Made in Oslo

Production School in Brenneriveien

Process
Introduction

This booklet tries to track the progression of the project, and is organized chronologically, rather than thematically.

This is partly due to the strange progression of this semester, during the ongoing Covid-19 pandemic. We believe this could be of value to future architects, searching to investigate how the architectural practice is changed by a global lockdown situation.

The book is structured by a timeline, visible in key moments of the project development. The lighter shade of grey between early March and late April signifies the period of national lockdown in Norway.

For a more distilled version of key findings, please see our booklet concerning 'Analysis and Reflections'.
The project starting with a familiarization of the excising building. This included tracing plans, sections, mappings of façades, and essential details.

During this phase, we learned to appreciate the structural logic of the building. The building consists of two large wings, built mainly of prefabricated elements. Connecting them are a central core in exposed concrete. This core is housing stairs, elevators, and toilets. Leaving the wings with a free and open plan.

Further analysis of the building can be found in the booklet named research and analysis.
structural materiality

structures absorbing lateral forces
Existing building, model 1:200

Existing building, model 1:50

Existing building, model 1:500
Excursion, Oslo Schools

Since our program deals with drop outs from secondary education, we found it interesting to visit these institutions of higher education. Our excursions are further documented in our excursions booklet, however, these are our most relevant findings.

Firstly we visited Etterstad School, which is Oslo’s only school specializing in food preparation. Here we learned a lot about how to organizing a kitchen, and the pedagogy of educational kitchens. We found their idea of a restaurant run by students especially intriguing.

We also visited Kuben Yrkesarena, the largest school in Oslo focusing on construction and building trades. Here the importance of materiality became obvious, as they told us about their ideas for a educational workshop. Furthermore, the integration of theory and practice was thoroughly emphasized.
Early playful intuitive model studies

Early playful intuitive collage doubling the building volume
Excursion, Bergen

In the beginning of February, we flew to Bergen, to visit the largest production school in Norway, Hyssingen.

While in Bergen, we also took the time to visit the new academy of fine arts, KHIB, designed by Snøhetta. As well as the Bergen School of Architecture. Our excursions are further documented in our excursions booklet, however, these are our most relevant findings.

The relevance and value of production schools were really conveyed to us during our visit to Hyssingen.

We learned about the ideal size of the student body, and important issues regarding privacy and sensitive students.

The question of how to adapt the program of the production schools to a new city was also discussed, and we got important information about the different workshops.
Site analysis

After having conducted research of the existing building and program, we continued by researching the neighbourhood of Brenneriveien.

These mappings included mapping the larger Akerselva area, neighbouring program, traffic, green areas, public spaces and future developments.
Mapping of neighbouring programs:

Yellow colour showing public accessible outdoor spaces, red showing closed off spaces.

Collage and model showing façades in Brenneriveien.
The open ground floor in the southern wing has a potential to tie the productive city and the recreational river together. The room is today quite dark, and we want to transform this into an inviting space.

Some initial sketches showing Grünerbreen, the river facing institutions, and the potential for a new plaza.

The diagram on the left shows the current situation, where there seems to be a strong division between production and recreation. The right hand diagram shows the potential for a unification of these two landscapes.

The relationship between the pulsating productive city shown in grey and the tranquil river became an important diagram throughout the design process.
Akerselva river is a significant part of Oslo’s landscape, and it played a decisive role in the industrialisation of the city. As with most urban rivers, its banks were the sites of heavy industrialization in the late 18th century. However, Akerselva is nothing like the great Rhine or Mersey; it is narrow and winding, filled with violent falls and strong currents. This feature of physical geography made the river unusable for transport of goods, thus the riverside industry doesn’t really engage and form the river. Instead, the industrial buildings seem to create a barrier protecting the tranquil river from the busy city surrounding it.

The same juxtaposition of recreation and production is also a defining characteristic of Brenneriveien. The street currently houses cafés, nightclubs, an art school, galleries, offices and smaller industrial spaces. The architecture is mainly 18th century industrial brick architecture, a notable exception being Brenneriveien 11.

We also concluded that we want to create a fruitful relationship between the different actors in Brenneriveien and the production school.
Due to this typology not being an established school in Norway, we were given quite free reign when deciding the different sizes.

However, we knew that the headmaster of Hyssingen strongly warned us about designing for more than about 40 students. Hyssingen is about 30 students, and occupy a building of about 1 400 m². Due to the size of Brenneriveien 11 being about 3 800 m², we decided to include some production offices and ateliers. This being a way of including the already creative character of the street into our project.

Since the program does not have any specific requirements for areas, we decided to base our sizes on Hyssingen, their advises, and the logic of the building.

Programmatic studies

Distribution of the programs categorised as separate for the production school and the production office
Comparative sizes for programs relating to food production and preparation.

