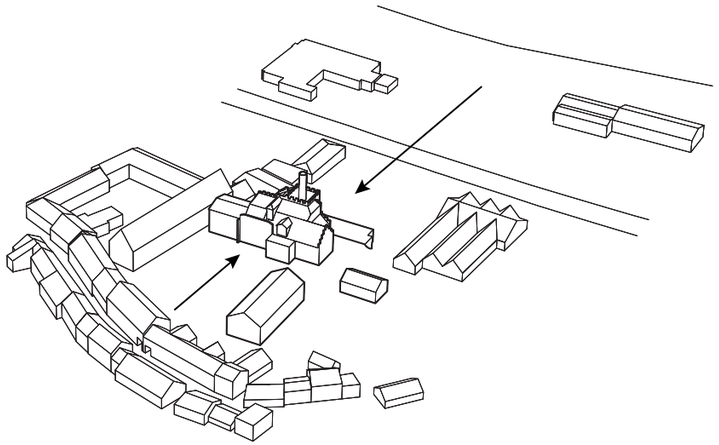
SITE PLAN

With a flowing landscape, The new malt factory work as a catalyst, stretching from the busy street life of Adelgade down to the calm breeze of the harbor front, bridging the two areas, where old meets new, adding zones with new experiences that bring about new life and culture for generations to come.

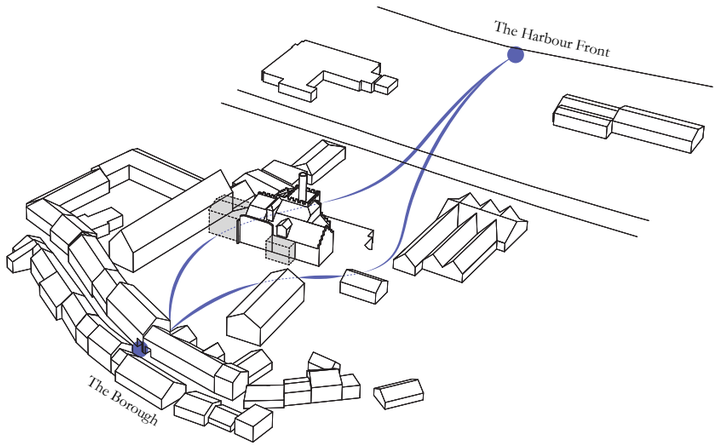
ill. 50: Masterplan

CONCEPT

The architectural concept derives from the hierarchy of the vision, and illustrates a pragmatic approach to the transformation of the factory site. The design focuses on the opportunities for letting life unfold and be experienced in the different spaces of the site, providing the visitor with plural impressions, while still maintaining a coherent architectural thought. The concept forms the building from the life and flow in the spaces and generates a unique identity shaping element, which connects the whole site together.



1. The existing building mass, forms the base for the transformation, but also hinders the flow between the old town the water front.



2. Existing building mass is therefore removed, to form easy flow round the factory building.

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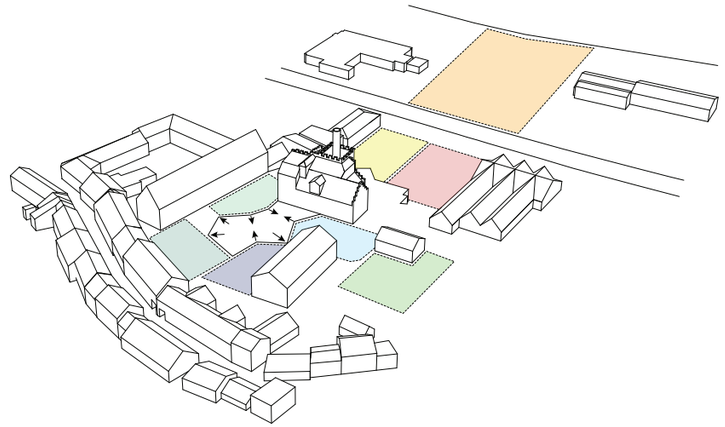
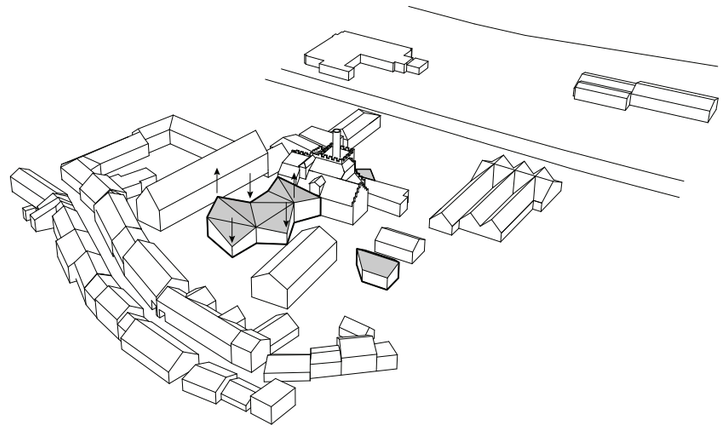
ill. 51: Concept diagram 1
ill. 52: Concept diagram 2

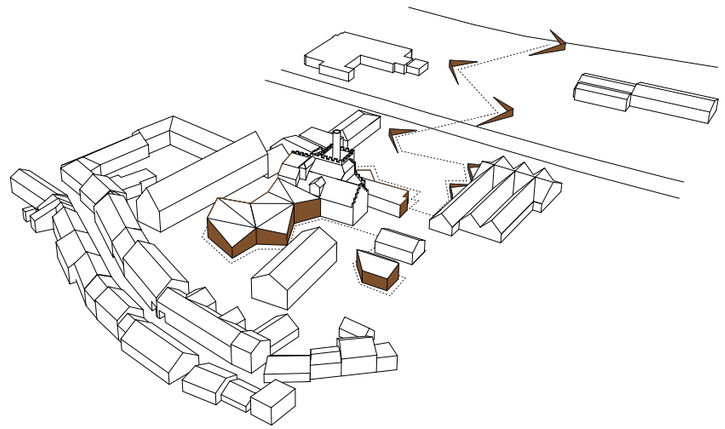
3. A series of Accupoints are formed through the site, and the urban area 1 is spilt in smaller areas, where spaces and passages are formed according to flow and atmospheres.



4. From the negative of the spaces, a new building extension is formed creating a new heart of the site. The Roof of the building is adjusted let the sunlight into the urban areas, and form a dynamic volume, which interacts with the old factory.



5. The materiality of the facades relate to the character of the old industrial buildings, and is continued as an identity and space creating tread through the site.



Current page:
ill. 53: Concept diagram 3
ill. 54: Concept diagram 4
ill. 55: Concept diagram 5

EXPERIENCING THE NEW MALT FACTORY

The transformation of the Malt factory form a series of new urban spaces in the site connecting the old borough of Ebeltoft with the harbor front. The different spaces of the site have been designed with focus on creating a diverse programming with multiple cultural offers to spark the curiosity within passing visitors.

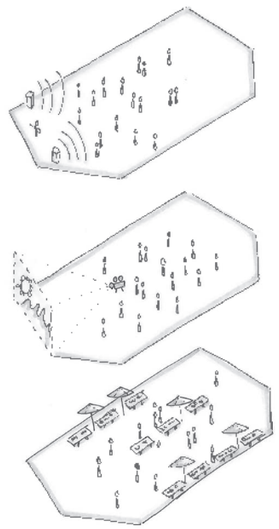
Entering the site from Adelgade visitors will be met by a quiet pocket, "Købmands Haven". The area is a place to experience the intimacy of smaller gatherings, where people are able to relax and enjoy meals, whether it being in the restaurant, or on the open grass. Occupants will experience the flow of people directed to the library or just passing through the site.

When continuing along the Malt Storage, people will experience the life unfolding in the library foyer, as well as views into the brewpub, where the freestanding brewing tanks are exposed, before arriving at the central area of "Fabriks Torvet". This is a performative area, meant to host local exhibitions and events. Furthermore, the square can host the local market, or be an outdoor exhibition area for the local artist, the museum or library. The square has access to the brewpub, from where local brew tastings can be served, and support the crowd when local performers hold concerts or movies are shown on library façade.

"Fabriks Torvet" is framed by the Malthouse and the new addition, the food workshop. When passing between the two buildings people enter the garden area, where the food workshop can grow their ingredients and the visitors can find a quiet spot to relax.

Moving south around the library and the factory, the "Malt Ally" opens up towards the west and providing an pleasant passage down to the harbor front. The area form an informal space where visitors of the library can enjoy a cup of coffee in the sun, while reading a book. It also open up to the façade of the long neighboring building, which in the future, has the potential to become an attractive space for shops and smaller businesses

Continuing further around the factory building, the view towards the harbor front and Ebeltoft Bay open up in a large vista, where the wood and metal workshop can move their work outside. Below the plateau is "Rampen" which capsulate a house for the young, allowing for privacy and the ability to enjoy their own space and skate park, or congregate the open grass of "Siloparken", a natural slope that make an ideal area for concerts and other events. Closest to the bay, lies an area for the occupants to relax, as well as sports facilities, which bring activity to the harbor, which have been limited to the back town of Ebeltoft.



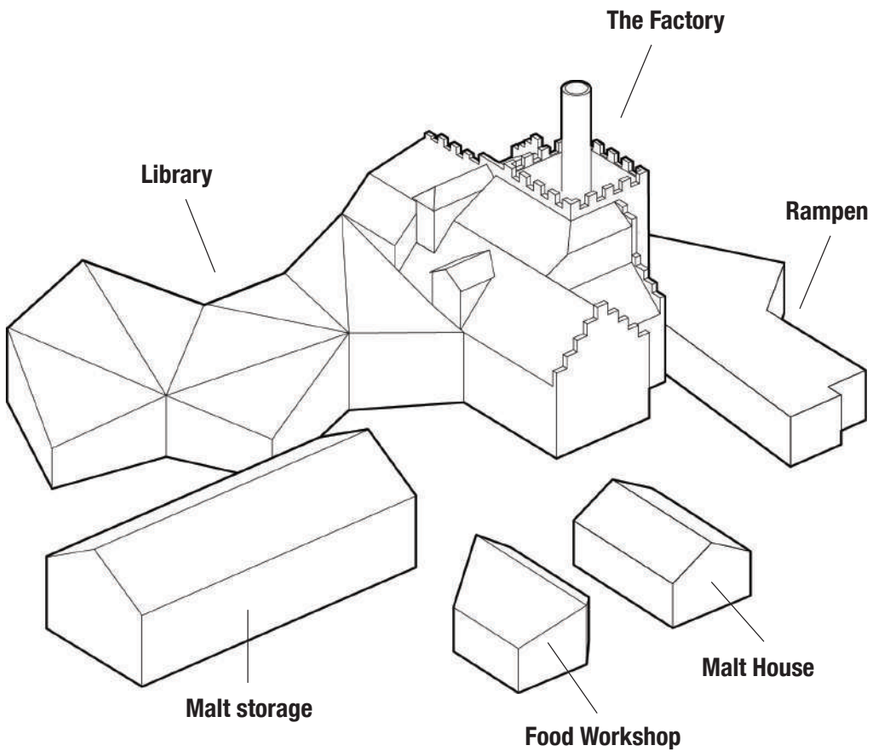
These illustrations show different scenarios of how the "Fabrikstorvet" is imagined to function.

Current page:
ill. 56: Scenario Fabrikstorvet
ill. 57: Ground floor in urban context

BUILDING OVERVIEW

The Culture hub of the new Malt Factory consists of five buildings where the main building is the old factory with the new buildings extension, the Library. The buildings contain varied programming, which in total form a cultural village of 4519 square meters.

Like the programming of the urban areas have sought to form a diverse mix of experiences, the buildings have been programmed to support the experiences of the spaces. The intent that some functions in the future might be inspired by the others work or exhibitions and in collaboration shape the new identity of the Malt factory and become a stronger community and local culture.



Room program

The Library	1544 m2
Foyer	360 m2
Small children's area	82 m2
Youth Library	145 m2
Kids Library	153 m2
Creative workshop	45 m2
Book café	120m2
Museum/archive	394 m2
Library storage	87m2
Closed Archive	59m2
The Factory	1200 m2
Exhibition area	268 m2
Workshops	88 m2
Work community	355 m2
Adult library	200 m2
Personnel	78 m2
Showroom	59 m2
The Malt storage	1250 m2
Restaurant	130 m2
Brew pub	210m2
Kitchen	43 m2
Closed brewery	78 m2
Culture House	230 m2
Back stage	32 m2
Rental room	92 m2
Staff	26 m2
Stage storage room	16 m2
Restaurant storeroom	55 m2
Internal storage	16 m2
External Storage	91 m2
The malt house	102 m2
The Food workshop	115 m2
Rampen	308 m2
Youth club	120 m2
Circulation/ Lounge	58 m2
Music studio	55 m2
Total	4519 m2

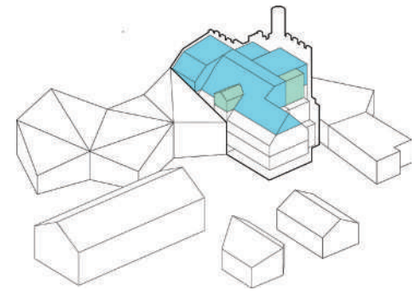
Previous page:
ill. 58: Ground floor in urban context

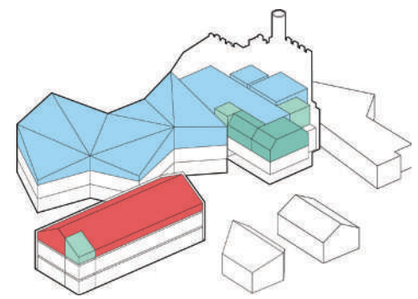
PROGRAMMING

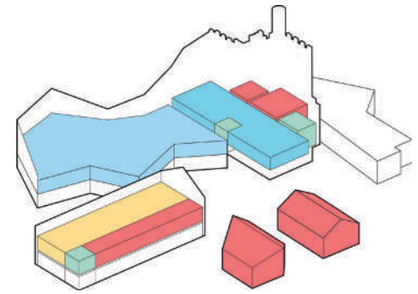
The ground floor have the direct interaction with the urban areas, and are therefore programmed with lighter function, where people can easily enter and interact without any deep affiliation to the community. This involves the workshops and atelier, the local restaurant and exhibitions spaces, for the artisans, the library or dynamic exhibitions of the museum, which can relate to both tourist as well as the local community. The building extension holds the library foyer, where people can enter, congregate, interact and seek information, without disturbing other visitors in quieter studies.

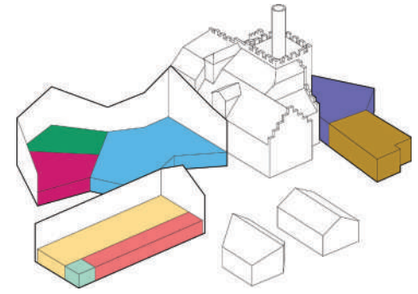
When entering the library, the visitors become aware of the functions in the basement, which hold the museums static exhibitions on the history of Ebeltoft as well as the archive. The malt storage hold the brewpub which serves the local specialities of the microbrewery.

Towards the harbour side the youthclub "Rampen" have been extended with a music room, which maintains the space for the young community and local music enthusiasts. Futher up in the complex the library provide the quieter sections, for the deeper studying or relax reading. The Malt storage provide space as a culture house, for music performances or private events. The top of the malt factory contains the working community, which provides a work space for local enthusiast and developers so have a work space away from home and interact in a common creative environment.



