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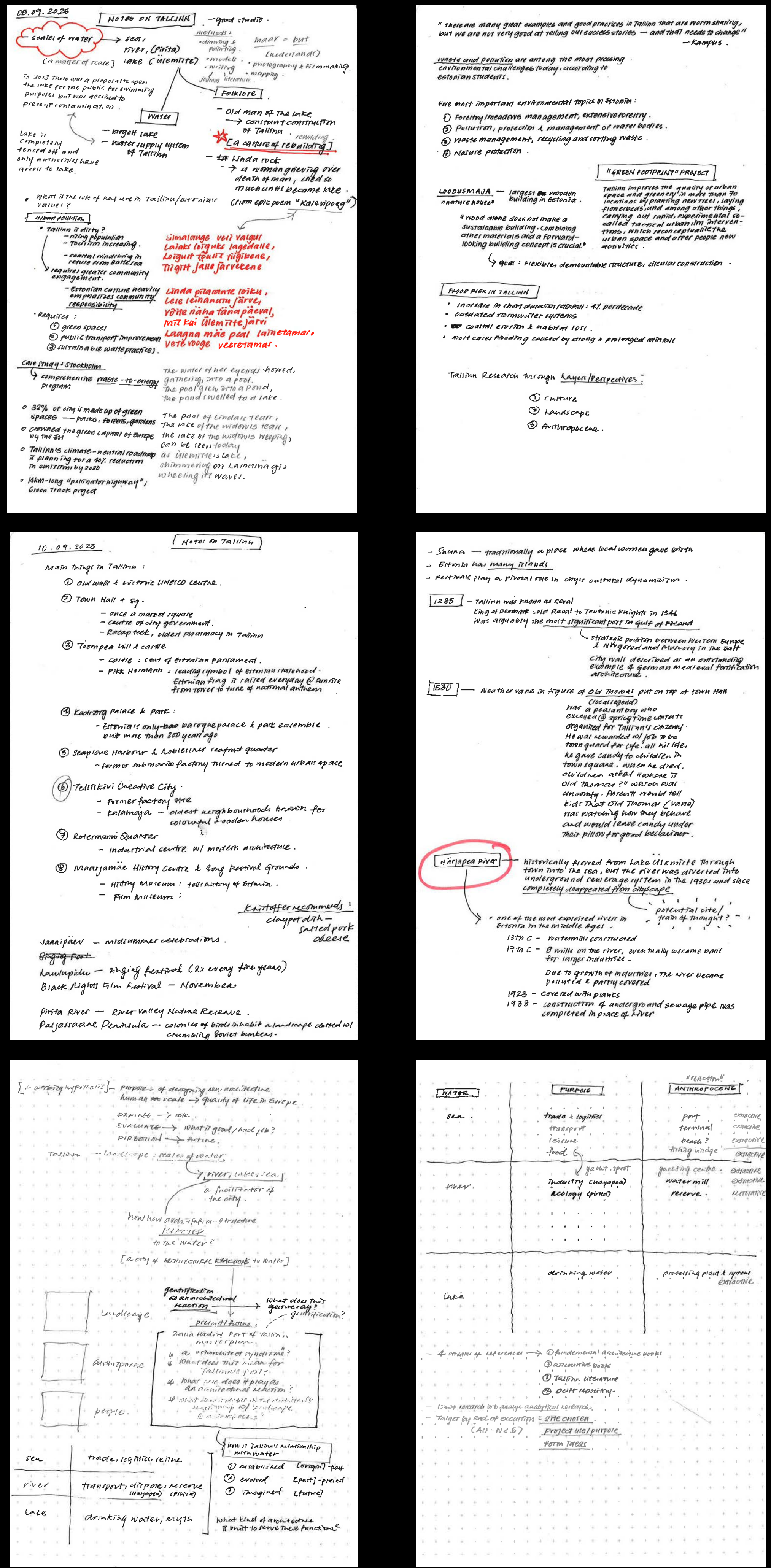
The River and Its Industrial Ghosts

Tallinn, Estonia

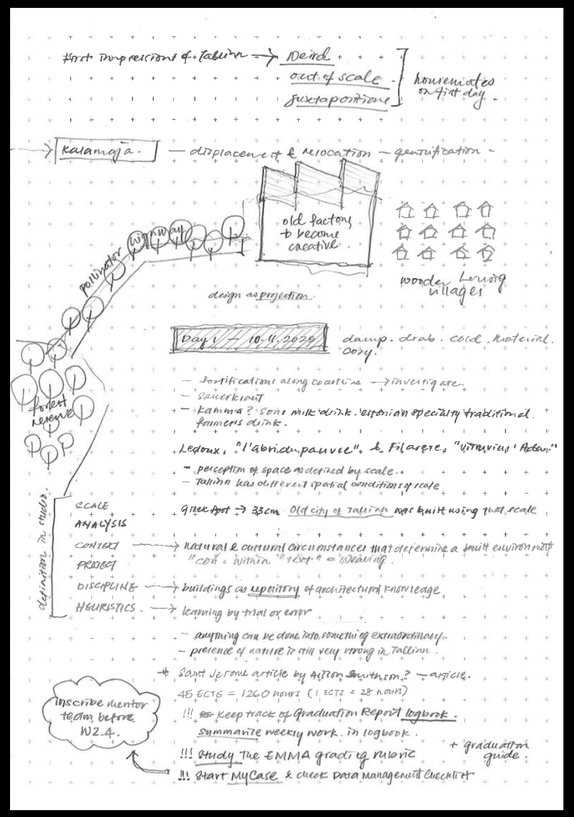
A Matter of Scale *Methods of Analysis and Imagination*
Logbook

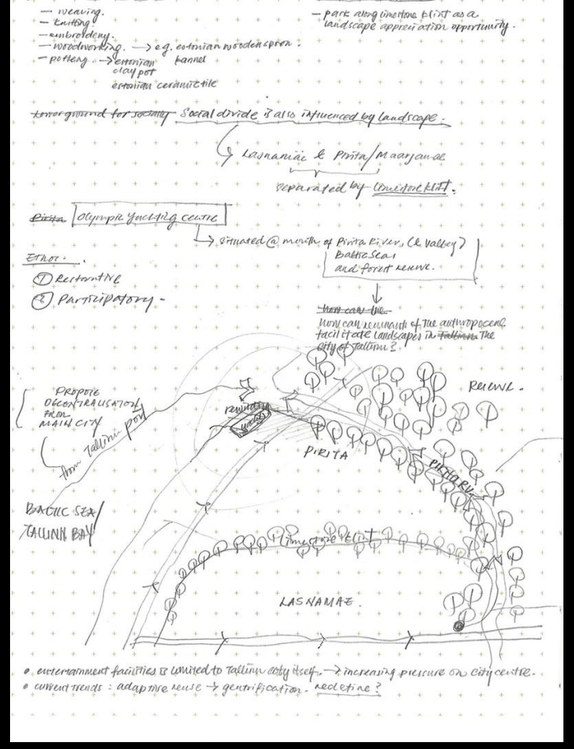


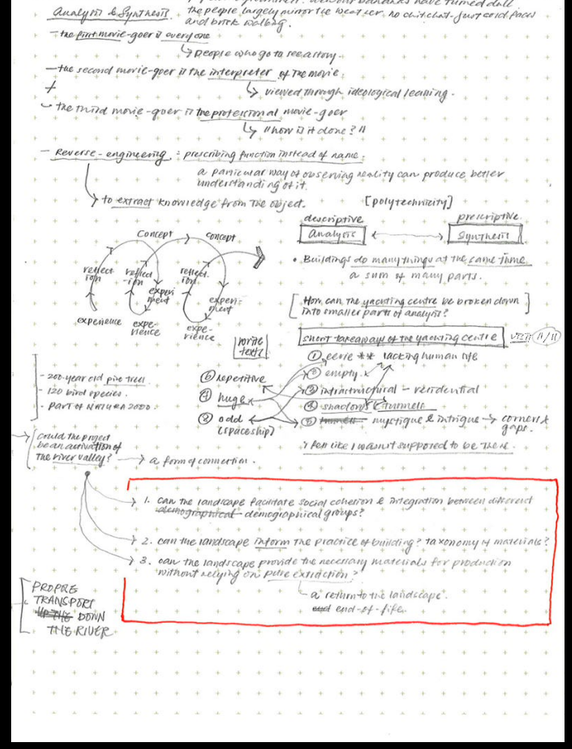
01
Excursion

(W2.1-2.2)

(Left) Some preliminary research notes on Tallinn and the theme of the studio which were made before the excursion and formal start of the graduation studio. Initial interest on the varying scales of water prompted research into connotations of these water bodies, ranging from environmental impact, functional prospects, to folklore. This pre-excursion research brought the River Harjapea to my attention.

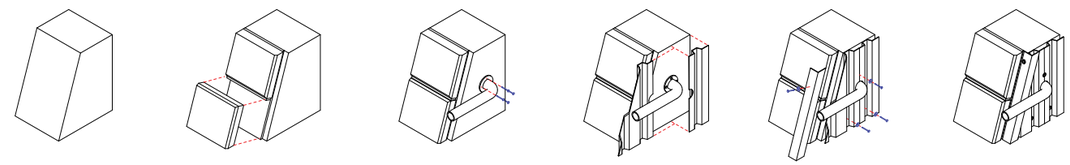






The first week focused on the selection of a building in Tallinn as a precedent study, whereby, in pairs, a series of sequence diagrams had to be made of a particular joint detail of interest from the studied precedent.

Due to a shared interest in the water, Balint Duma and I chose the Olympic Yachting Centre in Pirita as a suitable precedent to analyse. We looked into the balcony railing, as it seemed rather joyful and arguably injected a certain degree of "human-scale" to an otherwise out-of-scale building.



A reciprocal relationship between building and landscape:
the case of the Olympic Yachting Centre in Pirita

One of these “reactions” which presents a strong relationship between the building and the landscape is the Olympic Yachting Centre located in Pirita. This unique relationship of reciprocity between these two actors became a starting point to delve into this thematic typology in Tallinn.

The Olympic Yachting Centre was constructed for the Moscow Summer Olympic Games in 1980, by a group of architects: Henno Sepmann, Peep Jänes, Ants Raid and Avo-Himm Looveer. Despite the event being primarily held in Moscow, Tallinn, at the time still a member of the Soviet Union, was selected to host the sailing events of the Olympics.

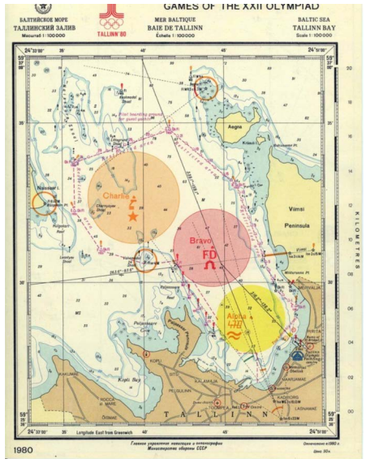
This presents the first point of landscape-building reciprocity -- landscape as function. it can be simply put that the Olympic Yachting Centre was constructed purely because of its immediate landscape. The reason why Tallinn was selected as the host of the sailing events was entirely dependent on its geographical construct. It simply could not be held in Moscow as it is a landlocked city. Meanwhile, Tallinn has access to the Baltic Sea via Tallinn Bay, and its form ensured that it was essentially a sea with ideal, protected conditions to host the event. The building was thus built directly next to the sea, and also at the mouth of the Pirita River -- as some events favoured the conditions of the river.

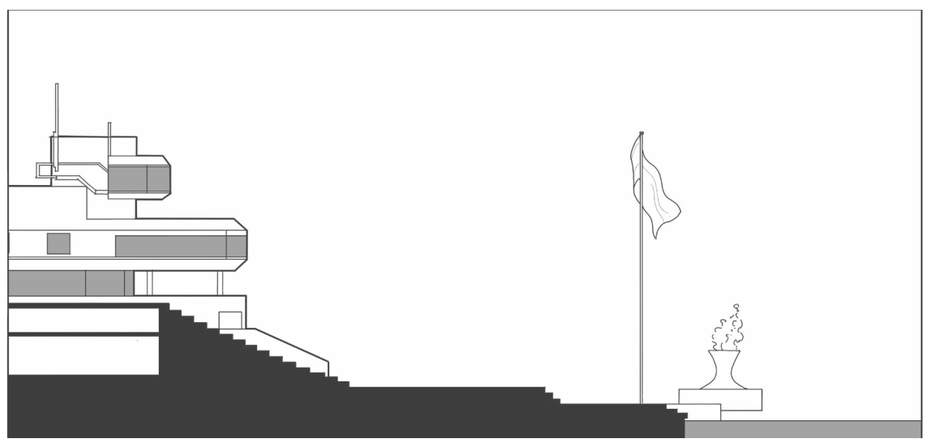
There is also another aspect of this reciprocity to be considered: landscape as influence.

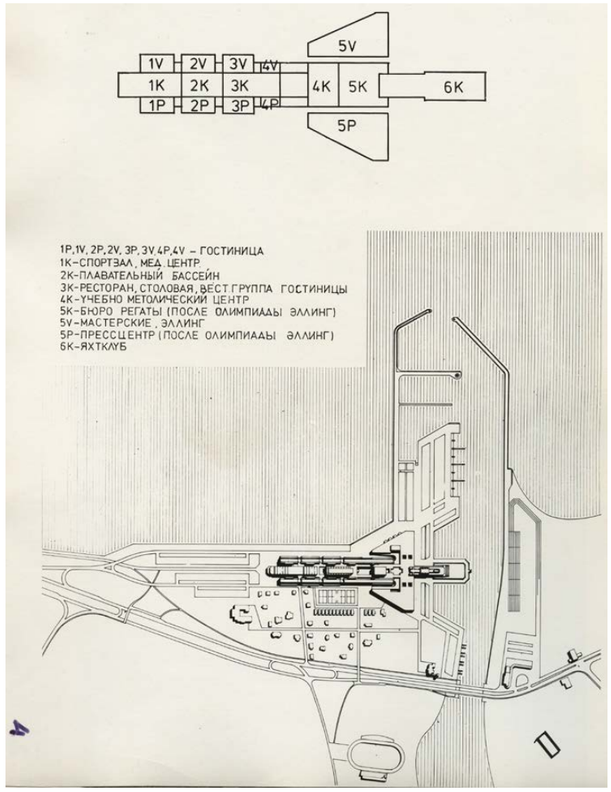
Upon reviewing archival material, what stood out was the recorded opening ceremony of the 1980 Olympics. Due to the games being held in Moscow and Tallinn, the opening ceremony was split across two days -- with the main opening ceremony being held in the Grand Arena of the Central Lenin Stadium on 19th July and a specific opening ceremony held at the Yachting Centre on the 20th.

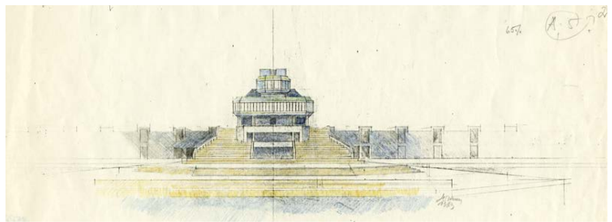
Thus, both the sea and the building became activated as a stage for the opening procession. The sea becomes more than a purely functional entity at the site, but rather an actor actively influencing the perception of Tallinn -- and by extension, Soviet-Estonia -- to an international audience. Certain design gestures of the Yachting Centre are surfaced, with the staggering steps facing the sea-stage becoming seats for the audience.

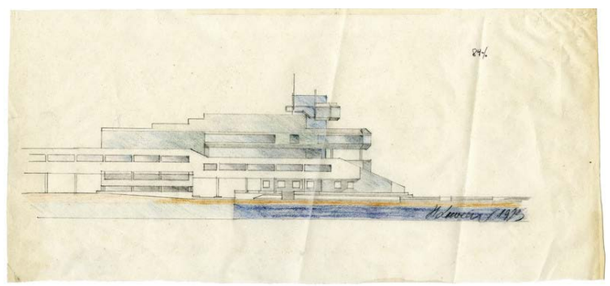
It also explains the monolithic nature of the Yachting Centre: the building wasn’t designed at the scale of the human, but rather at the scale of the vast Baltic Sea.











(Top) The second week involved a social scales exercise whereby insights were obtained from three encountered persons in Tallinn and translated into a map and a written text each. Due to a shared interest in the sea, Balint Duma, Tjitske Henstra and I thus decided to scout out Noblessner marina, eventually stumbling across the port master (Tonu), a cafe barista (Eva), and a young mother (Maria).

Notes of interest included a lack of public spaces in Tallinn which, if more introduced, could contribute to a livelier marina. Older generations might still hold an aversion towards public spaces due to avoiding past communistic tendencies during Soviet rule, and that Estonians enjoy social gatherings centred around food.

(Right) In the hairy drawings workshop conducted by LLRRLLRR, a series of rapid prompts had to be answered by an annotation on a map of Tallinn.

What was perhaps the most crucial takeaway from this excursion was independently tracing the path of the River Harjapea through the city of Tallinn which took place over a couple of days of walking. Below is a short excerpt of this encounter:

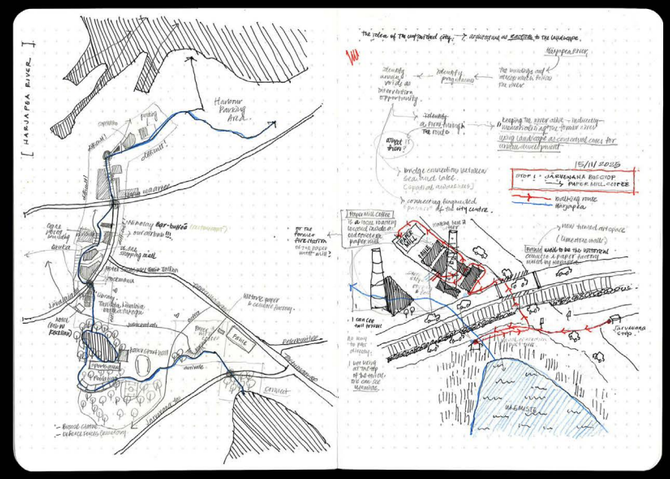
The forgotten river.

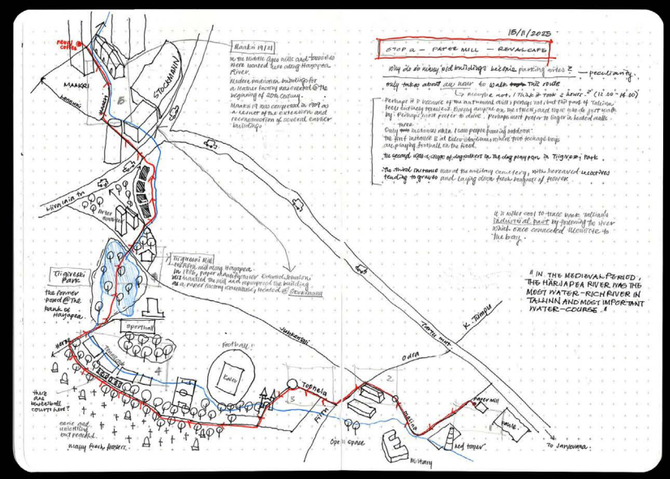
This lens then led to the realisation of the past presence of a river which once ran between Tallinn Bay and Lake Ulemiste, the Härjapea, which was what drove the independent contextual analysis for a few days during the excursion. Mapping was done to further support the qualitative observations obtained on site after several walks along the path of the former river.

