Proposal Booklet + Program

Kristiania Teglverk:
Preservation of architecture and ecology
A new annex to NATUR Vocational School and developing a Flowerfield at Bryn

Diploma

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The Oslo School of Architecture and Design

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Stories from Alna River

The theme of **Preservation of architecture and ecology** were set in the pre-diploma. The search for a heritage building situated in a diverse nature and a urban setting started. The rivers has been a natural resource for humanity since the dawn of human society, making it a logical starting point. The Alna River soon showed potential to test the merging of Preservation of Architecture and ecology. The area is big, complex and have a lack of a overall masterplan, and is not yet strongly involved in the renewal of the city.

Alna River, traditionally called Loelva has a long culture history dating back to the beginning of the industrial revolution. Alna River is Oslo's longest river, and on the shores of the river the first factories emerged in the 1800's. Hiking along the river you find traces and current evidence of old and new industry. All the different industries had a different relation to the nature and their production changed the landscape and nature in different ways. Like the clothing factory using the power from the river, the chemical paint manufacturer using the land and the river as disposal for hazardous waste, the soda factories used the water for their drinking product, like the brick factories used the clay from the river in the production of the brick. Some of the old factories are lost, some has got a new use and some is planned to be renovated. In some cases the renovation or transformation is changing the building to a degree that you would struggle to understand that it was the same building. You can question the contractor's motivation for these drastic transformation projects. Are the words transformation put in the application to the Cultural Heritage Management Office to be able to more or less demolish the building and be able to maximize square metres and profit?

Along the river you find different types of nature. In the north by the source, you find the spruce and pine forest around the lake Alunsjøen. Further down the river you find flat areas with clay in the ground resulting in a river that's altering its course in meandering movements, giving basis for a unique flora and fauna. Close to the middle you find the primeval forest of Svartdalen and it is around this area you find the old factories.

The areas with the intact ecosystems are also the areas were the paths and the public recreational facilities are well structured. It is in these areas the buildings from industrial times are well maintained. Entering areas where it is still modern industry and offices, you will often see a absence of a healthy ecosystem with some exceptions.

This is the situation around the poorly maintained old brick factory of Kristiania (former name of Oslo) Teglverk, closed in the 1960's. The building is placed between two different nature types along Alna River with poorly maintained and little used asphalt surfaces connecting the building and its neighbouring buildings. The area is confusing and with no direction in opposition to the Alna River's clear direction.

I want to look at the building and the surrounding areas from two perspectives and scales;

Landscape - I seek to get a understanding in both the buildings industrial contexts along the river and the original nature of the area. Kristiania Teglverk is positioned in a line of industrial buildings and in between two important nature types. By connecting the area around Svartdalen with the ecosystems around the wetlands of Smalvollen I want to strengthen this relationship. This is done by reintroducing the Flowerfields at Bryn, that historically dominated the area. This is a old culture tradition used by farmers to produce food for livestock. It is a very labour demanding ecosystem and work labour is needed to maintain and develop it. This gave the ide of introducing a new topic for the existing Voccational School, *Nature*. The Nature Vocational school founded in 1886 is located at Furuset further up the Alna River in the Grorud Valley. Their pedagogy have always been to do the theory at the school and learn the working life out in the fields. The School will get a new topic - the development and management of Flowerfields based on local knowledge.
Bryn area will be their test-bed.

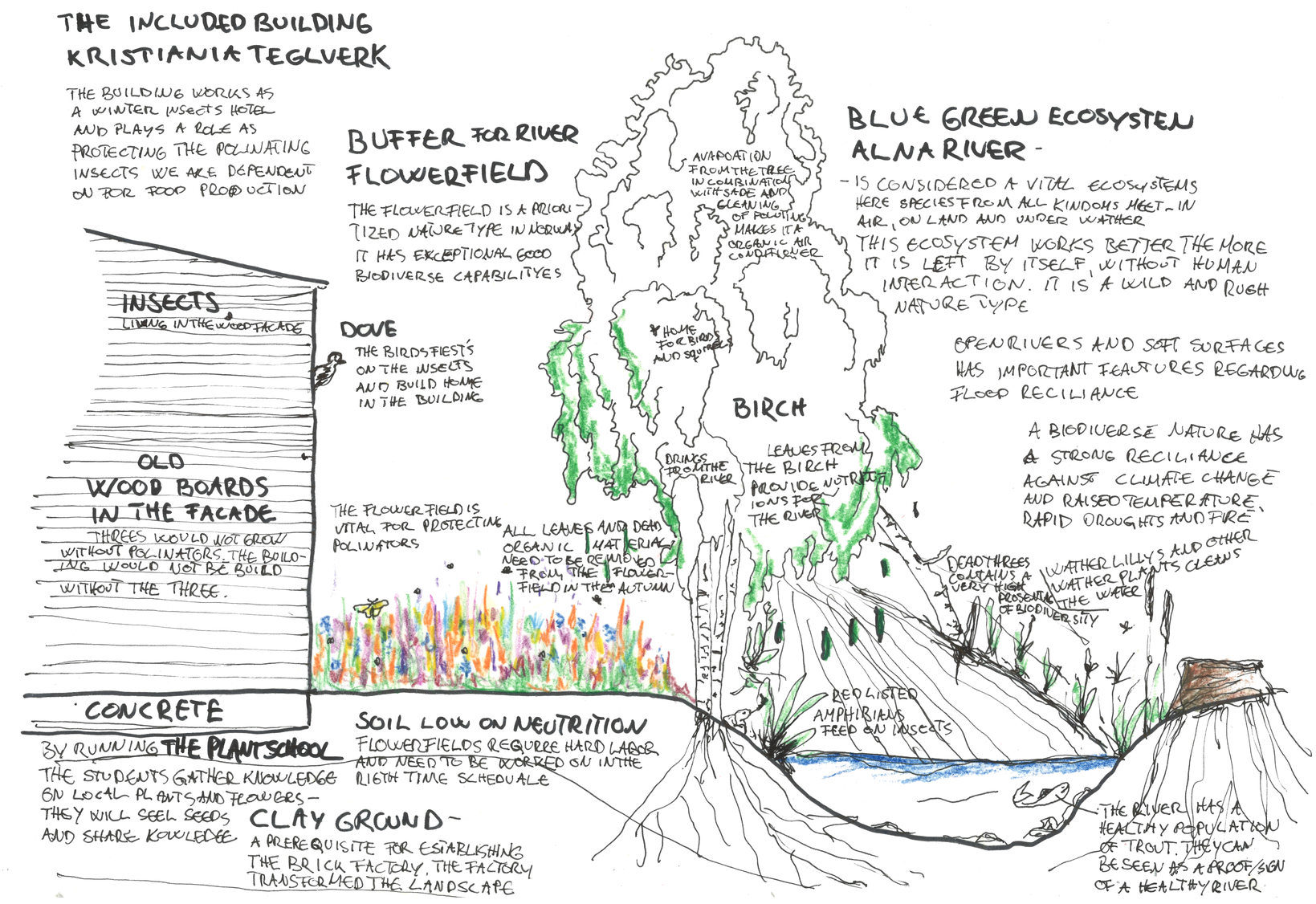
Architecture - Kristiania Teglverk have a special role in Oslo's industrial history being the only remaining brick factory standing in Oslo, maybe in Norway, containing a intact Ringoven of significant historical importance. The invention of the Ringoven (from German, in english The Hoffmann kiln) patented by German Friedrich Hoffmann in 1858 revolutionized the production of bricks. It is still used in many countries although the modern tunnel kilns has taken over the production in the west, making the Hoffmann Kiln obsolete.
The Ringoven at Kristiania Teglverk can be looked at as meaning-bearers of the brick construction knowledge culture dating back to the first productions accruing in the 1200's, with its peak during the building boom in Kristiania around the 1890's. During the building boom four bigger brick factories dominated the Bryn area. The production of brick used the clay from the river, resulting in a complete changed landscape. This production was a prerequisite for the rapid development of Oslo. It was a purely one-line process using natural resources to develop the city. In the process of preserving the building and introducing the school, this one-lined process is questioned, and a more nuanced relation to the surroundings is developed and accepted.

Today the building is partly empty, some spaces is used by car mechanics and other part are inhabited by insects and birds.
The building have a uncertain future. Parts of the building is in a poor state and lack maintenance. The owner is in a process of starting a application for a new zoning plan seeking to demolish the building and keep elements of the building as historical traces to further redevelop the site in a conventional office typology.
My position is that this would be a mistake. This would drastically reduce the building's ability to communicate its important history, and historical context with the Alna River's industrial past. The diploma sees this collective value of greater importance than private interests. Finding a strategy on how to use and maintain the building is a premiss for the project.

In this process I ask myself how little do I have to remove/add to make this place beautiful and meaningful. It is a question of building on what is already there.

Ecologycal relationships

Kristiania Teglverk, Flowerfield and the Alna River



Part 1

Program

Space program for the new annex of Nature Vocational School at Kristiania Teglverk

Kristiania Teglverk vocational school

The annex is dimentioned to host one class at a time at max. 30 students, and 4 teachers)

	Storey	Function	Number	Area	Comment	isolated spaces
	Ground floor. MB	Classroom	1	60		yes
	1st MB	Social and work zone	1	73		yes
	2nd MB	wardrobe	2	22		yes
	2nd MB	Beds for 30students/ 4 teachers (one class)		80		yes
	2nd MB	Kitchen and dining for 34 students/ teachers		50		yes
Total				**130**		
	1st PB	Inside oven, experiance, drying plants for sale, katalysing the fields. Possibilitys for kindergardens classes to dry their products like fruite.		350	Conserts, empty experiance, drying of plants, exhibitions	no
	1st PB	Timbered wood construction, experiance, exhibitions, place for eating picknik, sales of plantes		1400		no
	1st MB	Wardrobes, public toilets		50		yes
Total				**1800**		

MB Machine building
PB Production building

Kristiania Teglverk total numbers

Production building	
Ground floor	1760
1st floor	1760
2nd floor	1760
total	**5280**
Machine building	
Ground floor	345
1st floor	345
total	**690**
Total both buildings	**5970**

Choice of materials

Translating

Existing:

Wood
The wood columns and the beams in the production building are a product of their function. They have the dimensions based on the task they were given. A column at the ground floor carries more than in the column on second floor, and is therefore of a bigger dimension. The construction is a dynamic and adaptive system. Straight wood pieces of various dimensions was bolted together in a symmetric and ordered pattern. The purpose was to carry the weight of tons of tons of drying clay products like bricks and roof tiles. This is done in a way that brings in as much air and ventilation as possible to make the drying process optimal.

Brick:
The brick is serving as load bearer and a dense barrier both climatic and visual. The brick is used in three ways in the buildings: the brick oven, the firewall towards the neighbouring Zink White factory, and the machine building. Except of the fact that both the wood and the brick construction are load bearers they are preforming opposite in terms of occupying space. The brick is making a blockage in sound, temperature, light, visibility, smell and movement, while the wood construction is transparent.

Wood facade:
The wood facade of the production building is made up of simple boards and joined to the underlying timbered construction with simple nails. There are no isolation, giving sufficient airing for the drying process. This was a cheap, simple and straight forward facade. The facade protects both visually, climatic and physically at the same time as it is not a complete boarder with all its small openings and airiness. If you look close from the outside you can see inside in between the wood boards, and if you are standing inside you would see the sun sending rays of light in between and gives the facade a degree of transparency.

New:

Steel
The structural square hollow columns and the beams will follow the same constructive logic as the wood construction regarding optimisation of the dimensions. Hence steel can take compression and tension better than wood, the dimensions will be smaller, but at the same time they will also be nuanced and adapted to the various situations they are needed. Steel's advantage in strength will be used to make constructions that are stiff in its corners and the need for bracing will be redundant, enables the possibilities to use the new constructions in a more pragmatic way as systems for support of for instance shelfs and space dividers. To emphasis the strength in the new material all joints will be welded instead of bolted like in the existing structure.

Isolated Leca blocks:
Brick was the preferred industrial building material at its time. Today there are many new products that are optimized for being light, cheap and easy to build. The Leca block is a concrete isolated block that can serve as the basic building block and give the similar properties as the brick wall.

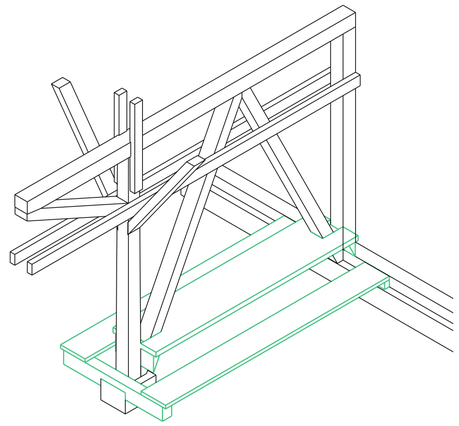
Kanalplast, Polycarbonate plates:
This is a plastic material that can come in a various of transparencies. It has climatic, sound and physical properties and can preform many of the tasks the Wood facade did.
The Polycarbonate plates will not only be used as a facade material, but be used wherever there is a need of a border with a degree of transparency, being a interior wall, a greenhouse wall or a simple window.

List of Architectonic strategies

1

Horizontal boards
Materials: Wood
Functions: Picnic area, storage, sales table, bunk beds, shelves, kitchen, Greenhouse

The wood boards were widely used during the production of the bricks. After the clay was mixed and dried it needed to be pre dried on shelves. Using the spill heat from the oven they could optimize this process. All space available was used, and to do so, they had a system of loose wood boards that could be placed so dense that you could now reach the brick in the back before you removed the shelves in the front. The huge spaces of the first and second floors was in constant change according to the drying process.
The horizontal boards are dimensioned according to the span they are going to perform and are simply fitted into the existing and new construction. No bolts or other fixing. The design ensure stability of the boards by sliding them into their position or simply laying them on their support.



