

# SKRIVERØYA QUARRY

Discovery of unintended beauty at an abandoned industrial site

## Binder I The project

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AHO | Diploma project

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# I

## PROJECT PROGRAM

This project does not have an architectural program.

Rather does it aim to explore architecture as a primer to understand the world by.

Its guiding mentality has been discovery, and its mode has been sensitivity.

Though it shows one solution, for a specific site, the overarching ambition has been to expand our approach to post-industrial quarrying sites.



## II

# ABSTRACT

Quarries are generally viewed as a negative by-product of the stone industry. Whether we quarry for massive stone, slate or gravel, or excavate our mountains for metals, the necessary incision to do so is seen as a permanent alteration of the local natural condition. The size of the incisions and the estimated industrial yield can vary greatly, but it is safe to say that we leave no larger irreversible imprints on our nature than our quarries. This is often tried mitigated by using the scrap stone or leftover materials to fill in or disguise the change that has taken place once production stops. This attempt at reversal seldom achieves any convincing results, but rather exposes our non-chalant position towards both nature and the traces of our industries. It is clear to all that stone massives can never be restored, and that the enormous material quality of homogenous rock never can be imitated. The process of quarrying, that is, drilling, sawing, splitting and crushing, not to mention the jet-burning and explosions, is often undertaken with tools and technologies that are extremely loud, dusty and outright unfriendly. Therefore there are strict regulations to where one can quarry, and when one can quarry. The uneighborly aspect of quarrying often leaves them to occupy the “away-place”, a place outside our circles of movement and engagement, a diffuse area we attribute the ability to hold all that is uninteresting or unwanted, a place that only becomes a place when our our attention is brought to its borders and its altered nature becomes apparent. This project discusses the inert qualities that are left behind from industrial quarrying, how we can relate to them through expanding our reading of them and understanding the lifecycle of the altered place. It postulates how, through architectural incisions, the place can gain from the play of discovery between intended and unintended beauty.

Among the numerous quarries that once flourished along Iddefjorden in the south-easternmost part of Norway, only one remains active, and out of the thousands of stone masons that quarried, hewed and carved the fantastical granite found here, a meagre trio of craftsmen continues on. Located at the neck of the Skriverøya peninsula, the quarry here supplies a high quality granite that lends itself as well to road stone as to monuments. Most recently did they provide stone for the Tusenårsplassen (The Millennial square) in Stavanger, but their greatest feat and grand boast is to have delivered a 20m tall stone to the Norwegian embassy in Berlin – the largest stone quarried in Norway since Vigeland's Monolith. This speaks to the quality of the stone, and though the quarry is not a large one by industrial standards, the quality and the abundance of the bedrock here is such that they theoretically could continue quarrying indefinitely. The continued life of the quarry though, apart from being dependant on its economical viability, is given through regulations and mainly by one limitation; a maximum excavation of 75.000 cubic metres of stone. The most difficult part of running a quarry are the five years of application time and the great economical security the applier has to have through those five years, but easier is it to later apply for an expansion of the maximum quarryable volume. In the case of the Skriverøya quarry though, the away-place is slowly being appropriated by the needs of the surrounding place. Existing close both to sites of cultural heritage, a beautiful recreation area and a growing neighborhood, conflict of interest might push the industry to a more suitable area. The great effort that has been undertaken to restore Iddefjorden as a thriving ecosystem, so heavily polluted by the wood industry, might also be a factor that speaks against industry here. For the purpose of this project, I therefore adhere to the quarry's own estimated drawings of the site as it will look after having fulfilled its 75.000 m<sup>3</sup> quota, in assessing its qualities and potential.

A central ambition in undertaking this project has been to understand the consequences of the stone industry. With the growing awareness of how modern machining and technology allows for precise stone constructions as well as post-tensioned stone elements, seen in both large scale projects like the Jesus tower at the Sagrada Família, but also in housing projects like Clerckenwell close By Groupwork architects; and as displayed by both architects and civil engineers alike in the 2020 exhibition "The New Stone Age", it is only right to evaluate one of the great cons of the stone industry. Coming from a place of great enthusiasm for stone constructions, and especially the craft it requires to erect buildings, standing on beautifully balanced equilibrium, the advances to our means of manufacturing again makes stone a viable construction material. Picking up the thread where it was left behind in the 1930's with the advent of steel and concrete, we must now assess the environmental costs of these materials as compared to the highly capable structural qualities of stone constructions. Given the low carbon emissions of stone, being mainly related to transportation, the biggest drawback are the quarries it leaves behind. But when left behind by purpose and industry, what can a quarry be?

By undertaking several excursions throughout the semester, I investigated both the traces of the stone industry and our long standing history of the built environment in stone. To understand how we write our history in stone, or how we understand history through stone, I visited Rome and looked at different monuments in differing states of disrepair. Among them, the Theatre of Marcellus really stood out, as



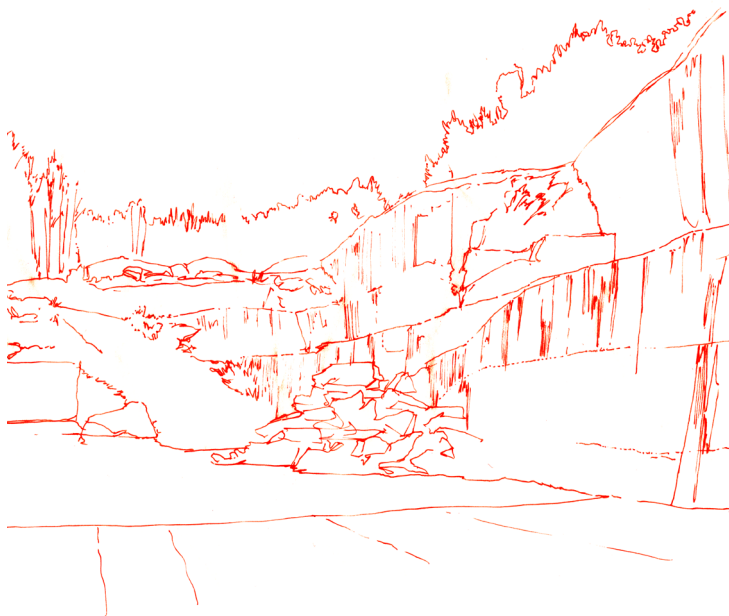
I was reminded of the brutal traces of blasted rock I had earlier seen in the quarry, but here in the shape of arches and columns, not readable but understandable. At the quarry, my investigation yielded a understanding of the slow, but steady reappropriation done by nature, seeing it slowly filling it in with water, with sand and silts from the hill above, with greenery and with fallen leaves. It paints the walls with running water, and as winter comes, some traces might be lost to the frost, while others remains. In keeping the quarry, one must therefor assess what qualities are given by decay, and which require upkeep.