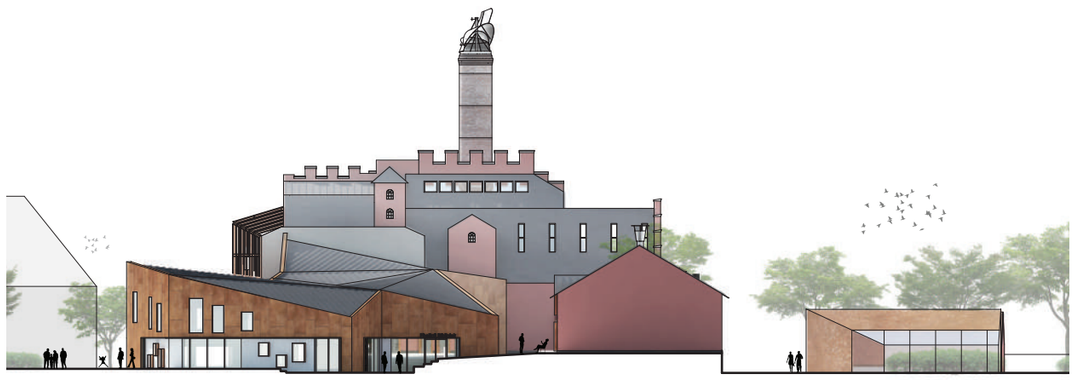




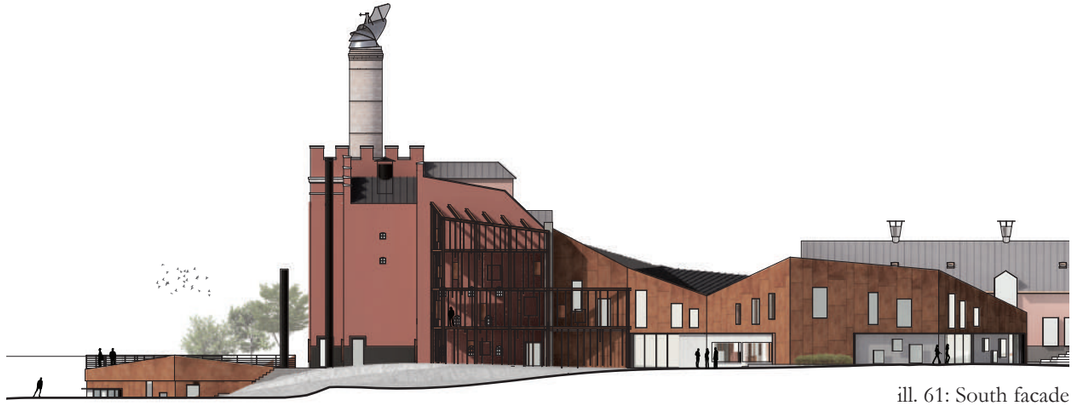


Next page:
ill. 59: Programming overview diagram

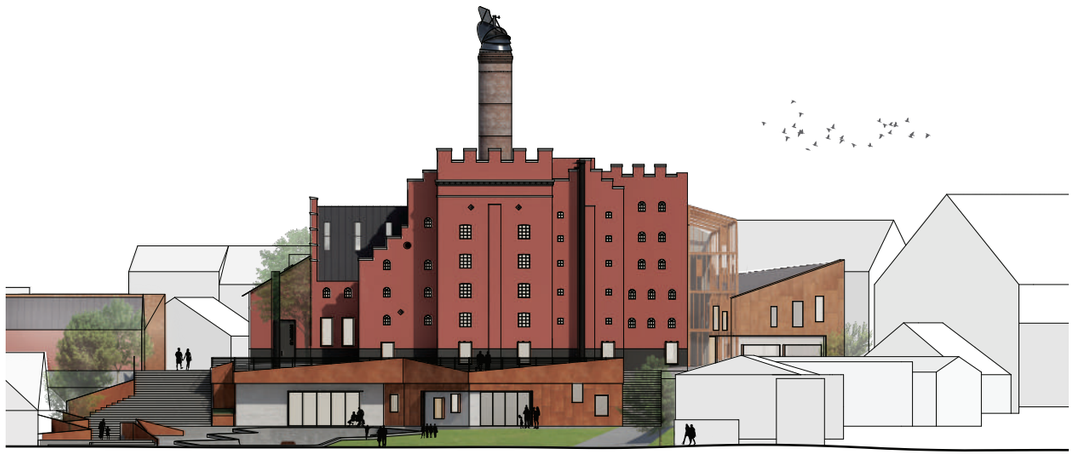
FACADES



Ill. 60: East facade
1:500

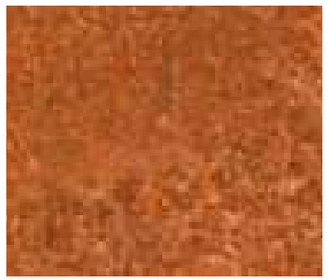


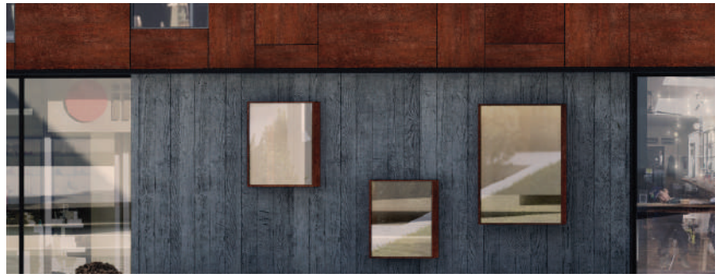
ill. 61: South facade
1:500



ill. 62: West facade
1:500

ill. 63: North facade
1:500





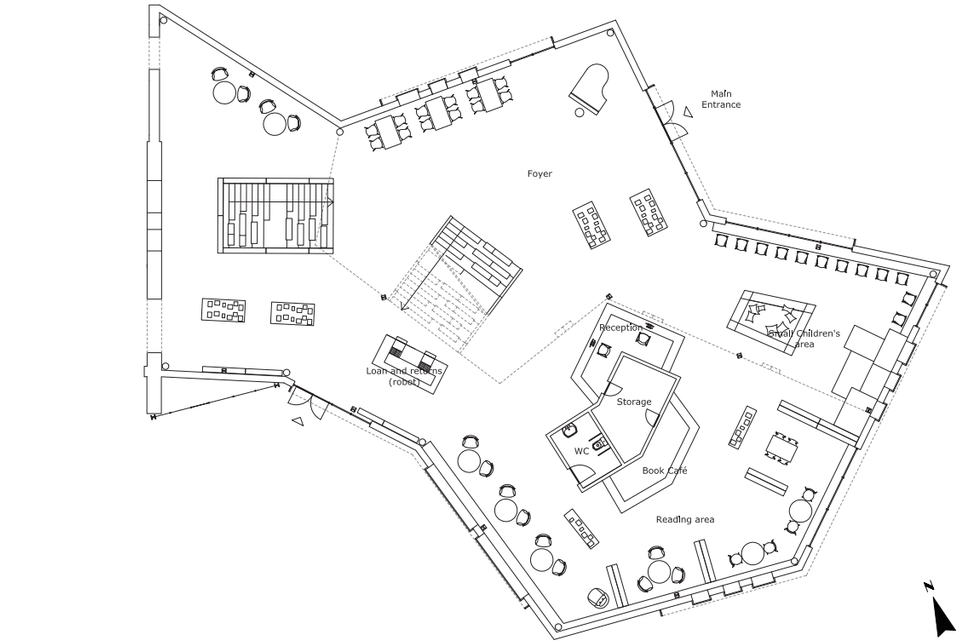
MATERIALS

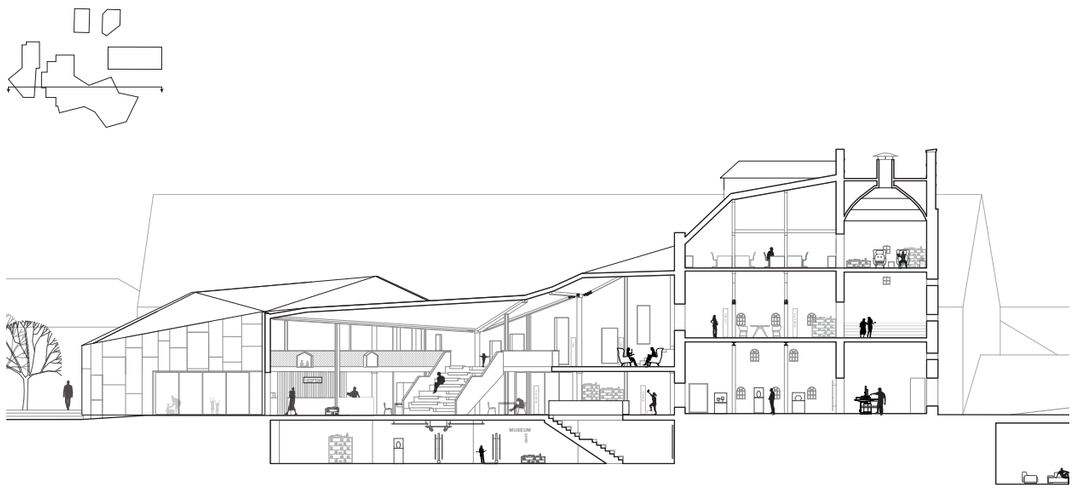
Along the facades and site the exterior is clad and detailed in sheets of corten, a material that unify the project into a whole, creating a flow and direction through the site, while also defining the difference between new and old. Glass perforates both old and new masses and corten highlight the incisions, giving focused views in and out of the buildings. The paving throughout the site varies from tiled concrete to grass, guiding users and visitors alike, while adjust the speed of flow though depending on texture, pattern and material.

The aluminum roofs are kept dark, shifting focus to the vertical facades, which define the human scale of the urban areas. This define a frame that focus on producing life and creating the social interactions that should and could take place, throughout the site.

Previous page:
ill. 64: Corten material
ill. 65: Brick wall
ill. 66: Concrete wall
ill. 67: Concrete pavement

ill. 67: Interior render of Library





THE LIBRARY

The extension of the malt factory's primary function will be as the new library in Ebeltoft. The Library will be more than a place for seeking knowledge. It will become the heart of the culture hub, and bind the areas of the site together.

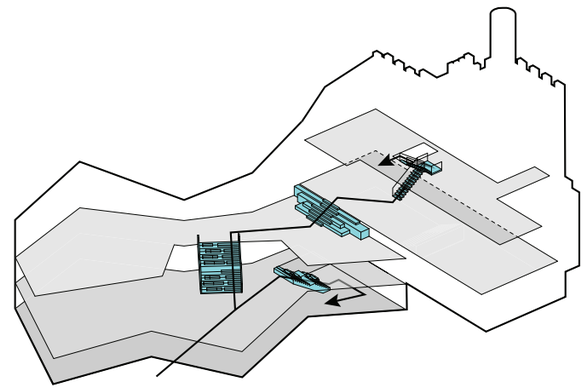
Entering the library, the room opens up in a large foyer, giving a clear overview of the whole building. The plan is arranged with the stairs at the center of the building, arranging different library sections to the facades, for close interaction with the outside. The functions of the ground floor are arranged with a focus on social interaction and light reading material. Visitors can get information in the reception or enjoy a coffee in the book café while their kids can unfold in the small children's area.

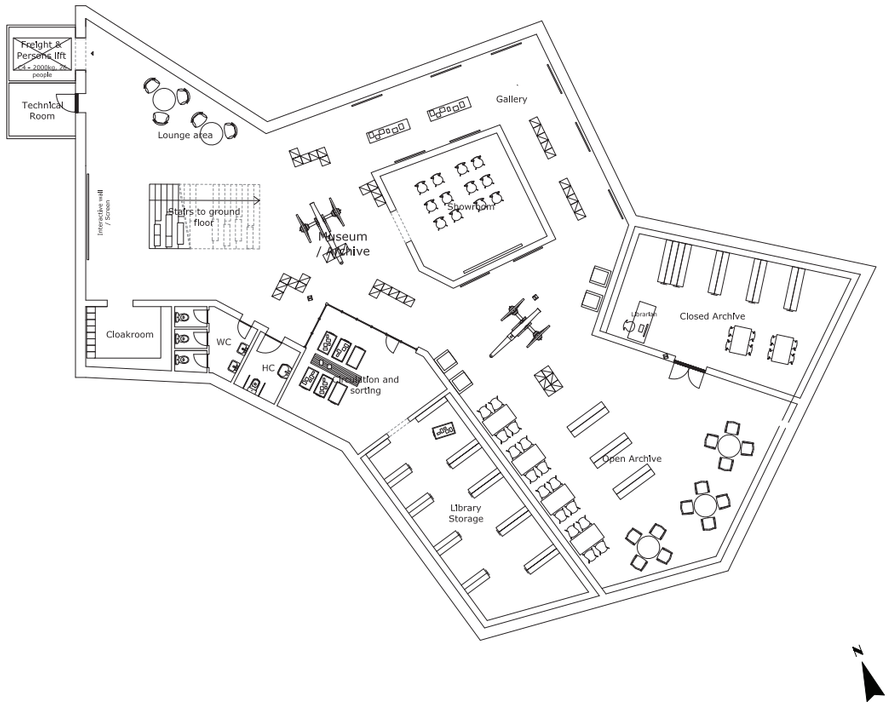
The first floor is arranged for the young, where the kids can read in groups, draw or do group projects at large tables in the creative workshop. The open and easily read foyer, makes people aware of the life going on within the library.
Descending to the basement, the staircase faces a wall that portrait information, before opening up to show the permanent exhibition and the archive. Compared to the ground floor and first floor, the basement has a more formal character, being artificially lit, allowing for the exhibition material of the museum to be specifically staged.

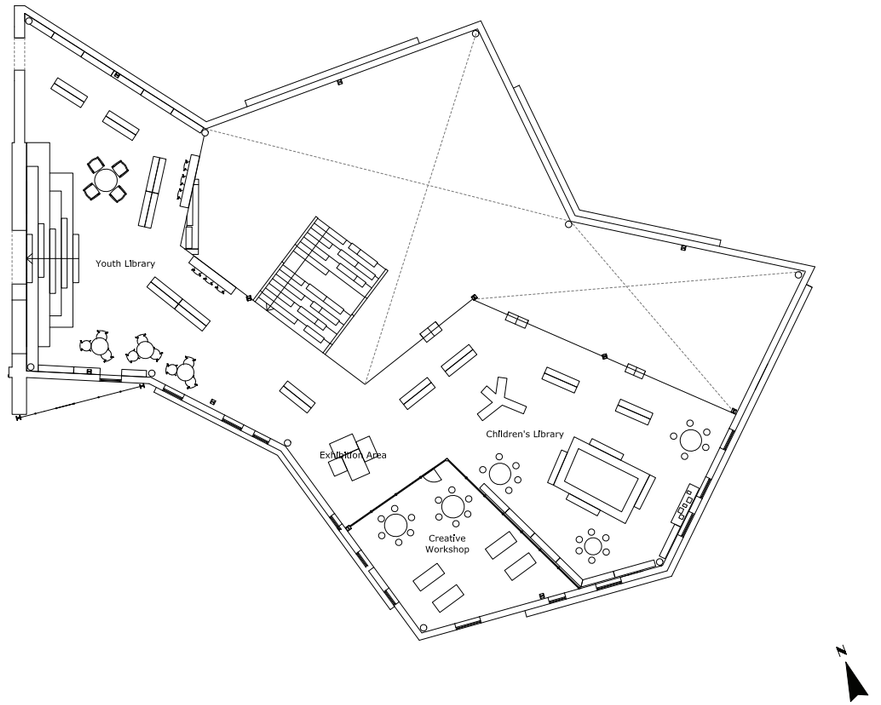
Multifunctional staircases connect the different floors throughout the building, giving possibilities for the library, museum or other actors within the culture hub to showcase material, catching the attention of people that pass by. The Staircases also form natural spaces for occupancy, where people can rest or take part in lectures or entertainment.

Previous page:
ill. 68: Library Ground floor plan 1:300
ill. 69: Section C-C 1:400

Current page:
ill. 70: Flow diagram







Previous page:
ill. 71: Library Basement floor 1:300

Current page:
ill. 72: Library First floor 1:300

MATERIALS

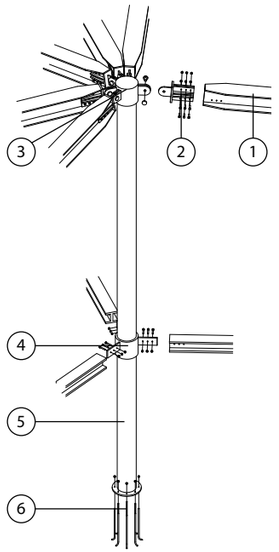
With the intention of fading the barrier between exterior and interior while also keeping an informal expression, to more easily invite daily passers-by and visitors into the architecture, a specific set of materials have been used, to serve this purpose.