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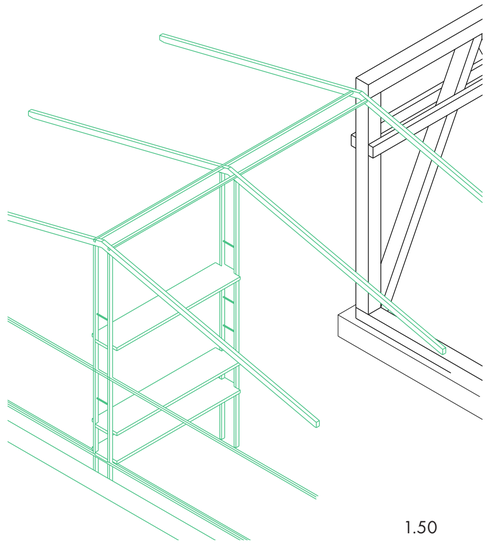
2

New structure for horizontal boards
Materials: Steel, Polycarbonate
Functions: Bunk beds, Greenhouse, Kitchen, Dorms, Outdoor, workshop

The idea of using the construction of the building as support for shelves are used further in the new situation at the school annex. Wood is replaced with steel, removing the need for bracing. This gives more flexibility of the spaces when the horizontal boards are moved. The steel support structure are always straight pieces of rectangular hollow steel profiles. The vertical pieces take the forces to the ground and are connected both in the floor and the ceiling. The horizontal rectangular hollow steel profiles works as support for the horizontal boards in combination with stiffening the structure.



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Existing

New

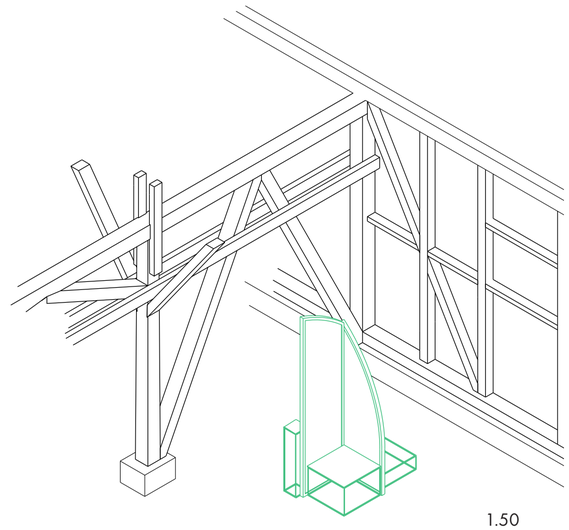
3

Free standing structures
Materials: Steel, Polycarbonate
Functions: Exhibition, Greenhouse, Kitchen, Dorms, Outdoor

Two types of structures. One supported and one supportive:

Supported
The supported polycarbonate is used as semitransparent boards for displaying objects or images both vertical and horizontal. The vertical boards has a iron frame to protect and stiffen it. When six of these vertical curved boards are put side by side, they will form the shape of the vault of the brick oven. This is a interpretation of the paper frames that was used to block the air and channel it to the chimney when the oven was in use.

Supportive
In addition to the polycarbonate vault frames there are made rectangles in square iron pipes in three sizes according to the size of the vault frames. They are used both as support for the vault frames and as free standing foundations for displaying objects. The objects follows the buildings logic of minimal material used according to the actions it will preform.
These flexible free standing objects invites to a big variety in exhibition design for the students.



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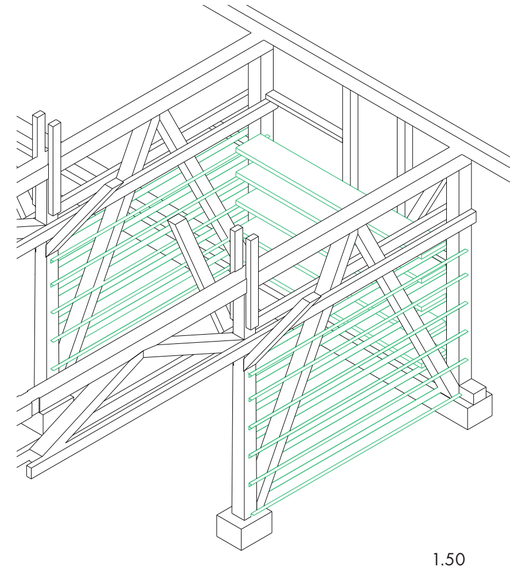
4

Separation of space, production building
Materials: Steel
Functions: Storage for machines and tools, simple wood workshop

The horizontal boards were originally placed on wood supports. In the new proposal these non-existing wood support will be replaced with L shaped steel supports.



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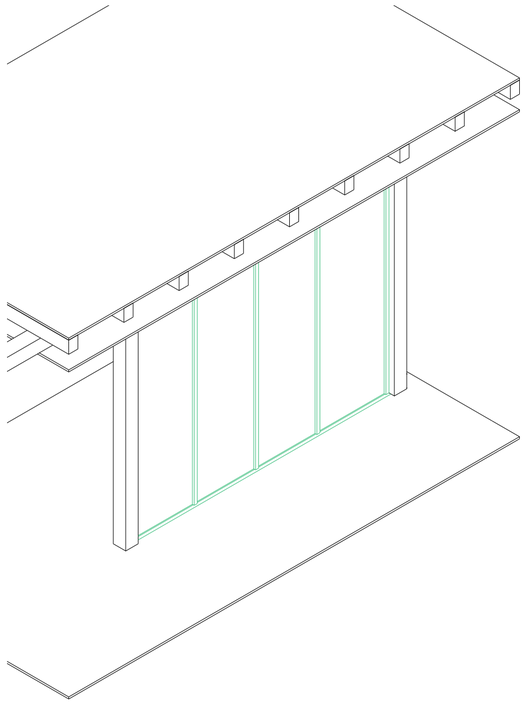
5 Separation of space, machine building

Materials: Steel, polycarbonate
Functions: Bunk beds, sanitary, classroom, kitchen, social zone, circulation

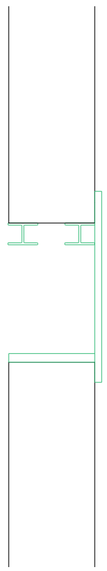
Hollow rectangular steel profiles suspended from floor to ceiling. Polycarbonate plates attached on each side of the vertical steel sticks. This gives a semitransparent separation of space. In combination with the two polycarbonate plates the air in between them helps sound isolation between the spaces.



6 Opening of brick wall

Material: Steel, Polycarbonate and wood
Potential functions: Windows

H-steel beams take the horizontal forces.
The wood make the bottom surface of the opening convenient.
The polycarbonate is attached from the outside with bolts.



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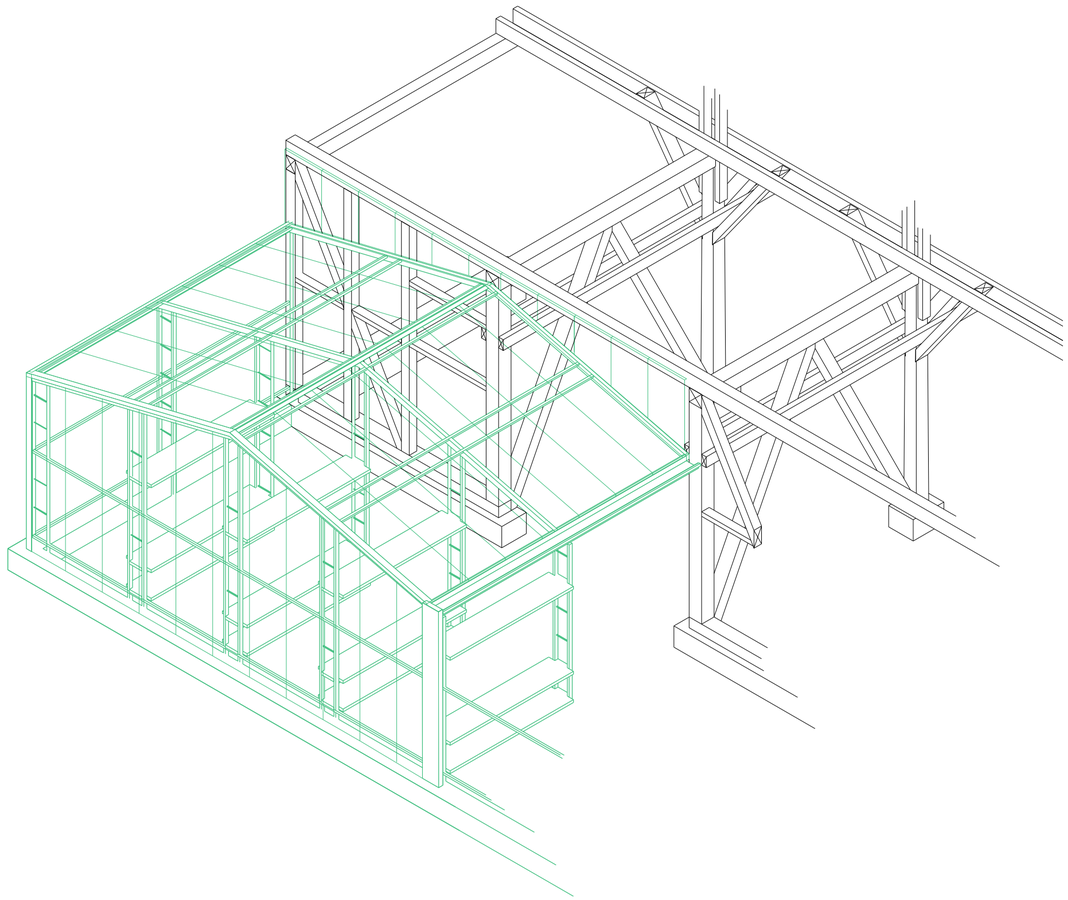
7 Bigger construction plugin into the existing

Materials: Steel, Polycarbonate, Leca (concrete blocks)
Functions: Greenhouse, lift tower

The bigger construction plugging into the existing structure are a combination of the other Architectonic strategies. The dimensions are bigger. They follow the existing constructions of the production buildings rhythm and are attached in selected points.