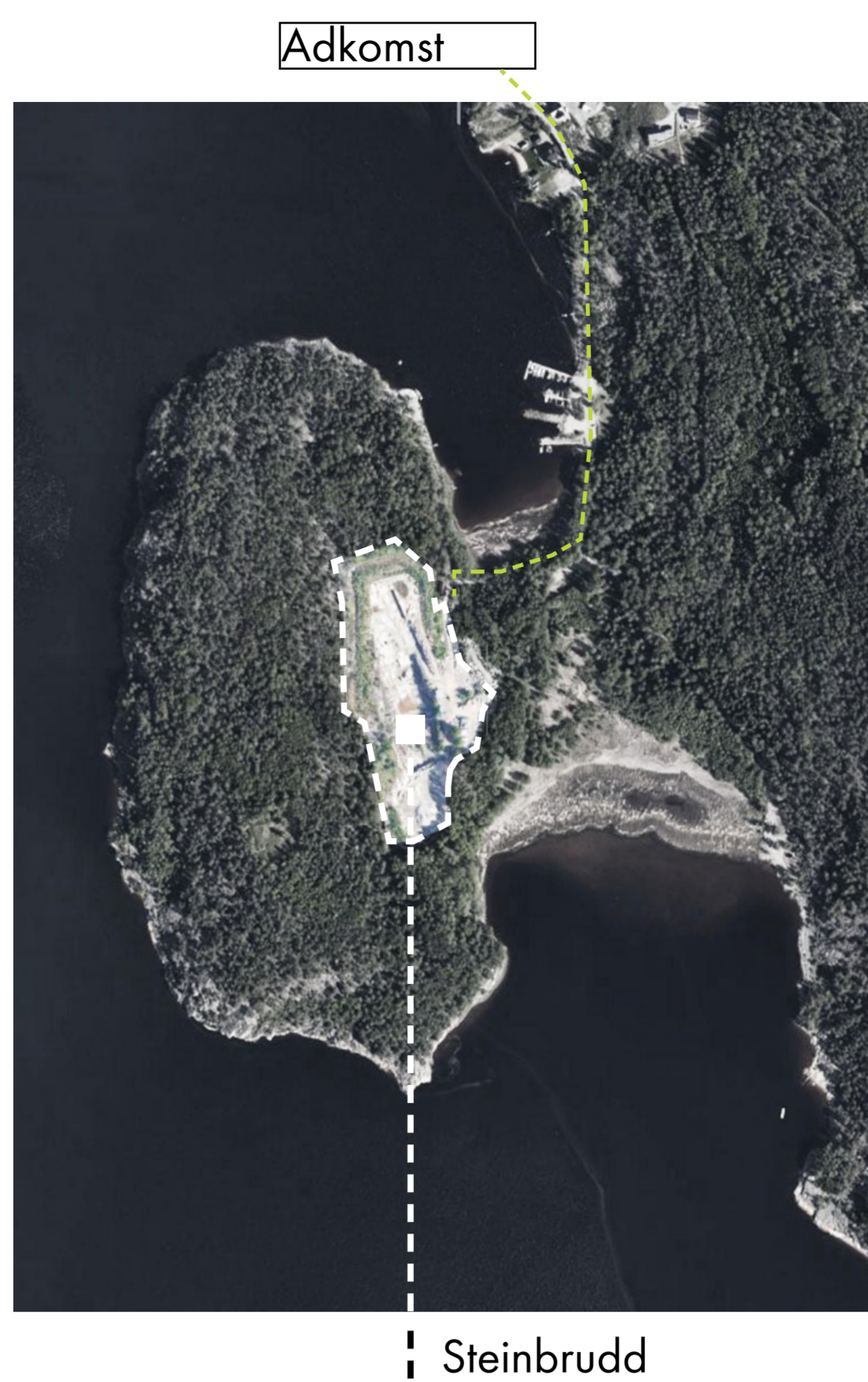
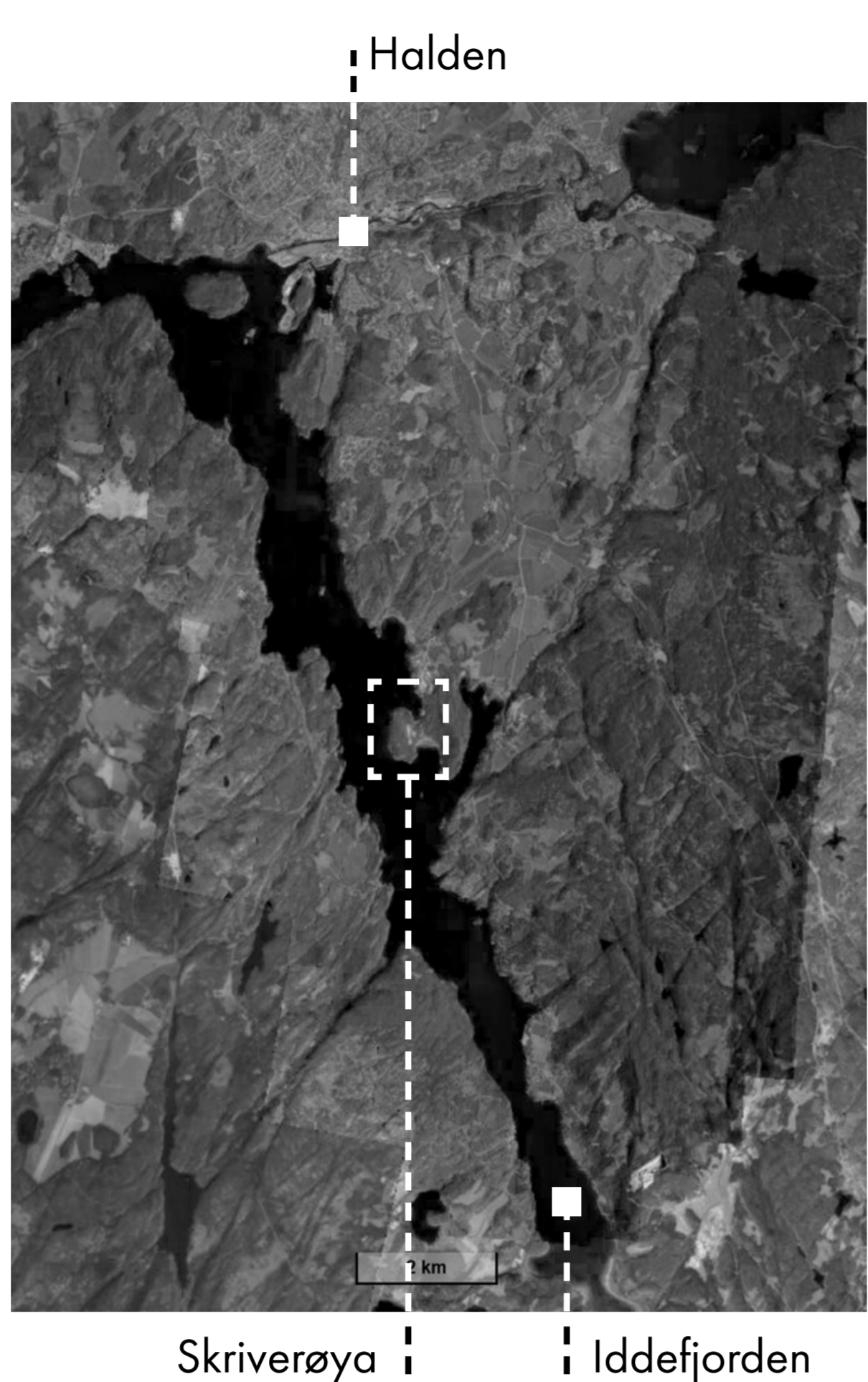
In an attempt at conveying the close relation between our reading, given by our sensitivity, and the discovered beauty, I build modestly a series of architectural experiences within the quarry, so as to prime and engage the visitor's sense of exploration while undertaking the decent to the quarry floor. Though I cannot restore the material integrity of the quarried mountain, I can complement the place that now exists with my built enviroment, giving it a frame, rhythm and movement. Letting the stone imprint upon the visitor as he transverses the path, I play on the division between landscape and architecture, slowly fading from clearly added constructive elements, to architecture that is part of the landscape, to a path that is no longer compromised of distinctly placed blocks. Leading the visitor through air and across water, I leave him at the end to his own devices to discover and muse upon those grand marks unintetionally left behind by a pragmatic efficiency.



# III

## The Project





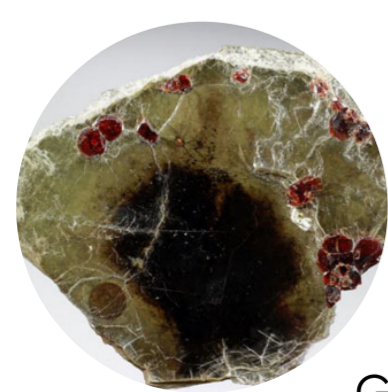
Iddefjordsgranitt  
Østfoldgranitt/Haldengranitt



Feldspat



Kvarts



Glimmer



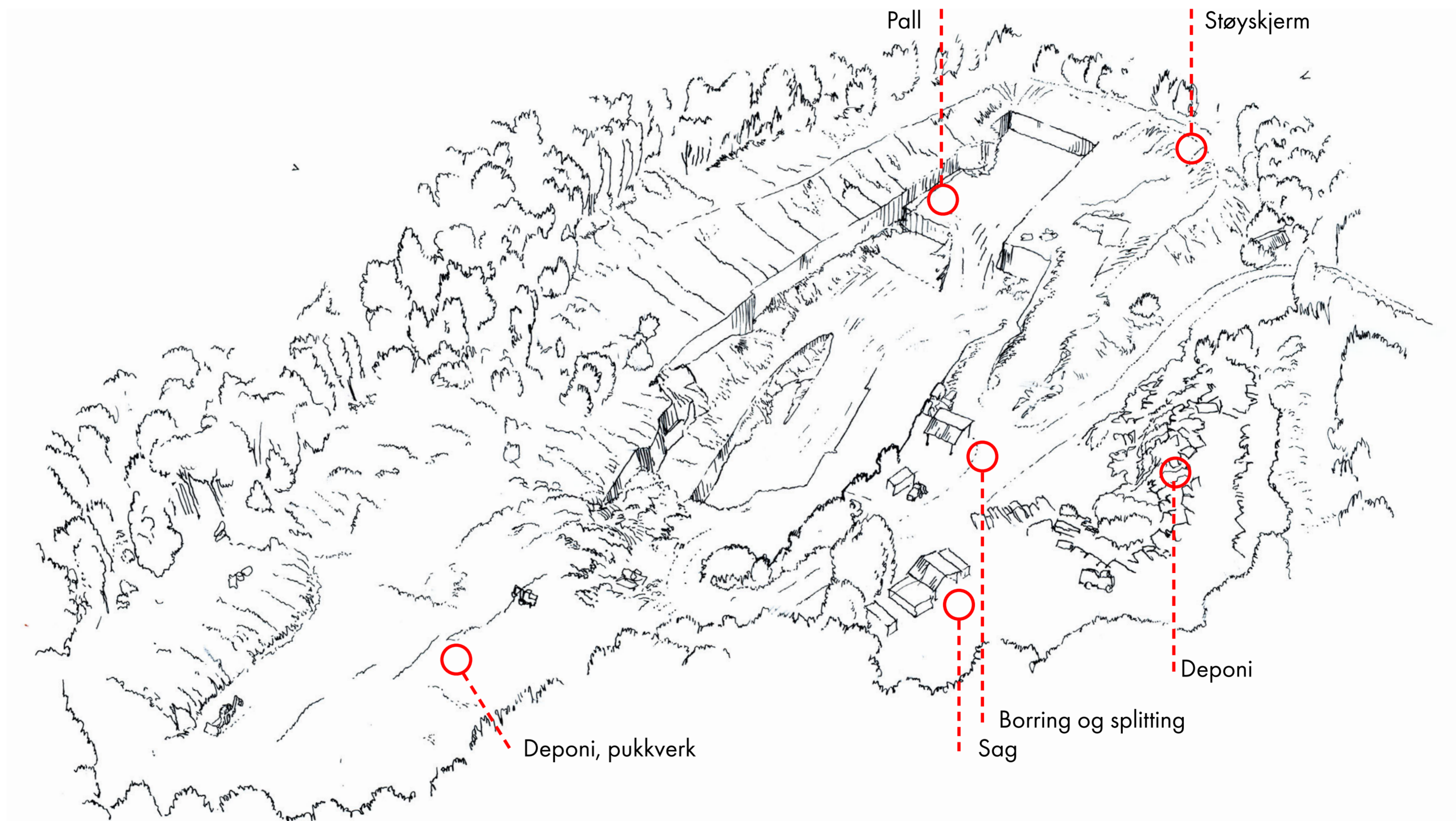
Tekniske egenskaper:  
 - Trykkfasthet: 152 MPa  
 - Bøyefasthet: 13.2 MPa  
 - Tetthet: 2.63 g/cm<sup>3</sup>  
 - Vannabsorpsjon: 0.20%

Til sammenligning betong:  
 - Trykkfasthet: 20-50 MPa  
 - Bøyefasthet: 2-5 MPa  
 - Tetthet: 2.4 g/cm<sup>3</sup>  
 - Vannabsorpsjon: 5-10%