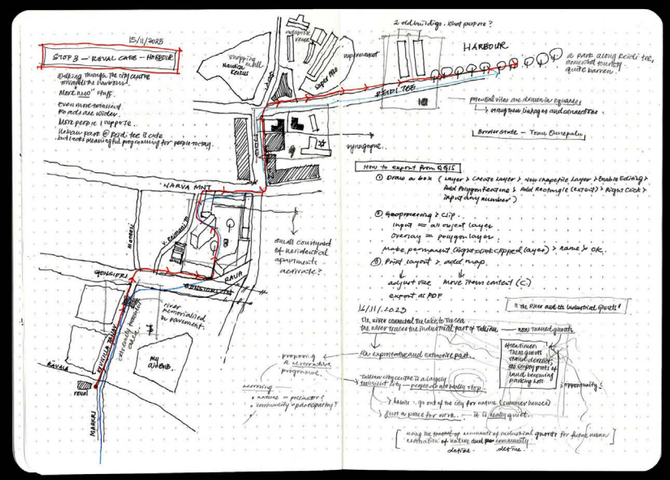
The river also revealed the industrial history of Tallinn and the ways in which the Harjapea River became “lost” in the present-day due to industrial pollution, having little to no tangible evidence of this former river, with only its course traced in palimpsestic nature through parks, roads, and some residual buildings of that bygone industrial era on the surface.

It can be observed that some parts of the city line up with the river -- in particular the valley along the edge of the cemetery (now turned into tennis courts), Tiigiveski Park, along Maakri Street which continues onto Kivisilla Street -- and, at the very least, it explains why Jõe (lit. “River”) Street is named that. Little is perceptible of the river’s presence along the route, save for some idle information boards for the transient passer-by.

The lines become blurred closer to Lake Ulemiste and Tallinn Bay. A main highway and railway run along the lake which makes following the route of the original river rather difficult, and streets do not go along the path until one reaches the cemetery. Towards the bay, one can walk along Reidi Street when emerging from Jõe Street to roughly approximately follow the path of the river, but whereabouts it once discharged into the sea is imperceptible.

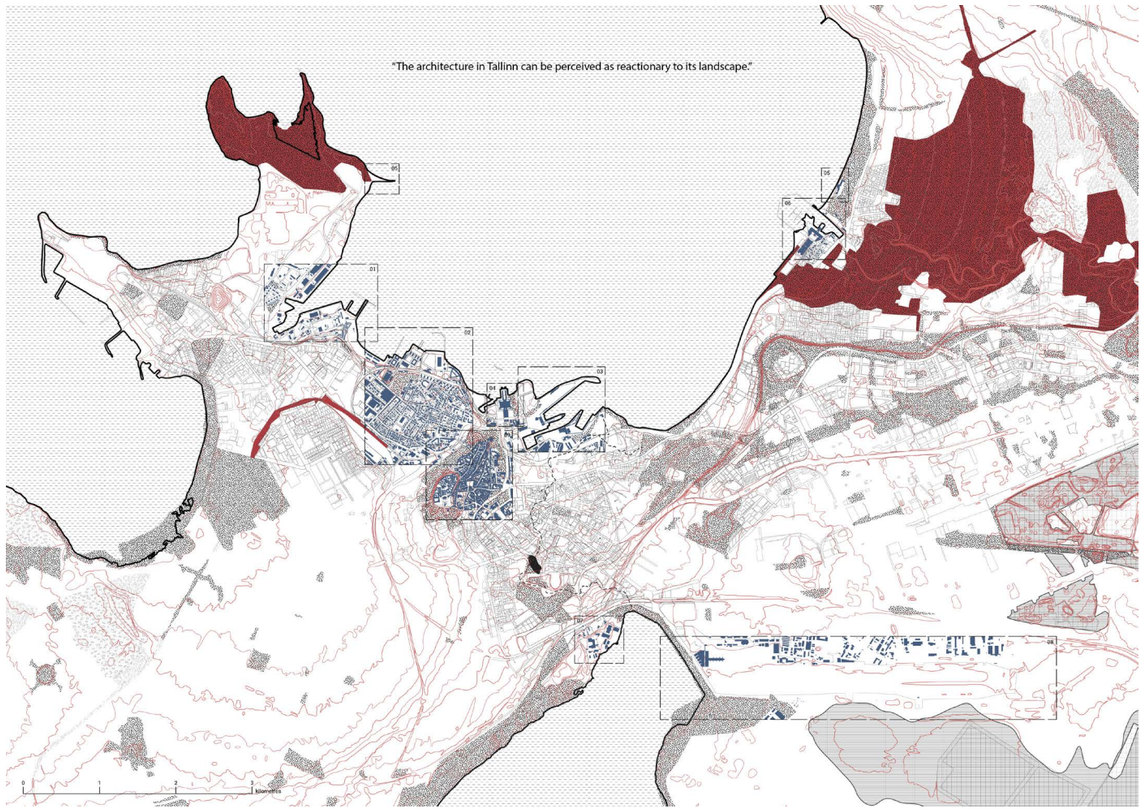






02
Formulating the Assignment

(W2.3-2.5)



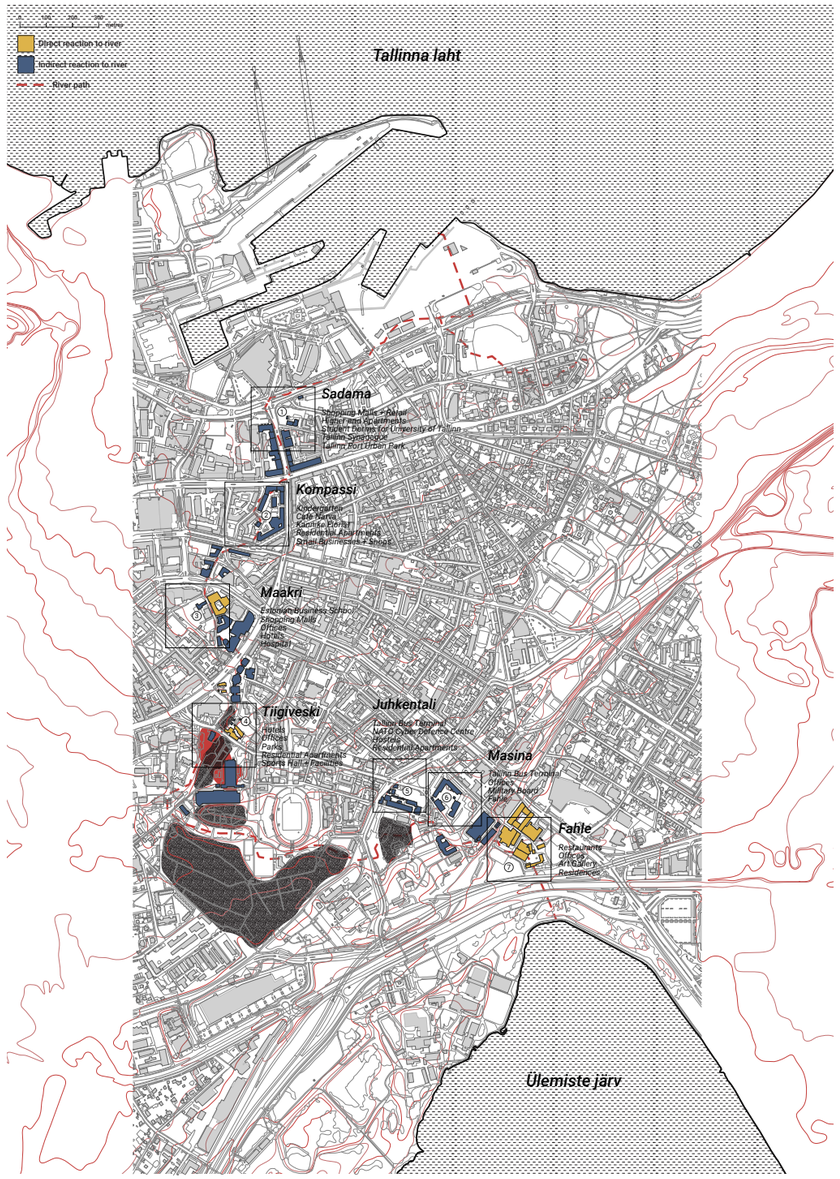
Post-excursion, my first endeavour is to retrace my steps and formally surface my position and findings via a series of maps. Backed with GIS data, the relationship between Tallinn's built and geographical landscape is framed as a series of architectural "reactions", making a catalogue between landscape and anthropocene (right).

This map was later zoomed in to trace the River Harjapea, through archival information and notes made on the excursion.

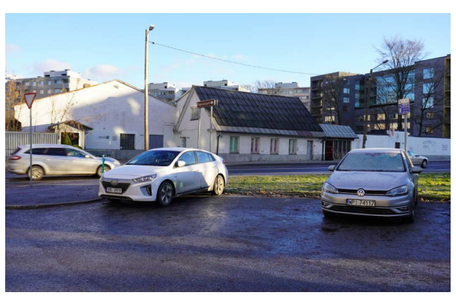
landscape	*function*	*anthropocene* *extractive ; restorative*
sea	leisure sailing fishing trading transport	beach marina, yachting centre fishing village *kalamaja* port harbour passenger terminal
river	sailing industry ecology	yachting centre mills nature reserve *pirita*
lake	drinking water transport	processing plant airport
hill	administration defence	parliament, palace *toompea* old town walls + towers
limestone (klint)	construction	quarry
forest	ecology	nature reserve pollinator highway

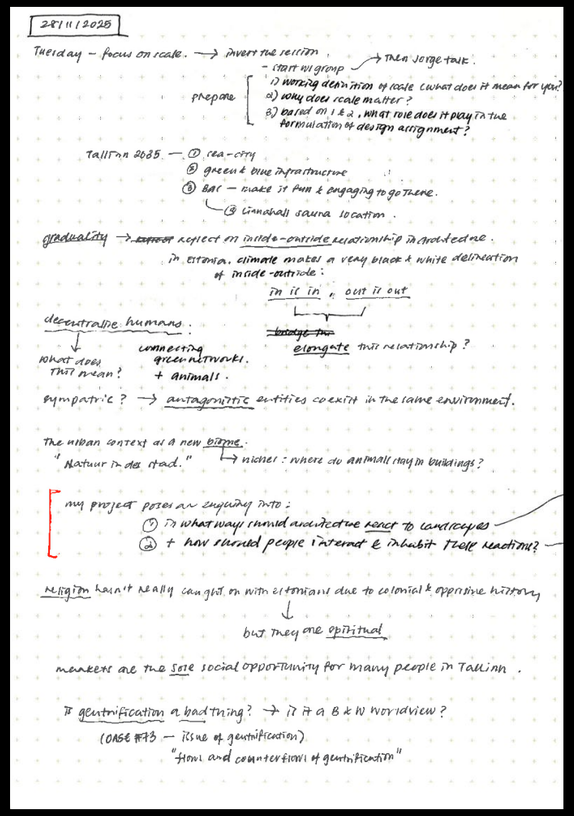
The endeavour of tracing the river is made possible through a projected course from the 19th Century overlaid onto the present-day map (see left). It was intriguing to see how buildings, streets, and the ground condition still largely follows the course of this river, building upon a palimpsestic narrative in Tallinn's urban condition.

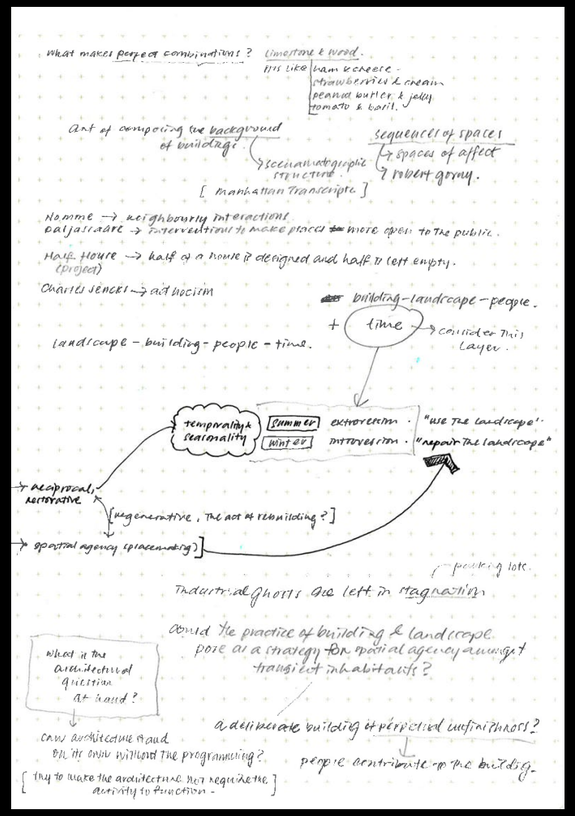
"Reactions" to the river are highlighted in blue.

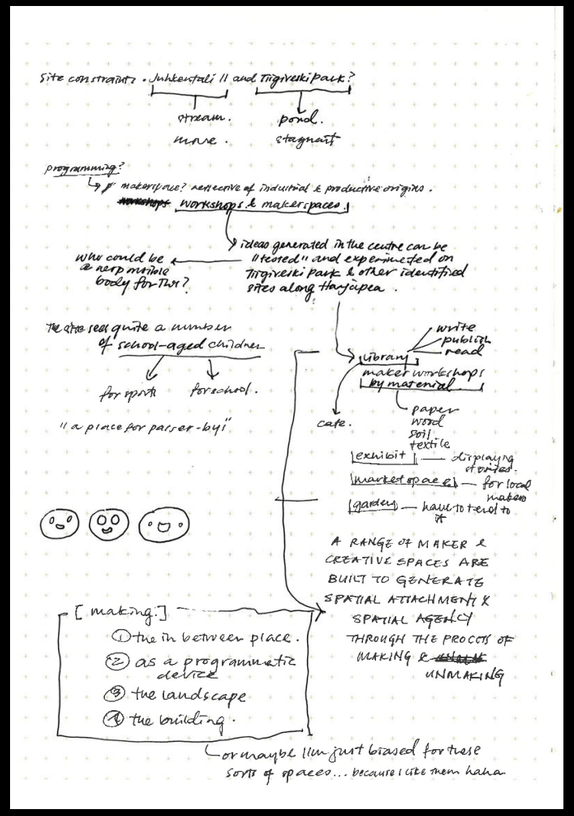


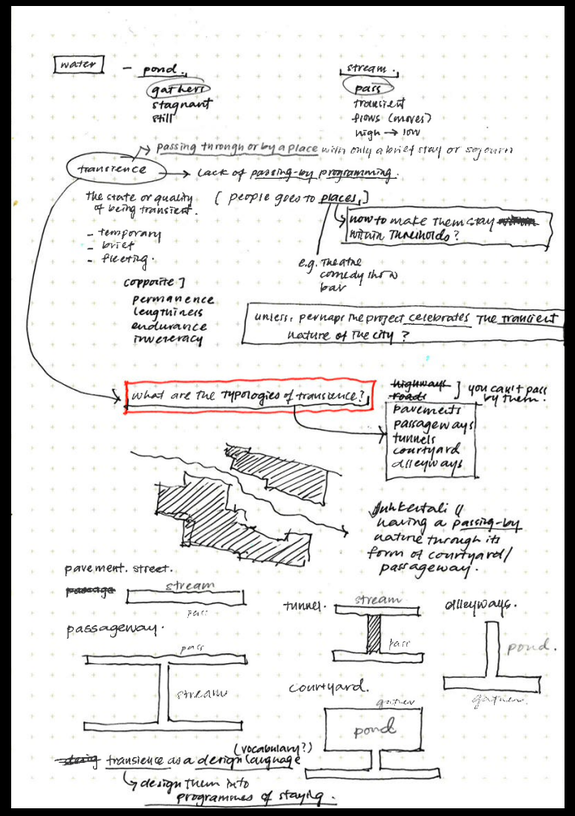
These reactions were then separated into direct and indirect reactions, highlighting present-day remnants of the industrial period when the river was still present in Tallinn. Yellow buildings are mostly mill buildings from this bygone industrial era. The condition of empty carparks and unused buildings along this path became site opportunities. My interest drew me to the site at Tiigiveski, which is a protected but currently unused paper mill.



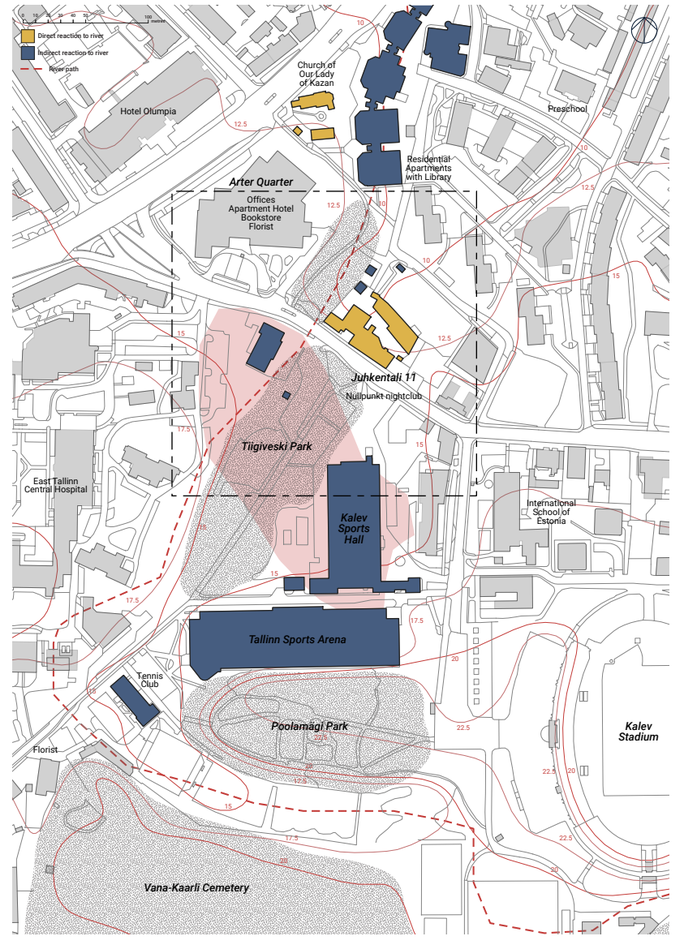


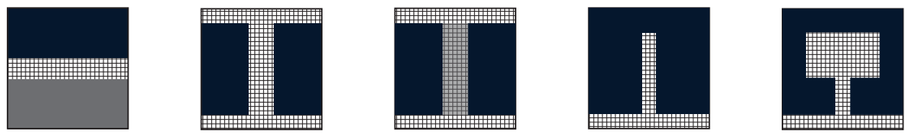






Thoughts and internal notes largely focus on the formulation of the design assignment, between formulating the project's driving concept and understanding the site at Tiigiveski.

