

ΣΤΥΔΙΟ ΘΕΣΣΑΛΟΝΙΚΙ Ρ5

FRÁGMATA REMÁTON

φράγματα

Greek:

dams

ρεμάτων

Ancient Greek:

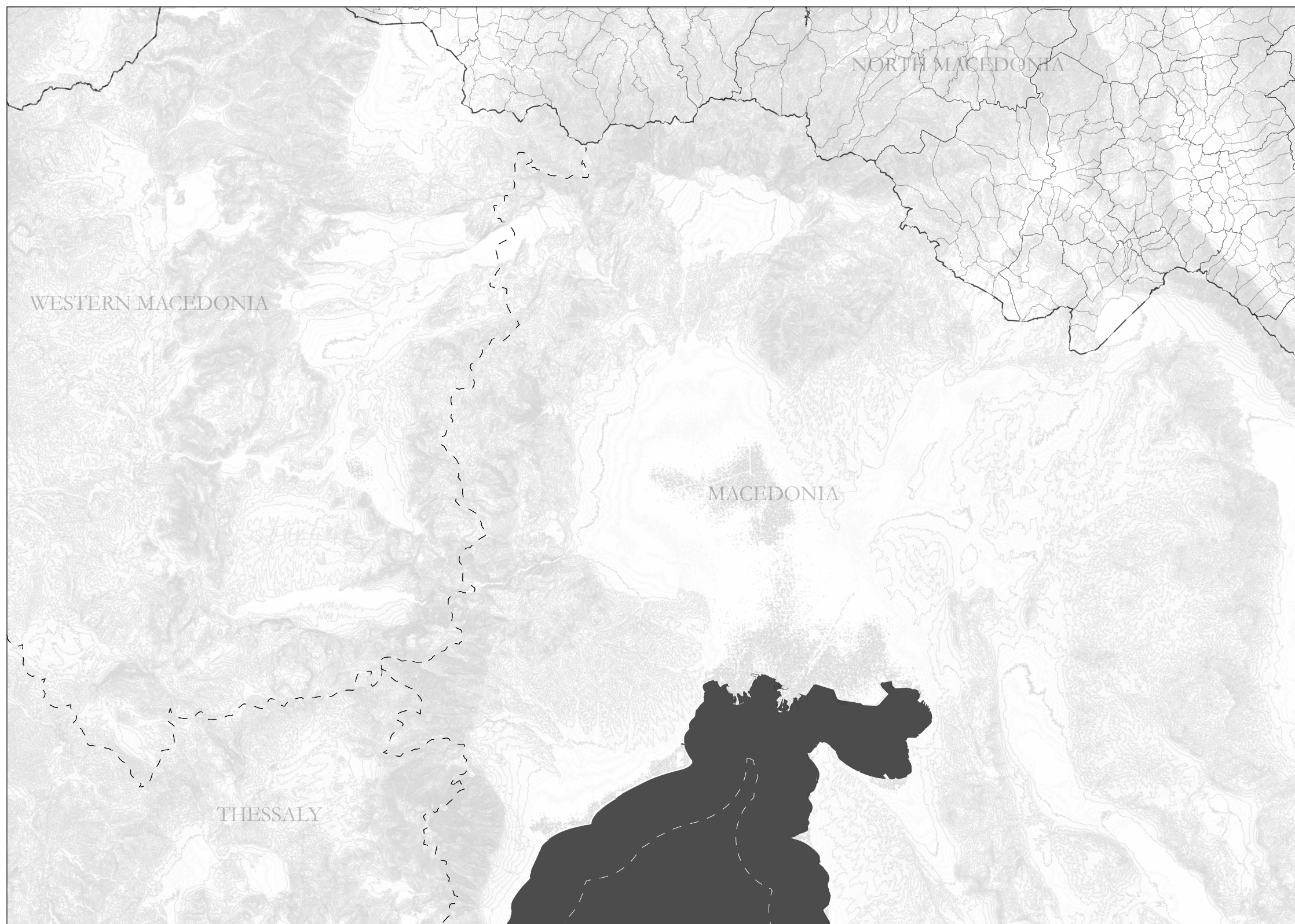
streams, flow



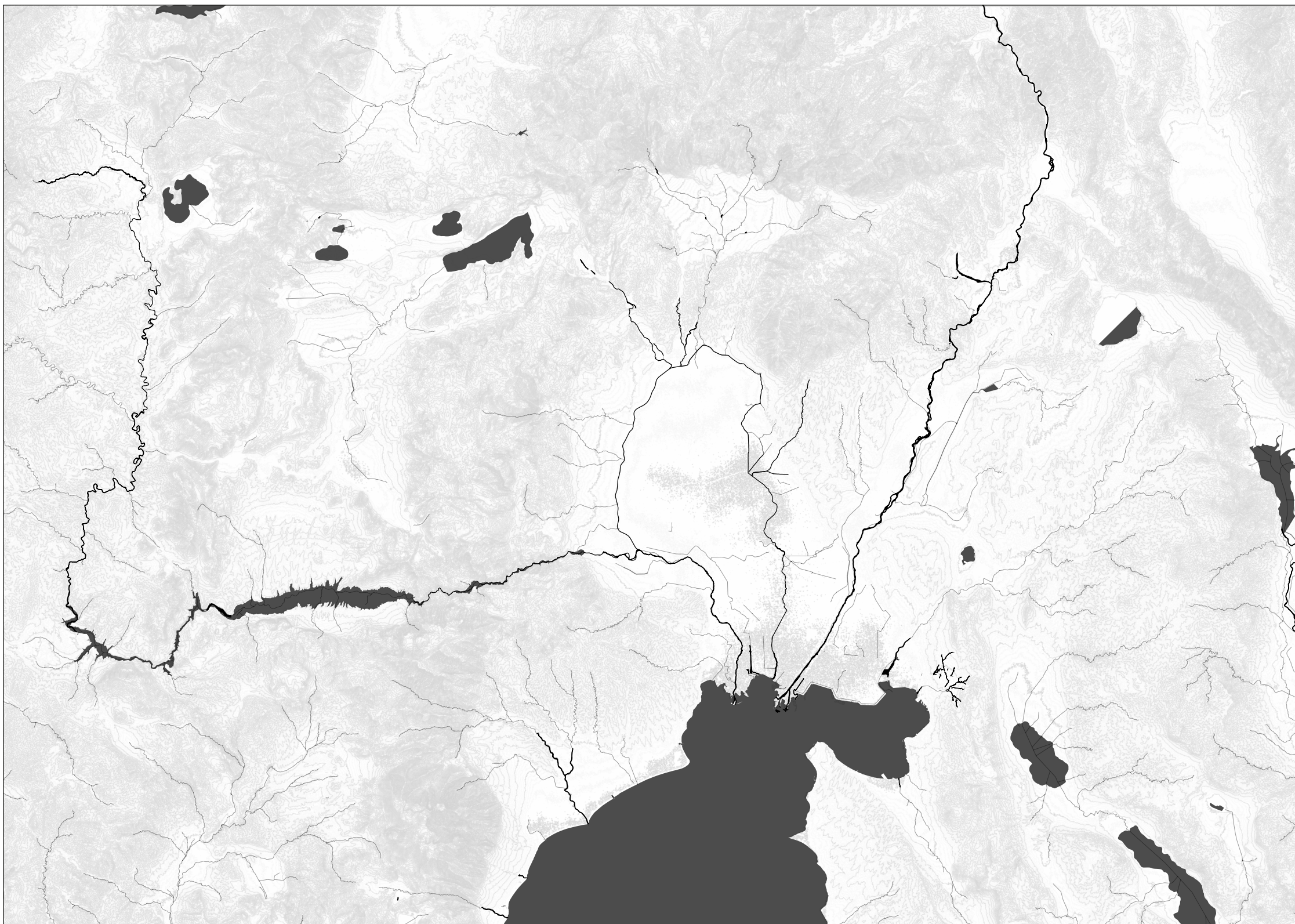
empowering the inhabitants surrounding the Polyfyto reservoir

Thomas Zhang
5380839

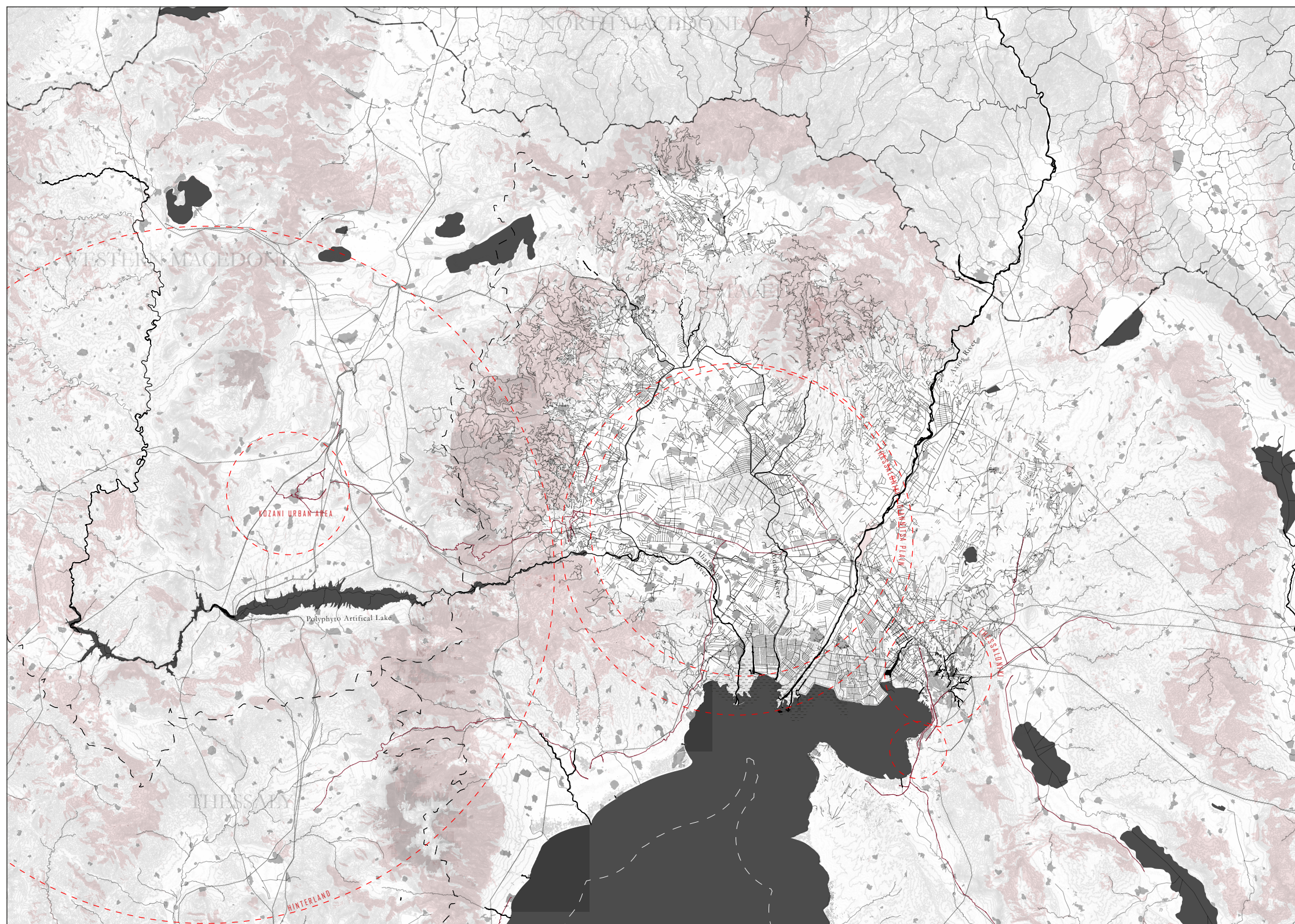
Tutors
Nishat Awan
Oscar Rommens
Pierre Jennen



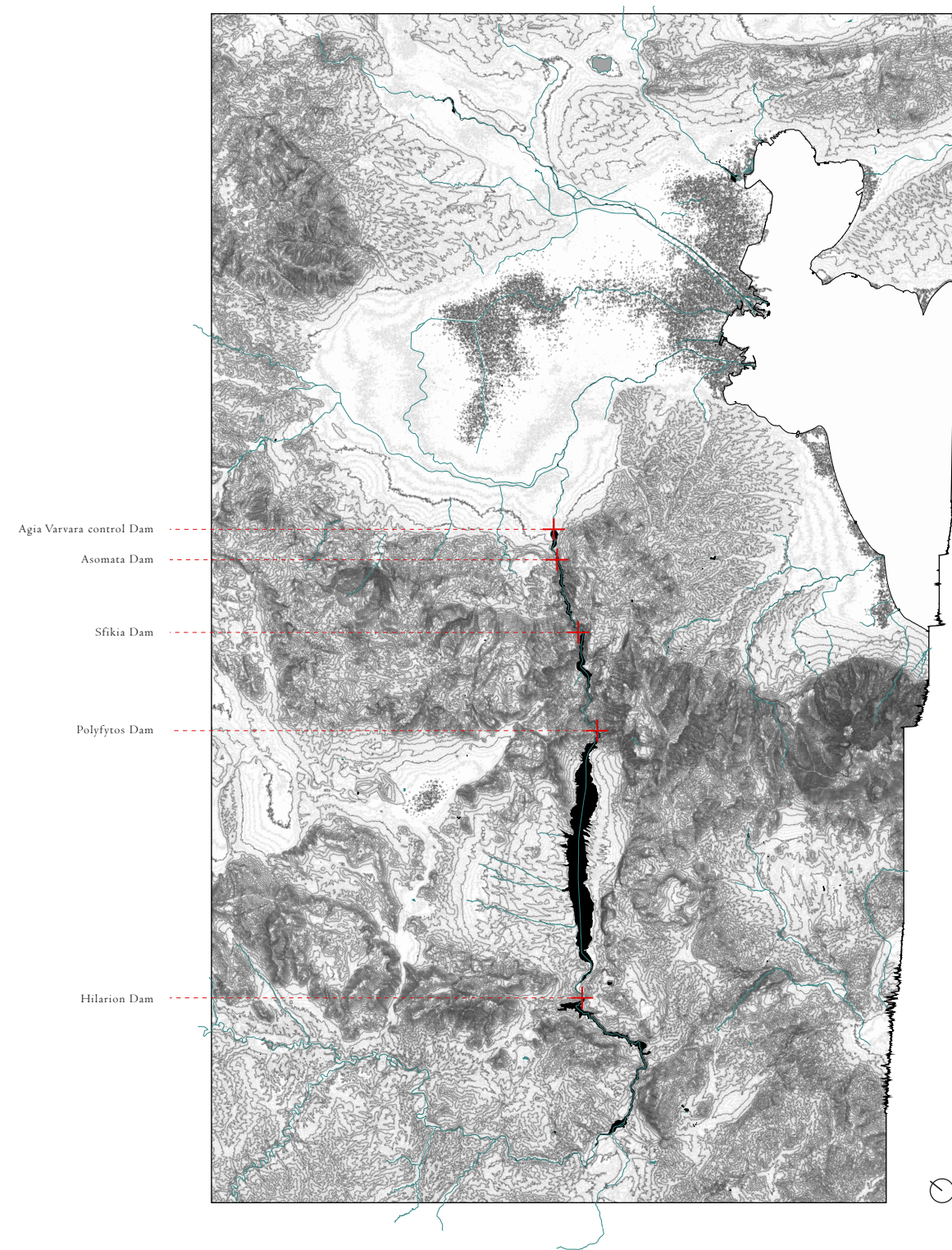
Topographical landscapes shaping the
relationship of a hinterland



Infrastructural links highlighting water bodies and rivers



⦿ Infrastructural links to the urban areas downstream,
highlighting water and electricity networks



ALIAKMONAS SERIES OF DAMS

—
dual presence of dams and reservoirs impounding the
topographical landscape



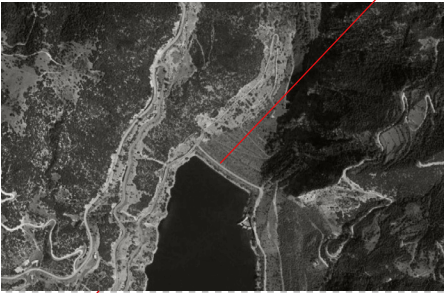
Agia Varvara control dam



Assomata Dam



Sfikia Dam



Polyfytos Dam



Hilarion Dam

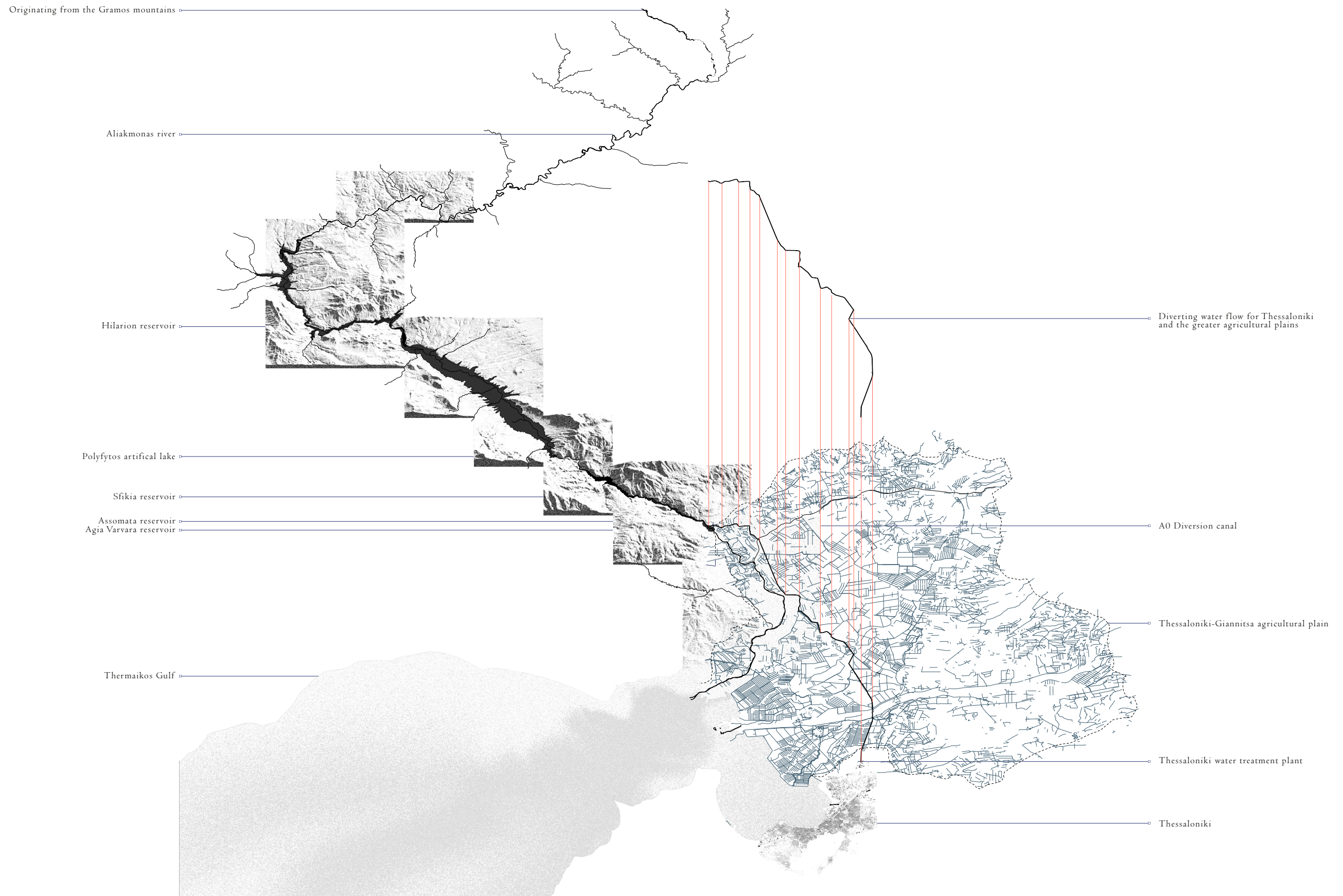




MODI OPERANDI MODEL

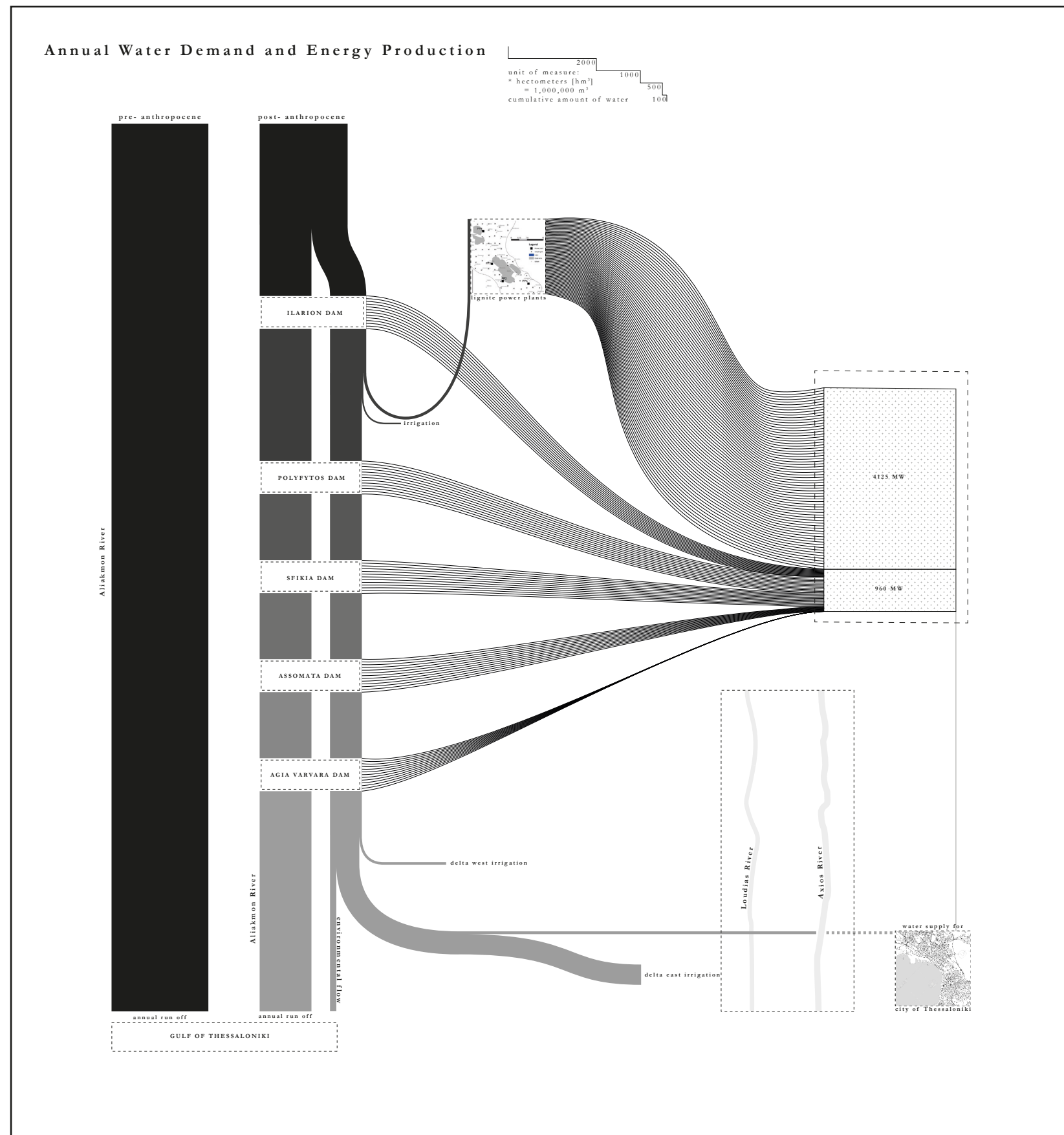
—

The hierarchical organization of the water as a productive resource is made clear through its actors that favour the users downstream as opposed to the ones that harbour the water in their lands