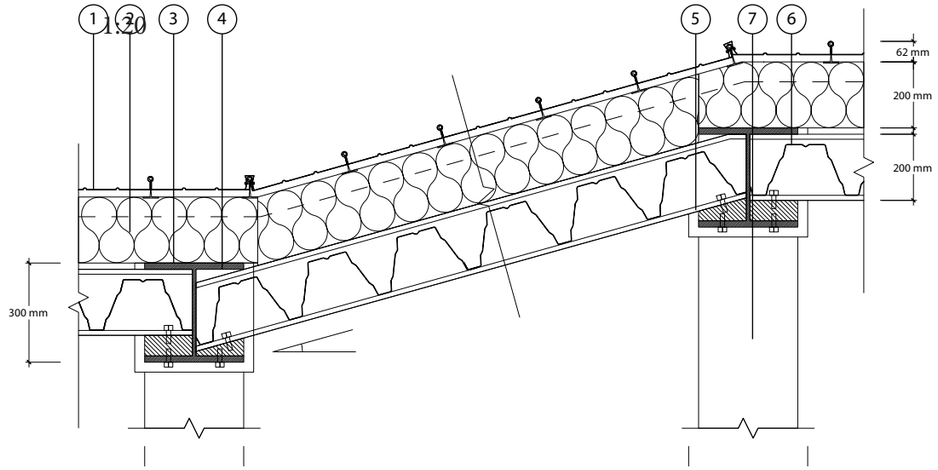
By entering the building on a concrete surface, the boundary between outside and inside is minimized, making entry, unconsciously, an easier hurdle to pass. Steel construction stretch from entry level to ceiling, but is toned down both by its simple expression and white fire retardant (REI-60) paint. The ceiling blends together with the construction filling the triangular voids of the construction with nearly white trapezoidal aluminum sheets. A softer and warmer expression is introduced by the use of plywood sheets, along the walls, and wooden floors from the 1st floor and upwards, differentiating the zones visitors pass.

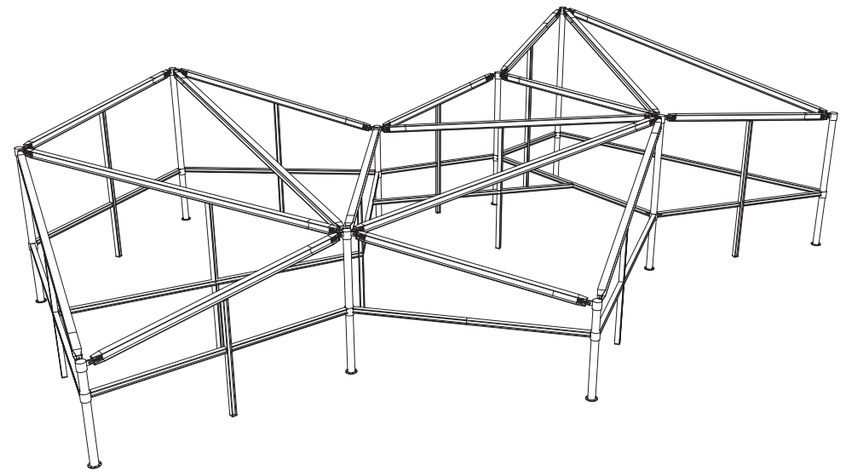
The tall glass window surfaces diffuse the boundary of the extension, opening up the exterior to the interior and vice versa, while corten bend in from the exterior and form window sills that frame the window openings, hinting of the material that bind the site together.

Next page
ill. 73: Trapez material
ill. 74: Plywood material
ill. 75: Concrete flooring
ill. 76: Brick wall

CONSTRUCTION







The library construction is designed to emphasize and underline the extension shape with an informal and clean look, but at the same time be humble to the unique identity of the malt factory. With a multi-angled boundary, the construction requires customized solutions, and the result has been to place simple and clean HEB profiles, acting as beam and column, along the straight sections, while the corners have directionally undefined cylindrical steel columns. The construction is aligned with trapezoid profiled steel sheets, which are sectioned up with HEB220 steel rafters, that slide into the larger HEB300 rafter supports, resting on the cylindrical columns.

The construction buildability is implemented into the design by delivering the corner columns in modular pieces. The direction specific crown and shoes are custom made for the individual column off-site and welded in place on-site. Additionally the top beams slide onto special made shoes, connecting to the crown. This allows for use of cheap standard pieces, resulting in smaller and cheaper customization pieces, which are cheaper and more easily handled.

Current page
ill. 77: View of construction in library
ill. 78: Joint diagram
ill. 79: Roof detail of Library
ill. 80: Construction diagram
(Legends found in drawing folder)

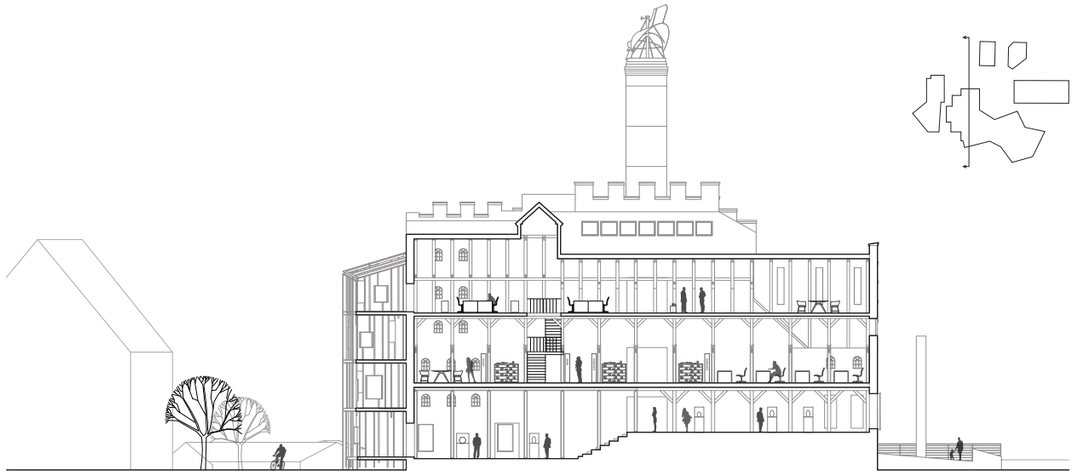
ill. 81: Seaside render

THE MALT FACTORY

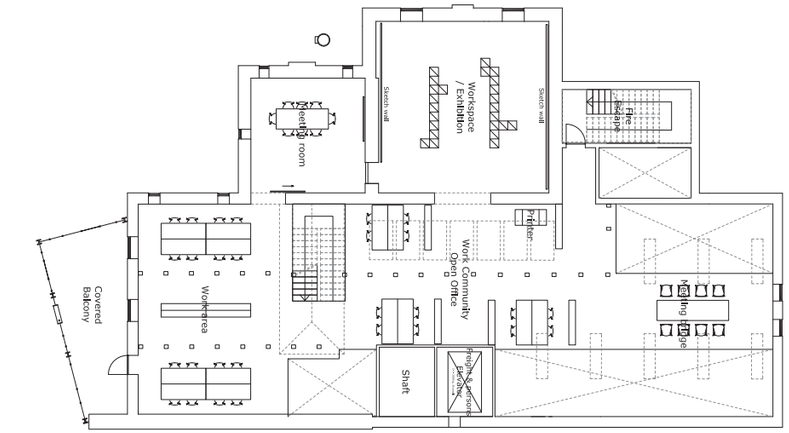
The old Malt factory stand as a contrast to the open and dynamic character of the new extension, with a regular form and periodic structure. The factory building is therefore programmed with functions of different characters. The ground floor contains public workshops within the old kiln, where they have direct access to the outside and close contact with the rest of the ground floor. Here the workers can showcase their creations, assemble larger projects or support other functions by being an active installation. The large space is optimal for temporary exhibitions, which engage both tourist and local community.

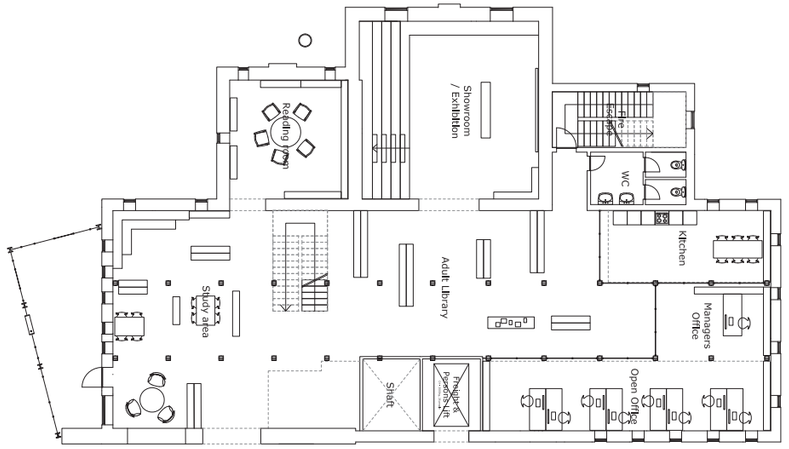
On the 1st floor of the malt factory, the quiet areas of the library are located, with the adult section of fiction and literature. Along the north wall, an office area for the personnel is located, where the visitors can get help with finding the right material. The adult section is arranged with smaller reading nooks, letting visitors read in a quiet environment.

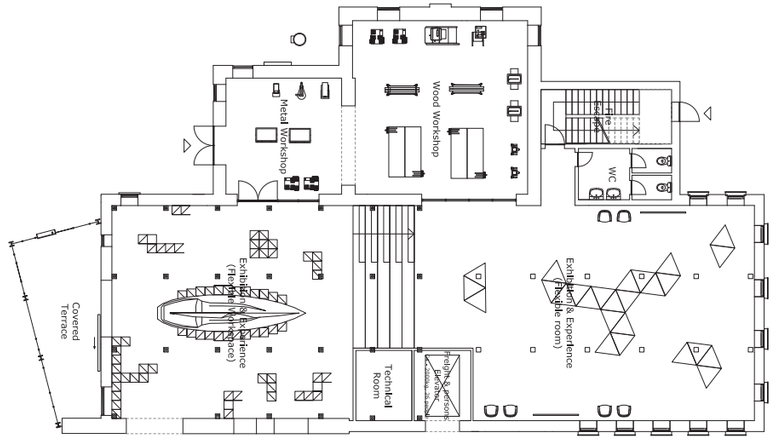
The top floor of the Malt Factory, is arranged as a working community. Here individuals can do projects, as local enthusiast or independent developers. The community is an integrated part of the library, to create awareness about projects and make it easy for the community to seek information from the library or exhibit their work.



Current page
ill. 82: Section A-A 1:400
Next page:
ill. 83: Malt factory second floor 1:300
ill. 84: Malt factory First floor 1:300
ill. 85: Malt factory ground floor 1:300

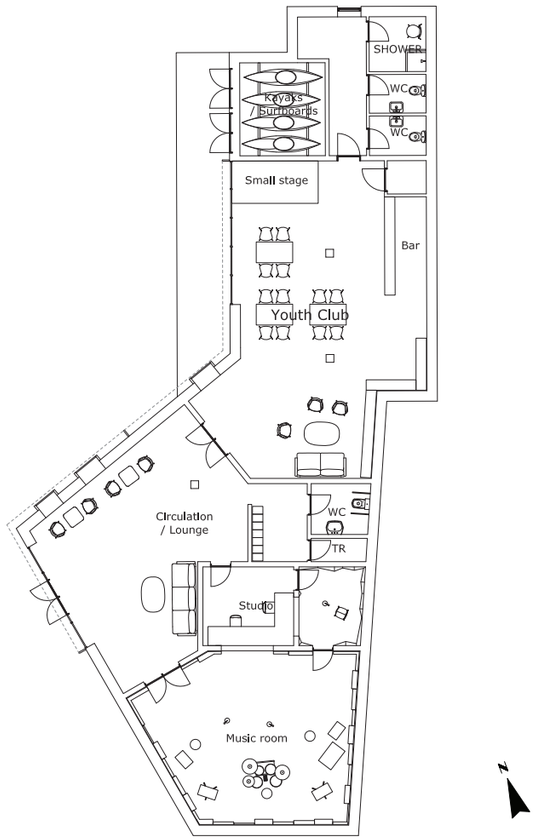


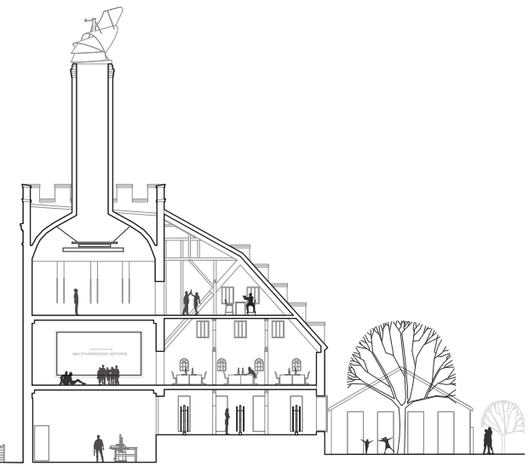


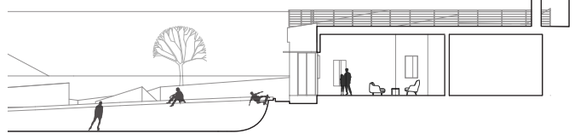


RAMPEN

"Rampen" is preserved with an addition of a larger lounge area and a music studio. The building is internally connected, although, the addition is pushed out dividing the outdoor space of "Siloparken", giving the two ends of the building privacy. An important value to the youth club, wanting a place of their own. The youth club and the workshops are placed in close relation, to fit in with the rough character of "Siloparken". That way the two function will be able to form relations, where the workers help the young with reparations of additional skater facilities, while the young can be engaged in the culture of the public workshops.







Current page
ill. 86: Rampen 1:400

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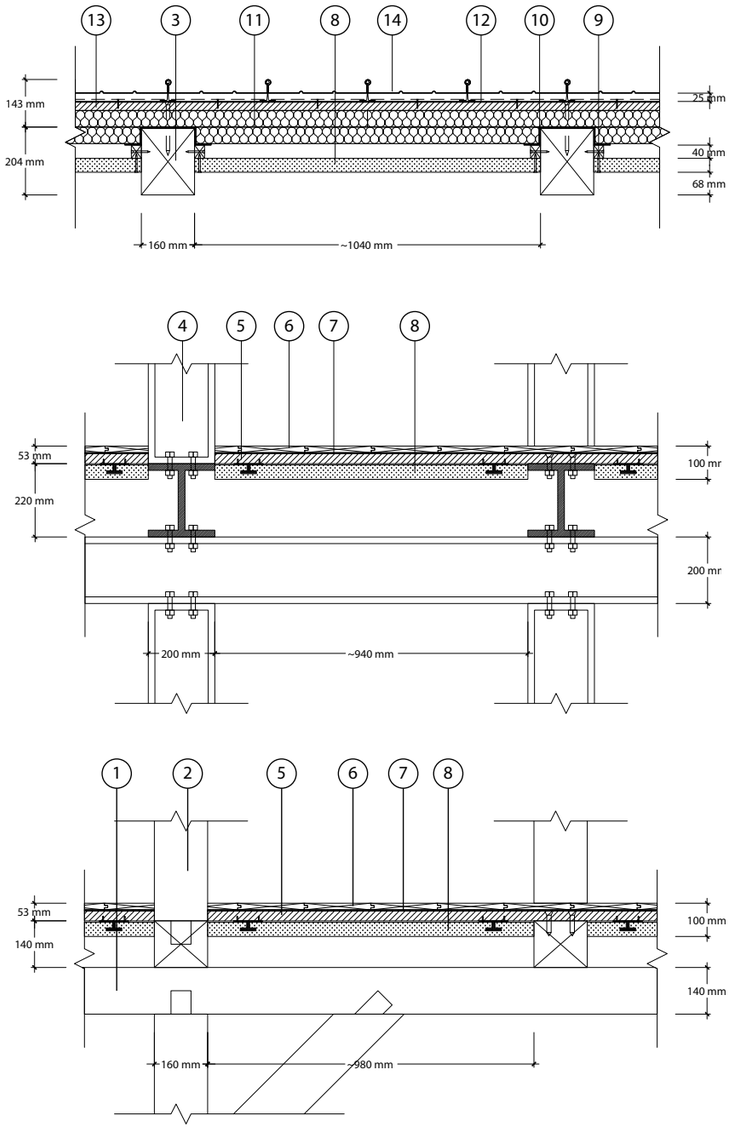
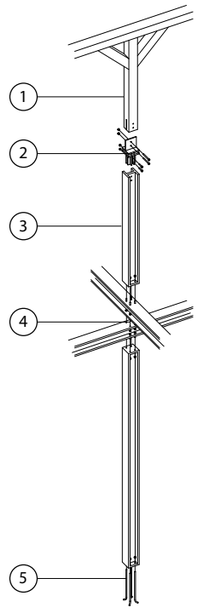
ill. 87: Section D-D 1:400



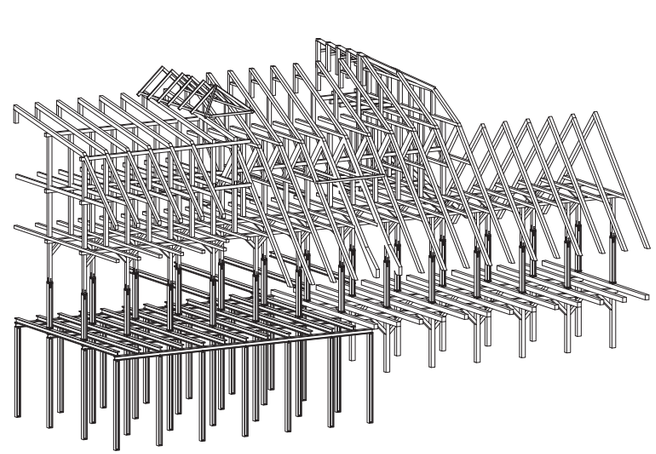


CONSTRUCTION

Aiming to preserve as much of the original construction as possible, it has been important to clearly show new incisions and contrast them from the initial, in a clear, but humble way. With the problem of the original construction rooted in too low ceiling height, unusable floors are removed, inserting a new construction. Steel HEB profiles are implemented, following the old constructions pattern, stretching out the functional floors.