Bruksområder:  
 - Bygningssten  
 - Gatestein  
 - Trapper  
 - Gulvflis  
 - Skulpturer

# Skriverøya Steinbrudd

Eier: JOGRA steinindustri AS

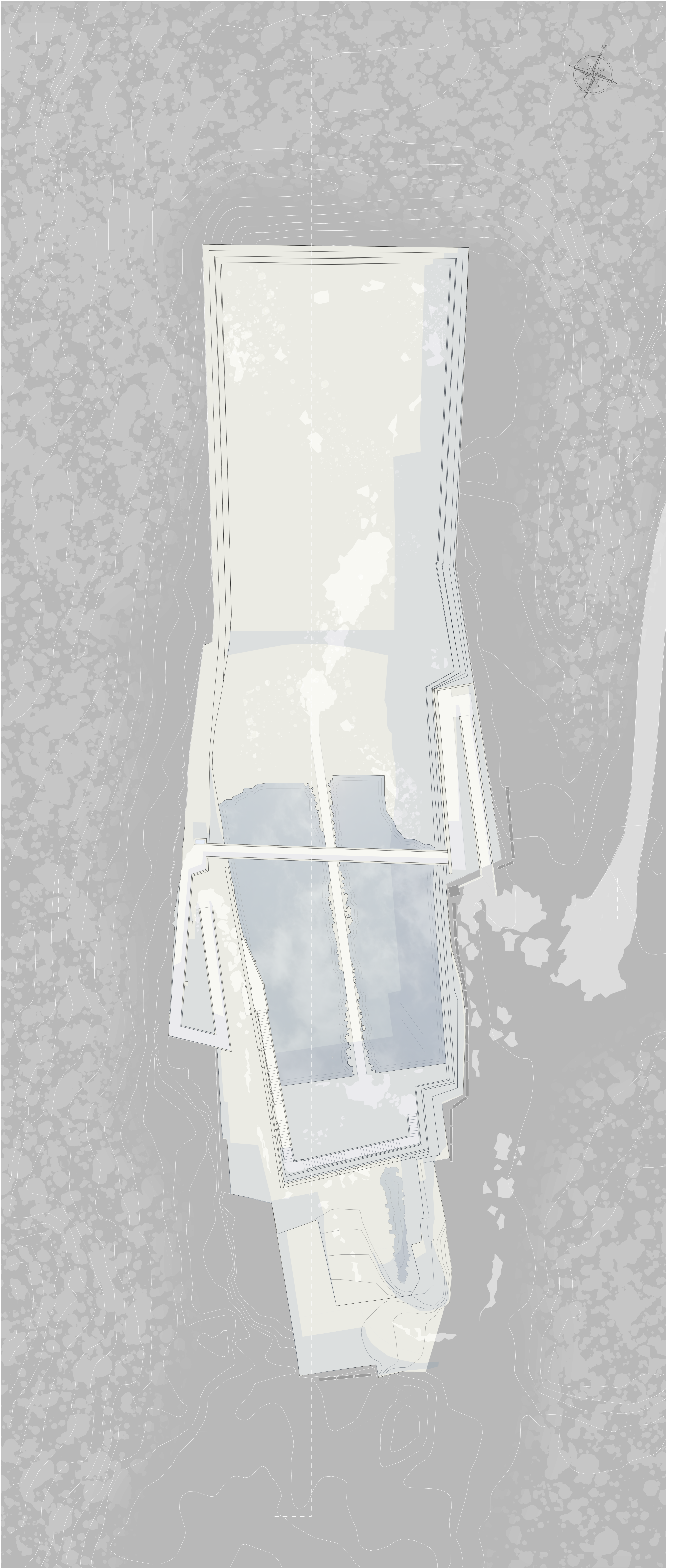


- Anslag totalvolum uttak: 75000m<sup>3</sup>
- 70% salgbar vare (52500m<sup>3</sup>)
- 30% skrotstein (22500m<sup>3</sup>)
- Forventet årlig uttak : 2150m<sup>3</sup>
- Forventet årlig blokk: 1500m<sup>3</sup>
- Forventet årlig skrot: 650m<sup>3</sup>
- Skrotstein lagres i regulerte deponier
- Lokal steinknuser reduserer behovet for deponering