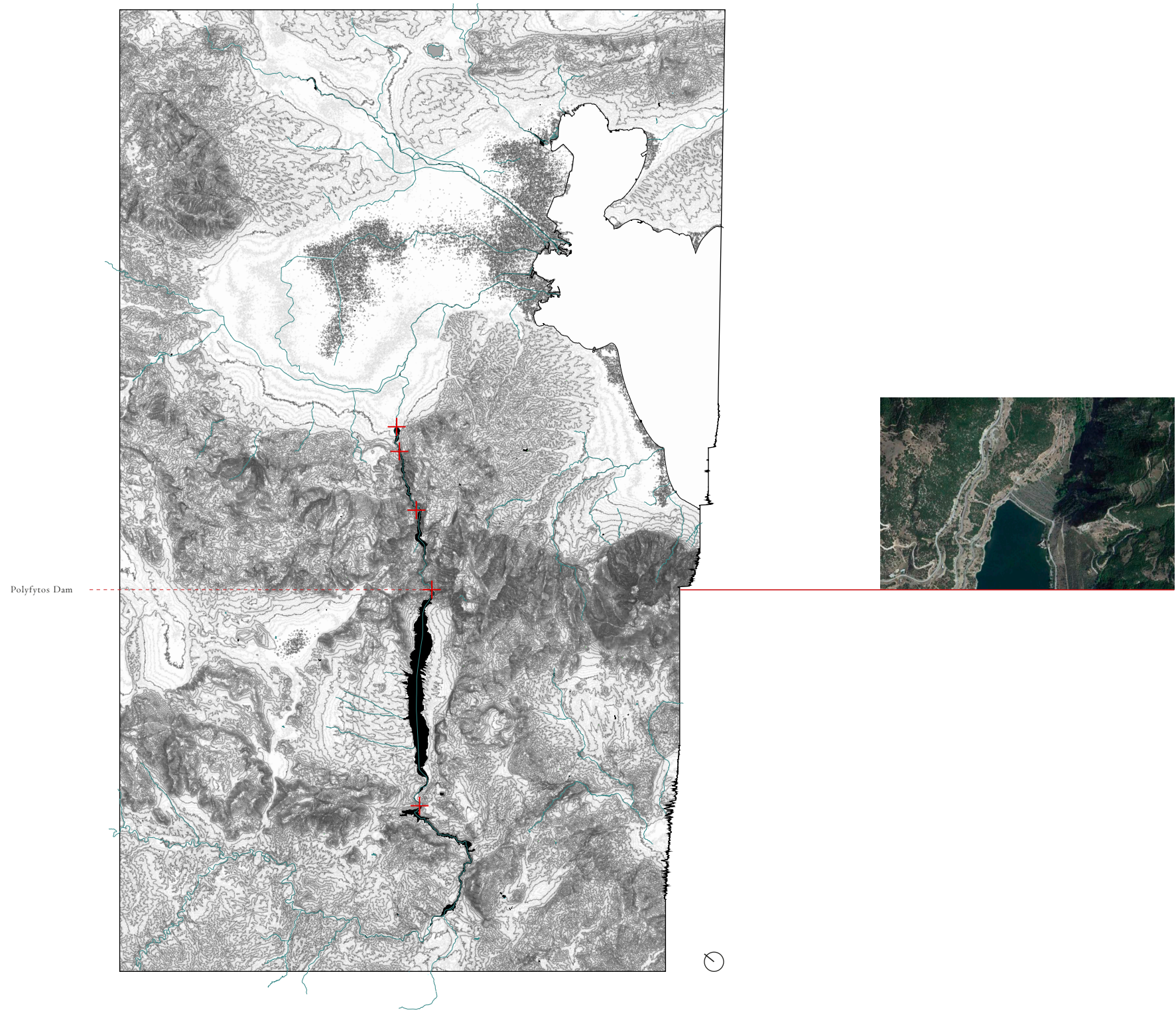
UPSTREAM / DOWNSTREAM OPERATIONS OF ALIAKMONAS RIVER

Mapping the hydraulic network that constitutes the transformation of the original river to its current focus of resource collection and extraction, linking the downstream demand and use of its water supply harnessed through the landscape in the greek hinterland.



MAPPING THE SYSTEM OF THE PRODUCTIVE LANDSCAPE

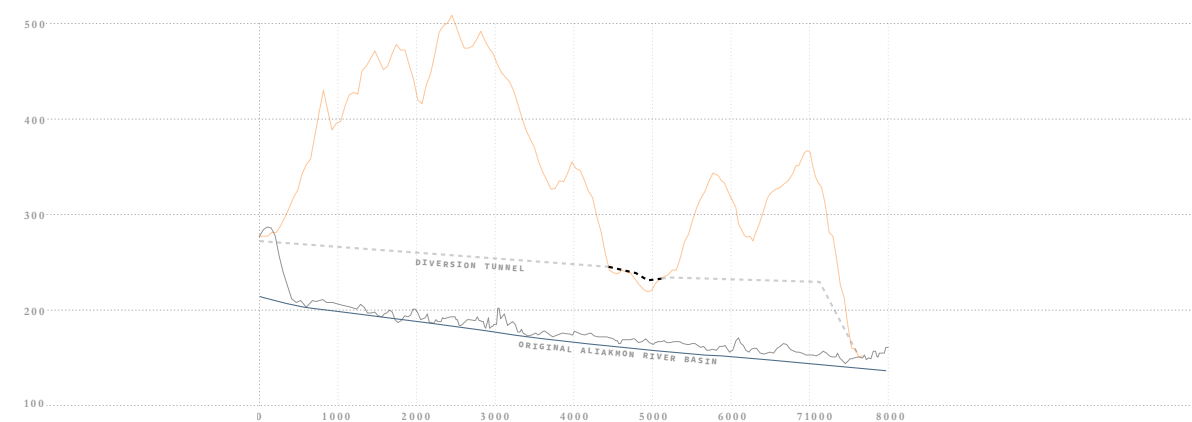
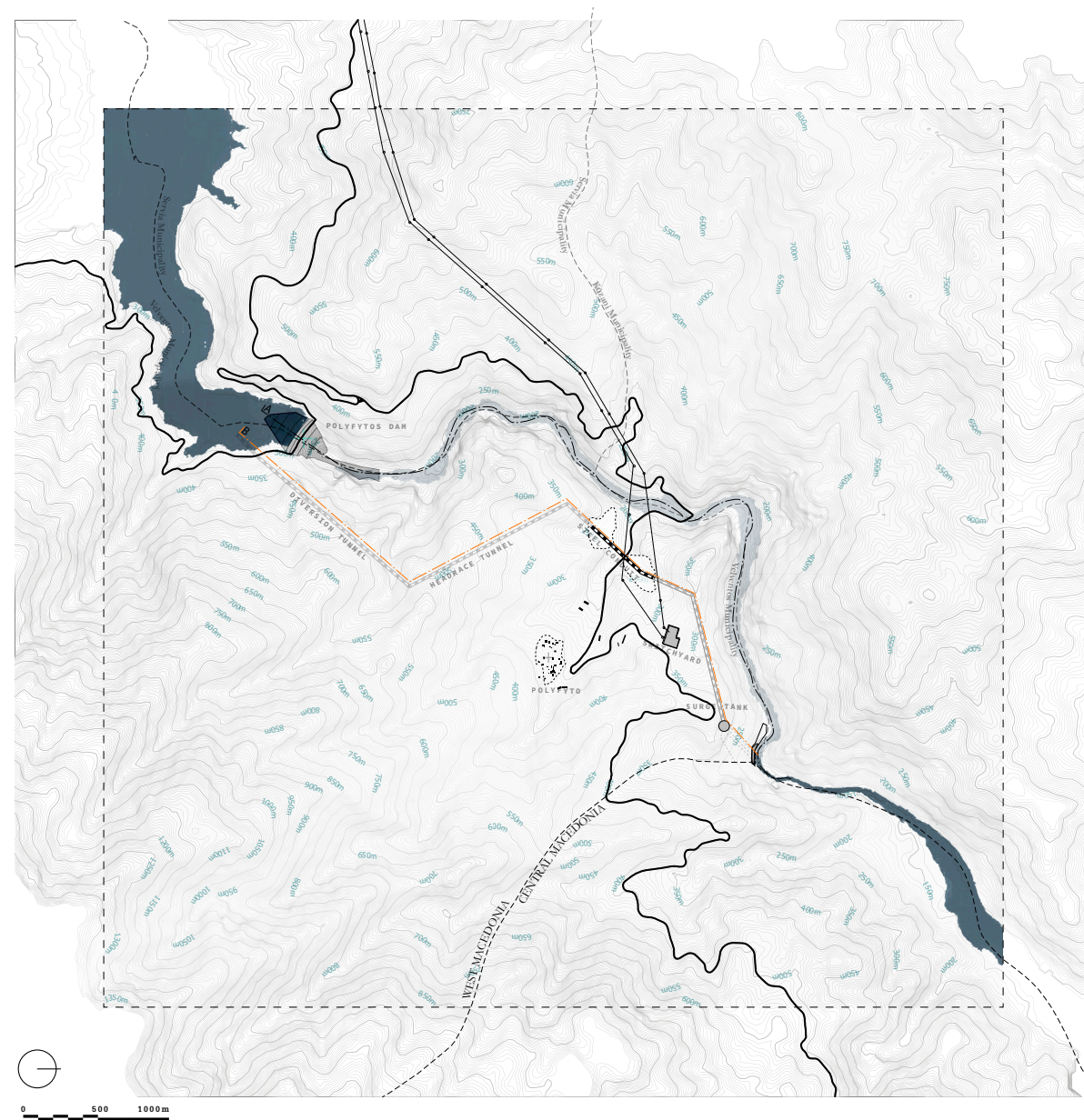
Viewing the river and its water flow as a resource for extraction



ALIAKMON VALLEY

—

Focussing on the Polyfyto dam and the resulting artificial lake



Disjointed operations of Polyfyto dam and the splitting of the river in two



Concrealed operations and management

EPT NEWS GREECE REGION · POLICY WORLD MORE ·

Residents opposed to the floating photovoltaic park in Polyfytos

VIDEO ERT3 ERT3 - NEWS 18/06, 1:10 pm | Upd: 18/06, 1:15 pm

Syntax Evmaria Dimitrakopoulou



The 73 sq. km. artificial lake of Polyfytos had been built in 1973 for the needs of PPC and had been granted to the residents of the area for fishing and eco-tourist exploitation. Today it changes use and acquisition and is going to be converted into the first floating park in Greece with photovoltaics, causing the reasonable reactions of the residents.




Source:
<https://www.ertnews.gr/video/antithetoi-oi-katoikoi-sto-ploto-fotovoltaiko-parko-sti-limni-polyfytoy/>

EPT NEWS GREECE REGION · POLICY WORLD MORE ·

Drought hits the crayfish of Lake Polyfytos Kozani

VIDEO ERT3 ERT3 - NEWS 03/07, 6:14 pm | Upd: 03/07, 6:14 pm


Syntax Vassilis Karabasis



ΕΙΔΗΣΕΙΣ ΥΨΗΛΑ ΠΟΣΟΣΤΑ ΘΝΗΣΙΜΟΤΗΤΑΣ ΓΙΑ ΤΙΣ ΚΑΡΑΒΙΔΕΣ ΣΤΗ ΛΙΜΝΗ ΠΟΛΥΦΥΤΟΥ

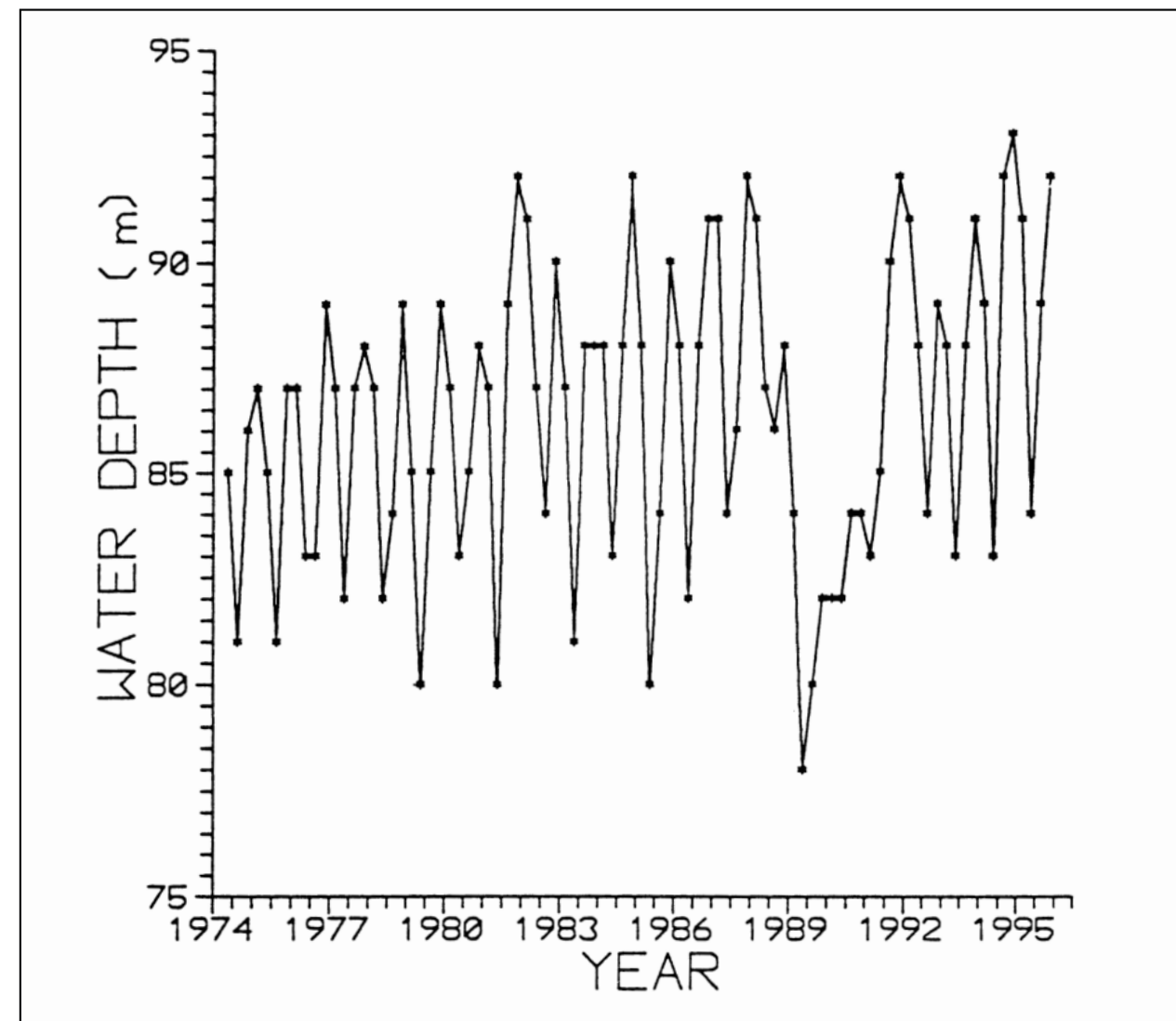
High mortality rates were observed in recent times in the population of crayfish in Lake Polyphytos. The fishermen of the area are emitting SOS and are asking the state to take measures to deal with the situation.

Reportage M. Nassiadis



ΔΥΤΙΚΗ ΜΑΚΕΔΟΝΙΑ
ΚΟΖΑΝΗ – απευθείας
ΟΙ ΚΑΡΑΒΙΔΕΣ ΑΠΟ ΤΗ ΛΙΜΝΗ ΠΟΛΥΦΥΤΟΥ... ΤΑΣΙΔΕΥΟΥΝ ΣΕ ΟΛΟ ΤΟΝ ΚΟΣΜΟ
facebook: ΚΑΘΕ ΜΕΡΑ ΕΛΛΑΔΑ email: kathemeraellada@ert.gr
Ελλάδα 10:58:20

Source:
<https://www.ertnews.gr/roi-idiseon/i-xirasia-plittei-tis-karavides-tis-limnis-polyfytoy-kozanis/>



Historical data of reservoir water level fluctuation
—
1974 - 1995



The settlement of Neraida before Aliakmon valley was flooded due to the impounding of the reservoir area

Credit: Ξενοφών Βατζογλου



24. ΝΕΡΑΪΔΑ 1929 - 1974 Οκτώβριος 1973
Προετοιμασία για την ισοπέδωση των σπιτιών

ΦΩΤΟ: Α. Η. ΠΑΠΑΝΙΚΟΛΑΟΥ

Double exposure of the territory
Infrastructure operations and the Neraida settlement



1. ΝΕΡΑΪΔΑ 1974 – ΕΩΣ ΣΗΜΕΡΑ

ΦΩΤΟ: ΓΙΩΡΓΟΣ ΠΑΠΑΔΟΠΟΥΛΟΣ

1975 Η μετεγκατάσταση ήταν επώδυνη, ο κρατικός μηχανισμός ήταν απών, οι Νεραϊδιώτες με περισσή δύναμη της ψυχής τους ξεπερνούσαν όλες τις δυσκολίες, μαρτυρεί το χαμόγελο του Ηλία Γεωργιάδη στο φωτογράφο. Στο σημείο αυτό εμφανίσθηκε μία από τις πηγές που υπήρχαν στην όχθη του Αλιάκμονα) εξ αιτίας της ανόδου της στάθμης της λίμνης

The hydraulic projects are mired in a nearly
insurmountable web of controversy and conflict, and it's
hardly alone in that status.

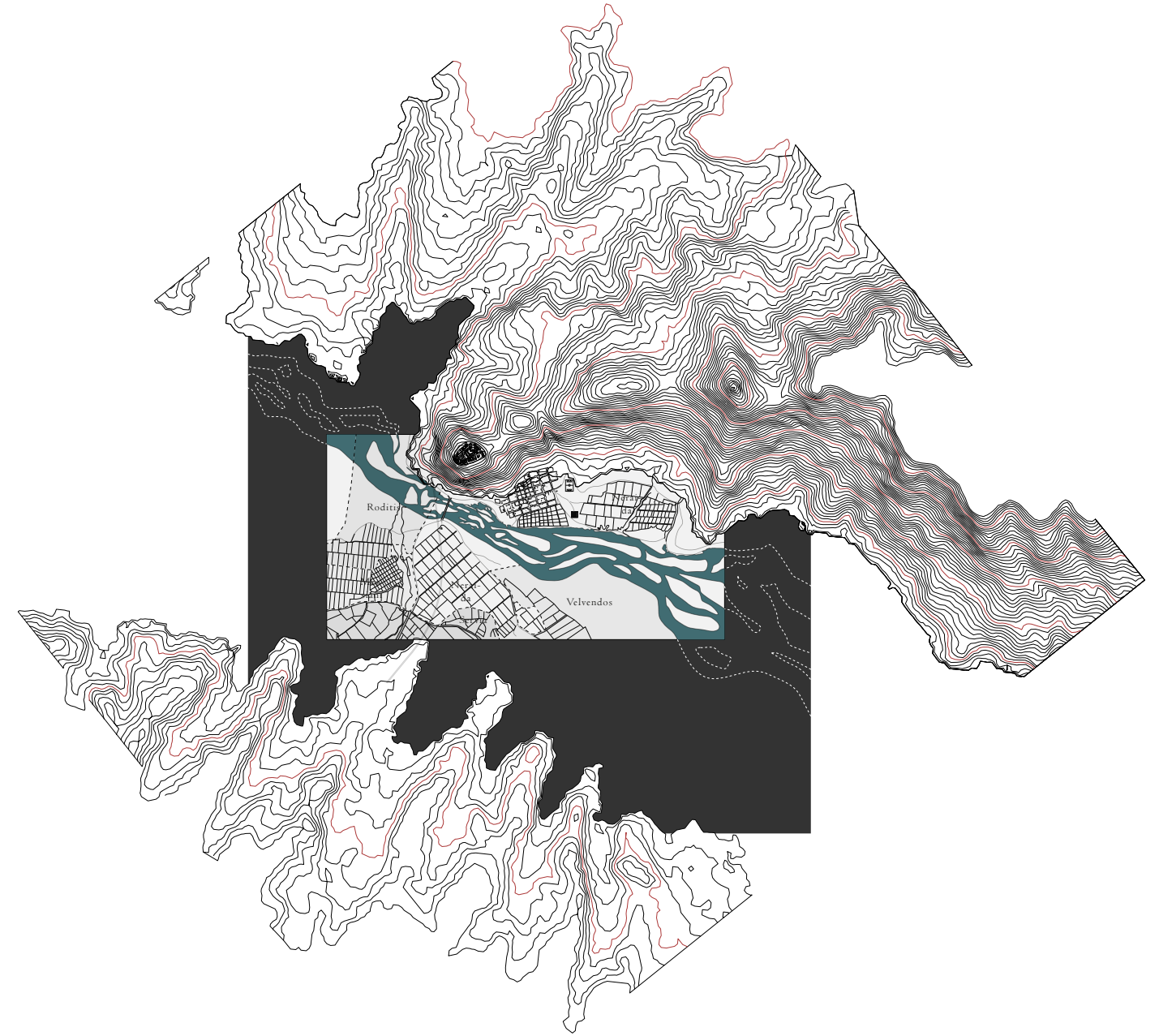


'In this late phase, an aesthetic institution was generalized which permits landscaping the world at small expense: the belvedere. It creates a fixed relation between a given point of land and all those other points which can be seen from it. The belvedere transforms the landscape into a shape, freezes it into a cliché, socializes it in banality...'
Andre Corboz
The Land as Palimpsest



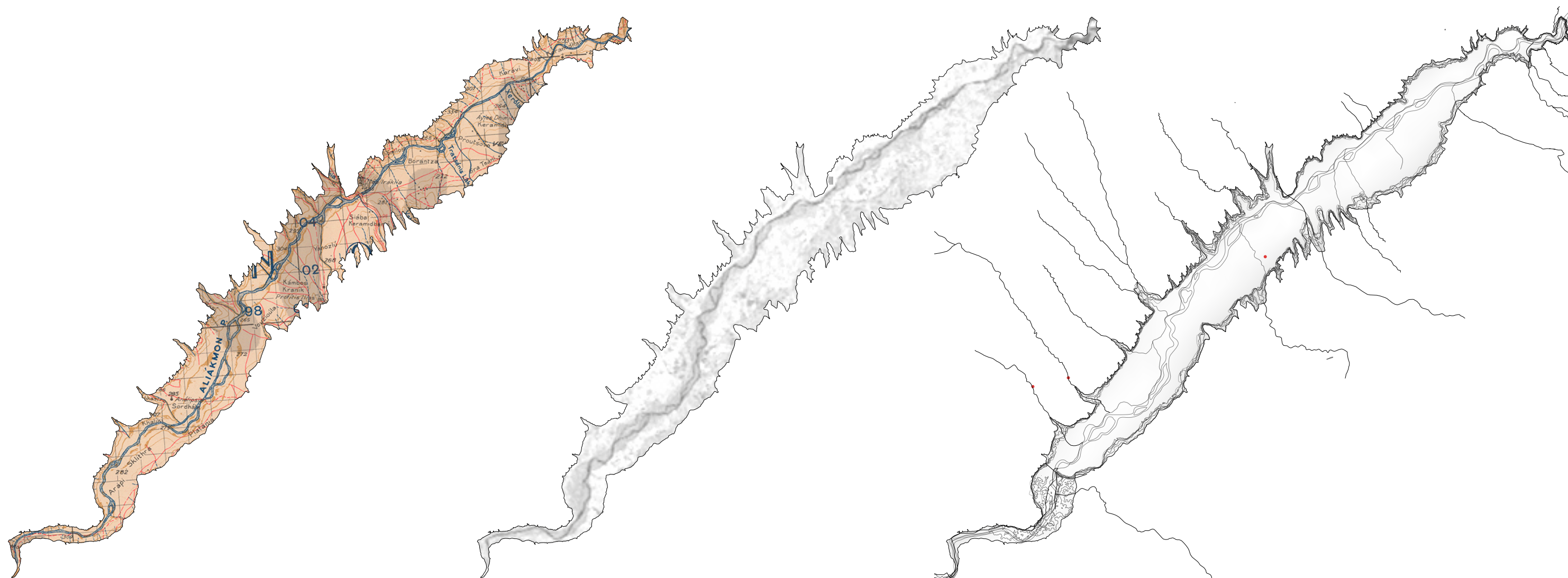
converging
territories

temporal superposition



Neraida, 148, peninsula surrounded by the reservoir is now a tourist hotspot for the region.
Belvedere, last sentence of quote
Was not initially atop this hill. Neraida was initially founded at the bottom .
Refugees settled in 1922, found this gap of land that they could inhabit