This leave two rows of the old characteristic wood columns hanging in midair. Instead of removing historical columns a, custom made, shoe made off-site, is connected to the wood column with bolts, while the opposite side attached to a short HEB column.

To make sure the malt factory is usable, new floors and roof are laid out. To retain the old atmosphere, the construction is intentionally exposed, as much of as possible, weighing thinner and more expensive product solutions, rather than less expensive solutions that might damage the genius loci.

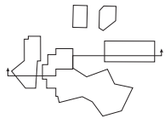


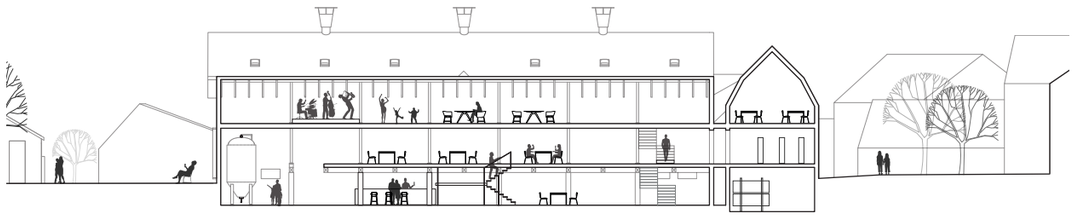
Previous page from the top
ill. 88: Roof detail Malt factory 1:20
ill. 89: Floor detail 1 Malt factory 1:20
ill. 90: Floor detail 2 Malt factory 1:20
(Legends found in drawing folder)

Next page:
ill. 91: Joint diagram Malt factory
ill. 92: Construction diagram

THE MALT STORAGE

The malt storage is the second largest building on-site and together with the new building extension shape the urban areas closest to the borough. Like the library, the malt storage contains an open floor plan, where the boundary between the floors have been reduced. The ground floor is programmed as a restaurant, while the basement is arranged as a brewpub. However, the two can work both separately or in unison. The visitors, will be able to experience and engage with the micro-brewery, creating awareness of the processes, giving the Malt storage an industrial and authentic character. The second floor of the Malt Storage is designed as a large room for bigger cultural and private events.





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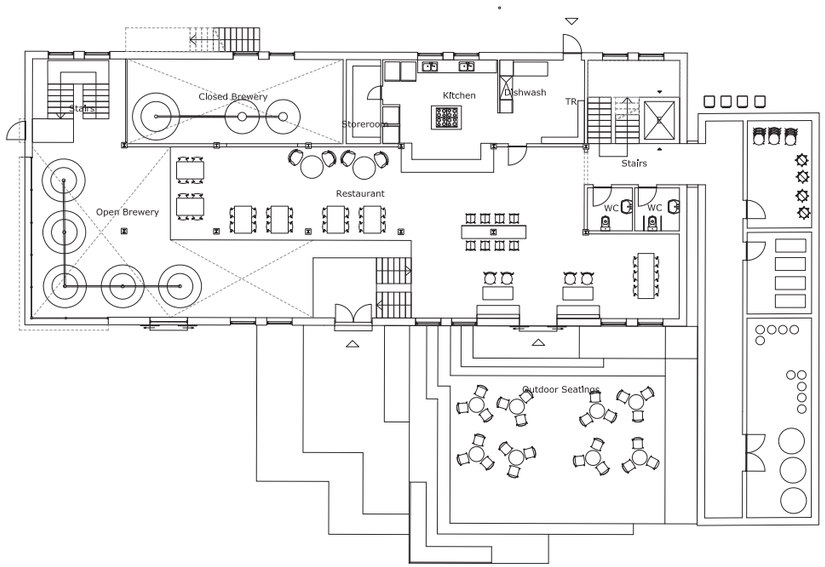
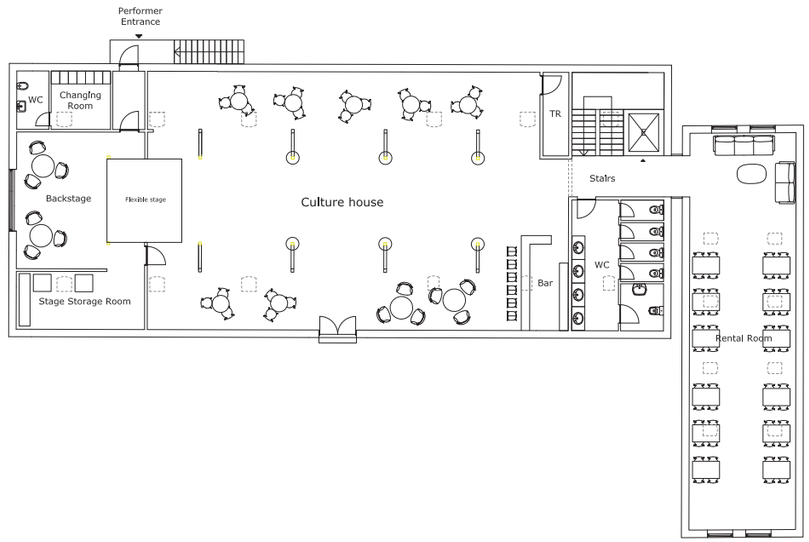
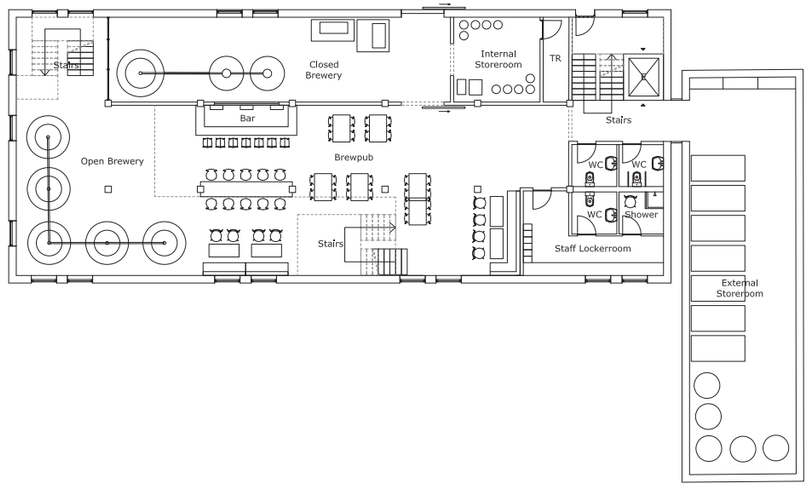
ill. 93: Section D-D 1:400

Next page:
ill. 94: Malt Storage render







Previous page from the top:
ill. 95: Malt factory ground floor 1:300
ill. 96: Malt factory basement 1:300

Current page:
ill. 97: Malt factory first floor 1:300
ill. 98: Section B-B 1-400

08

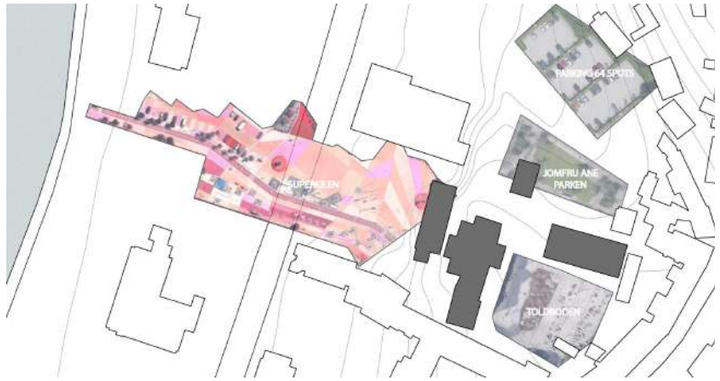
DESIGN PROCESS

The sketching phase relates to the initial analysis, and aim to illustrate the vision and its evolution from thought into architecture through the process.

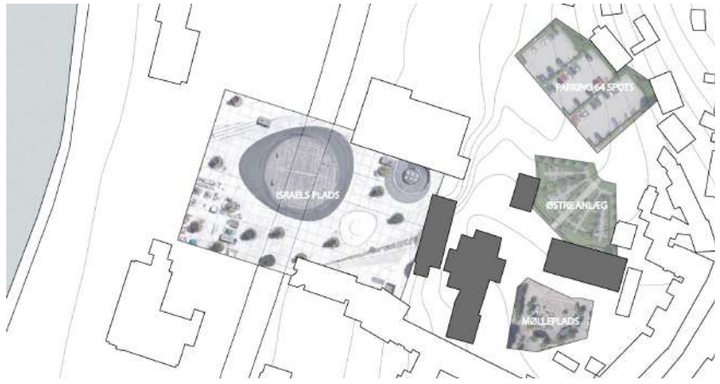
Initiative Studies

The development of the design proposal, are based on the strategy relating to the initial analysis and theories. It has been a central focus throughout the sketching phase, to ensure the essential thoughts in the visions of the project. Though the concept has a strong rigidity, the exploration of the design have multiple aspects which needs to be explored, discussed and tested through different iterations to ensure a detailed, argumented and integrated process.

The Process is an iterative workflow, where many different aspects influence each study. The following pages, try to provide an overview of the challenges and reflections, which have pushed the design forward.



ill. 1: Comparison of urban areas, with Superkilen, Copenhagen; Toldboden, Aalborg; Jumfru Ane Parken, Aalborg and parking



ill. 2: Comparison of urban areas, with Israels plads, Copenhagen, Mølleplads, Aalborg and Østre anlæg, Aalborg and parking

ill. 3: Comparison of urban areas, with Israels plads, Copenhagen, Mølleplads, Aalborg and Østre anlæg, Aalborg and parking

Urban Spaces Comparison

From the initial analysis, it was clear that the most important aspect of the projects was the life that would unfold in the spaces of the site and buildings. Therefore the initial studies, investigated the conditions of the urban areas on the site through a comparison with other existing urban spaces.

To compare, a series of space were selected, which the projects members could relate to. Both in terms of scale, but also spatial and atmospheric experiences.
The studies showed as expected, that the spaces towards the harbour, had the character op large urban areas, which could provide various areas of activity. Making the comparison with "Superkilen" in Copenhagen, also indicated the strong potential in highlighting the direction of the site, underlining that these spaces would form the connection between the factory buildings and the coast line.
The study also showed unexpected results in the space between the factory building and Adelgade. The selected areas of "Toldbodplads" and "Mølle plads" in Aalborg, have scales which need a high amount of people to fill them. This space could therefore gain qualities with the extension of the Malt factory, to reach a higher degree of intimacy, and thereby contrasting the other areas towards the coast.

Previous page from the top:
ill. 99-101: Urban space comparisson

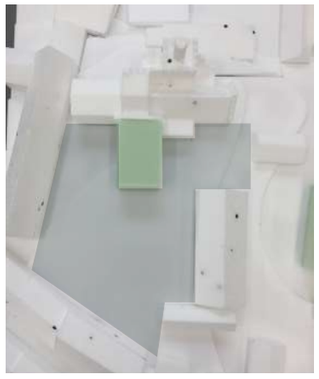
Urban Flow Investigations

A central element in the vision for the project were the connection between the old town and the harbour front. This were set as a main parameter for the design process, and would have great influence on the further programing of the different areas of the site.

The flow would be important to support both the immediate and future urban life in the area. Continuous studies where therefore made to understand how people would travel cross through the site, and which areas would be optimal for high level of activity or intimacy. This were supported by simple volumetric studies to investigate, which qualities and challenges the extension of the malt factory would form.

The studies in area 1, showed that the large space was divided in smaller areas which could be arranges in squares and passages. The facades enclosing the smaller squares provided opportunities to form a series of spaces, which could provide the users with diverse experiences. However, the extending volume would also form a pocket on the southern side, which became an isolated sport. The long neighbouring building to the south, had no current relation to the space, which made it hard to argue for the potential of life being generated from the new building extension alone. To counter this the existing building volume on the south side of the factory building. This would open a second flow around the building, which would increase the natural flow and increase the potential for future occupation of smaller businesses or retail in the neighbouring building, to compliment the Malt Factory.

next page:
102: Flow model exploration



Space and Passage

In connection with the flow studies, a simple exploration of space and passage were tested, to find out how the added building mass would affect its surrounding environment. The existing infrastructure of the site have two flows around the Malt factory and between the old town street and the harbour front that is taken into consideration. The added mass breaks out into the urban space, not only creating space in itself, but also around it. It divides the urban space from being one open square only defined by its adjacent context into being perceived as various spaces and passages forming new relations in between the surrounding buildings.

As shown on the illustrations, the length of the building mass and how much it breaks out into the space of the courtyard, creates different scenarios and different characters of the place. The shortest volume divides the area, but still maintain the feeling of a large coherent square were you can overview most of the courtyard when you enter from the entrance of the old town street. The middle size volume creates the feeling of passages and a stronger relation to the Malt Storage building. The longest volume clearly separates the area into two passages and create the opportunity for a more intimate environment with smaller urban spaces and sequences that evokes curiosity.

Previous page from the left:
103-105: Space and passage exploration

Atmospheres

The difference in scale and flow activity in the urban areas, proposed opportunities for creating varies atmospheric experiences. In combination with the more objective study of scale comparison and flow directions the areas were also evaluated more subjectively, though reference images on what could be imagined taking place in the spaces. The areas were evaluated in terms of both functions, moods, materiality, flexibility and spatial conditions. As described in the analysis chapter on "The Culture House", the strategy for the urban programming were to imagine the site divided in a series of "Architectural acupoints", which should form a diverse area, where different user groups could experience both planned and coincidental meetings. The combination of these atmospheric references, the scales of the areas and flows in the site, could later argue for the programming of the building and be a driver to understand how the different spaces could be changed by the building extension.

next page:
106-115: Atmosphere pictures

Intimate arrangements


Courtyard feeling


Natural meeting place


Playfull elements


Physical activities


Diversity


Stay and transit


Wild growing plantings


Smaller arrangements

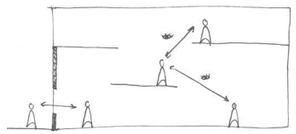

Urban gardening

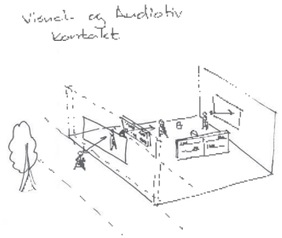
Programming

The functions selected in the programing of the buildings, took inspiration from the competition program, but have been changed in some aspects to relate to the analysis and the atmospheric vision for the different areas.
With the site reflections and flow studies as catalysts the initial programming focused on creating relevant connections between functions as well as considering which would have high potential for generating life in the buildings and outdoor areas. The main factor in the studies were the concept of coincidental and informal meetings. When different user groups occupied the area, the programming should force the users to experience other functions directly or indirectly. For instance when entering the site for a break, the visitor would experience the workers doing projects, or become aware of new exhibitions, and hopefully start interact with site in a new way.

The programming were therefore thought as transparent, providing possibilities for visual interaction both between inside and outside, but also between the different floors in the building. The variety of functions should activate the all the senses of the users and not only visually though openings and windows, but also by hearing activity around corners.

Challenges appeared in forming a balance in mixing different functions, while also taking care of different users need. One case being the programming of library functions, where the activity in the children section, can attract other life, but also be a disturbance for other users.