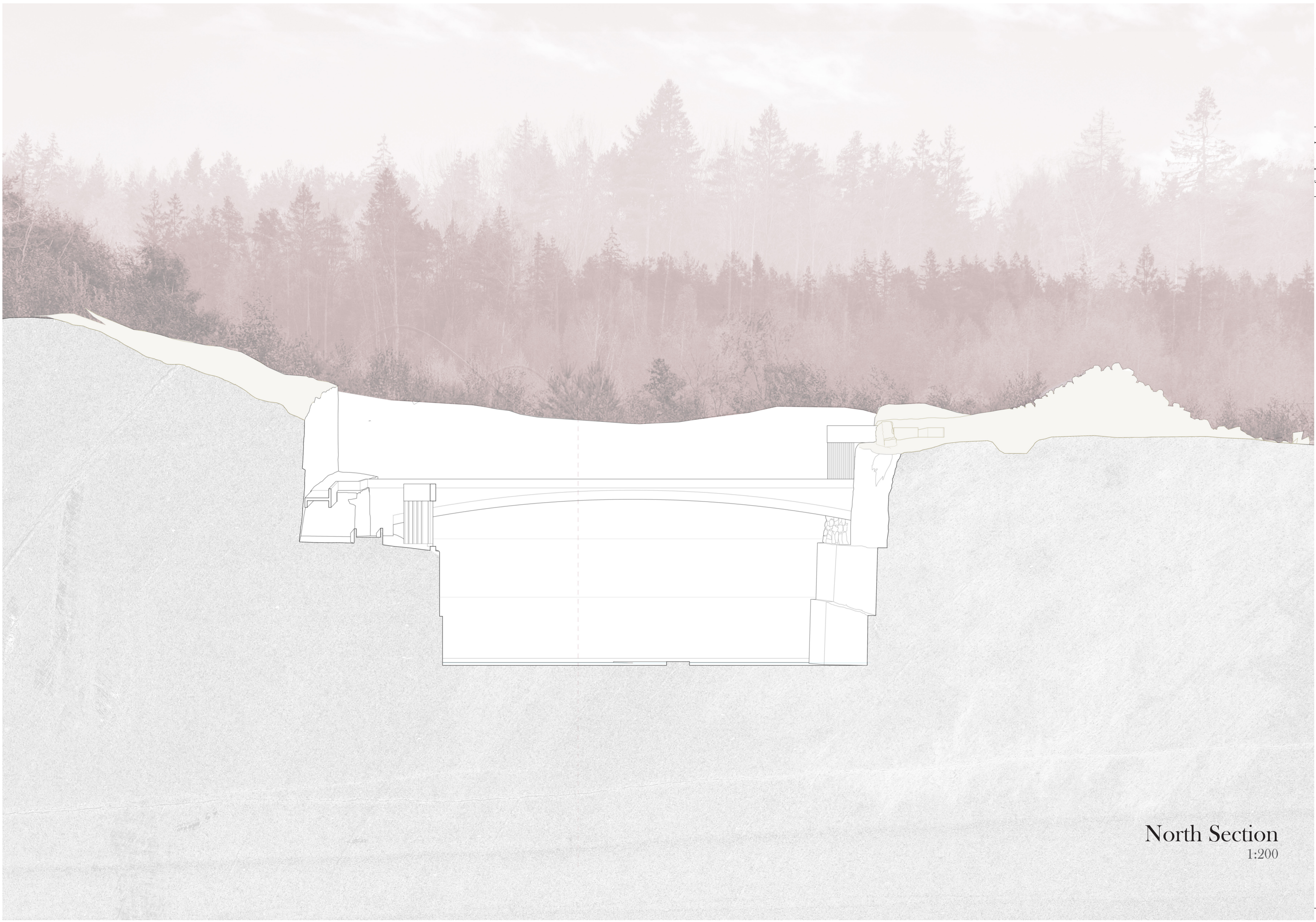


“Silencio”  
1:16  
Experimental video

<https://vimeo.com/779361188/c085a4e229>

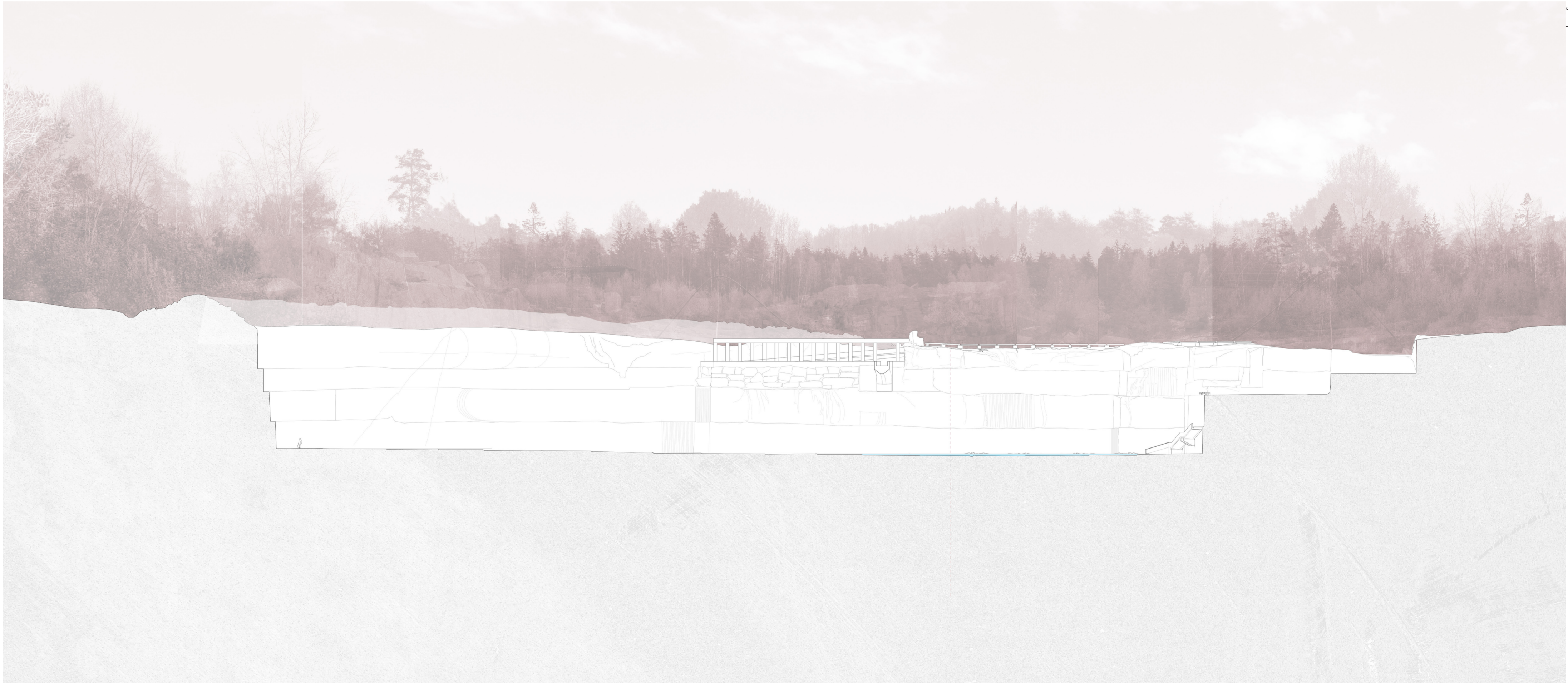


Site plan  
1:200

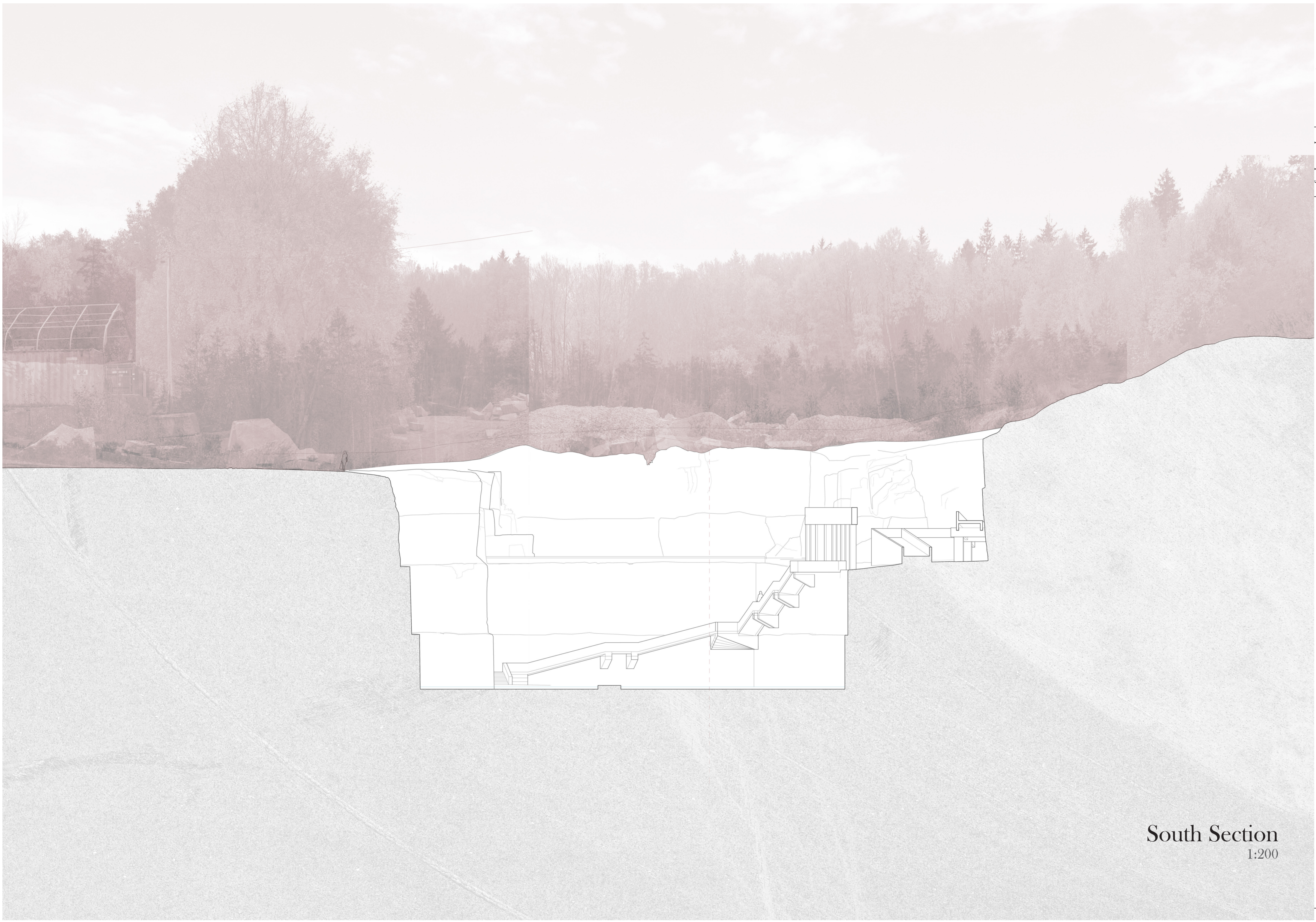