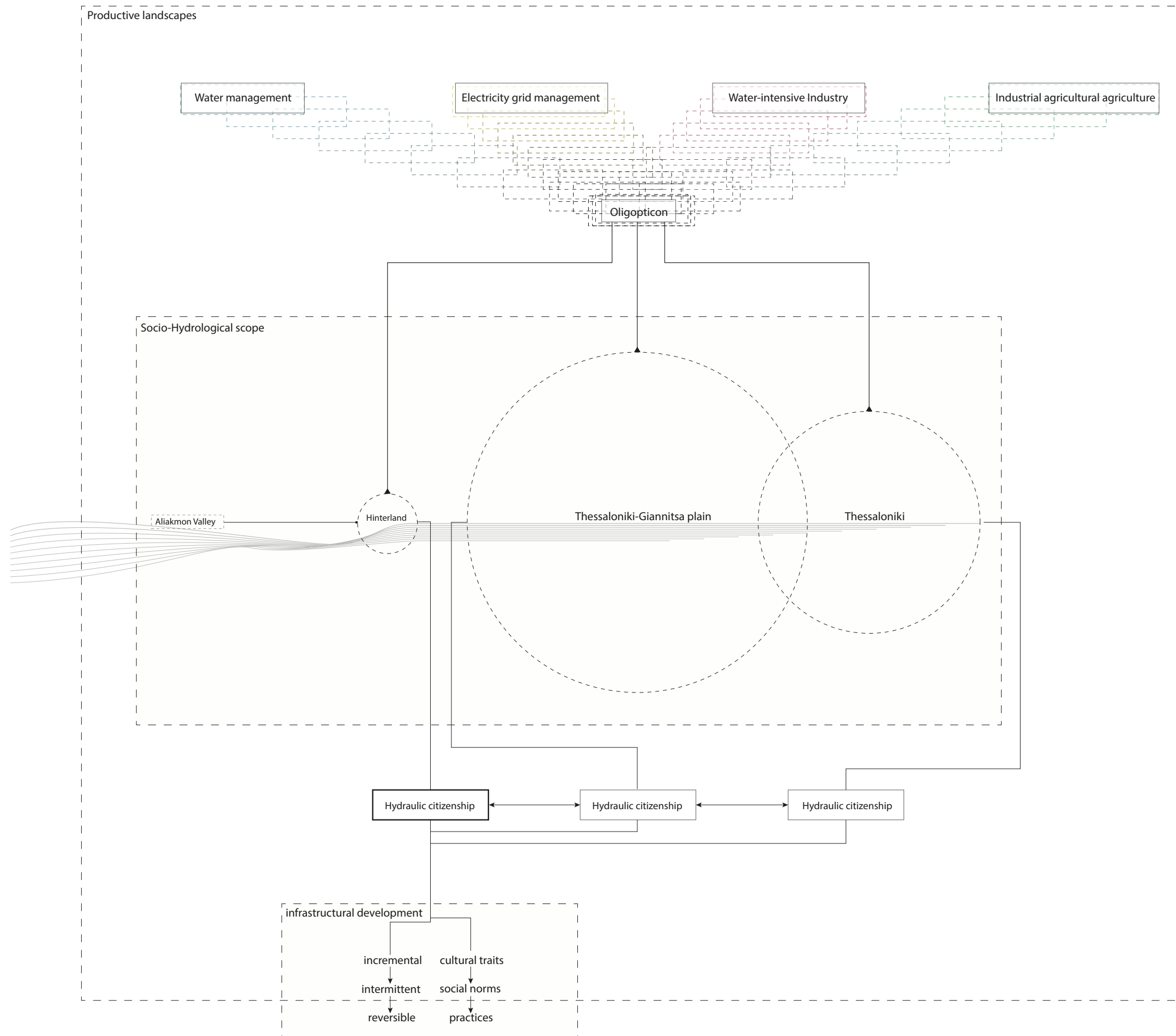
SUBMERGED TERRITORIES
—
cultivation of memory

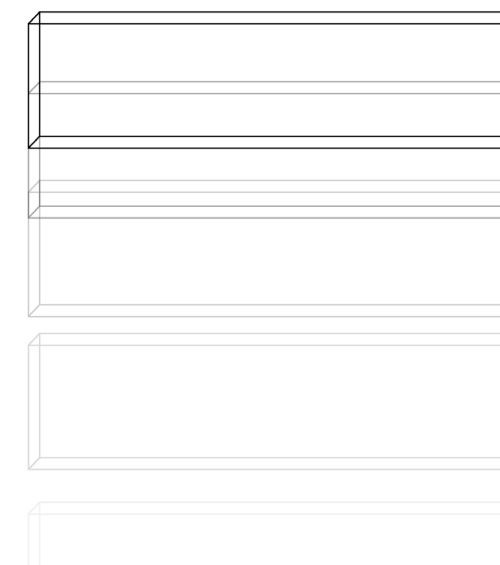
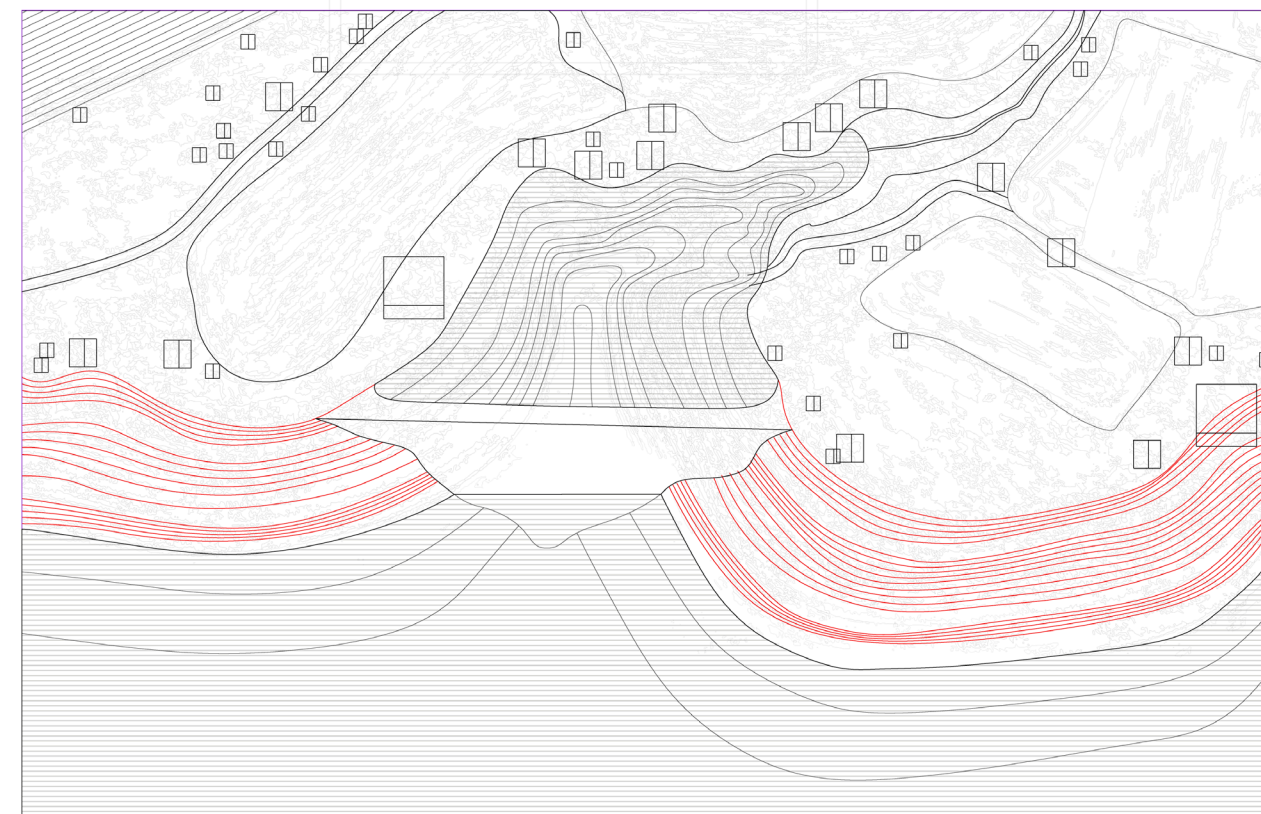
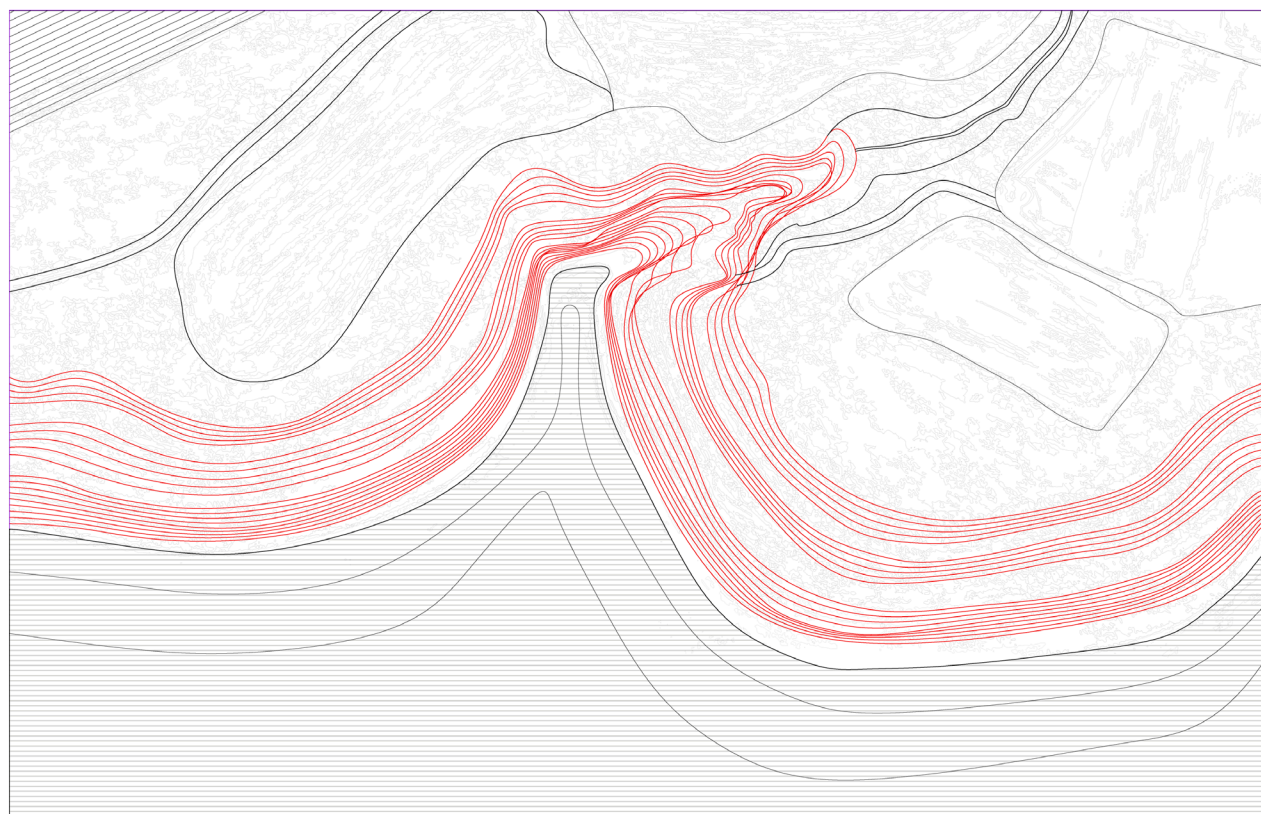
- map 1 1:100.000 Greece E.6 Kozani 1934
- map 2 Landsat 5 1972
- map 3 Today (2021)



SOCIO- HYDROLOGY

Viewing the water-based network as a two-way feedback between the hydraulic and social systems





Inserting the artificial lake actors into the view of the oligopticon: the system that regulates their waters.



Small scale hydraulic infrastructure

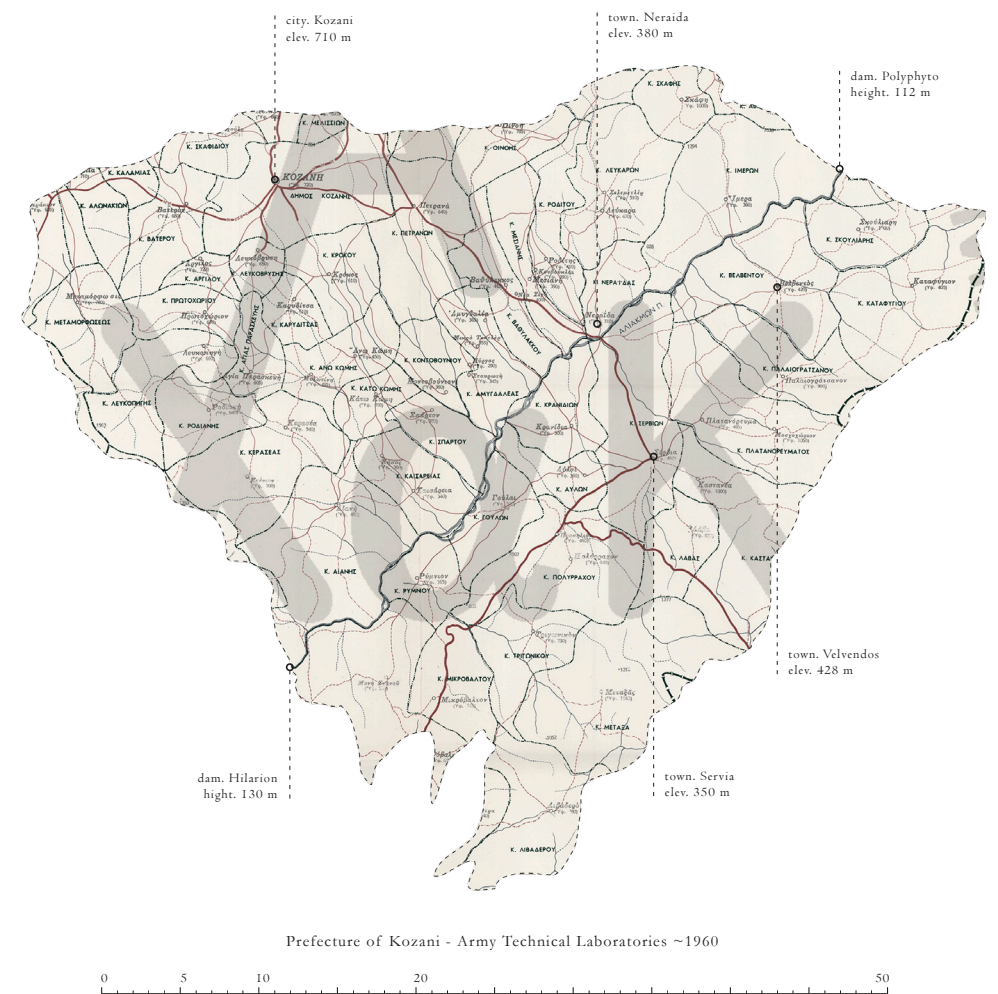
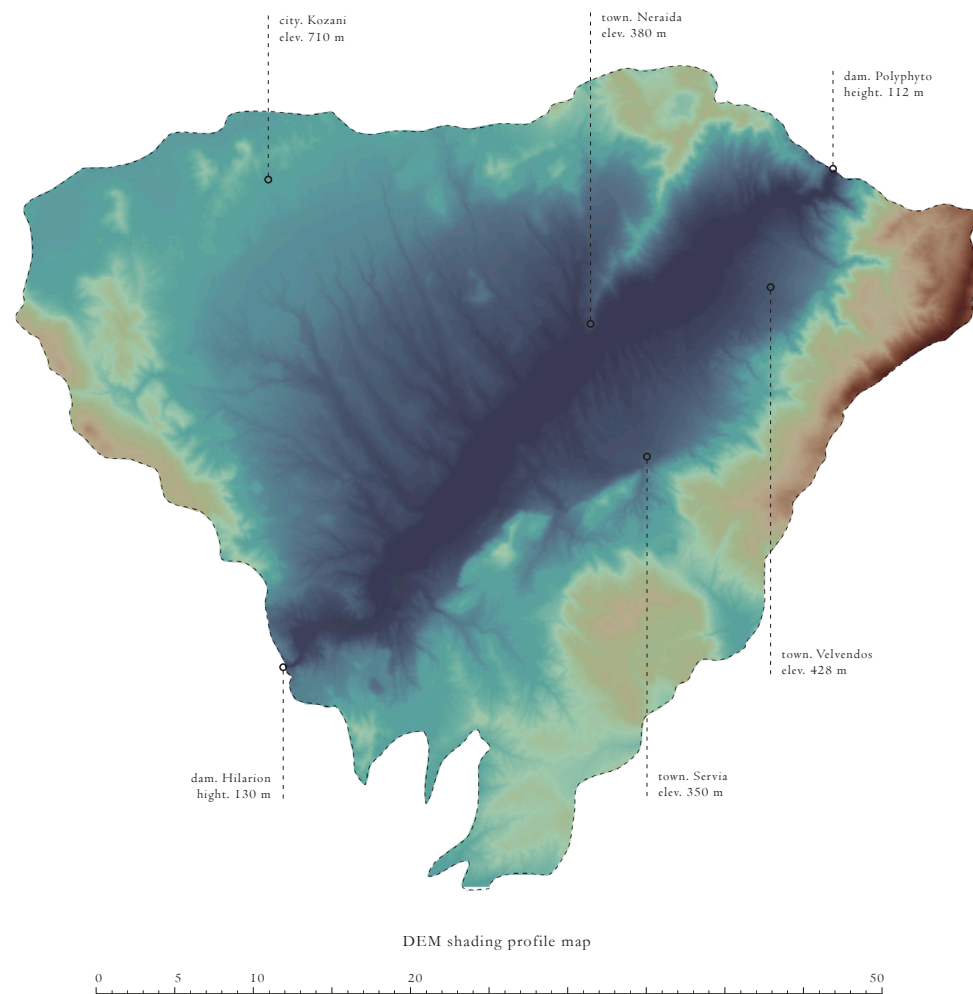
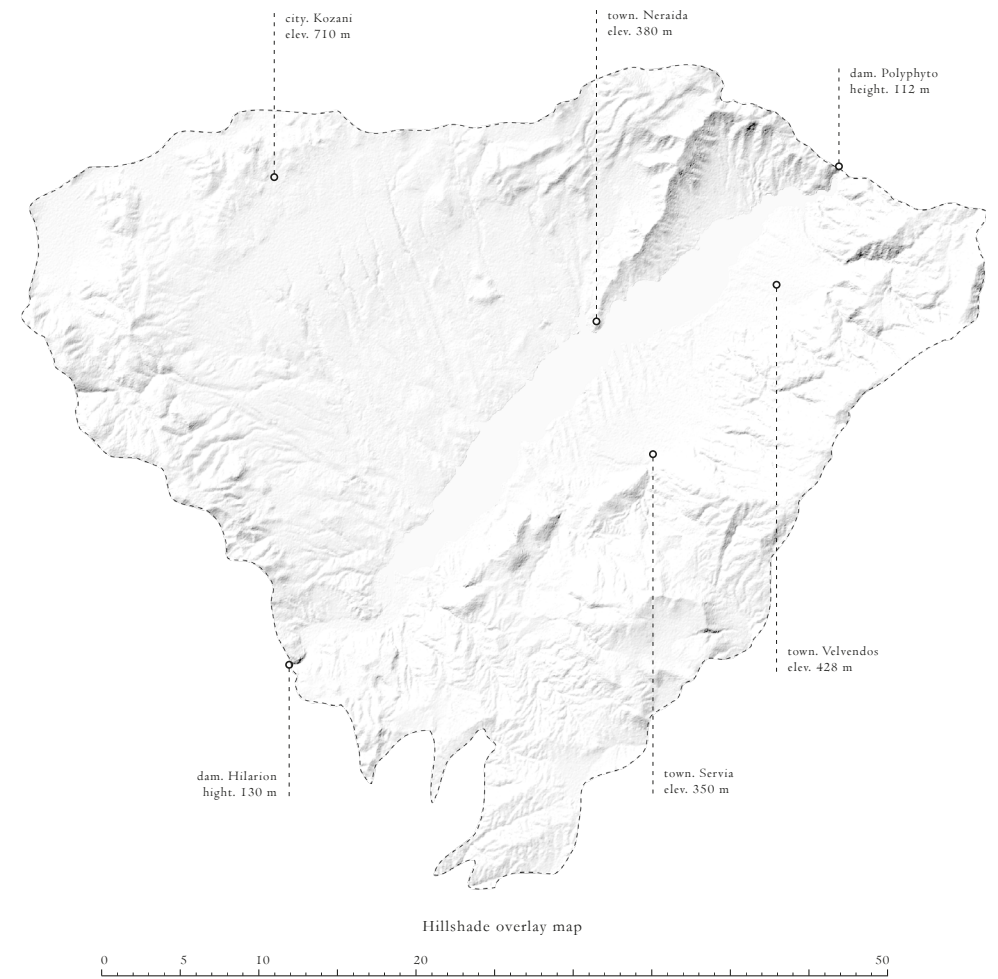
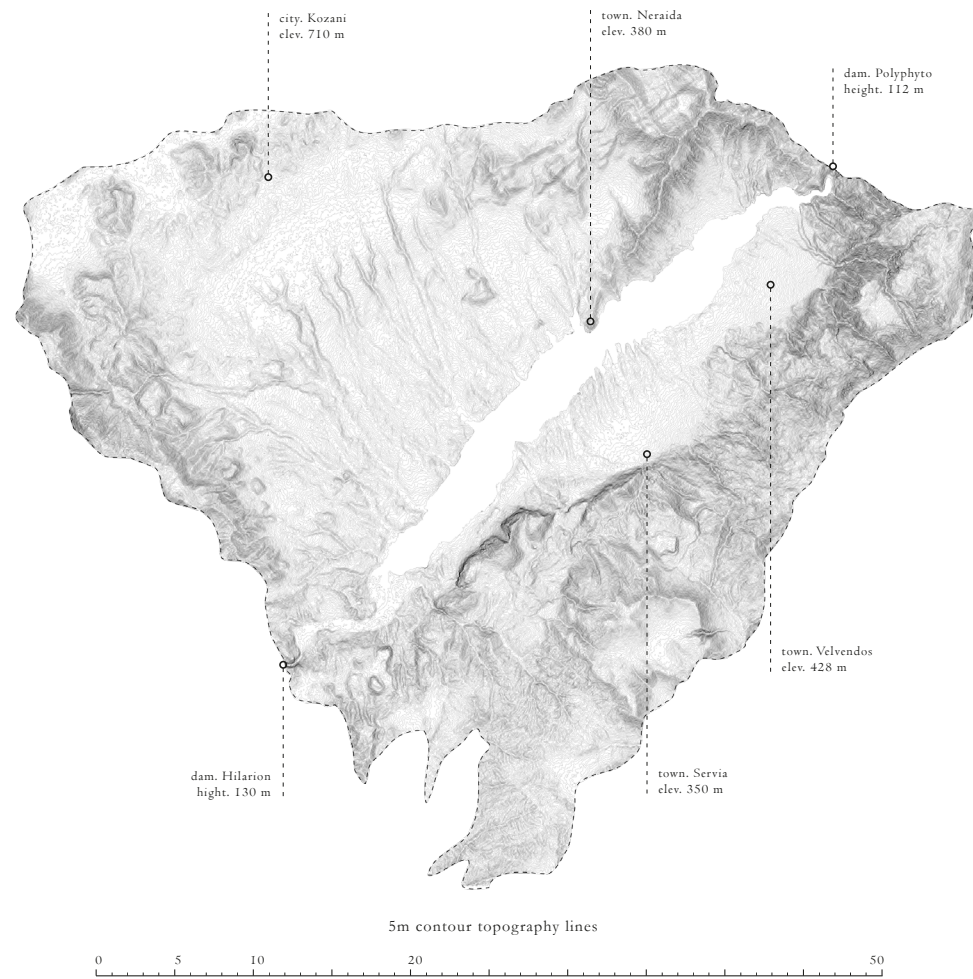
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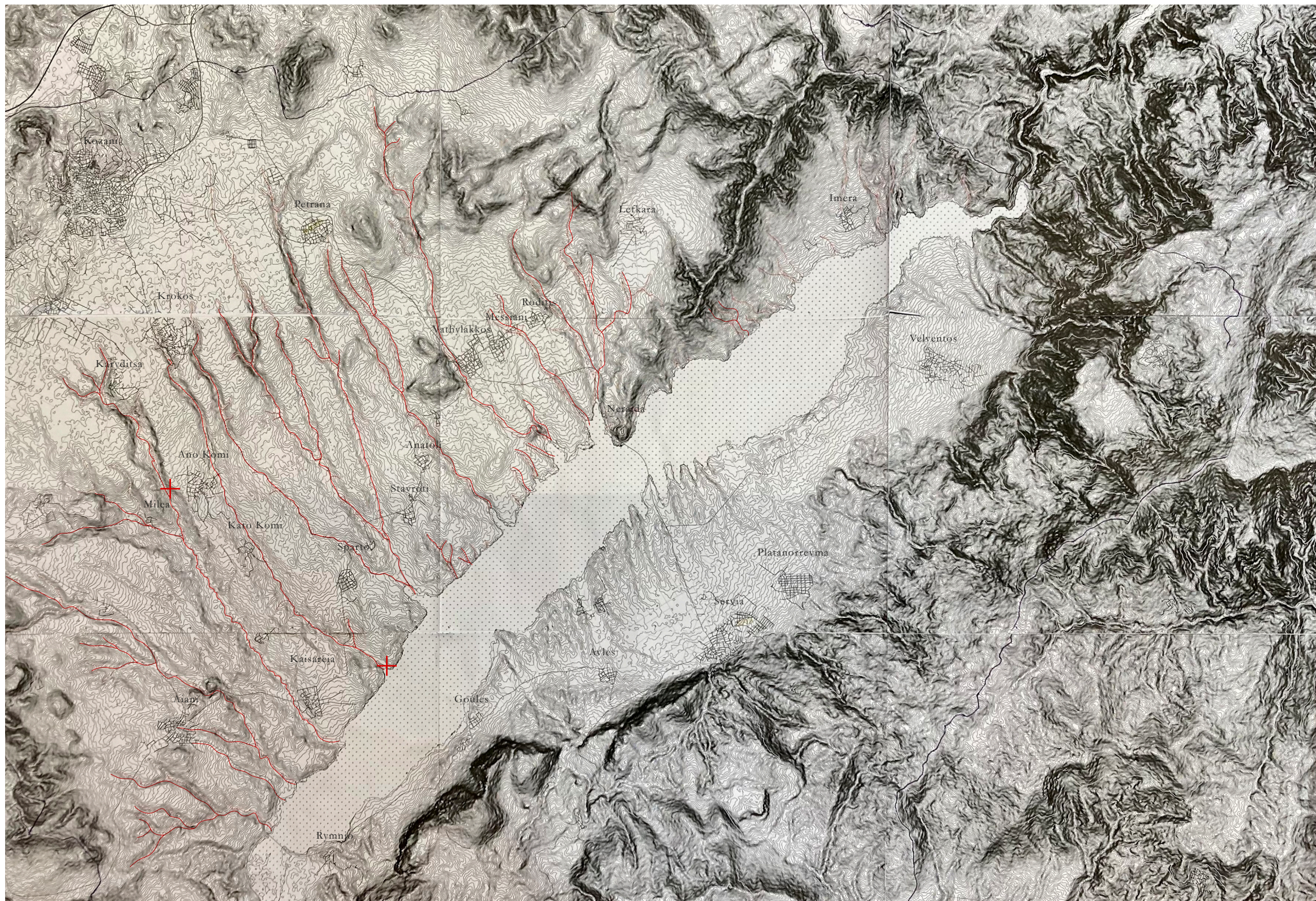
Neraida's community-led projects



