Reimagine a Factory

6. Process

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This booklet will present volume studies, sketches, strategy testing and collages. This eventually became my diploma project, and the process will be prestented in chronological order.

January

Mapping a circular city

Circular network
Import off-grid

Fredrikstad is the unofficial captial of circularity in Norway. Almost all Norwegian batteries, all collected glass and metal packaging, 25,000 scrapped cars and several hundred tonnes of metal must all pass through Fredrikstad to get new life.

The buses run on a mixture of food waste and sludge from the municipality's water treatment plant. Special glass that was previously special waste is converted into building materials.

A factory with 30 employees processes the neighboring factory's pollution into new products, and 700 meters away last autumn opened Norway's second recycling plant for gypsum.

Camilla Brox of the Norwegian Center for Circular Economy (NCCE) is quoted as saying: *"There are other places where networks of companies do good things. But in Fredrikstad we have the best example of industrial symbiosis, where companies exchange energy and material resources at crossroads and I do not think you can find anywhere in Norway with so many companies related to the circular economy".*

Brynild Gruppen
Producer of snacks

Norsk Teknisk Porselen
Production of porcelain

Fretex
Recycling of clothes

University College Østfold
Educational institution

Norwegian Centre for Circular Economy (NCCE)

Europris
Consumer products

Unger
Chemicals

Vy / Nettbuss
Public transport

Farmers
Products: Fertilizer / biogas

Jøtul
Producer of fireplaces

China Clay, UK grade
Clay for porcelain prod.

Norsk Gjenvinning
Recycling of cars
Product: metal

Batteriretur
Recycling of all batteries
Product: new batteries

Kronos Titan
Producer of chemicals

Gyproc
Producer of insulation

Gipsgjenvinning AS
Recycling of gypsum
Product: gypsum powder

Sirkel
Recycling of glas and metal
Product: Glasopor

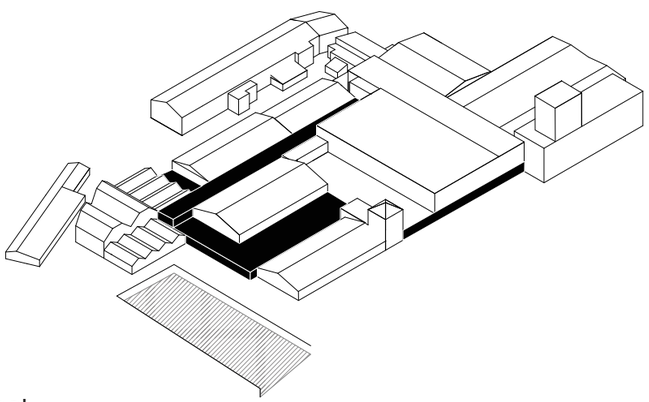
Frevar
Recycling plant
Product: biogas

January

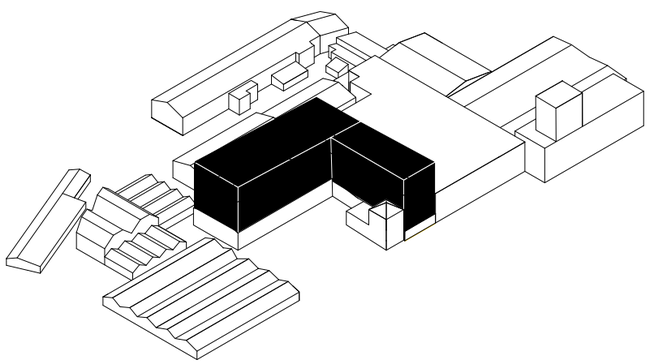
Repairs of facade through the Wabi Sabi technique?

January

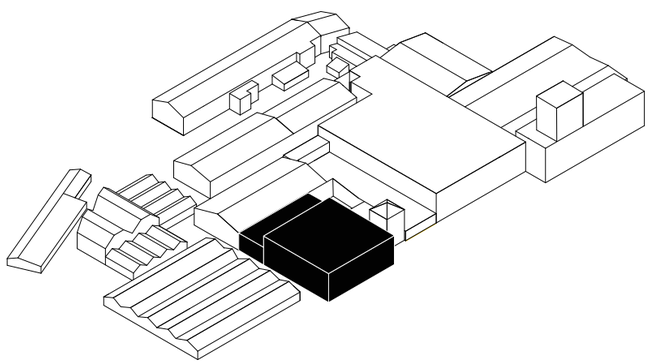
Volume studies



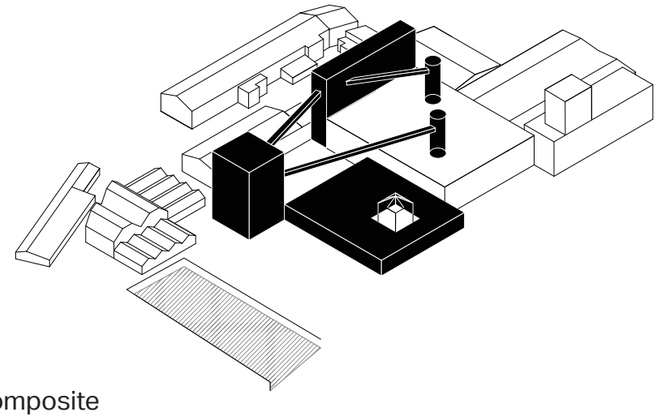
Sheet



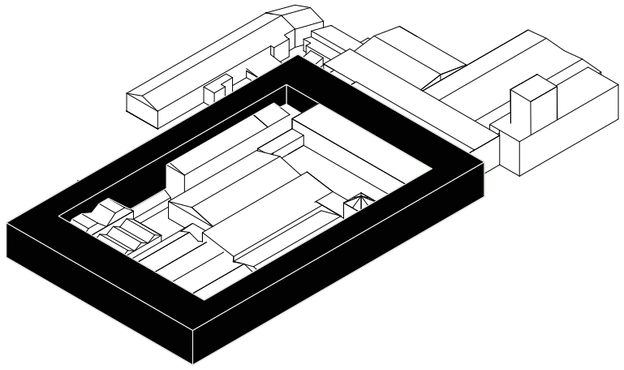
Onfill



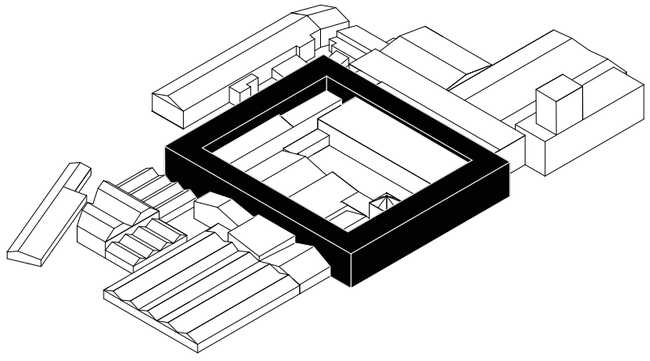
Skin



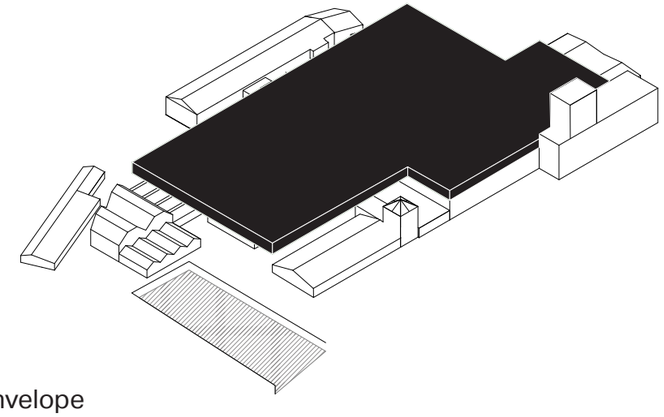
Composite



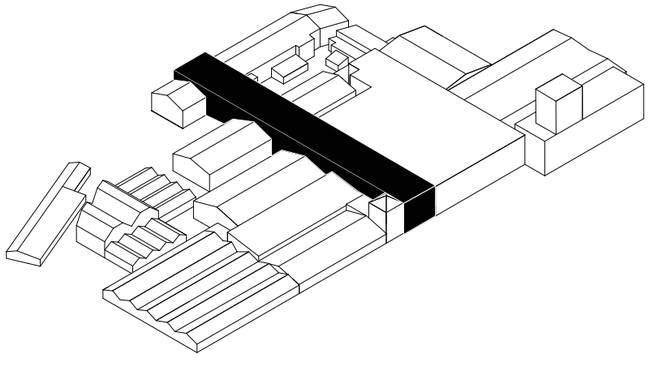
Recatanguler frame



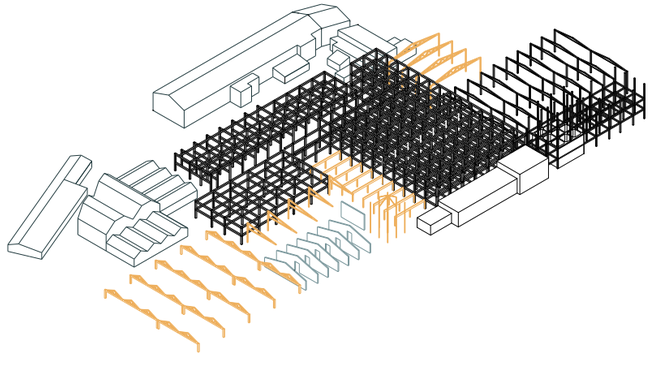
Square frame



Envelope



Cut

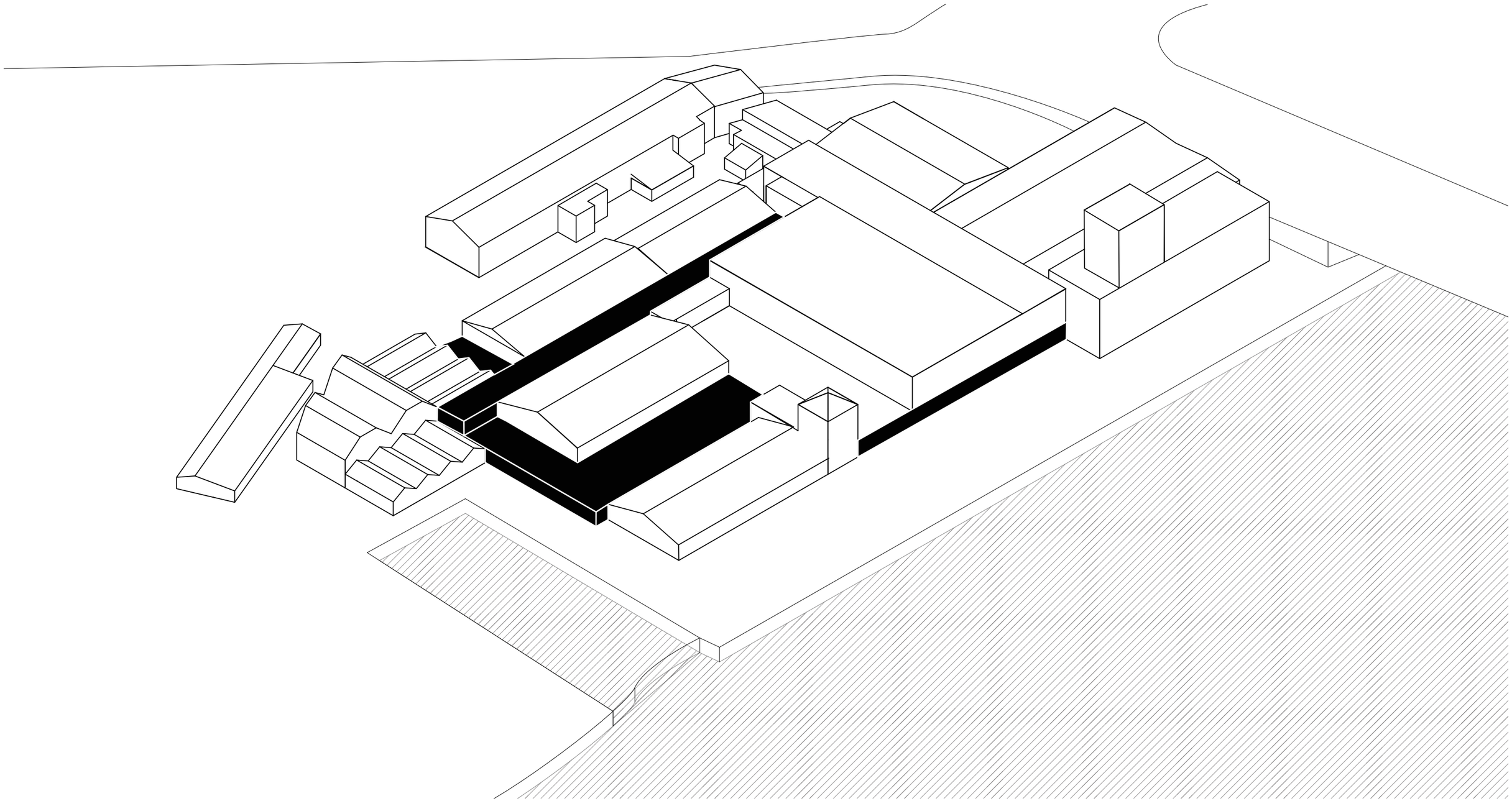


Cleanse

January

Volume study__I
Sheet

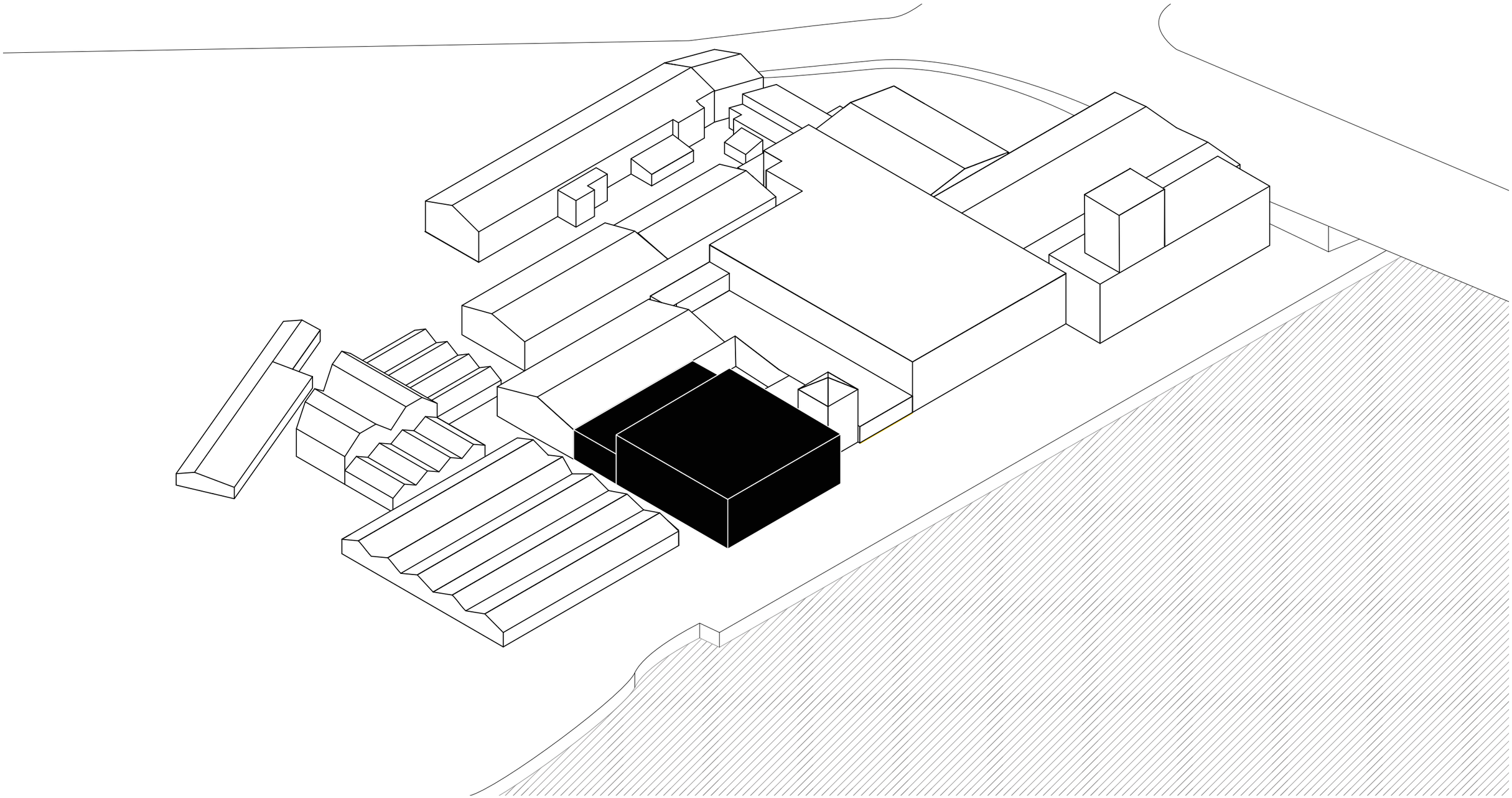
- Wraps around and between existing structures.
- Exploit the courtyards.
- Common ground floor.
- New dock, replacing the storage shed.



January

Volume study__II
Skin

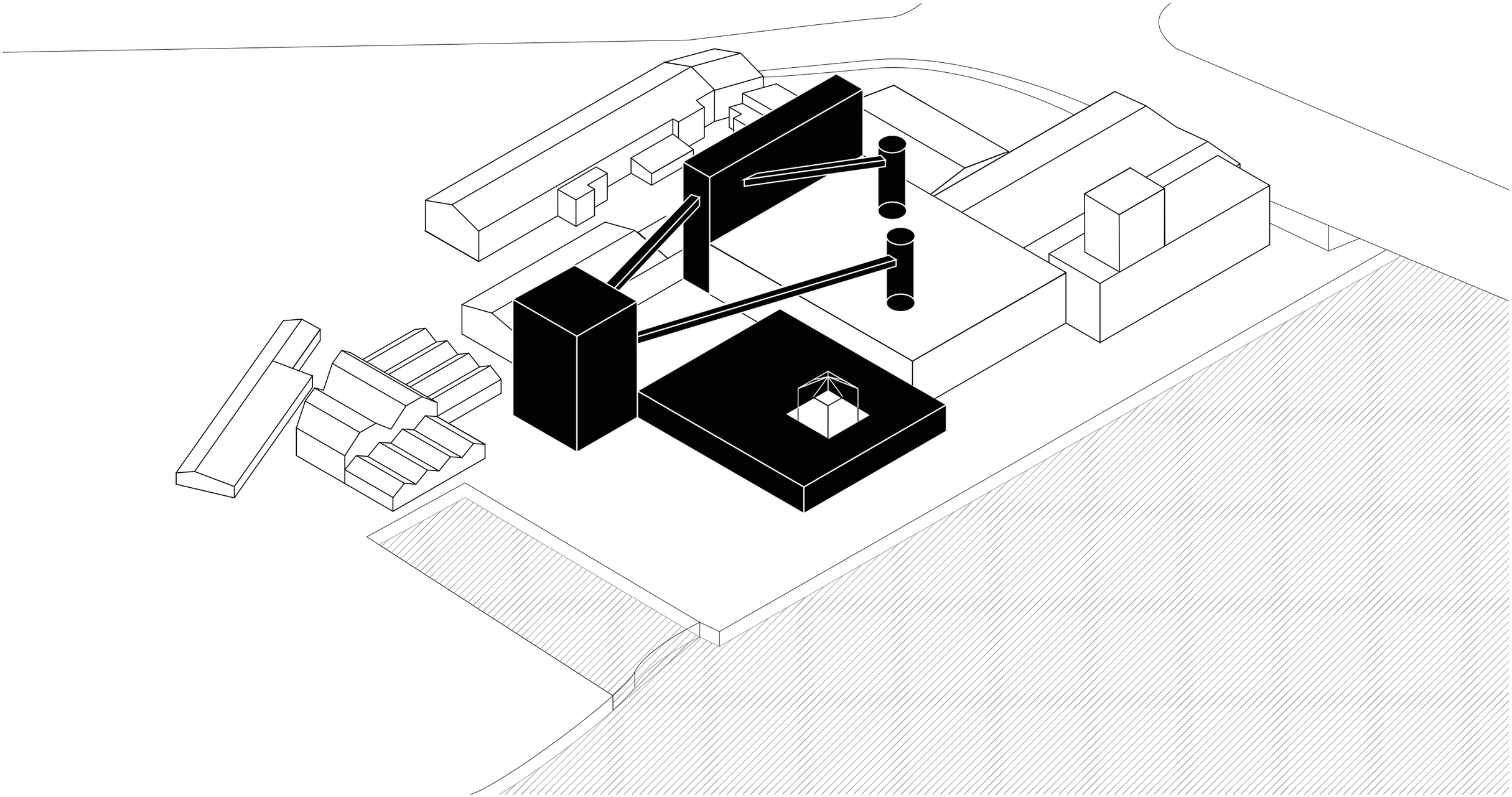
- Surfaces
- Sensorial and identity
- Adding new structure
- Fondazione Prada (OMA) as a reference project



January

Volume study__III
Composite

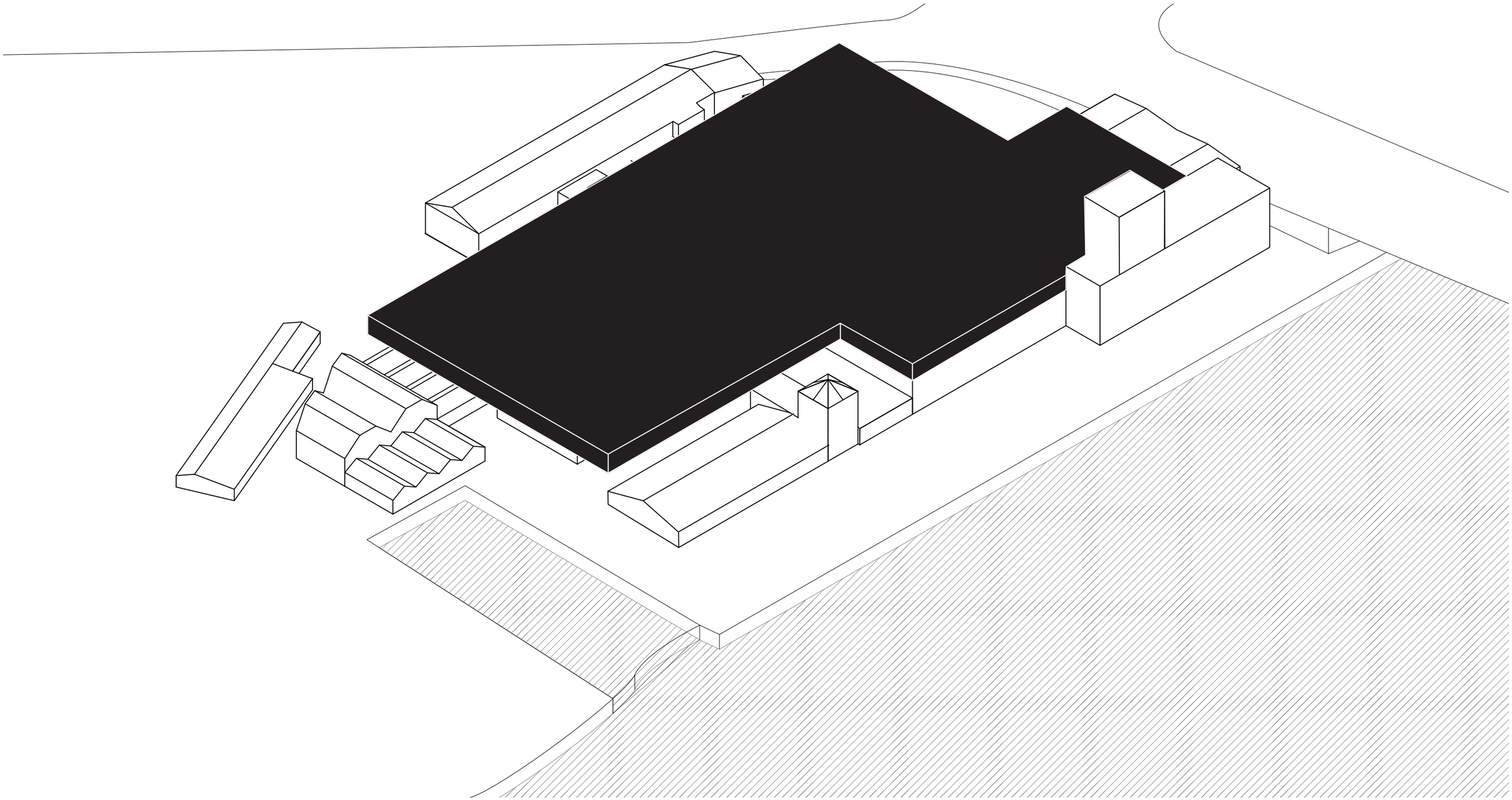
- New forms to contemplate existing structures
- Traces of history
- Exploit the existing circulation to gain access to roofs
- SESC Pompeía by Lina Bo Bardi as a reference project