North Section  
1:200

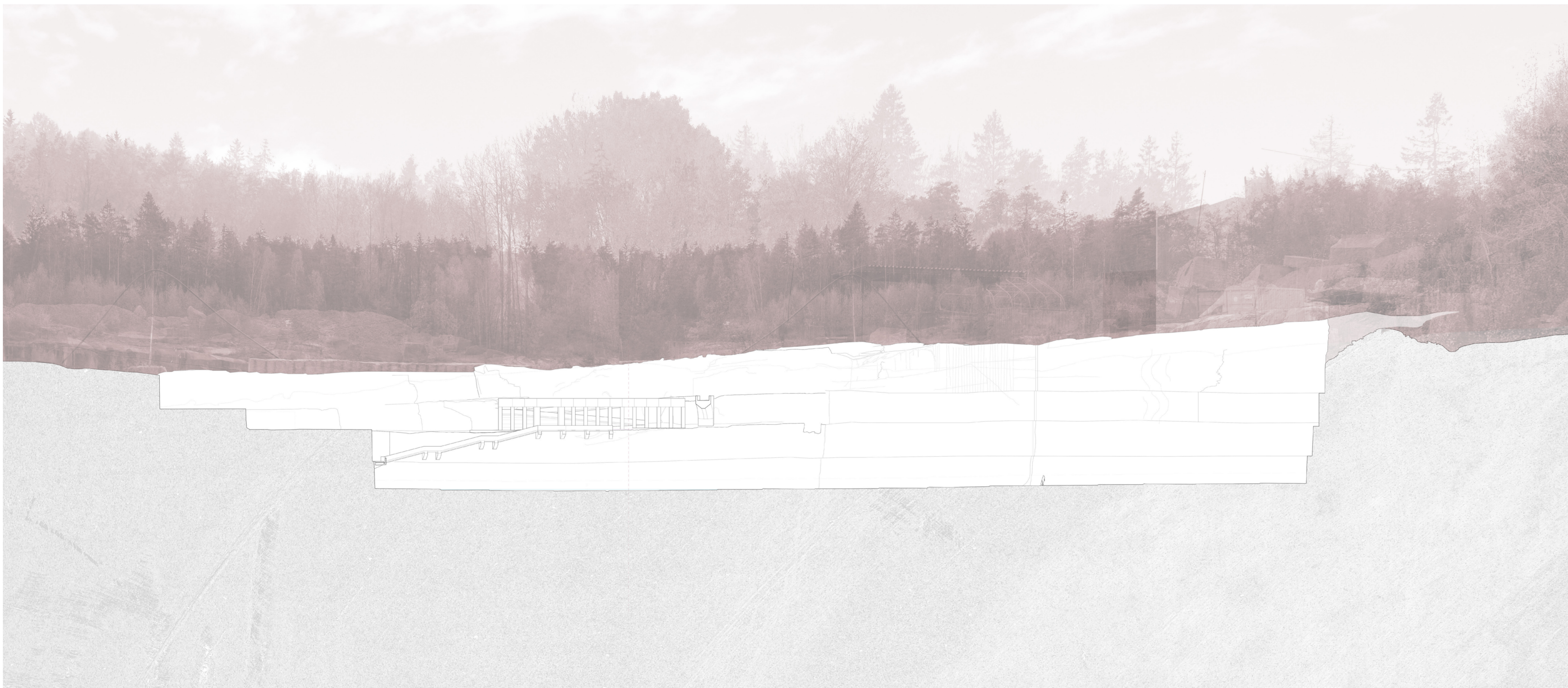




East Section  
1:200



South Section  
1:200

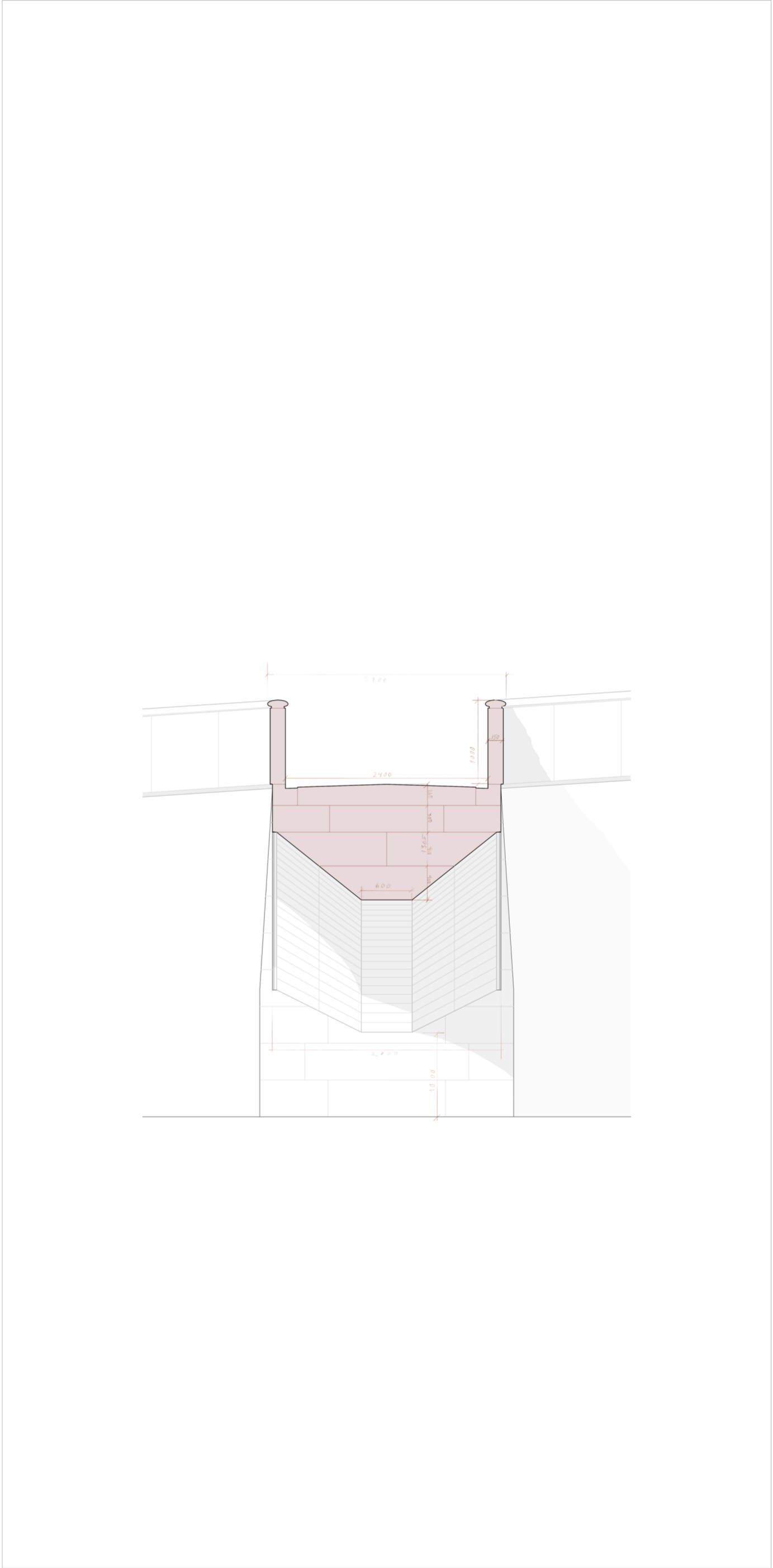
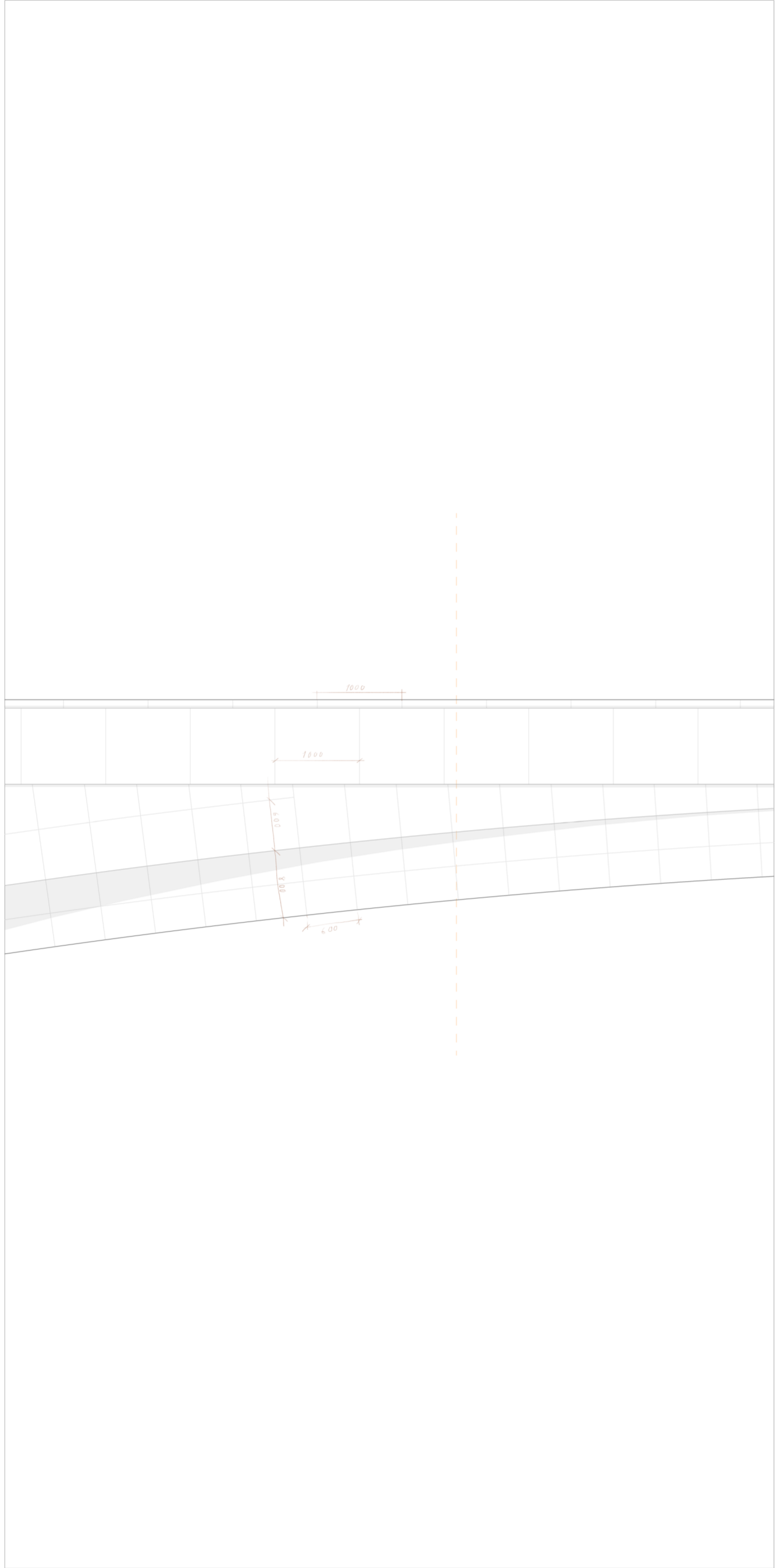