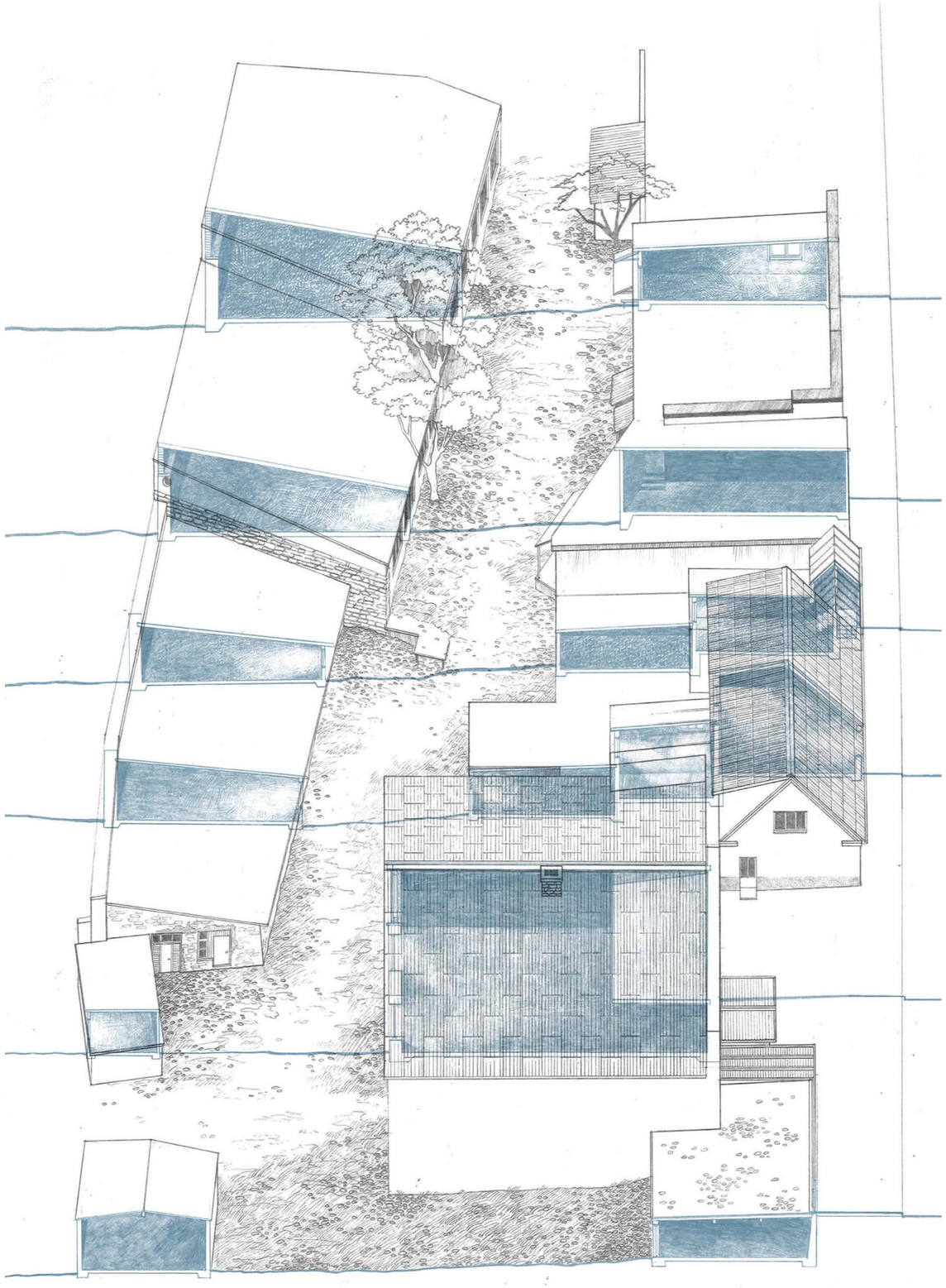


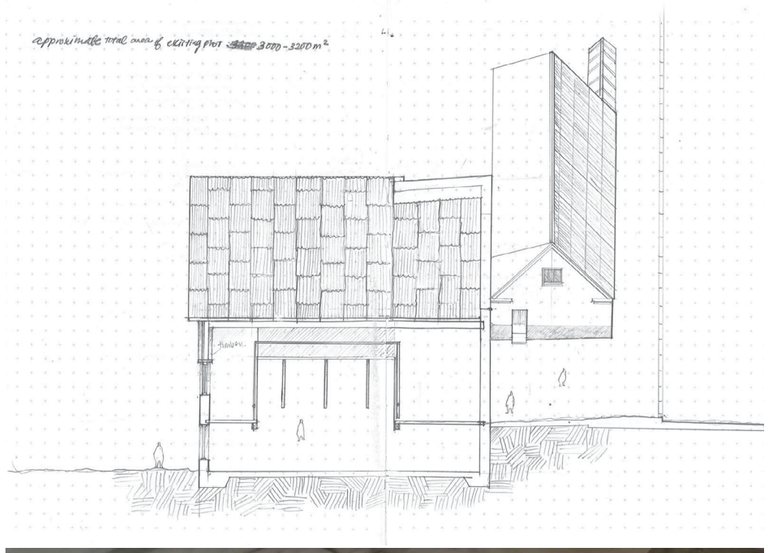


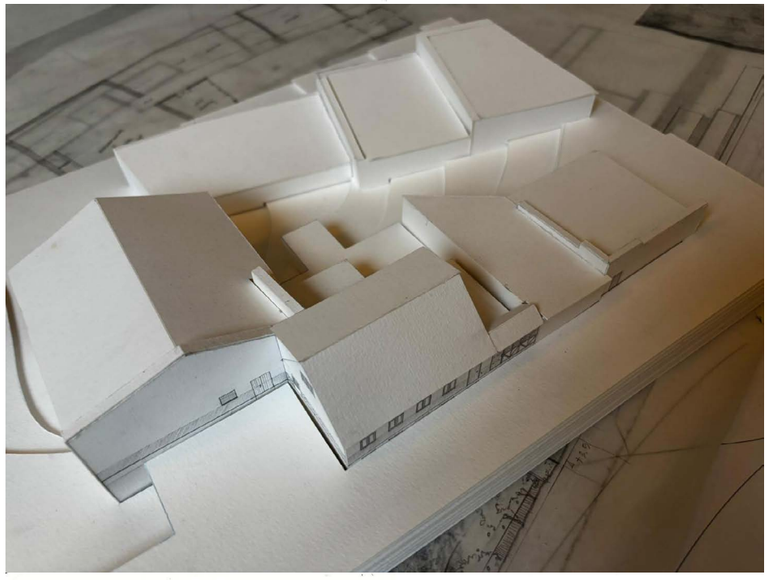
street. passage. **tunnel.** alley. courtyard.

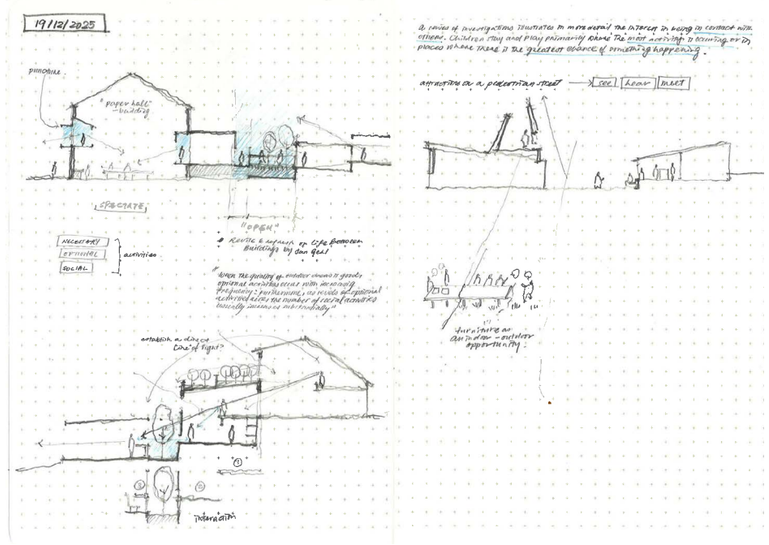
03
Preliminary Design Development

(W2.6-2.10)







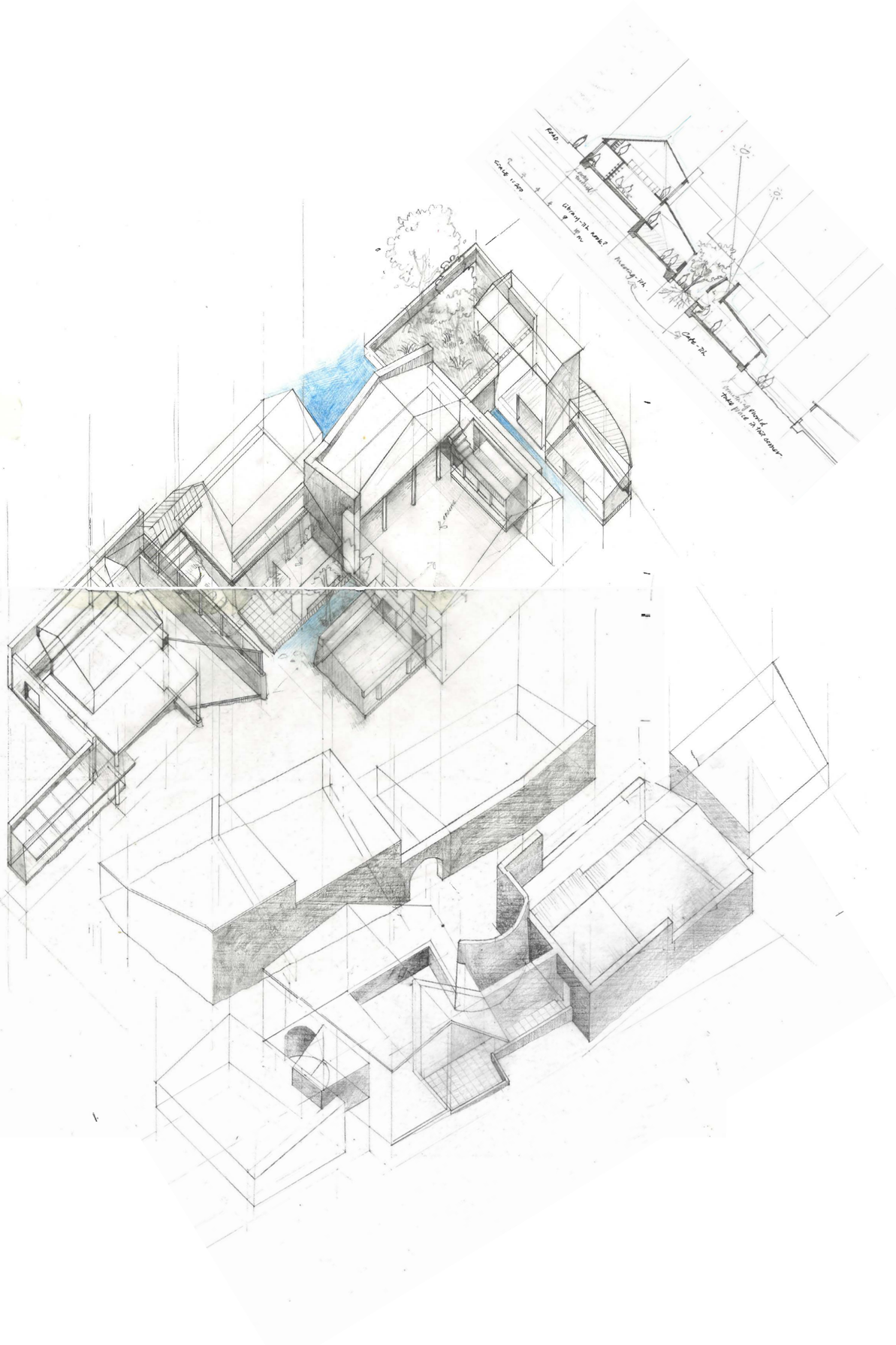


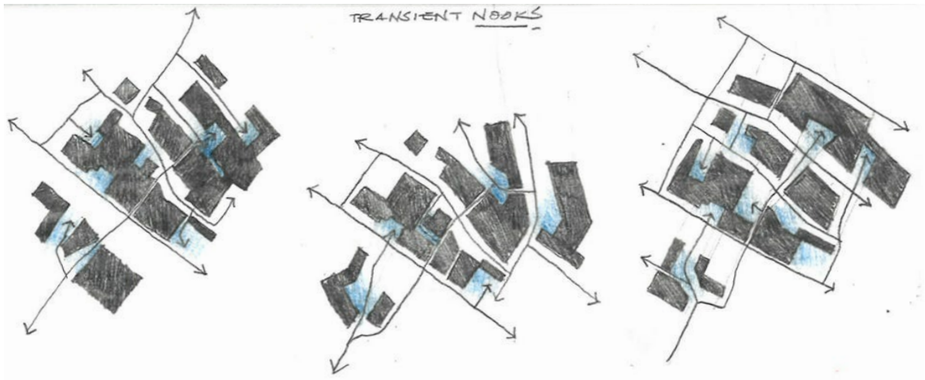
W2.6

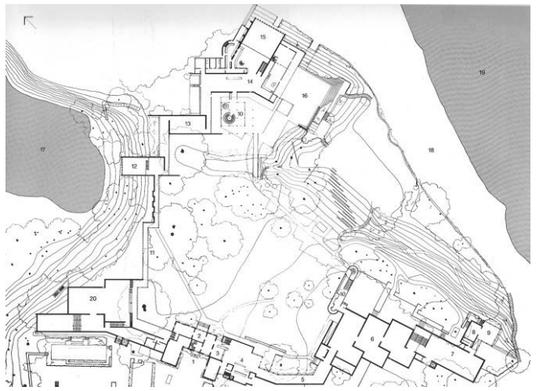
The site at Tiigiveski is further analysed through the method of tracing. Due to the subtle topographical differences still present at the site, a paper model was constructed to understand the building as it currently sits on the ground.

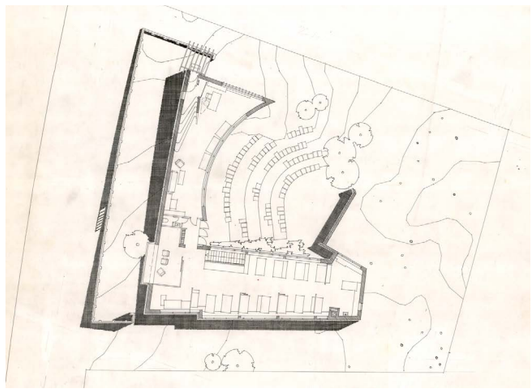
A series of speculative sections were then drawn based on this volumetric model. Floor heights were drawn based on speculation derived from positions of doors and windows. The drawings served as a strategy to not only capture the site's formal construct, but also its atmospheric condition.

These sections enabled the basis of working towards a design, by iterating spatial relationships and relationships between ground and space.









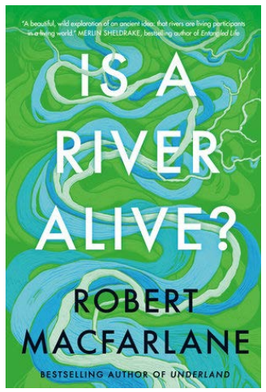
W2.7

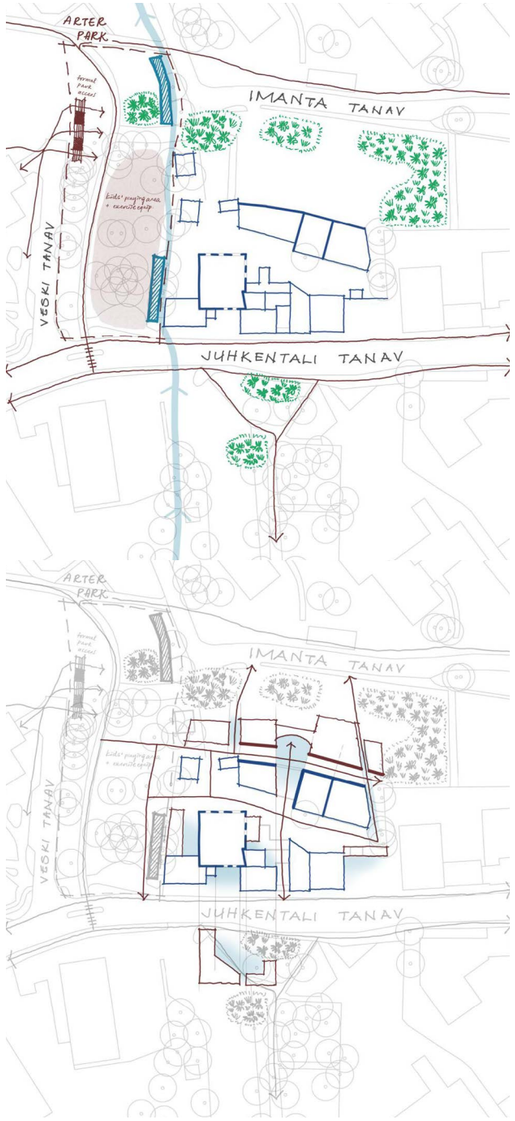
Initiated the growing drawing, which is an axonometric projection of the site acting as a basis to test design ideas in a volumetric approach. The initial approach was to play around with the paths of going through the site, and manipulating volumes to create nooks of gathering (see top).

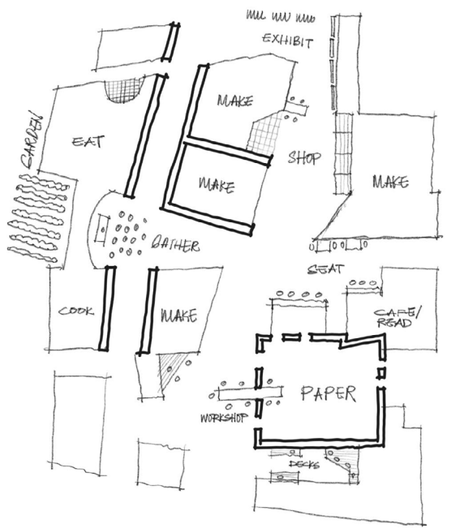
Looked briefly into a couple of precedents whereby the building is built with particular attention to the ground in its topography. The first precedent was the Louisiana Museum of Modern Art in Copenhagen. The building is similarly placed in a park. It also similarly building upon an existing building, Villa Louisiana. It reveals several strategies which might inform a methodology of building with the landscape: by preserving existing trees (and building around them), rejecting monumentality, playing with topography and variation of space, and using windows as frames of surrounding landscape. The plan reveals this intentional manoeuvring of built space with the ground and trees.

The second precedent was Studio Aalto, located in Helsinki. The plan reveals the integration of a functional landscape, allowing the topographical difference to guide the formal construct of space and becoming a temporal amphitheatre.

Started reading "Is a River Alive" by Robert Macfarlane, who argues that rivers ought to be viewed as living, legal entities. Perhaps that could become the approach of the project, by treating the River Harjapea as a friend to be re-encountered.







W2.8

This week was focused on the writing of the report draft, which helped me to find ways to consolidate design ideas into a series of broad strokes for the sake of simplicity.

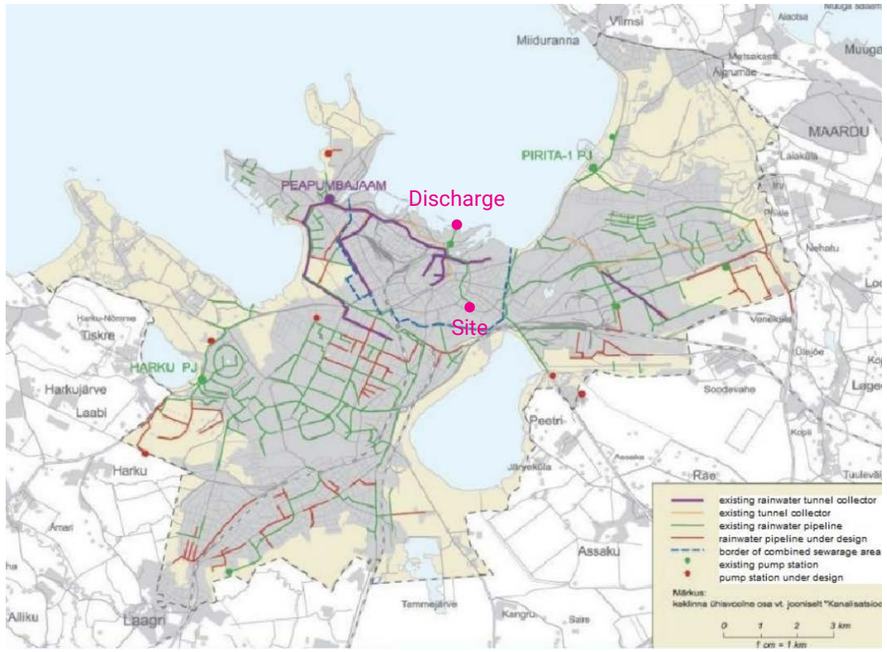
The initial idea for the project was built upon the idea of encounters due to the juggling of three scalar entities, which were the landscape, building, and pedestrian. Strategies were thus built upon 1) the encounter between the river and the city (daylighting River Harjapea), 2) the encounter between building and landscape (manipulating the existing buildings to coincide with the ground), and 3) the encounter between pedestrian and place (the creation of nooks and spaces for in-between gatherings).