January

Volume study__IV
Envelope

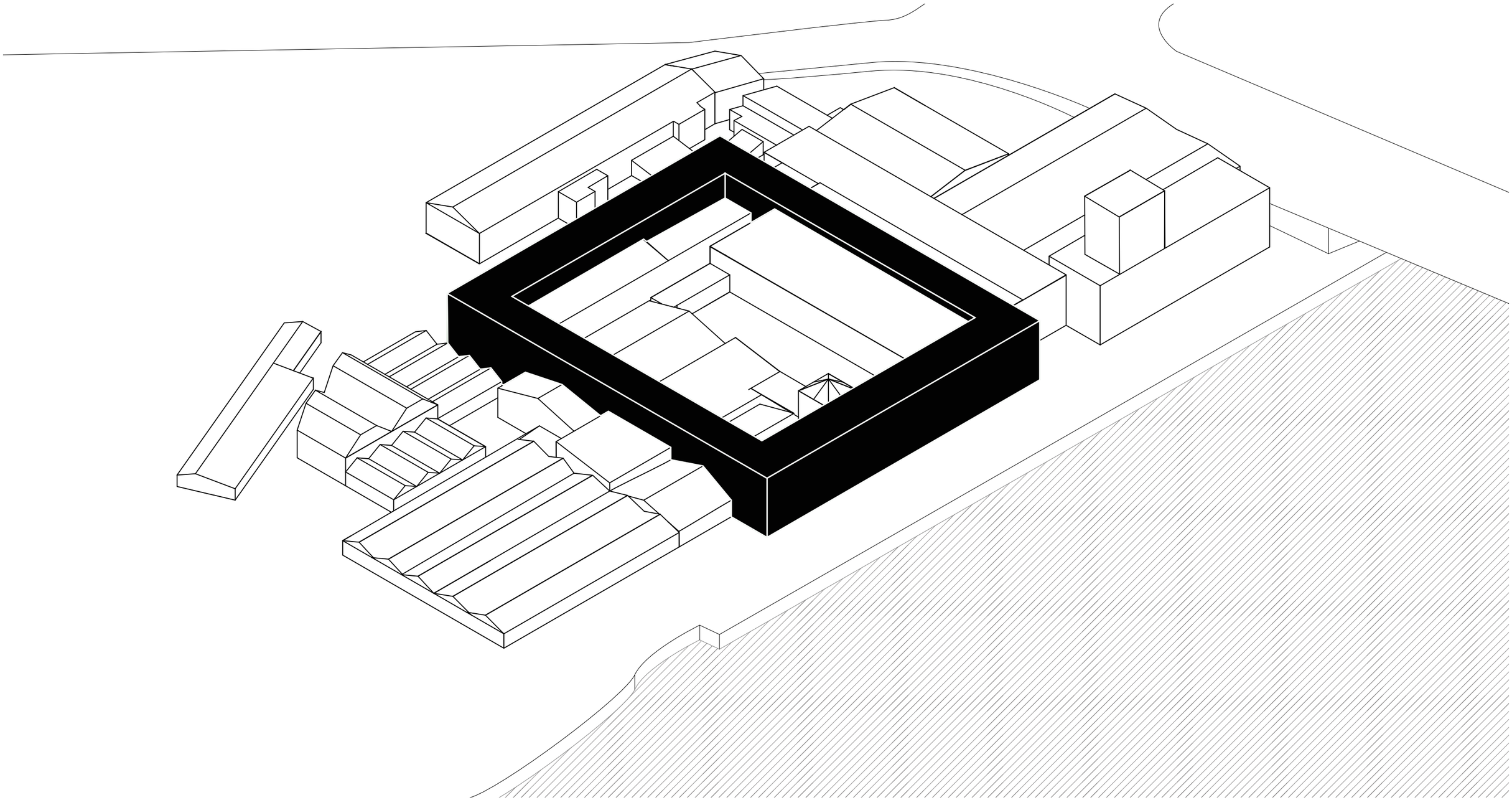
- Flexible structure
- Exploit the chaotic roofscape
- Give the public overview over each production process



January

Volume study__V
Frame

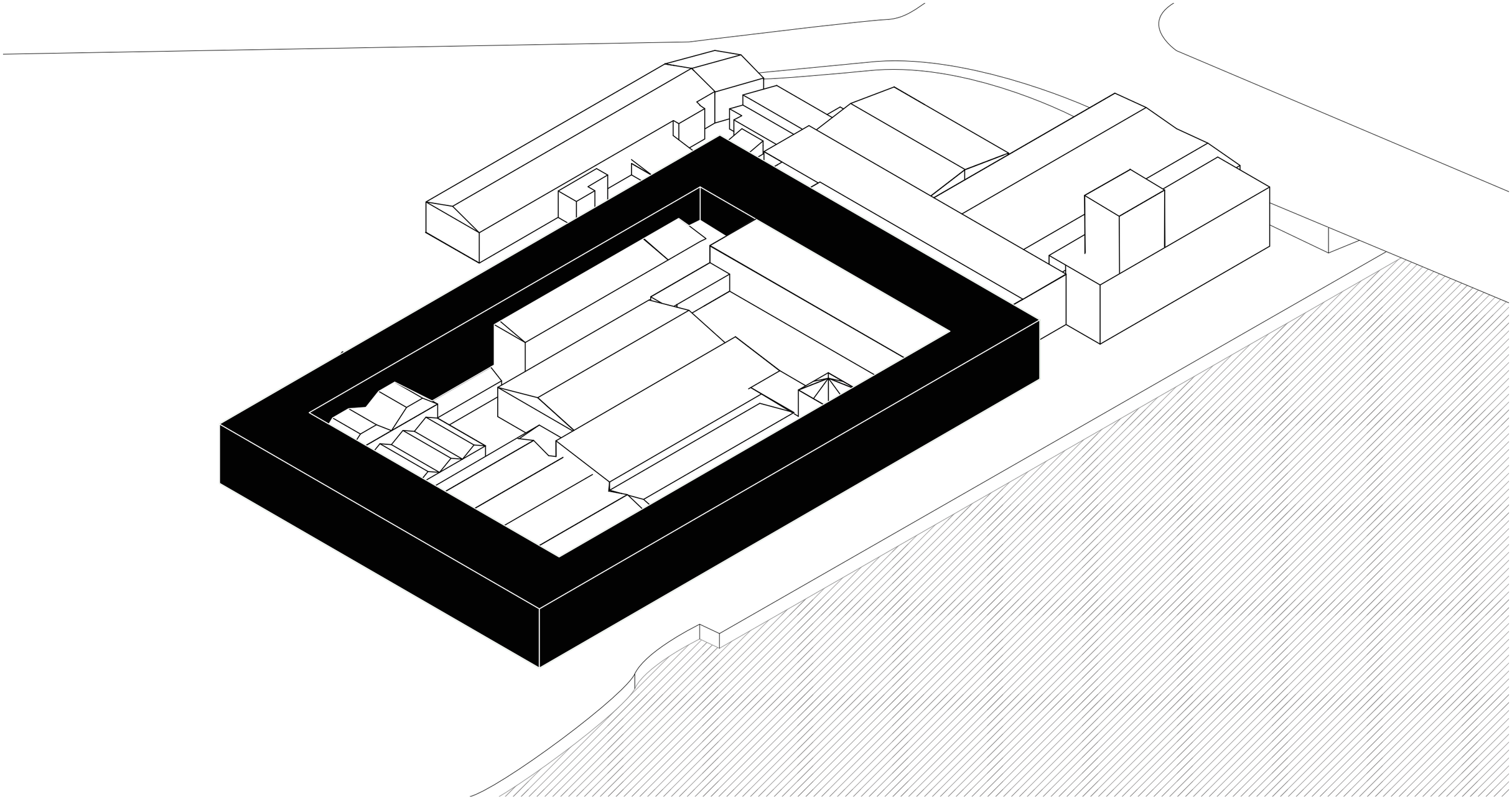
- Frame and protect the industry
- Create a clean shape
- Give the public overview over each production process



January

Volume study__VI
Frame II

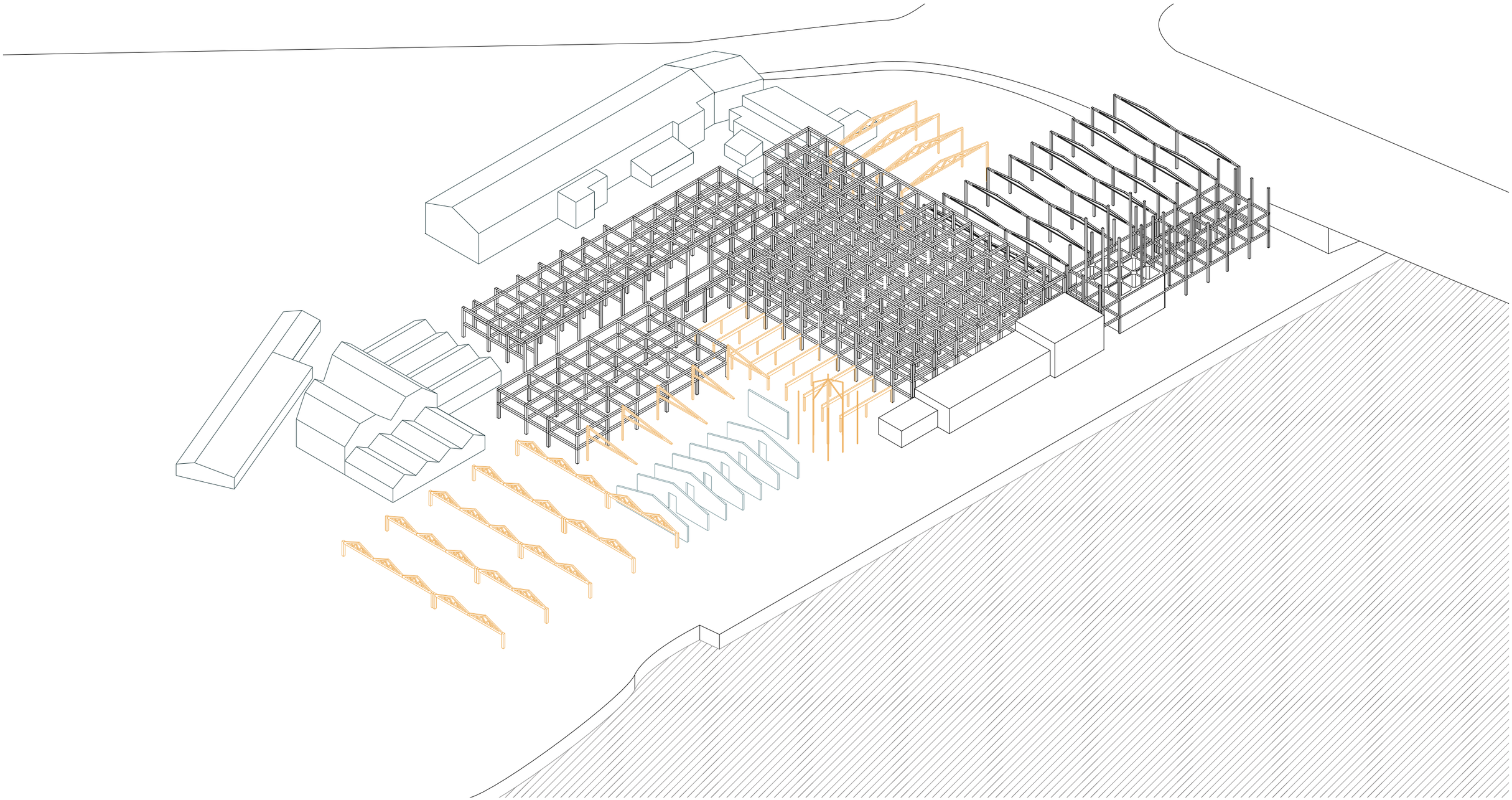
- Frame and protect the industry
- Create a clean shape
- Give the public overview over each production process



January

Volume study__VII
Cleanse

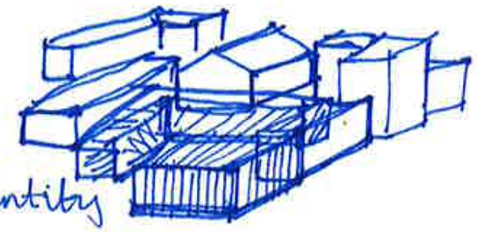
- Remove all 'unprotected' facades
- Exhibith the different structures
- Could make it easer to modualte a 'common' uilding



Vdumstudier:

#1 Skin

- Surfaces
- Sensorial and identity
- New structure

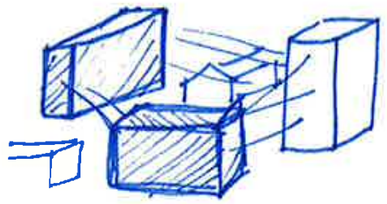


#2 Sheet

- Wraps around and between x volumes
- Common ground floor

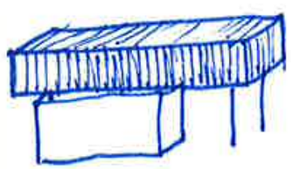
#3 Composite

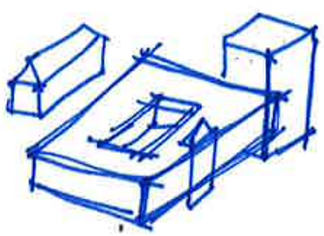
- New forms
- Contemplate x



#4 Envelope

- Flexible structure
- Roof plan





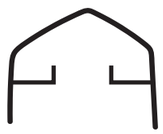
Sketches of my own perceptions of the preservation strategies at site.

February

Testing out different spaces and programs at the site

Kontoret
Privat
Andre etasje
Kobling mot et større offentlig rom

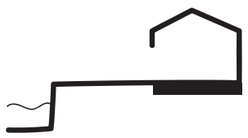
Showroom
Offentlig
Visningsrom
Kobling kunst og industri



Kunstnerkollektivet
Semi - offentlig
Visningsrom og
arbeidskollektiv

Skolen
Semi - offentlig
Undervisningsrom

Trafoen
Offentlig
Utsiktspunkt
Ikon

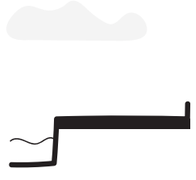


Kaféen
Offentlig
Pause

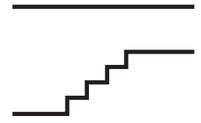
Samfunnet
Semi - privat
"Lunsjrom"

Fabrikken
Semi - privat
Verksteder(?)

Torget
Fleksibel møteplass
Eksisterende loppemarked
Matmarked (?)

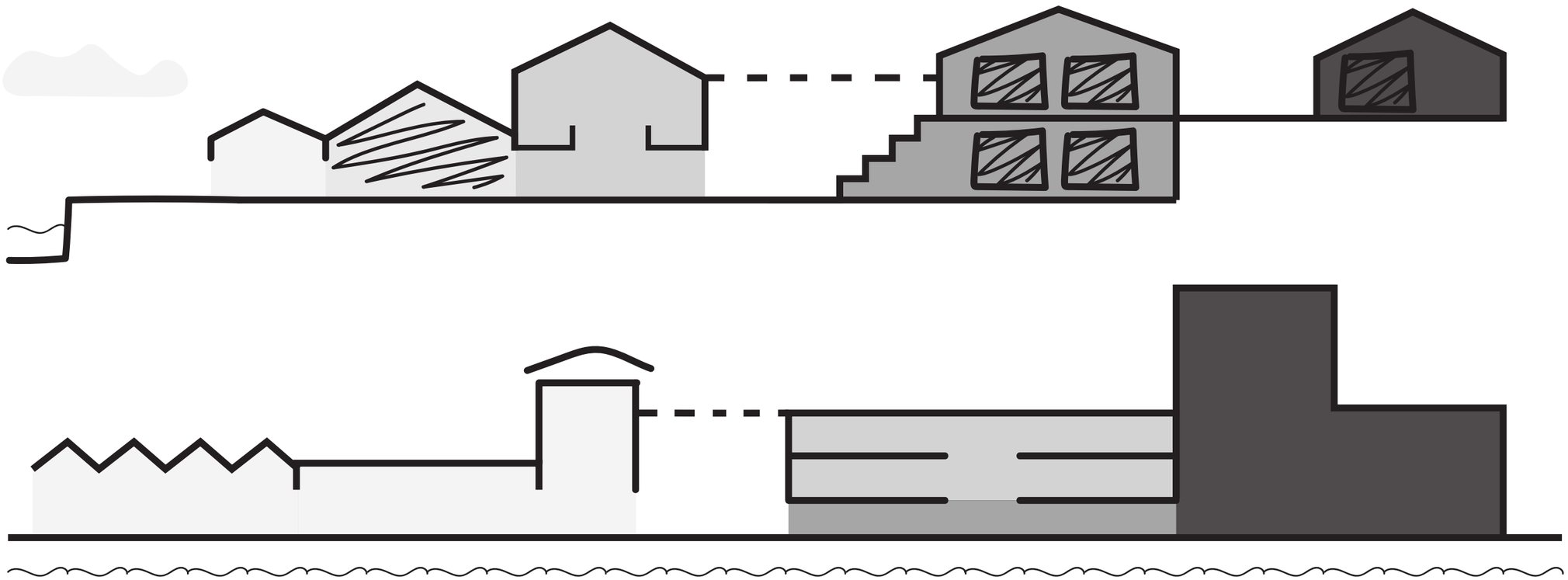


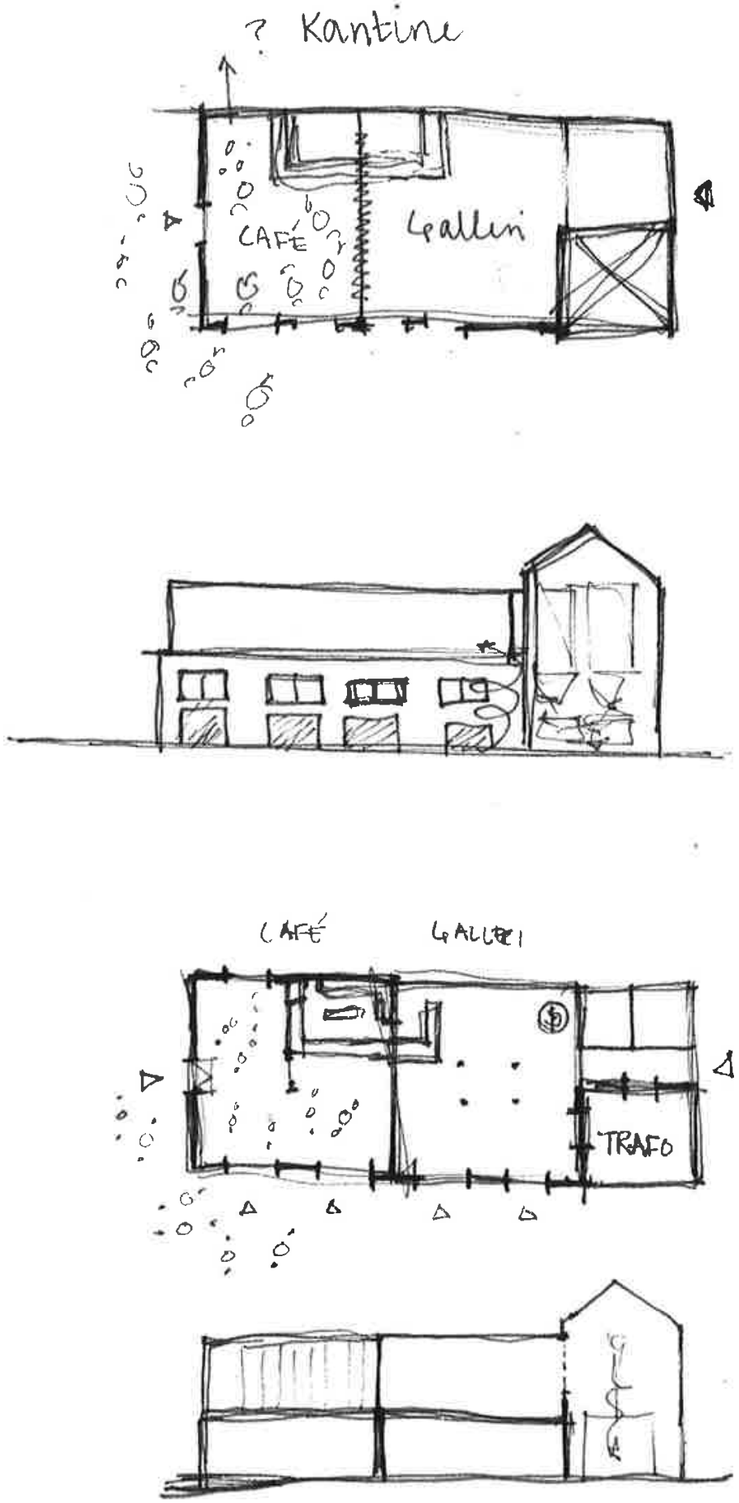
Kaia
Sjikt mellom vann og bygg
Inngang
Kobling by og industri