West Section  
1:200







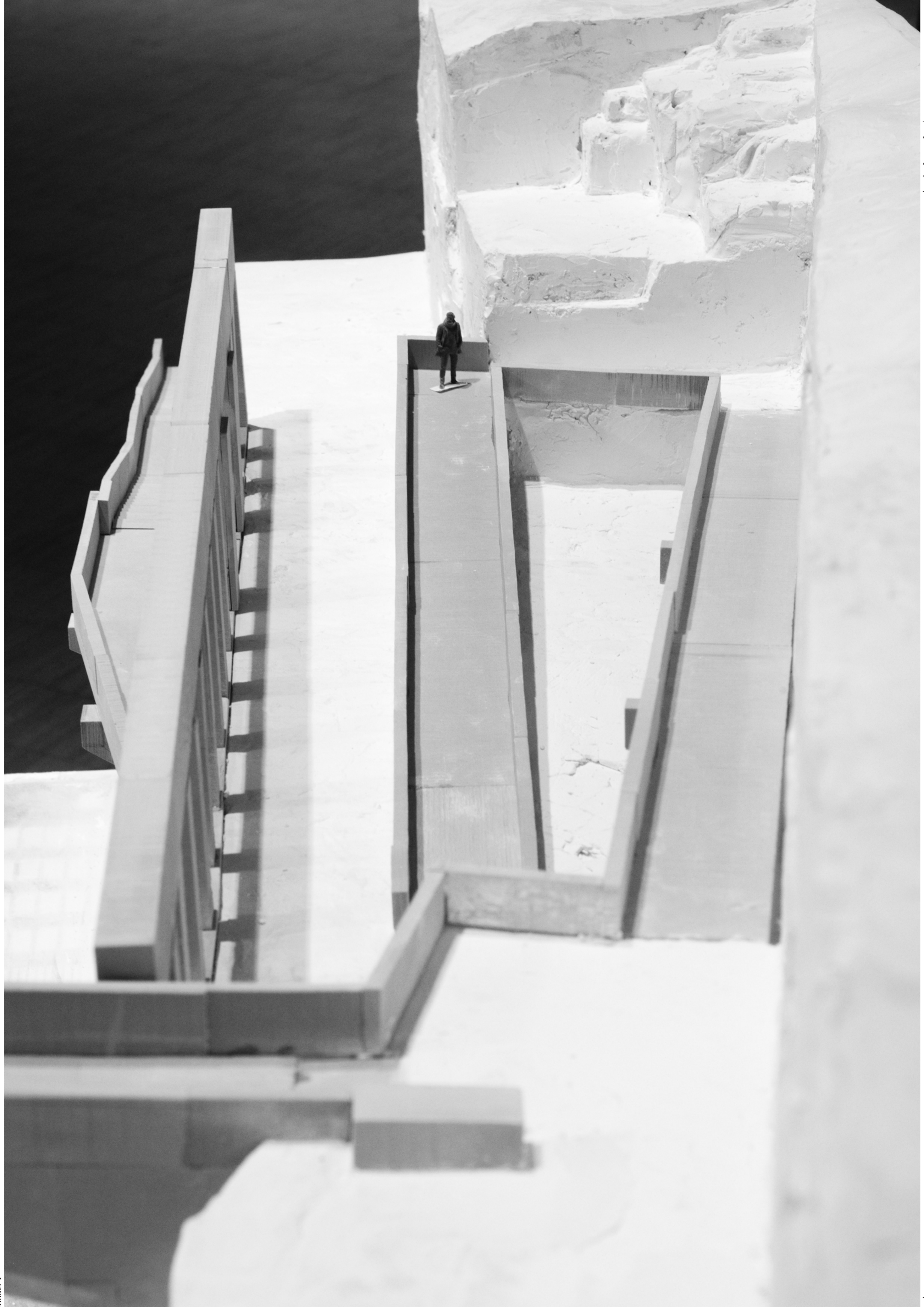


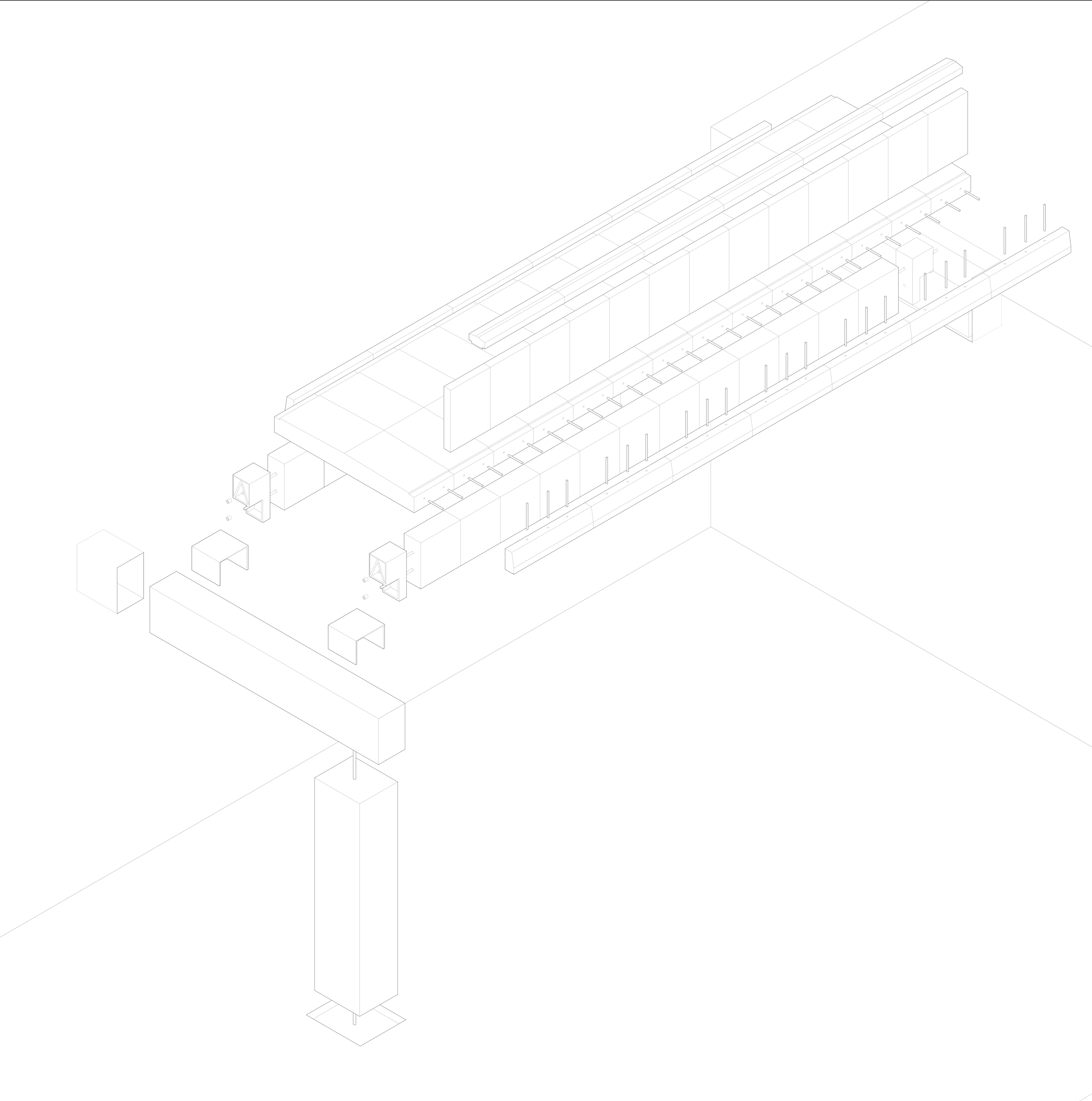
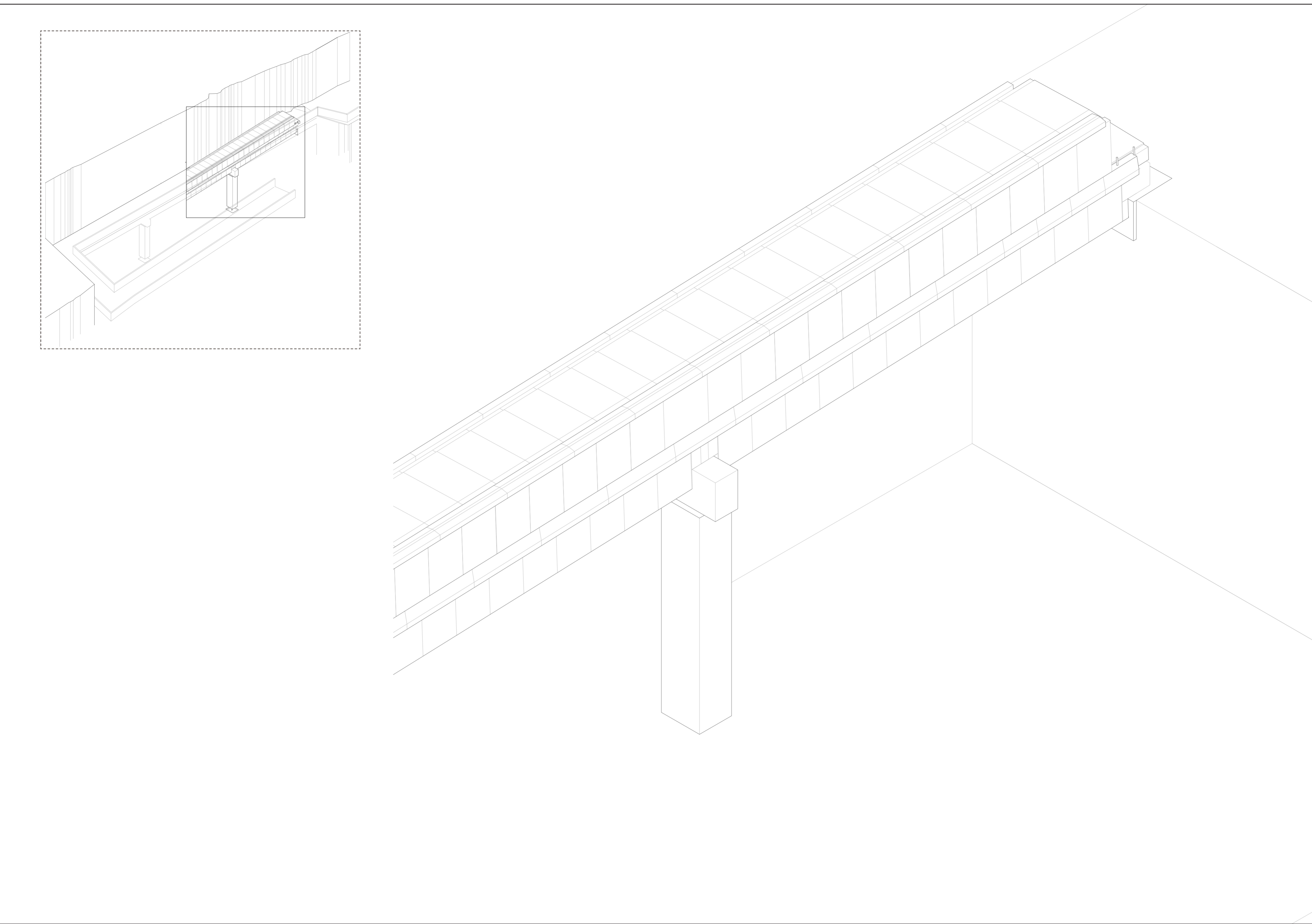
# Bridge details