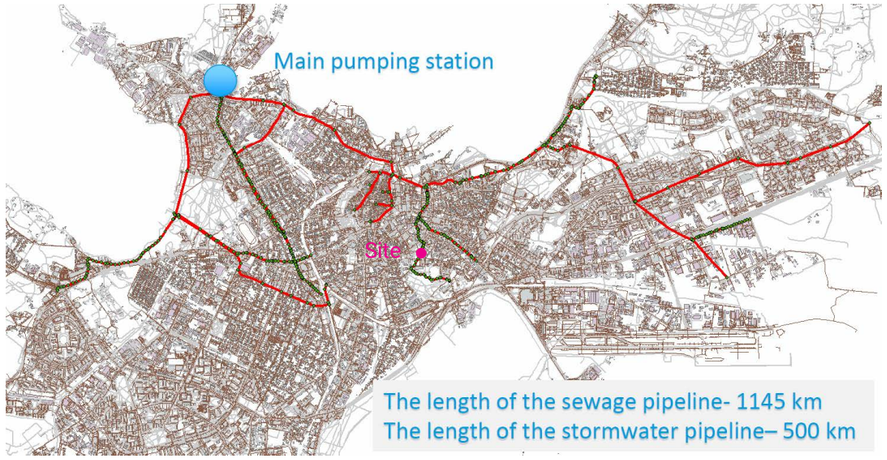
Overall, I felt that the approach was still quite jumbled-up and lacked a simpler, more straightforward approach which required further thought.

Nevertheless, this week was helpful in formulating a stream daylighting strategy for the project, aided via consultation with Pierre Jennen. It became evident that the project would be incomplete without daylighting the river along this particular site, which brought along its own series of challenges -- of which, the most prevalent being that the site is situated within the confines of a combined sewage and stormwater system. Daylighting the river via conventional means would require the construction of a completely separate channel from the lake to the sea in order to properly separate freshwater and wastewater.

Then I came across recent reports whereby Tallinn is seeking to upgrade its current wastewater management systems as it is unable to deal with current stormwater capacity. Moreover, 80% of collected stormwater is sent to the main wastewater processing plant in Paljasaare instead of being discharged directly into the sea. Stormwater which does get discharged to the sea often bring along with it a large amount of sediments and impurities (see right). With increasing unpredictable rainfall volumes, the stream daylighting strategy is proposed to become a stormwater management strategy instead, whereby instead of using water directly from the lake, the stream can be "daylighted" as a catchment area of stormwater from the site's immediate vicinity. This is a similar strategy to the canals built at Kadriorg Park:

"Stormwater at Ülemiste junction is directed to Kadriorg Park. The historical circular canal in front of Kadriorg Palace was reconstructed and stormwater facilities, a cascade with five levels, a pond and stormwater outlet into the sea were built in the course of the reconstruction work" (Tallinn City Government, 2014).



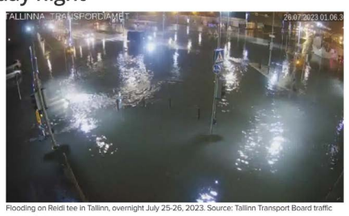


Tallinn sewer system unable to handle torrential rains, flash flooding

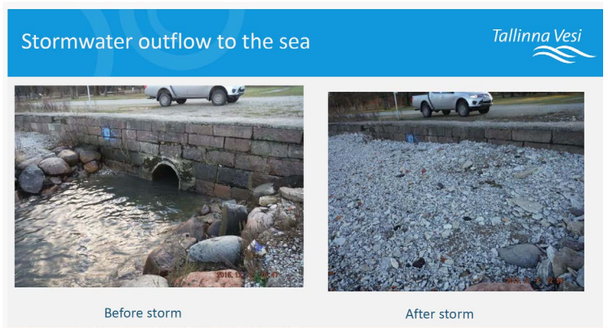
NEWS
By Elo Ellermaa, Vahur Lauri
11.07.2016 20:08

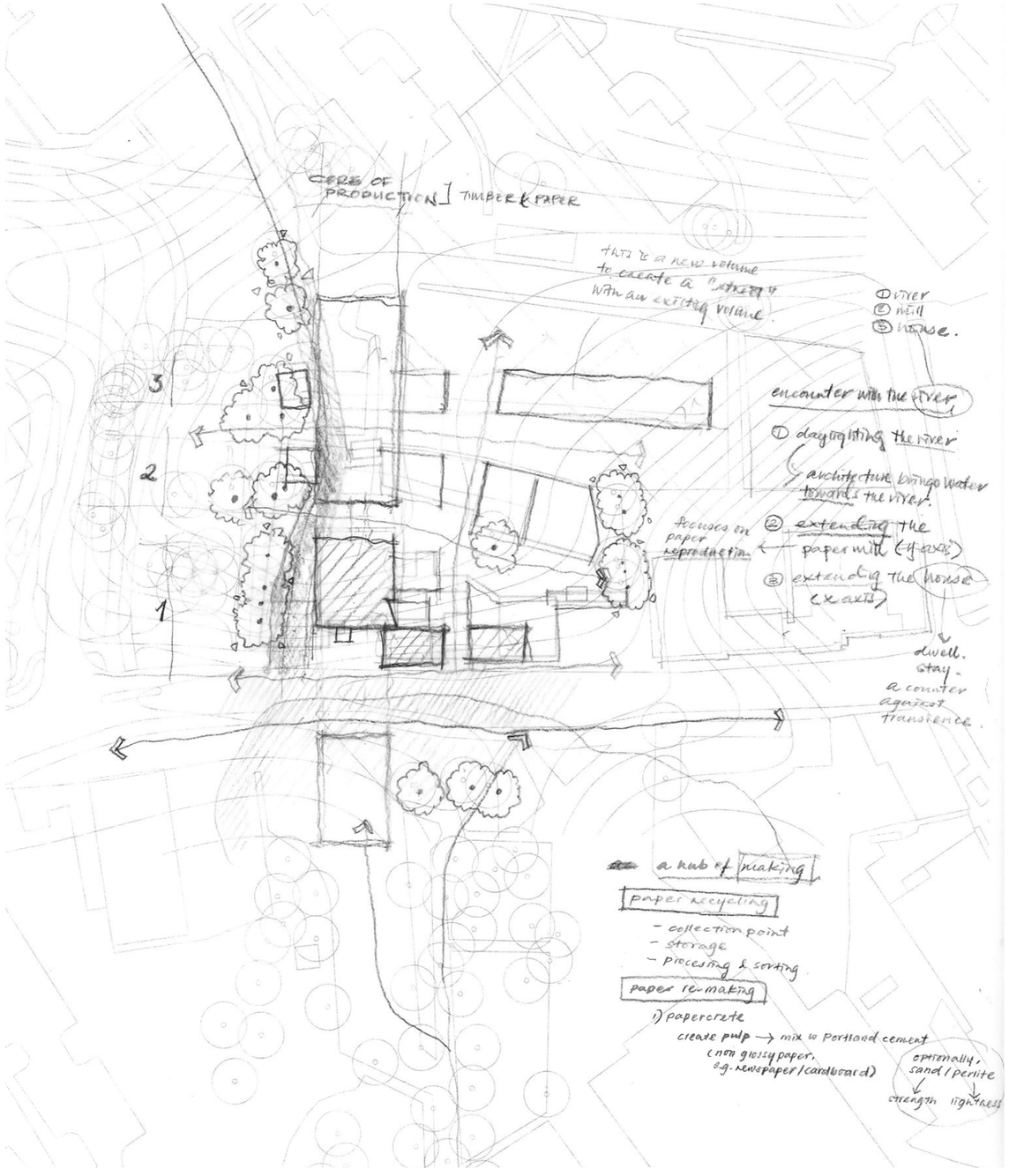
Tallinn hit by heavy rainfall and extensive flooding Tuesday night

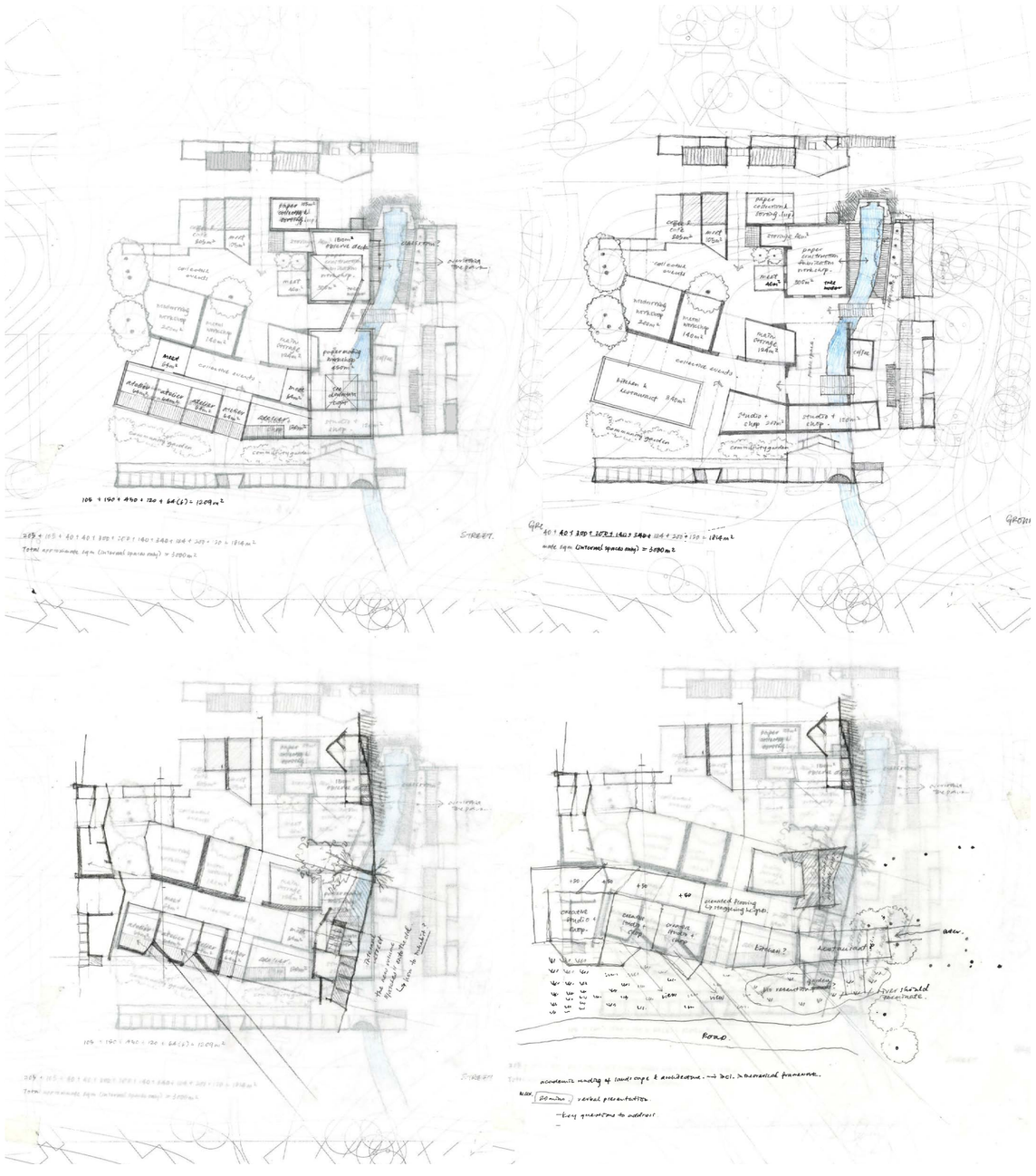
NEWS
ERR
26.07.2023 11:27



Flooding on Reidi tee in Tallinn, overnight July 25-26, 2023. Source: Tallinn Transport Board traffic camera footage.







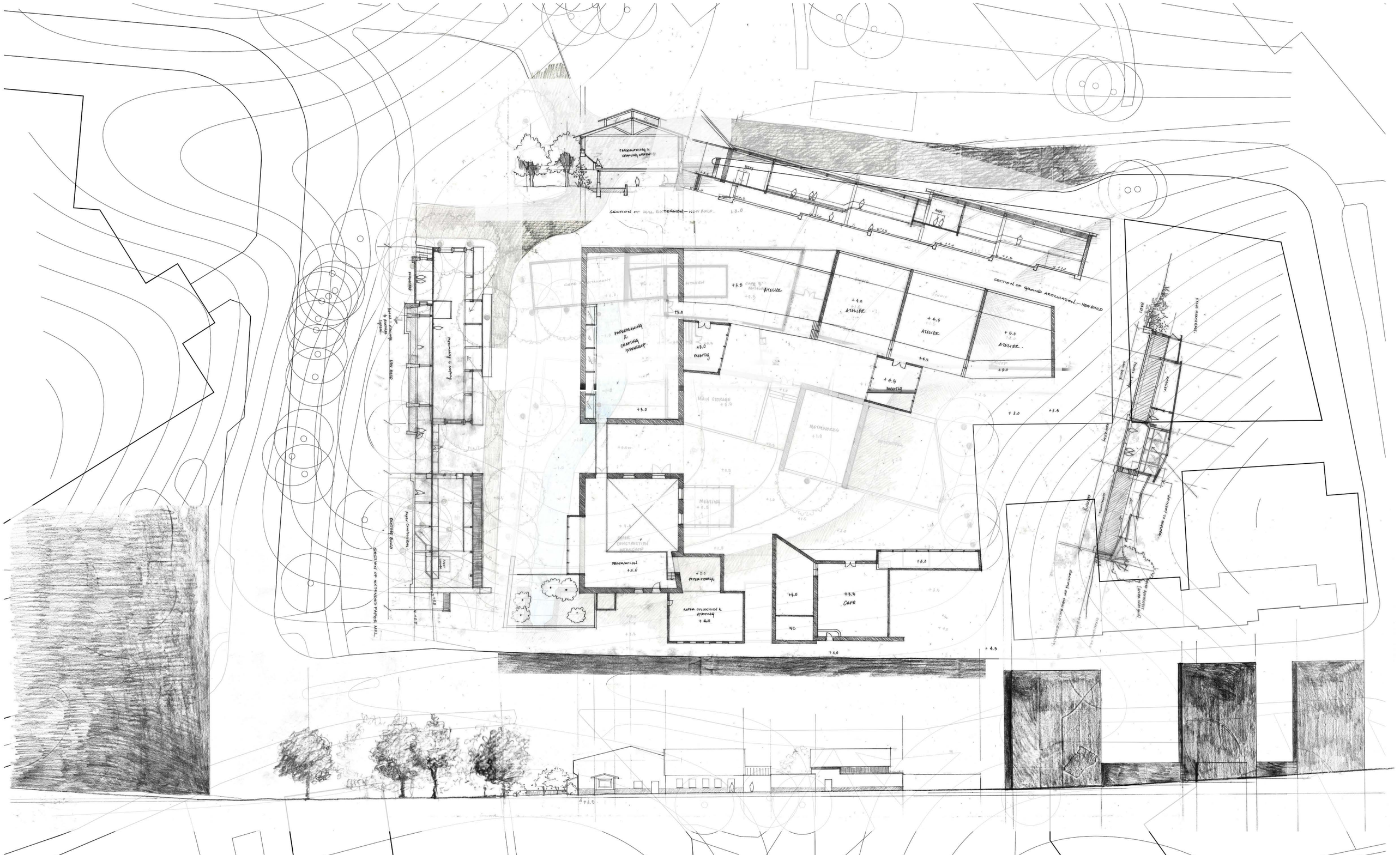
W2.9

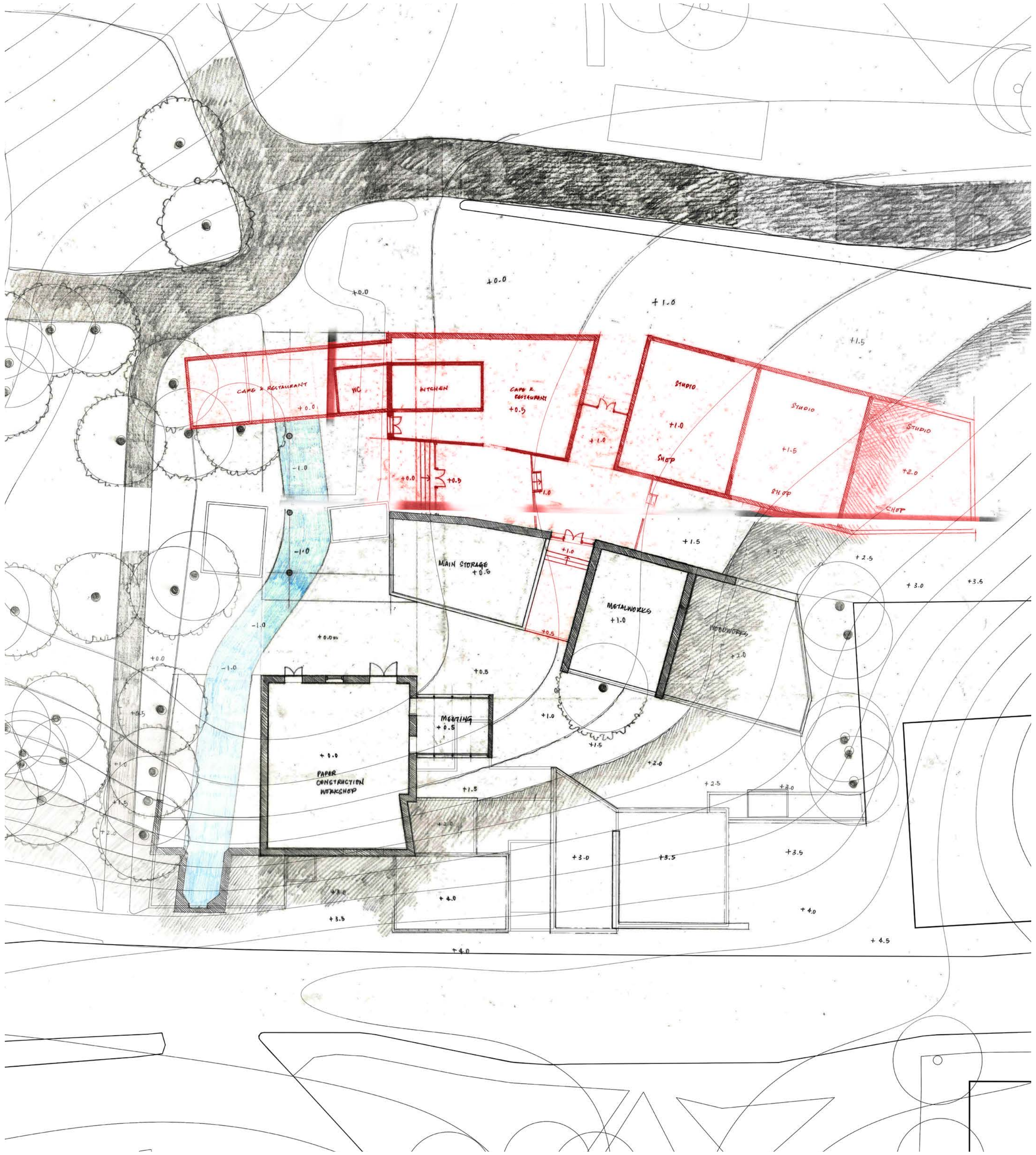
Focused on simplifying the project approach and consolidating loose ends, the project now stands as an encounter between the river and the city. This is formed by two main moves, firstly being the reintroduction of the river back to the surface through its original course. The second design direction is centred on the Tiigiveski paper mill, and looking into both an adaptive reuse and extension of the mill -- adapting the mill to become relevant in the present context yet retain its historical legacy. Thus the programme is now shifted into a sort of paper waste “re-making” hub, taking paper waste and programmatically centred around its reuse in crafts, construction, and gardens (this decision was made after a report which showed that Estonia largely ships its paper waste to neighbouring countries for processing).