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Existing

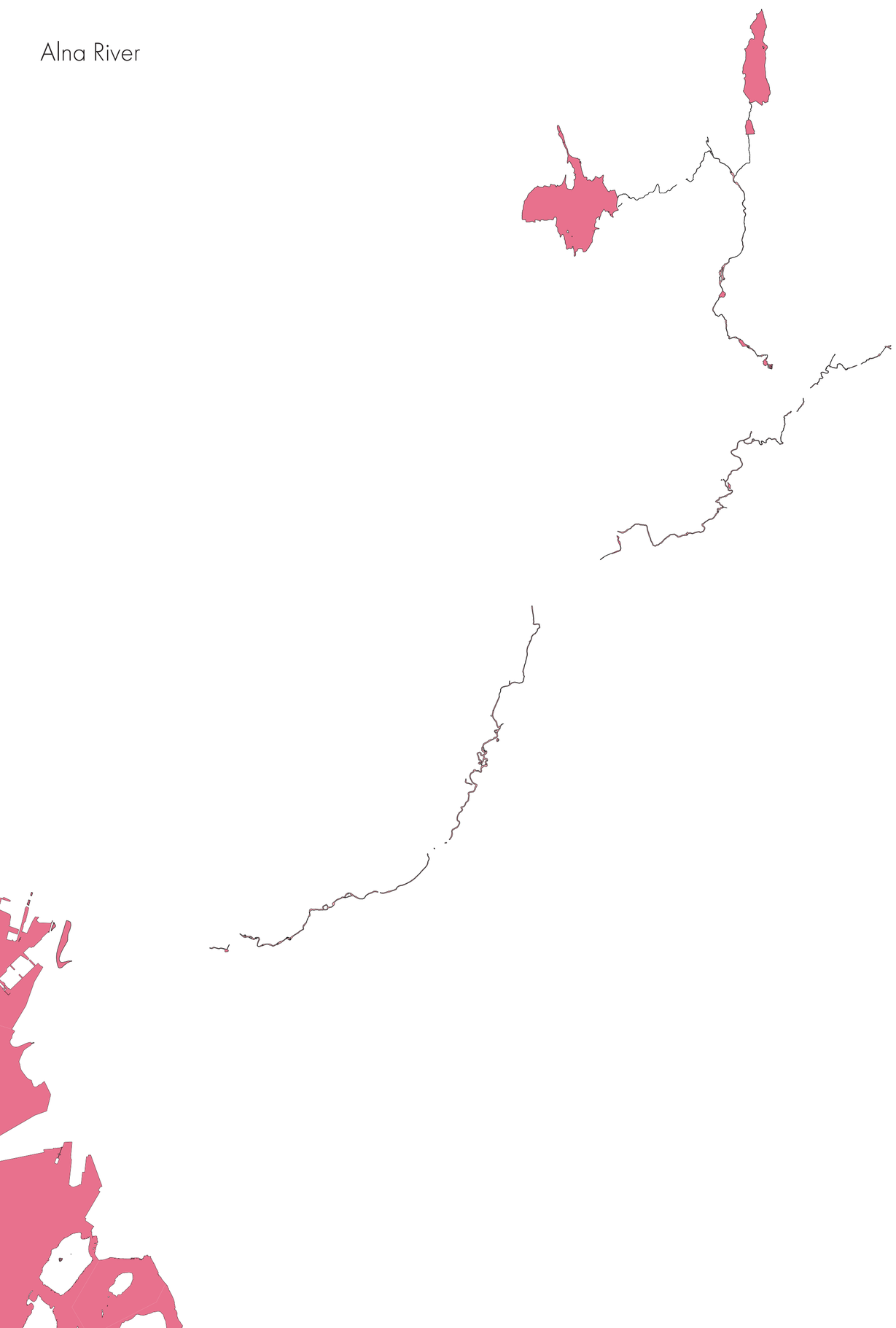
New

Part 2
Alna River

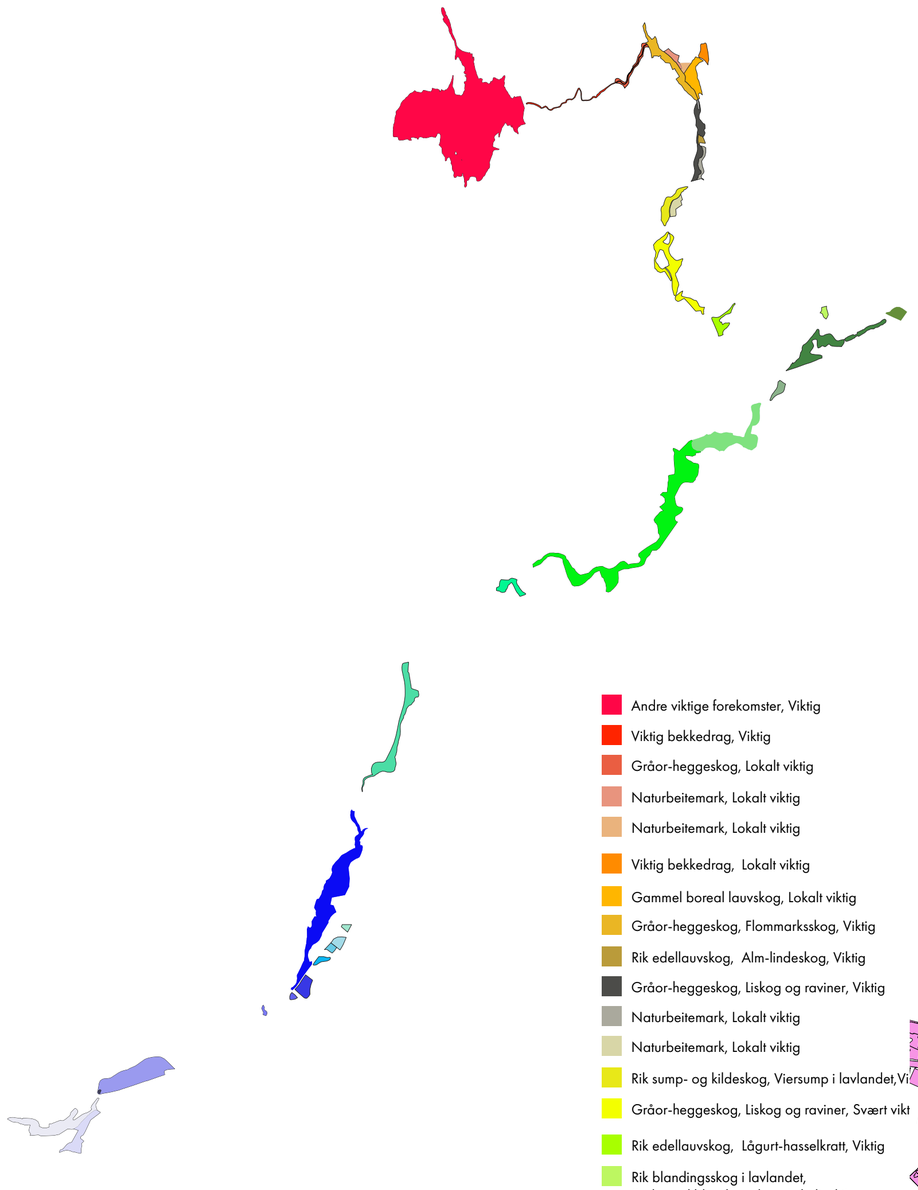
Background

Alna River

Industrial heritage buildings



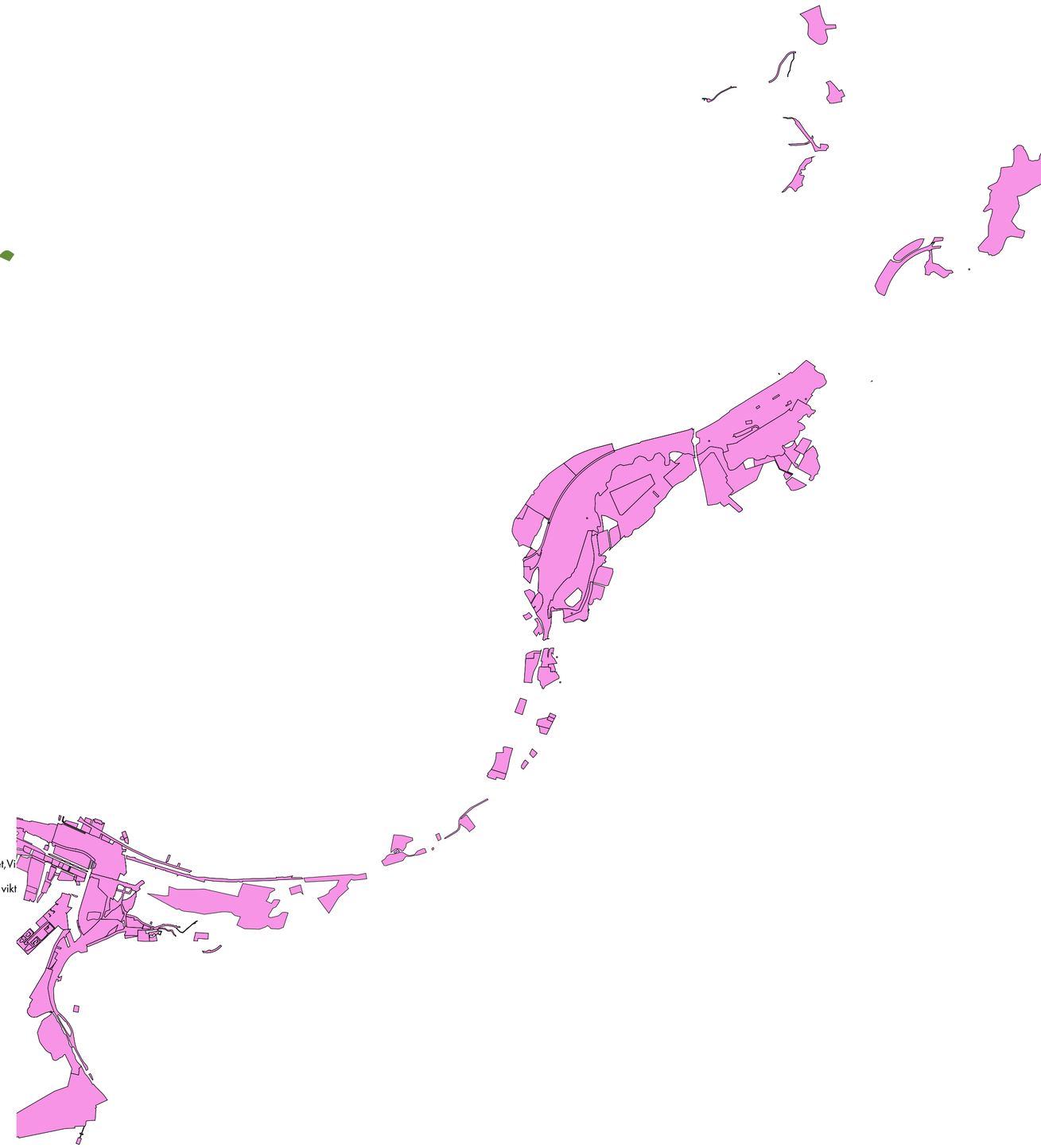
Types of nature



Andre viktige forekomster, Viktig
Viktig bekkedrag, Viktig
Gråor-heggeskog, Lokalt viktig
Naturbeitemark, Lokalt viktig
Naturbeitemark, Lokalt viktig
Viktig bekkedrag, Lokalt viktig
Gammel boreal lauvskog, Lokalt viktig
Gråor-heggeskog, Flommarksskog, Viktig
Rik edellauvskog, Alm-lindeskog, Viktig
Gråor-heggeskog, Liskog og raviner, Viktig
Naturbeitemark, Lokalt viktig
Naturbeitemark, Lokalt viktig
Rik sump- og kildeskog, Viersump i lavlandet,Vi
Gråor-heggeskog, Liskog og raviner, Svært vikt
Rik edellauvskog, Lågurt-hasselkratt, Viktig
Rik blandingsskog i lavlandet,
Sørboreal blandingsskog, Lokalt viktig
Gammel boreal lauvskog, Lokalt viktig
Viktig bekkedrag, viktig
Gråor-heggeskog, Liskog og raviner, Viktig
Viktig bekkedrag, Svært viktig
Viktig bekkedrag, Svært viktig
Gammel boreal lauvskog, viktig
Gråor-heggeskog
Liskog og raviner
Lokalt viktig
Rik Edellauvskog, lokalt viktig
Kalkskog, lokalt viktig
Rik edellauvskog, lokalt viktig
Rik edellauvskog, lokalt viktig

Kroksjøer, flomdammer og meandrerende elveparti
Artsrik lavlandsform under gjengroing
Svært viktig
Gammel boreal lauvskog, Lokalt viktig
Viktig bekkedrag, lokalt viktig
Viktig bekkedrag, Ravinebekk, Viktig
Artsrik veikant, Lokalt viktig
Viktig Bekkedrag, Svært viktig
Rik edellauvskog, Alm-Lindeskog, lokalt viktig
Rik edellauvskog, Lokalt Viktig

Pollution in the ground



The selected part of Alna River in an Oslo context

The Alna River is the longest river in Oslo. It was the first river used for industry and have one the of the most interesting bio-diverse ecosystems . Oslo used to be positioned between Alna River and Hovinbekken. Later Akerselva became a river of importance. Mills have populated the riverbanks of Alna River as long as we have written history, using the power from the river.
The path D10 runs along the river from the source in the Marka (protected nature area dominated by forests and lakes in mountainous topography surrounding Oslo) out in the Oslofjord.

The area selected is the area with the old industrial buildings, complex ecosystems and a primaeval forest of Svartdalen, and it is located in close proximity to the city centre. From the north the limitation is set where the river exit the pipe running under highway E6, and the wetlands of Smalavollen begins. In the south it is sat to the ending of Svartdalen where the river enters the pipes going under Kværnerdalen (old steel factory complex transformed into a huge housing complex) and out in the Oslofjord.

Oslo is the municipality in Norway were there are the biggest registration of animal and plant species both in total number, and when you count species of risk of extinction.

Many of these species are dependent of the rivers and maintaining them in a way that is promoting local ecosystems and bio-diversity. The Alna River have mainly not been a victim of bigger park renovations with mono-cultural big lawns and imported plants benefiting recreational facilities on the cost of local specialized ecosystems. The more the blue green ecosystem along the river can be self grown, the healthier it will be!
Along the river you can meet a big variety of living organisms. There have been observations of fox, bever, moose, rabbit, trouth and many other river fish, deer, many birds, moss, newts and other amfibies, many red listed mos, the ground consists of bacterias, virus, the complexity is just incredible.

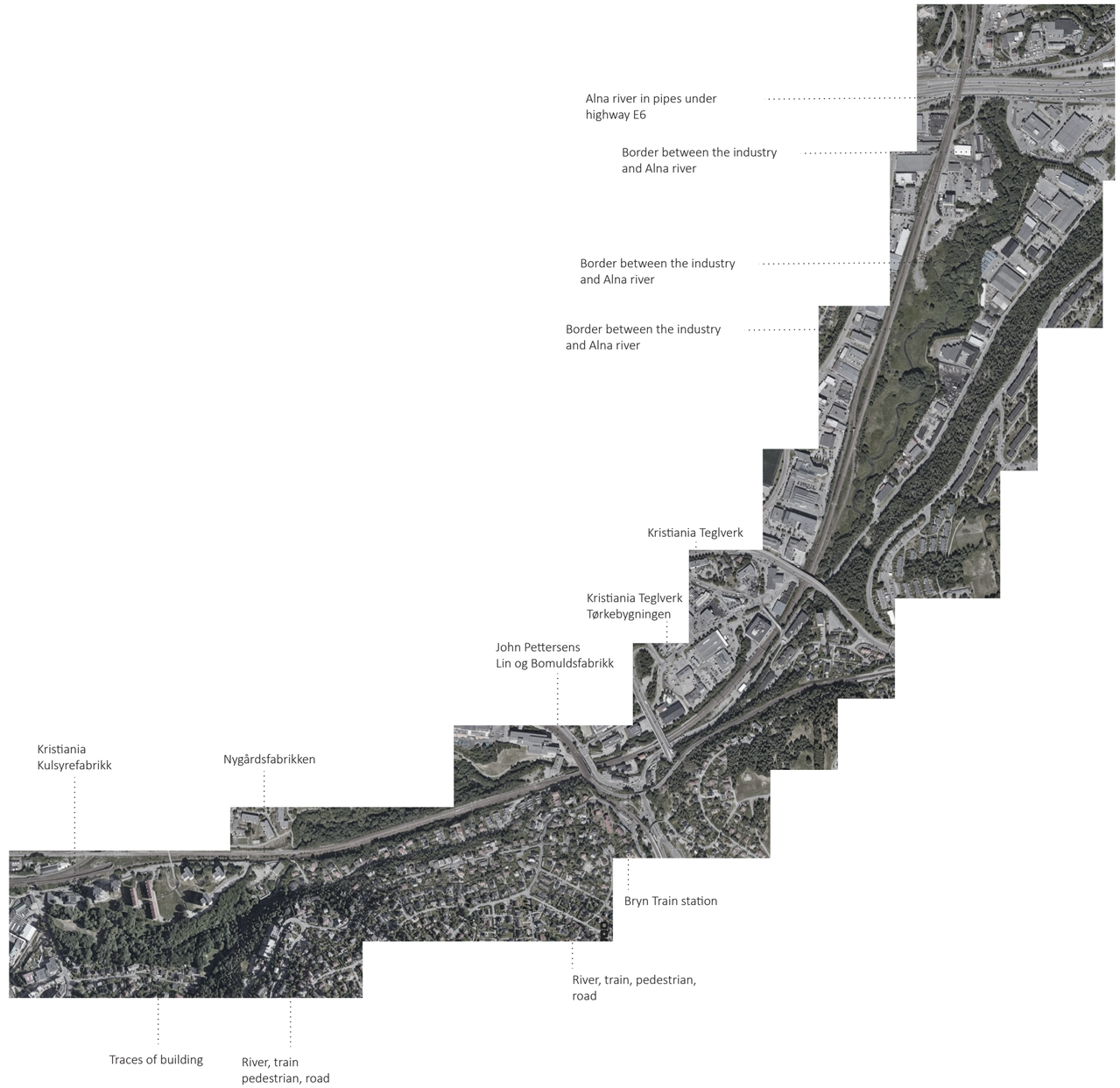
Overview of observations along the Alna River

The factories, industry and nature along Alna River

Most of the Alna River runs in the open, but some parts are running in pipes. There are a initiative from the urban environment agency to reopen the rivers of the city. It is a costly and time-consuming process, dealing with many interests and land owners.