1:50







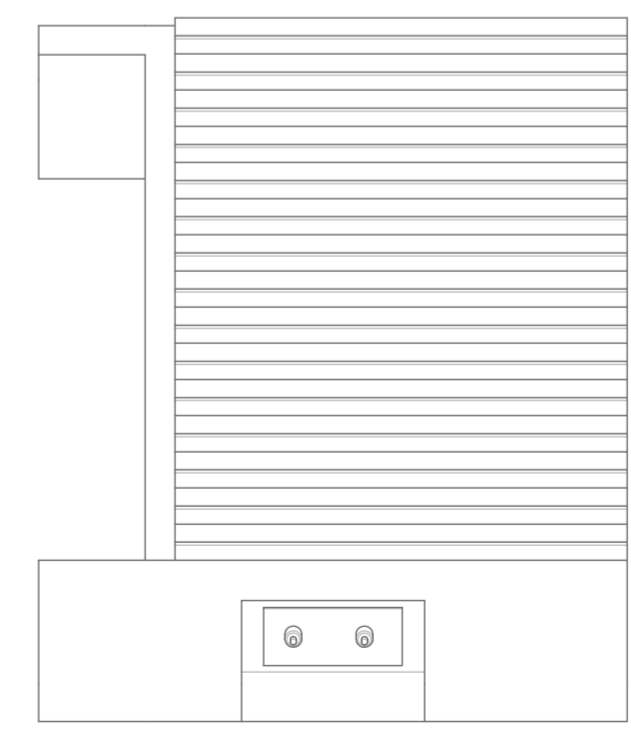
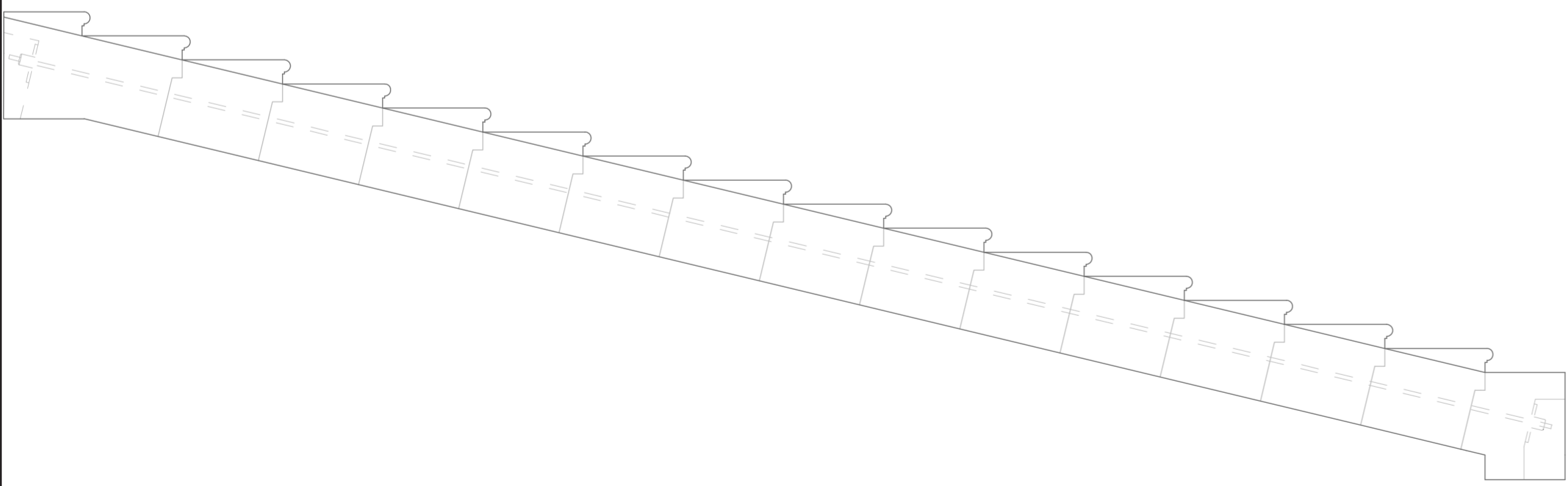
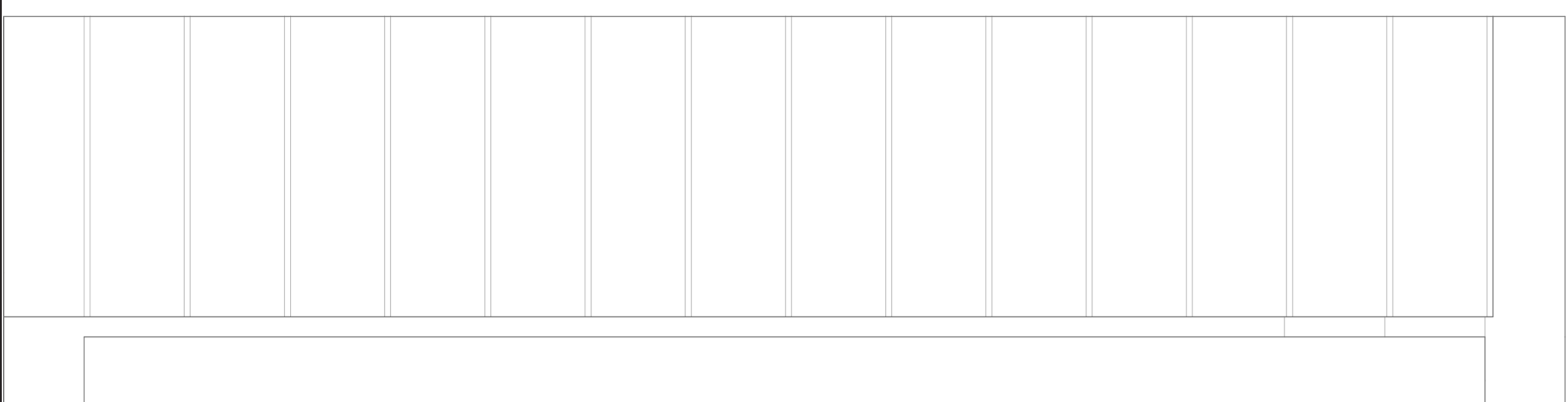
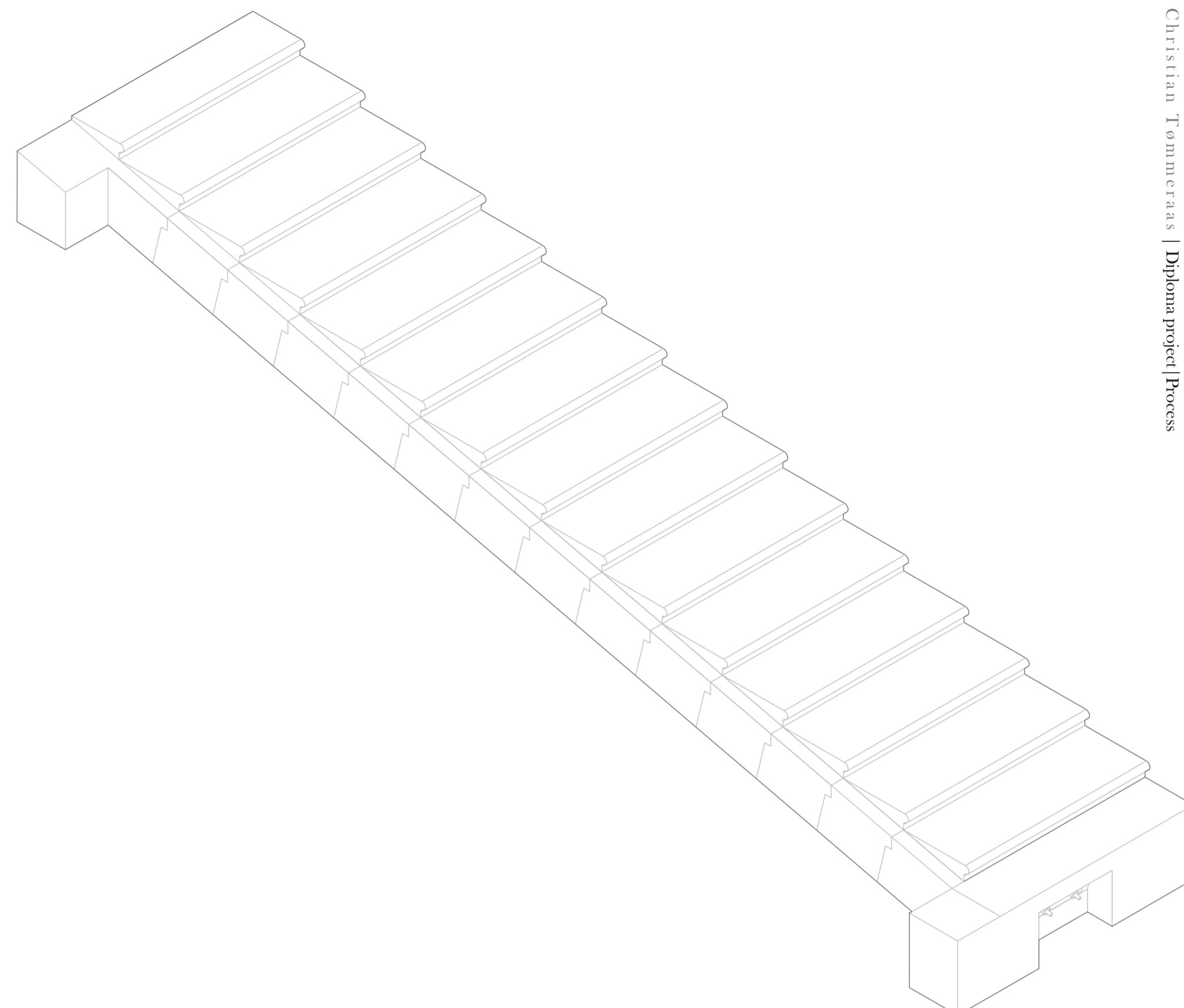