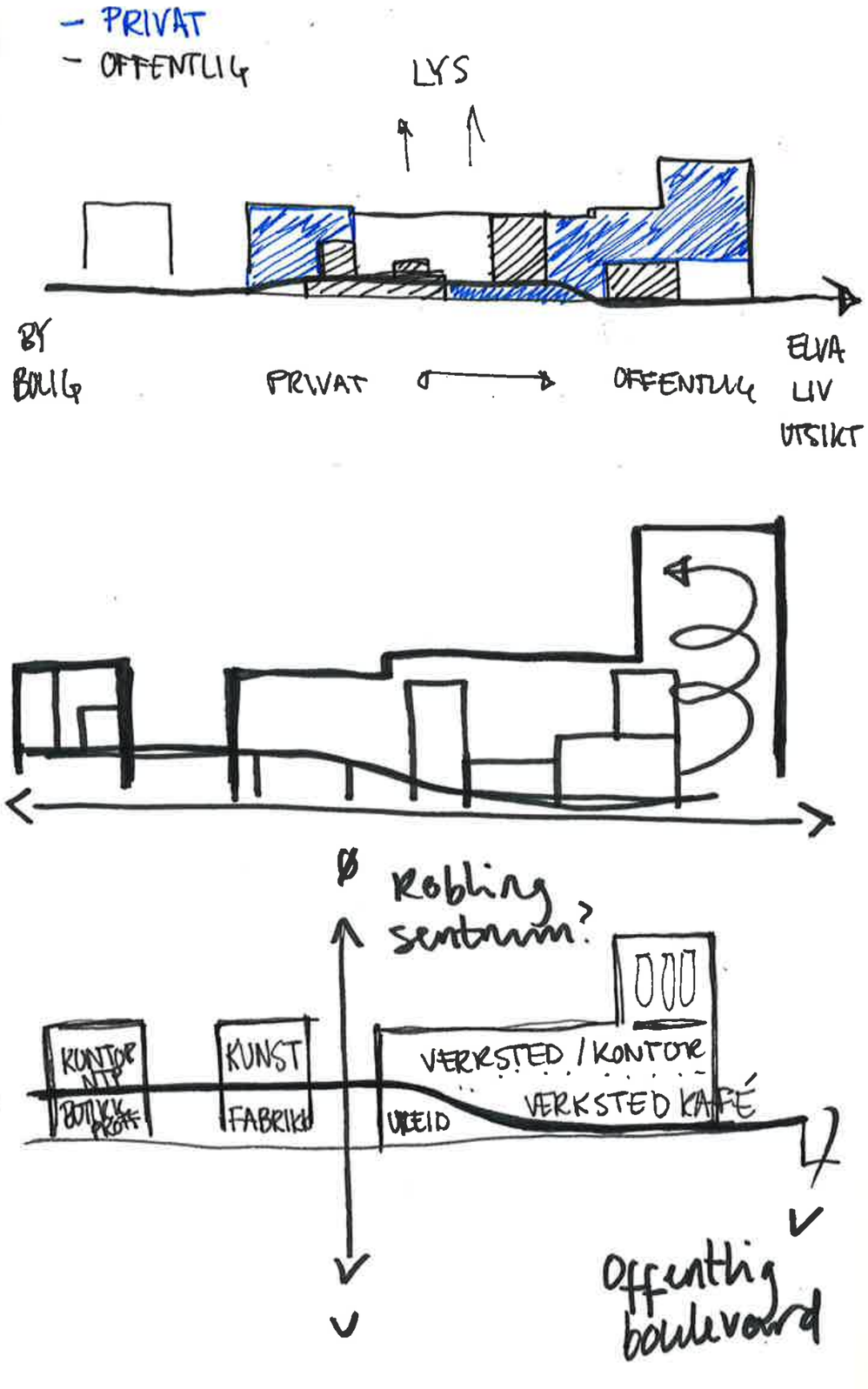
Auditoriet
Offentlig

Skuret
Offentlig
Fleksibelt og røft
Nattklubb, scene, , kino, utstilling





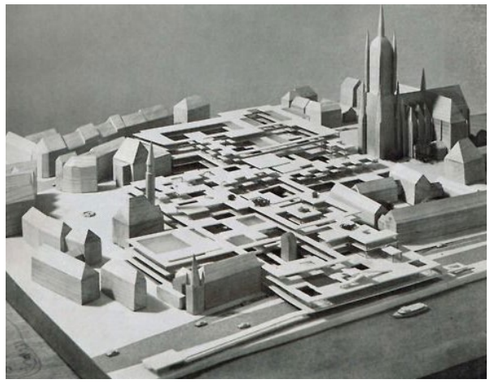
Early sketch of new use of the Raw Material storage



Early sketches of program concept

February

Preservation strategies presented in *"Tabula plena"* by Bryony Roberts

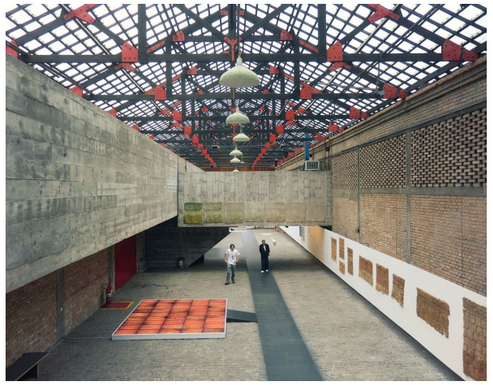


Sheet

An abstracted scale of the planned city grid by Jean Cicignon in the 1600s, as a background for opening up the ground floor. This structure wraps around and between existing buildings to connect them to one uniting structure. As Candillis Josic Woods present in the reconstruction of the Center of Frankfurt-Romerberg (1963), the plan highlights social spaces and circulation within the structure.

Skin

Can you imagine transforming in the way that you transform the facades and the interiors through alchemy? In the project Fondazione Prada by OMA in 2015 it is clear that the architect worked concretely with surfaces creating a complex sensorial system and identity. It do also manage to create a new landmark with its golden texture and mirror facade.



Composite

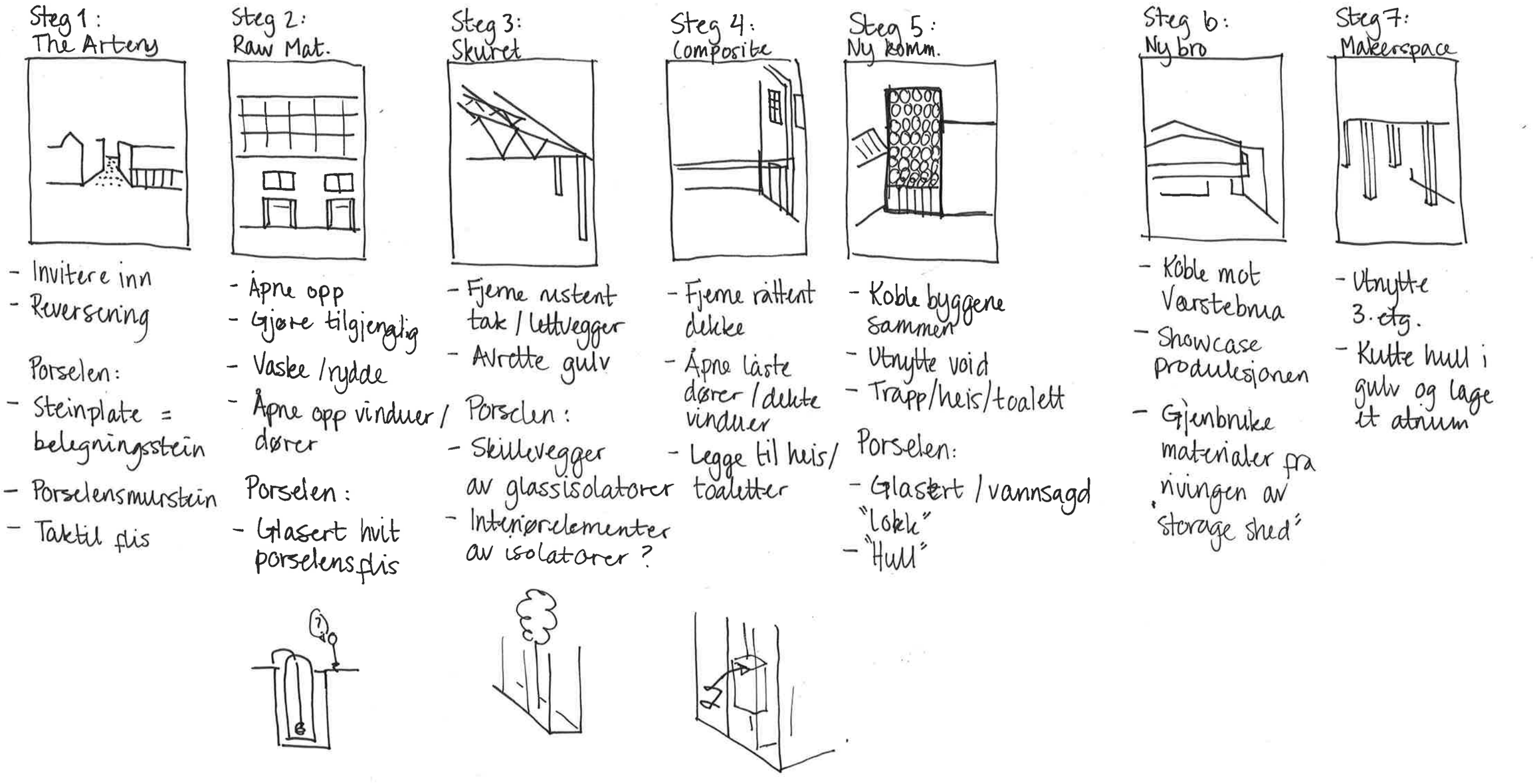
A strategy creating new forms that are spatially interwoven with existing structures.

Envelope

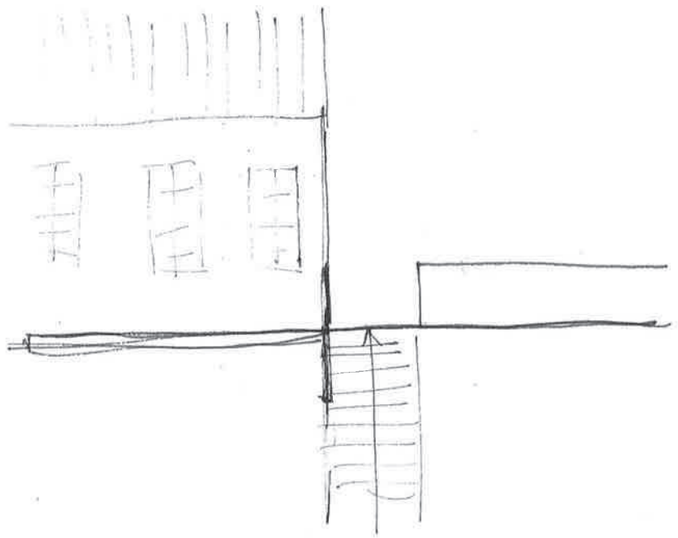
Adding a high-roof supplement with a new mechanical system, can create common container for different programs. Can look down on the different productions, and be a new social space connection the different building components.

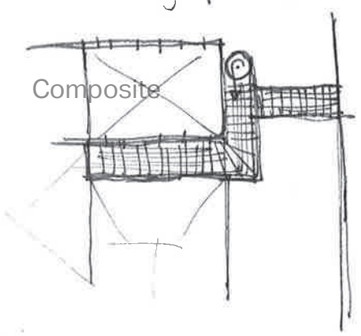
February

Testing out a preservation strategy



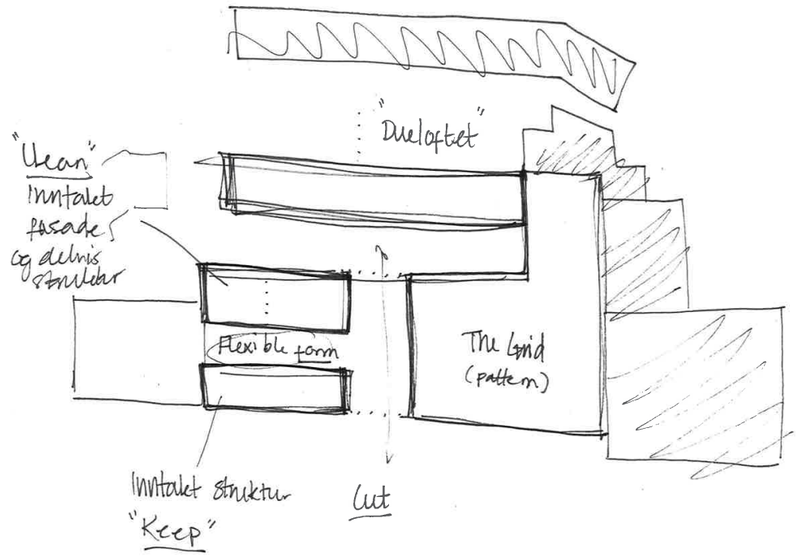
Sketches of the different steps of *the arterty* strategy.

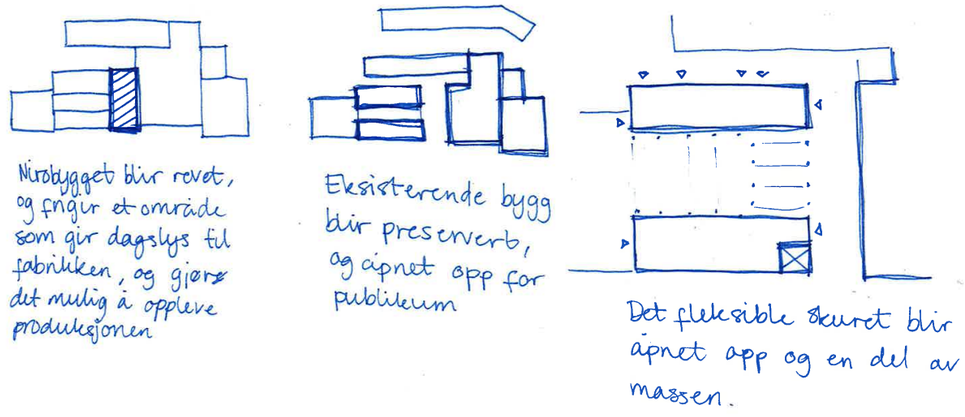


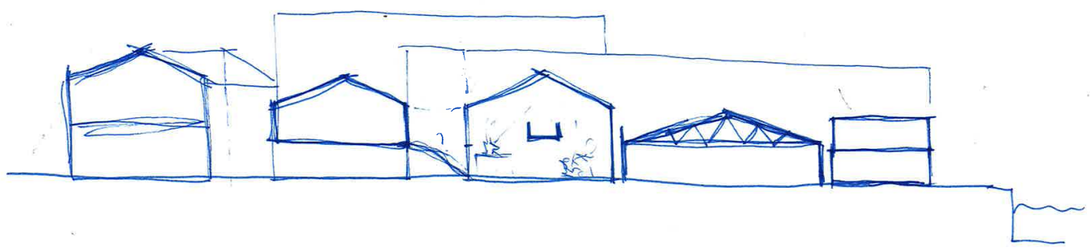


The *Factory*

Sketches of a possible new bridge between *Composite* and the *Factory*





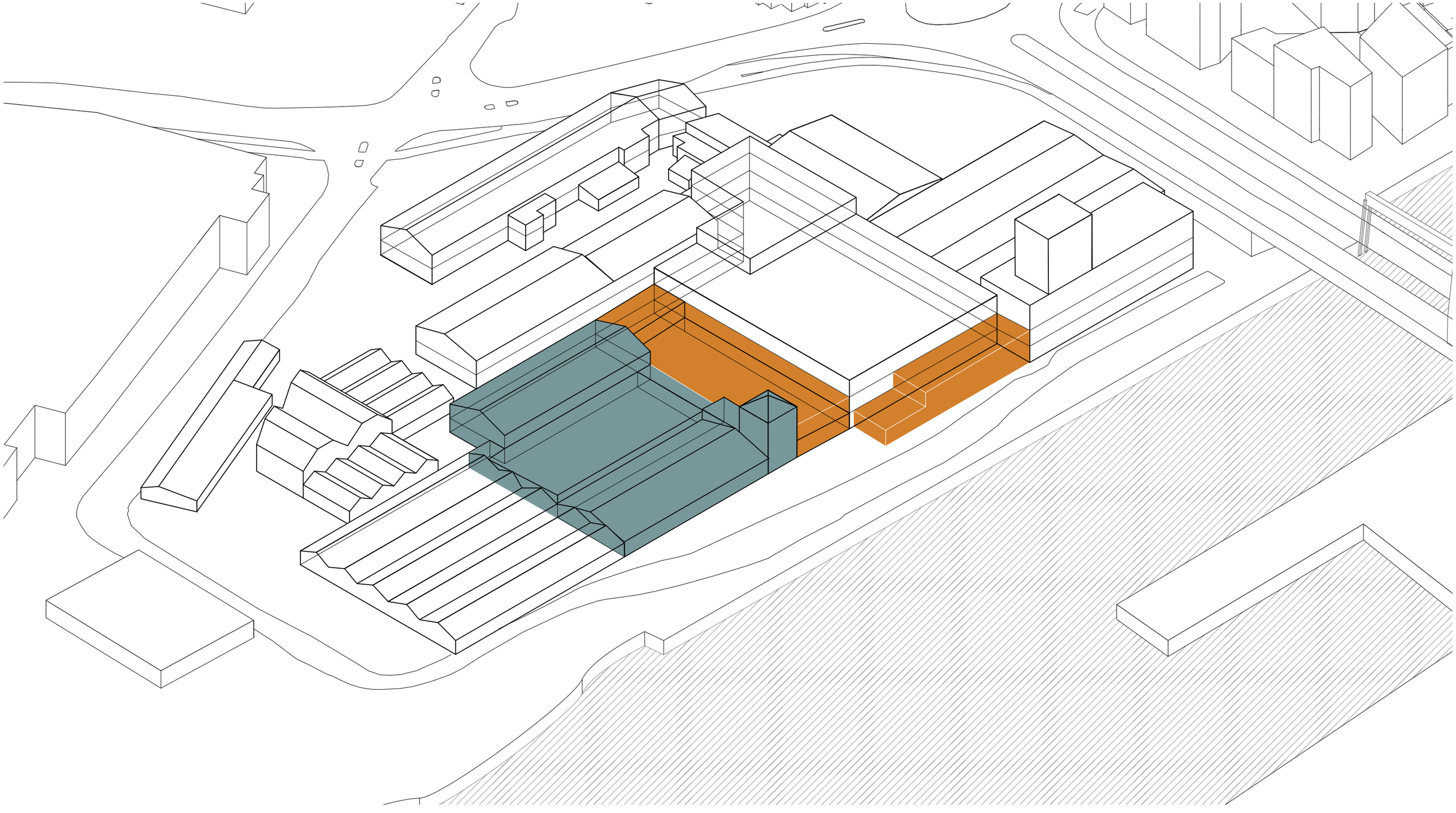


Sketches of the different steps of *the arterty* strategy.

February

Testing out a preservation strategy
Chosen buildings to work with

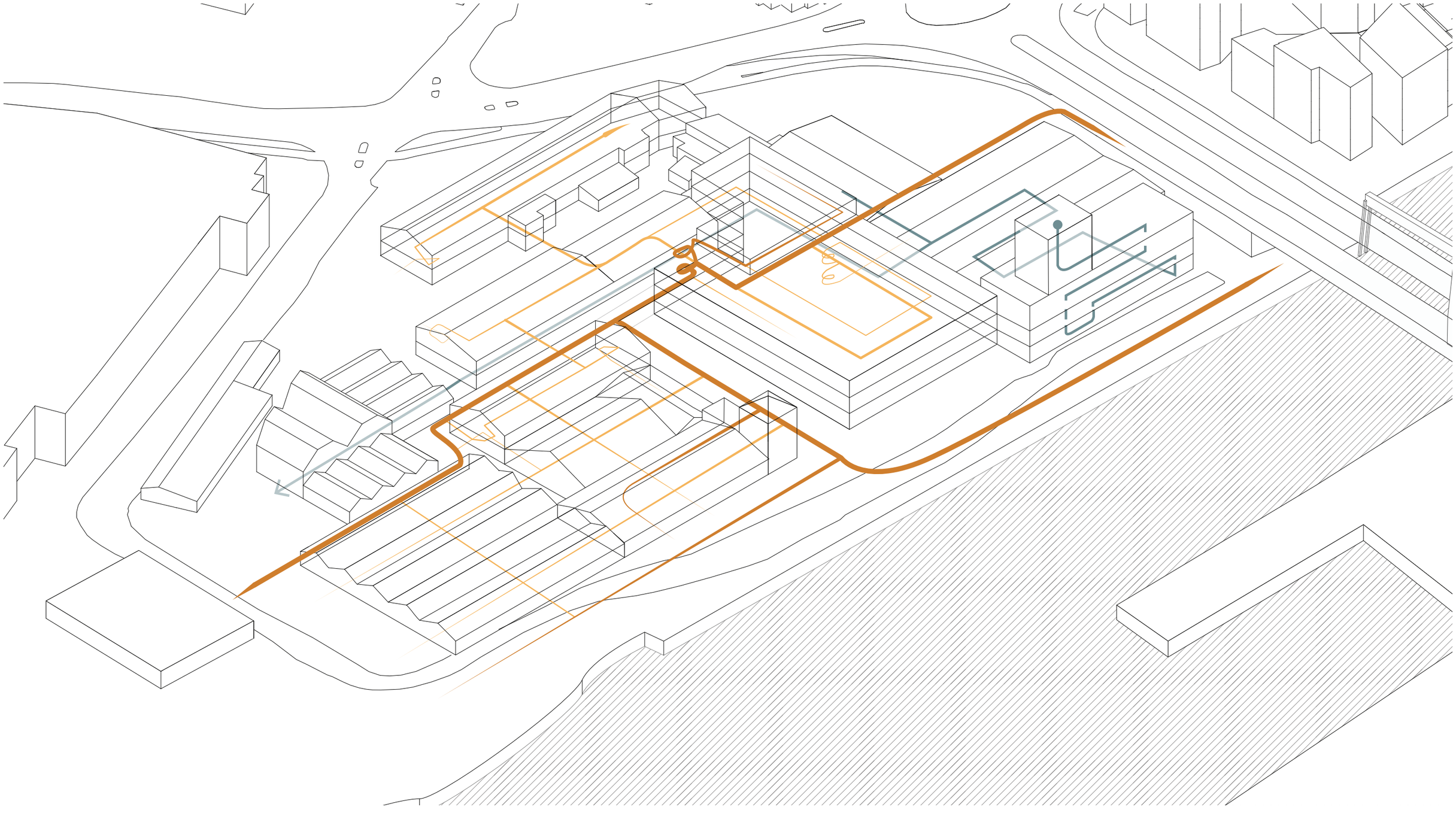
Removed
Modified
Other buildings



February

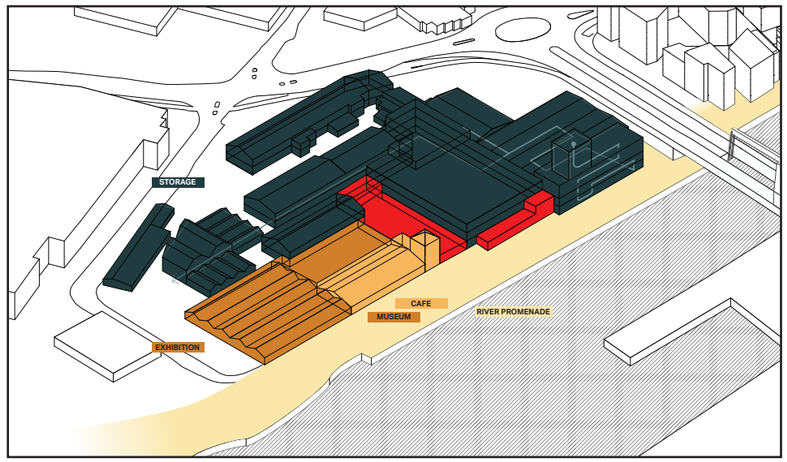
Testing out a preservation strategy: The Artery as the mediator between private and public spaces