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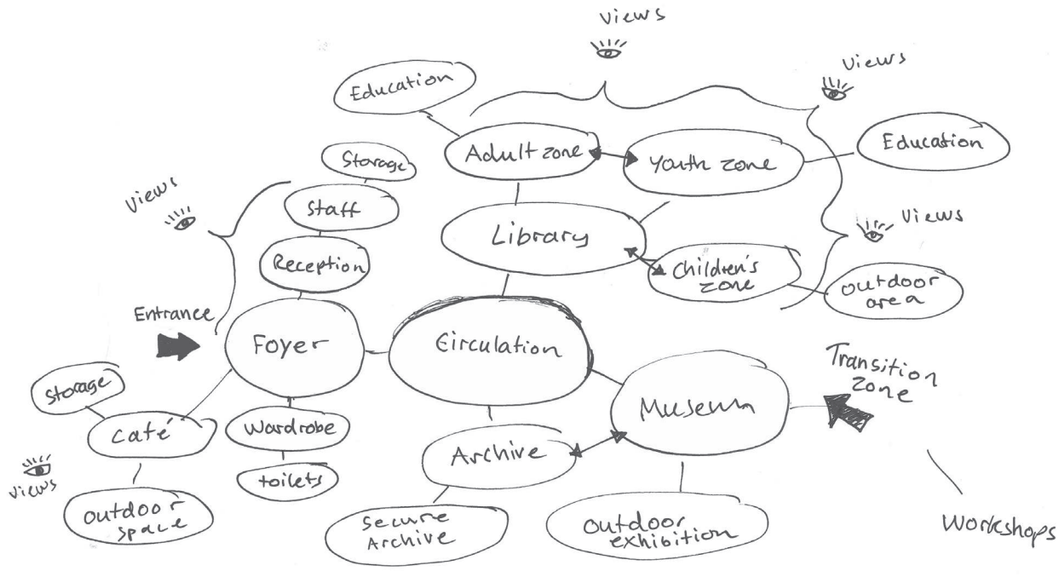
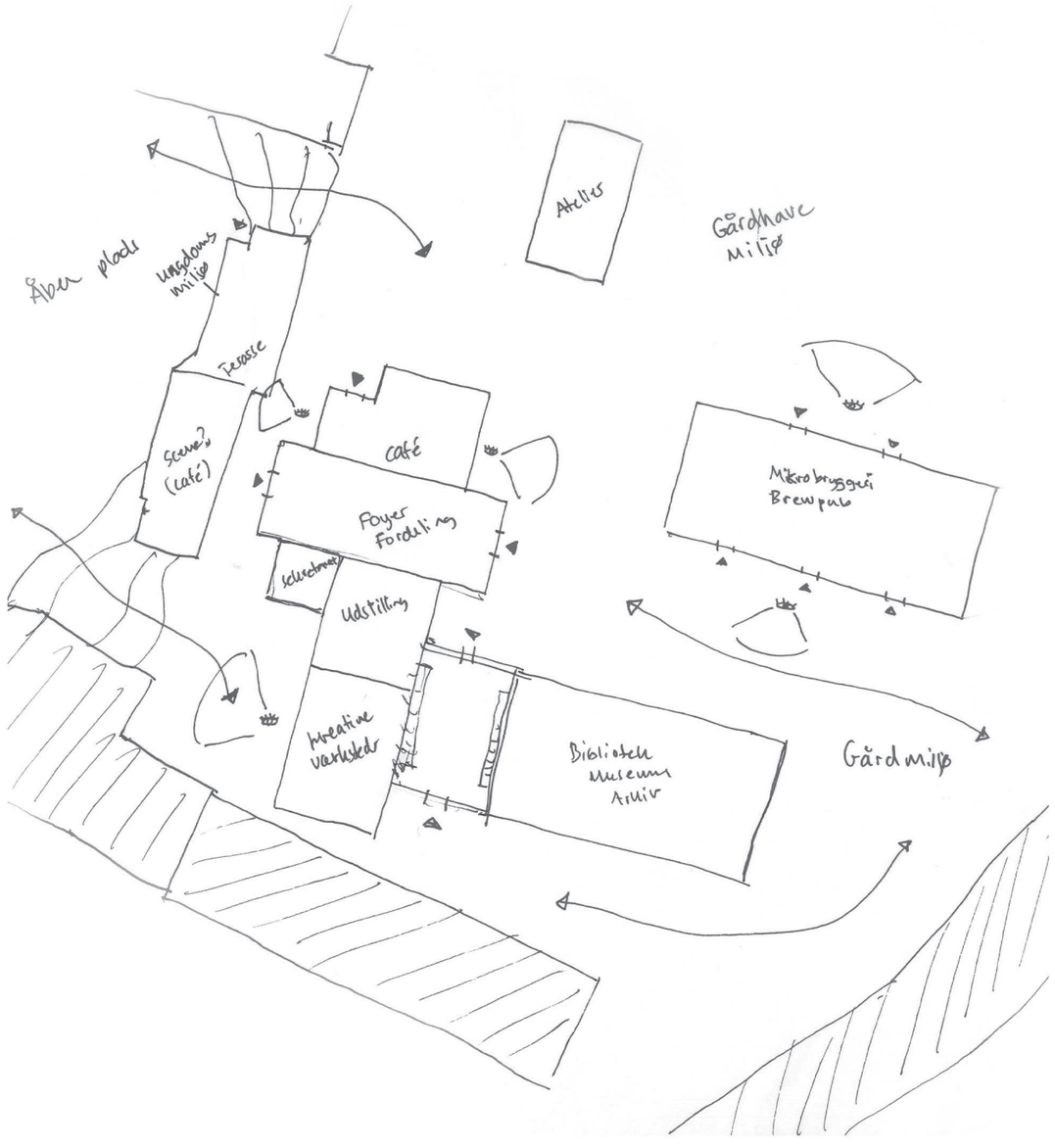
ill. xx: maiore maximus
ill. xx: Sed esequi corumquam consero





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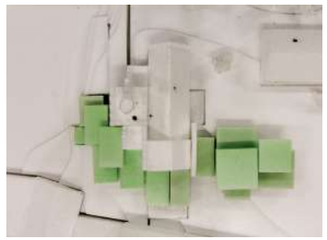
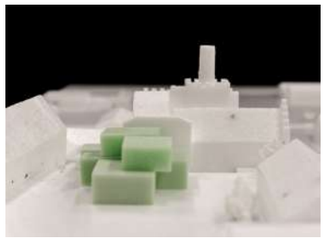
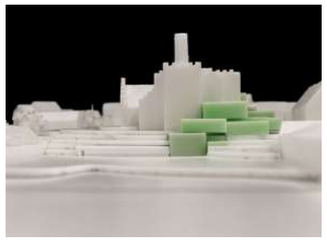
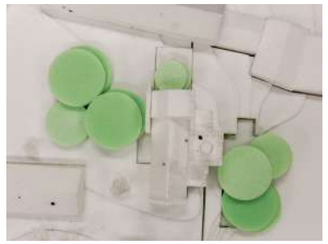
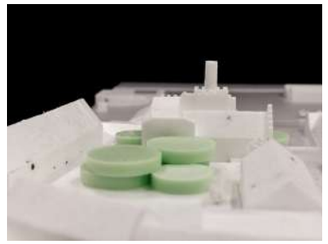
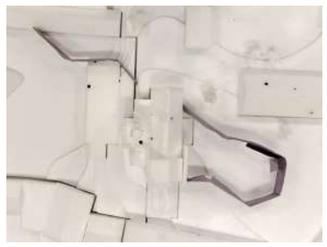
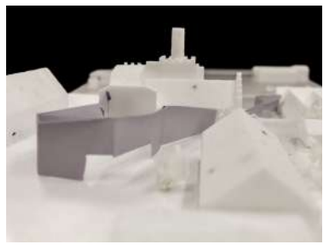
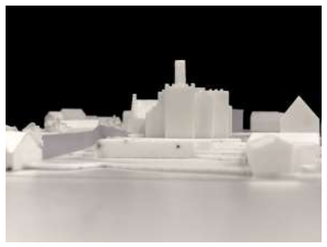
116-119: Programming sketches

Previous page:
120-128: Volume studies

Volume Studies

Doing the conceptual sketching phase it was important to test a varied set of scenarios and ideas to explore the possibilities of the strategy, and how the vision should be expressed through architecture. To get the best understanding of the different iterations, each study were detailed through various media, from physical- and digital modelling and sketching. This provided an understanding of the detailing in different scales and especially how the volumes impact on the spatial conditions at eye level.

The building volume was investigated through a series of model workshops, to investigate how different conceptual iterations would relate to the existing building mass, how it would affect the site, and how it would portrait the transformation from eye level. The iterations would consider the flow around the building and the special qualities and challenges, which would accrue.

The first iterations explored a cubic language, which could relate to the existing volumes on the site. The volumes could easily be connected with the existing building mass, but would also make some sharp divisions in the site and form wide corners, which would damage the flow around the building.

The next iterations would therefore explore different forms, which could form a contrast to the existing building mass. This had positive effects on the total building volume, which clearly separated the new structure from the existing. This was especially the case with the circular language. The contrast of the two volumes resulted in emphasizing the identity of the existing building structure, while maintaining an independent character.

Compared to the cubic studies the circles divided the spaces and formed smaller pockets. The curved façade also opened up for the flow around the building. However, the circular shape also had a character of introversion, letting the flow pass easily around the building, but does rarely invite people inside.
This was solved by compering these reflections with the strategy and vision for the project, meaning focusing on the life and urban structure before the Architecture. When working with the volumes the representation always illustrates a build mass and the spaces that are formed around it. By taking the strategy more literally, the further studies, investigated a more pragmatic approach, where the urban spaces were defined by a boundary. This boundary would define the scale and transition through each space, but also form a negative space, which would become the building mass.

Design Development

Building Development

In correlation with the volume studies, the different concepts were likewise modelled and evaluated from eye level. These studies should illustrate how the building would influence the spatial experiences of the urban spaces, in regards to the size of the space, the maintaining of flow and orientation, and the relation to the existing buildings. The digital sketching tool allowed for a higher level of detail in a short amount of time, which could show elements which the foam studies would lack.

The earlier iterations working with cubic and circular volumes, all formed a large square between the entrance from Adelgade and the building, which would provide the clear overview of the resulting transformation the of the malt factory. However, they all experienced challenges in maintaining the flow around the building as well as clearly indicating entrances and openings for interactions.
The concept of the bounding wall provided a simple tool, which could be angled to lead to openings and passages to the next spaces, as well as drawn back to form spaces and indicate entrances. The corners of the walls were lifted and lowered, to accommodate sunlight inside the building as well as the outdoor spaces. The roof were formed by a series of triangular surfaces, which formed a dynamic building volume. The arrangement of the surfaces were further investigated, to insure good spatial conditions inside the building, while still ensuring views towards the factory chimney.

Urban development

The bounding was had a character of a flexible design elements, which could easily be changed to indicate spaces and passages. In urban area 1, the form were generated by the relation to the surrounding buildings, which became harder to continue in the spaces towards the harbour, because of the open and undefined character. Interations were made of a similar volume extruding from the factory, this formed clear flows around the building, but would not interact with the spaces as on the opposite side. However, as the areas were imagined with a different atmosphere, the character of the concept would change. To underline the open character of the space, the walls of the extension, would continue though the site but become more fragmented design. This formed a conceptual thread, which would bind the site togeather from the old town to the coast, and could be changed to fit the needs and atmospheres of the urban spaces.

Current page:
129-139: Design development studies

ill. 140: Urban Model study

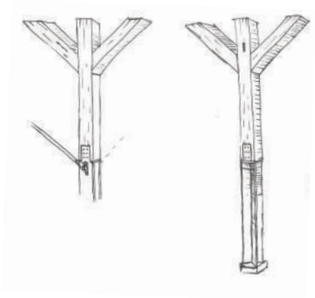
Construction in existing building

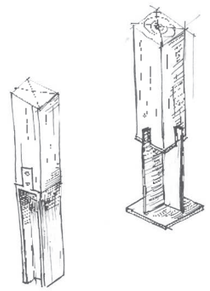
As the wish was to retain personality and history of the old building, the existing construction within the Malt factory was taken into account from the very start. Analysis were done with the intention to utilize the existing, by doing minor incisions and thereby retaining the atmosphere within. From the very first investigations, however, it became apparent that a plural of the existing floors were past or close to the verge of not being usable, a result of compact levels with low ceilings heights shaped for the intention of past industry, not a modern cultural programming.

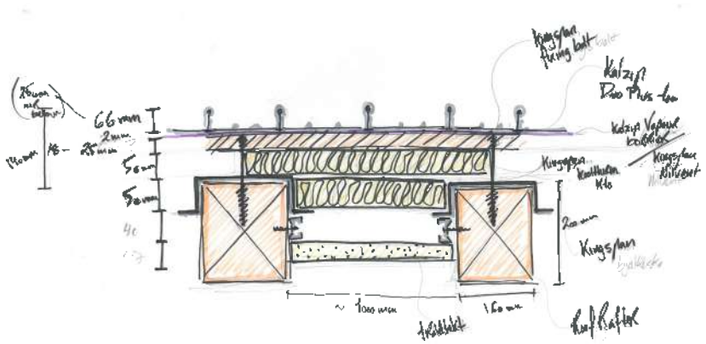
Furthermore, the construction was raised at a time where less inhomogeneous construction wood and stress calculations for wood constructions were uncommon and therefore instead overcompensated for. As such the constructions strength was difficult if not impossible to calculate or account for, without adding large variables for unforeseen or extreme events.

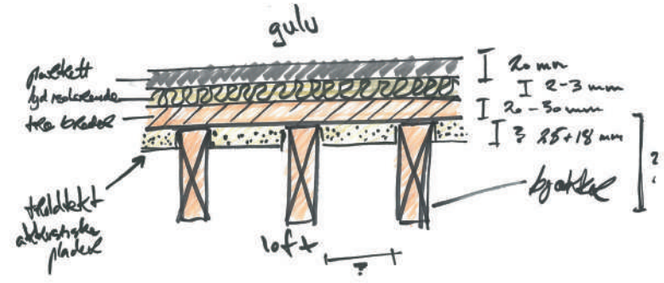
The work therefore focused on removing half-floors and evening out levels for use. Where construction was removed, steel HEB- beams and columns was inserted. A contrasting and strong material, that would visualize the compensation for unknown stresses, and where original construction had been removed.
Where possible the steel would function as an extension of the old wood construction utilizing the steel to create simple, inexpensive, yet elegant joint solution of industrial character, between the old wood and new steel.

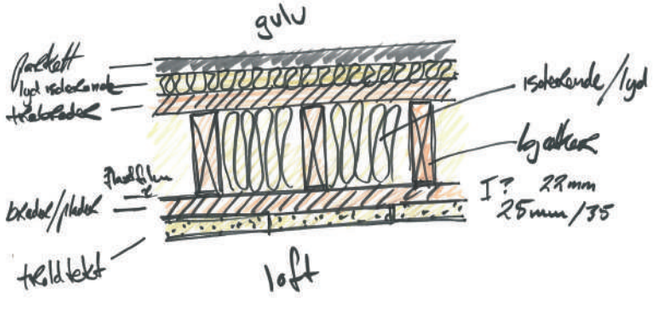
Additionally, the floors and roof needed to be insulated. The ceiling from the forces of nature, and floors against noise. As not to mask the buildings persona, product solutions where researched so that the details were made to expose as much of the construction as possible, leaving the rafters as visible, where possible.











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ill. 141-148: Construction detailing

Construction in New Building

Along with the reiterations of building mass, the construction was assessed and changed synchronously. Although, because of how the strategy shaped the architecture, the construction solutions derived as byproducts defined by the massing shape, throughout the process. And while linear and square masses might have allowed for most constructions, differing shapes were limited to other or a lesser selection of solutions.

As the building closed in on its final shape, an irregular multifaceted shape with a plural of varying angles, the list of viable solutions was thinned out, making some solutions more apparent than others. Being an irregular mass required a dynamic and versatile construction that could be customized to the varying angles and, preferably, not be overly complicated to assembled on-site.

Both material and construction types were discussed and evaluated in combination with roof function and expression. The intention of making an informal building which should diffuse the barrier between exterior and interior and not steal attention from the past constructions and masses, but rather work the interplay between the historical and new, led to the choice of a steel pillar-beam construction.

Matching the new construction in the existing building, utilizing HEB-beams and pillars along the straight edges, but inserting circular pillars as corner posts for a omni-directional construction, assuring a clean look as possible for the more complicated joints. To solve the build-ability, the circular column would come in certain customized pieces, specifically the column crown which would vary from each corner post. The rest would be pre-fabricated beam shoes, which would slide onto the crossing HEB-beams and bolted stuck.