Most of the time the path D 10 is maintained and designed in a way to give the visitors a clear direction and overview. I could observe a more or less correlation between the clear path, maintained heritage factories and a rich bio-diverse nature. In some parts like at Bryn, the wide belt of living organisms running by the river is cut by bigger mono-cultural asphalt surfaces, fences from the industry, roads, railways and other infrastructure.

On the next pages the named places on the map on the right are photographed and commented.



Observations along the Alna River

Christiania Kuldsyrefabrikk

The building appear to be maintained and in use. The small constructions by the river looks like fragments from the old production. I get a sense of time looking at the layers of man made structures (both in use and obsolete). Since the fence is places along the river and not perpendicular it is there to protect me from the dangers of the strong current rather than stopping me from following the river.

Traces of a building in Svartdalen

Foundation one metre above river hight. Easily to imagine the building over-flooded when the ice melt in the spring or in heavy rain and the river grows over it's river banks. It sparks my imagination thinking of previous use. Was it a house, or was it used for production? Today the nature is gradually taking over the building and eventually there will be no building and only nature.

Bryn Station and the old brewery

The train station is still in use. There are three heritage buildings on the site. The one in the picture is a old brewery using the water coming from Østensjøvannet and entering Alna River under the railway. The buildings are all used and in more or less maintained state. The station was a important factor together with the river for developing the Bryn area for the industry. All the buildings are made of natural materials such as brick, stone and wood. The relation to nature is somewhat a relation were the nature was seen as something you could exploit rather than having a mutual benefit.

Kristiania Teglverk, brick factory

The old brick factory was one of several in the Bryn area. It is partly used for storage. The facade is poorly maintained. The building appear like a object placed on a surface, by the river and the highway. The surface consists of gravel and asphalt with some smaller objects like trash bins placed on top. The facade of this building is not isolated and looks old. It has many damages and holes. They can work like openings for birds and insects.
It is like the heritage building and the river are two old forgotten treasures, replaced by undefined modern plans or lack of plans.

Nygårdsfabrikken

The building sits on the steep rocky hill by the river and the primary forest of Svartdalen. The materials used are all natural mural and breathing. The foundation follows the hill in the most intimate way giving respect to what was there at the same time announcing its own presence. The proportions are not contradicting or dominating the surroundings, it is rather complimentary. The functions have changed many time since the erection in the 1850's. All of these functions are related to the nature in different ways: The mill used the power from the river, the chemist factory used the river and the backside of the building as waste deposit and so on.

The pathway

Continuing the modern pathway facilitated for hikers up along the river you pass under huge infrastructure elements like railways, Metro and roads. They are all linear objects working like walls dividing everything they pass in two. Pedestrians, animals and many plants need a continuity to connect with different areas. Here the pathway work as that connector. The river is the connector for the fish and other water-based life. I imagine it is more difficult to spread over these areas for plants and other species that are less mobile.

Zink white factory

Following the asphalt surface from Kristiania Teglverk the neighbour is the old Zink factory. This building appear in good shape with a clear new function; a distillery. Even though the old Zink factory probably had a damaging effect on the nature and the river the old function is gone today. Could some of the asphalt be replaced by some of the original plants of the area, supplementing the story of the place? Can this give something back to the nature that has been neglected in this area since before the industry entered the river? This would also make a clearer continuation of the hiking path following the river from Svartdalen.

Smalvollen wetland

This is the only stretch of the Alna River were the river is free to move in meandering movements. The area is not developed and the only human intervention is the pathway. Flat river banks like this is giving premises to a specific nature. The river is flooding and the plants must manage to be flooded at a regular basis. You can see buildings at a seeing distance from both side of the river. The fact that there is a absence of human intervention close to the river, at the same time as you can look at the industry at a distance, gives a feeling of respect for the nature at the same time as human needs are met.

John Petersen Lin og Bomullsfabrikk

Well maintained heritage building in use. The old factory is places on a plateau with the river running under the building as a previous source of energy. The landscape appears like a park with grass, planted trees and pathways. This is a very designed nature and you would find it anywhere humans want some green spots. This has nothing to do with the previous relationship the nature had with the river. This relation was probably removed during the industrial period. You could imagine that in the process of introducing nature back to a area you would benefit from having a somehow understanding of the removed nature and then using this knowledge to reintroduce it. This would in my opinion tell much more about the place. The relation between the heritage building, the river and the nature.

Brynsengfaret

The path from Svartdalen turns into a road shared with cars following the west bank of the river. On the east it follows the railways. The metro and a road cross the river. This gives a area almost only devoted to transport for humans. Very little is left for the nature except the river. This area probably works as a complete barrier for most animals and plants.

Modern industry

From this part the Alna River is so narrow that the old factories did not benefit from the river. Today you have modern industry, typically storage buildings along the river, but they are not connected to the river, rather to the roads. This function never needed to use the river or the nature. It rather want to keep it away. From building to building I could see fences or containers making a barrier towards the nature and the river. Could the people working at these industry buildings benefit from a more blurred border between the nature and the industry? Could the nature benefit from getting more space?

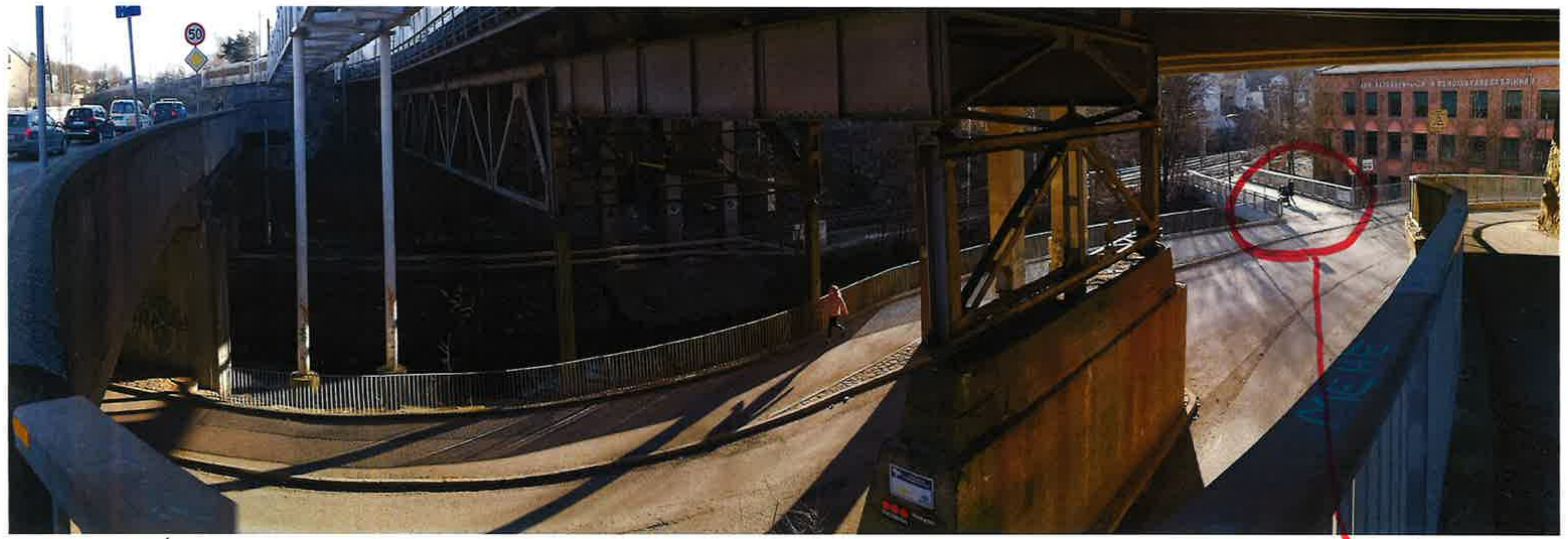
The river bends for the highway, E6

At this point of the journey the river dive into the pipes. The pathway is completely lost and the road with its highway traffic works as a efficient connection for the vehicles and as a barrier for pedestrians and animals.
Can the situation be improved for pedestrians and animals without making the situation for the vehicles worse?

Mapping mono-cultural asphalt surfaces at Bryn

Overview of photos taken following the Alna River at Bryn

Registrering - bevegelse gjennom rommet / hvorfor er disse bildene her?



1. Standing under the metro, looking at John Pettersens Bomullsfabrikk.

walking along the river the path D10. This is the point the path disappear at Bryn.

6. left office building, right elevated highway and kristiania Teglverk. The parkinglot between the buildings is partly used.

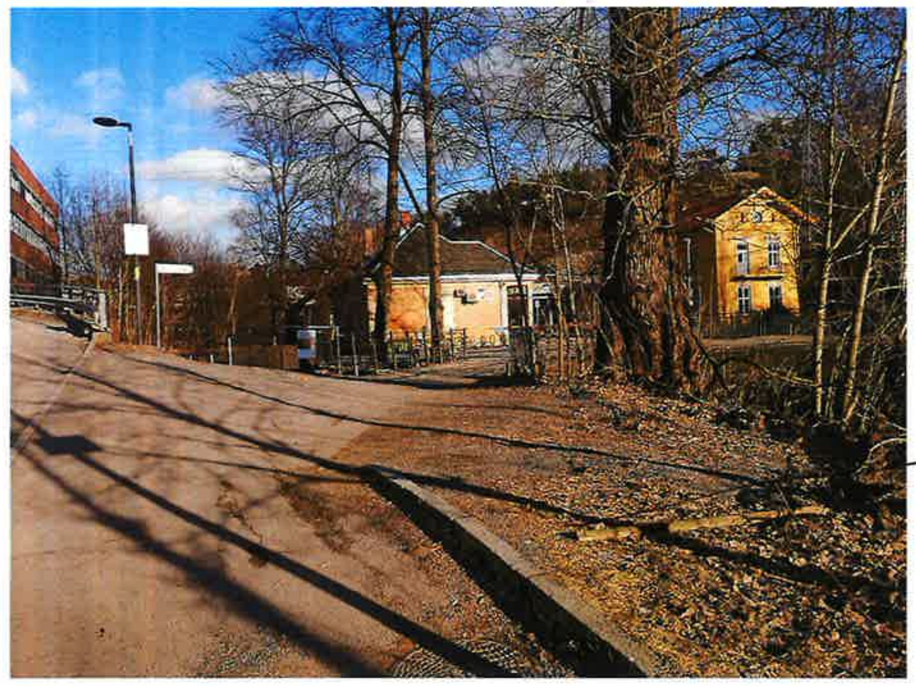
Flower-field

2. The river under the metro

Flower field

3. Abandoned building, not used parking lot in front.

7. The trainstation (left), Alna, highway, office building (front) kristiania teglverk right. Parking lot partly used. Path D10, not exisisting.



Flower field

4. Bryn train station 1854. The whole station area is listed.

Flowerfield

5. Alna on the right, 60's office building on the left. Highway E6 elevated in front, Kristiania Teglverk in the back.

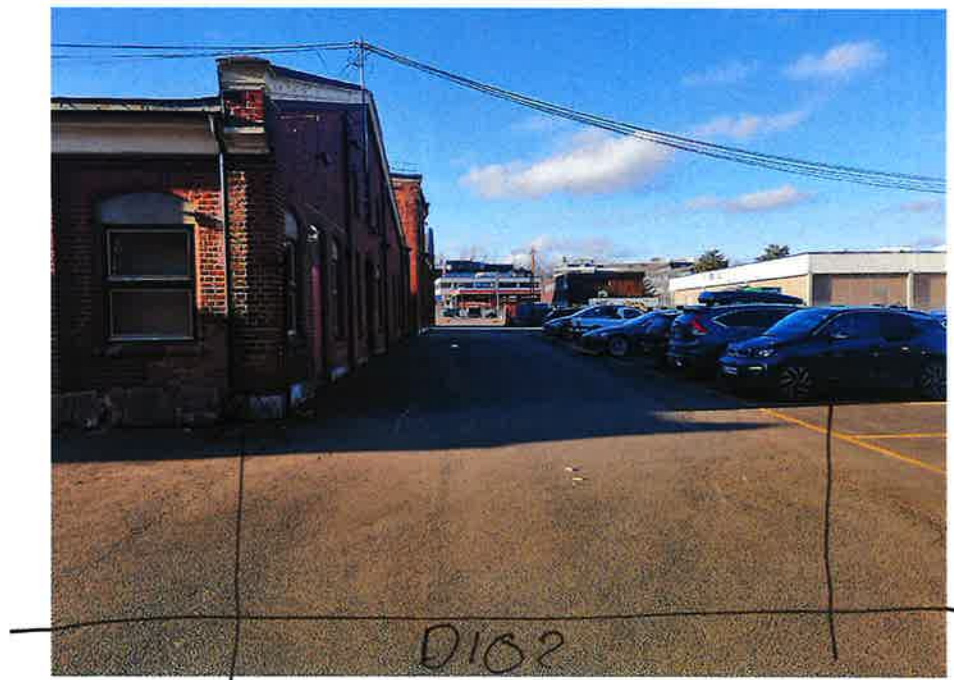
8. kristiania Teglverk. Path D10?

Flowerfield "

9. Firewall kristiania Teglverk left. Right zink white factory.

10. Right, Arkitramia Teglverk. Left zink white factory. In front Nils Hansensvei.

11. left zink white factory. / Path D10? / Alna river
little used parking lots.



12. zink white factory / charging of electric cars in good use

13. zink white factory
little used asphalt surfaces.