<table>
<thead>
<tr>
<th>BAKERI</th>
<th>KJØKKEN</th>
<th>GROVKJØKKEN</th>
<th>SPISESAL / KANTINE / RESTAURANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 kvm</td>
<td>176,4 kvm</td>
<td>178 kvm</td>
<td>100 kvm</td>
</tr>
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<td>154 kvm</td>
<td>137 kvm</td>
<td>168 kvm</td>
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<table>
<thead>
<tr>
<th>CAFE / BAKERIUTSALE</th>
<th>SLAKTER</th>
<th>MATPRODUKSJON UTE</th>
<th>ISKREMPRODUKSJON</th>
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<td>40 total areal:</td>
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<td></td>
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<td>150 kvm med lager og oppvask</td>
<td>176,4 kvm</td>
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<td></td>
<td>178 kvm</td>
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</tbody>
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Comparative sizes for workshops
- Hyssingen workshop - 130 m2
- Project hall AHO - 305 m2
- Wooden workshop AHO - 270 m2
- Steel workshop AHO - 90 m2
- Project hall KHB - 1 300 m2
- Workhome KADK - 600 m2
- Project hall BAS - 600 m2
- Hjelmcs mechanical Workshop - 350 m2
After having made the decision to include production offices and ateliers, we visited Kroloftet in Oslo, which proved to become a valuable inspiration for the production offices. Our excursions are further documented in our excursions booklet, however, these are our most relevant findings:

The importance of involvement in the local community.

The fact that Kroloftet actually had considered to move into Brenne-rivien, however due to the planed demolition it would be too costly for a short period of time.

The importance of creating a combination of regular workers with time shared offices.

Excursion, Kroloftet

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Early intuitive models exploring the spatial qualities of the structural grid.
The Project Hall
Locating in the Southern Wing of Brenneriveien 11

Central for the idea of the production school is the continuous interaction between the students and their neighbouring communities. Thus we have chosen to organize the building around a grand project hall, offering opportunities for students, workers, and visitors to connect, discover and learn from one another.

The production hall is a multi-use production space for students and workers, used for day-to-day production and learning, as well as facilitating exhibitions, events, and markets. It exists in the intersection of the public and private realm, thereby opening the building and engaging in dialogue with both Akerselva and Brenneriveien. Our ambition for the project hall is to provide broad spatial freedom for the school, as well as being a new type of climatized public space for the general population and urban industries along the river.

To achieve a public and shared use of the production hall we find it natural to locate the active + public + shared programs in this area:
Findings from the previous diagrams show that the following programs should be placed in the Production hall:

- flexible event space
- building hall
- market space
- exhibition space
- wood workshop
- gathering space

We have decided to locate the project hall in the southern wing of Brenneriveien 11. This decision was reached by looking at programmatic concerns, as well as a desire for structural pragmatism:
Project hall in daytime

Project hall at night

Restaurant in daytime

Restaurant at night
Stability

The building’s horizontal stability is guaranteed by concrete slabs. Thus, a large open space in the existing structure would undoubtedly create complications when dealing with these horizontal forces.

The stiffness in structure is furthermore created by the central concrete core, as well as the gable wall on the building’s southern end. This provides the southern wing with two supporting walls, while the northern wing only gains support from the core. Hence the southern wing provides greater freedom when striving for a large open space.

Location

However, we believe that our programmatic concerns are an even stronger argument for locating the project hall in the southern wing. The intersection of Brenneriveien and Grünerbrua might boast a larger quantity of bypassers, yet we find it more crucial to work with the existing cultural institutions in Brenneriveien. This is due to the nature of the production school, as well as the potential of providing new facilities to one of Oslo’s most vibrant cultural street. Among the actors in this street are KEM, Blå, Ingensteds, Rom for Kunst og arkitektur, and Bortenfor. Our stated mission of the project hall is to create a meeting point between the school and the neighborhood. Therefore we believe the most natural location of this space is in the southern wing of Brenneriveien 11.
To investigate the production hall and its architectonic potential and organisation we have tested different opportunities within three different strategies: 1. outside, 2. on top of, 3. within existing building mass. All model studies are done in model 1:200, where the existing bearing structural grid creates a formal framework for all of the studies. We have chosen to do this to test and discover the full potential of the existing bearing construction. The following pictures show a selection of the studies done within strategy 1: To build around existing construction.
strategy 1: building around existing building

project hall located around south wing

notes

+ Public and direct approach to Bremerhaven
+ Visibility and strong presence in the street and cityscape
+ Increase the vertical stability in the existing structure
+ Possibility for a new and more efficient facade
- The plaza in front of the building would disappear
- The visual architectonic identity of the building would be lost
- The deep volume will reduce accessibility to natural light