WATER CATCHMENT AREA

—
Aliakmon Valley basin

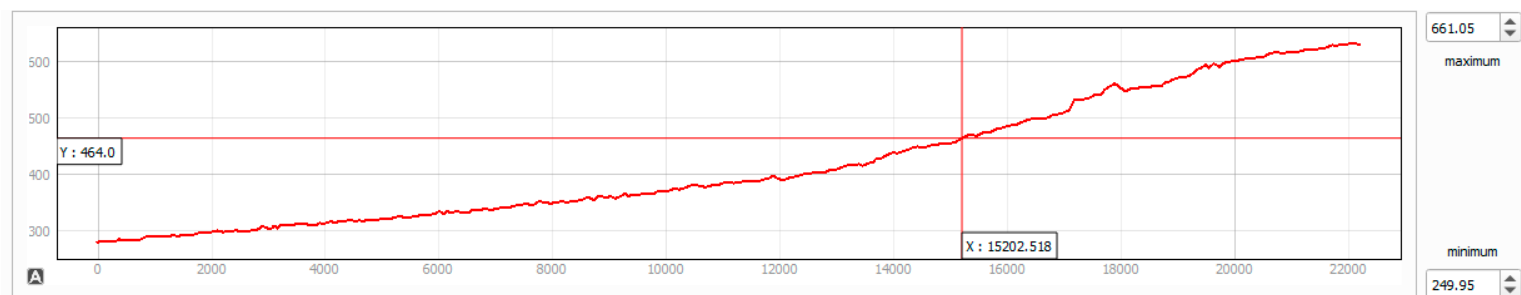
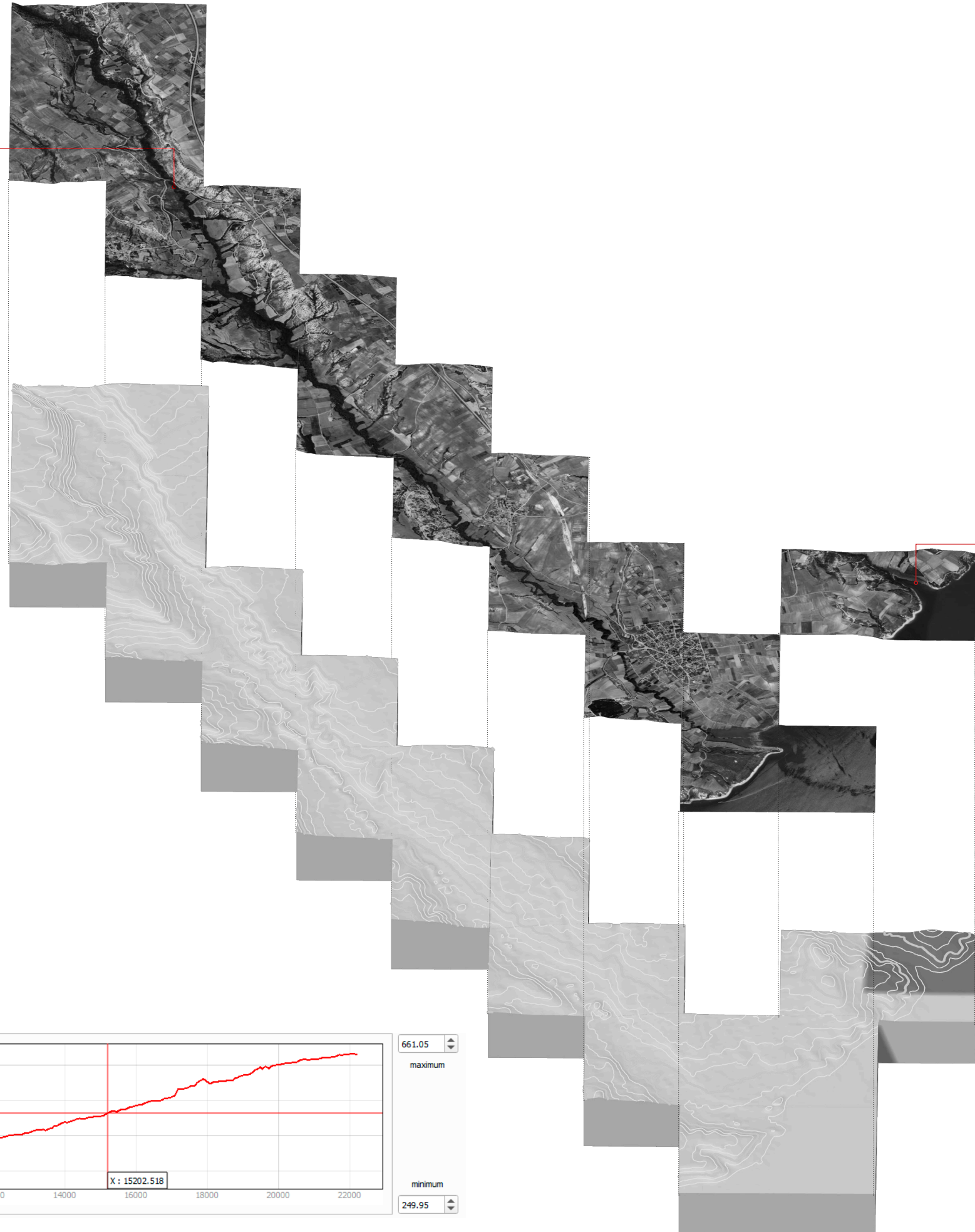




Streams that flow into the Polyfyto reservoir

Site for first prototype
phase 1 of building dams

phase 2
Site for water policy meetings





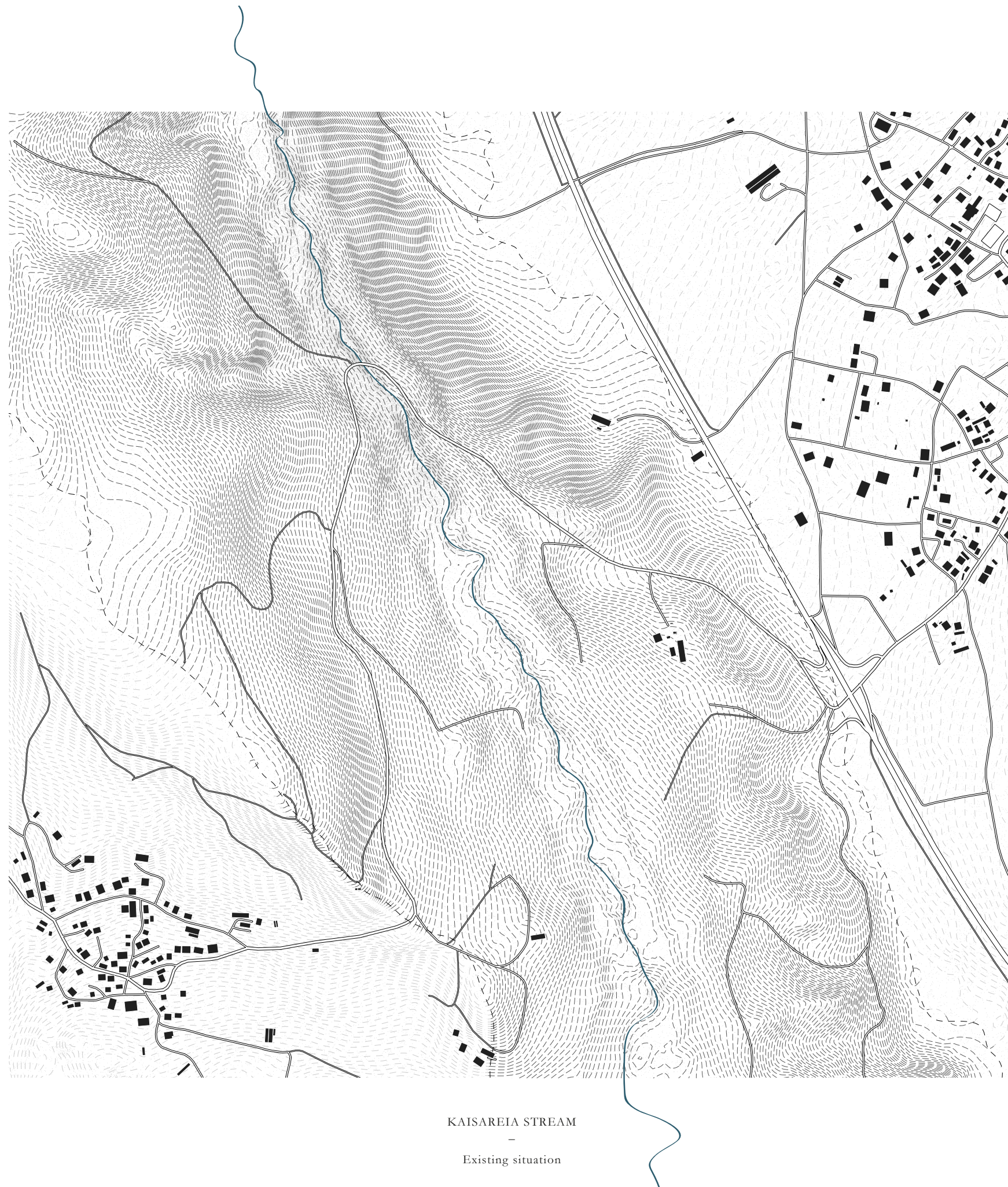
FIRST SITE OF DEVELOPMENT
—
road traversing through the undeveloped stream landscape

MILEA

ANO KOMI

KAISAREIA STREAM

Existing situation



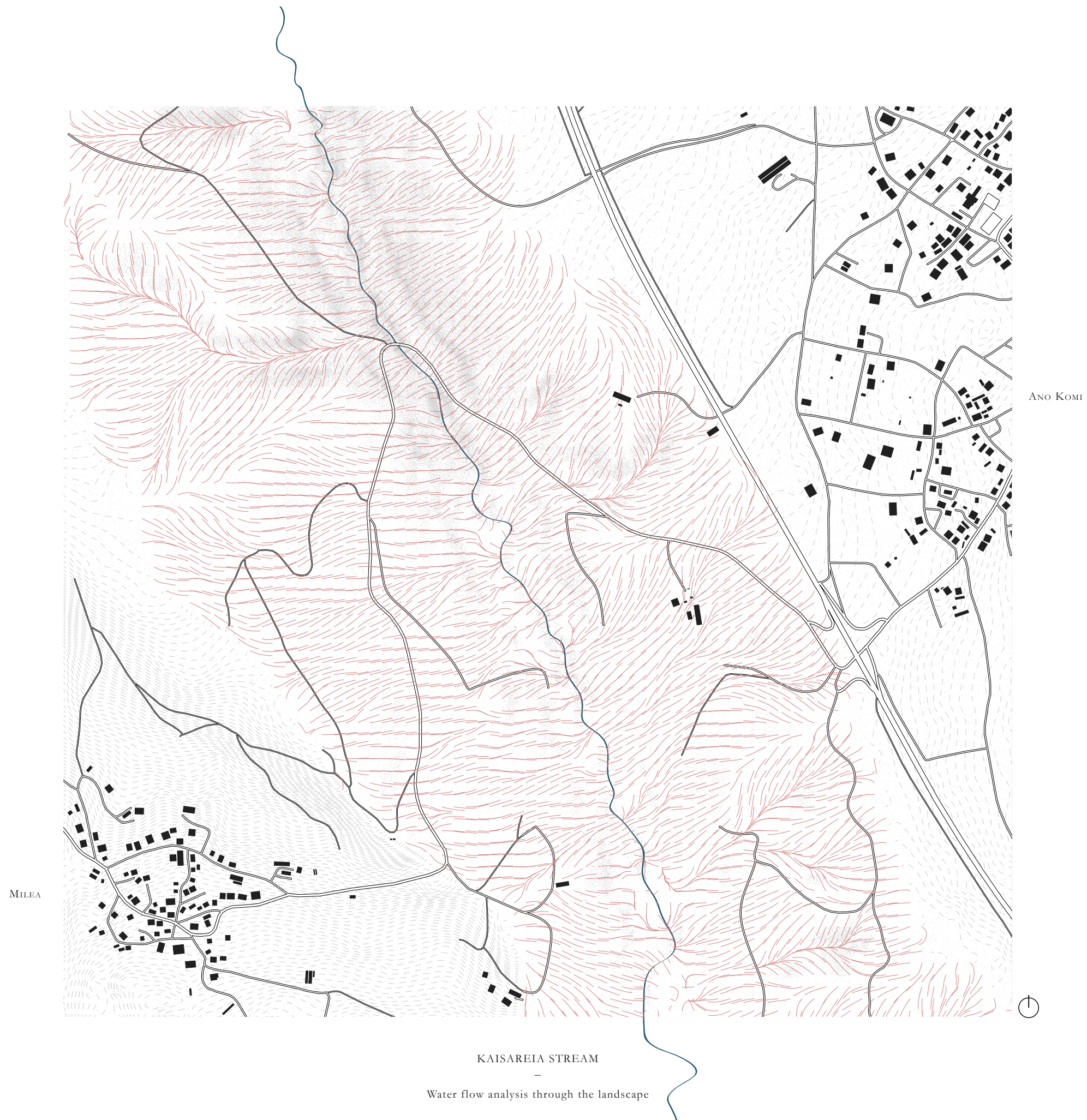


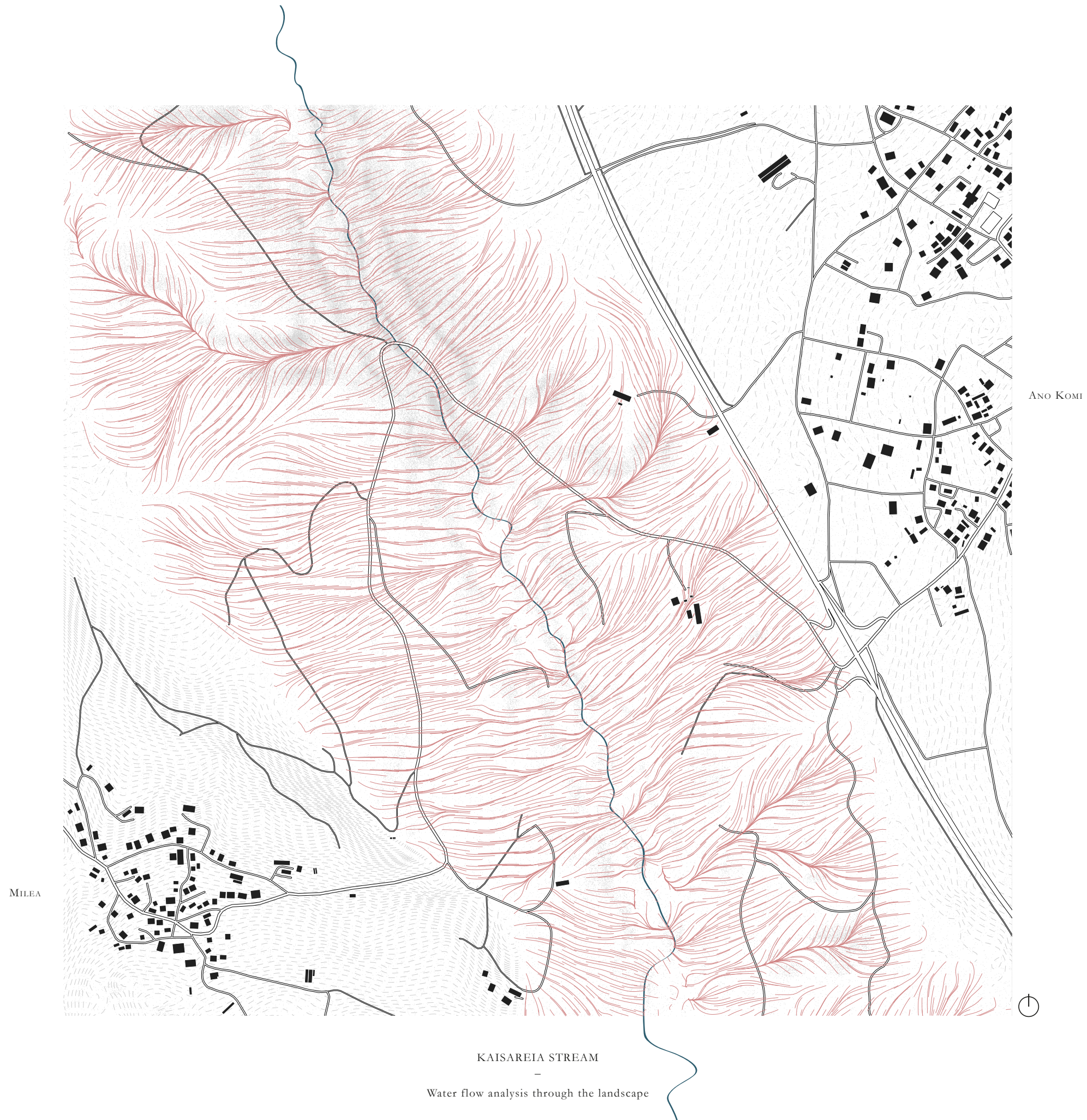


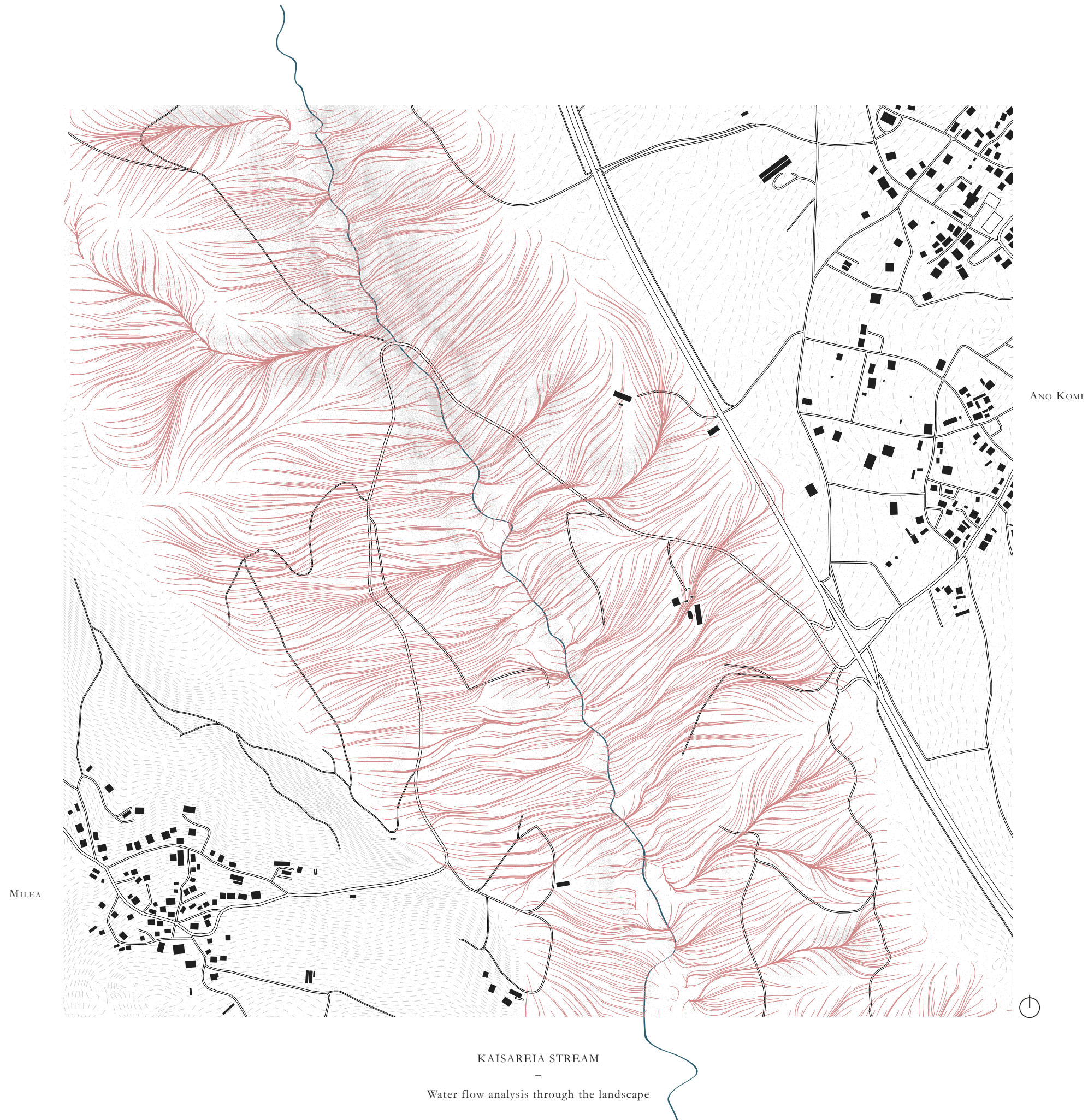
KAISAREIA STREAM
—
Water flow analysis through the landscape