Public path (artery)
Semi-public path (vein)
Production line

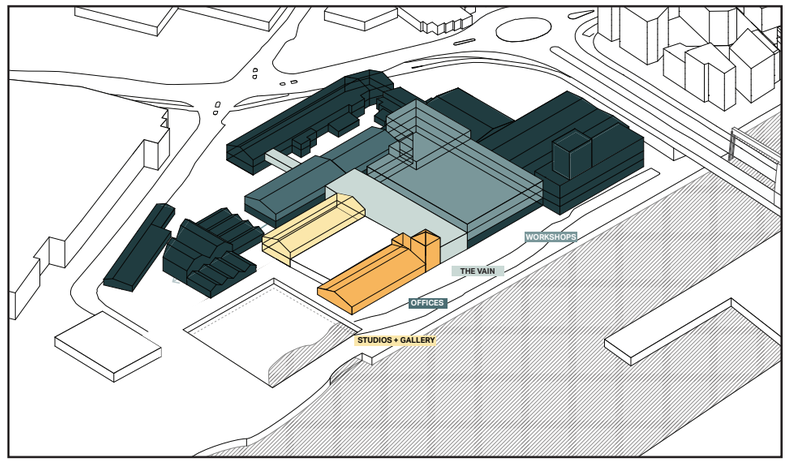


March

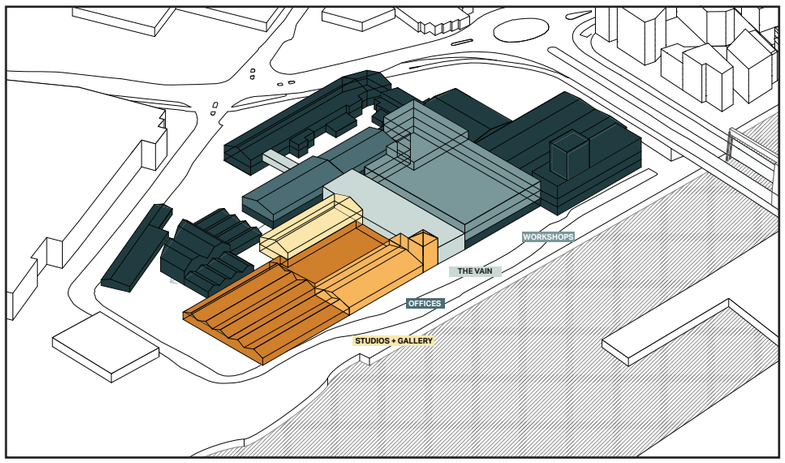
First take on the different strategies



1 year



20 + years



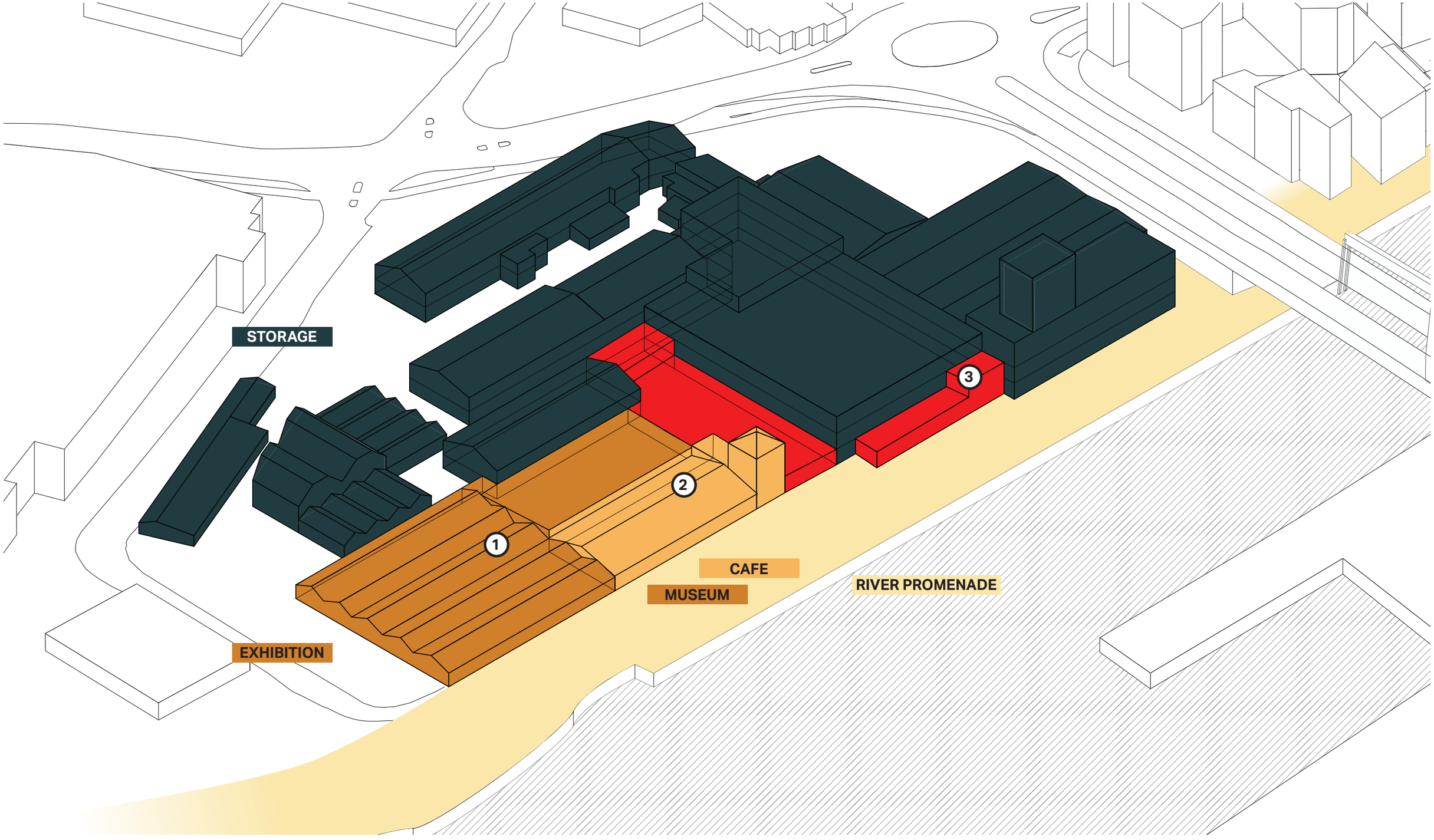
5 - 10 years

Stage 1:
One year

1. The shed will be more open for the public towards the river. The storage of NTP could be a space for low threshold places such as bar, scene, exhibition, lectures etc.

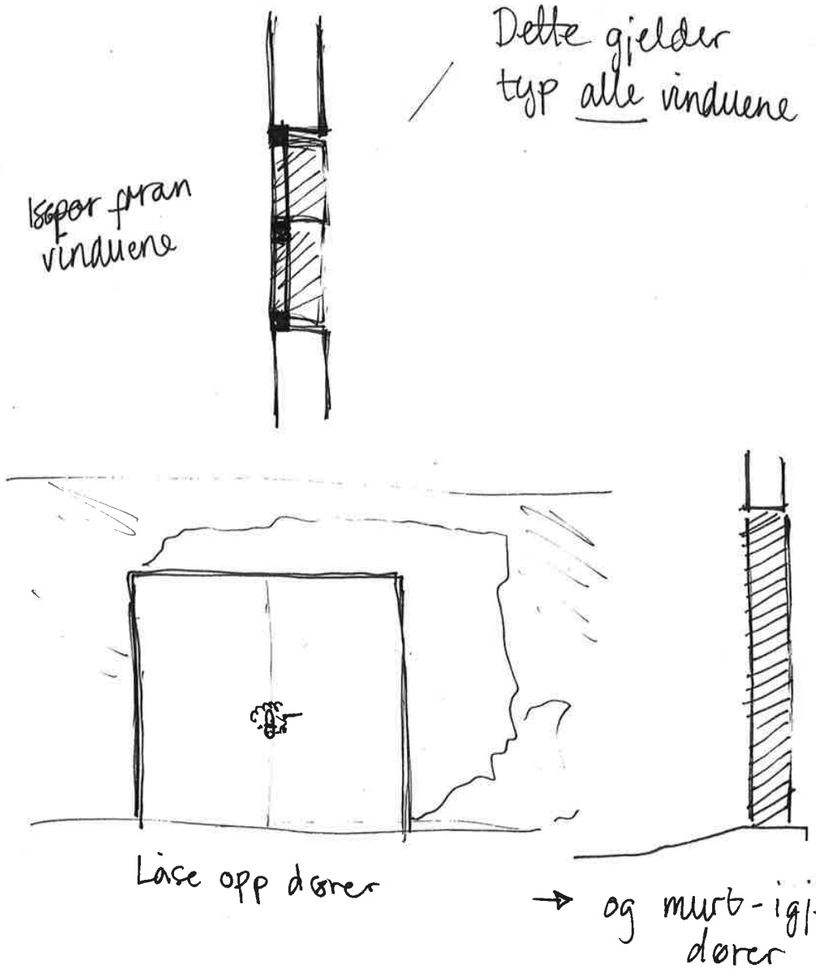
2. The raw material storage will be cleaned and open up its doors and windows. Here it will opened a local café and the Trafo as a viewing point. Possible to connect to the shed.

3. The Diving Club house will be removed due to its condition and that the Club has moved to a new location. The removal will make the production inside visible to the public.



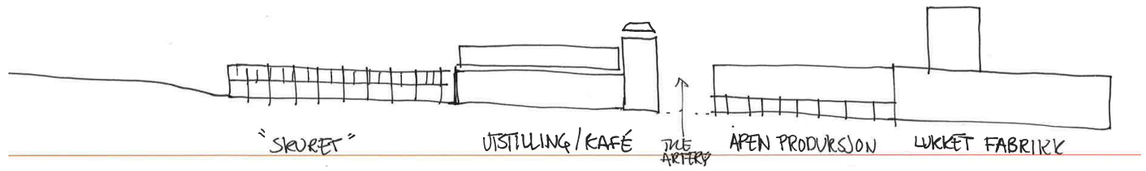
Dette gjelder typ alle vinduene

Isoper fran vinduene



Låse opp dører

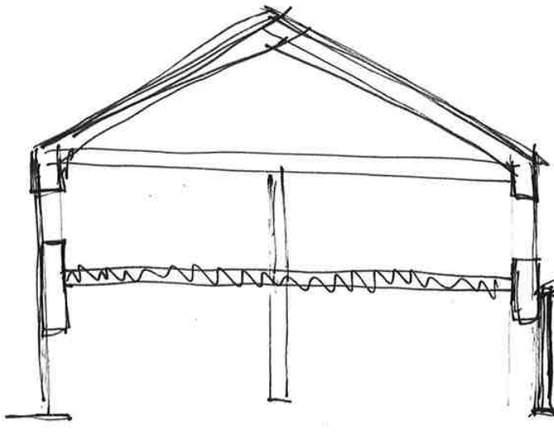
→ og murb-igjen dører



Tekonstruksjonstale (saltak)

Stiplet mitt

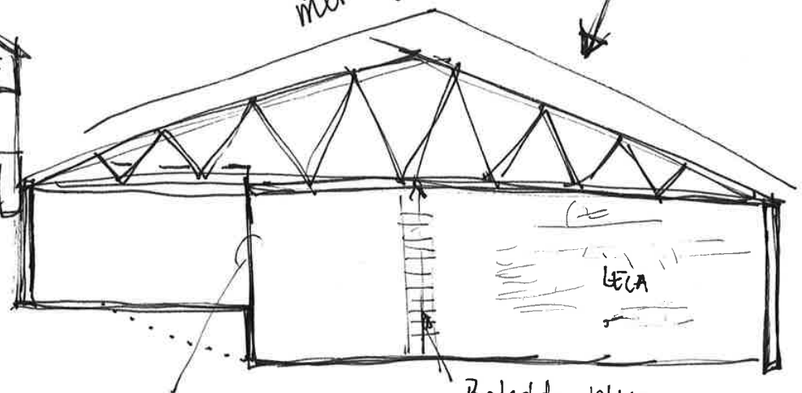
Fjerne papir fra vinduer



Fjerne dekke – få mer lys

evt alle?

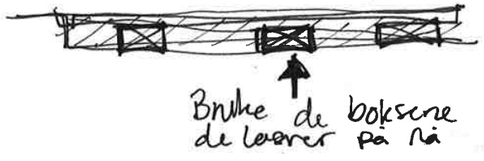
Fjerne tak, mer lys



Fjerne skitt vegg

Beholde volum

Fjerna rusta bølgeblikk → gir mer lys!



Bruke de boksene de leverer på nå

Sketches of the different steps of *the arterty* strategy.

Stage 1
Value mapping

1. The shed

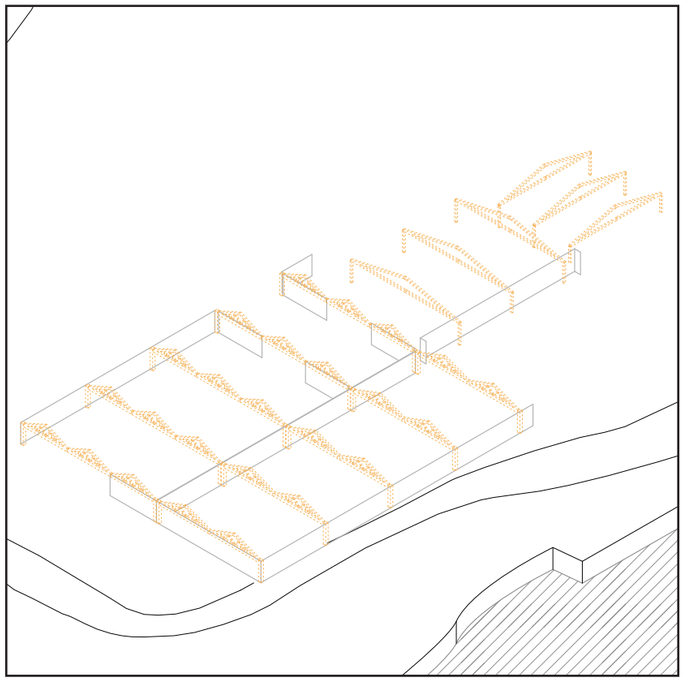
POSITIVE

Offers a flexible structure with overlight. Asphalt covered, which means the site is suitable for rough programs. The facade offers graphiti art.

NEGATIVE

Gets flooded everytime it is raining. The polypurentane facade is badly maintenained and not welcoming.

- Framework
- Graphiti art
- Facade sheets



2. The Raw material storage and Trafo

POSITIVE

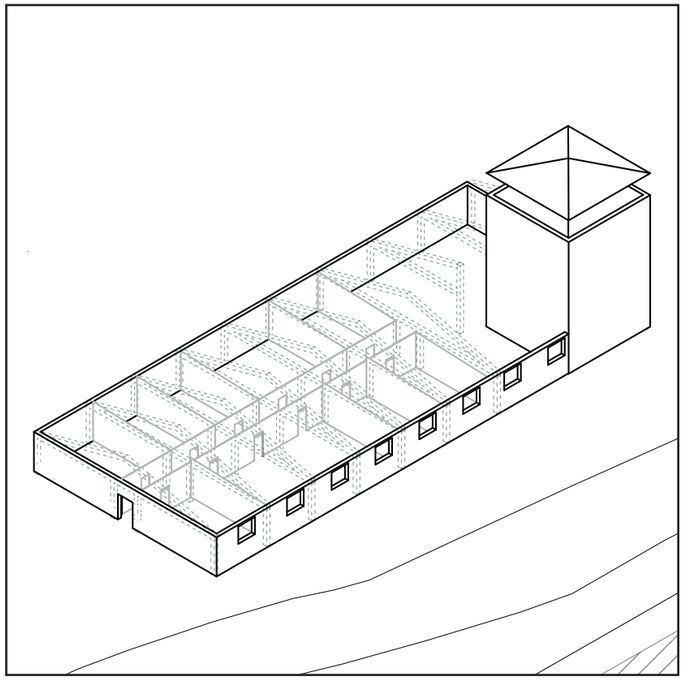
The Storage has a prefab. steel construction and concrete cladded walls. The structure itself is intact and creates big and flexible rooms.

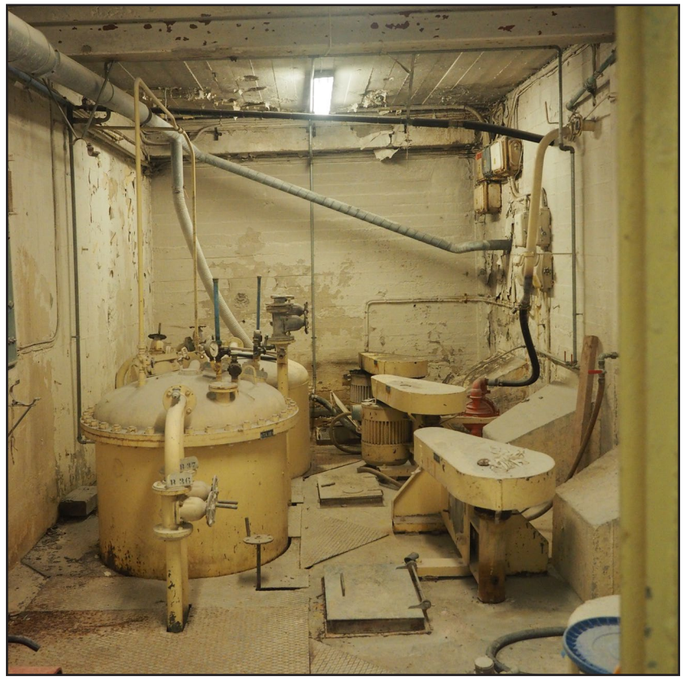
The Trafo tower is in a bad condition, but it still has the value of being an "iconic" element in the area.

NEGATIVE

Looks like the factory abandoned the buidlings in a second, beacuse of its lack of cleaning. The buildings are quite dark and especially the storage has a low ceiling.

- Framework
- Cladding
- Light walls





March

Collages made early in the semester

Existing riverfront

Future riverfront

March

Collages made early in the semester

Existing storage shed

Future - exhibition area

March

Collages made early in the semester

Existing storage shed

Future - flooded exhibition area

March

Collages made early in the semester

Existing shed

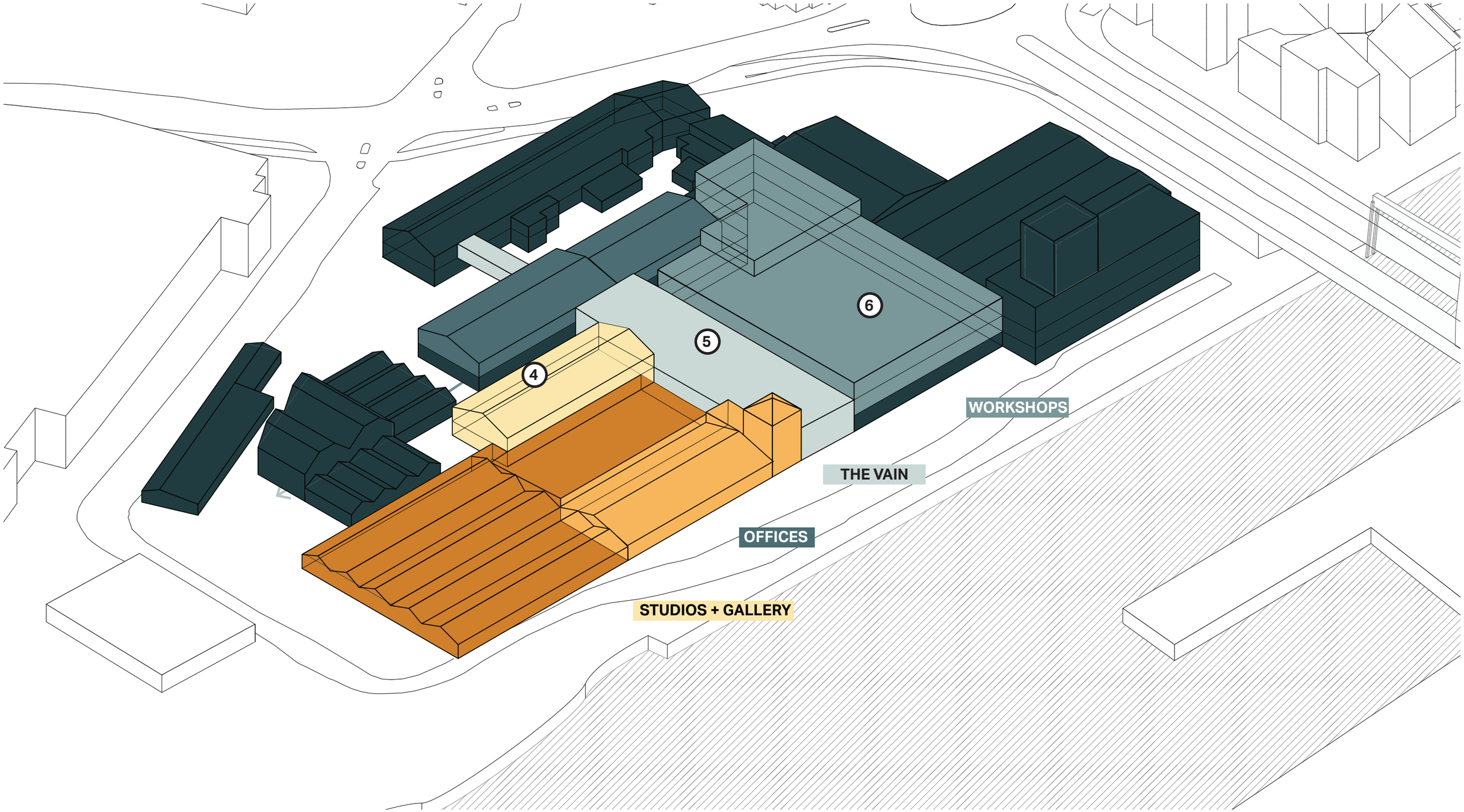
Future - flexible auditorium

Stage 2:
5 - 10 years
The Vain is the former name of *the Artery*

4. The Composite building will be restored and the ground floor will be a permanent space for exhibition of art, and a store. The 2nd floor will use the exisiting office plan for a cultural / production office purposes.

5. The low factory building will be removed due to its condition. The structure will be kept. Will function as a main street in my project. The connection between culture and industry.

6. The Factory will be transformed, but kept as workshop facility. The ground floor will be both a public workshop and model lab. The rest of the floor is reserved for the factory if needing more space.



Stage 2
Value mapping

3. The Composite building

POSITIVE

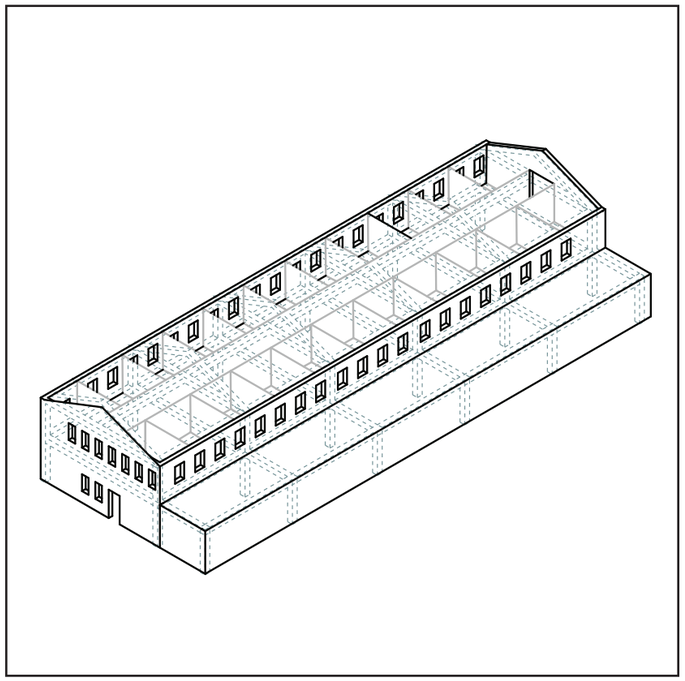
Offers a flexible office plan in the 2nd floor. Today many of the windows are locked and covered. A possibility to create an attractive office space.

The ground floor offers a flexible space with a high ceiling.