Study 1: Extending building volume
Extending volume, while cutting holes in existing decks

top view, model 1:200

model 1:200
strategy 2: building on top of existing building
project hall located existing south wing

notes
+ A strategy for maximising floor area
+ Preserving the open ground floor, providing views of the river
- Suboptimal location of the project hall regarding heavy machinery
- Far away from the urban floor
- Quite small production hall

Study 4. Predetermined extension of grid
Cutting holes in existing slabs. The cuts contrast and play with the existing grid
Study 3, extruding building envelope upwards
Cutting holes in existing slabs, these holes follow the existing grid

notes
+ A strategy for maximising floor area
+ Preserving the open ground floor, providing views of the river
+ Suboptimal location of the project hall regarding heavy machinery
+ Far away from the urban floor
+ Dominating volume, regarding the scale of neighbouring buildings
+ This volume would cast long shadows towards the river park.
strategy 3: building inside existing building

project hall located within existing volume
Study 5; fine grain pixelation
Cutting holes in existing slabs. The holes follow the existing grid.

+ Potential of creating a variety of different spatial qualities
+ Flexible in terms of location of program
+ Follows the structural logic of the building
+ Highlighting the load bearing steel grid
- Might appear chaotic
- Remove much original building mass
- Struggling to achieve large open spaces

Study 6; larger grain pixelation
Cutting holes in existing slabs. The holes follow the existing grid.

+ Potential of creating a variety of different spatial qualities
+ Flexible in terms of location of program
+ Follows the structural logic of the building
+ Highlighting the load bearing steel grid
- Might appear chaotic
- Remove much original building mass
Study 7: rectangular atrium with central stair
Cutting holes in existing slabs. The holes follow the existing grid.

+ Central location in the building
+ New open spiral stair
+ The project hall as the connection between the street and the river
+ New circulation connects all programs to the project hall
- The added circulation occupies a lot of space in the project hall

Study 8: central atrium with bridges
Cutting holes in existing slabs.

+ Central location in the building
+ New open stair
+ The project hall as the connection between the street and the river
+ New circulation connects all programs to the project hall
- The added circulation occupies a lot of space in the project hall


**Study 9, selective cuts**

Cutting holes in existing slabs. The holes follow the existing grid.

- Potential to create a variety of spatial qualities
- Interior atrium providing good light conditions in excising volume

**Notes**

- Potential to create a variety of spatial qualities
- Interior atrium providing good light conditions in excising volume

**Study 10, circular atrium**

The new atrium contrasts and plays with the existing grid.

- Central location of the project hall
- Maintain the visual contact to the river
- Stark contrast to the load bearing principles
- Introvert placement of project hall

**Notes**

- Central location of the project hall
- Maintain the visual contact to the river
- Stark contrast to the load bearing principles
- Introvert placement of project hall
Study 1: rectangular atrium
Cutting holes in existing slabs, holes follow the existing grid.

+ Central location of the production hall
+ Maintain the visual contact to the river
+ The project hall is activating the façades

Study 2: circular atrium
Cutting holes in existing slabs.

+ Central location of the production hall
+ Maintain the visual contact to the river
+ The project hall is activating the façades
It quickly became clear that increasing the buildings footprint was an undesirable route forward. This due to the increased depth of the volume, and occupying important open space narrow street.

The reason not to locate the project hall on top of existing building was mainly a question of public access. However, after disguising this alternative with structural engineer Finn Erik Nilsen, this alternative seemed un-probable without making radical changes to the existing building.

Thus we arrived at the conclusion of weaving the project hall into the structure. This insertion of the new program in the existing structure looked to be a fruitful path forward. It has the potential of vertically connecting the building, while also preserving the visual identity of the building.

Furthermore, we also concluded to place the project hall close to the core, giving it a central location.
The early analysis of building, program and site led us to the following first draft of the ground floor plan.

Already, the idea of dividing the building into one area for the school, and one wing for the offices have been established.

The connection between the street and the river have been preserved by a proposed passage under the southern wing.

The cafeteria have been placed in the corner, jutting out into the street and the plaza.
After settling in the primary organisation of the southern ground floor, we decided to experiment with the façades, mainly to investigate how to treat the existing facade.

The result of this exercise was that we did not want to tear down the existing facade. This was both due to the graphic quality of the building, and also due to how the facade pays an homage to the neighbouring industrial building.

Instead, we opted for a strategy of adding a new more transparent facade, being more in line with our desire for a public program.
Replacing existing facade

Static polycarbonate facade

Polycarbonate sliding doors

Night view with LED
After consulting our structural advisor, we saw the potential of building a new floor above the northern wing. This was due to the fact that identical foundation were utilized across the whole building, thus also having the load bearing capacity for three floors every were in the building.