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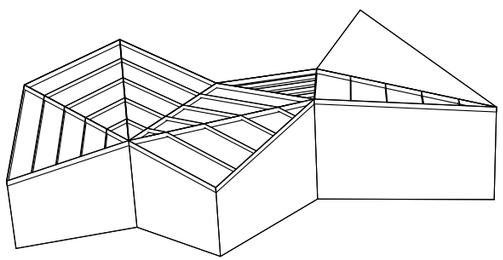
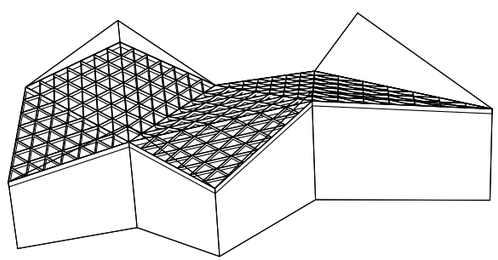
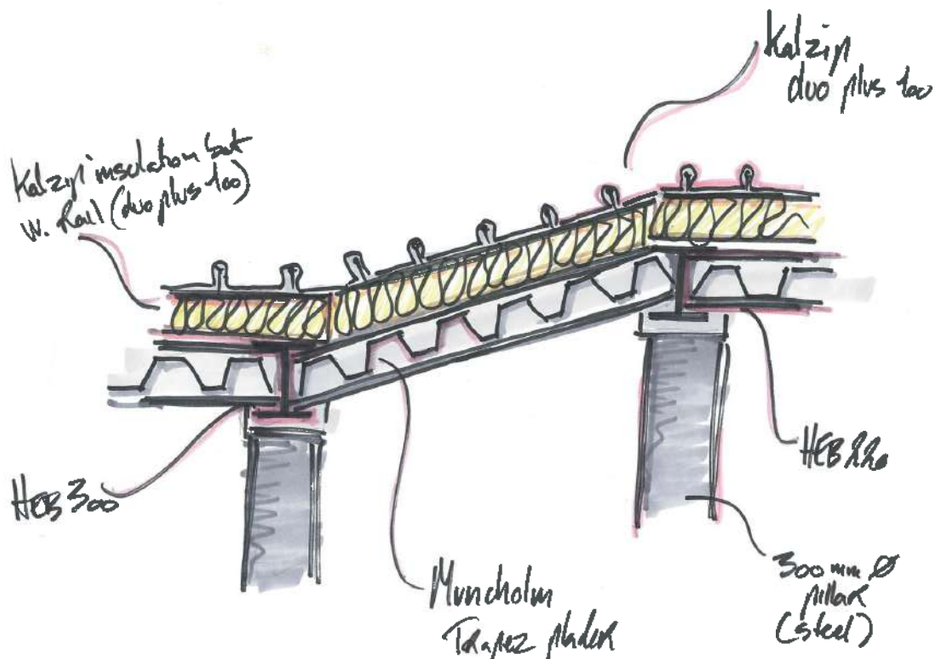
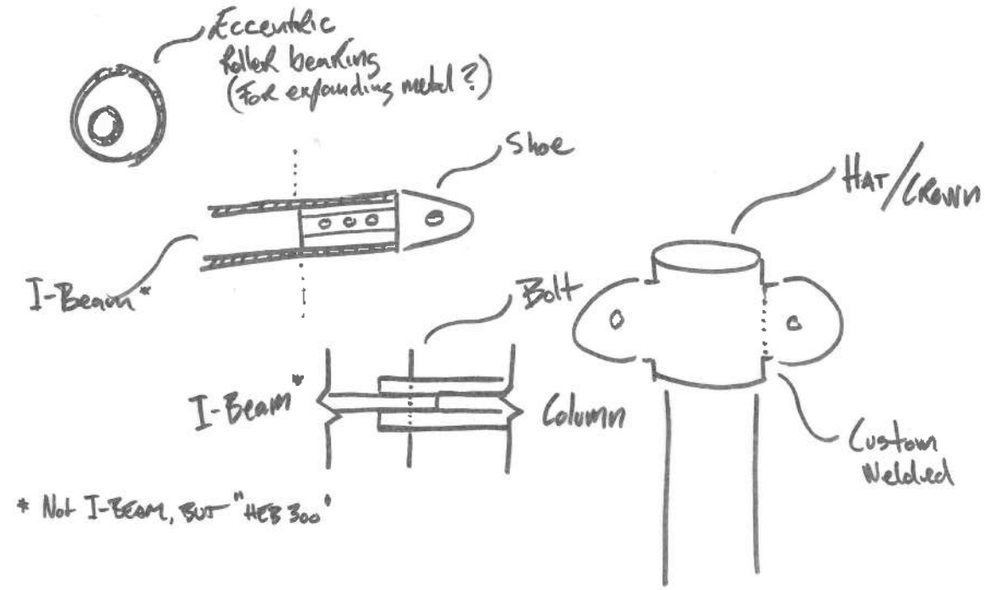
ill. 149-152: Roof construction detailing









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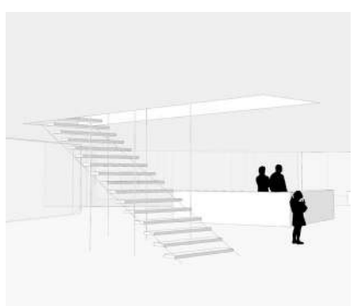
ill. 153-157: Flow and stairs exploration

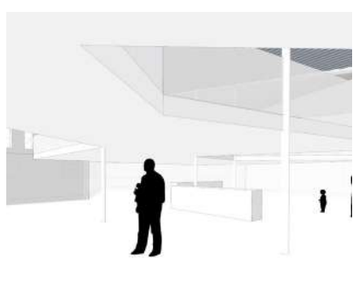
Internal Flow

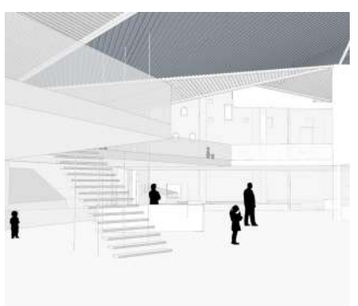
As well as the flow around the buildings and through the site, the circulation within the building have been of high priority, to argue for the informal meetings and connections. As the building expanded into the courtyard of urban area 1, it was necessary to understand how the two ends of the building would relate to each other. To illustrate the life in the building, the flow lines of the different users were sketched on plans, to indicate whether they would encounter each other in informal meetings.

The first iterations investigated having a staircase in one of the kilns, which could easily connect the floors in the existing factory building. This also argued for a second connection in the building extension, with the idea that visitors could easily move between the floors. However, it also indicated that people could move directly to the different functions, and not experience other life, and unexpected meetings. Other iterations therefore investigated having a single connection in the meeting of the old factory building and the new extension. This would bring all circulation through one point in the building forcing the different users to meet and become aware of the other functions in the building. This also meant that some corners of the building would become remote or isolated, with the risk of become dead spots in the building.

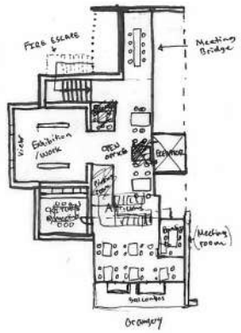
The final iterations therefore investigated having a series of individual staircase on each floor. The visitors would that way experience the floors in steps, and be let through multiple areas on the way to their destination. The staircases could that way become more than an element of circulation, but also be integrated in different ways to work as playful installations for lectures, exhibitions or storage. The distribution of staircases, also made it possible to create a more open floor plan, which could strengthen the visual connection between the floors, as intended in the initial programming.

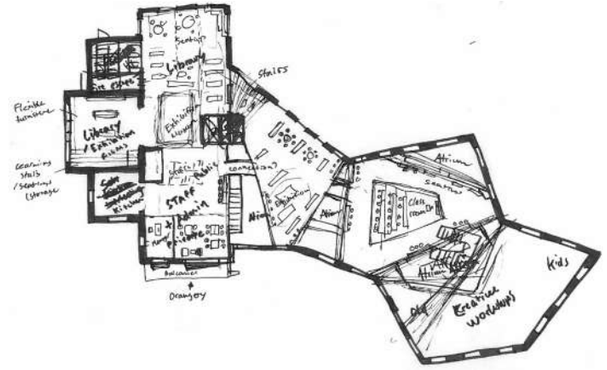


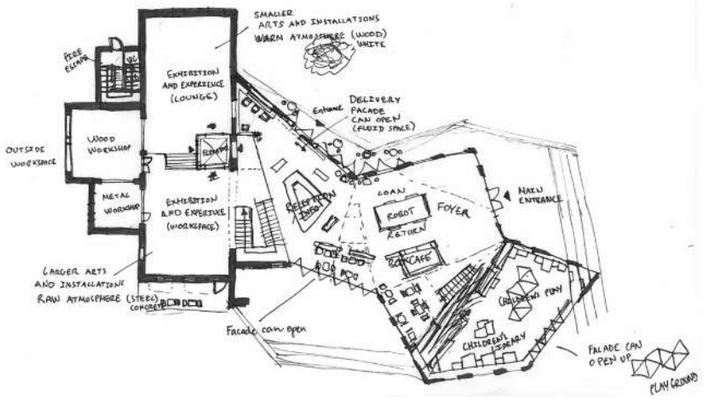


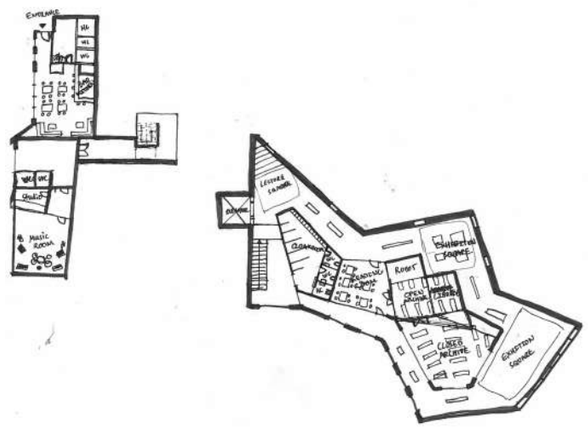


Plan Solutions









The plans are a further development of the programming that were done early in the process, and should support the urban life and both formal and informal meetings between people across of ages, interests and cultural background. Furthermore, should it solve the meeting between the historical identity and the new identity and create an inspiring and spirited environment. Through the process, it has been important to solve the distribution and the flow between functions, not only horizontally but also vertically. Forming the settings for the informal meetings in particularly gave the process a direction to work with fluid functions, were two or more functions would merge together both physically and sensually.

The challenges have been how to create the scenarios for these meetings and how the function will interact with each other both physically, sensually but also practically in terms of noise, correlation, transitions, distances, accessibility, amenities and how the spaces will function in different ways throughout the day. An example is the children's library were there should be room for play and noise. It should appear as an open an integrated part of the library but at the same time still be shielded off in some ways in terms of noise. The Book café is placed closely to the small children's area, so that the children's can play while the parents can enjoy a cup of coffee and maybe socialise or read a book meanwhile. Settings for a reading area for people not interested in the noise of the children should therefore be placed suitable distance or shielded in some way.

The sketches shown in this spread is a step towards the final plan proposal where many of the qualities have been maintained and carried on. The proposal works with an open plan solution that would give an interaction across floors and functions. This have given some challenges in terms of not having a backside where you could place practical necessities as toilets, storage rooms, technical rooms and so on. The ground floor plans should not only consider the relation to one another in the interior, but also take in consideration the relation to the exterior surroundings, the nearby urban spaces and buildings and the adjacent context. The functions should therefore not only merge together on the inside, but also scatter its functions to the outside.

Current spread:
ill. 158-161: Plan development

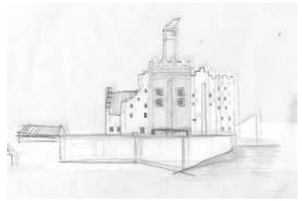
Facade Studies

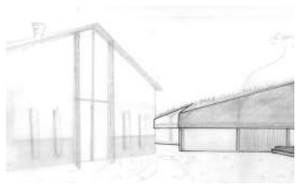
The transformation of the existing buildings involves considerations on how the closed facades of the buildings could be opened up, to create awareness of the functions inside, and make the interior and exterior spaces float together. It was about finding a balance between creating transparency, while still complimenting the identity of the old factory buildings.

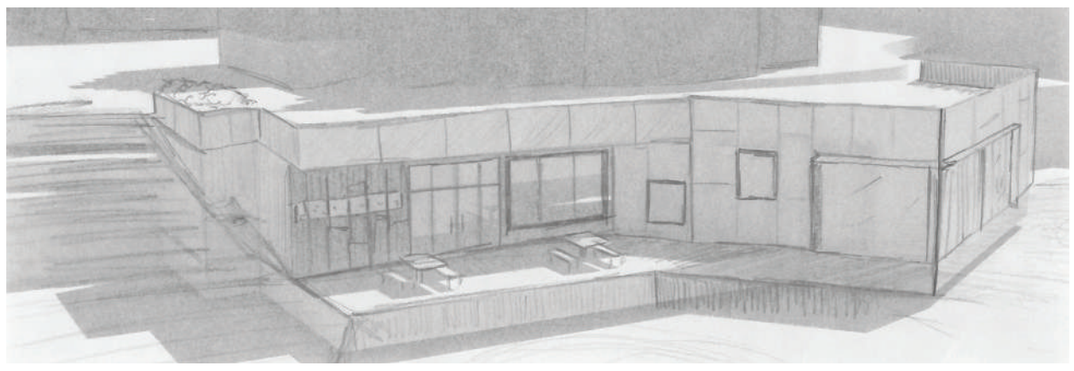
This also meant the studies on the facades on the new building extension, would focus on a calm expression, to form an informal building for everyone. The façade studies worked with strategic openings, and closed surfaces, that would prioritize the life and relations between the buildings and squares. To indicate the importance of the life at street level the ground floors would work with larger openings creating a high degree of transparency, which would be complimented with contrasting smaller window in the first floor.

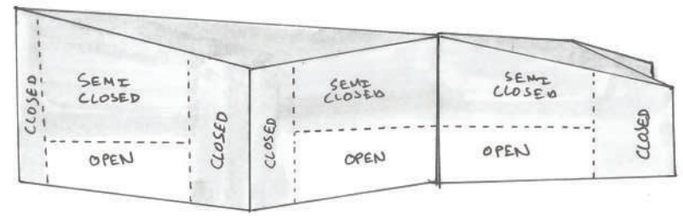
The materials of the building have been kept in a raw expression, to relate to the industrial character of the existing buildings. The detailing of the facades, have used corten steel as the primary element. The steel would illustrate the identity-creating element that would continue through the site as a thread, creating spaces, directions and form a common link.

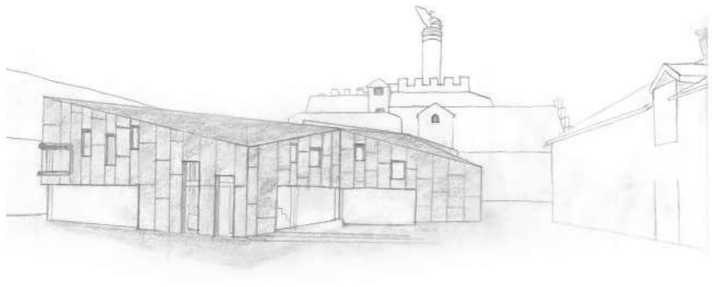
Studies were made in to find a balance in the facade to let the corten steel show a direction and not be to dominant, and were therefore tested in combination with concrete and wood to form a contrast and dynamic. The different patterns of the corten cladding were likewise sketched through different studies. This involved iterations with more regular grids of horizontal and vertical directions, but especially sketches of a more randomized pattern which would underline the dynamic of the building, and give direction and movements along the facades.









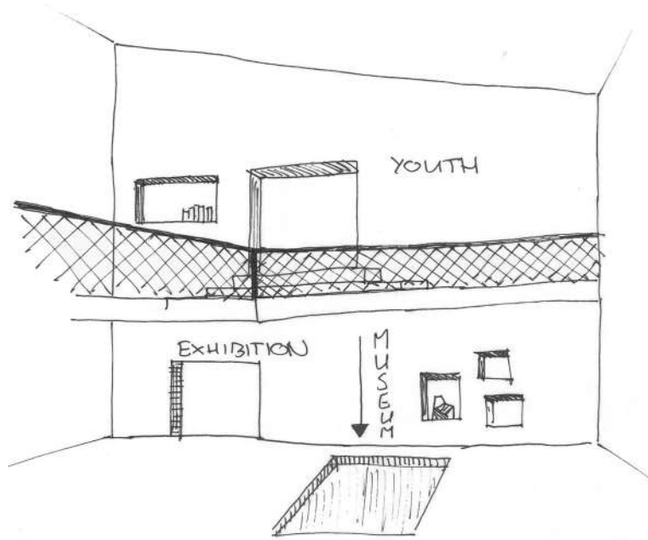


Current spread:
ill. 162-169: Facade development

It has been important for the character and the new identity of the place that the interior becomes a product of the urban life that is prioritised in this project. The life inside of the building should reflect the life on the outside and vice versa. It is sought to create a very diverse and popular atmosphere that invites people of all ages and with different economic and cultural backgrounds. Everyone should feel welcome, and not feel misplaced or underdressed. The design is therefore directed towards a more informal character that consider ones' sense of place with familiar scenarios, a so-called "third place" (//KILDE), like a public extension of your own Livingroom. As a result, the interior is intentionally held to a very simplistic and down to earth expression were the spaces are decorated in simple arrangements with simple furniture and inexpensive and well-known materials, like plywood, concrete, bricks, steel, aluminium, wood, troldtekt and trapeze plates.