NEGATIVE

A lot of light walls in the ground floor, what can be removed. Unused connection the the shed.

- Structure
- Facade
- Onfill



4. The Factory

POSITIVE

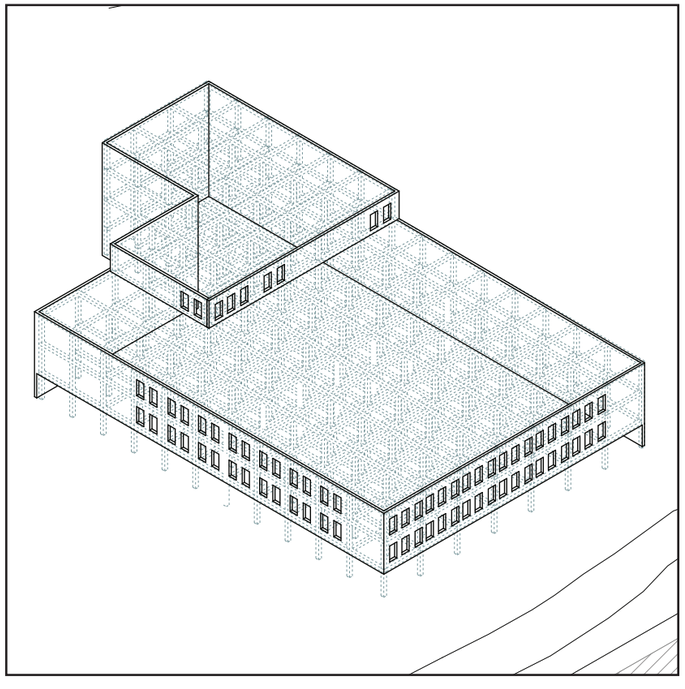
Original from 1916. Some of the original facade burned down in the 1930s, so the exisisting elements proofed its sustainability.

A flexible structure.

NEGATIVE

The building is quite deep, creating a lot of dark spaces.

- Structure
- Facade



March

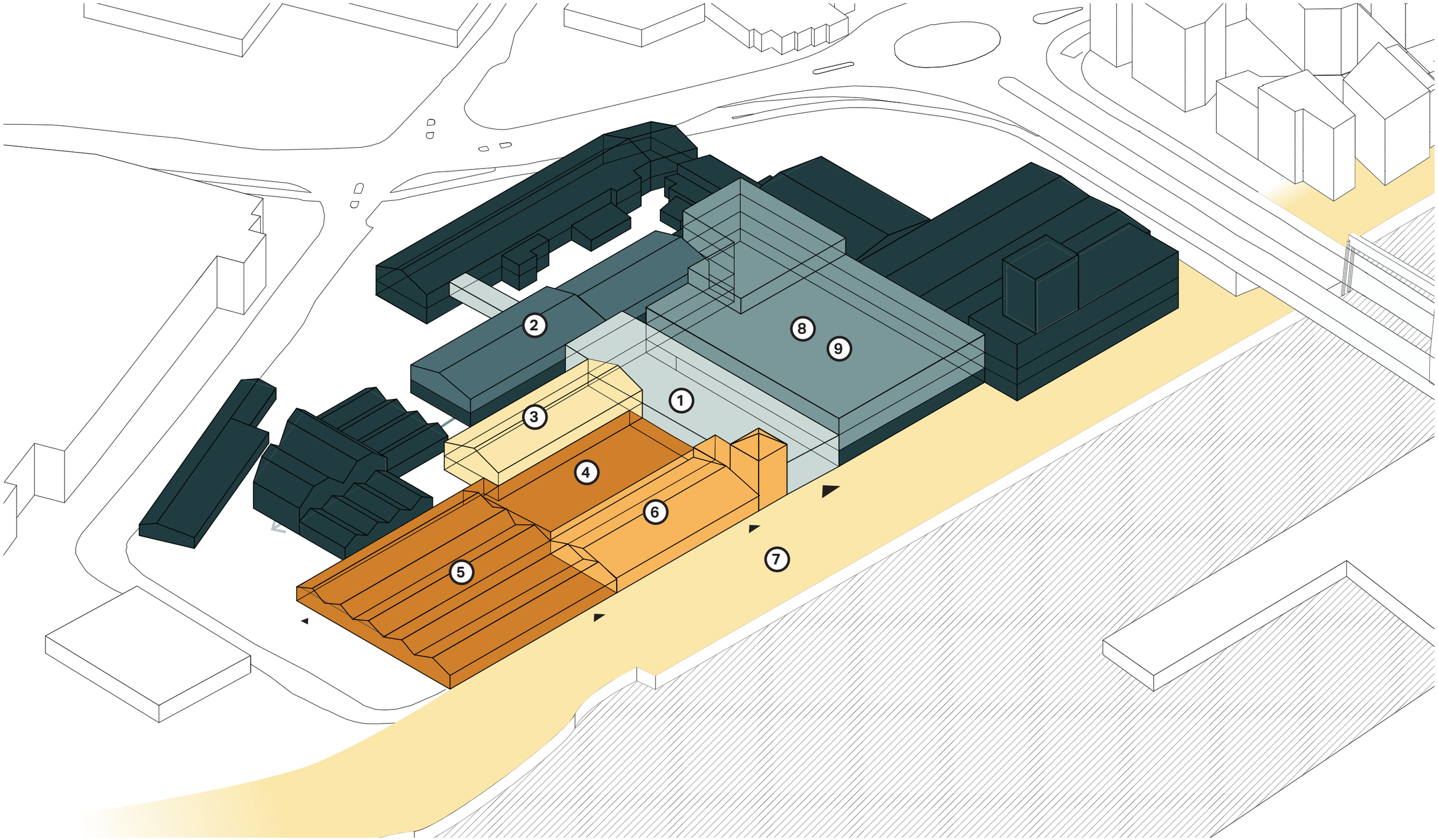
Collages made early in the semester

Existing offices in the *Treatment* dept.

New use of empty office space

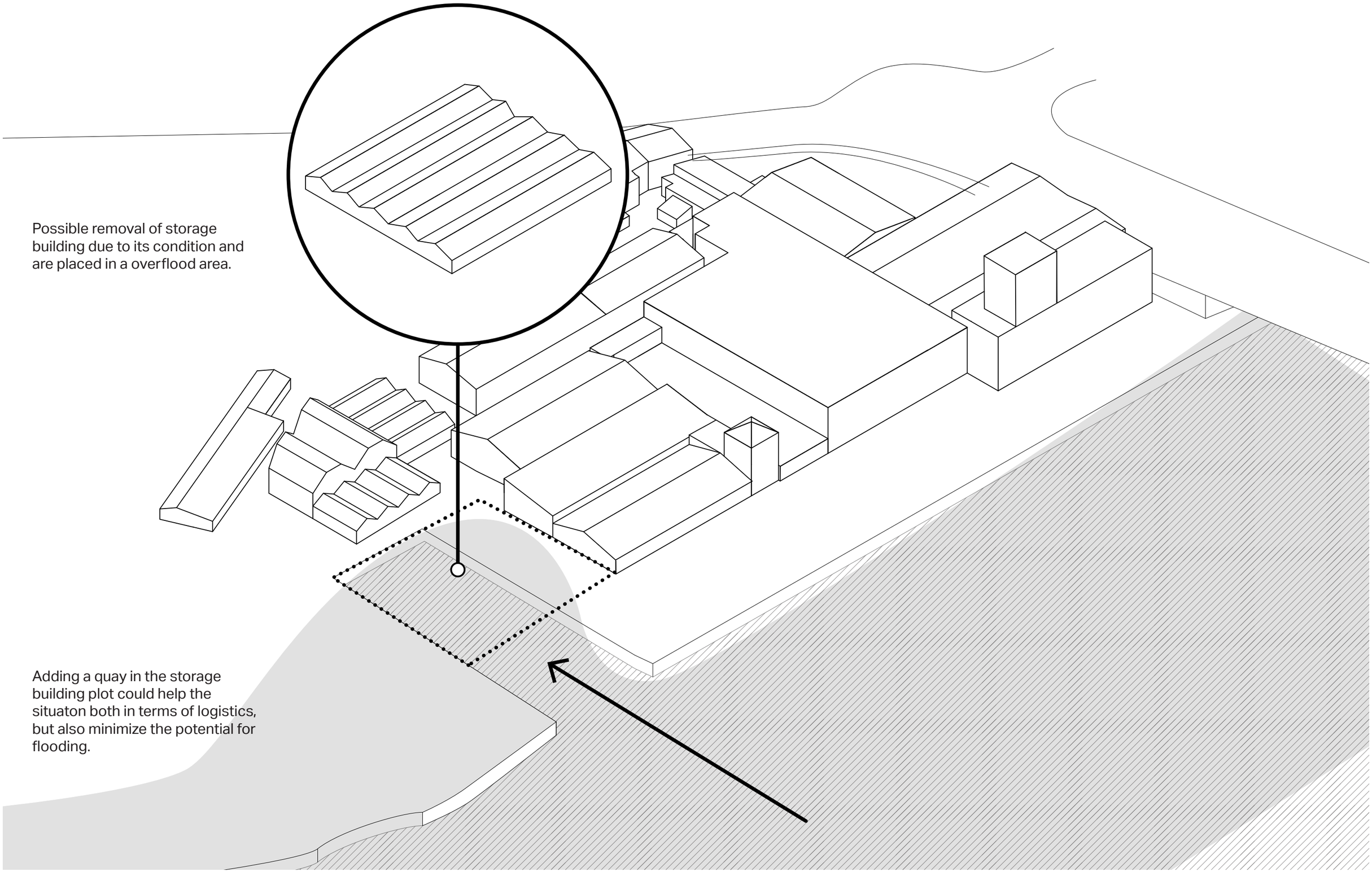
New programming after 10 years

1. The Artery / Connector
2. Creative offices
3. Studios
4. Gallery space
5. Flexible shed
6. Café & viewing tower
7. River promenade
8. Creative workshop
9. Public workshop



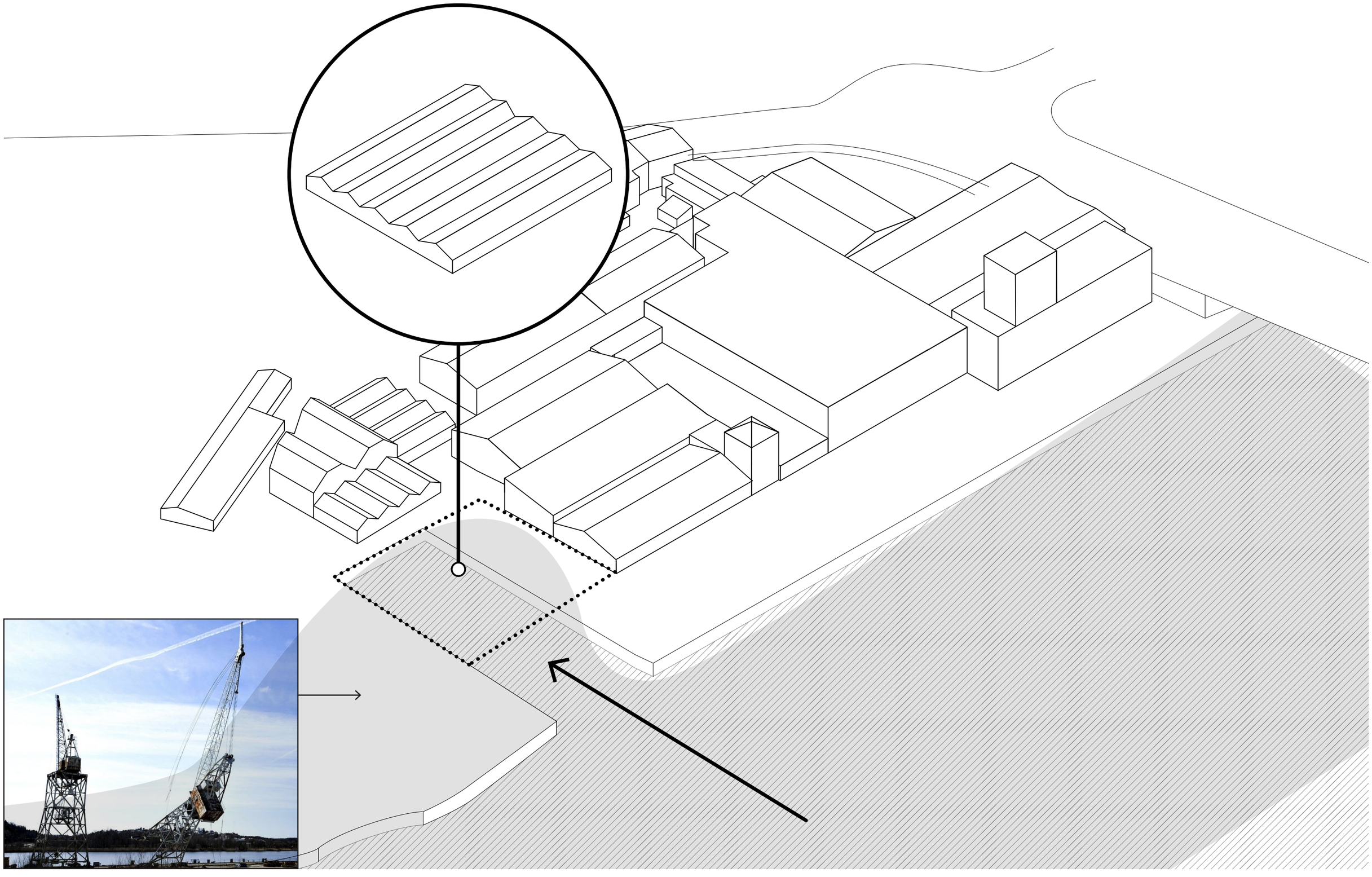
Future arrangement of existing buildings

Possible removal of storage building due to its condition and are placed in a overflood area.



Adding a quay in the storage building plot could help the situaton both in terms of logistics, but also minimize the potential for flooding.

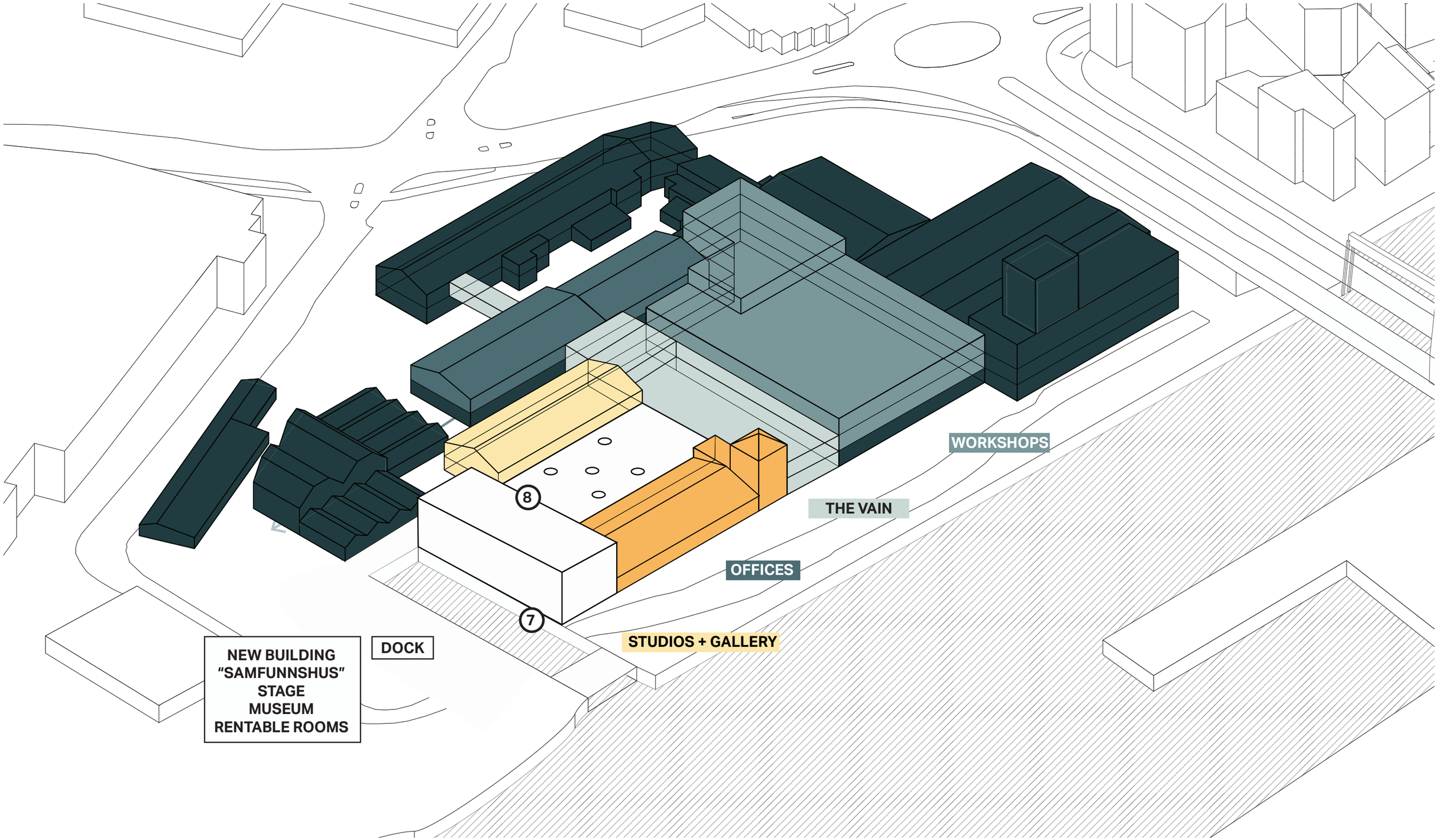
Keeping the historical and iconic cranes from FMV



Stage 3:
10 - 15 years - Community House

7. The Shed will be removed due to its condition and the danger of overflood. As an possible solution where can be built a new dock.

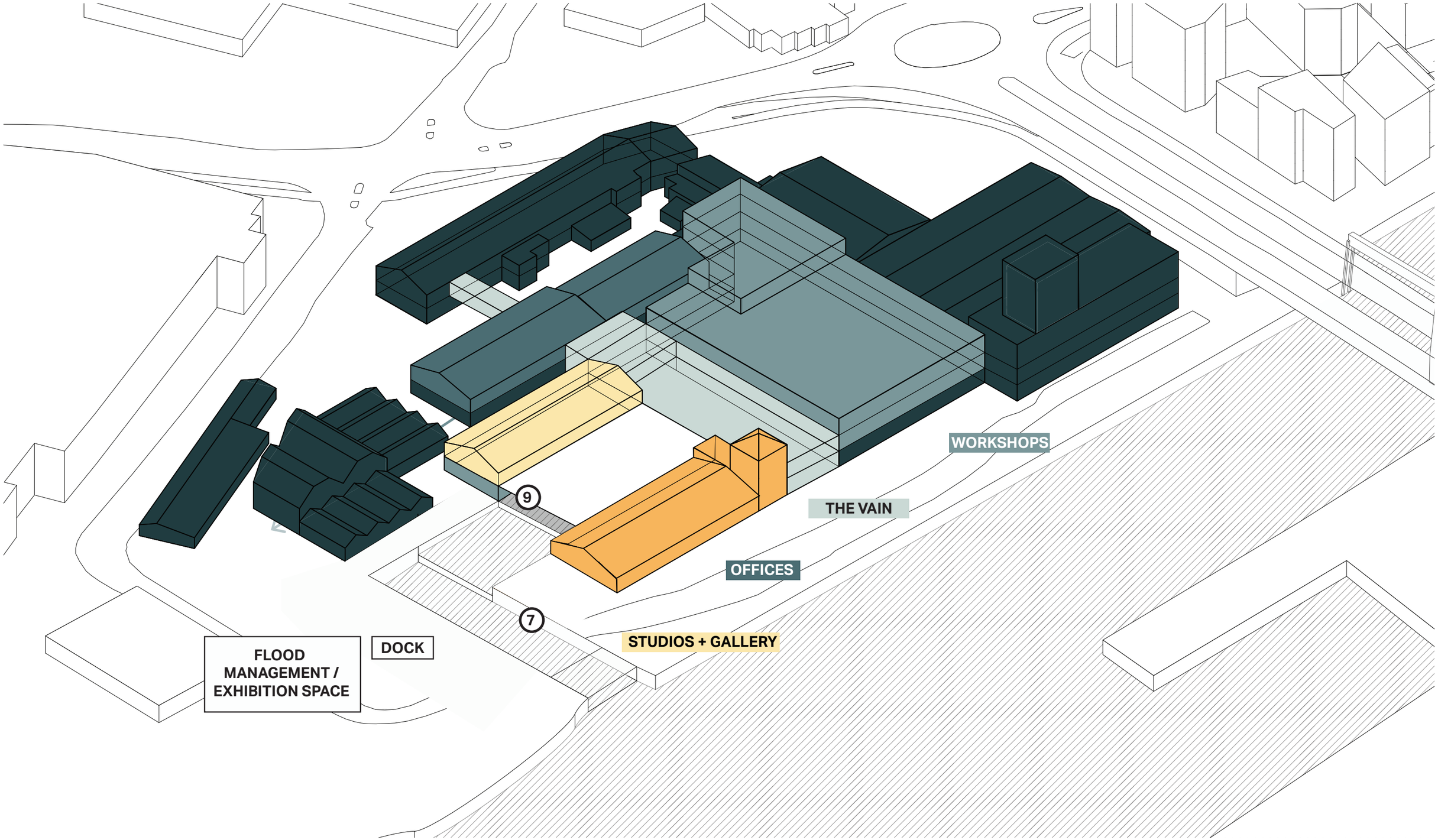
8. A new building will be placed at parts of the former shed plot. This building can work as a new "samfunsshus" where several actors in the local community can meet. Scene, exhibiton, flexible.