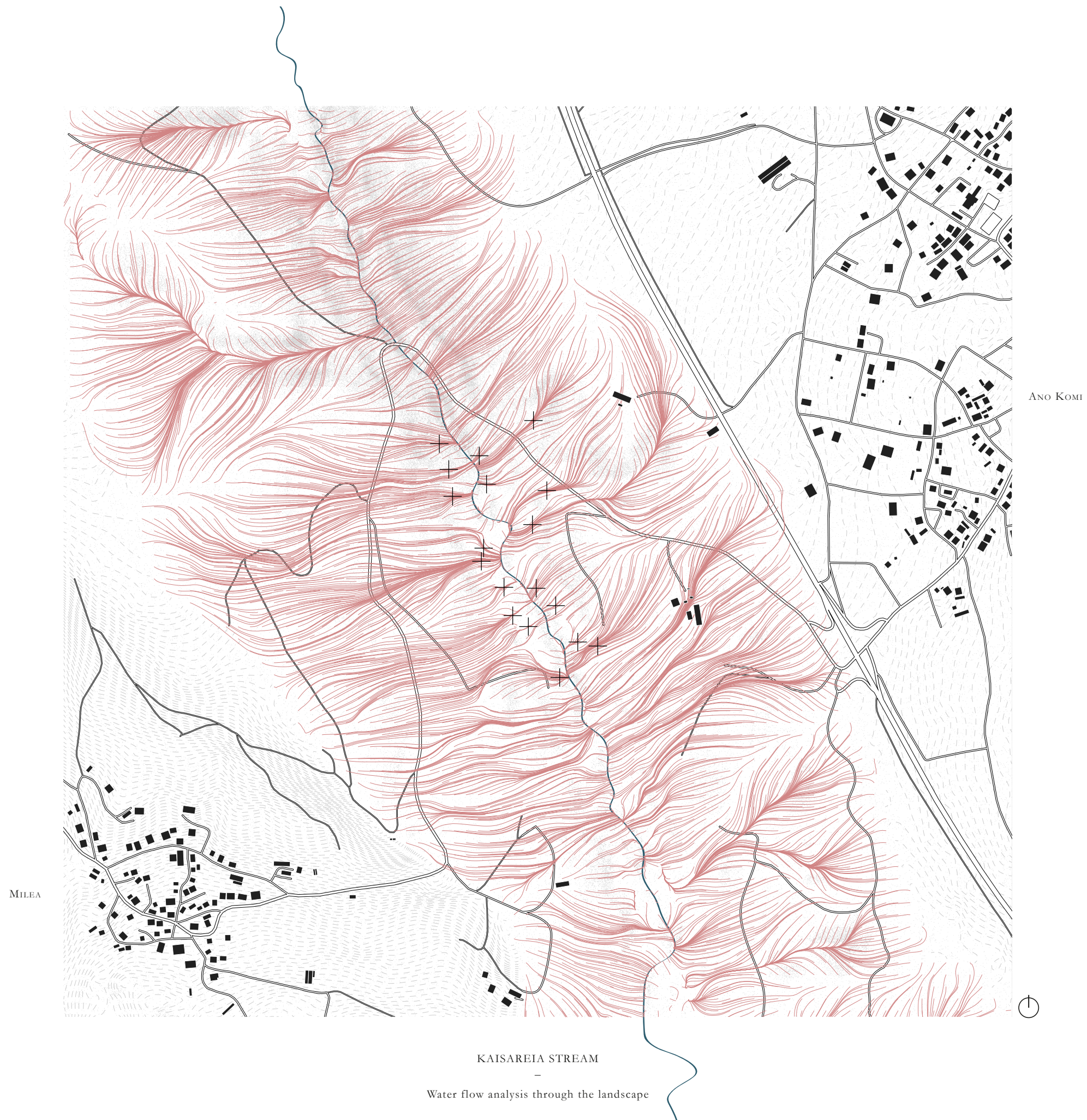


KAISAREIA STREAM
—
Water flow analysis through the landscape





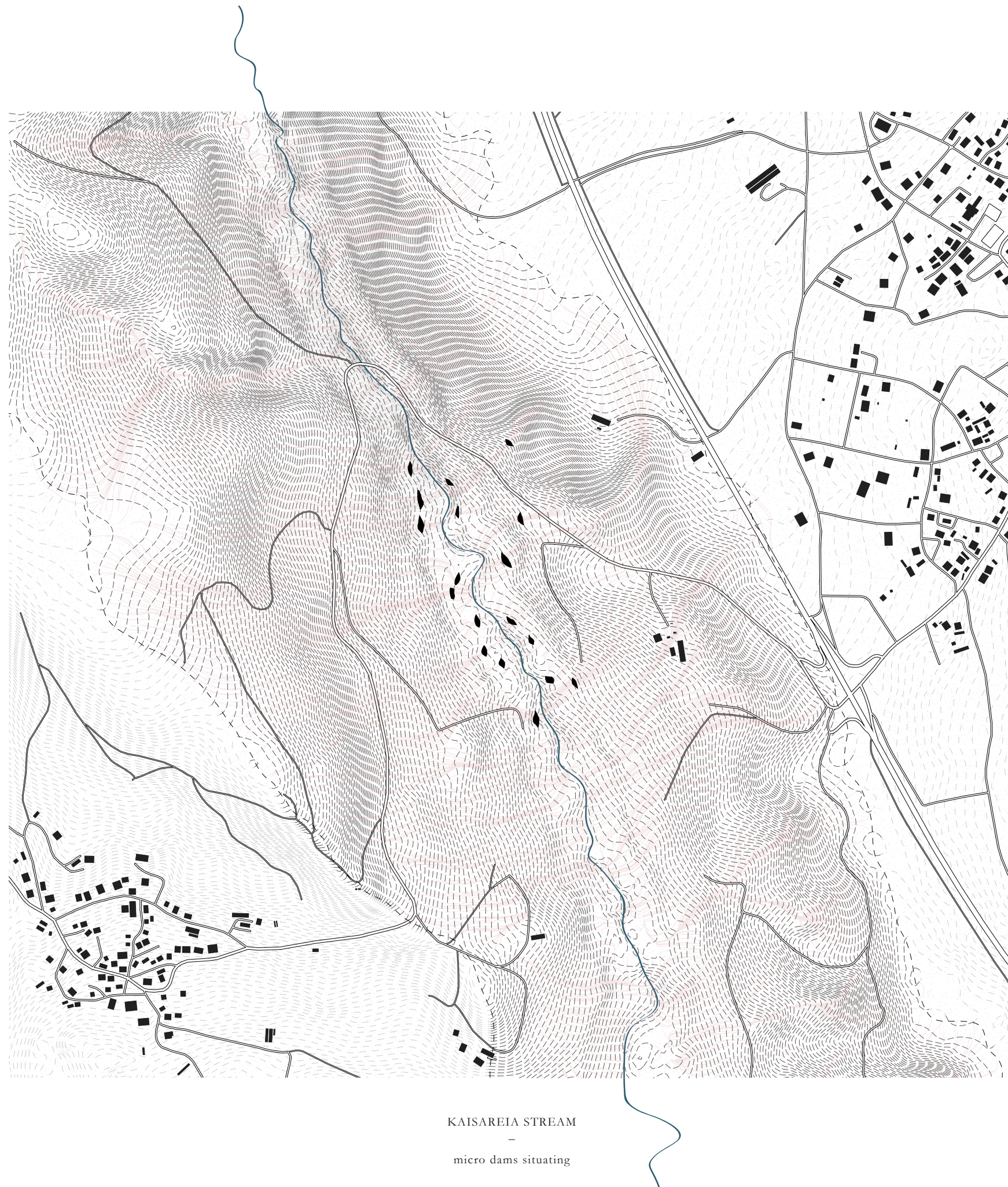


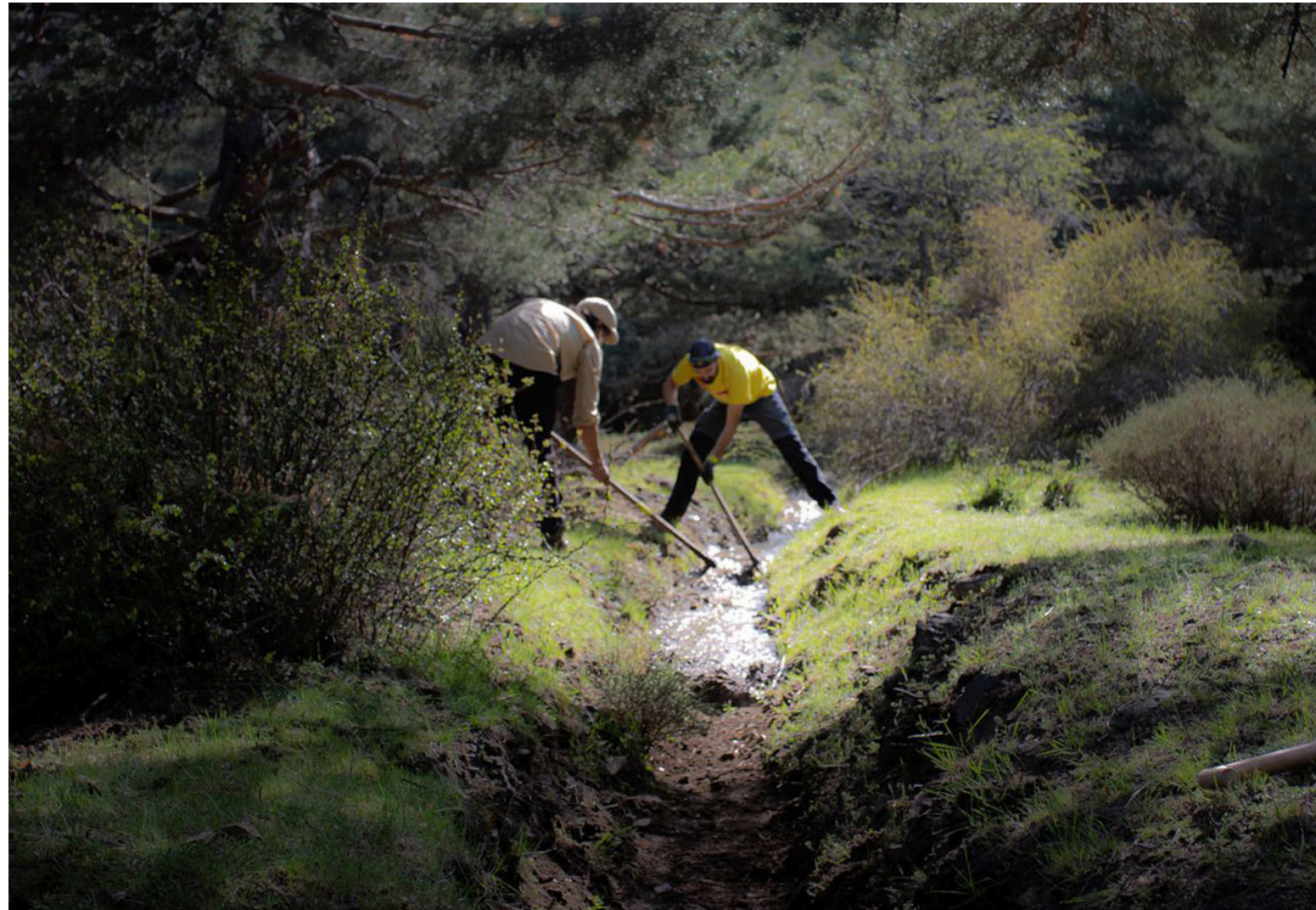


MILEA

ANO KOMI

KAISAREIA STREAM
—
micro dams situating

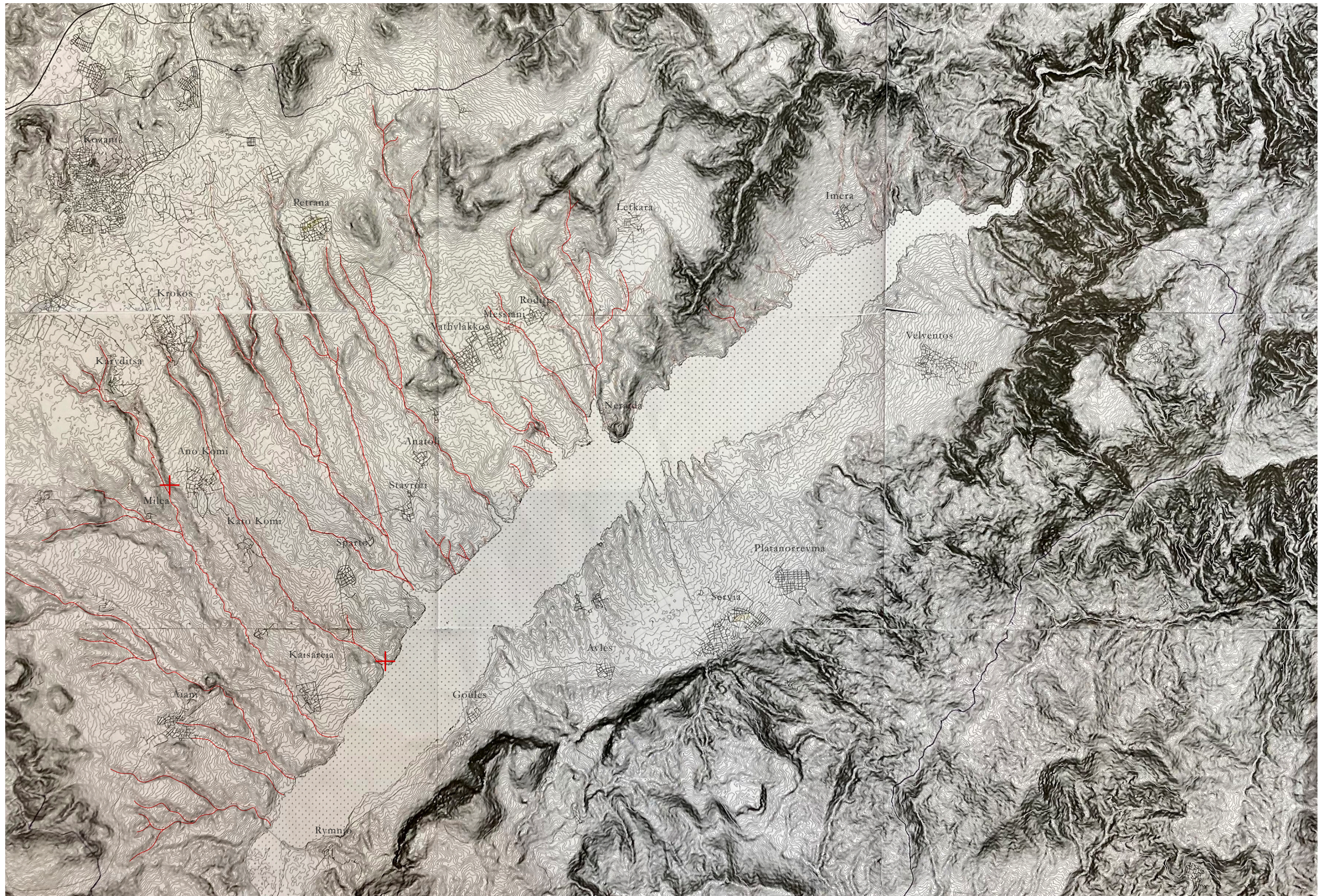




COMMUNITY DRIVEN INITIATIVE

—

maintaining canals and dams

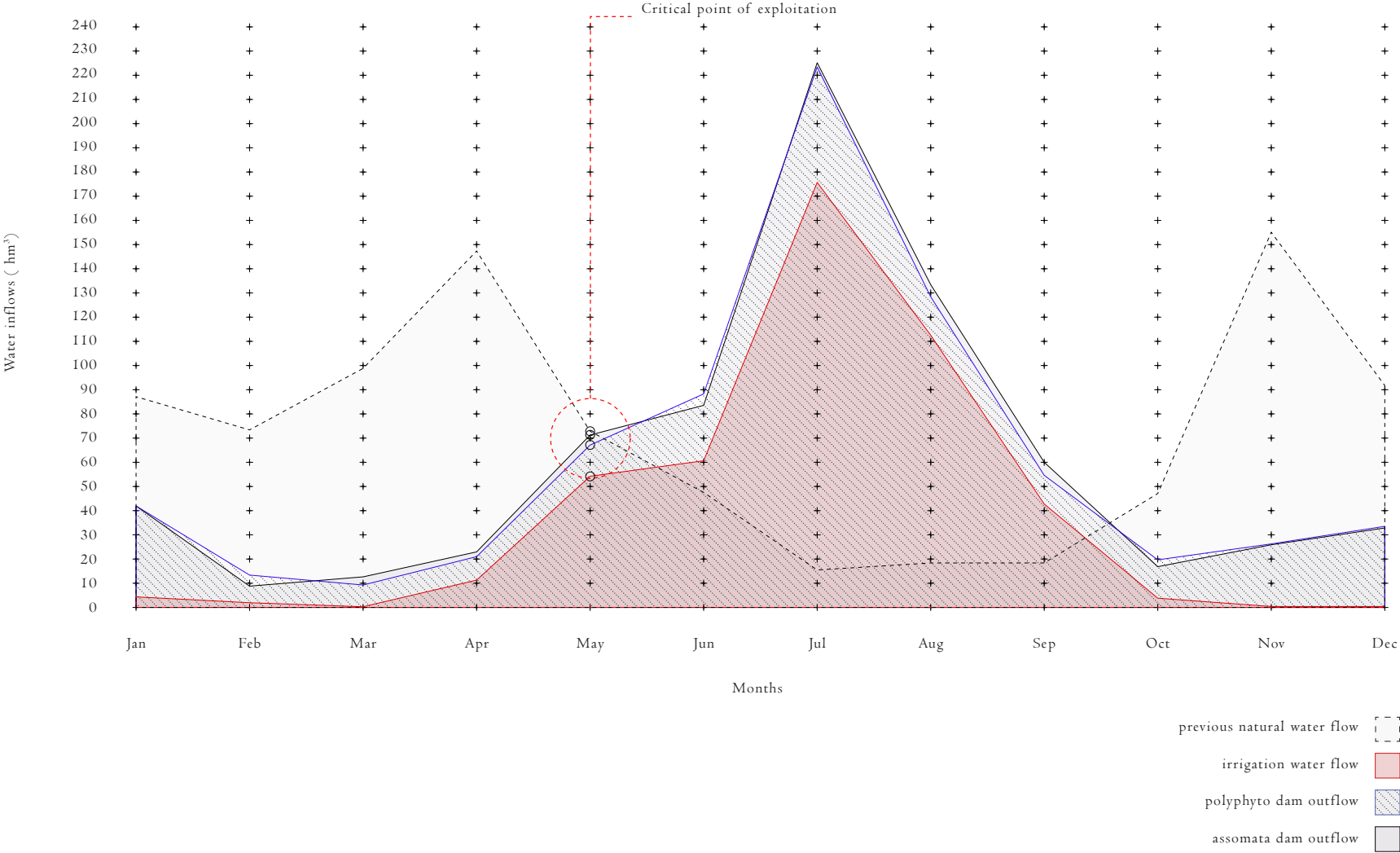


TACKLING STREAM BY STREAM

—

harnessing the water from their nearby streams would potentially spread to other villages

Inverted abstraction of water of Aliakmon River dependent on downstream irrigation demand





proposal for developing a place about the reservoir

—

low reservoir line



proposal for developing a place about the reservoir

—

high reservoir line



CONCEPTUAL MODEL WITH WAX

—

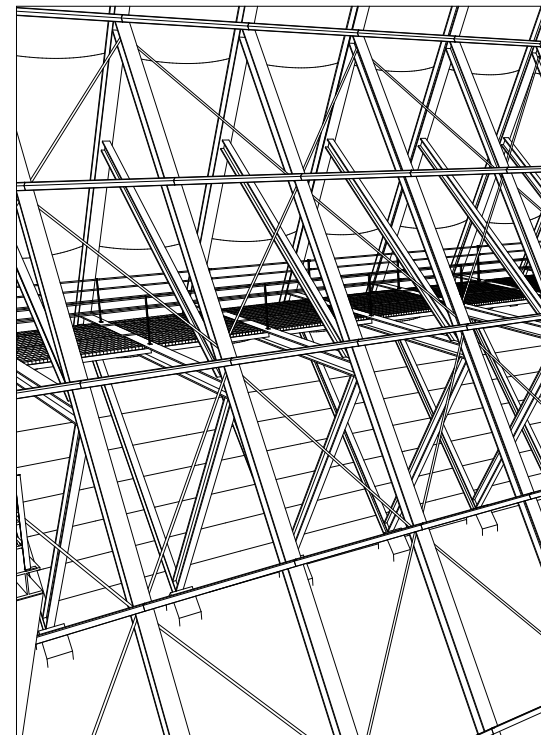
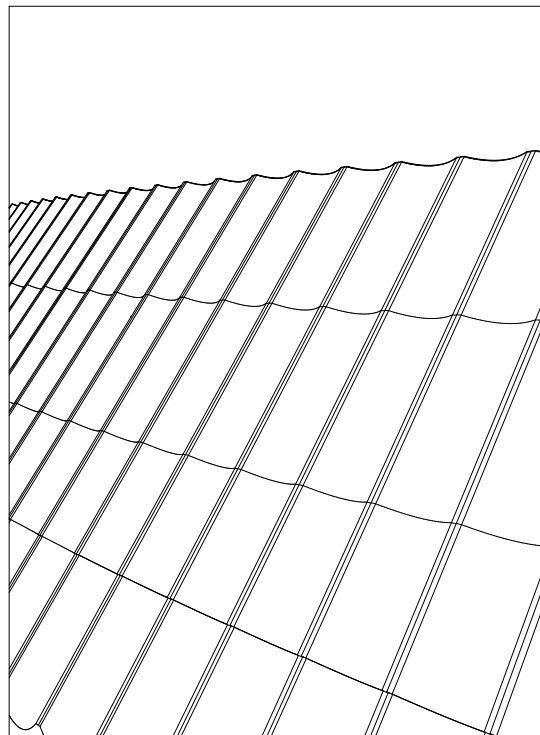
formed through wax floating on water and then cooled into this freeform shape