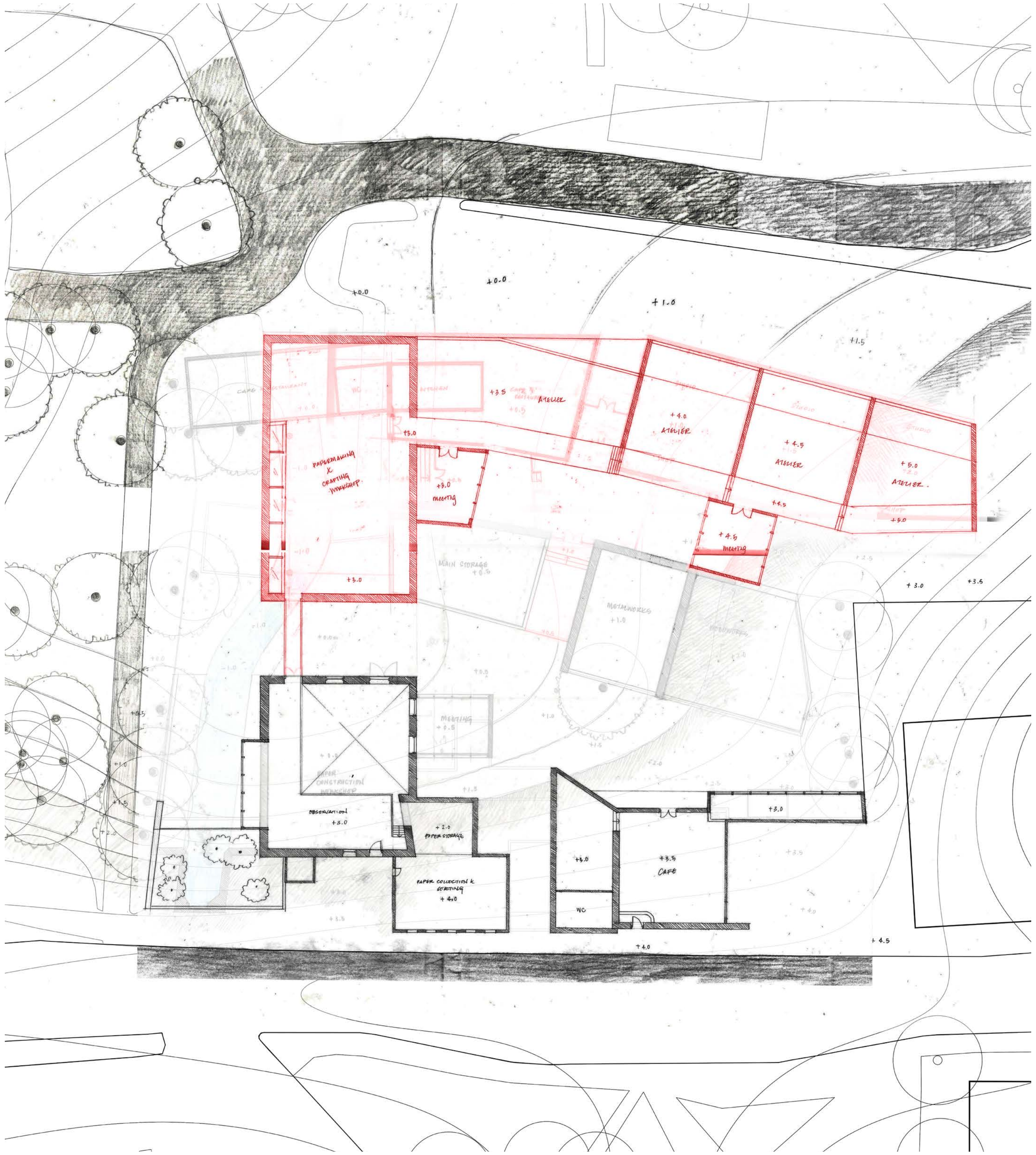
Moving forward, construction methods will take significant reference from “Building with Paper: Architecture and Construction” by Knaack, Bach and Schabel.

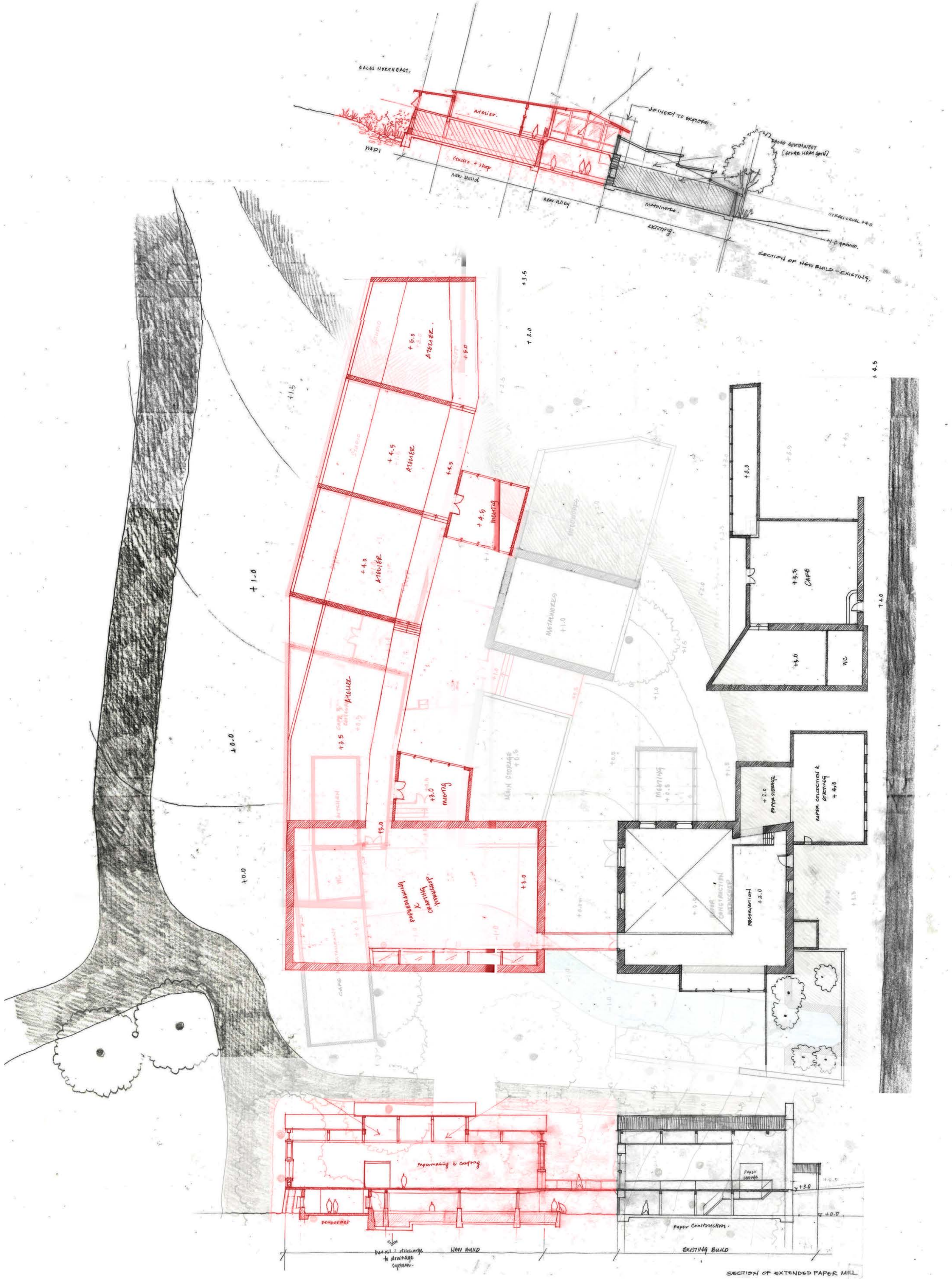
W2.10

Moving towards the A1 presentations, this week was focused on the production on a first series of technical drawings for the design as it currently stands, with particular attention on planar and sectional projections.

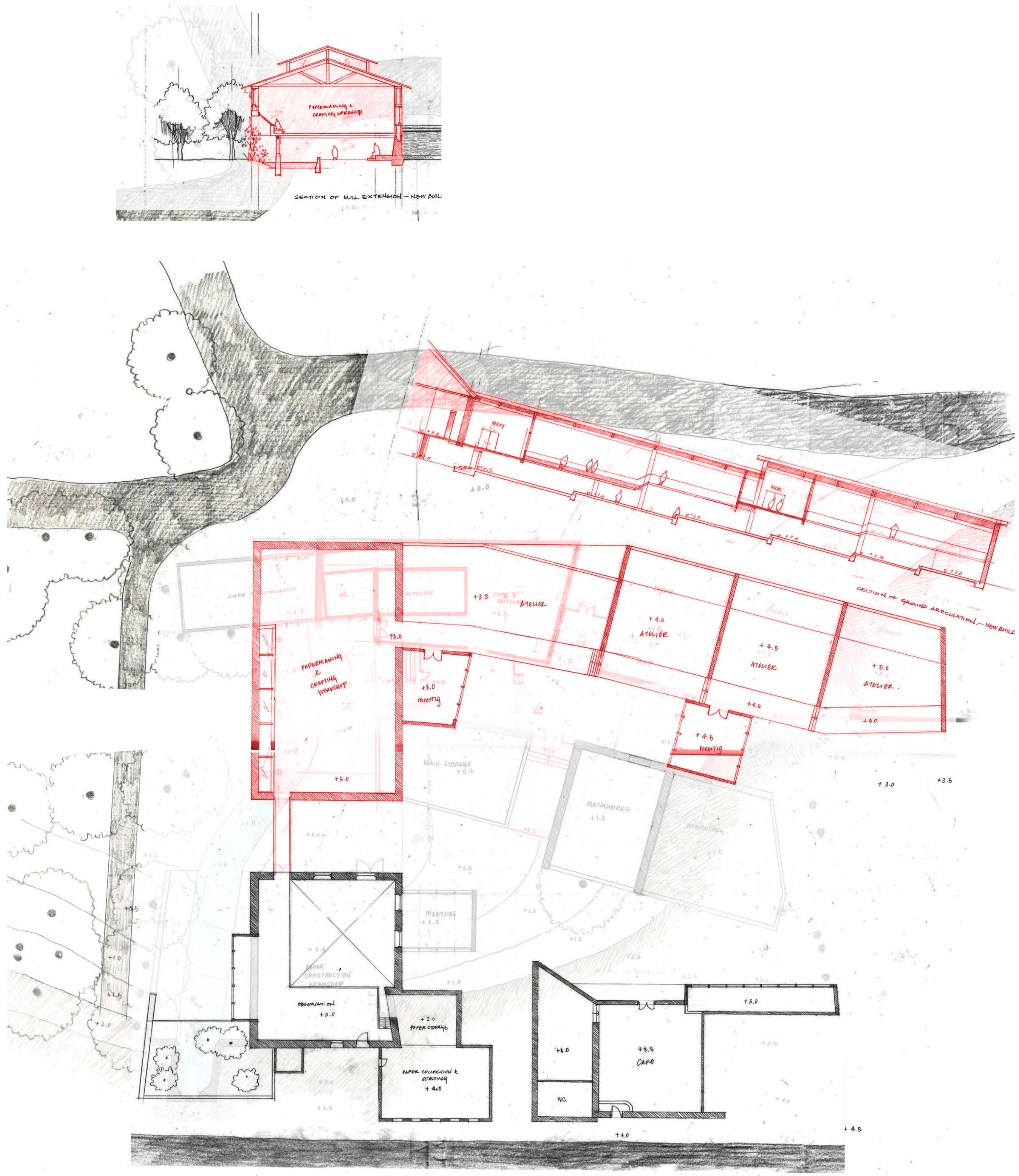



CAFE & RESTAURANT
+0.0
WC
KITCHEN
CAFE & RESTAURANT
+0.5
+1.0
STUDIO
+1.0
SHOP
STUDIO
+1.5
SHOP
STUDIO
+2.0
SHOP
+0.0
+0.5
+1.0
+1.5
MAIN STORAGE
+0.5
+1.0
METALWORKS
+1.0
WOODWORKS
+2.0
MEETING
+0.5
+0.0
PAPER CONSTRUCTION WORKSHOP
-1.0
+0.0
+1.0
+2.5
+3.0
+3.5
+4.0
+4.5


PAPERMAKING
X
CRAFTING
WORKSHOP.
+3.0
+3.0
+3.5
ATELIER
+4.0
ATELIER
+4.5
ATELIER
+5.0
ATELIER.
+3.0
meeting
+4.5
meeting
OBSERVATION
+3.0
+2.0
PAPER STORAGE
PAPER COLLECTION & SORTING
+4.0
+3.0
+3.5
CAFE
WC
+3.0
+4.0
+4.5



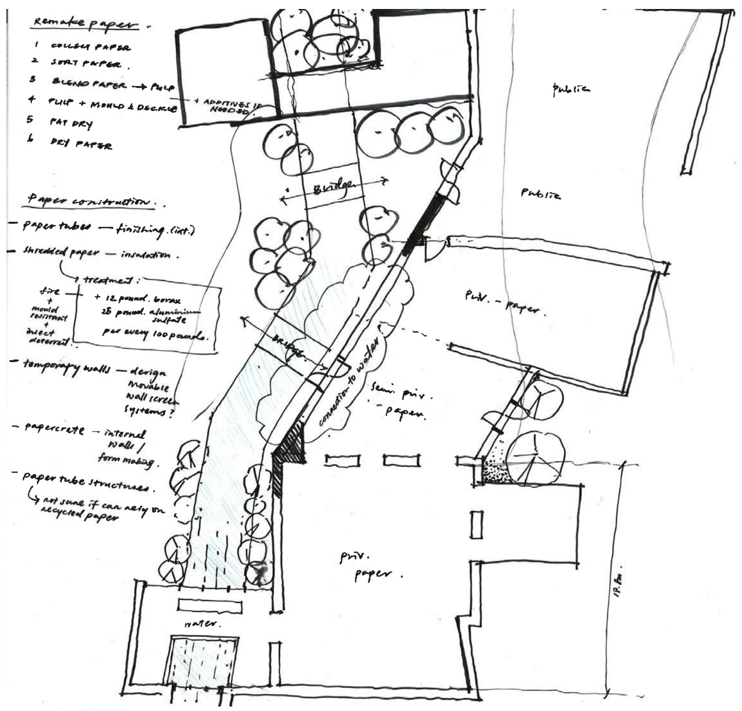
SECTION OF NEW BUILD - EXISTING
ATELIER
MEETING
CAFE
WC
MAIN STORAGE
PRESERVATION
PAPER COLLECTION & STORING
EXISTING BUILD
NEW BUILD
SECTION OF EXTENDED PAPER MILL

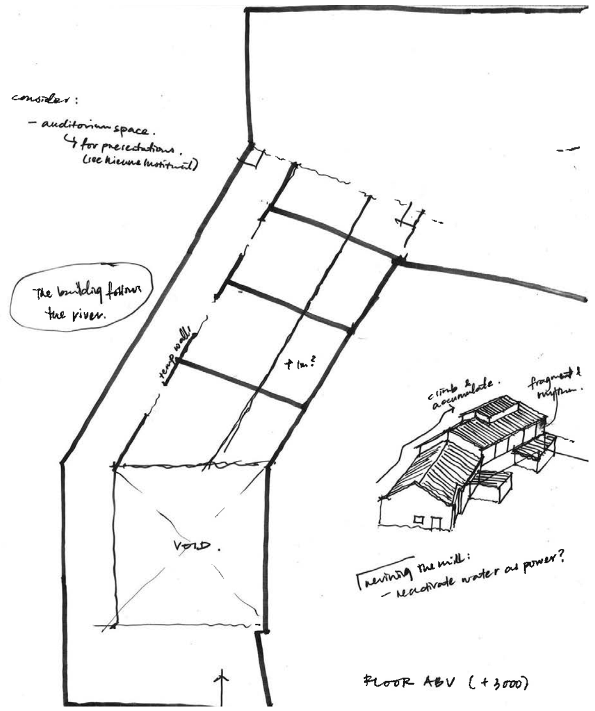


SECTION OF MILL EXTENSION - NEW BUILD
SECTION OF GROUND ARTICULATION - NEW BUILD
ATELIER
MEETING
MAIN STORAGE
PRESERVATION
PAPER STORAGE
PAPER COLLECTION & STORING
CAFE
WC

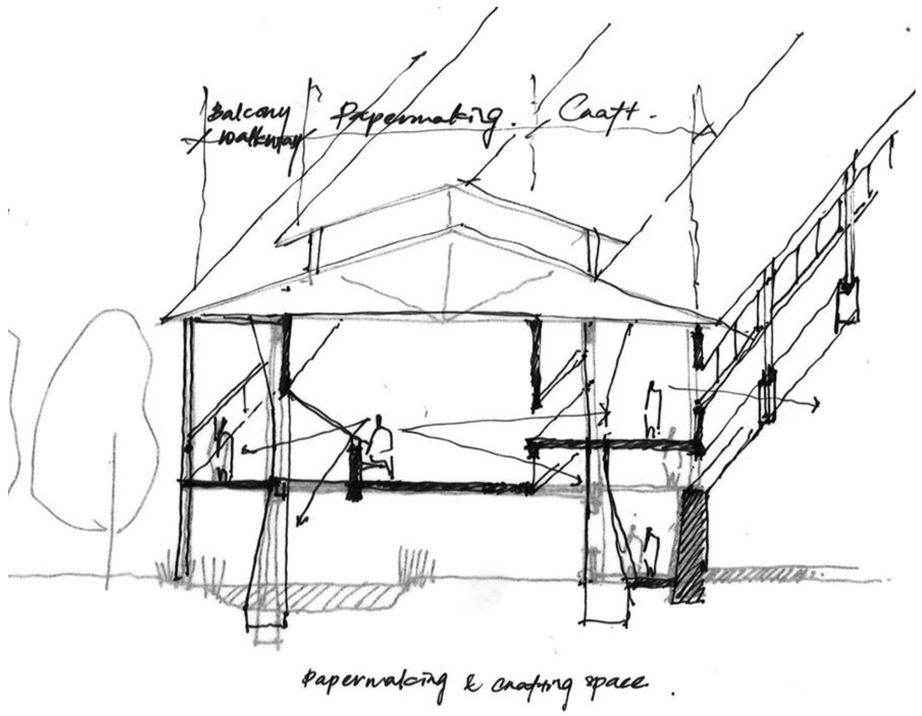
W3.1

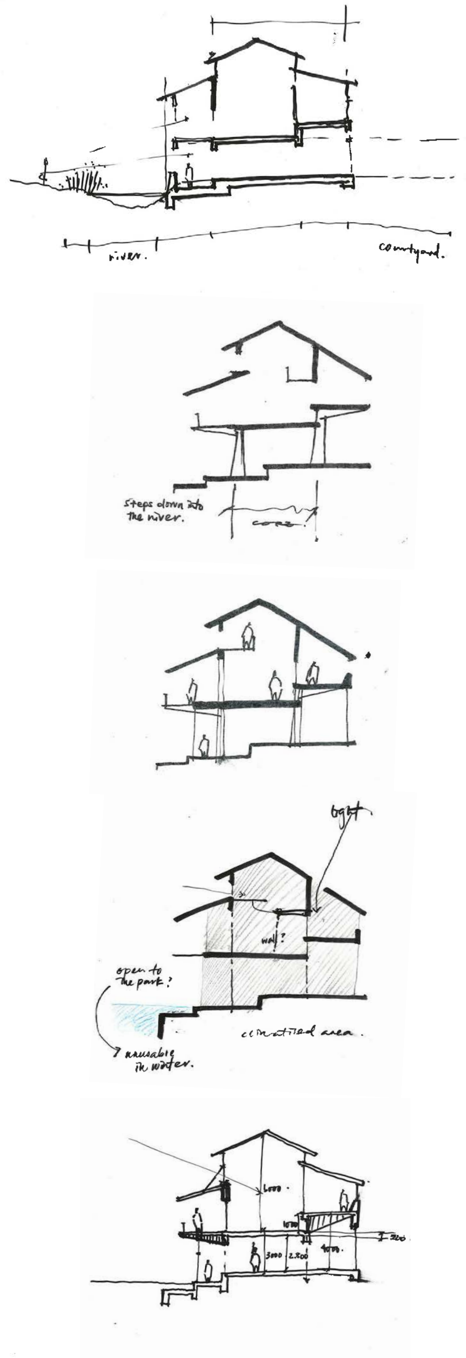
Focused on the configuration of the extension of the paper mill. The idea was to directly continue the mill whilst following the curve of the river's course, which proved to be a challenge due to the intersecting volumes between this new volume and the existing buildings.