These following pages shows the testing of different heights.
Adding one floor

January
February
March
April
May
Adding one floor

March 22. 09:00
March 22. 12:00
March 22. 15:00
March 22. 18:00

June 22. 09:00
June 22. 12:00
June 22. 15:00
June 22. 18:00

December 22. 09:00
December 22. 12:00
December 22. 15:00
December 22. 18:00

En etasje tilbygg
Adding one floor
Adding two floors
Adding two floors

March 22. 09:00
March 22. 12:00
March 22. 15:00
March 22. 18:00

June 22. 09:00
June 22. 12:00
June 22. 15:00
June 22. 18:00

December 22. 09:00
December 22. 12:00
December 22. 15:00
December 22. 18:00
Adding three floors
Adding three floors

March 22. 09:00
March 22. 12:00
March 22. 15:00
March 22. 18:00

June 22. 09:00
June 22. 12:00
June 22. 15:00
June 22. 18:00

December 22. 09:00
December 22. 12:00
December 22. 15:00
December 22. 18:00
Adding ten floors
Findings and conclusions

We found it most interesting working with only adding one floor to the existing building. This decision was based both in the desire not to overwhelm the existing volume, as well as the desire to work within the smaller scale in Brenneriveien.

This decision was further grounded by consultation from our structural engineer, advising us against creating new foundations for the building.
The next stage of design was finding an expression for how to articulate the physical presence of the public program in the building.

We started doing these studies using physical models, however due to the national lock down, we were soon constrained to conducting these studies mainly using collages.

**Facades and roofscape**

Skylights inspired by surrounding industrial buildings
Skylights inspired by Louis Kahn's Centre for British art at Yale

Creating an interior courtyard on the roof
Steel frames, replacing existing facade

Green steel frames, changing existing facade

Partly closed wooden facade

Open wooden frames
White steel frames, transparent facade

Inspired by 'Damesalen' Mikkelsen Architects

Black steel frames

Night view, LED lights
White steel frames, semi-circular vaults

Roofscape inspired by industrial architecture

Wooden frames, trapezoidal skylights

Roofscape inspired by green houses
Roofscape with playful skylights

Roofscape with larger square skylights

Roofscape with small individual skylights

Roofscape with small connected skylights
During these investigations, we started to view the building as a blanc canvas in the street. Its anonymous appearance seems to be an attractor for local street artists.

Thus we decided to proceed with a toned down expression. Simultaneously, we discovered the potential of a polycarbonate facade. This responds well to the issue of public program, while also sheltering students inside, obscuring more the further one is from the pane.

We also started working on a concept where an outer ring of balconies and greenhouses surround a central interior space.

**Findings and conclusions**

January
February
March
April
May

Concept of creating an open courtyard on the roof

Concept of creating an outer ring of greenhouses and balconies
Simultaneously as we are investigating the exterior expression of the building, we are taking care to ensure this is happening in accordance with what is happening in the inside.

Here, the central core have been opened up to a larger degree.
Simultaneously as we are investigating the exterior expression of the building, we are taking care to ensure this is happening in accordance with what is happening in the inside.

**Circulation**

- Current circulation
- Circulation in project hall
- Exterior central circulation
- Circulation in project hall and cafe
- Exterior dispersed circulation
Findings and conclusions

The conclusion of these studies were a new circulation concept, perforating the core, uniting the school and the offices.

This new circulation is a sequence of spaces, manifesting itself as a public journey from the urban floor, to the rooftop.
Sculptural circulation

This new circulation has the potential of becoming a sculpture in the large open project hall.

In the plans we see this axis articulated as the public path, winding around, and sheltering the more private areas of the project.
Early plan studies

These are the first plan studies showing a new circulation principle, penetrating the core.
At this point in the process, we started to focusing more on the immediate surroundings of the building. One interest that had grown out of earlier facade studies was to work with nightly views. This also had its basis in our analysis of how dark the surrounding area seemed to us.
At this point in the process, we wanted to dive into the detailing of the building. This led us to the discovery of the windows placement on the walls. These windows were designed for a standing working environment, however the new modes of production is mainly based around sitting at a desk.

The detailing also gives a new dimension to the new façades, and how the new and the old is merging.

We also started experimenting with a new way of integrating vegetation into the streetscape using perforated concrete to allow shrubs and flowers to grow.
After this point, we started investigating the interior qualities of the spaces, using collages. This proved to be a great way to discuss materiality and, which again influenced the details.

The hard surfaces are complimented with wooden interior walls. The green /teal colour is already used in toilets. Steel painted in this colour and became a way to create identity, and signify public functions.
The exercises concerning materiality and collages proved to further informed the plans. The plans on the right are showing the proposal.

Any material created after this point is considered finished result, and can be seen at the project posters.

Conclusions