PHASE 1
Building steel dam/meeting space

PHASE 3

PHASE 2

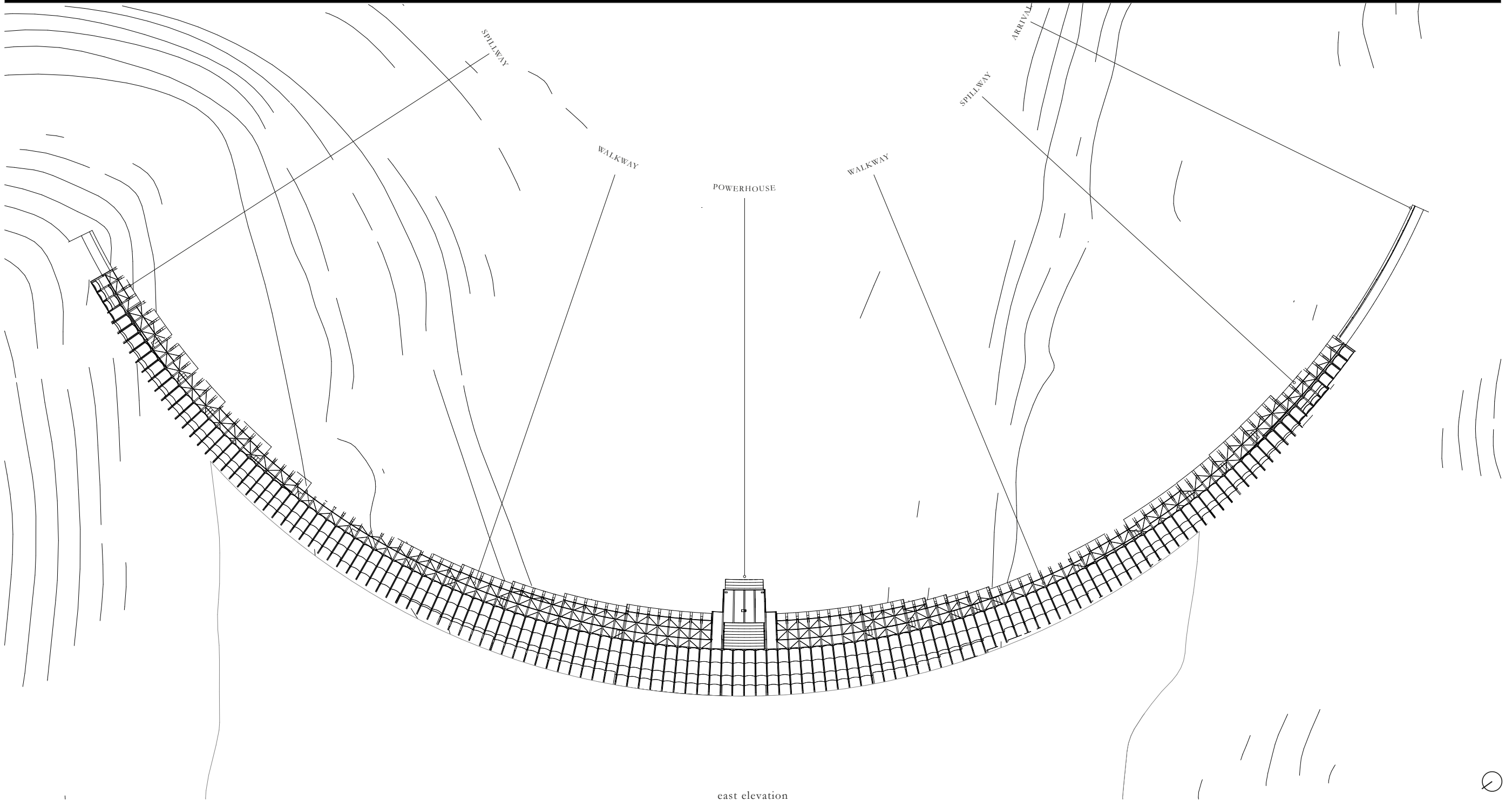
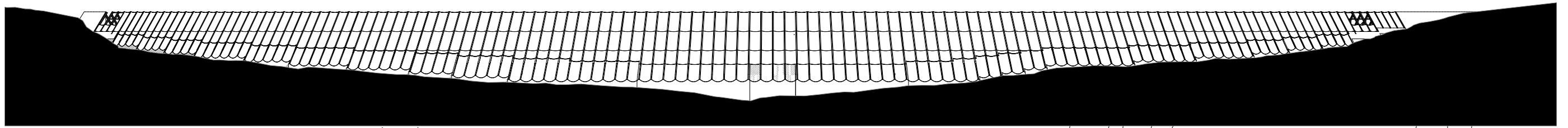




building a steel dam
faster construction/lightweight/flexible

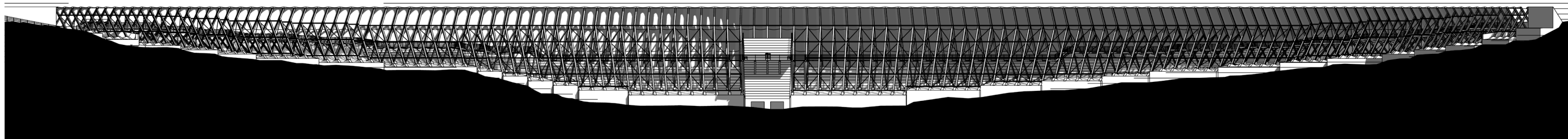
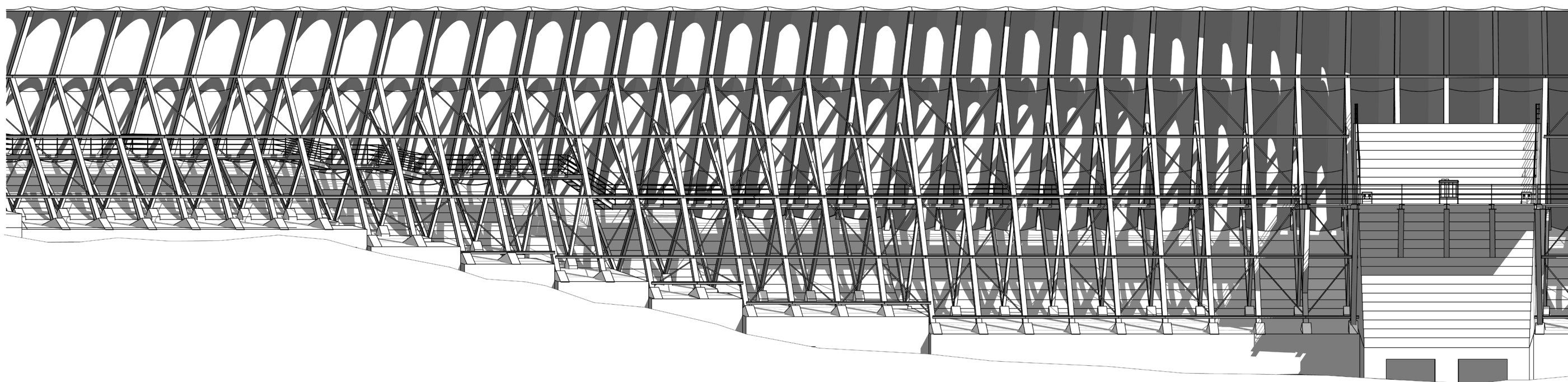


Redridge steel dam
1901
faster construction/lightweight/flexible



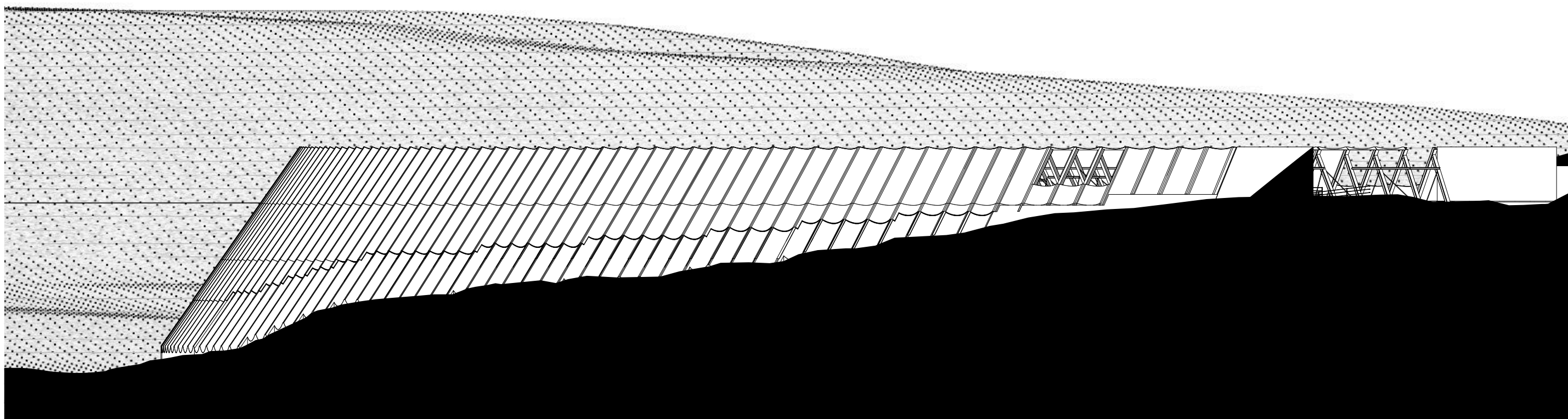
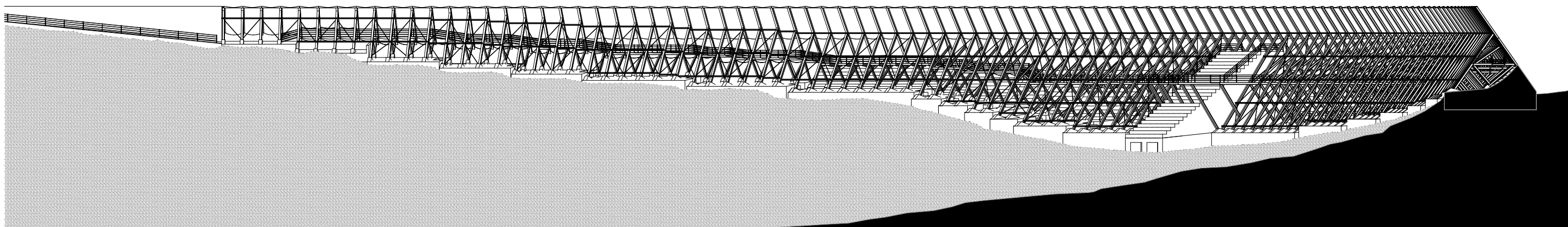
east elevation

top plan view

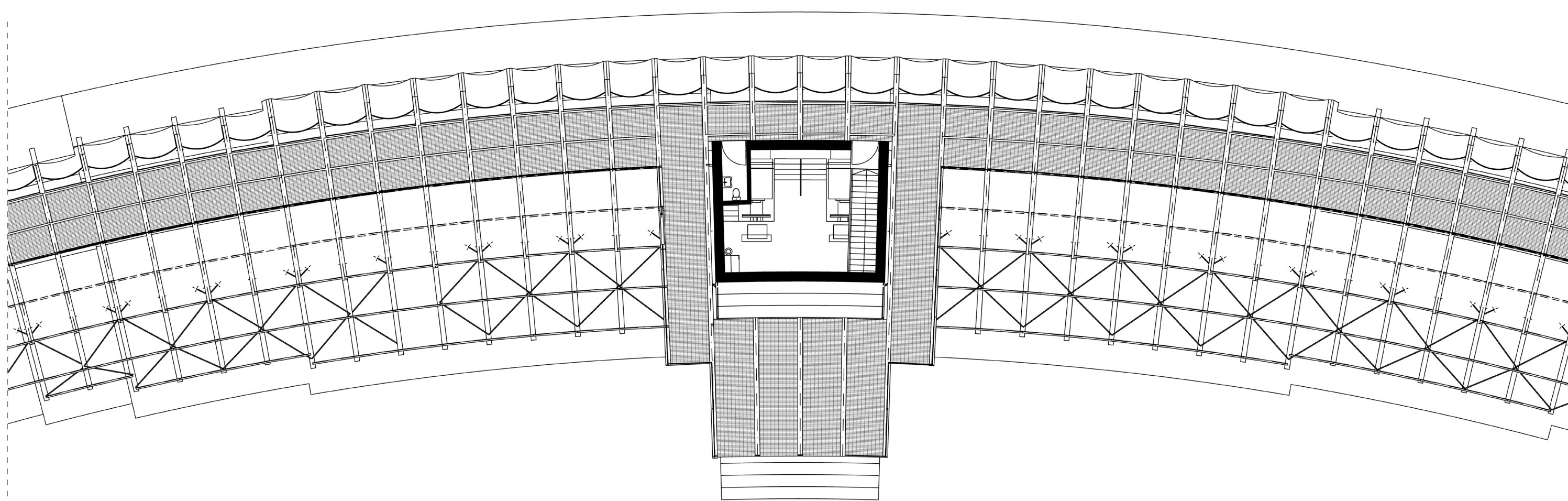


west elevation

access within the steel walkway



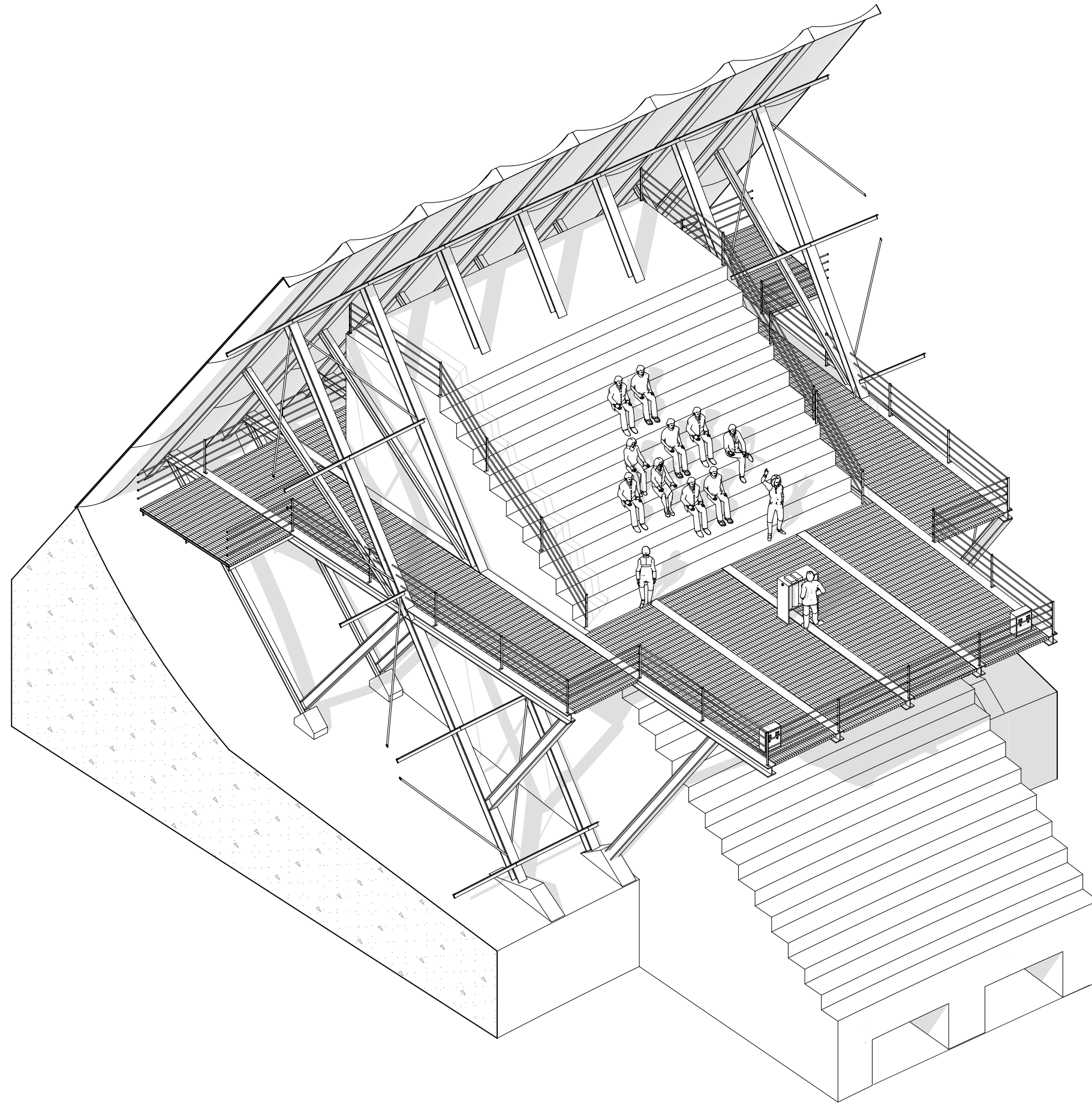
east section/elevation
&
north section/elevation