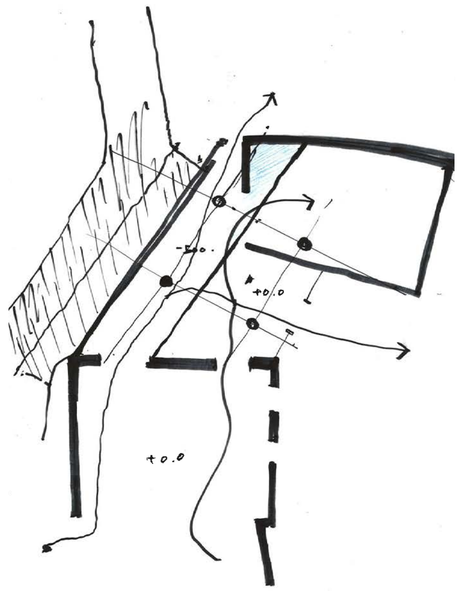


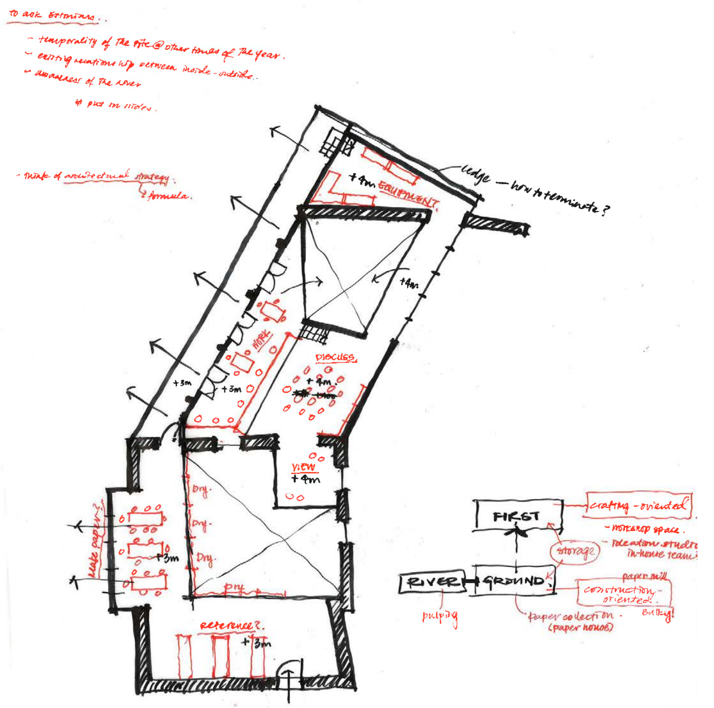


Sectional explorations of extension-river connection

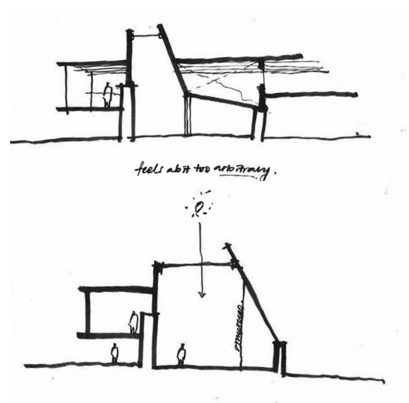


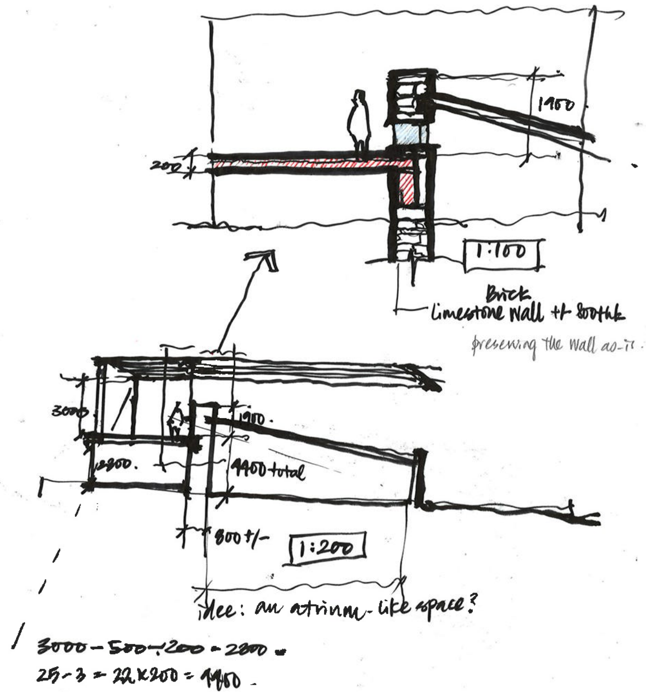






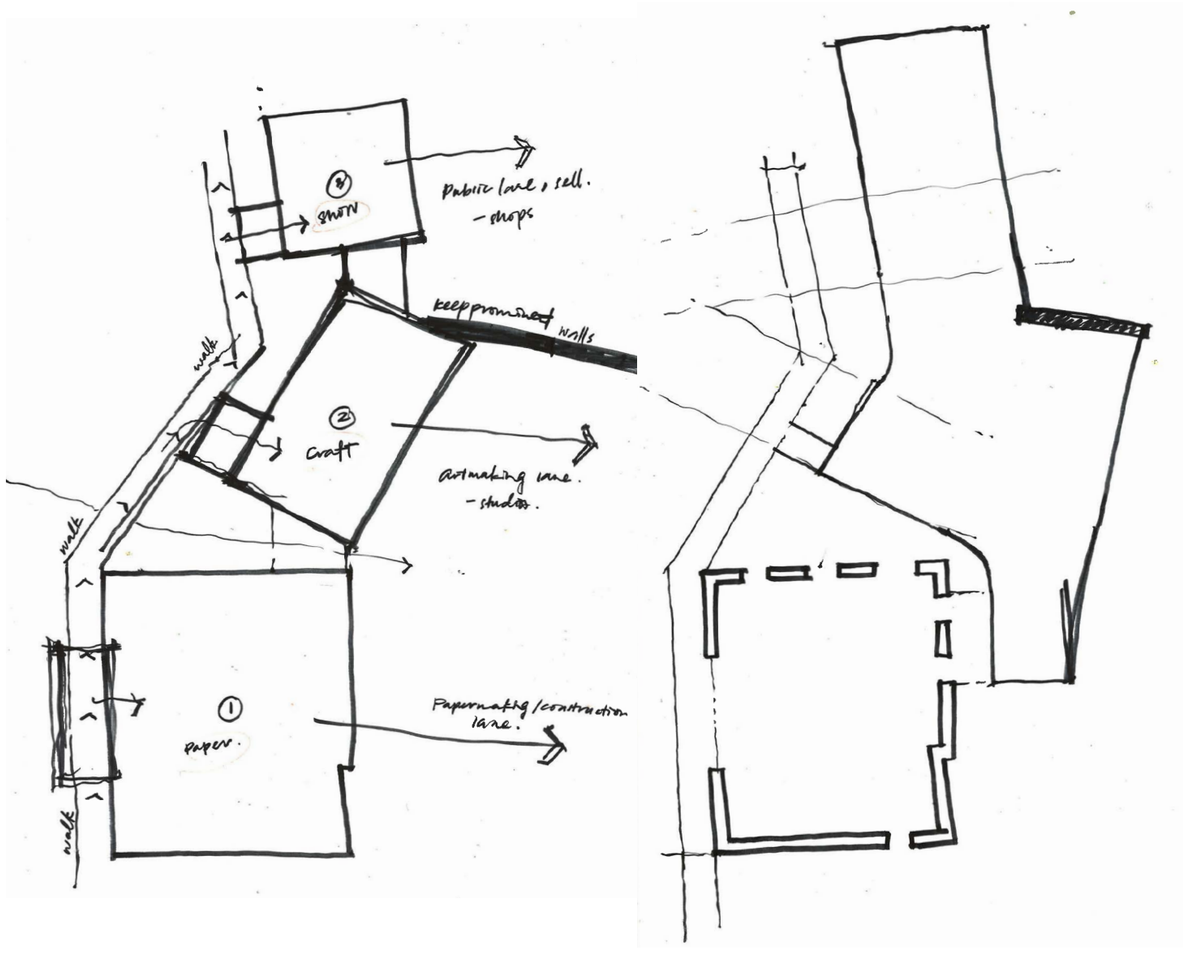
Exploring ways of intersecting with existing irregular volume

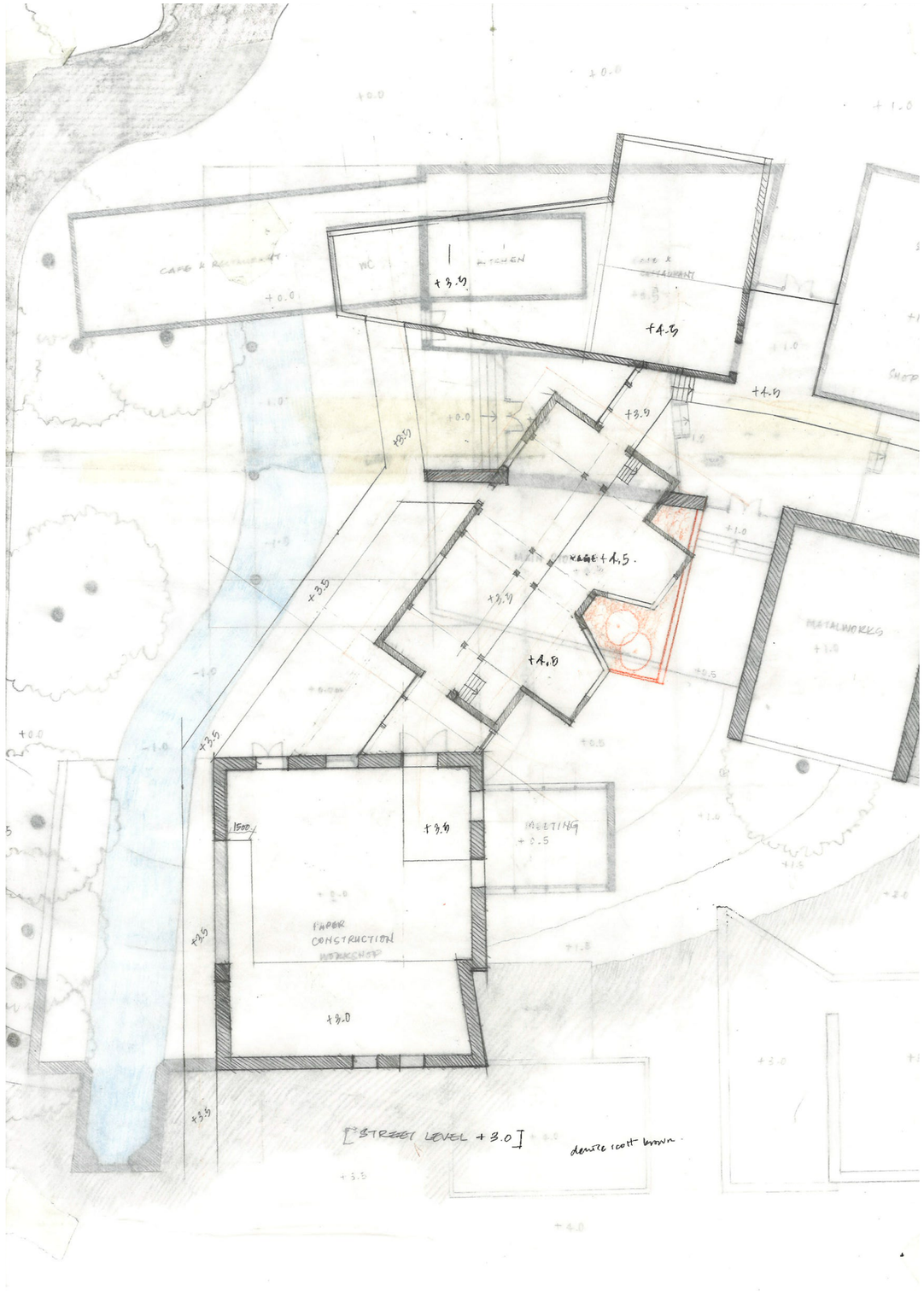




W3.2

Focused on the configuration of the extension of the paper mill and the programmatc functions of the new and existing volumes.



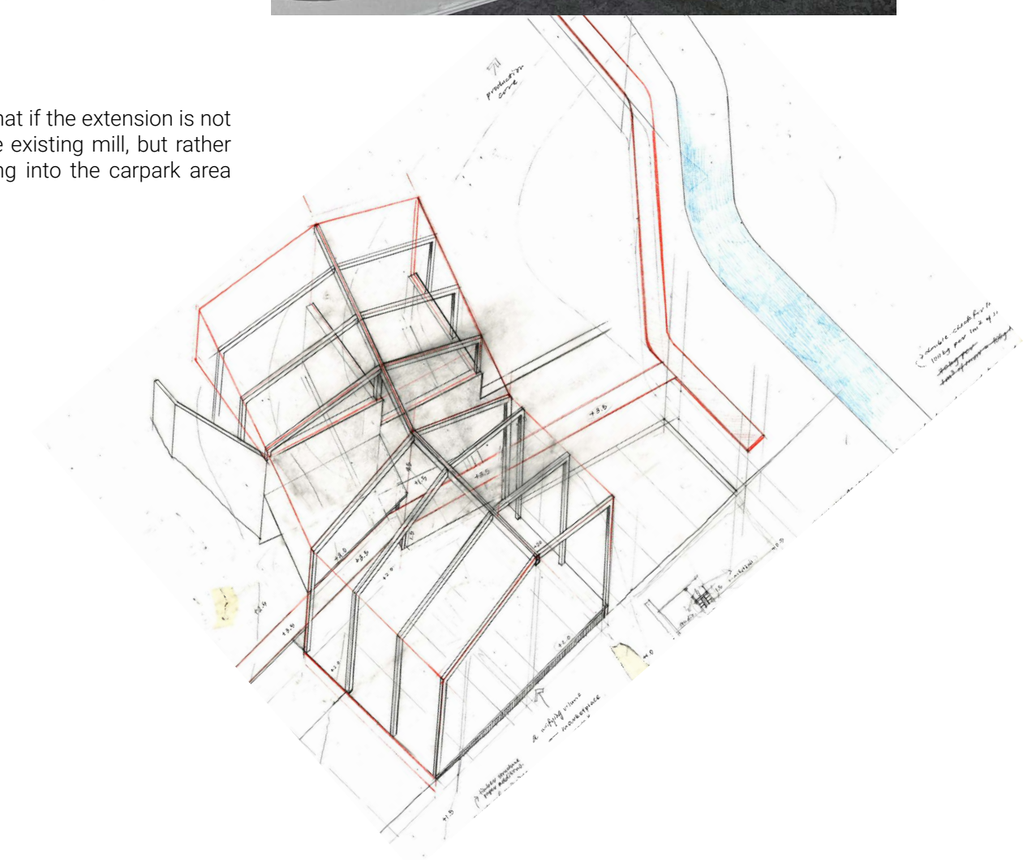


W3.3

Tested the iteration on a paper model. The new extension felt too jarring and awkwardly placed, further diminishing the presence of the original paper mill instead of complementing it.

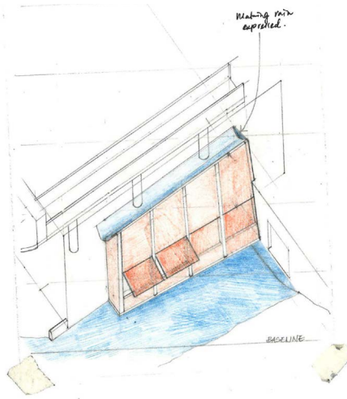
W3.4

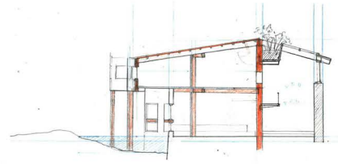
A change in direction. What if the extension is not directly connected to the existing mill, but rather a mirror of it encroaching into the carpark area behind the site?

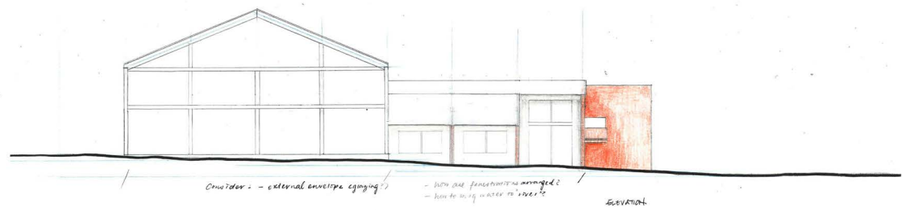


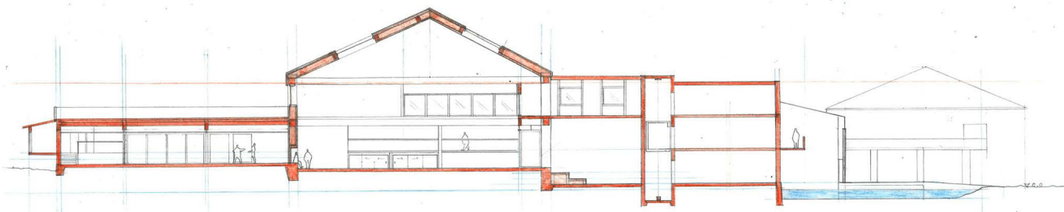
W3.5

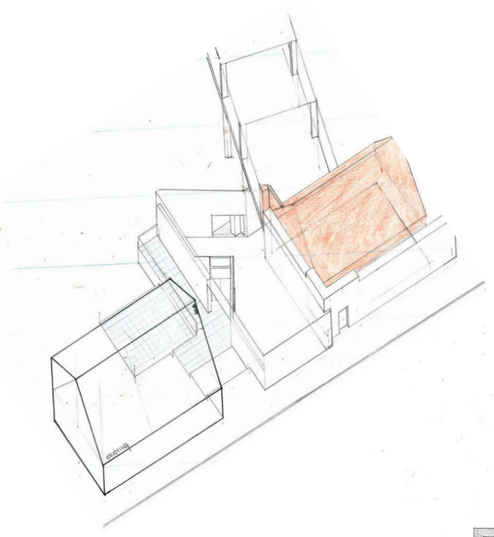
The new volume mirrors the form of the original paper mill but straddles the existing walls, unifying the random volumes while reintroducing the river's influence by adhering to its course.







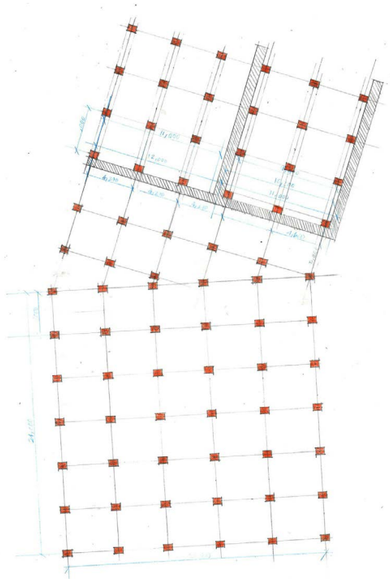




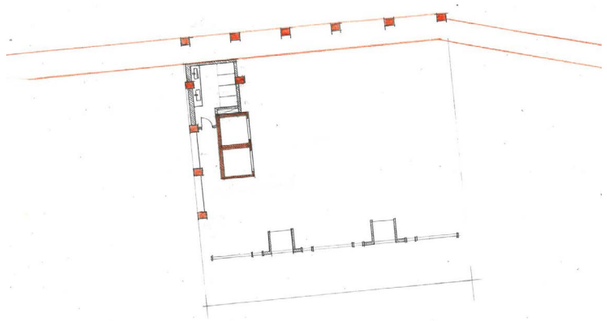
New, comprehensive floorplans inserted with programme, with explorations done in sections, elevations, and intriguing corners (axono).