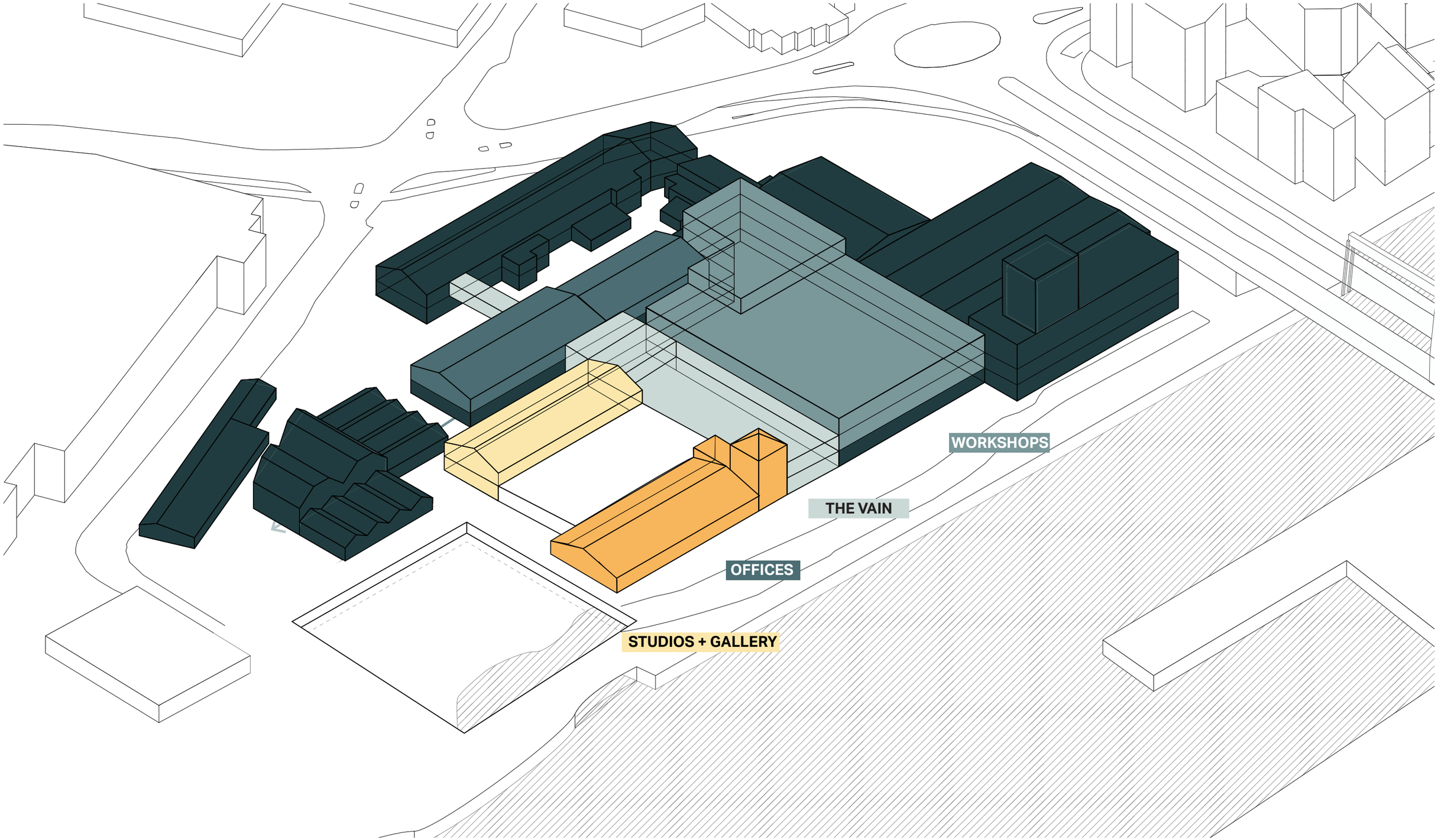
Stage 3:
10 - 15 years - Flooded architecture

7. The Shed will be removed due to its condition and the danger of overflood. As an possible solution where can be built a new dock.

9. A kanalization of the flooded water will be placed where the old shed and addition was. This can both works as an exhibition space, but also function as flood management when needed.



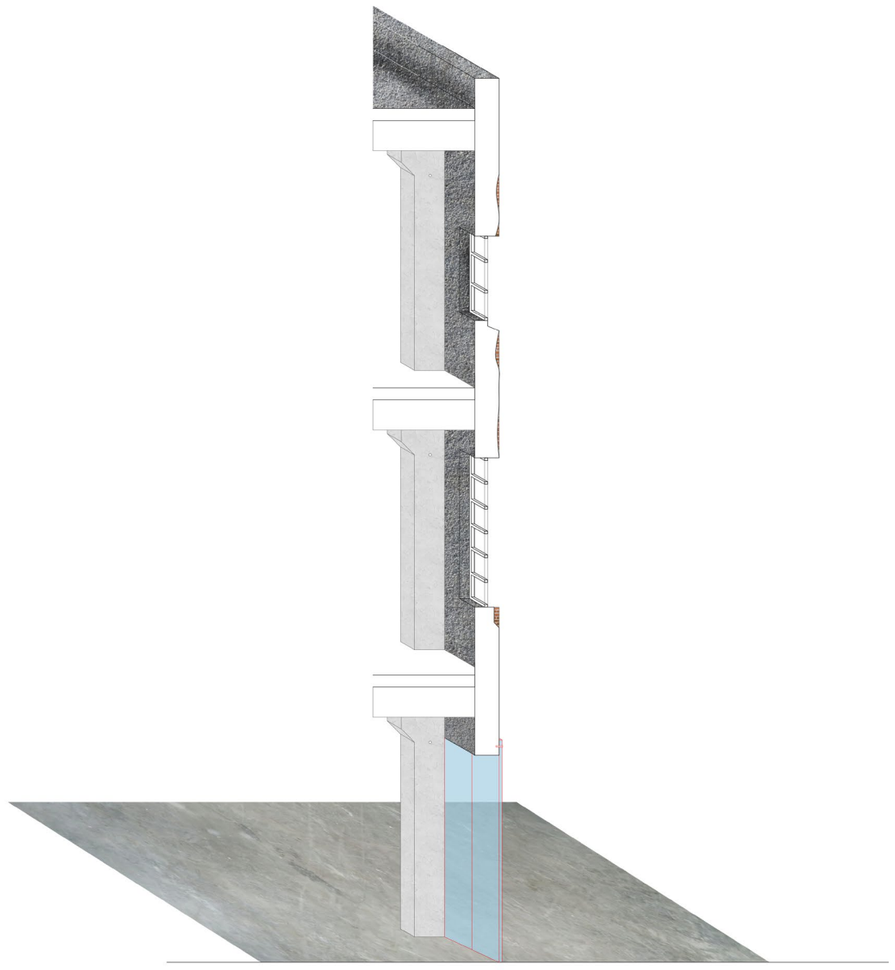
Stage 3:
10 - 15 years - water controlled piazza



Interventions
Transparent production

Existing

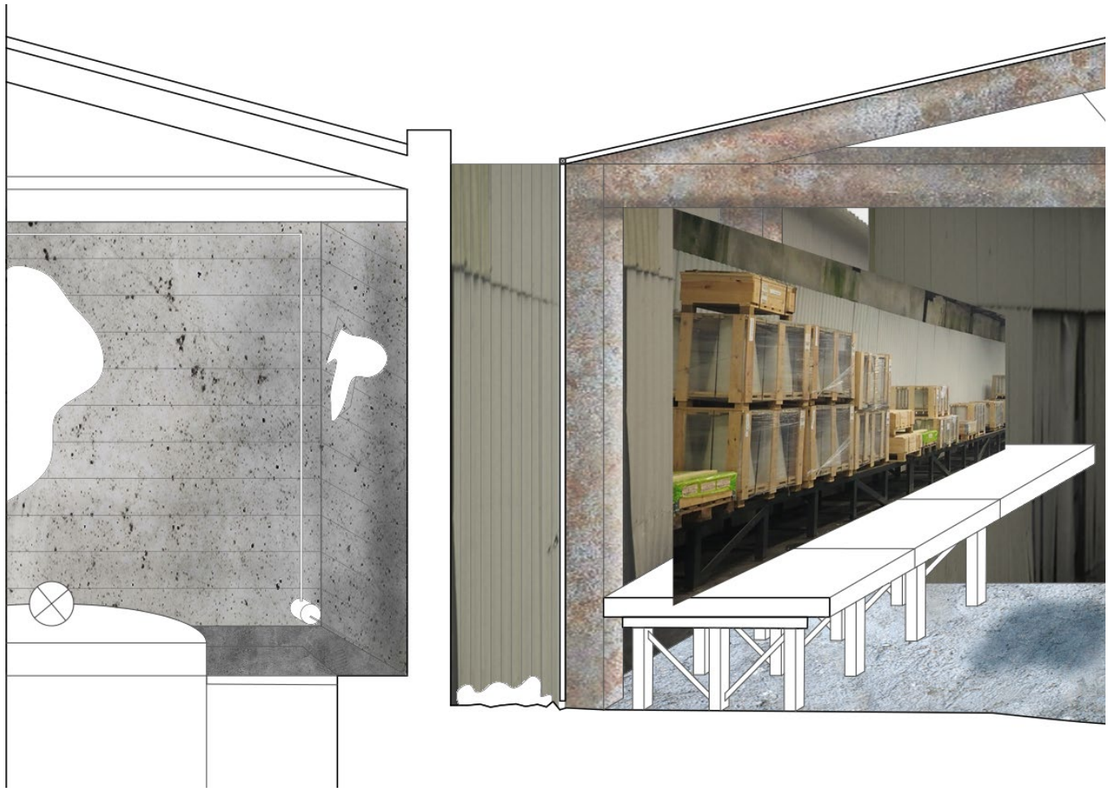
A abandoned storage unit is blocking the view towards the river. The existing factory facade in the ground floor is removed.



Future

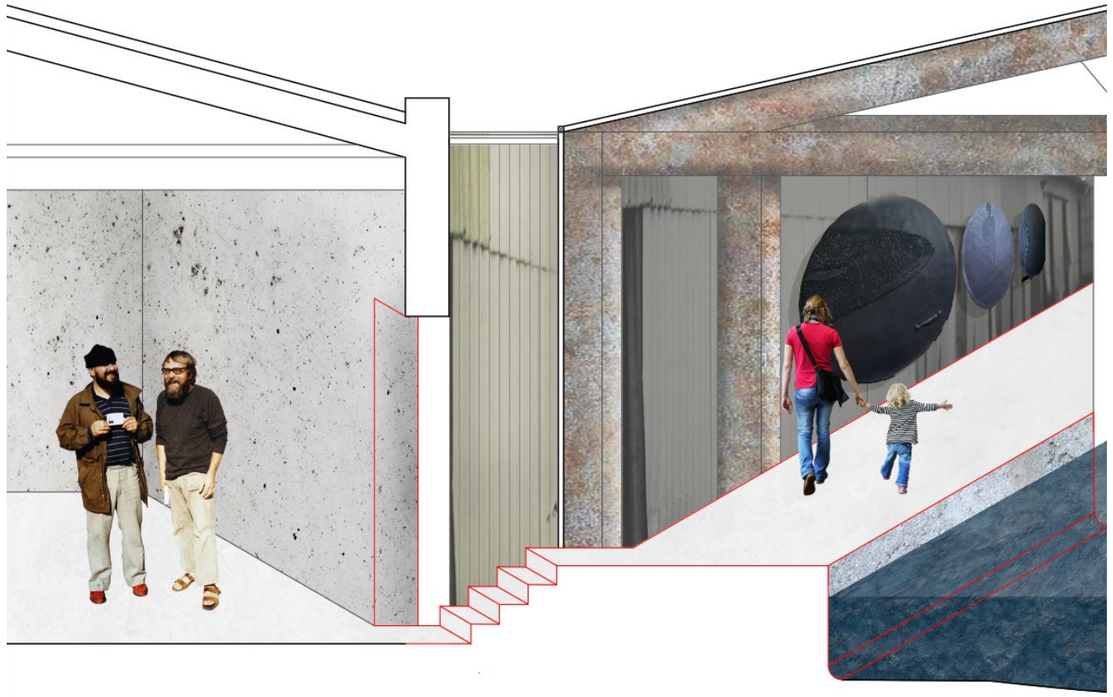
By removing the storage unit and adding windows carefully to the protected facade, the public will have overview of the the production inside.

Interventions
Connect buildings through courtyard



Existing

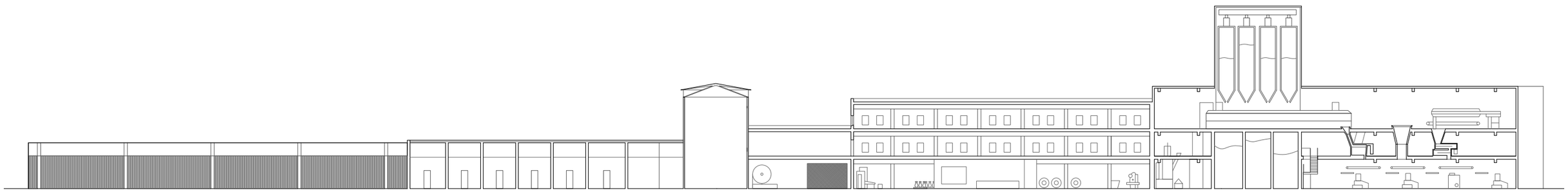
The Raw Material storage at the left, the shed at the right.



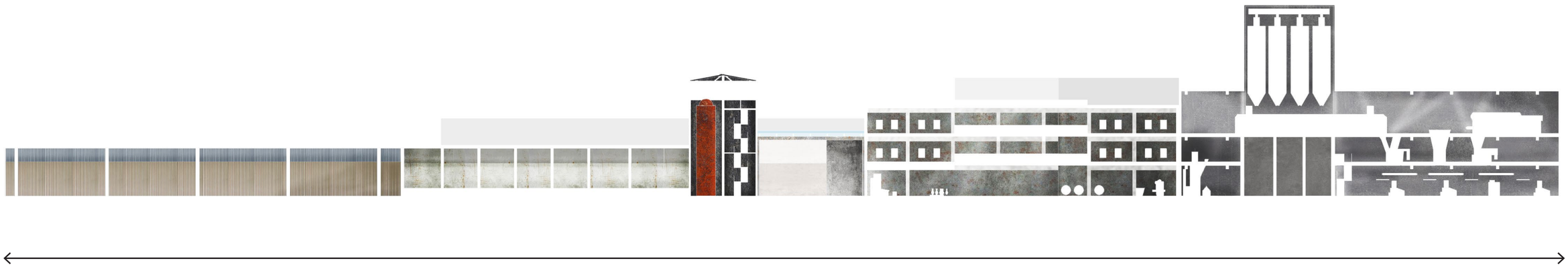
Future

Materialty test section

EXISTING



FUTURE (STRATEGY 1+5)

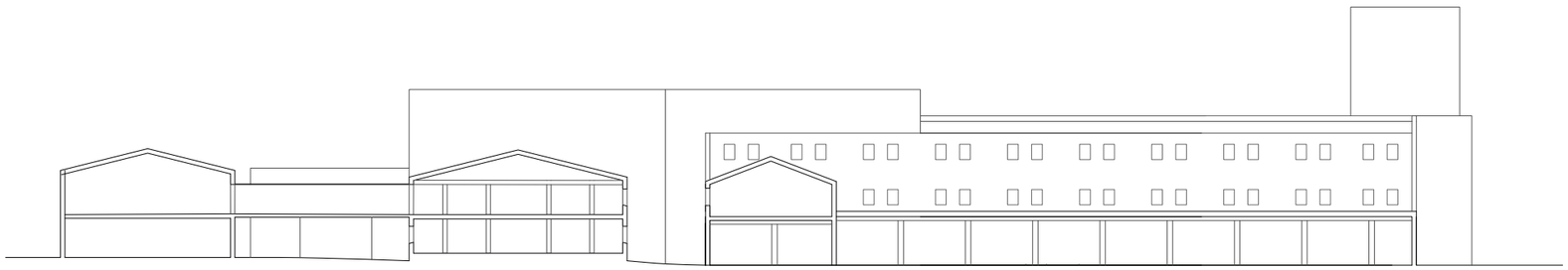


Public

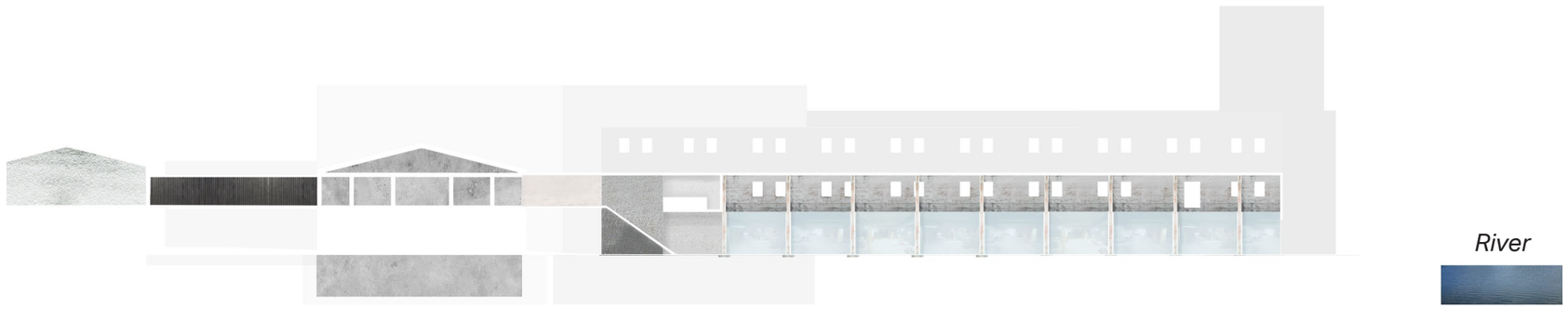
Private

Materialty test section

EXISTING



FUTURE (STRATEGY 1+5)



Private

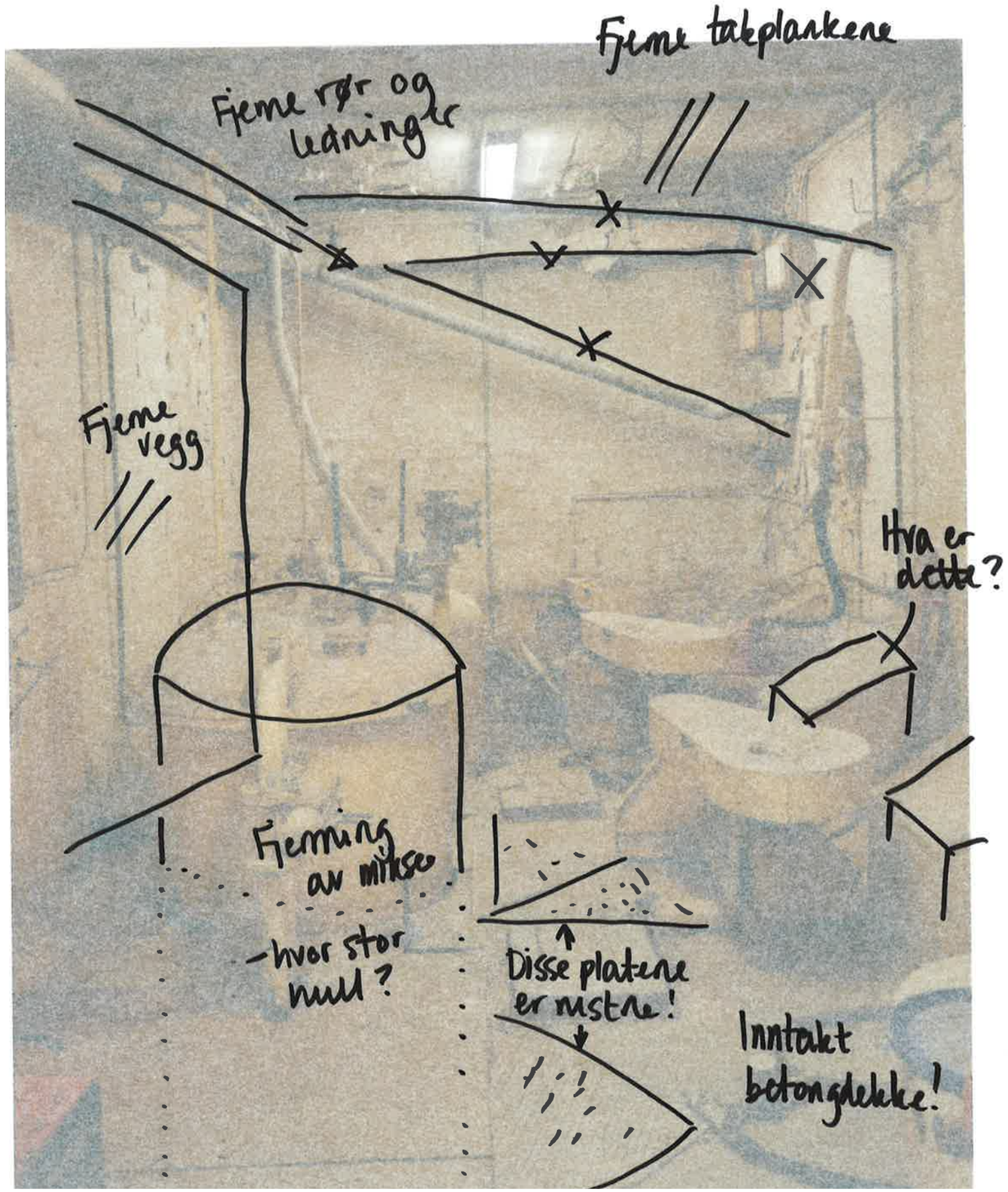
Public

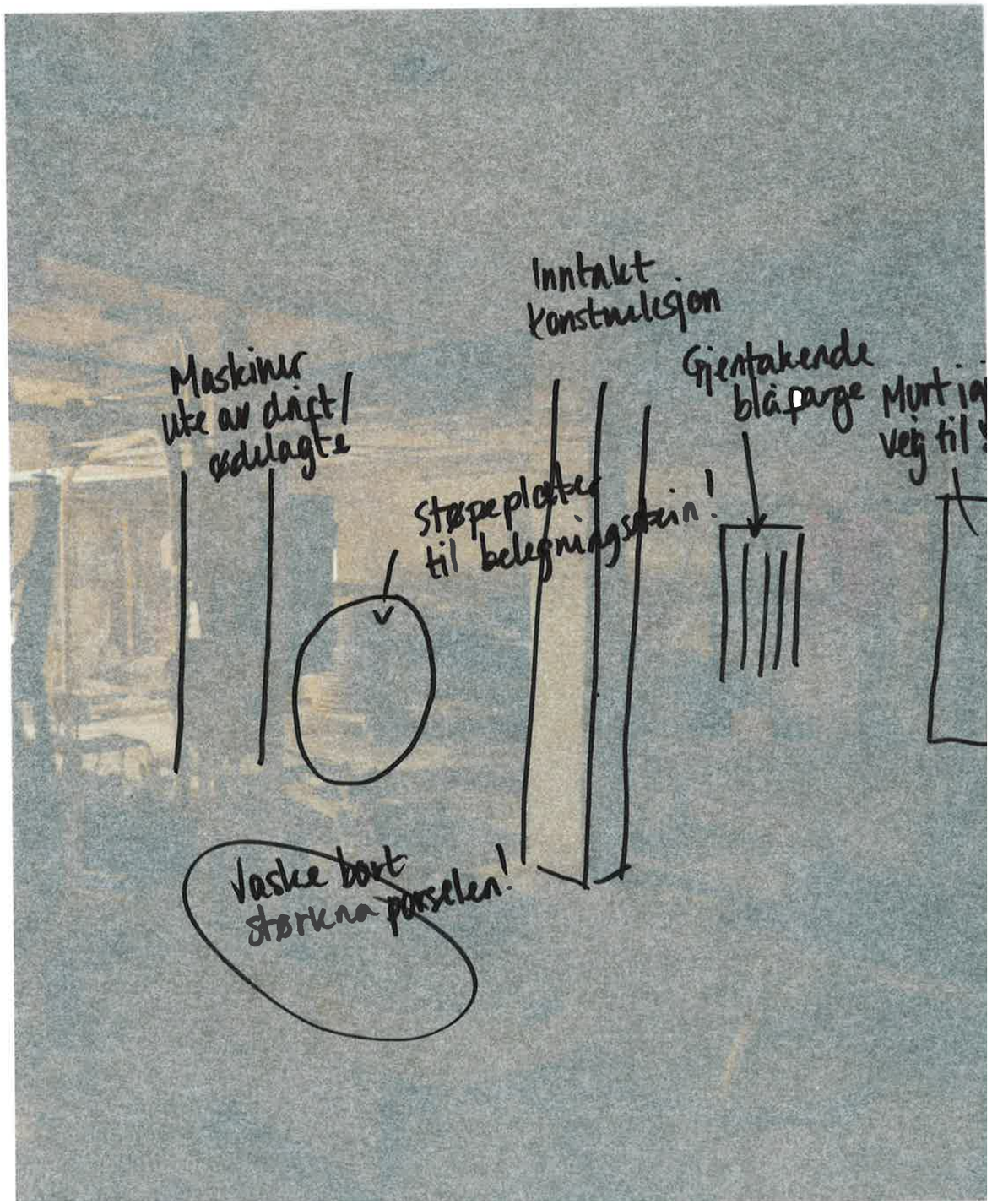
April

Mapping the Raw Material storage

April

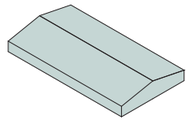
Mapping the Raw Material storage - sketches