powerhouse plan

—

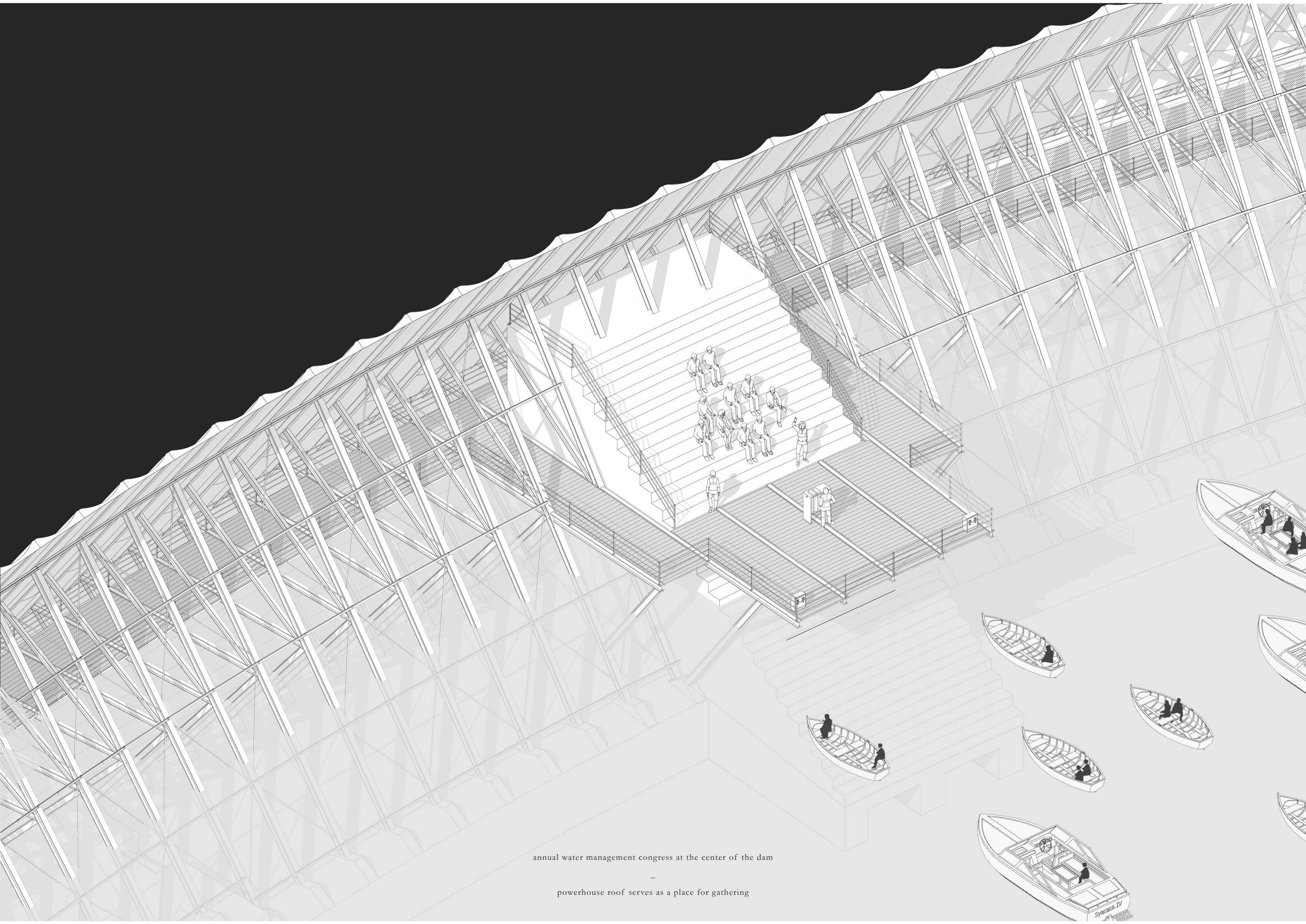
1:100



annual water management congress at the center of the dam

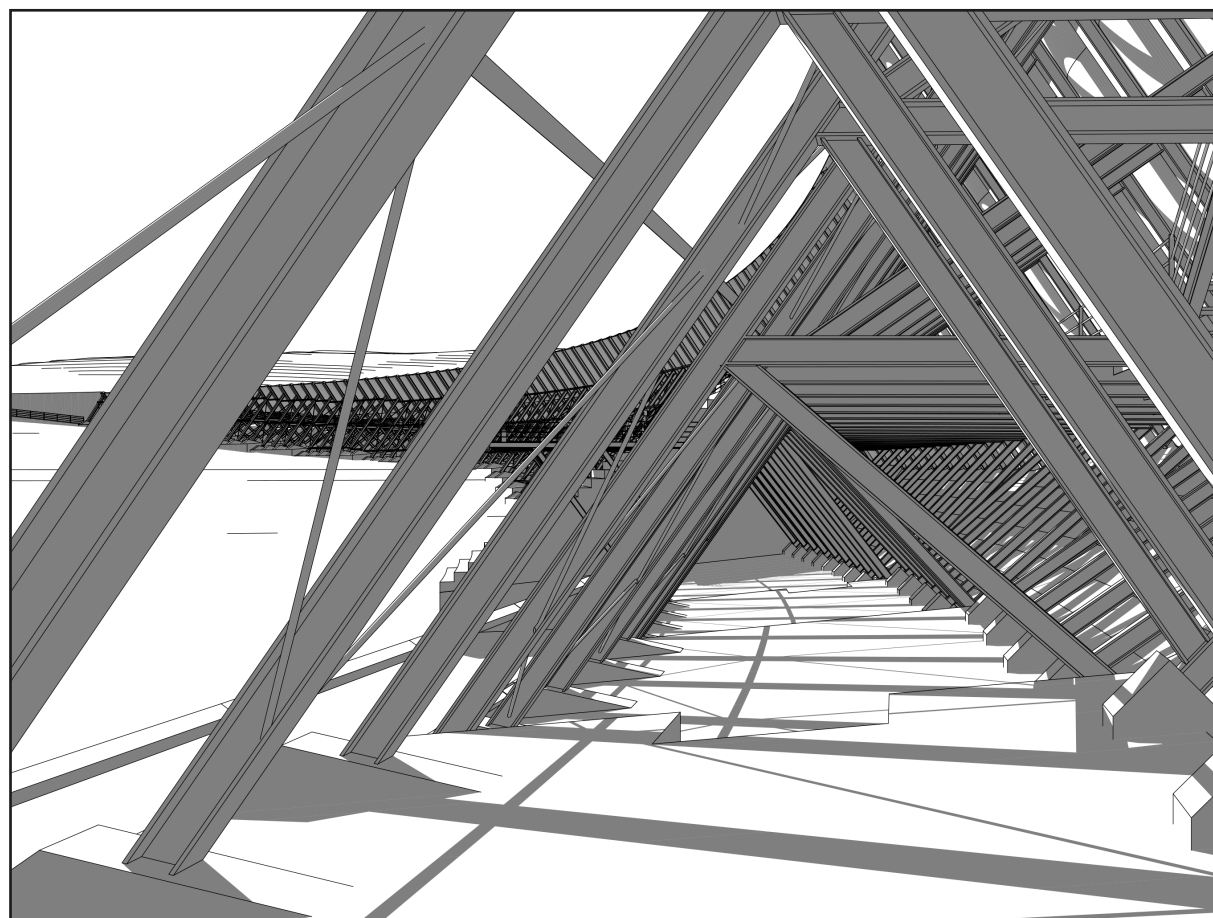
—

powerhouse roof serves as a place for gathering

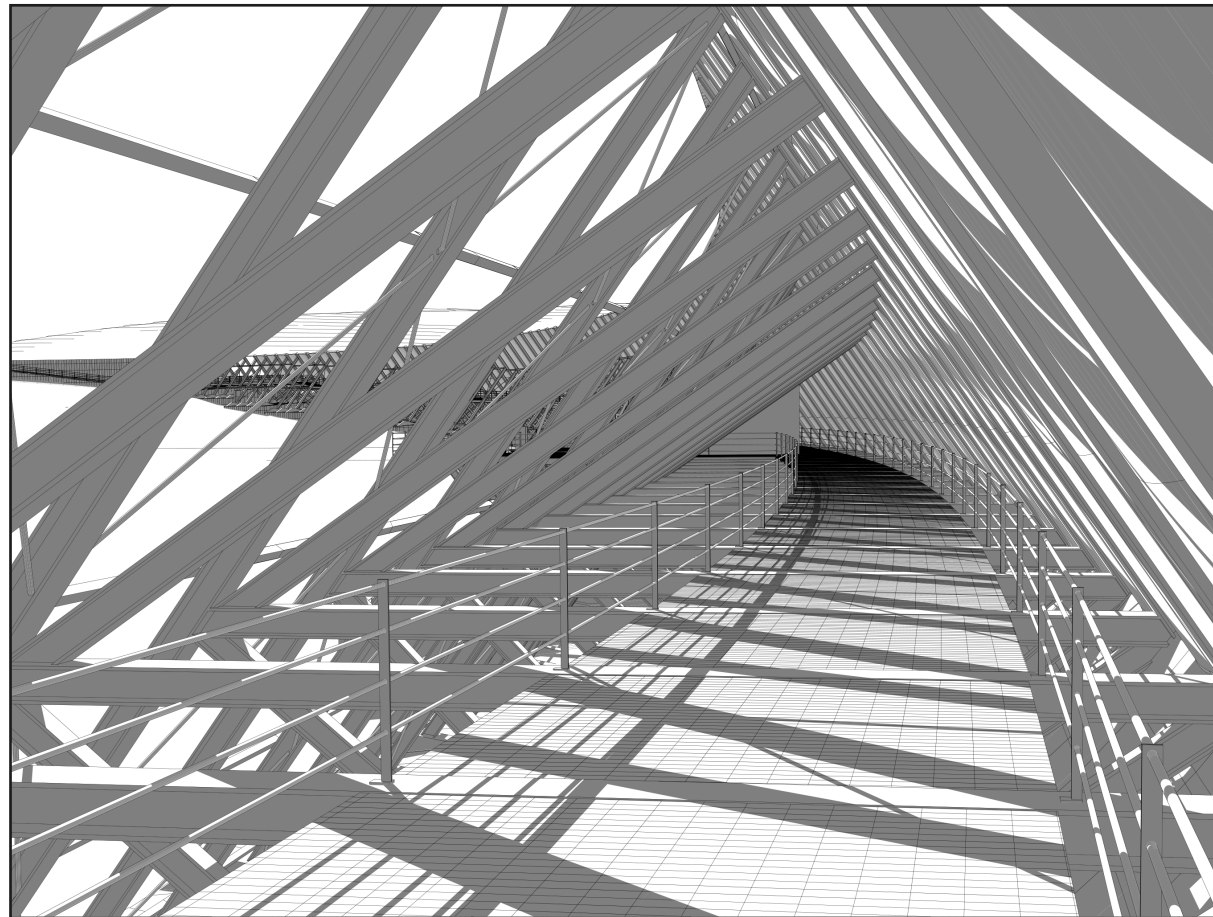


annual water management congress at the center of the dam

powerhouse roof serves as a place for gathering



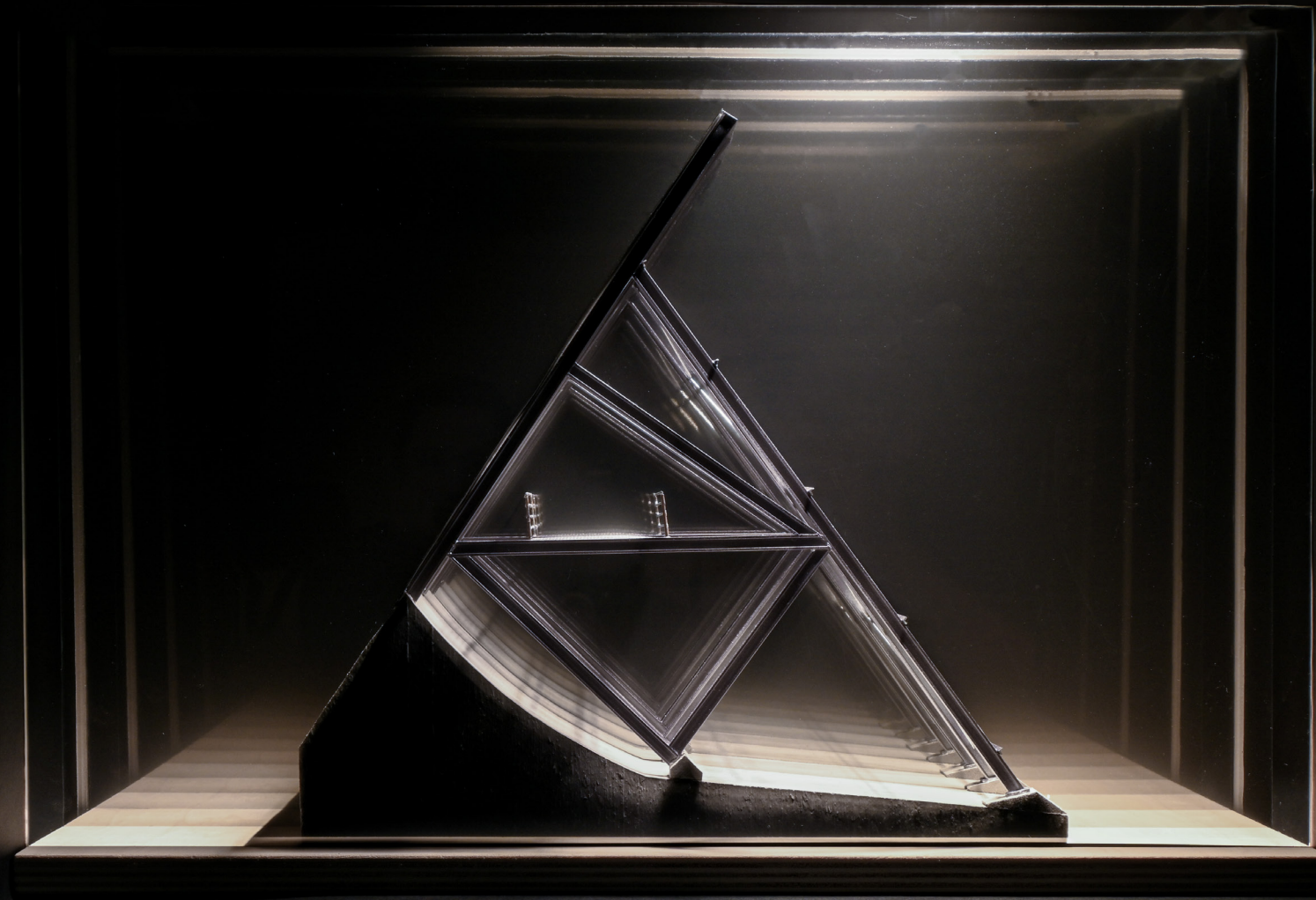
through the infrastructural
—
stepped concrete and steel landscape



walking on the main deck

—

central powerhouse repetitively obscured



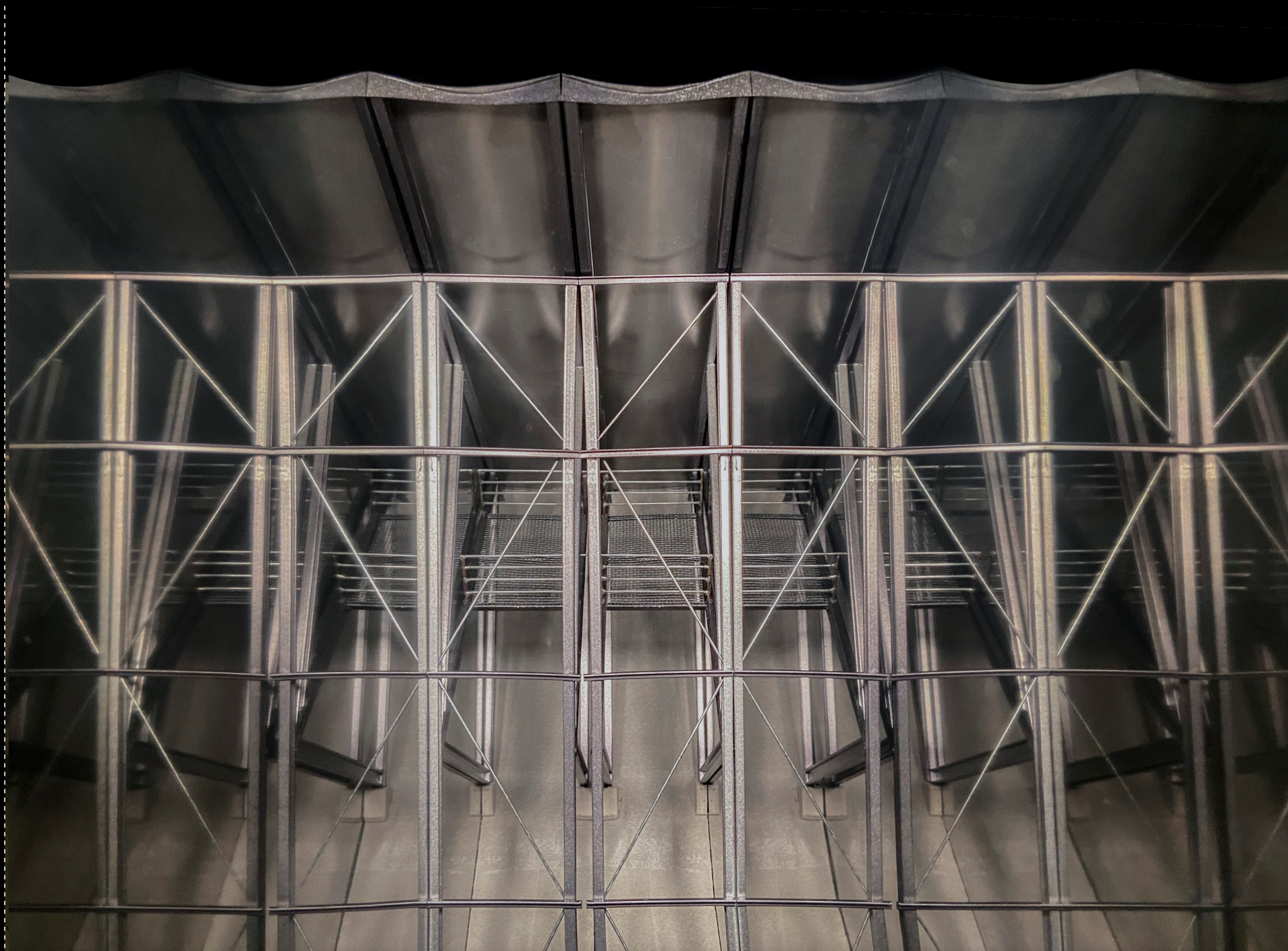
walking on the main deck

—

central powerhouse repetitively obscured



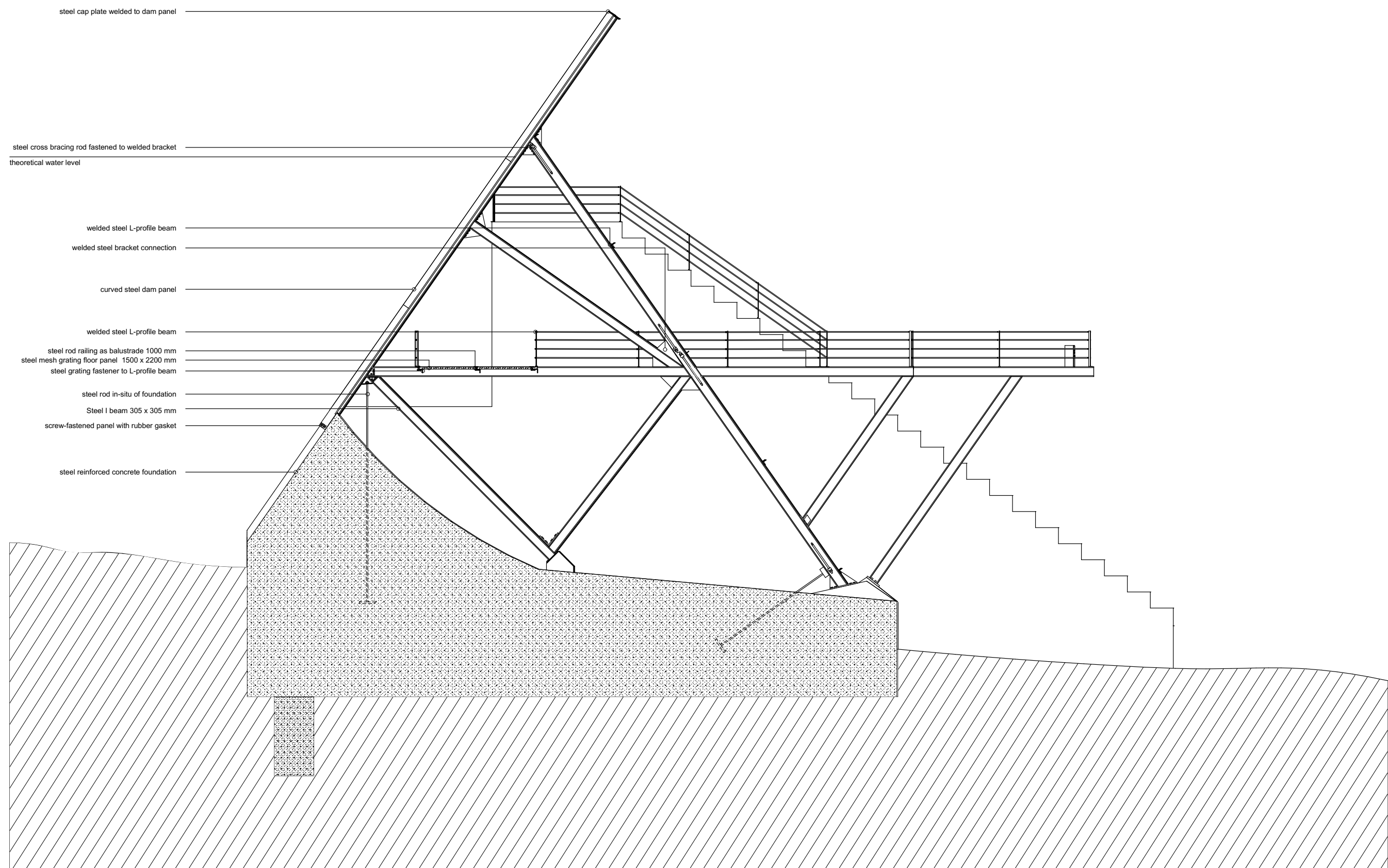




in-between the double mirror

—

revealing and obscuring the framing of views

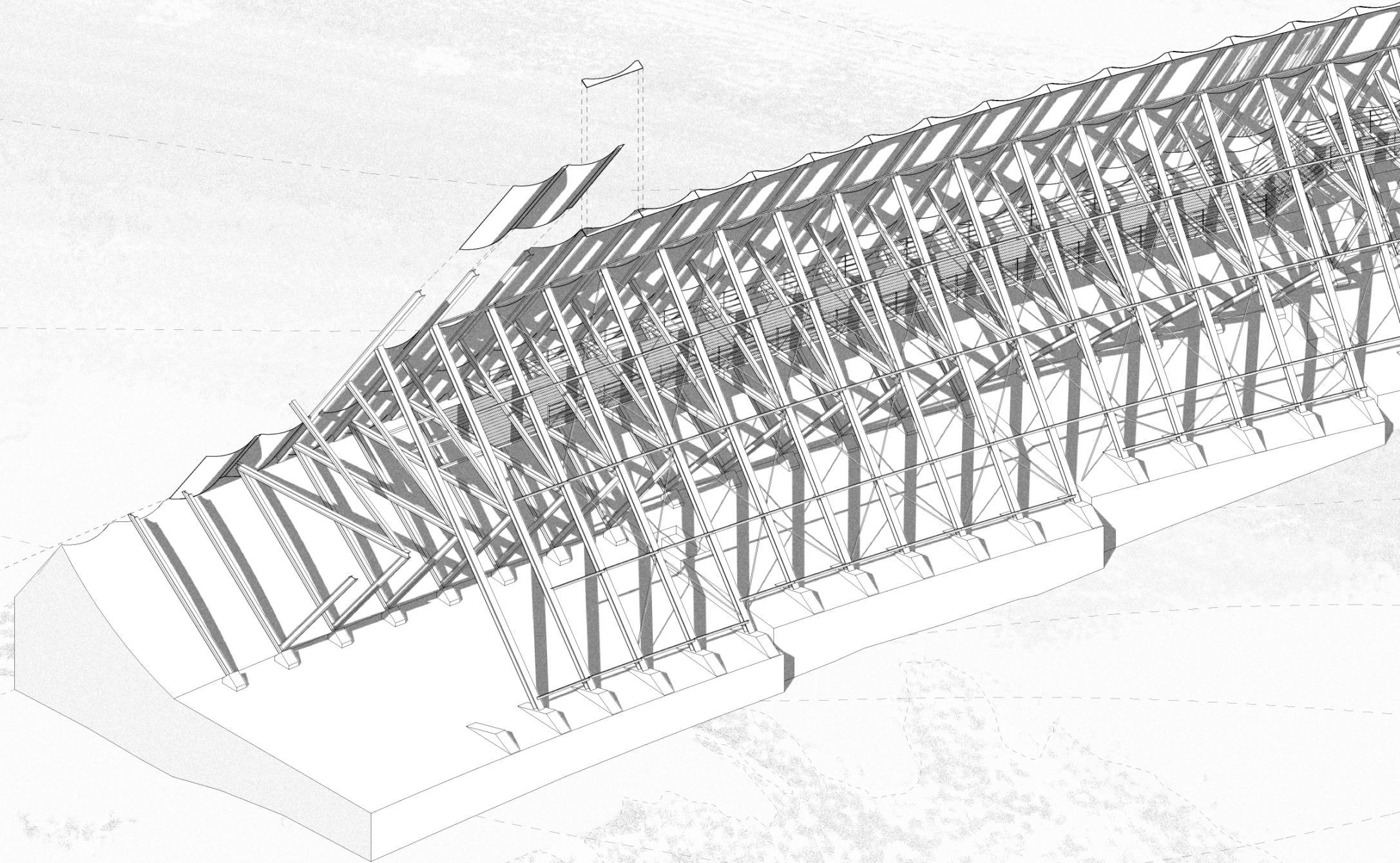


detail section of steel dam

1:20

Sectional build up of steel dam

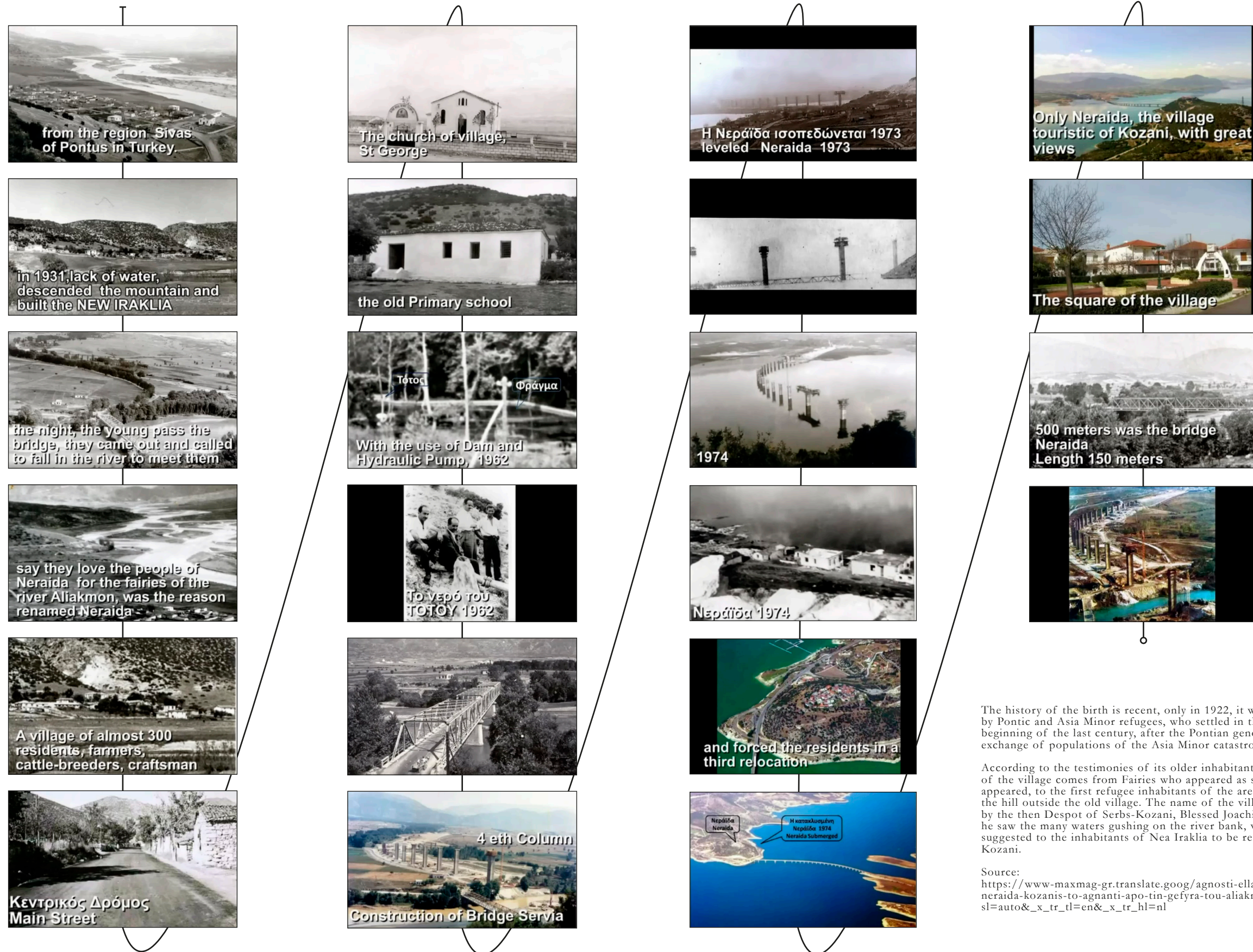
Concrete foundation and steel panels supported by densely arranged steel framework



- 1 Earthworks / diverting the stream
- 2 Pouring concrete foundation
- 3 Building up steel beams
- 4 Erecting 'A' frames
- 5 Connecting L purlin members
- 6 Cross bracing steel cables
- 7 Subfloor structure
- 8 Fixing metal floor grating
- 9 Installing guiding handrail