14. charging electric cars in good use / Path D10 / Alna

Flowerfield

15. temporary storage container / charging station electric cars well used / zink white factory

Flowerfield

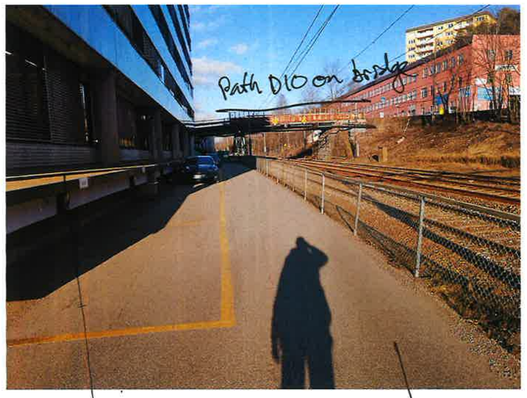
16. Zink white factory. Poorly used asphalt surface. ~~[illegible]~~ Fence may be removed

17. Temporary barracks / little used asphalt surface / zink white factory

18. Alna / Flowerfield / Path D10? / zink white

19. Flowerfield / Path D10 / bus stop with no bus

20. Rauke ecosystem on prioritized list.



21. Office of industry
Arkitektur Grong Geogrove

Flowerfield

Flowerfield

22. Partly used parking

you will have to cross the bridge to continue D10.

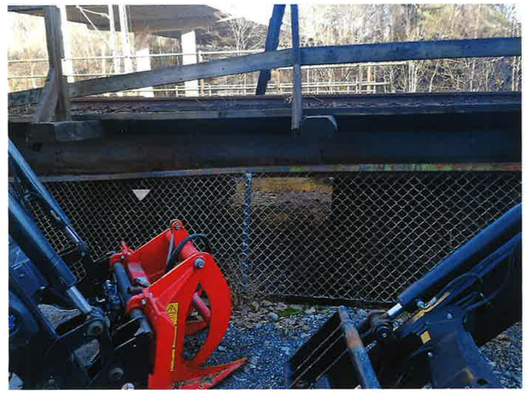
The bridge is yellow listed and was used for trains today it appears abandoned.

23. Looking under the bridge the storage building is placed over the river.

24. 10° looking down at the river

25. Flowerfield Special Rivine ecosystem where the river exits the pipes

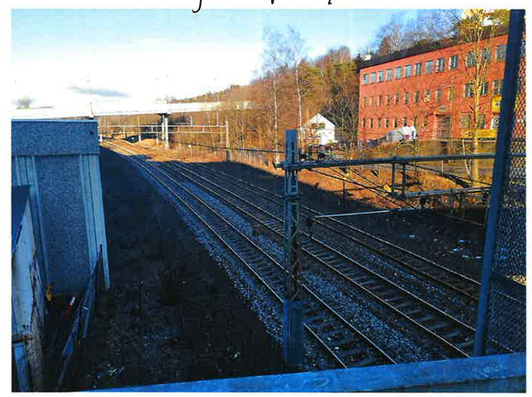
26. The storage building placed on top of the river



27. The river enters the pipes after running under the bridge for the trains

28. Standing on the bridge looking Flowerfield at the storage building placed over the river
Parking lot partly used

29. Flowerfield Path D10 Old tram bridge



30.

31. The path share the road with the cars. Means need to be taken to secure the pedestrians

Path D10?

32. Can the path D10 get a alternative route under the bridge?

Part 2

Landscape

Intention

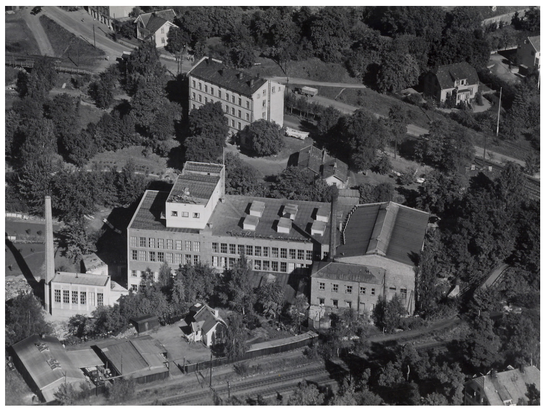
Historical images, industrial architecture

1955
Kristiania Teglverk
photo: Widerøe

1951
Kristiania Teglverk and Zink White factory
photo: Widerøe

ca. 1868
Steam train at Bryn station
photo: Unknown, Museum of Oslo

Unknown year
Østensjøbanen in a bridge over the railway
photo: Wielse, Anders Beer, Museum of Oslo



1951
John. Petersen A/S Bomull og linfabrikk
photo: Widerøe/ Oslo City Archives

1926
Landscape at Bryn
photo: Wielse, Anders Beer, Museum of Oslo

Flowerfield at Bryn based on historical roots

1956
Landscape at Bryn
photo: Unknown, Museum of Oslo

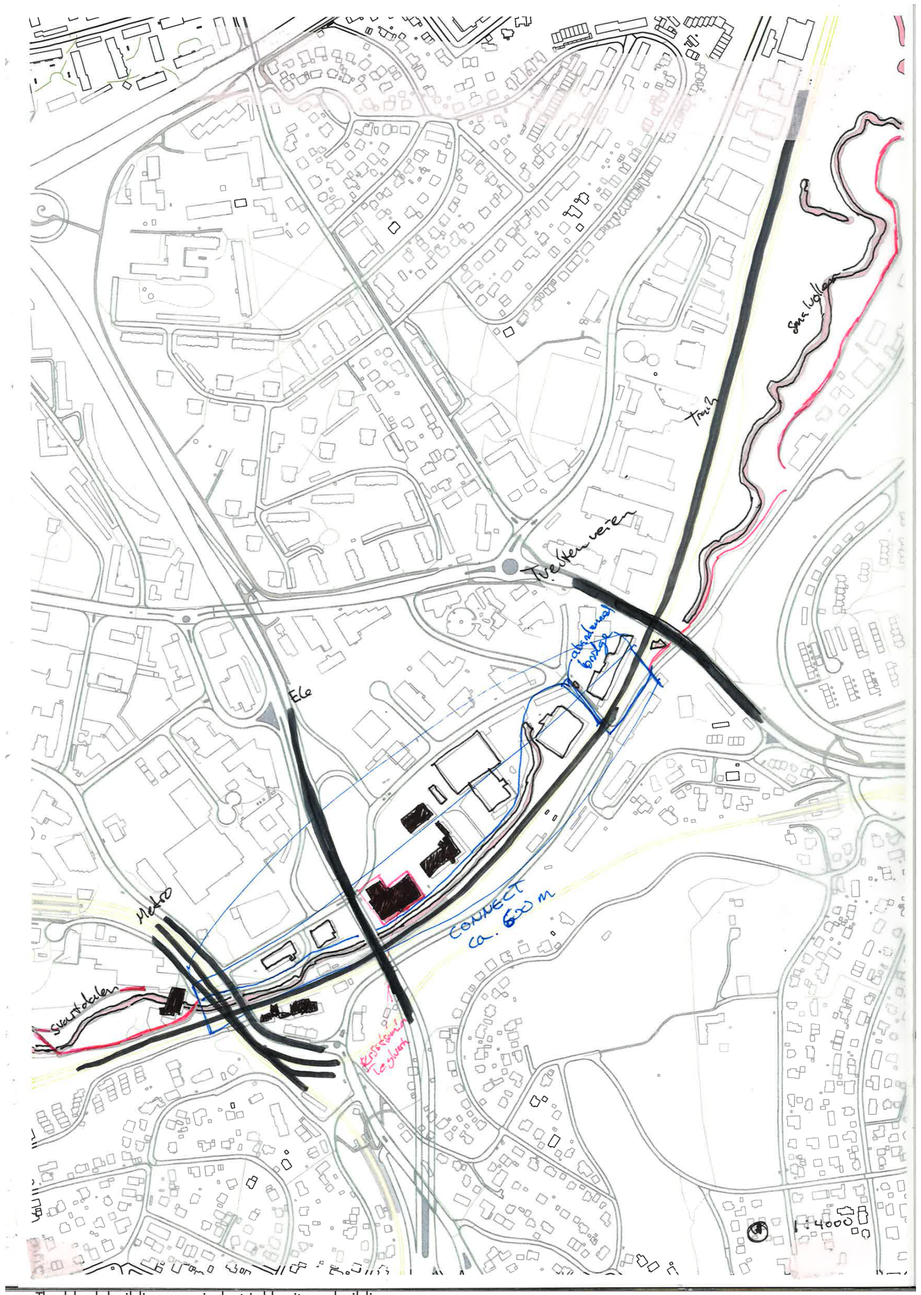
The name Bryn is from old Nordic (Norrøn) and means Eng (Flowerfield) and bridge.

Historically the Bryn area has a long tradition as farmland, and the Slottmark (Flowerfield) was a way of making use of all small spots of land for food production for the livestock. This type of landscape is called Kulturlandskap and is today becoming less and less dominant in Norway. This have several explanations; modernization of livestock farming (leaving Slottmark as a obsolete method of feeding livestock) leading to re-forestation of previous Flowerfields, and urbanization.

Flowerfields have exceptional good biodiversity capacity and plays an important role in saving the pollinating insects. Pollinating insects are vital for many ecological processes, and for the human food production.

Flowerfields has status as a prioritized nature type by the Norwegian environment Agency.

Intention of reconnecting Bryn



The black buildings are industrial heritage buildings

Part 3
Kristiania Teglverk

Background

Auto-Pluggen

SjekkPunkt
BILVERKSTED

Pallesentralen a/s

Analyse Volumes

The supporting building
The Administration and machine building

Storeys: 2
Area: 350m2
Toral area: 700m2
Material: Bricks
Height top: 10 m
Height side: 7,3 m

The supporting building
The Administration and machine building is made of bricks. The brick is constructive, have thermal isolation properties, it lets some air through and protects from the weather. The bricks are painted with white lime, a natural paint that is breathing.

The production building

The Ringoven and the drying facility's

Storeys: 3
Area: 1730m2
Toral area: 5200m2
Material: Spruce and brick
Height top: 14 m
Height side: 10,3 m

The production building
The facade of the production building is not isolated and have a breathing spruce panel originally treated with red composite painting. The facade have air hatches at a regular interval. This gave good conditions for drying the bricks because you could open the hatches to air out in the summer and keep it closed in the winter.

Non-measurable qualities
The buildings consists of two individual volumes placed on a flat surface. The surface appear unnaturally flat giving them the impression of the buildings being somehow alien to the place. Simultaneously - giving the historical context, they belong to it.
The machine building serve the production building both in appearance in the original function. The area is made up of different materials and have different proportions. Still they give the impression that they relate in a random way. In fact, the impression of randomness could not be more from the truth. The relation or the architecture of the two buildings are carefully thought and well planned according to each task the Architectural element needed to preform.

Each of the four façades are unique, with different expressions as a result of their different functions.
The south west facade is facing the bridge of the highway. The south east face the river. The north east face the old Zink white factory and the north west face a smaller road, Nils Hansens vei. This makes the movement around the building appear in a varied way despite the landscape's flat condition.

Observation and intentions

Lack of care

The highway and the building is placed on the same asphalt surface. The road is elevated and appear like a dusty line producing noise. It somewhat cuts the building in two. Under the bridge you find a surface devoted to park cars. It is often empty. It feels like a non-place. Cars do not park there. People do not walk there. Nature is not present. Above is traffic, on the side is the river. On the other side is the building. This surface lack care. This space has a huge potential.

Traces of use

The north east façade looks the oldest. The panels have a strong patina with traces of previous production of the boards, the assembly method and previous paint. The facade is not isolated and have many wounds and holes working as openings for animals and insects. The organic material is easily demountable and possible to reuse or recycle. That makes it easy to maintain and in close contact with nature.

New inhabitants

On both the second and third floor you find a number of something looking like doors with a window on top. The glass is gone a long time ago and it is the opening indicating the existence of the glass. The windows can remind of the opening on bird houses. In a way the whole facade can give associations to a huge bird house. Visiting the floors you see cm by cm of pigeon droppings showing the new inhabitants of the brick factory.

The construction

The load bearing construction in oak appear to be in good condition. It is placed in a grid of approx 3m on concrete pillars.

Ringoven for the brick factory

The Ringoven appear in good condition. Inside you still find bricks laying on the floor from the production. The oven is emptied for all fuel. Today it can give associations to a deep cave in the mountains. With the exception that it is round and you can walk and walk and never reach the end.

Deterioration

Part of the north side is in very poor condition. Especially the facade and the boards of the flooring. The load-bearing structure is still intact. Some reparation is made with new materials, it looks like it is made fast and ad hoc, with little care for the building, other than preventing it from falling apart.

Kristiania Teglverk and preservation of Industrial Heritage buildings

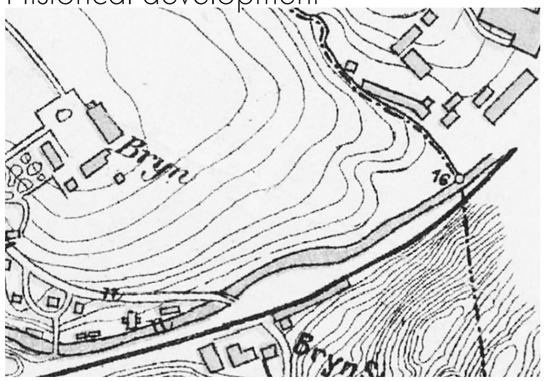
Kristiania Teglverk from 1898 is the last standing in Oslo and one of the last that had to close the production in the1960's. The four biggest Brick factories in the Oslo region was placed close to Bryn around the1900s. They used the clay in the river as a resource. The original landscape was changed during this period.
Today the future of the building is uncertain. The owner looks into applying for a new regulation plan with the aim of maximizing the square metres to promote commercial activity.

Functional Architecture heritage buildings are often a challenge to protect. They are highly specialized buildings with unique space, light and climatic condition making it difficult to combine with a new function. In these cases you often conclude in a compromise where the facade will be kept to give a historic identity, but the construction is demolished. In the case of Kristiania Teglverk you could argue that the facade alone is of little importance. It is the building and its production process that is of heritage significance. Thereby the facade is a inherited part of the whole and can not be isolated from the rest. It can be drawn parallels to Le Corbussieres (Charles-Edouard Jeanneret) fascination for airplanes, and how he saw the task of designing a airplane as a exercise in optimising the form according to the function the plain needed to preform; to fly. Le Corbussieres used this approach when designing his renown housing projects. Louis Sullivan discusses this furter in his article «The tall office building artistically considered» where he quote "Form ever follows function".
However Kristiania Teglverk was not designed in this academic context, the result of an engineer designing the building makes it comparable with Sullivan's quote. But in the case of Kristiania Teglverk you could say; the form follows the production!