The floor plans are kept open, airy and clear, while also creating small niches for immersion and relaxation. The floors decks are opened up in certain areas creating double high spaces and views across functions. Web net of steel is used as railing to create a more transparent and industrial expression. This will enhance the sense of life across the room and floors. An indication of genres and functions are underlined by writings on the wall and coloured lines on the floors giving the users a wayfinding that is both informal and playful at the same time.

Current spread:
ill. 170-171: Interior sketches



09

EPILOGUE

Within this chapter, the report and design process will be summarized, concluded and reflected upon.

CONCLUSION

The project has through the transformation of the Maltfactory tried to answer the issue formulated through the initial analysis, in the best possible way. The final proposition has as intention to form a foundation for the earlier factory area to become a catalyst for diversity between its users and life in Ebeltoft.

With a focus on creating social interaction between people and stage a frame for meetings of an informal character and personal growth, areas have been shaped by multiple acupoints, offering a variation of cultural experiences. The areas are connected through a clear flow, leading the visitors past and through a plethora of impressions, to spark individual curiosity and open for the possibility to find, experience and create new interests and relations.

The new extension is designed with a pragmatic approach that, with its angled facades, define rooms and passages through the area. The limits outline a third space, that end up as the focal point in the middle of it all, interweaving the functions and acting as a distribution and meeting node for the surrounding users and visitors. The building is clad in a dynamic pattern of corten plates that add movement along the facades. Together with the individual concrete walls elements, the building is given an informal and grounded character, emphasizing the preserved Maltfactory. The same goes for the interior, where materials are kept to a cheap selection of steel, concrete and plywood, which contrast the exterior corten facades. The construction is kept in steel beams, with a combination of perforated trapezoidal sheets, functioning as acoustical dampeners while also underlining the informal character of the room.

Through the transformational process of the malt factory and construction of the extension, it has been essential in the consideration to create realistic and buildable solutions. The programming of the buildings is based on the idea of having the functions merge, or rather, intertwine in the open plan solution, while openings on the different floors to create a sensorial connection between levels. This is also underlined by a series of stairs that embody the possibility of multiple functions from transit to exhibition, or a place to sit. This even out the boundaries between the differing zones, naturally leading visitors around within the building. This has shaped a building on the basis of the life that should and could potentially unfold both within and outside its extents. Visitors are able to freely seek areas of differing size and intimacy, that all are connected together by the conceptual ribbon of corten. The more intimate rooms, as købmandsgården and humlehaven offer breaks from Adelgade, while fabriksplasden frame a courtyard for potential performative art or local events.

As such the project has attained a soundly argued programming, based on thorough analysis. This has set the foundation for a solid strategy, which has been able to weave the projects considerations and elements together as a whole. Resulting in a holistic product, that frame the settings for new life and interaction.

REFLECTION

The transformation of the malt factory has been conducted through an integrated design process, dealing with the issue of depopulation and how architecture, in the shape of a “culture hub”, can become a catalyst for life by staging coincidental and informal meetings between people. The process has been an iterative process, incorporating analysis and studies on all levels, to form a solid foundation for the argued result.
As mentioned in the conclusion, the analysis have been a crucial part in the understanding of the challenges and potentials for the revitalization of Ebeltoft, as well as generators for the strategy and vision, throughout the design development. The group have visited the site and had dialog with the directors of the competition, albeit only in the beginning. The process could have gained more support from further studies on informal meeting and a more continuous user involvement in regards to library requirements and wishes.
With that said, the analysis laid foundation for a thorough strategy, in correlation to the project task, as the future identity that connects the old borough to the harbor front. As such, the process has had a pragmatic, yet strictly defined, order in which the task was approached; Starting out in the large scale of the masterplan, down via the architecture and ending in details and tectonic considerations, the theme for the project.
This resulted in more time, focusing on analysis and general programming, than initially planned, to solve the architecture and its tectonics and detailing.

Approaching the task with expectations to explore analysis, transform existing masses and add required extensions, the group have come to realize that the magnitude of the task at hand was larger that anticipated. Work has thereby been focused on programming and flow through the site, buildings and construction in addition to detailing of the malt factory and its new extension.

Through a continued process, further studies within the malt factory would have been relevant, considering comfort of indoor climates by executing deeper studies regarding daylight for working conditions and general readability within its library.

In retrospect, looking at the process, a higher level of detail could have been achieved , but this would have required a thorough and realistic limitation of the task, in addition to a critical evaluation of the competition brief, whether the room program is in equilibrium with the competitions intentions and wishes , or not.

10

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ILLUSTRATIONS

All illustrations are own illustrations with the exception of the following:

ill. 04: Ebeltoft cove - http://www.visitdjursland.com/femmoeller-strand-djurs-land-oestjylland-gdk605937
ill. 05: Mols Bjerge - http://www.visitdenmark.dk/da/ostjylland/historie/nationalpark-mols-bjerge
ill. 06: Adelgade street - https://www.panoramio.com/user/473490?photo_page=196
ill. 13: Birdperspective of Ebeltoft harbour - http://www.archipelago.nu/SKARGARD/ENGELSKA/DENMARK/ebeltoft-trafik-gastehavn1.jpg
ill. 19: Historical picture of Malt factory - Dennymaltfabrik.dk
ill. 41: Statistic moving (DR 2016) - http://www.dr.dk/nyheder/indland/kort-boernefamilier-flytter-fra-de-store-byer
ill. 43: Nordvest Library - COBE - cobe.dk
ill. 44: The Culture Yard - AART - aart.dk
ill. 45: Saint Nicolai Culture Centre - dortemandrup.dk
ill. 46: Nordvest Library - COBE - cobe.dk
106-115: Atmosphere pictures

11

ANNEX

This final part contains contributing material, that support the report.

ANNEX 1 - THE 5 METHODS OF TRANSFORMATION

Technical – historical – phenomenon bound

The technical - historical – phenomenon bound method is about the phases of a project, through which we try to understand the building intellectually and emotionally. The technical angle is based on an understanding that materials in form of building elements are connected in a certain order using building technology. The historical angle is used to describe the existing, and to place the existing situation into a greater architectural and cultural historic correlation. But just as important, the historical perspective can amount to an inexhaustible resource of inspiration for what is going to be. The phenomenon bound angle has to do with experiencing the architecture as it reveals itself to the user, a form of experiential realisation that can be experienced without a filter of what we think we know. The method makes it possible to deal with all three aspects simultaneously throughout the process and give it a direction. There is always something to start with, a trail to follow and a material to work with, whether it is a specific building material, historical or cultural marks. In this way, the architectural work become a question of identifying, changing, adjusting, developing and passing on.

Landscape – Still life – Portrait

To ensure varied and specific architectural interventions in the city, existing buildings or in a characterful space, and to hold on to an experience of connection and correlation, we may need knowledge about the quality of the respective places, the technical, historical, and phenomenon bound qualities. The landscape – still life – portrait method help to study architectural intervention in a large landscape or urban scale, in a structural middle scale and in a scale on material and detail level.

In comparison to experiencing paintings in different distances, the same can be applied to the question of scale within architecture, which can be important not only for the experience, but also in the creation of architecture. A building can be experienced differently depending on distance, just like the building is part of various relations in the large, the middle, and small scale.

The landscape is about the buildings relation to the landscape and the city. In a 1:500 scale you can relate the architectural interventions to the question of facade pace, movement and building pattern. Still life is about the building scale: the building volume, space and construction. In the scale 1:50 you experience the buildings spatial character as well as the works and atmospheric qualities. While Portrait, is about the detail: The textile qualities, the buildings tectonic part and the way the buildings components are assembled. The materials properties, the parts mutual order and the constructional coherence, can be described and developed in the scale 1:5. Working simultaneously in all the three scales, the project can be developed in a coherence with its context and at the same time in a near, physical and human scale.

Skin – Meat - Bone

According to the swizz architect Andrea Deplazes, architecture occurs when a material, through construction, gives form by the hand of the architect's intention.

The Skin – meat – bone method is about understanding a building as a tectonic constructed whole, consisting of three various, but mutual dependent elements: Facade, space and structure. Skin represents the facade, meat represents the space and bone is about the structure.

Skin is about the membrane that separates outside from inside. The facade is crucial in a resource optimization, given that the buildings lifetime is dependent on the cultural recognition with the residents and appreciation of passers-by. The facades aesthetic expression is, in other words, crucial for a sustainable architecture.

Meat can be understood as the volume, the house shape and inner spatial organisation, the buildings inner organs. It refers to the house gestalt and inner connection, the spaces' mutual relation, as well as each separate room's special atmosphere. Meat can also constitute the plan drawing, which describe how the human body moves in the room.

Bone refers to the buildings construction and structure, the house framework. The construction can be independent and a character giving element, that constitute an important and meaningful part of the space and experience of the house atmosphere, or it can be a neutral part of the house construction. Bone can also embody the section drawing, describing how the house transmit gravity forces through the building parts and into the ground

Look – Throw – Project

The "look – throw – project" method entail three main phases of the architect's work. The first phase is about registration, analyse and valuation of the existing situation, whether it's about a listed building, a house worthy of preservation or an existing context.

The second phase "throw" is about forgetting the whole subject for a while, trying out different solutions. The third phase "project" is about developing the project, defining intentions and tightening up the effects into a cohesive architectural proposal, processed in the scales 1:500, 1:50 and 1:5. A landscape, city or building is examined in term of the technical, historical and phenomenon bound properties in the cities, buildings and detail scale.

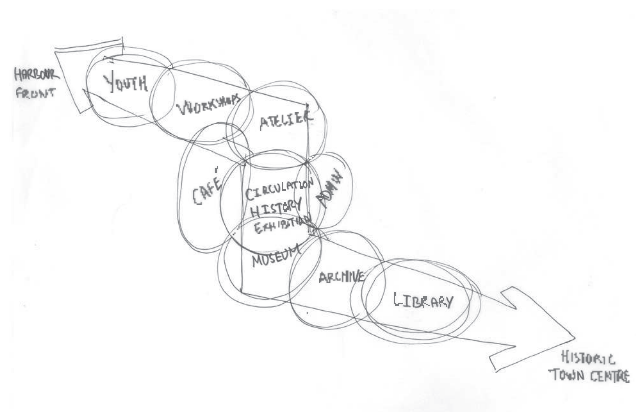
The method can be helpful when identifying and refining existing architectural qualities and contribute to preserve building values, so that they are maintained throughout the entire process.

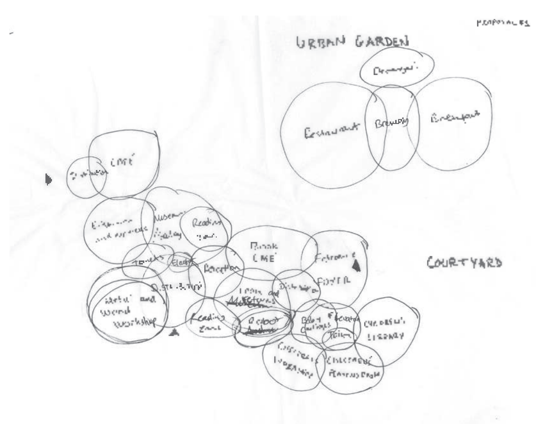
Subtraction – Reconstruction – Reparation – Reshape - Addition

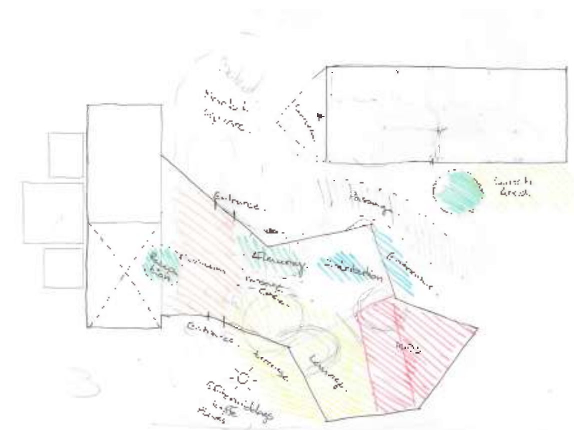
The transformation of architecture is about making interventions in an existing physical situation. In one part of the scale the architectural intervention consists of removing material where the reconstruction is about restoring something which has been there in the past. In the middle of the scale, it's about repairing the existing, where transformation is an alteration of the existing and in the end of the scale the intervention is about creating a new structure in an existing structural, urban or landscape context.

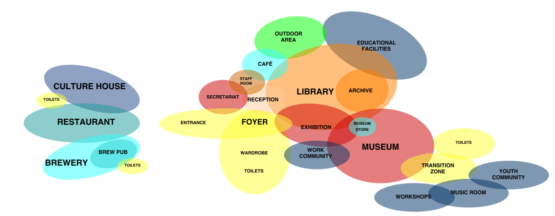
The "subtraction – reconstruction – reparation – reshape – addition" method apply to both the classical restoration practice and for design of a new building in an urban or landscape context. The intention is that the cultural heritage, transformation and restoration is not understood as a limited, independent field but, as a natural integrated part of the buildings artistic practice, were interest for the work with the culture bearing, the site-specific and the material, is central.