April

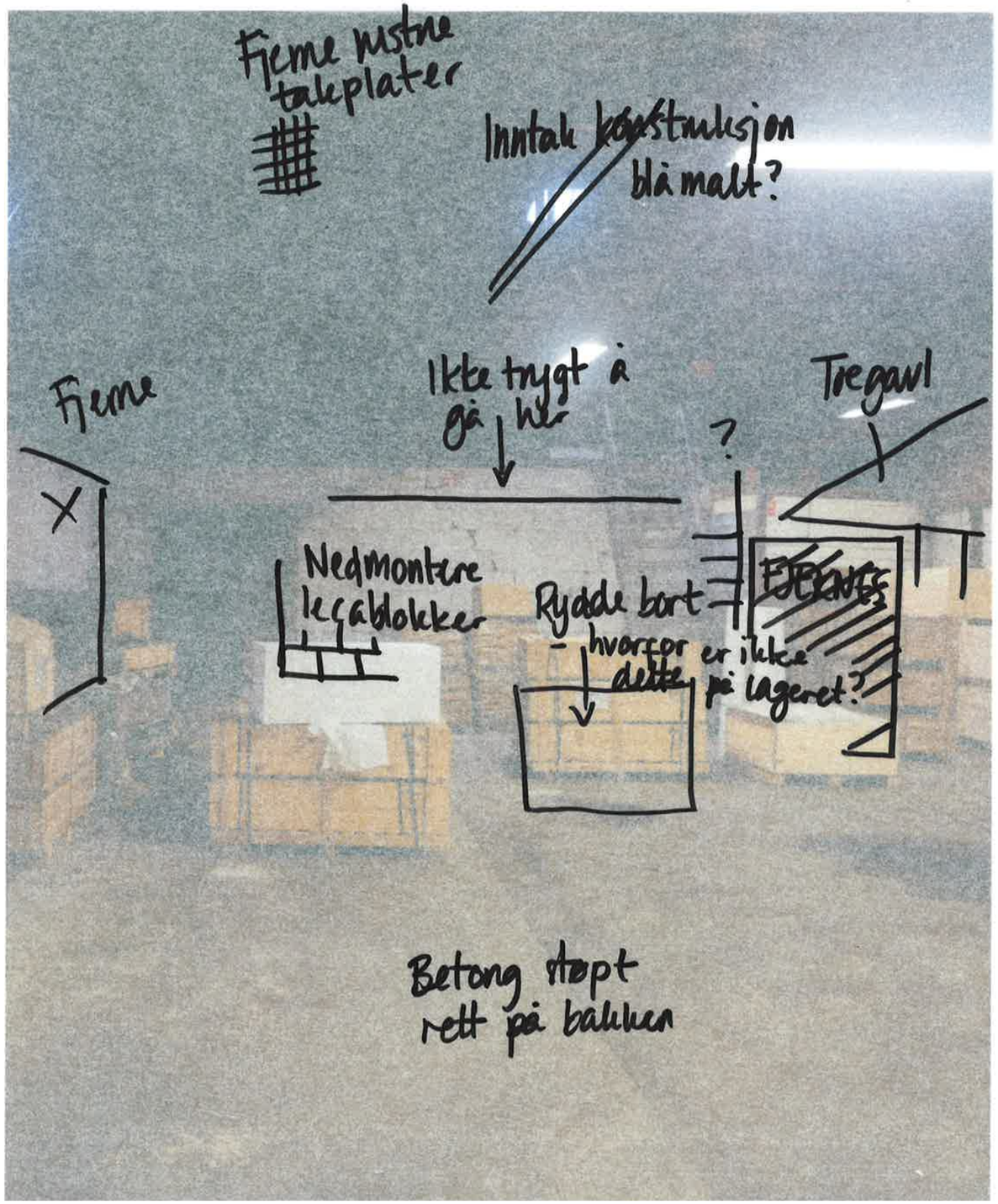
Mapping the Shed

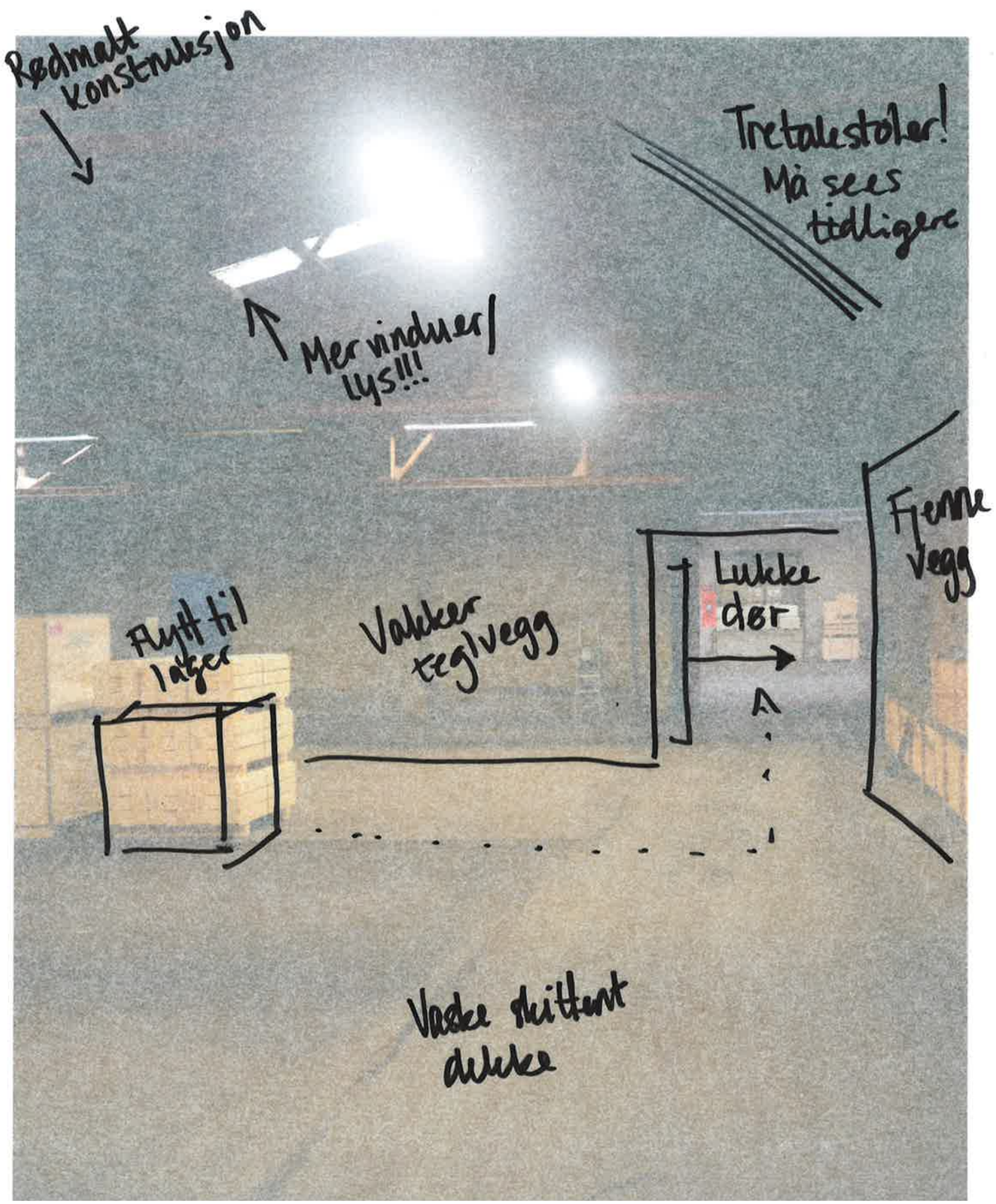


April

Mapping the Shed

- sketches



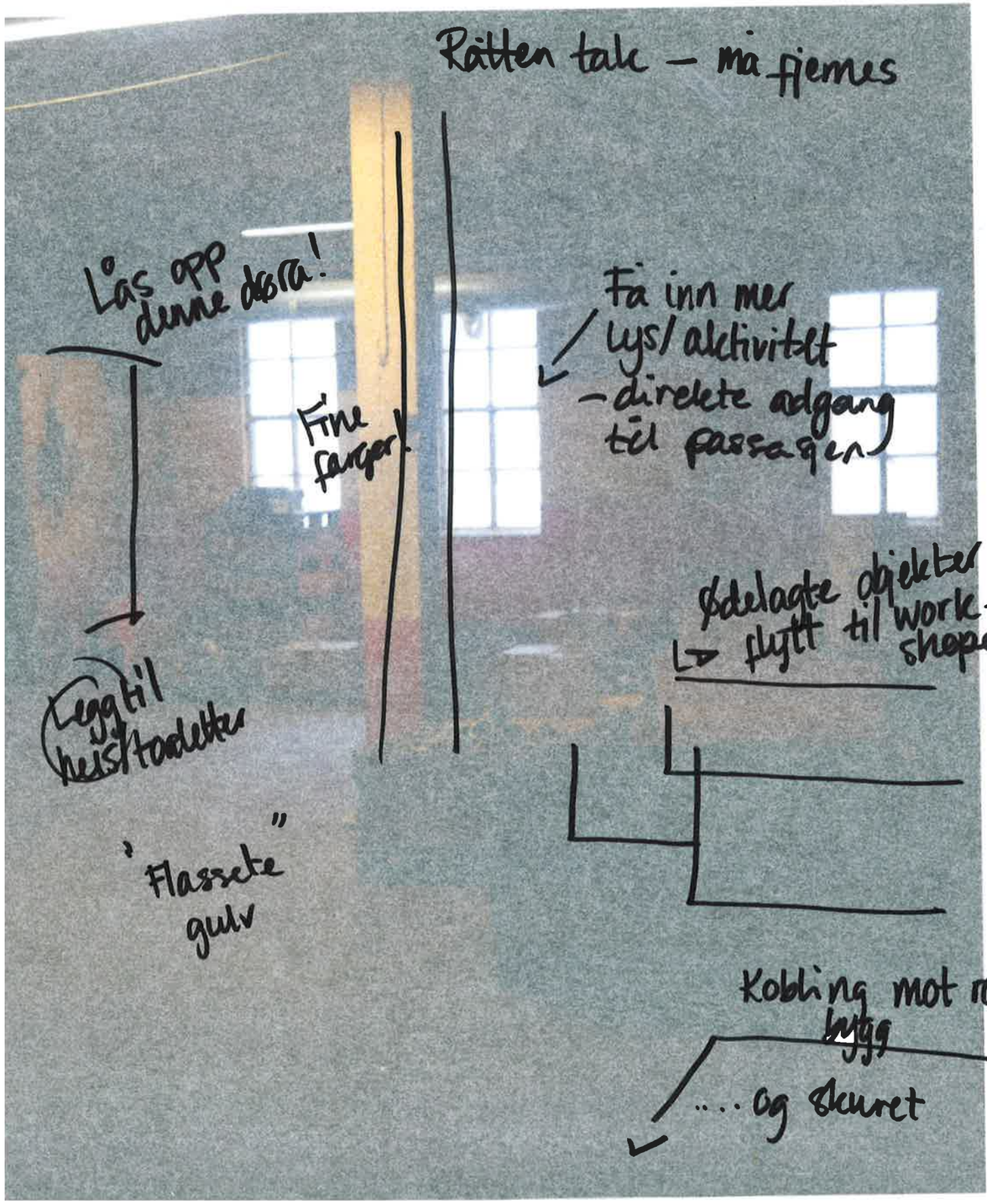


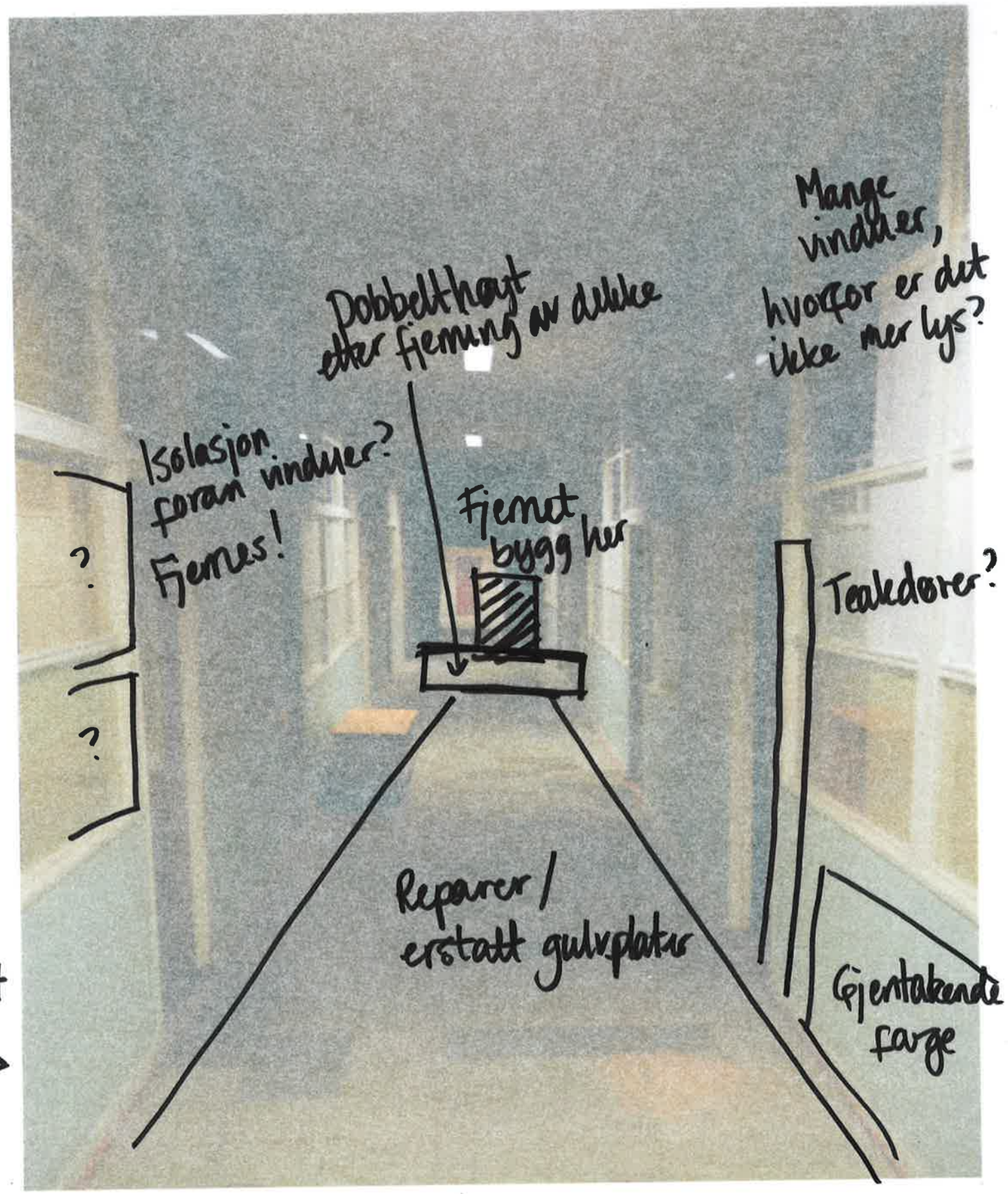
April

Mapping the *Composite* building

April

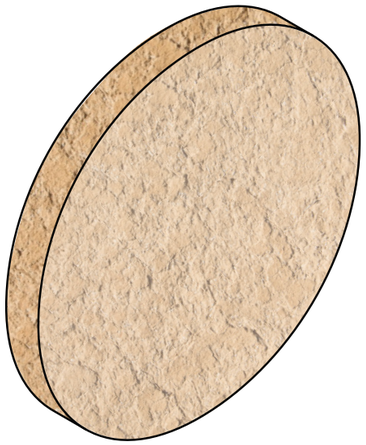
Mapping the *Composite* building - sketches





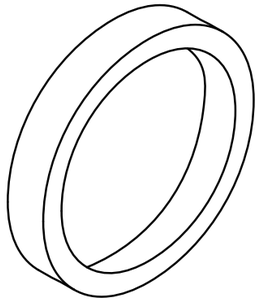
April

New use of leftover porcelain from the factory



New floors
Non-glazed burning plates

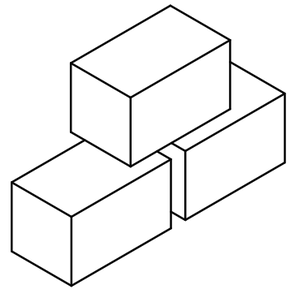
In production:
Used one time, then dumped in a container.



New walls
Forming shapes

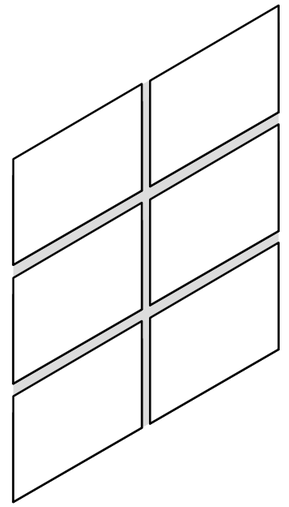
In production:
Used one time, then crushed and used as landfill.

Elements from existing production



New facades
Recycled porcelain from the factory (Ref. glazed porcelain brick)

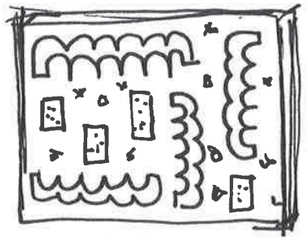
A collaboration between the artists and the factory to create synergies.

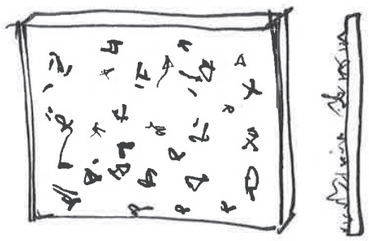


New facades
Crushed porcelain transformed to tiles.

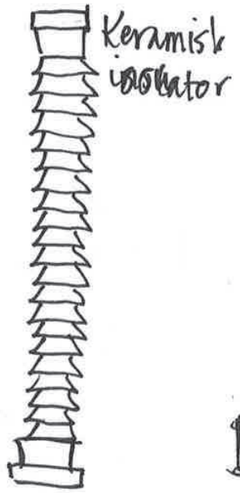
Elements based on crushed excess porcelain

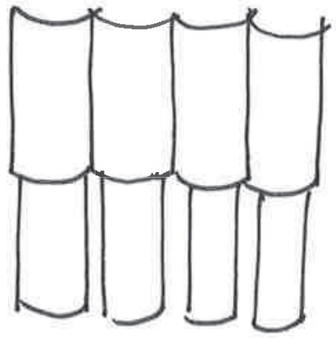
Terrazzo tiles
mixed with excess porcelain





Keramisk isolator

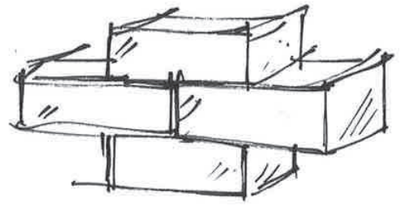




Hul isolator

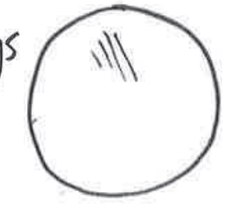
Ubrent steinplate

Porcelain bricks

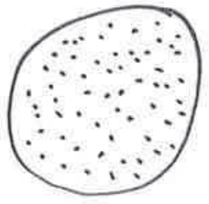


- Experiment
with different glazings

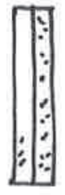
Glasert

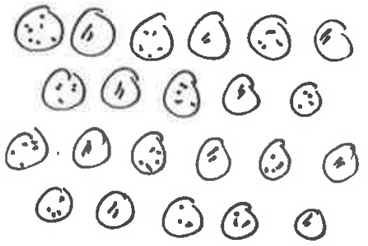


Vannsagd



5cm



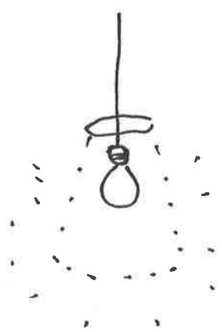


Think tank
Production workshop
Learning network

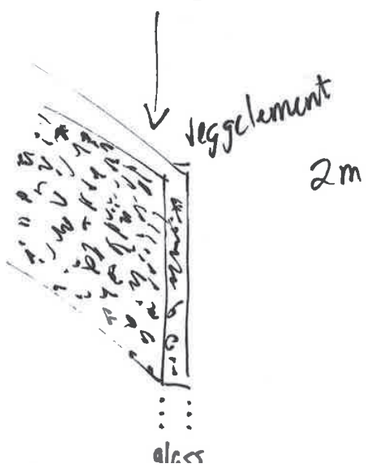
Isolator

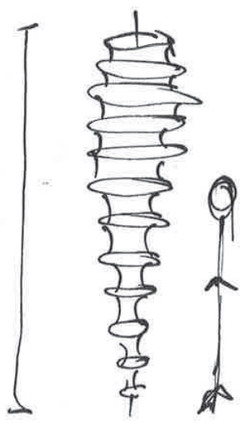
Keramisk hul

Glassisolator

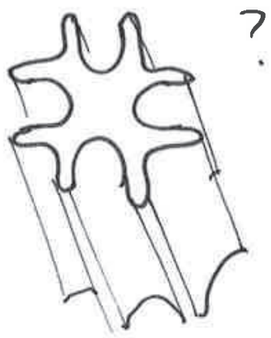


Interiørelementer



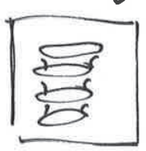


Sløyfer?



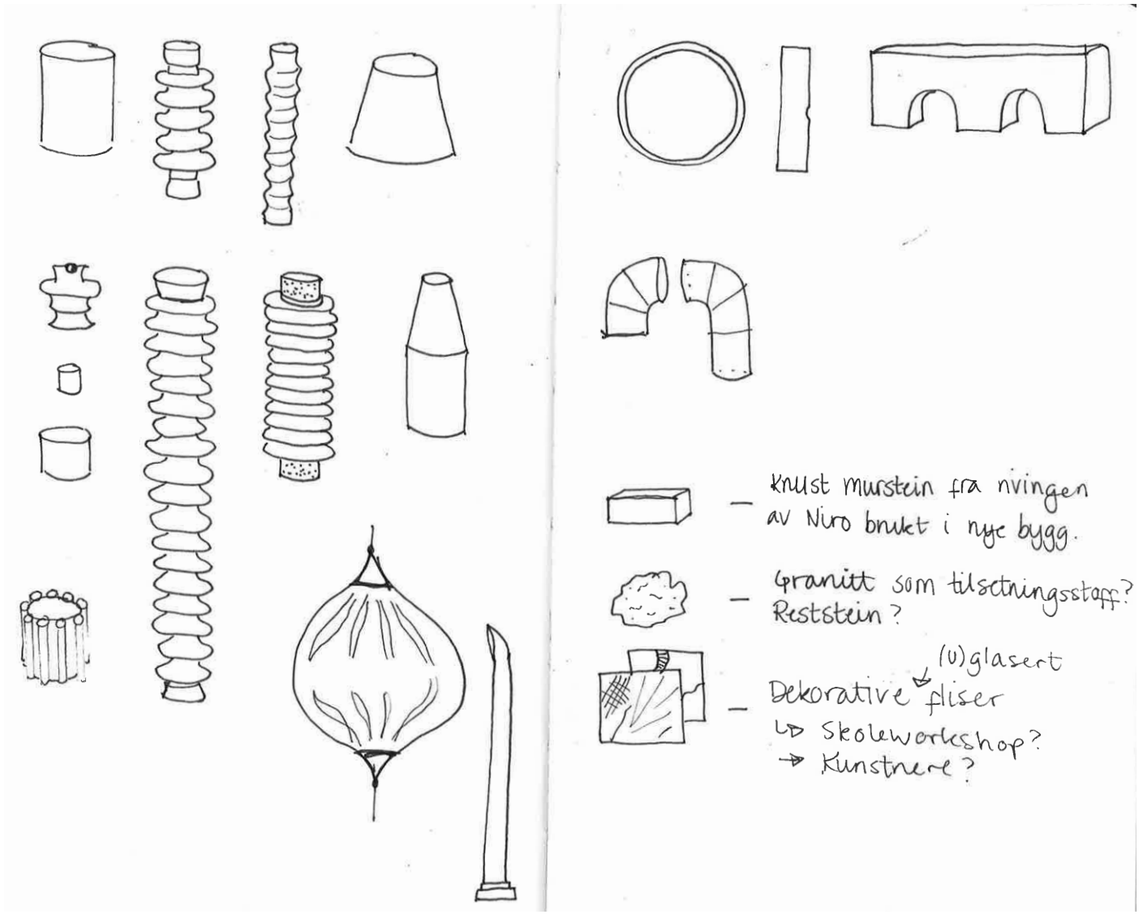
?