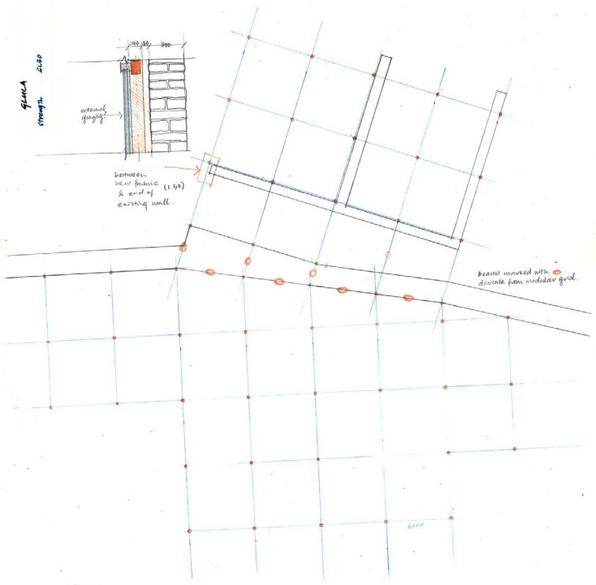
W3.6

Explorations on structure. Initially wanted structural timber, but due to span constraints, decided to go with glulam post-and-beam (with reference to The Glulam Handbook, Volume 1 by Swedish Wood, published in 2024).

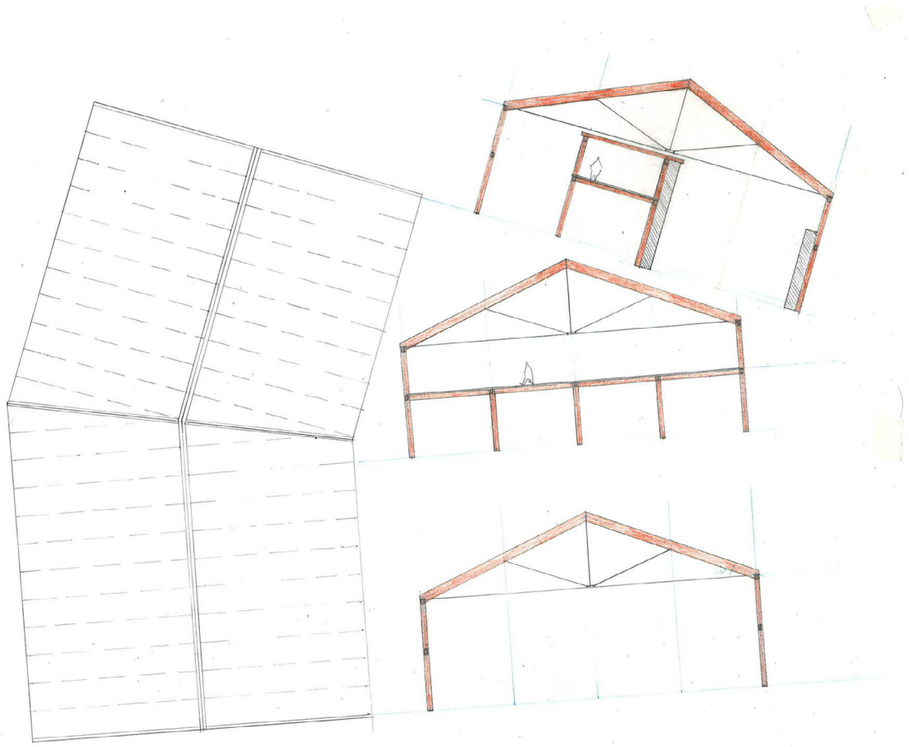


Structural timber system forming a very dense column grid.





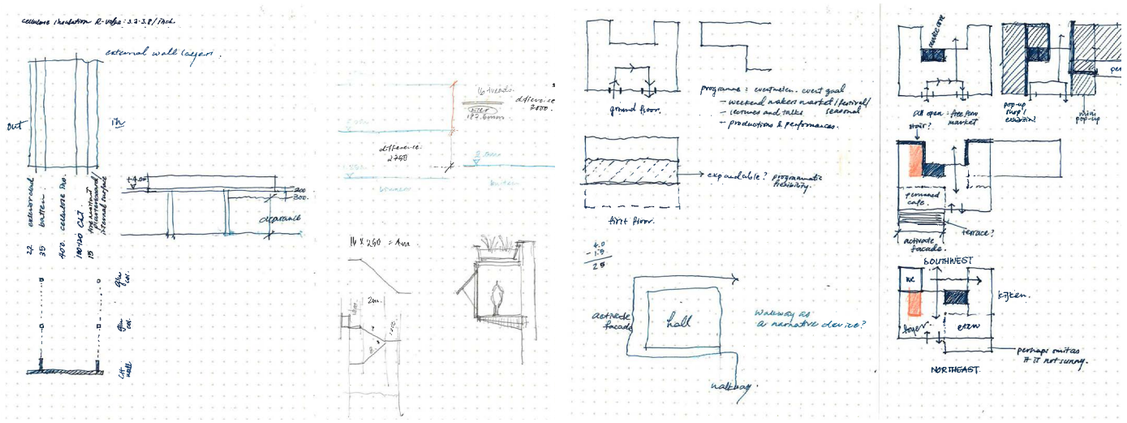
Glulam system forming a more functional, material-efficient space.

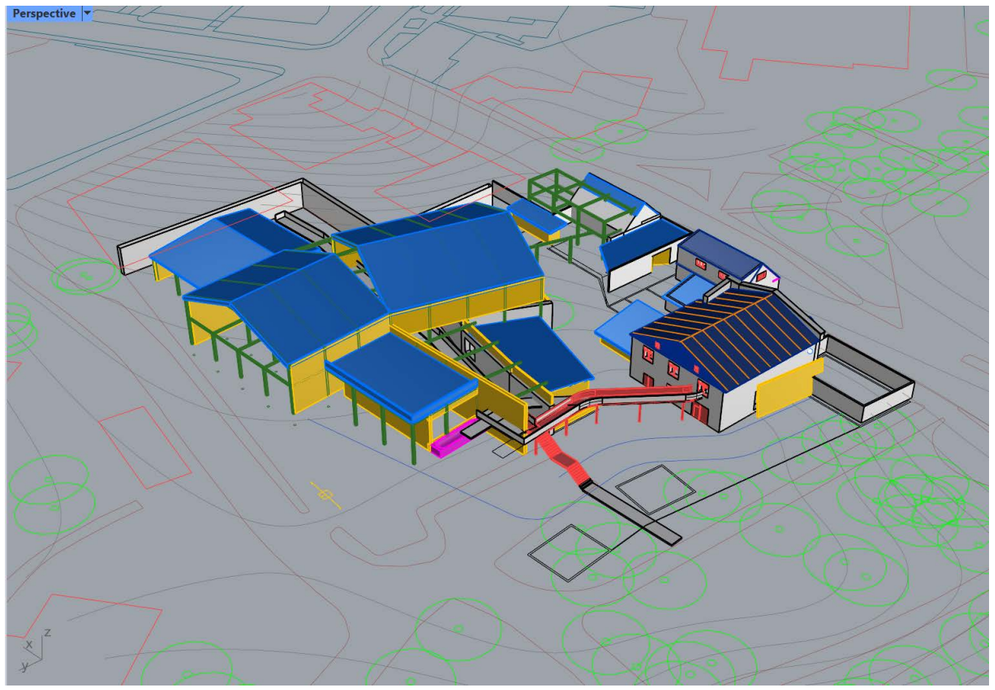


Adapting a suitable roof system and its configuration throughout the new extension.

W3.7

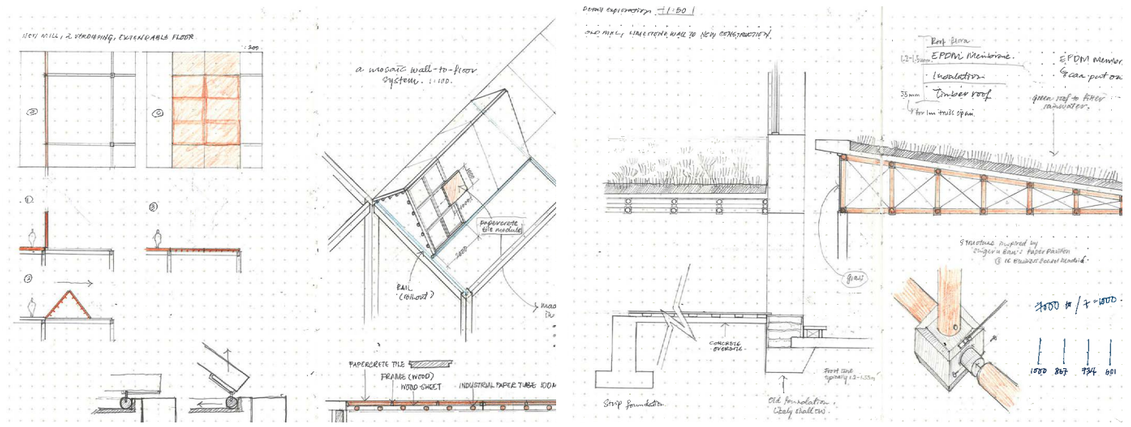
Worked on 3D model in Rhino while figuring out construction and articulation of specific project aspects.

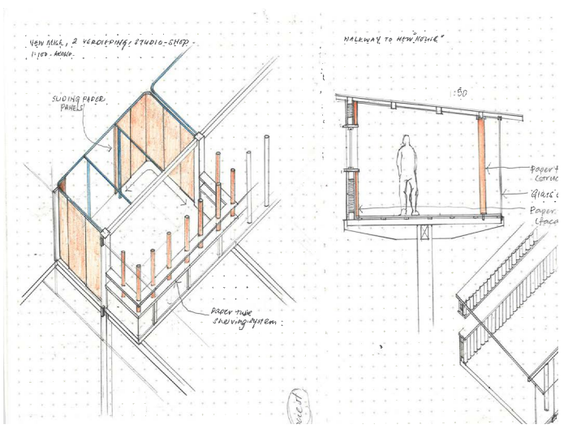


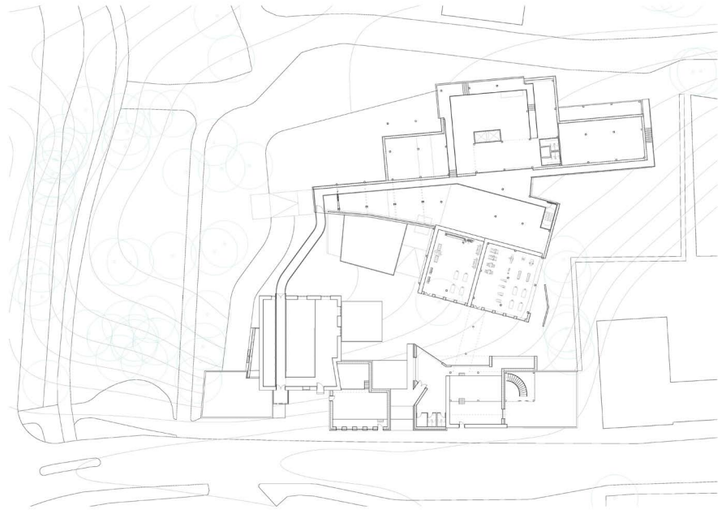


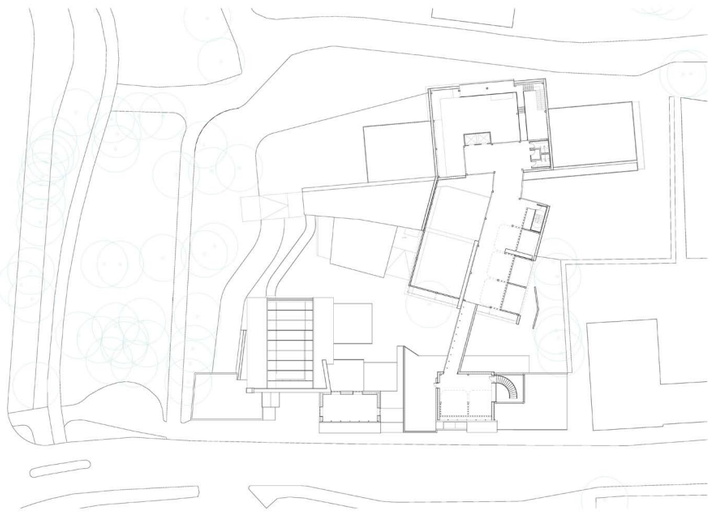
W3.8

Tested out some perspectives and sections from the model alongside articulating paper construction concepts.



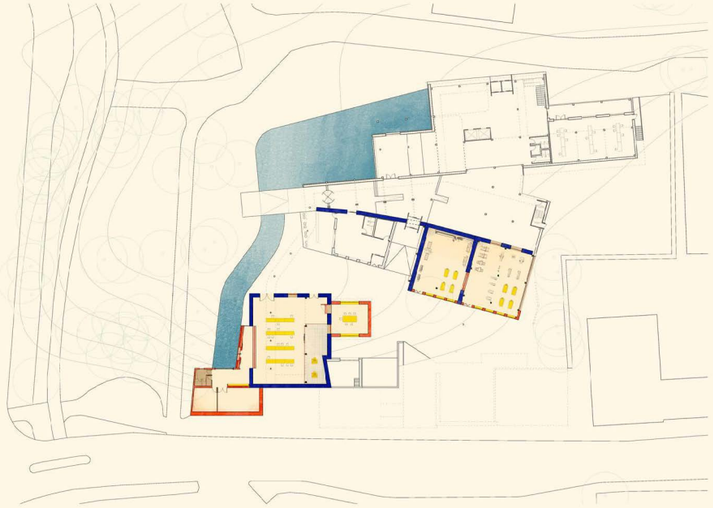


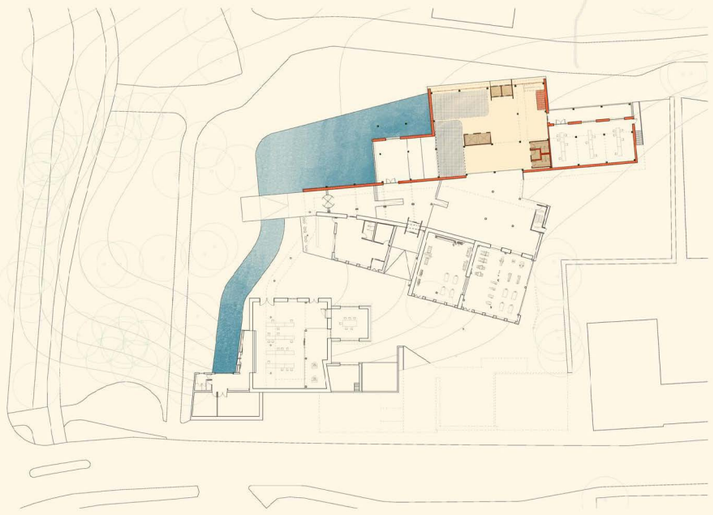




W3.9

Produced CAD floorplans and refined digital model towards design finalisation for A2 examination.



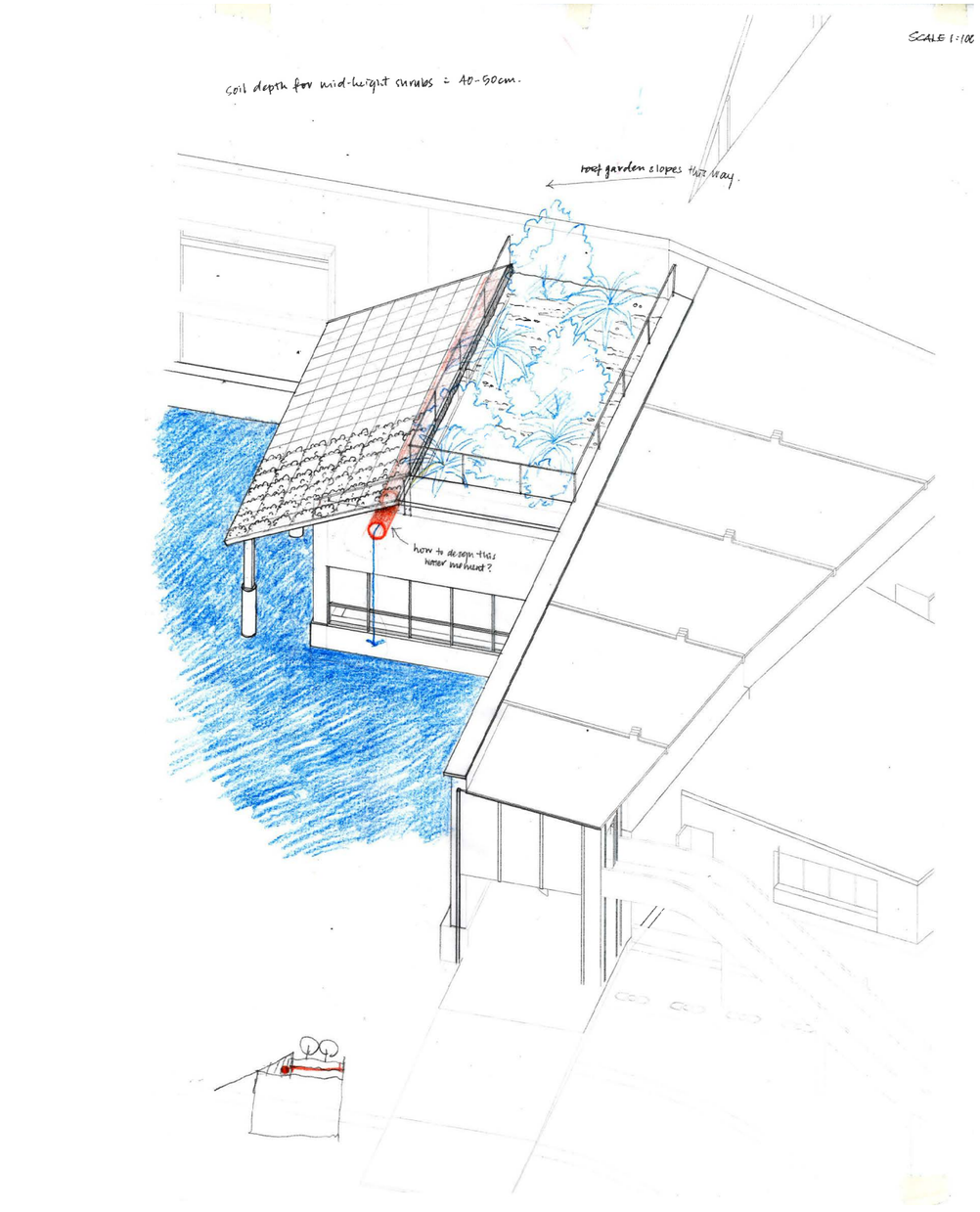


Testing out some rendering techniques

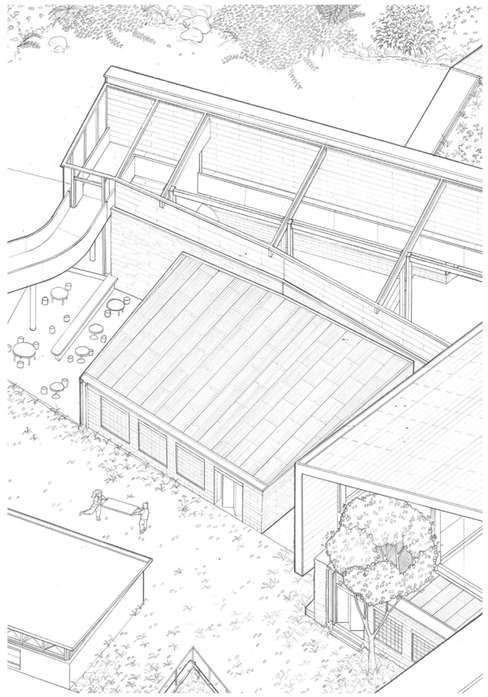
W3.10

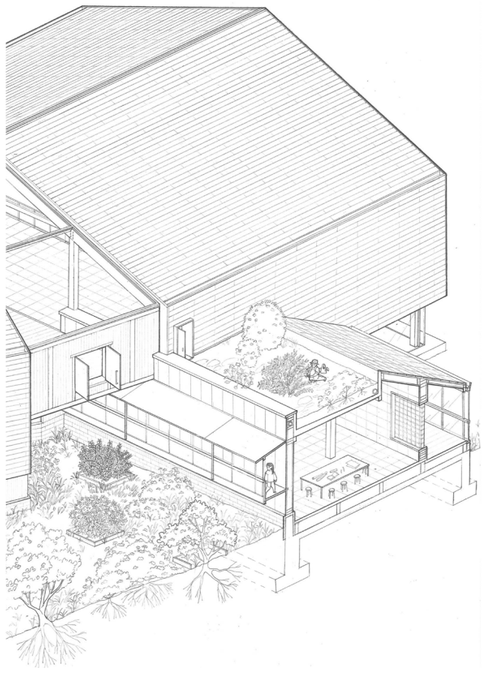
A2 examination held.