Perspective Ramp  
1:20

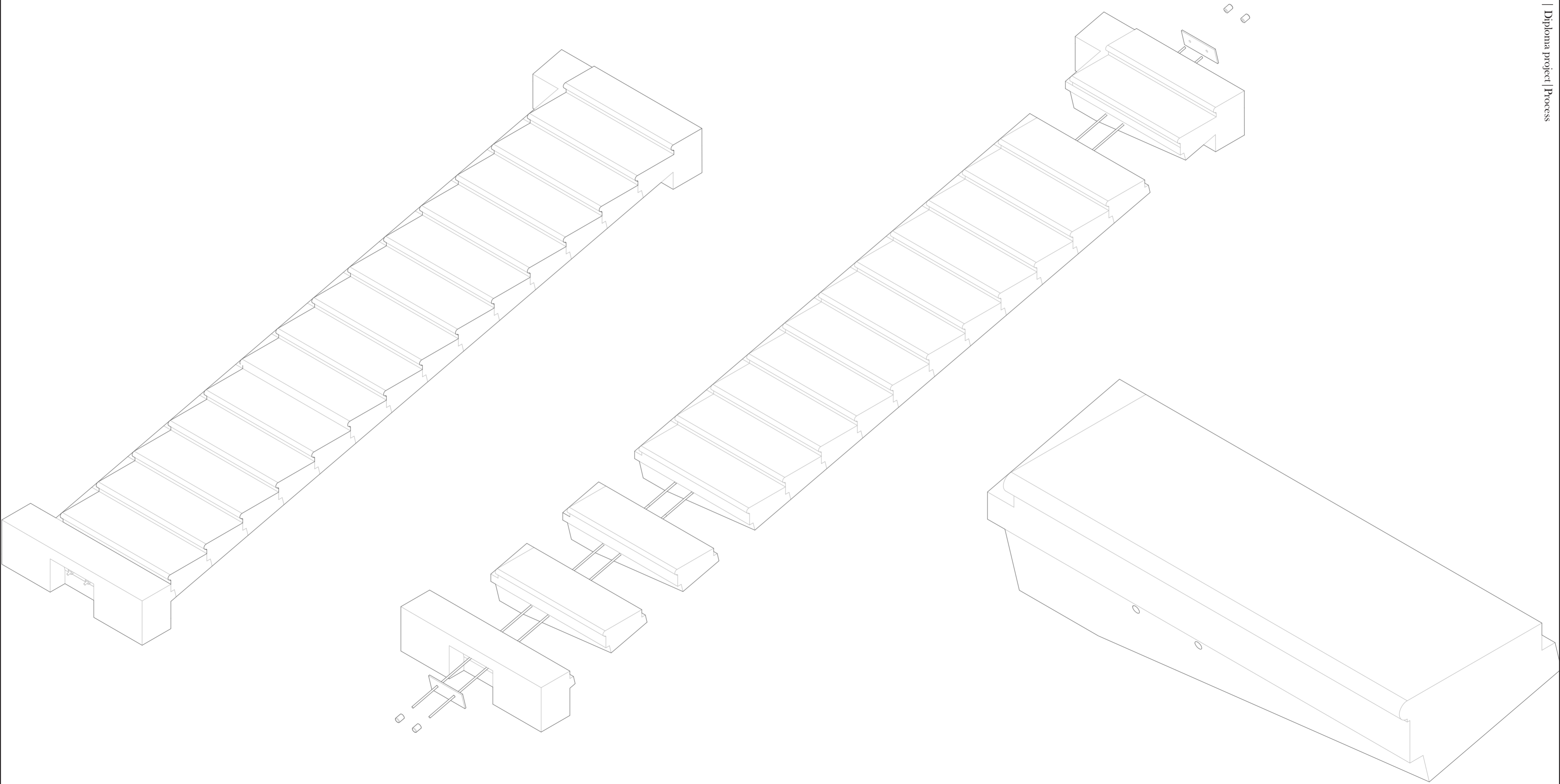




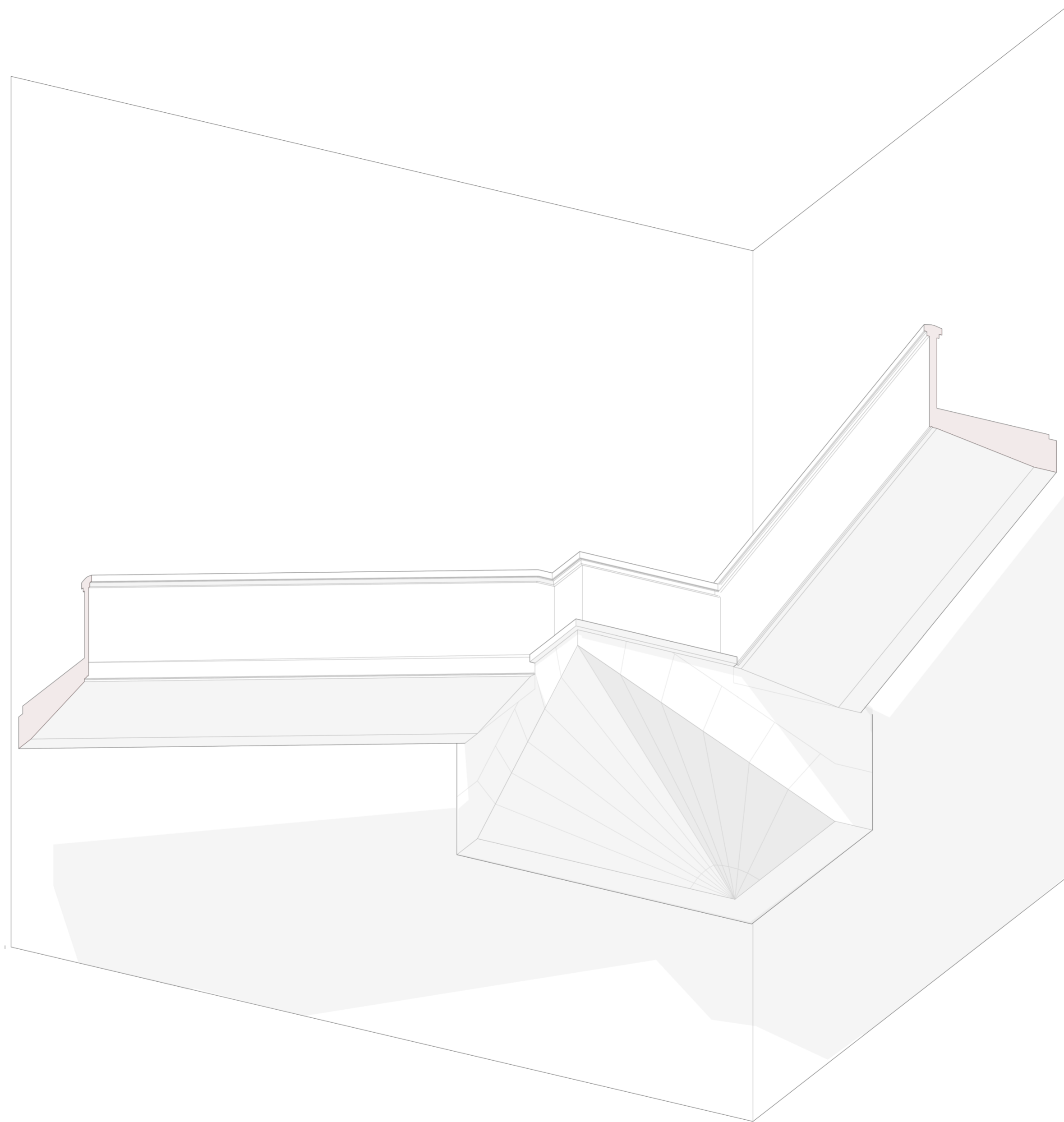




Staircase  
1:20

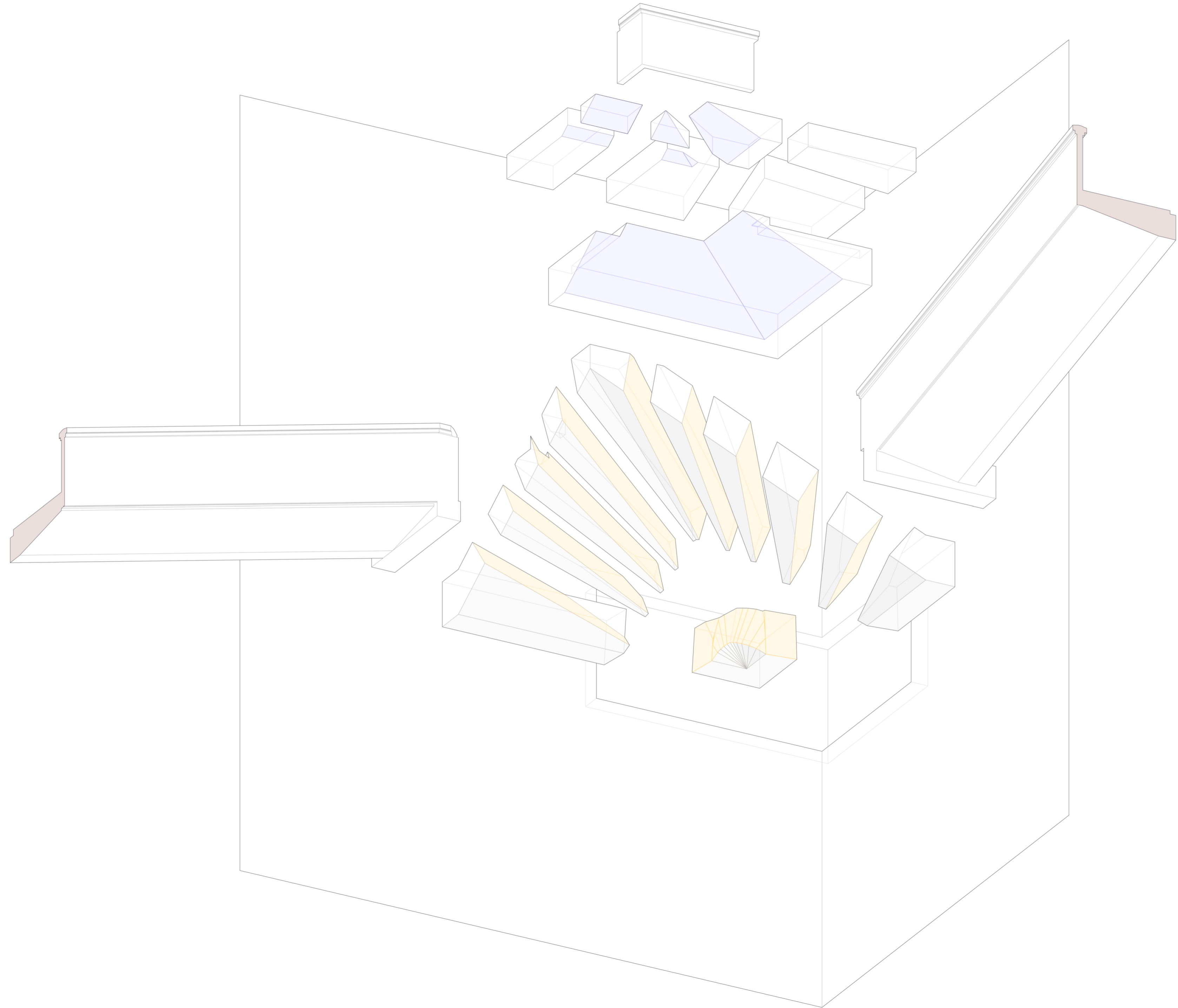


Staircase detail  
1:20



Squinch detail  
1:20





Squinch detail  
1:20