NTP:



Brun, grå, hvit

Sketches of different variations of use of excess porcelain.

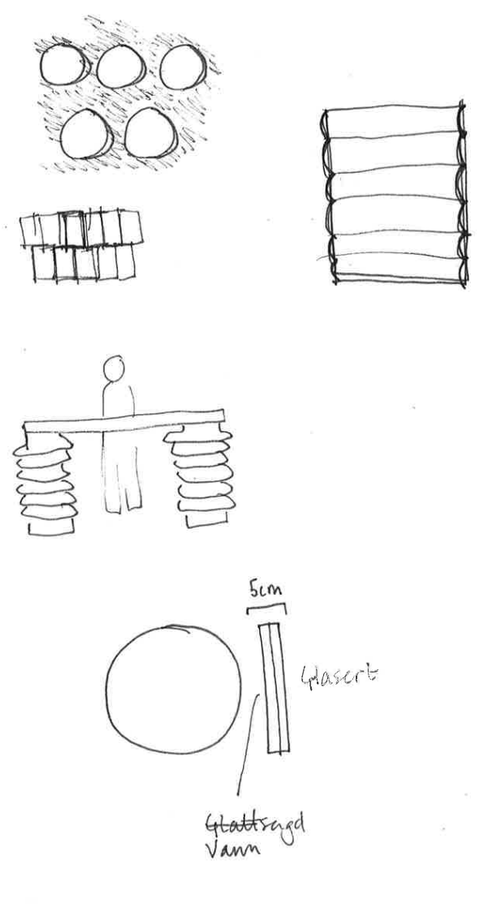


– Knust murstein fra rivingen av Niro brukt i nye bygg.

– Granitt som tilslagsstoff? Reststein?

– Dekorative (U)glasert fliser
↳ Skoleworkshop?
→ Kunstnere?

Sketches of different variations of products produced at the site.



Live in - live with - live on

- Global - mass-production
- Local - ~~at site~~ workshop

Customers

- Customize their own products and experience the production line

– Porselensmurstein brukt i fuktige områder, type svømmehaller

Raw - Silotårnet, hallene under bakke

Shed - stort og fleksibelt
lucavolumet tas vare på

Comp. - Kontorlokalene, universell kom.
manglende trapp / heissjakt

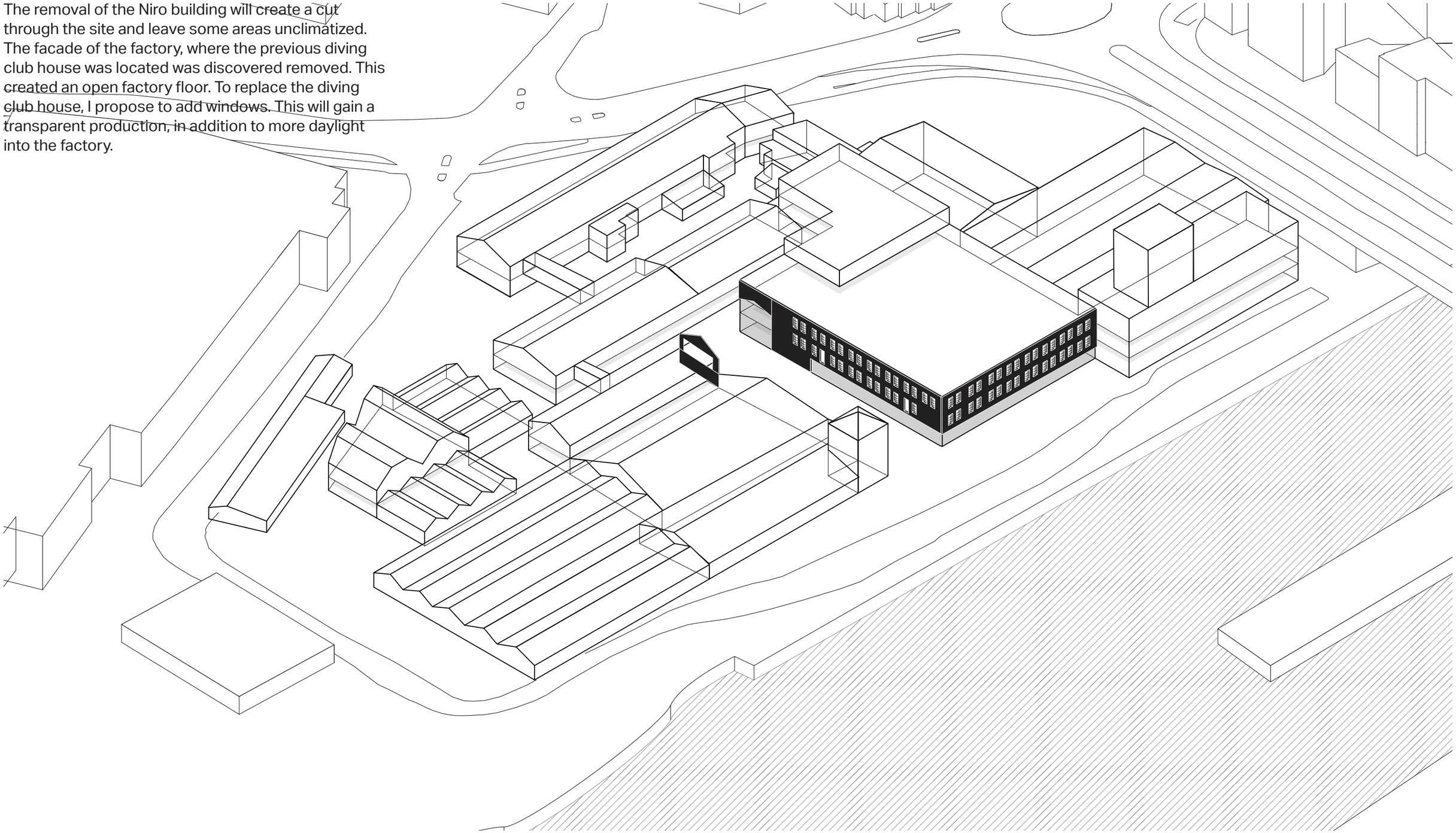
Sketches of different variations of use of excess porcelain.

April

Material intervention
Start of the Artery - a cut through the site

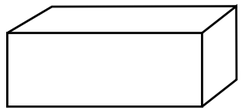
Cutted facade
Removed light walls

The removal of the Niro building will create a cut through the site and leave some areas unclimatized. The facade of the factory, where the previous diving club house was located was discovered removed. This created an open factory floor. To replace the diving club house, I propose to add windows. This will gain a transparent production, in addition to more daylight into the factory.



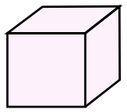
April

Material intervention
Cut replaced by porcelain bricks



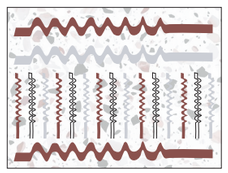
Glazed porcelain bricks

Raw kaolin and qvartz mixed with a glaze designed by the artists.



Raw clay block

Unglazed and sintred porcelain used element around openings.



Insulator terrazzo

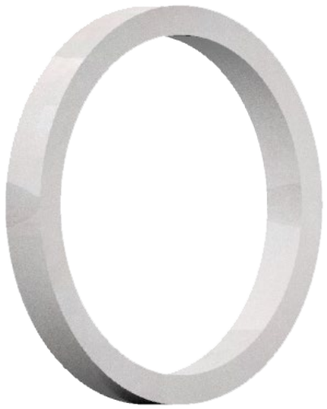
Cutted and/or crushed insulators used in tactile tiles.

April

New use of leftover porcelain shaping forms from the factory

Glazed "lid"

Sawed "lid"



Glazed "belt"

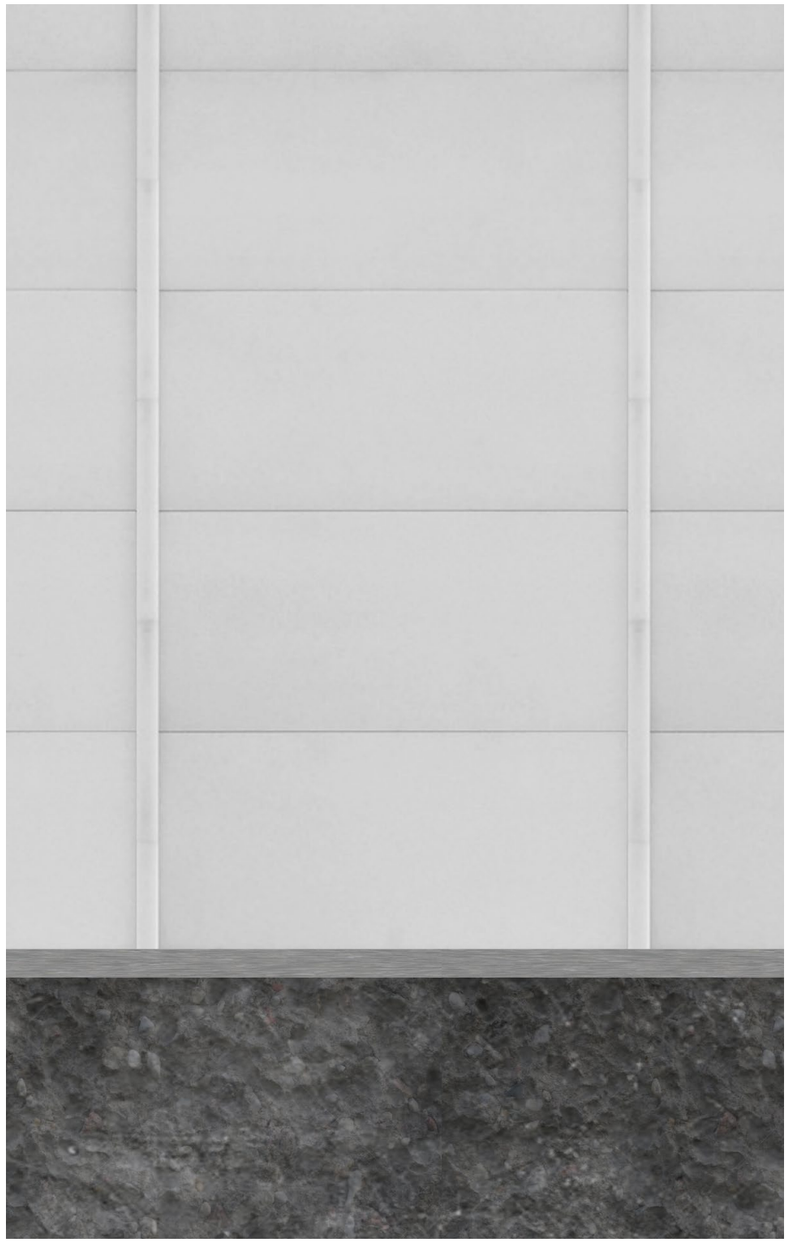
Shaping forms with a mixture of porcelain and stones. Thrown away after use.

Illustration of the new communcation tower.

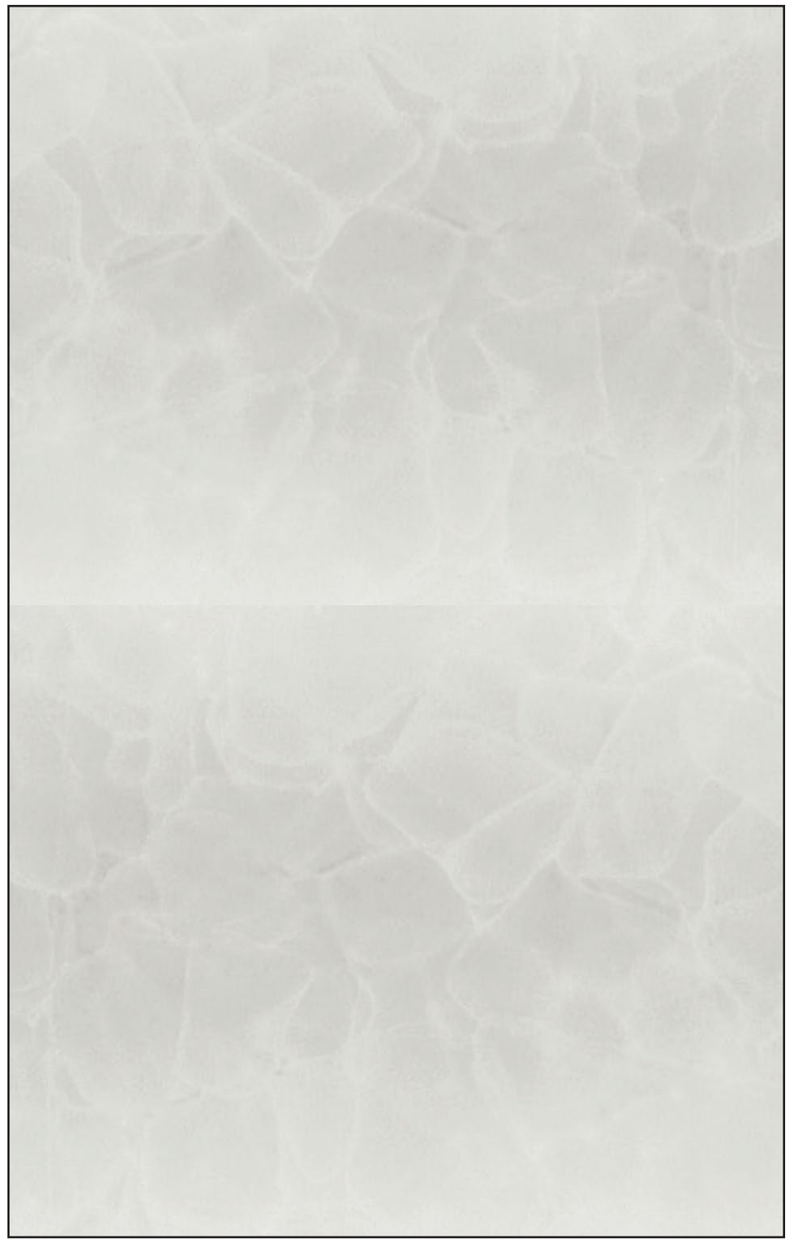
April

New use of crushed porcelain into tiles

Drawing 1:200:
Short section of the Gallery.



Facade detail 1:50:
Contrast between rough concrete and fine porcelain.



Tile detail 1:1:
Extraction of kaolin createas a translucent look

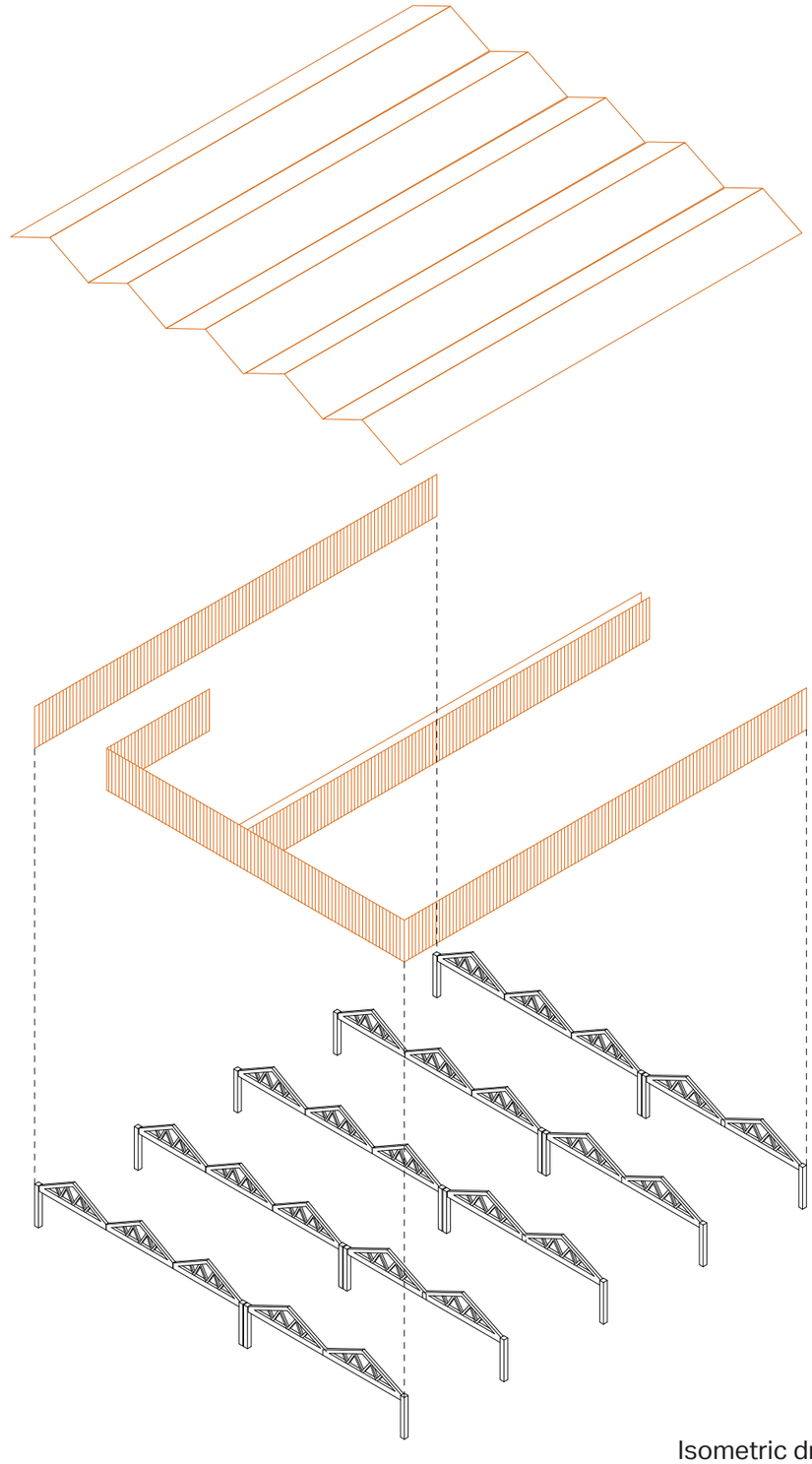
April

Removal and new use of removed material creates a flexible shed

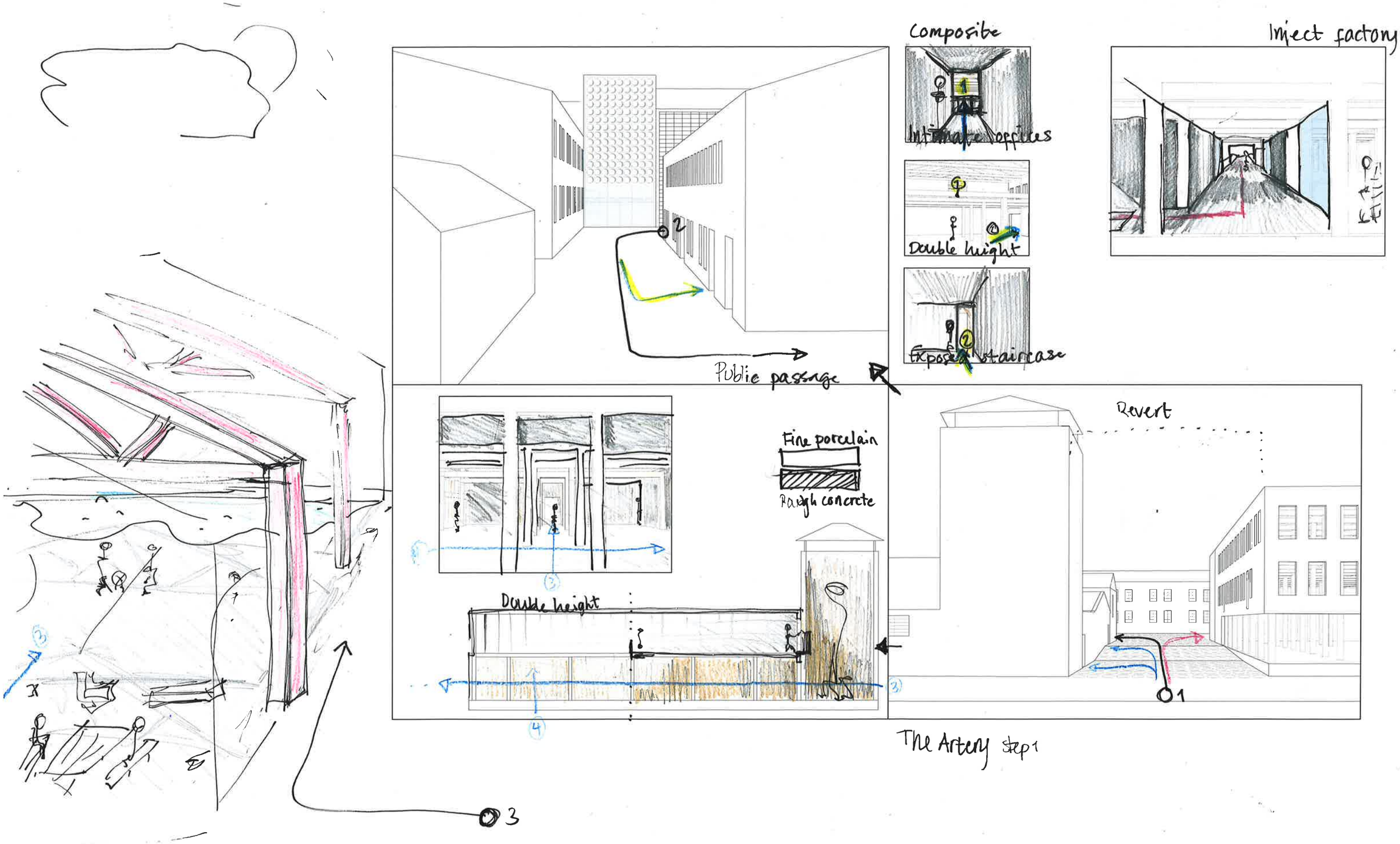
The shed is currently occupied by NTP as a storage shed, and it also hosts a flea market storage. The facade is poorly maintained, but the structure is intact.

The site of the shed gets overflooding everytime it is heavy rain, and that is a danger for the different products stored there. Therefore, the administration have decided to remove the shed, and move its storage space to the Kitteriet building.

I propose to add the removed facade sheets (those sheets which are intact) and construction to a material bank. In that way it can potentially be used in future projects.



Isometric drawing of the storage shed's structure.



"Cartoon" drawing of the journey of *the Artery*