The owners of Kristiania Teglverk started the process of re-regulating the zoning planing already back in the beginning of 1990's. This process were stopped by the The Norwegian Public Roads Administration in the potential need of using the site for a new highway. The Norwegian Public Roads Administration is one of a very few public agencies that can halt the development of a site decades in the future pending their potential future plans. Heritage and local democracy is totally subject to the plans of the Public Roads Administration. This hierarchy in decision making should be challenged.
Similarly the Naturmangfoldsloven, (Act relating to the management of biological, geological and landscape diversity) is subject to the Public Roads Administration.

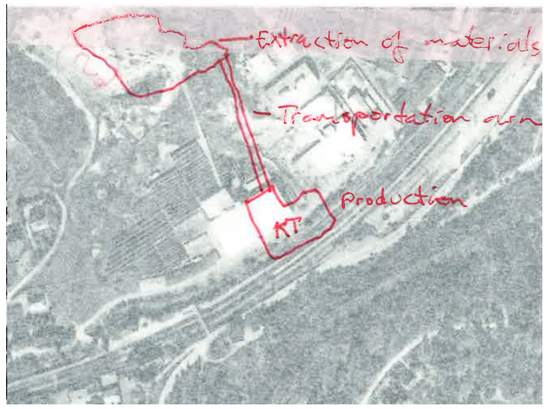
This hierarchy in decision making promotes big infrastructure and new development in favour of the existing, both built and living. I question this hierarchy and state that recognition of the presence should be weighted considerable more when facing contradictory needs in developing the city.

Historical development



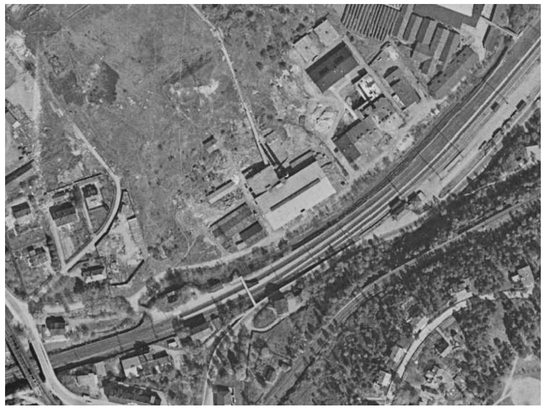
1881

The site appear untouched from human development with its original nature. Bryn station with the railroad following the river is established, making the basis for further development.



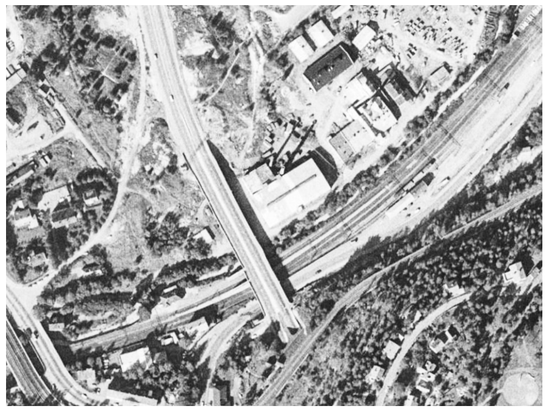
1937

The production at it's maximum. Taking up huge areas for storing and drying the product. The extraction of the clay in the North completely changed the landscape and the native nature. The new excavator and the cable tracks (see image) did speed up this process. Still it was a hard manual, polluting process for both humans, flora and fauna. The outcome serves the growing population and the rapid needs for bricks used to develop the region.



1956

The production is slowing down due to the rapid emergence of concrete production. The surrounding land is left as it is.



1971

The highway connecting Manglerud with Bryn and the Ring 3 road is established. This makes ground for a new way of organising society mainly transporting goods on the railways to using the roads. Kristiania Teglverk and the area under and around the bridge for the highway is left in neglect.

1984

The site of Kristiania Teglverk is split in two and a office building is erected on the opposing side of the highway. In this period the area is starting developing its suburban like office buildings with cars as the means of transport, giving the need for huge parking lots. Kristiania Teglverk and the native nature is still being neglected.

2019

The old Zink fabric in the North East is transformed into offices and a distillery. Kristiania Teglverk and the native nature is still being neglected.

Time-line

1200's	First evidence of brick production in the Oslo region
1890's	Speculative building boom in Christiania. High demand of bricks in the marked
1898	Bryn: Nye Teglværk was erected. The building was later called Christiania Teglverk and in the end, Kristiania Teglverk
1899	The production was stopped
1900	Full stop in the building industry in Christiania
1904	The parliament decided a law called Murtvang; all buildings in the city centre has to be built of bricks
1912	Restarting the production
1918	Einar Stange took over the production and owns the property up to today
1936	The building burned. It was immediately restored and it was invested in new machinery increasing efficiency
1960's	The production was closed due to hard competition from the booming concrete industry
1999	The owner took contact with the Cultural Heritage Management office for evaluating the possibility of demolishing the building. They concluded that the building was in poor technical condition and they found it challenging to defend a reuse that would be a representative conservation from a economical perspective and ended with permitting demolition. They strongly recommended to integrate characteristic elements like the brick Ringoven, important facade etc. in the new building.
2007	The frame plan for Bryn area was approved. The Cultural Heritage Management office made a statement on Kristiania Teglverk and pointed out the buildings' high culture historical value, but did not demand that the building had to be protected.
2000's	The owner initiated a private zoning plan process for the site. The building would then be regulate partly to regulation-area and partly recreational area. A illustration project were developed. The long wall towards the river and parts of the end-wall in brick were kept and integrated in the new. The public roads administration made a opposition due to possible conflict with the development of the main road out of Oslo. The Cultural Heritage Management office do not expect a new demolition application before a new zoning plan is approved by the Planning and Building Services, or the building get in such a poor condition that it makes a danger too the public.
2020	Today the administration building is used by a car paint business and a car mechanic. Part of the first floor of the main building is used for car storage, and part is empty. The first and second floors are inhabited by doves.

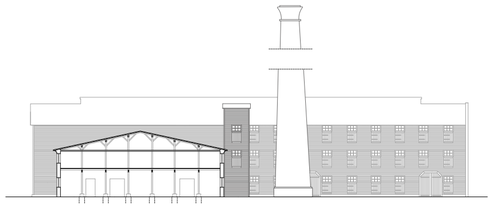
Part 3
Kristiania Teglverk

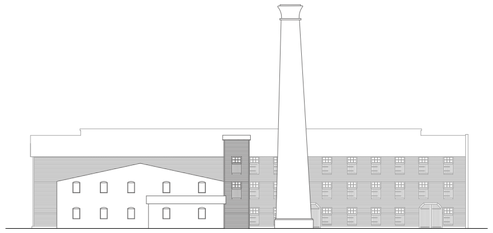
Registration, Intention

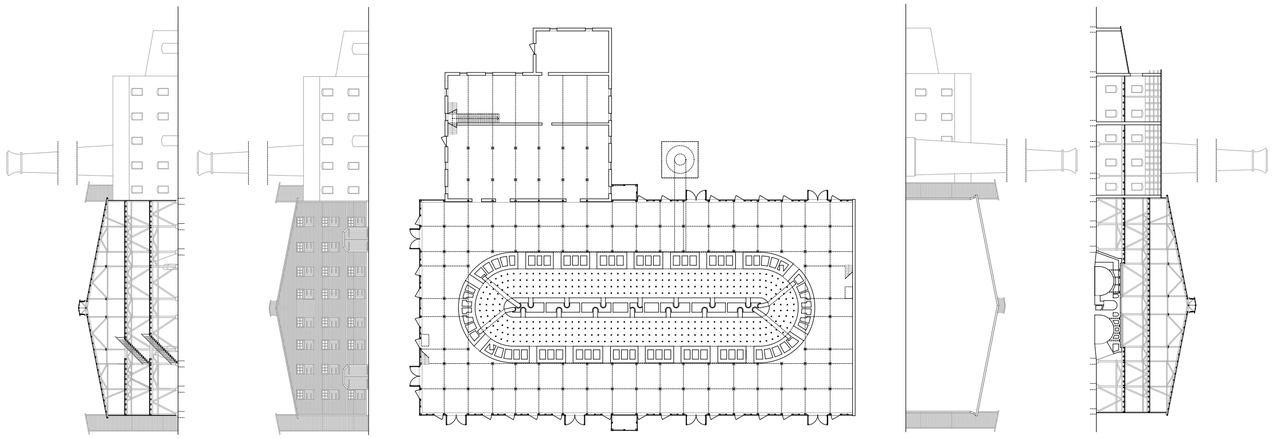
Historical development, condition and needs of maintenance

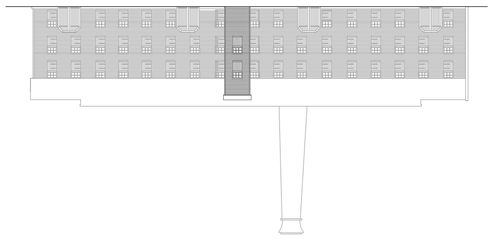
Kristiania Teglverk main construction phases:

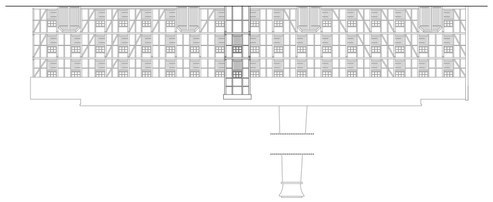
Built	1898
Rebuilt after fire	1936
New air hatch at roof and tower	1936
Demolishing the chimney	1960

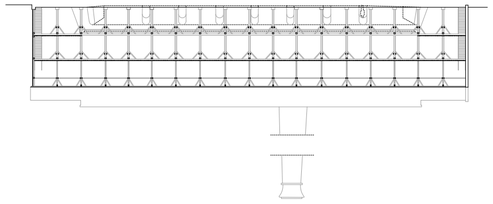












Mapping of the chronology of the building and the need of preservation, maintenance and preservation

The machine building 1898 undergone Major transformation

NW tower 1949 very poor condition

1936 Still standing Generally good condition need maintenance

Facade rebuild 1936 need maintenance and securing

The machine building 1898 major changes has been made

Extention to machine building 1898 - demolished

Stair in machine building demolished

The chimney removed 1960's

1936 construction on production building is in generally good condition

The oven built 1898

Still standing

1936 The south west facade is ~~so~~ not changed much during the years. Maintenance and replacement of some boards are needed

SE Tower better condition than NW tower but need preservation

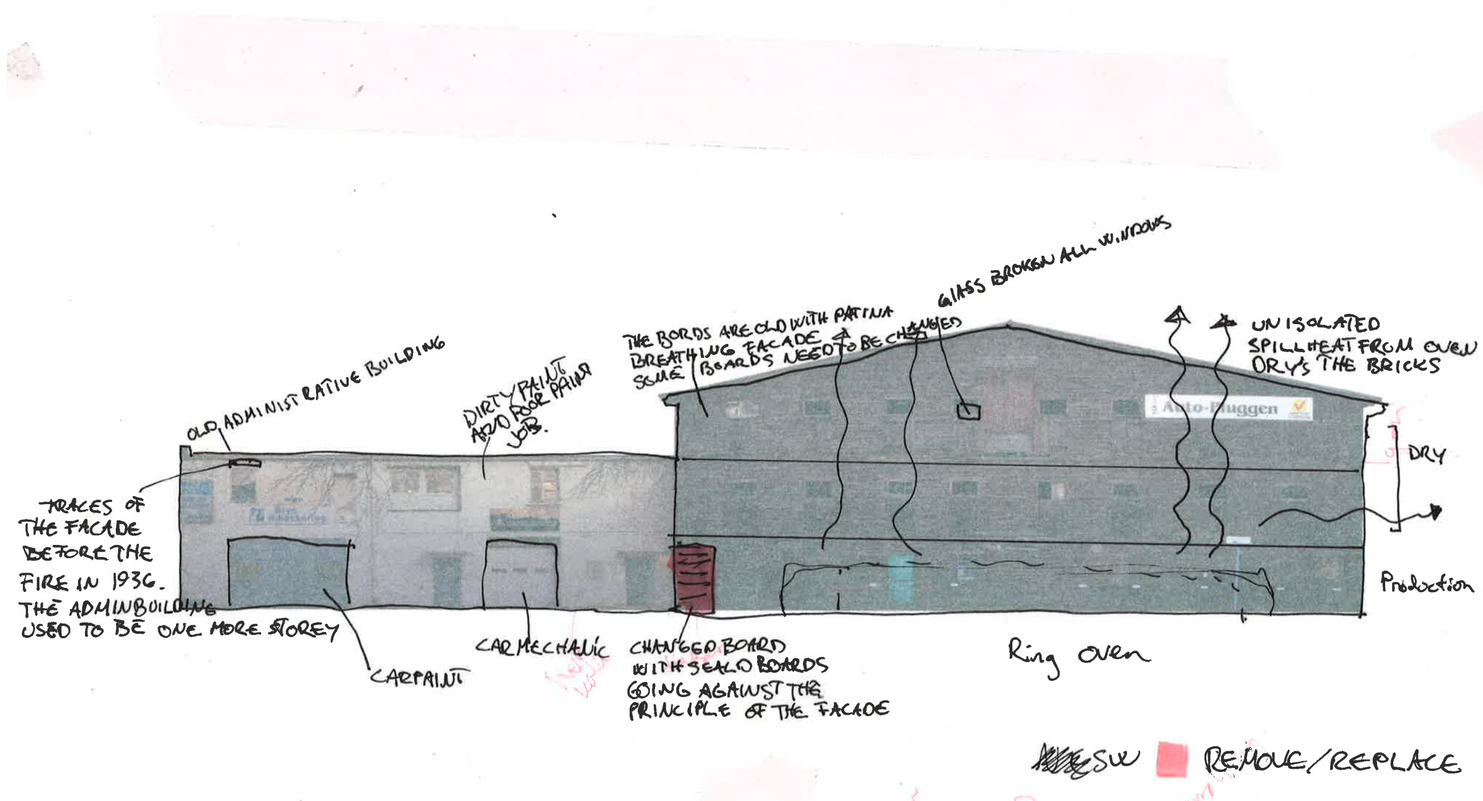
First floor changed wood boards today. See photo

The air ventilation 1941.