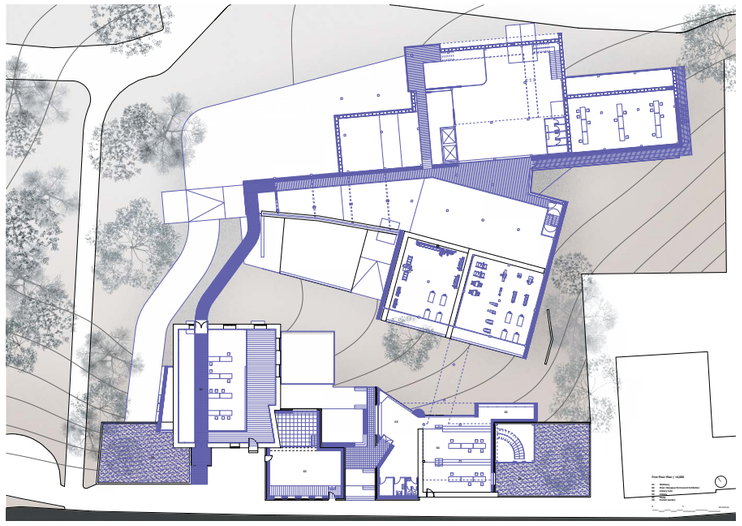
W4.1-4.2 Designing final bits and elevational study

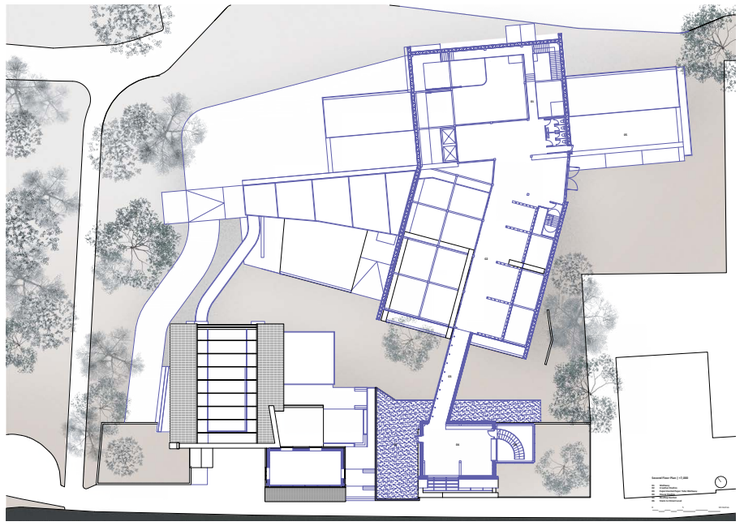


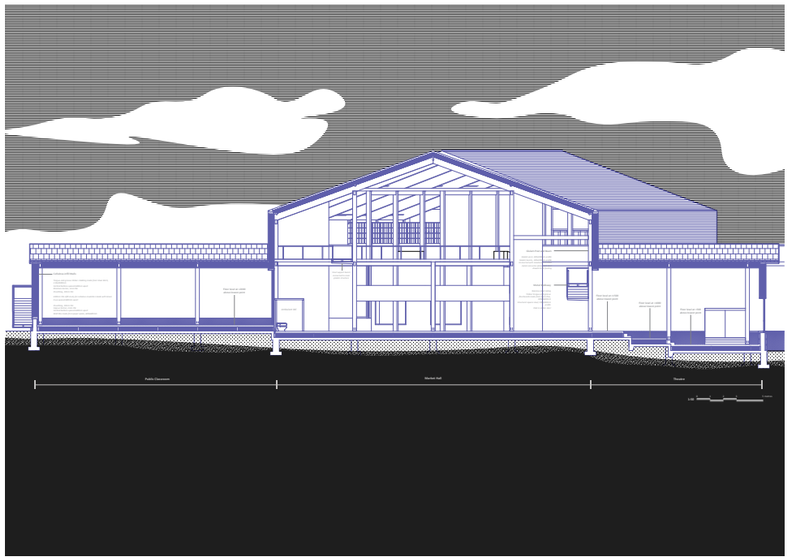
W4.3-4.7: Production-focused
with presentation-planning.

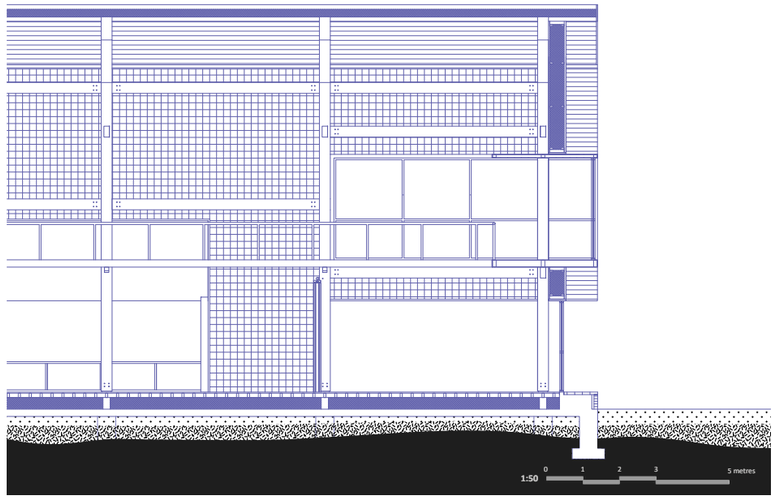




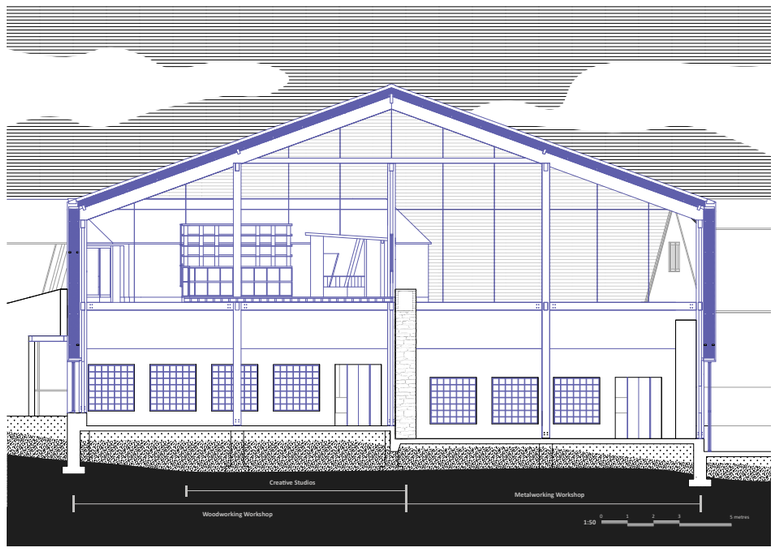




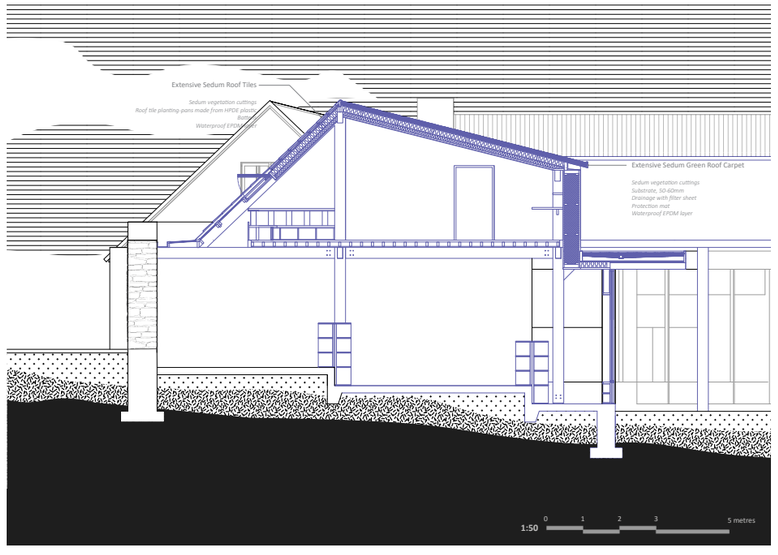

Public Classroom
Market Hall
Elevation
1:50


1:50
0
1
2
3
5 metres

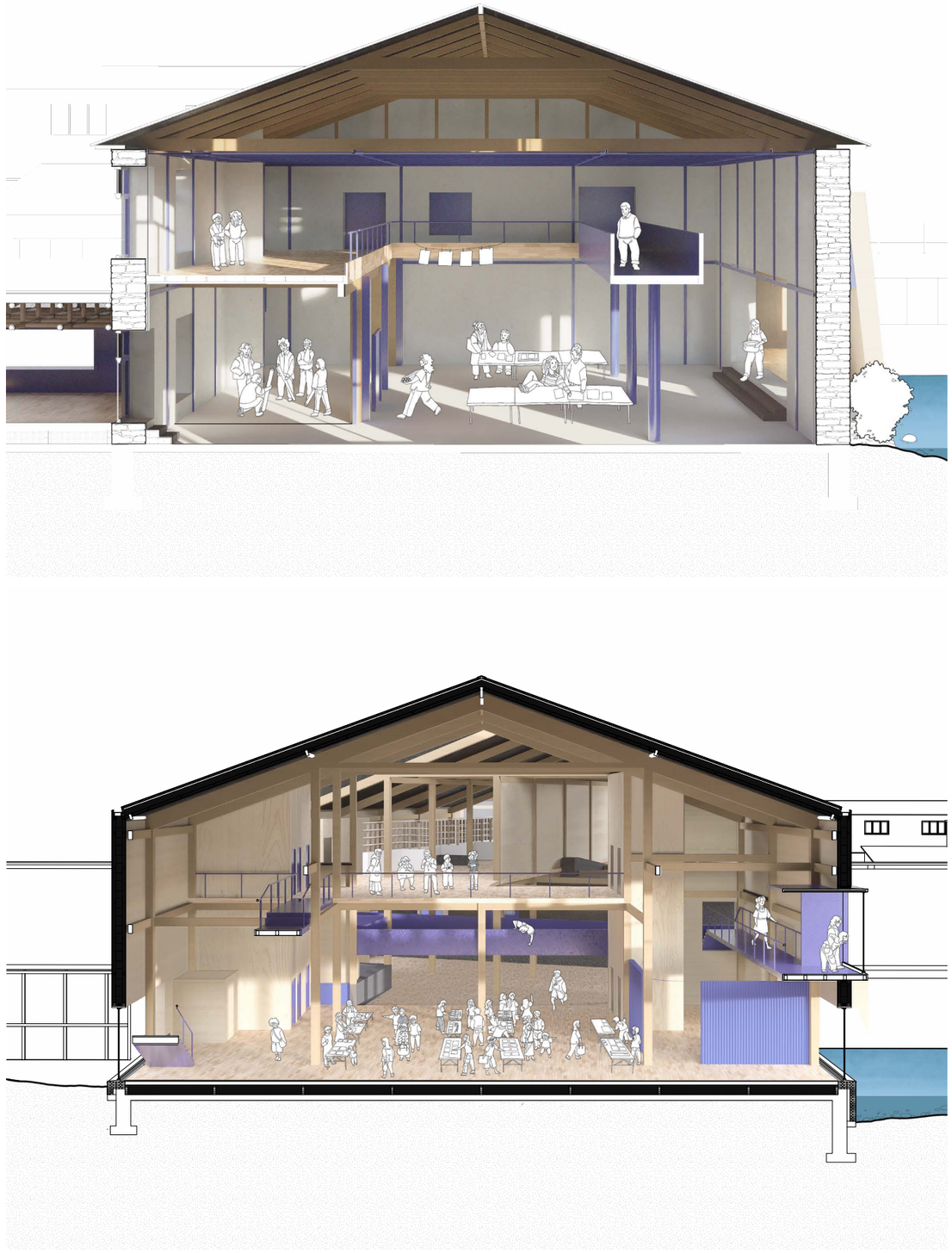

River Härjapea Permanent Exhibition
1:50
0
1
2
3
5 metres


Creative Studios
Metalworking Workshop
Woodworking Workshop
1:50
0
1
2
3
5 metres


River Härjapea Permanent Exhibition
Permeable Surface
Experimental Paper Lab (Meeting Room)
River Härjapea Permanent Exhibition
1:50
0
1
2
3
5 metres

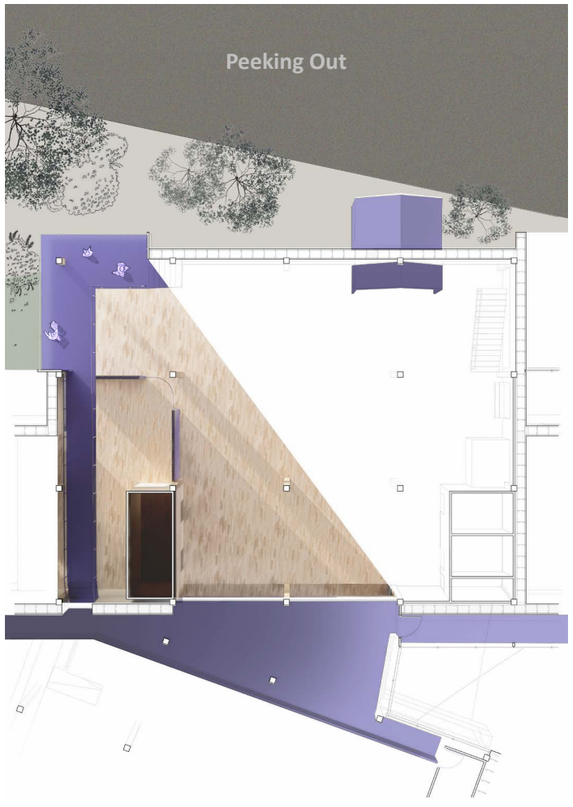

Extensive Sedum Roof Tiles
Sedum vegetation cuttings
Roof tile planting pans made from HPDE plastic
Insulation
Waterproof EPDM layer
Extensive Sedum Green Roof Carpet
Sedum vegetation cuttings
Substrate, 50-60mm
Drainage with filter sheet
Protection mat
Waterproof EPDM layer
1:50
0
1
2
3
5 metres

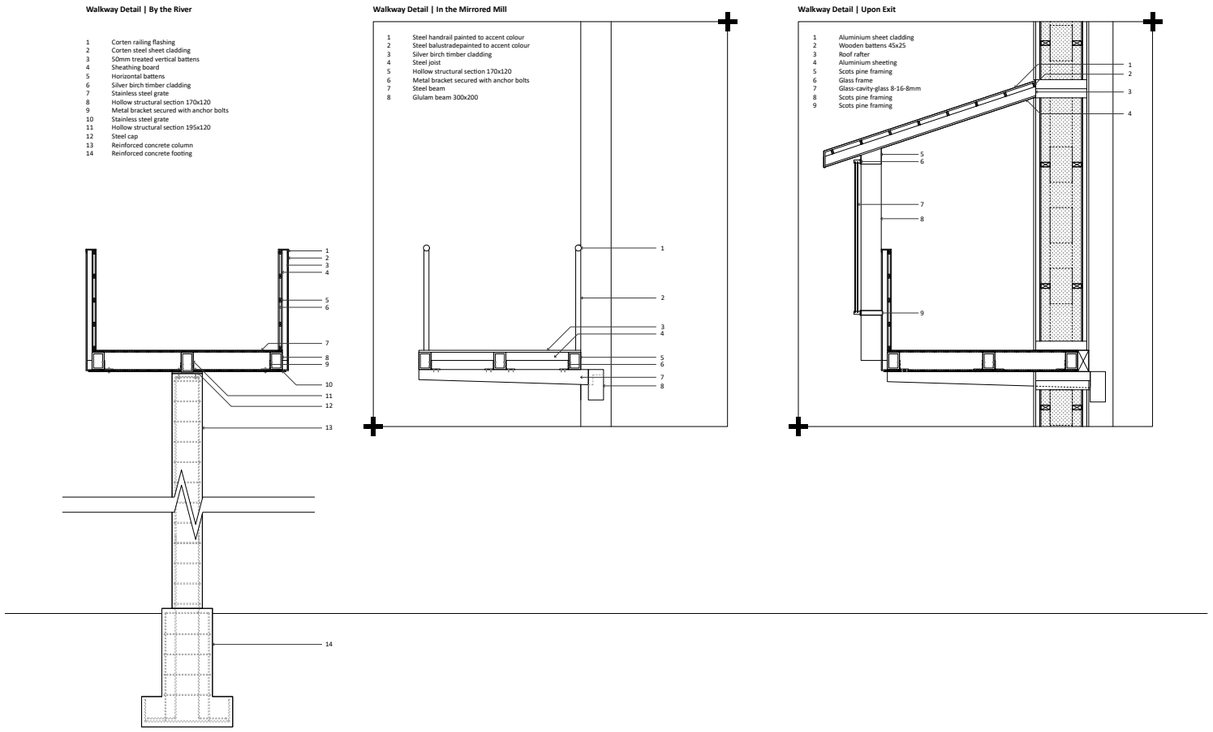
Mirroring the Elevation

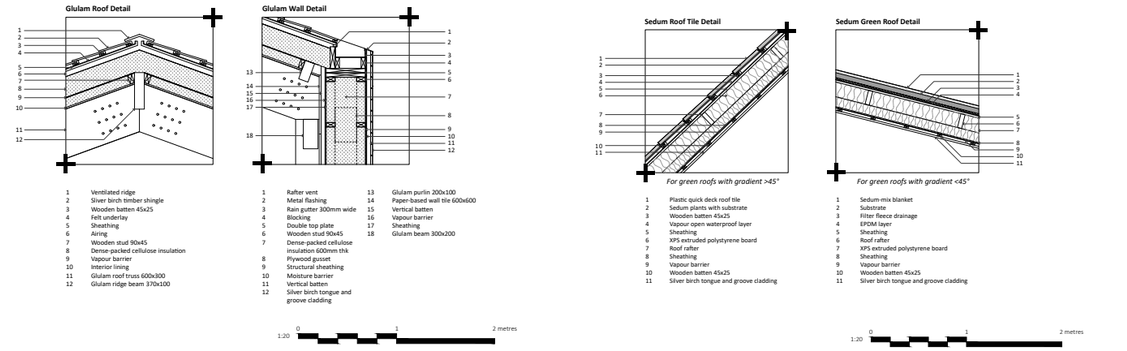


Peeking In

Peeking Out







Presentation-planning

Final model making