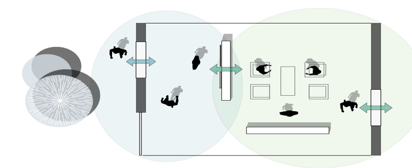
ANNEX 2 - Programming Sketches

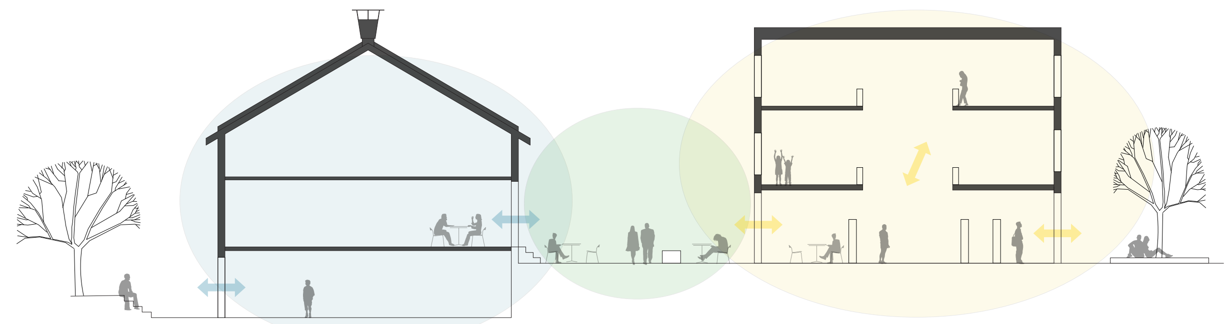


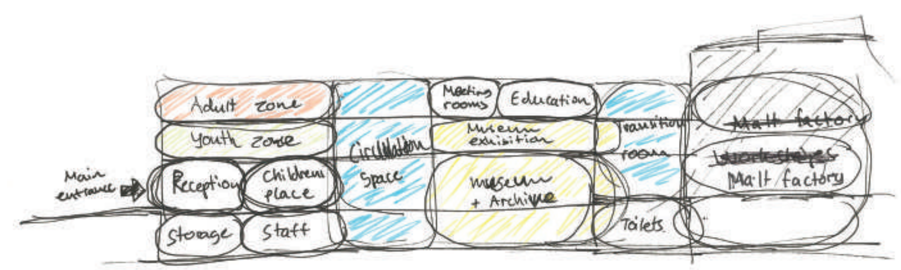












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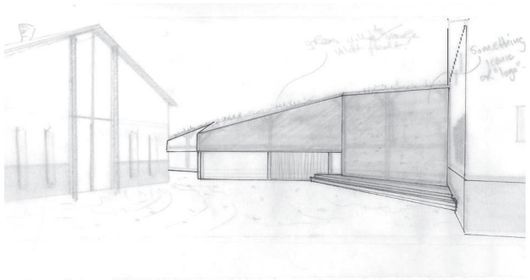
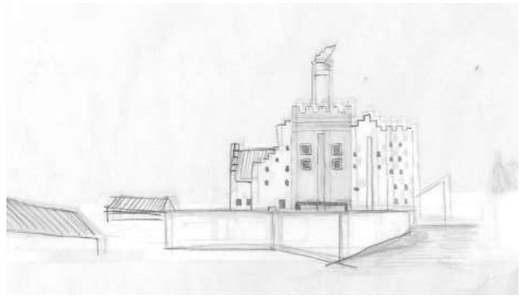
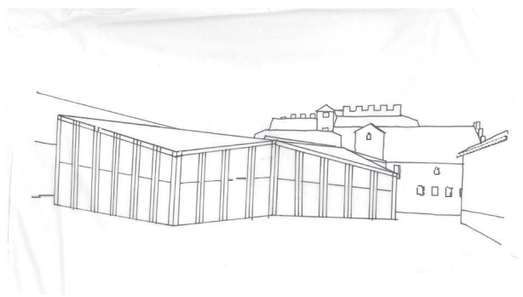
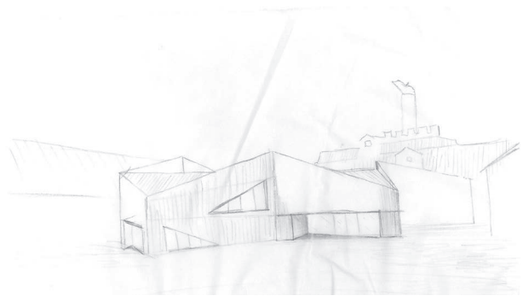
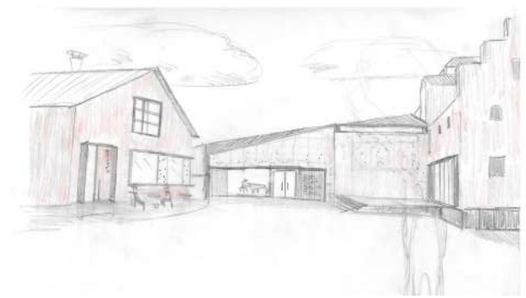
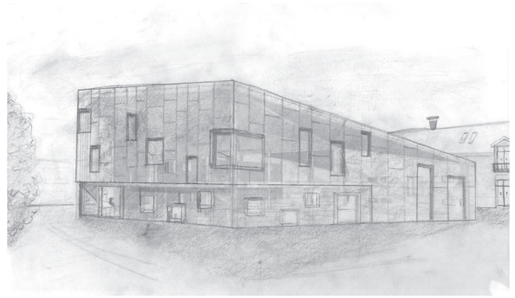
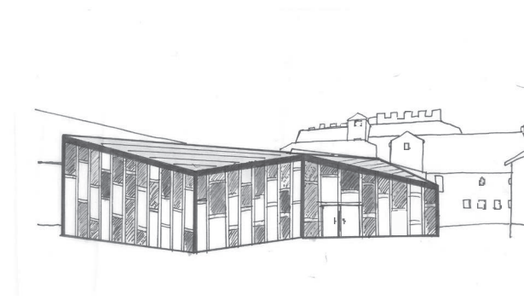
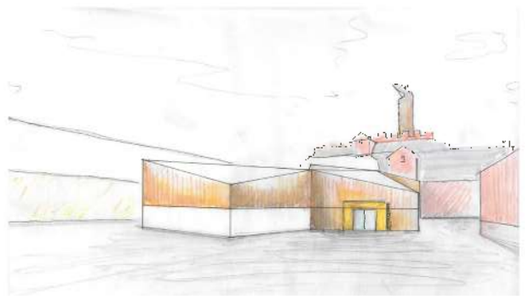
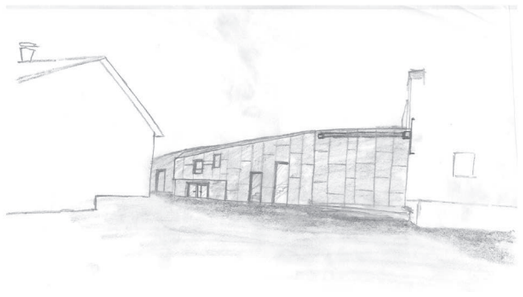
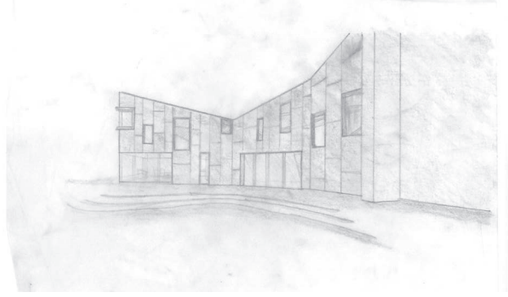
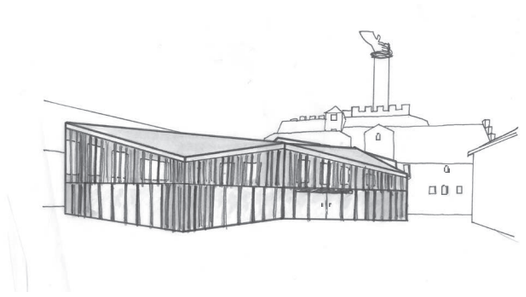
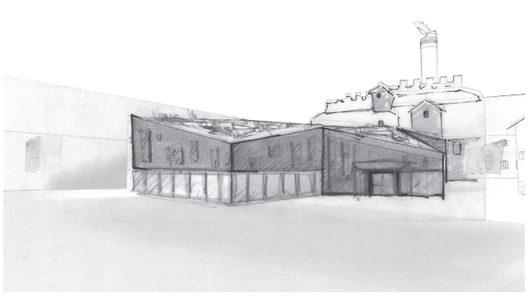
ill. 172-179: Programming sketches

ANNEX 3 - FACADE STUDIES

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ill. 180-191: Facade sketches

ANNEX 4 - LOADS

In the design process of the roof construction the structure, have been modelled through the grasshopper plugin for Rhino, and verified using the Finite Element Method calculation software, Robot Structural Analysis. For the dimensioning and verification of the structures stability, the following data and calculations have been specified.

Consequence class: CC3: $CC3: K_{FI} = 1{,}1$

Self-Weight:

Dead load of beams: $G_{beam} =$ (Defined independently by robot analysis.)
Roof construction: $G_{roof} = 2{,}16\ kN/m$

Variable loads:

Snow load:

$S = \mu_i C_e C_t s_k$, where
$\mu_i = 0{,}8$ (Teknisk ståbi figur 4.1 s. 168)
$C_e = 1{,}0$ (Teknisk ståbi s. 168)
$C_t = 1{,}0$ (Teknisk ståbi s. 168)
$s_k = 0{,}9$ (Teknisk ståbi s. 168)

$S = \mu_i C_e C_t s_k = 0{,}8 \cdot 1{,}0 \cdot 1{,}0 \cdot 0{,}9 = 0{,}7200 \frac{kN}{m^2} = 1{,}27 \frac{kN}{m}$

Wind load:

Because of the complex shape of the roof, the wind load have been difficult to calculate correctly. Therefore, the wind load have been set high to ensure the conditions are over dimensioned.

$V_k = 1 \frac{kN}{m}$

Combined load on the beams:

Total load $= 4{,}43\ kNm$

SLS

The "Service Limit State" calculate the deformation of the structure. The calculation of SLS is based on the characteristic load of the structure and the material properties of the steel.

$$\Sigma G_{beam} + G_{roof} + Q_k + S_k + V_k$$

SLS is calculated with a factor 1 in Robot.

Deformation

The maximum deformation of the structure is defined as:

$u_{\max} \leq l/400$

Where l is the length of the cantilevering part of the beam.

ULS

The "Ultimate Limit State" combination is used for the verification of the members on Robot. The calculation is preformed using the snow load as the dominating load.

$\Sigma 1{,}0 \cdot K_{FI} \cdot G_{beam} + 1{,}0 \cdot K_{FI} \cdot G_{roof} + 1{,}5 \cdot S_k + 1{,}5 \cdot \psi_0 \cdot V_k$

Where ψ_0 is a last combination factor of 0,3

The factors are used in Robot Analysis, when defining the ULS combination.

ANNEX 5 - Results and verification

Member	Section	Material	Lay	Laz	Ratio	Case
57	HEB 220	S 355	144.25	243.33	0.77	4 ULS Snow
51	HEB 220	S 355	89.76	151.42	0.44	4 ULS Snow
47	HEB 220	S 355	106.59	179.81	0.44	4 ULS Snow
41	HEB 220	S 355	114.80	193.65	0.38	4 ULS Snow
55	HEB 220	S 355	95.90	161.77	0.35	4 ULS Snow
44	HEB 220	S 355	106.92	180.37	0.33	4 ULS Snow
33	HEB 300	S 355 M/ML	53.77	92.19	0.26	4 ULS Snow
53	HEB 220	S 355	72.12	121.66	0.23	4 ULS Snow
17	HEB 220	S 355	125.72	212.08	0.21	4 ULS Snow
10	HEB 300	S 355 M/ML	65.20	111.78	0.21	4 ULS Snow
45	HEB 220	S 355	53.46	90.19	0.20	4 ULS Snow
52	HEB 220	S 355	44.88	75.71	0.20	4 ULS Snow
32	HEB 300	S 355 M/ML	53.77	92.19	0.19	4 ULS Snow
22	HEB 300	S 355 M/ML	43.07	73.84	0.18	4 ULS Snow
34	HEB 300	S 355 M/ML	38.60	66.18	0.18	4 ULS Snow
26	HEB 300	S 355 M/ML	59.99	102.84	0.17	4 ULS Snow
40	HEB 220	S 355	57.40	96.83	0.15	4 ULS Snow
27	HEB 300	S 355 M/ML	59.99	102.84	0.15	4 ULS Snow
49	HEB 220	S 355	72.12	121.66	0.14	4 ULS Snow
21	HEB 300	S 355 M/ML	56.81	97.39	0.14	4 ULS Snow
30	HEB 300	S 355 M/ML	39.08	67.00	0.13	4 ULS Snow
42	HEB 220	S 355	57.40	96.83	0.12	4 ULS Snow
50	HEB 220	S 355	44.88	75.71	0.12	4 ULS Snow
35	HEB 300	S 355 M/ML	38.60	66.18	0.12	4 ULS Snow
31	HEB 300	S 355 M/ML	39.08	67.00	0.12	4 ULS Snow
11	HEB 300	S 355 M/ML	59.36	101.77	0.11	4 ULS Snow
20	HEB 300	S 355 M/ML	50.10	85.88	0.10	4 ULS Snow

To ensure the stability of the structure all members are verified using Robot Structural Analysis. In addition, the most stressed element is calculated manually to ensure the conditions match.

Calculated profile:

HE220B

$h = 220mm$

$b = 220mm$

$d = 9{,}5mm$

$t = 16mm$

$r = 18mm$

$l = 13{,}6m$

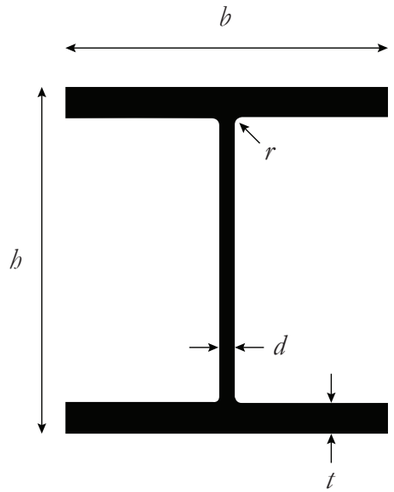
$q_{ed} = 5{,}25\frac{kN}{m}$

$W_{pl} = 828 \cdot 10^3\ mm^3$

$W_y = 736 \cdot 10^3\ mm^3$

$f_y = 355\ MPa$

$M_{Ed} = 121{,}38\ kNm$



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ill. 192: HE220B beam

Verification

To verify the calculations in robot the ration of the beam is calculated. This is done through the following steps:

1. Calculating the strength of the beam f_{yd}
2. Determining the maximum bending moment $M_{\max}$
3. Find the stresses in the beam σ_m
4. Compare point 1 and 3: $\sigma < f_{yd}$

The strength of the beam is calculatedF_{yd}:

$f_{yk} = 355\ MPa$ (S355 Teknisk ståbi udg. 21 s. 229 tabel 6.2.1)

$\gamma_m = 1{,}1$ (ECO s.35) – Reduction factor

$$F_{yd} = \frac{f_{yk}}{\gamma_m} = \frac{355\ Mpa}{1{,}1} = \mathbf{322{,}72\ MPa}$$

The maximum bending moment is determined by:

$M_{\max} = \frac{1}{8} \cdot q_{ed} \cdot l^2$

$$M_{\max} = \frac{1}{8} \cdot 5{,}25\frac{kN}{m} \cdot 13{,}6^2 = 121{,}38\ kNm = \mathbf{121{,}38 \cdot 10^6 Nmm}$$

The stresses are determined

$$\sigma_{m,d} = \frac{M_{\max}}{W_{pl}} = \frac{121{,}38 \cdot 10^6 Nmm}{828 \cdot 10^3\ mm^3} = \mathbf{146{,}59\ MPa}$$

The final verification

We calculate the maximum moment the beam can resist.

$$M_{ed} \leq \frac{W \cdot f_y}{\gamma_{m0}}$$

$$121{,}38\ kNm \leq \frac{736 \cdot 10^3 mm^3 \cdot 355\ MPa}{1{,}1} = 237{,}53 \cdot 10^3\ kNm$$

$$\sigma < f_{yd}$$

$$146{,}59 MPa < 322{,}72\ MPa$$

The ratio is calculated

$$\frac{146{,}59\ MPa}{237{,}53 MPa} = \mathbf{0{,}69}$$

The calculated ratio is compared with the ratio from the robot calculation, which show a ratio of 0.77 for member 57. This indicates that the verification is corrects and the member can hold.

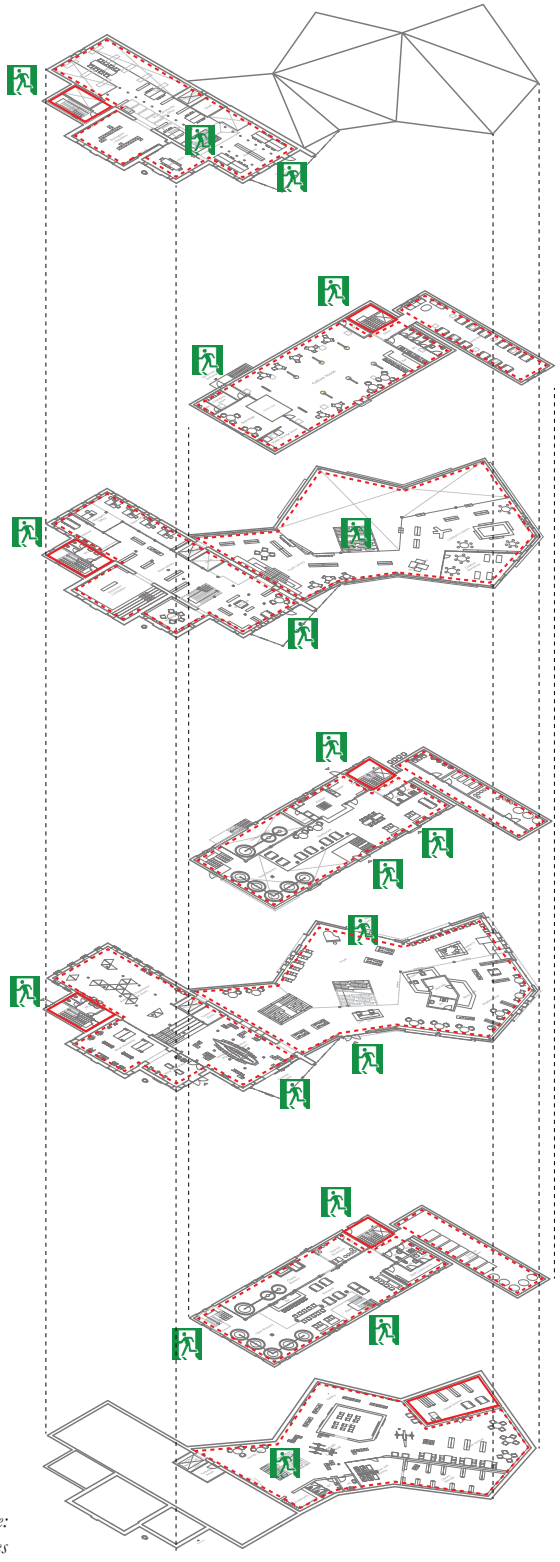
ANNEX 6 - Escape routes

The diagram to the right show an overview of the Escape route in the buildings in case of a fire. The diagram are also marked with the different fire cells and sections.

Escape Routes

Fire Cells

Fire Sections



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ill. 193: Escape routes