Timbered wood 1936 varied condition secure, replace, maintain

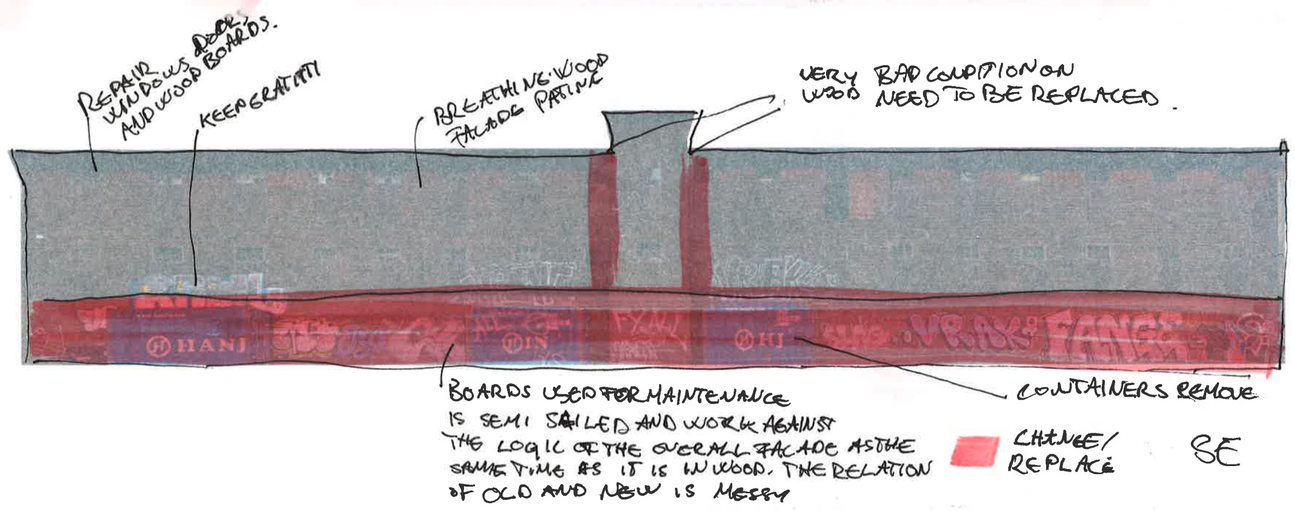
Registration of condition, needs of maintenance, other observations and first design ideas

South West facade



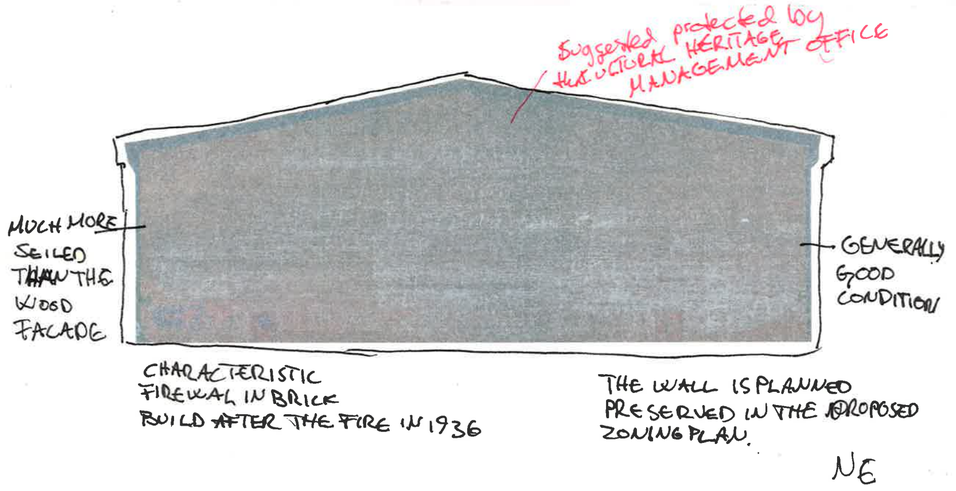
Registration of condition, needs of maintenance, other observations and first design ideas

South East facade



Registration of condition, needs of maintenance, other observations and first design ideas

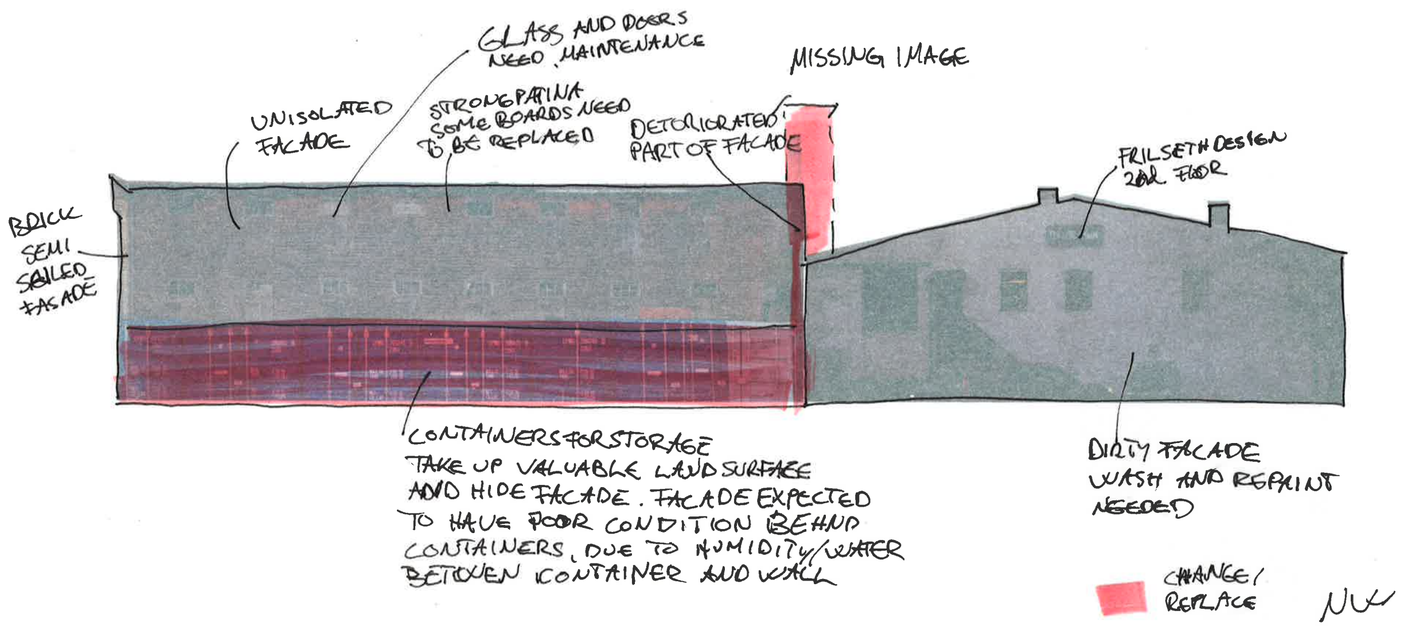
North East facade



Registration of condition, needs of maintenance, other observations and first design ideas

North West facade

Missing image



Users, functions and preservation

Bryn Billakkering and Autopluggen

Bryn Billakkering is a spray paint shop for cars and Autopluggen is a car mechanic. Both companies is renting their spaces from the owner of the building. The building is the former machine rooms for the brick factory.

Autopluggen

In the production building Autopluggen use the left half of first floor as storage for cars. On the right you see the oven. This is a highly unpractical way of storing cars. When the car mechanic need to repair car G, he first has to drive out car A, then B, then C, then D, then E, then F, before G can be driven out of the production building and into the machine building. Then the car mechanic will have to drive back the cars into the production building. First F, then E, then D, then C, then B, then A, and he is ready to work on car G. The car mechanics would benefit from being relocated!

Frilseth Design

Small design company with specialization on customized furniture for homes. The company rents from the owner. The location is positioned in the old administrative space of the brick factory.

Storage for containers

The space in the South of the building is used as a storage space for locked containers. They are not alive and since they are made of an in-organic material (steel) they are not possible to inhabit for a life form. They only offers occupation of a space that has a huge potential for life and use..

Pigeons

The second and third floors of the drying facilities are only accessible through the stairs since the old lifts are removed. This make the spaces very inaccessible for humans, and therefore attractive for wildlife. This floor is thick of droppings from pigeons and indicates that this floor is overtaken and occupied by them.

Insects and small animals

The facade has many openings and is naturally ventilated. This give space for numerous of small lifeforms. In a way the whole wood construction can be looked at as a insect hotel. In a time were the biologists and other associations proclaim the need for people to build insects hotels, keeping a old three or a old building will do a great job.

The building were designed to supply a certain function; the brick factory. All elements of the building tells the story of this use. Like the air hatches, the dimensions of the columns, the shape of the oven etc. Today the production is closed and the building stands as a reminder of its previous use. Like a living storyteller.
At the same time new inhabitants has entered and do still enter. Some rent from the owner, some is illegal occupants like the pigeons, but they all share the fact that they are users and benefiting from this building.

In preservation of buildings there is a tradition of protecting the buildings through use. By accepting that a new use of the building would require some change in the building you can find new meaning and new arguments for protecting the building.
It is a matter of finding a efficient use for the building. You could say, give the building a function and then it will be space efficient, and therefore used and then protected from obsolescence and demolition.

The process of deciding who will be the users of the building often turns into a economical question. I assume this is the motivation of the owners of the building today, when they apply to demolish the building (keeping some key heritage elements) and erect a conventional economical beneficial building.
The new building will then neglect what's already existing on the site. The important role the building has for the pollinating insects and for a secure space for the pigeons.

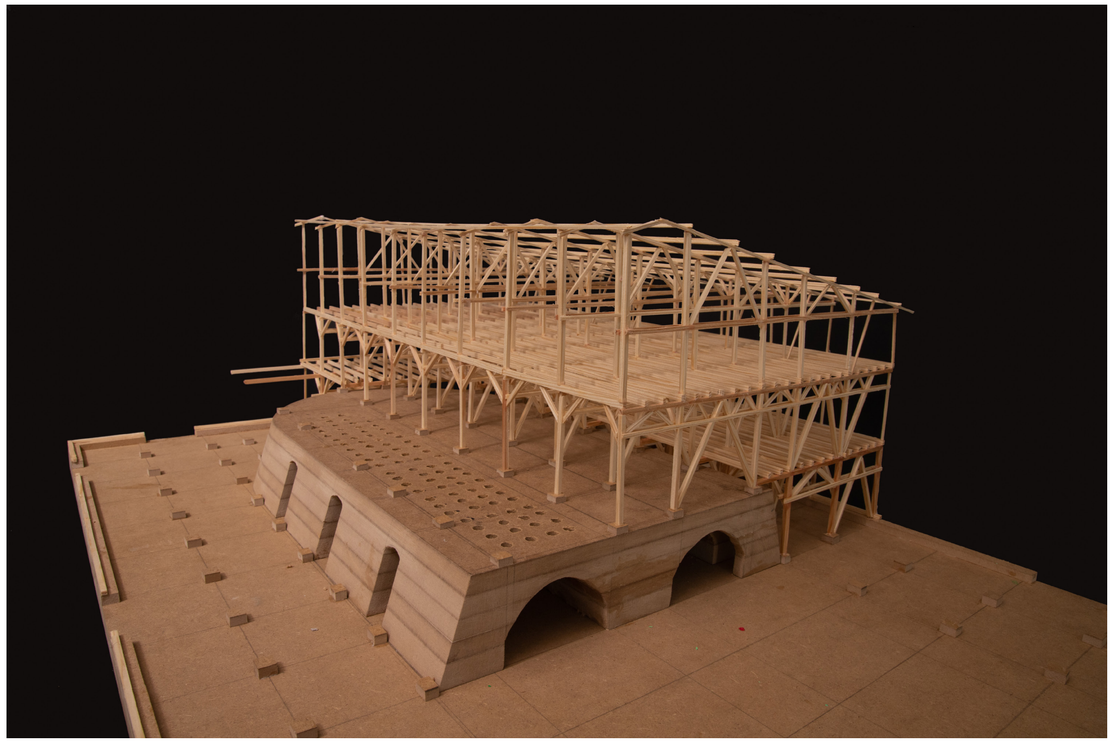
Users that is not benefiting from the building may be relocated.
This is the case for the car painters, the car mechanics, the Friseth design, and the storage of the containers on the North west side of the building.

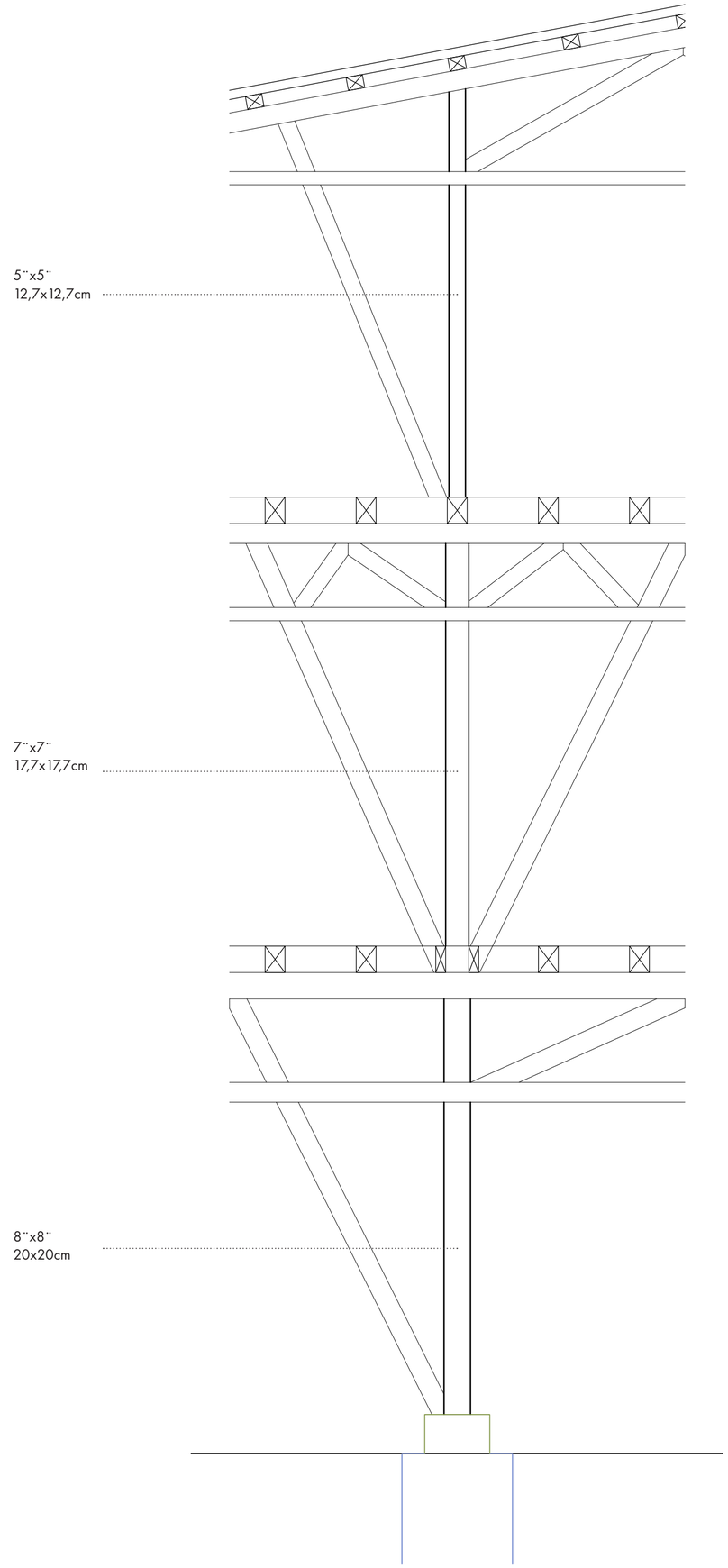
We say protect a building through use. **Who decide the users?**
In the end it is the users who will take care of the building that will make it possible to maintain and keep it.

Construction of the production building

Measurable content
The construction is optimized
Each part is calculated
Cheap workforce, expensive materials
Good condition
The function is the main design driver
Three stories

Non-measurable content
The timbered construction of the production building is repetitive and dynamic consisting of straight wood pieces in a variation of the dimensions according to their functions. All the parts work together with their repetition and gives a association of a forest. It is a airy and complex structure. It is like the drying bricks is the leafs evaporating in the sun.





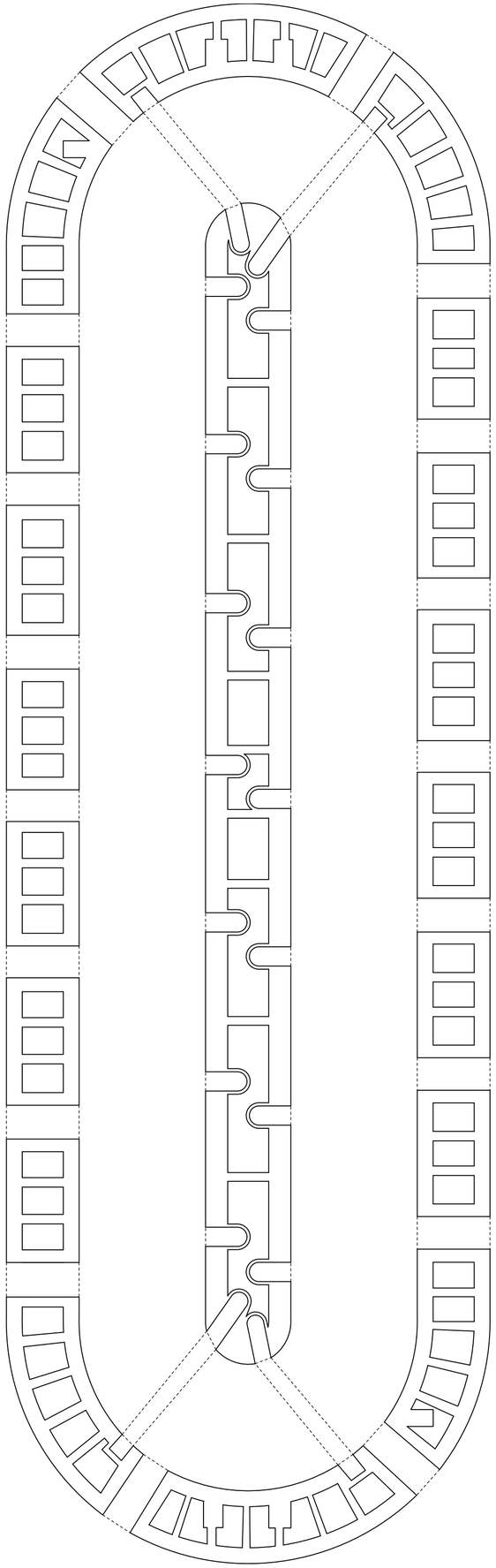
1:30
Short section of construction
Production building

Analyse Oven

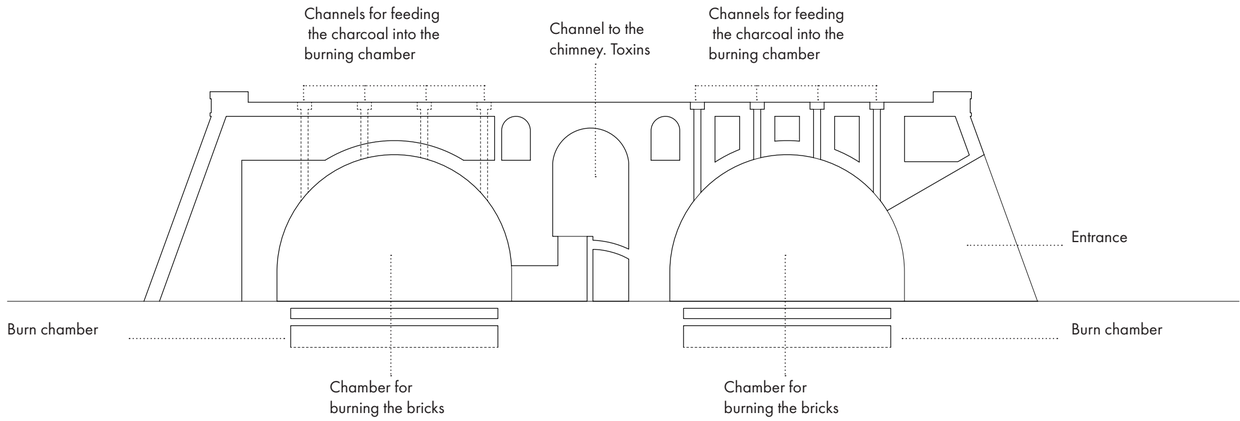
Measurable content
Technological breakthrough
Continuous burning and production
18 burning chambers
Made up of brick with kaolin mortar, making it possible to handle temperatures up too 1100 C°
Capacity of 20 000 brick per 24 hours, 365 days a year. The possibility to pre-dry enough brick was the main challenge in the process
The form follows the function
80 meters long

Non-measurable content

Dark deep cave
Feels like it is eternal
From outside it can appear like a fortress
It is nice to think that it is made of brick for bricks. That the spill heat from the production is part of the process of drying the clay. It is like a breathing construction and process.



Interior model image of the oven with proposed ceiling light from the charcoal channels.



1:50
Short section of oven
Production building

Nature Vocational School today

Originally the *Nature Vocational School* were named *Vinter-landbruksskolen* (the Winter Agricultural School). It was found-ed in1886 by Bastian R. Larsen og Olav Sendstad. Since the beginning the pedagogy has been to teach the theory at the school and the practical work at farms. A quote on the school's homepage highlight this principle with regards to the practical work; "where it is run for it's own sake".
The program for this diploma work spins out of the schools ped-agogy and makes a new topic for the school; the development and maintenance of Flowerfields. This topic will comprehend all stages of Flowerfields. From historical context, ecological rela-tionships, biological process, development and maintenance of the Flowerfield.
To better understand the demands from this hypothetical created topic, a talk with the Nature Vocational School's dean Heidi Tokstad was done.

05.03.2020
Talk with dean Heidi Tokstad

The school has approx:
140 students
30 Staff

The classes are between 17-29 students

Most of the education is preformed outside school at farms, business-es etc. This is changing from period to period.

Heidi tells that traditionally this kind of schools are placed at a farm and most of the education is executed there. Nature have had the practise on sending students out in the society since the founding of the school in 1886. Bach then as now the pedagogical model was to teach theory at school and get experience "der hvor den drives for sin egen skyld" (where it is preformed for its own sake)natur.vgs.no/om-skolen/. This is a model they still think is relevant and efficient. Although it has some negative effect like less community between the students and a gathered school.

Heidi Tokstad put emphasis on there method.
They work with cycles from natural resources to products and services like horsing

An examples of products the students made:
A sensational garden at a elderly home.
Indoor Aquaplant (like a greenhouse for aquatic plants)

Some of the locations outside school:

Two farms for the learnings on horses
Several businesses
Workshop for machines
The forest
Neighbouring schools for sports
Greenhouse small (40m2)

Heidi tells that they are looking for new facilities even though they are somehow satisfied with the situation they have.

Fag
Vg1 Naturbruk
Engelsk
Kroppsøving
Matematikk 1P-Y
Matematikk 1T
Naturfag
Norsk
Naturbasert aktivitet
Naturbasert produksjon
Yrkesfaglig fordypning
Vg2
Engelsk
Kroppsøving
Norsk
Samfunnsfag
Yrkesfaglig fordypning
Kjemi 1
Heste- og hovslagerfag
Aktiviteter med hest
Hest og hestehold
Stalldrift
Landbruk og gartnernæring
Forvaltning og drift
Produksjon og tjenesteyting
Vg3
Naturbruk (studieforberedende)
Historie
Kroppsøving
Matematikk 2P-Y
Matematikk R1
Naturfag
Norsk
Naturforvaltning
Valgfrie programfag
Bruk og vern
Kjemi 2
Internasjonal engelsk
Gartnernæring
Kroppsøving
Gartnerbedriften
Omsetning
Plantebruk
Planteproduksjon

List of subjects at the school today.

Natur Yrkesfag
Nature Vocational school

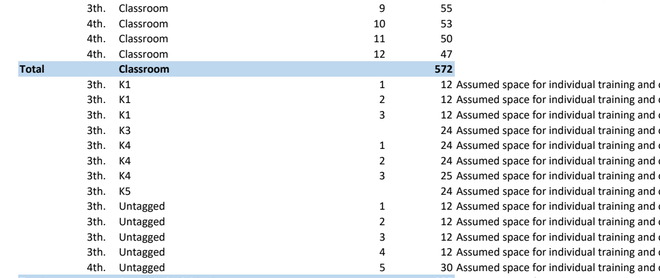
Romfordeling
space distribution

	Floor	Function	Number	Area	Comment
	3th.	Classroom	1	36	
	3th.	Classroom	2	44	
	3th.	Classroom	3	54	
	3th.	Classroom	4+5	90	Shared space devided by sliding door
	3th.	Classroom	6	73	Naturefag
	3th.	Classroom	7 + 8	70	Shared space devided by sliding door
	3th.	Classroom	9	55	
	4th.	Classroom	10	53	
	4th.	Classroom	11	50	
	4th.	Classroom	12	47	
Total		**Classroom**		**572**	
	3th.	K1	1	12	Assumed space for individual training and or cell offices
	3th.	K1	2	12	Assumed space for individual training and or cell offices
	3th.	K1	3	12	Assumed space for individual training and or cell offices
	3th.	K3		24	Assumed space for individual training and or cell offices
	3th.	K4	1	24	Assumed space for individual training and or cell offices
	3th.	K4	2	24	Assumed space for individual training and or cell offices
	3th.	K4	3	25	Assumed space for individual training and or cell offices
	3th.	K5		24	Assumed space for individual training and or cell offices
	3th.	Untagged	1	12	Assumed space for individual training and or cell offices
	3th.	Untagged	2	12	Assumed space for individual training and or cell offices
	3th.	Untagged	3	12	Assumed space for individual training and or cell offices
	3th.	Untagged	4	12	Assumed space for individual training and or cell offices
	4th.	Untagged	5	30	Assumed space for individual training and or cell offices
Total		**Assumed individual spaces**		**235**	Assumed space for individual training and or cell offices
	3th.	Library		45	
	3th.	IKT		37	
	3th.	Meeting		32	
	3th.	Staffroom		49	
	3th.	Copy		17	
Total		**Specialized spaces**		**180**	Specialized spaces
	3th.	Storage	1	32	
	3th.	Storage	2	17	
	3th.	Storage	3	10	
Total		**Storage**		**59**	
	3th.	Wetrooms	1	56	Group of WC, HWC, small kitchen
	3th.	Wetrooms	2	20	Group of WC, wetroom
	4th.	Wetrooms	2	18	Group of WC
Total		**Wetrooms**		**94**	
	3th.	Circulation		556	
	4th.	Circulation		118	
Total		**Circulation**		**674**	
	3th.	Vertical Circulation		97	
	4th.	Vertical Circulation		56	
Total		**Vertical Circulation**		**153**	
Total				**1732**	

Missing spaces

	Gymnasium	500
	Aula	200
	Outdoor free space	
Total		**700**

Current space distribution at Nature Vocational School in Furuset, Grorud



3th. floor

4th. floor

I am grateful for all the
support from family and friends
throughout this semester

Thank You