PHASE 3 —
Submerged Territories Museum/Exhibition





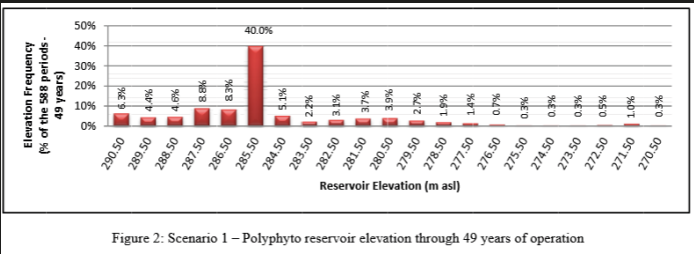
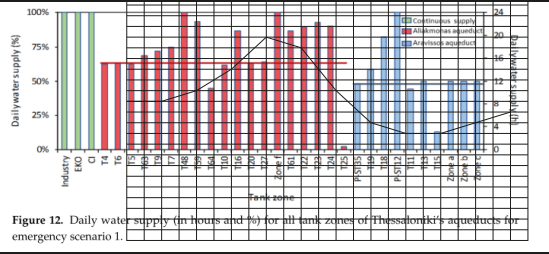
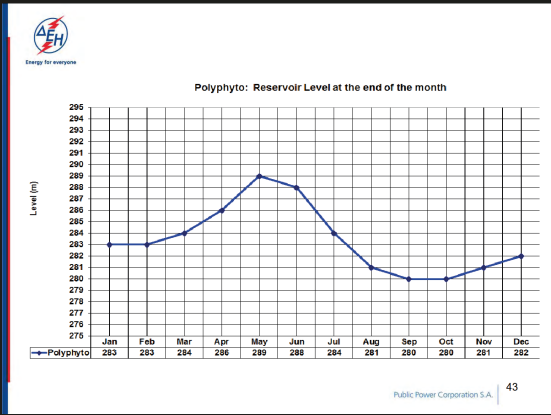
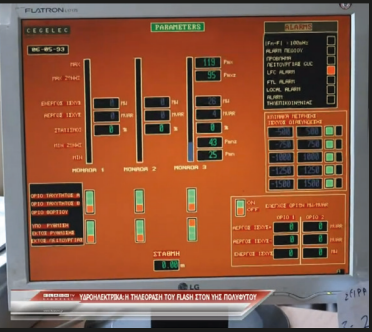
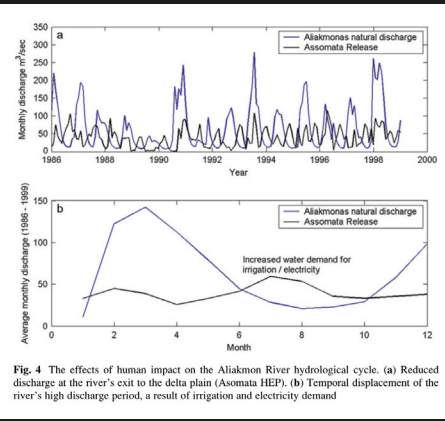
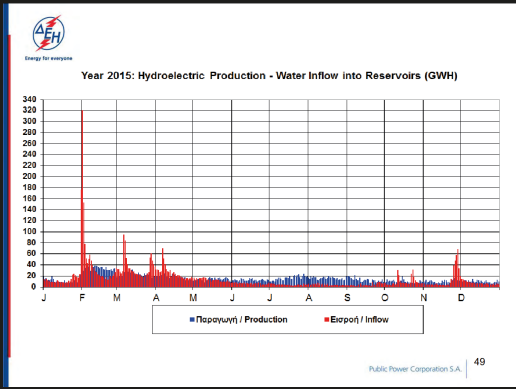
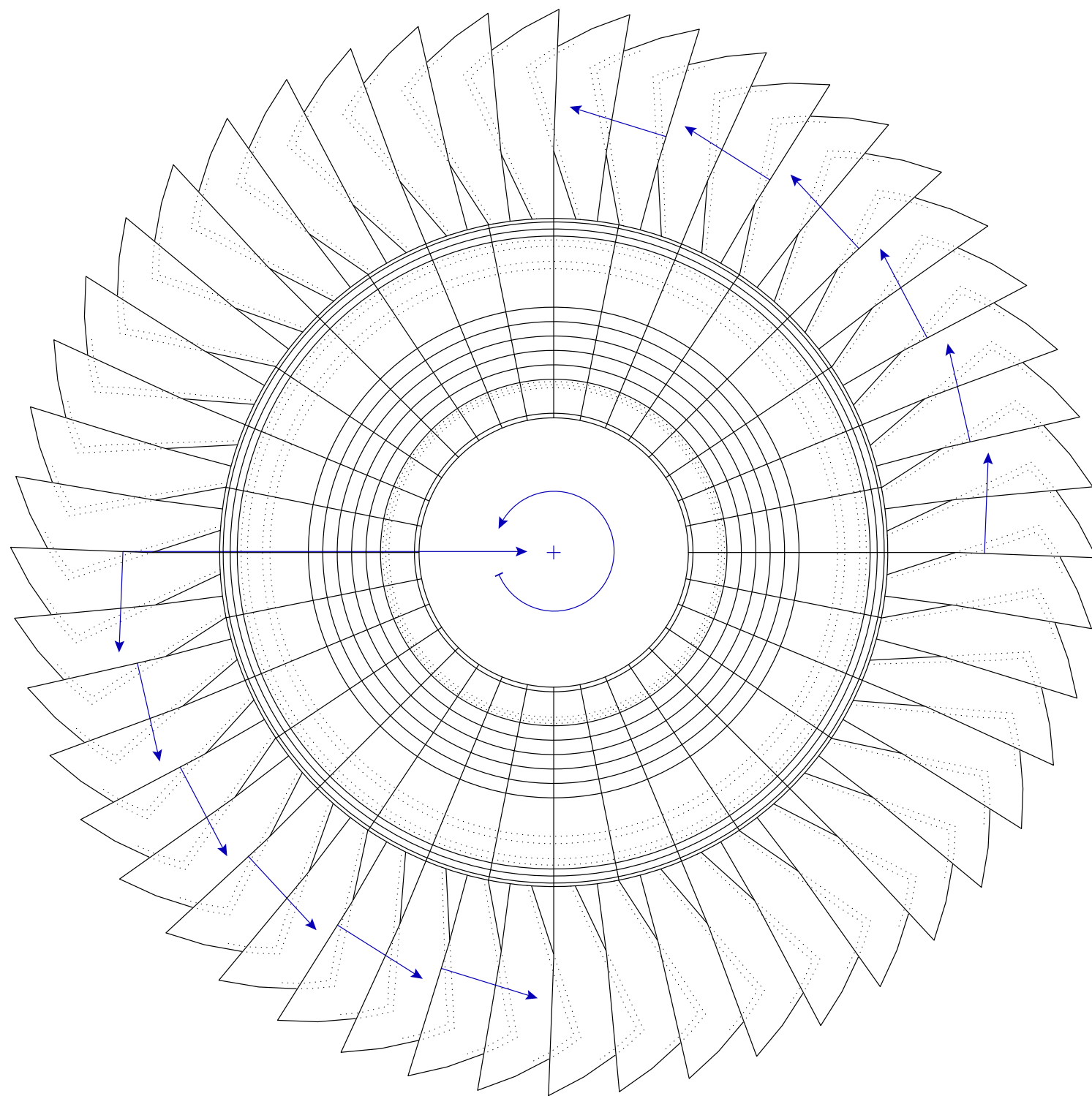


Figure 2: Scenario 1 – Polyphyto reservoir elevation through 49 years of operation



Agia Varvara dam
Polyfyo dam
Sfikia dam
Assomata dam
Hilarion dam

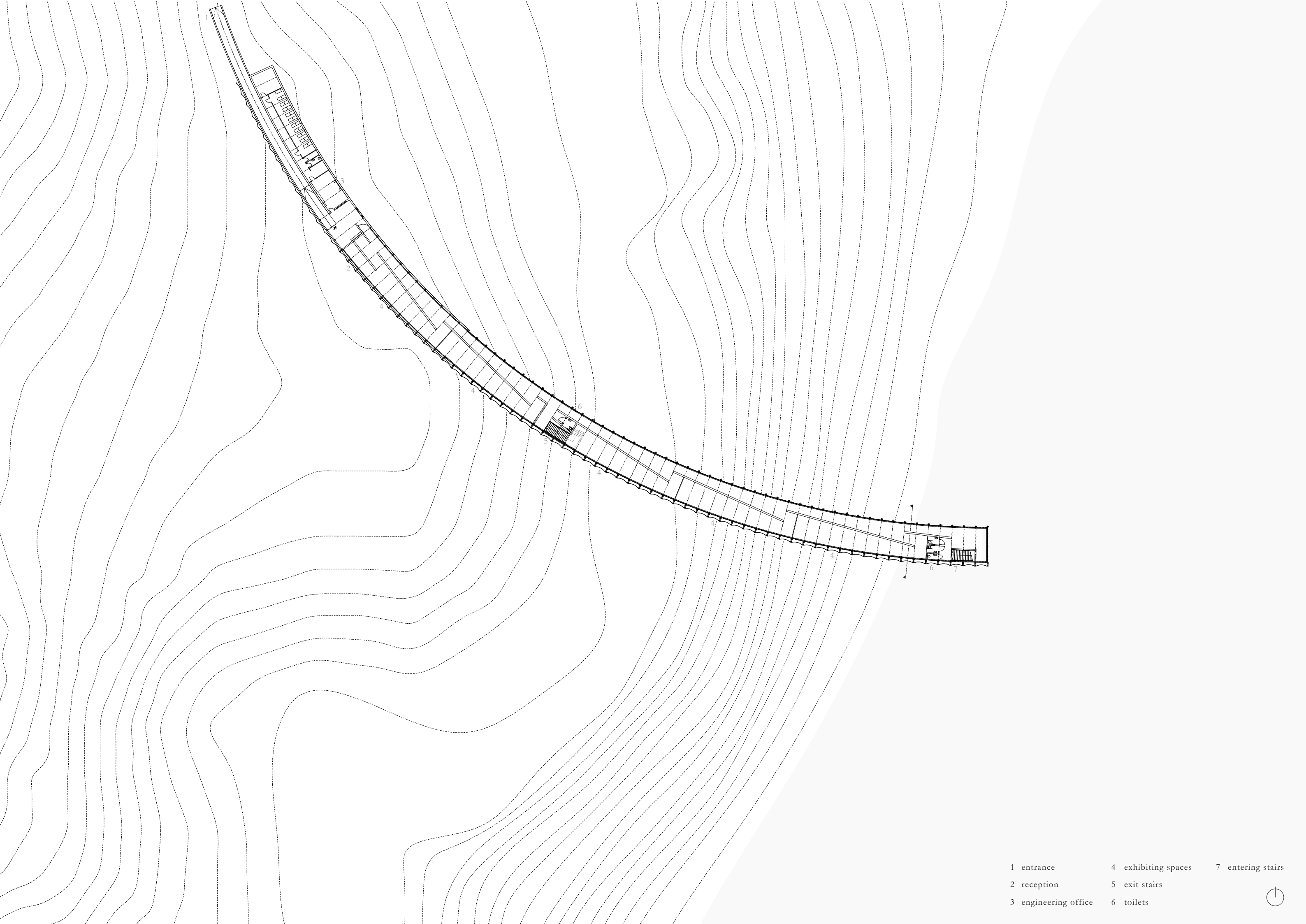




design interpretation of hydro-electric turbine

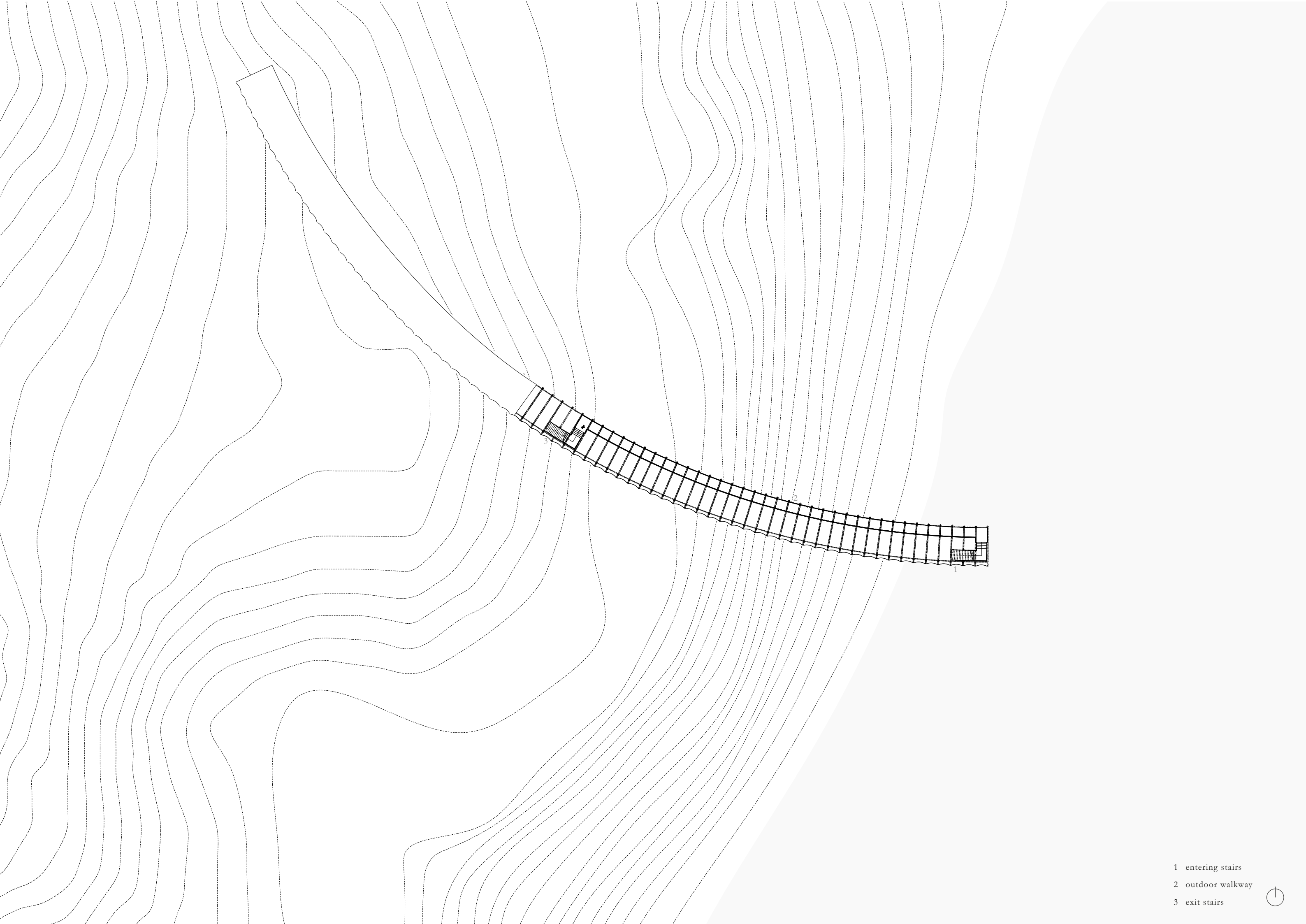
—

archive plan and pier



- | | | |
|----------------------|---------------------|-------------------|
| 1 entrance | 4 exhibiting spaces | 7 entering stairs |
| 2 reception | 5 exit stairs | |
| 3 engineering office | 6 toilets | |





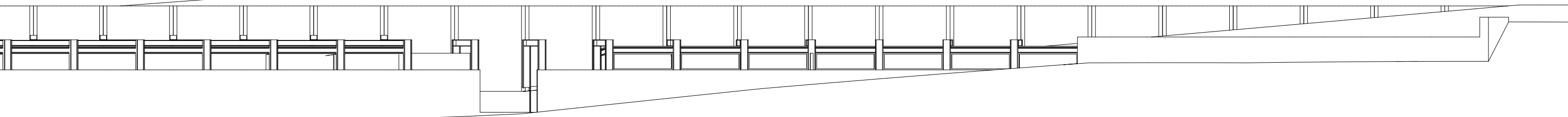
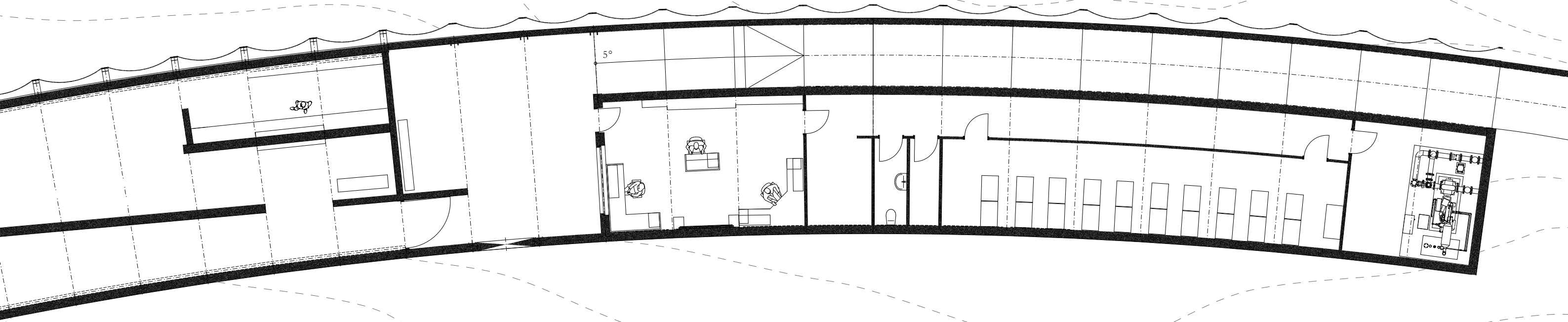
1 entering stairs

2 outdoor walkway

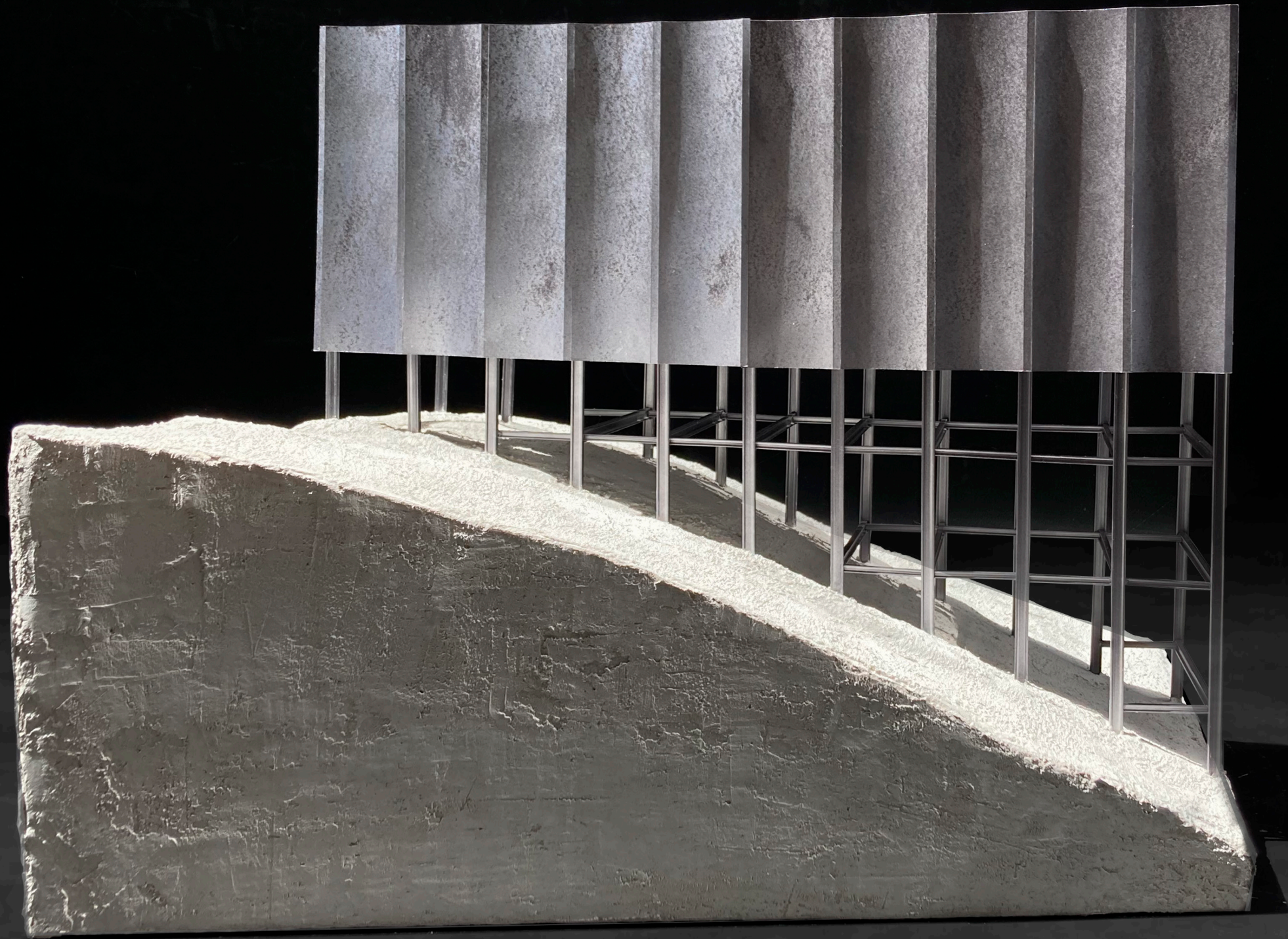
3 exit stairs

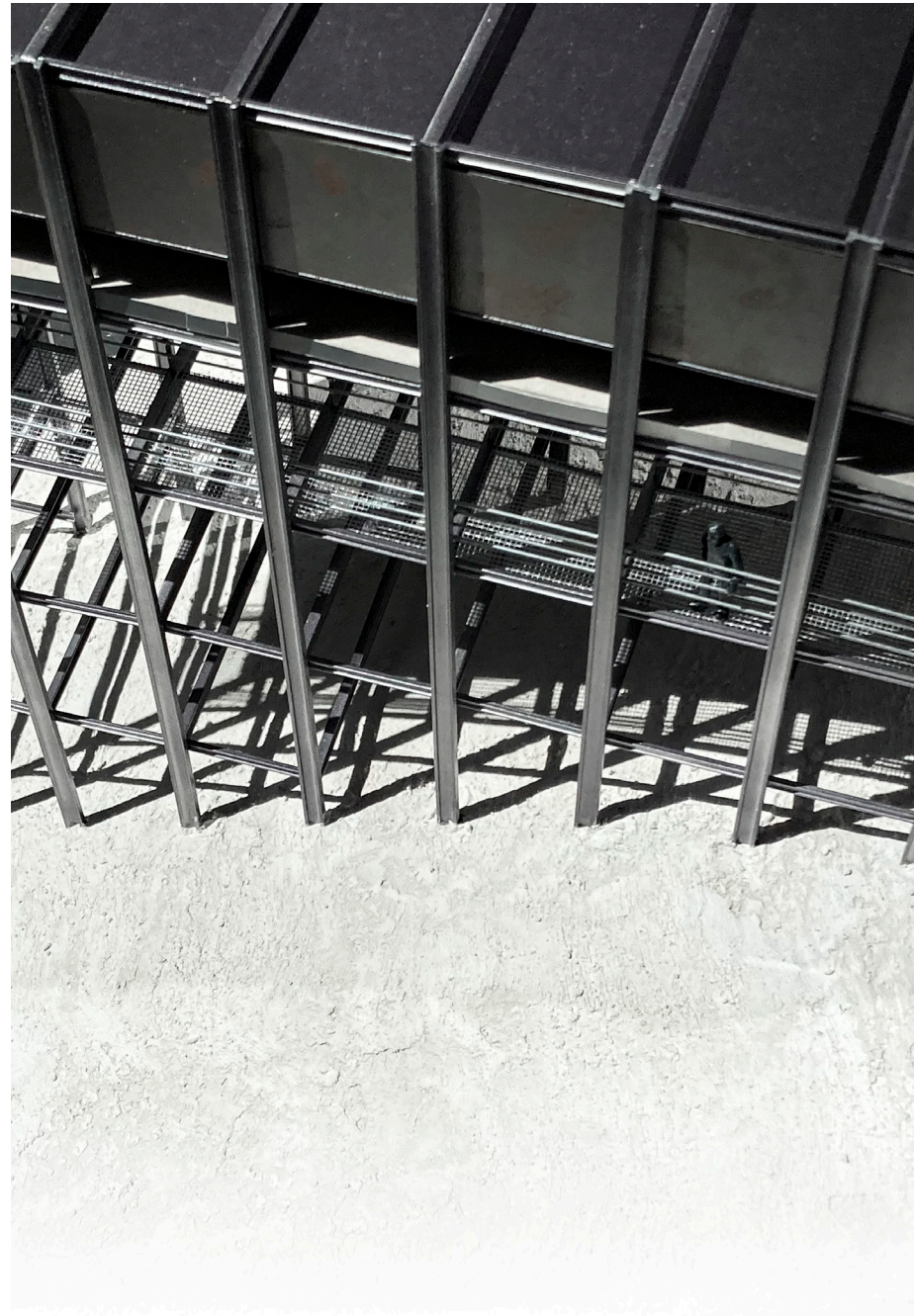


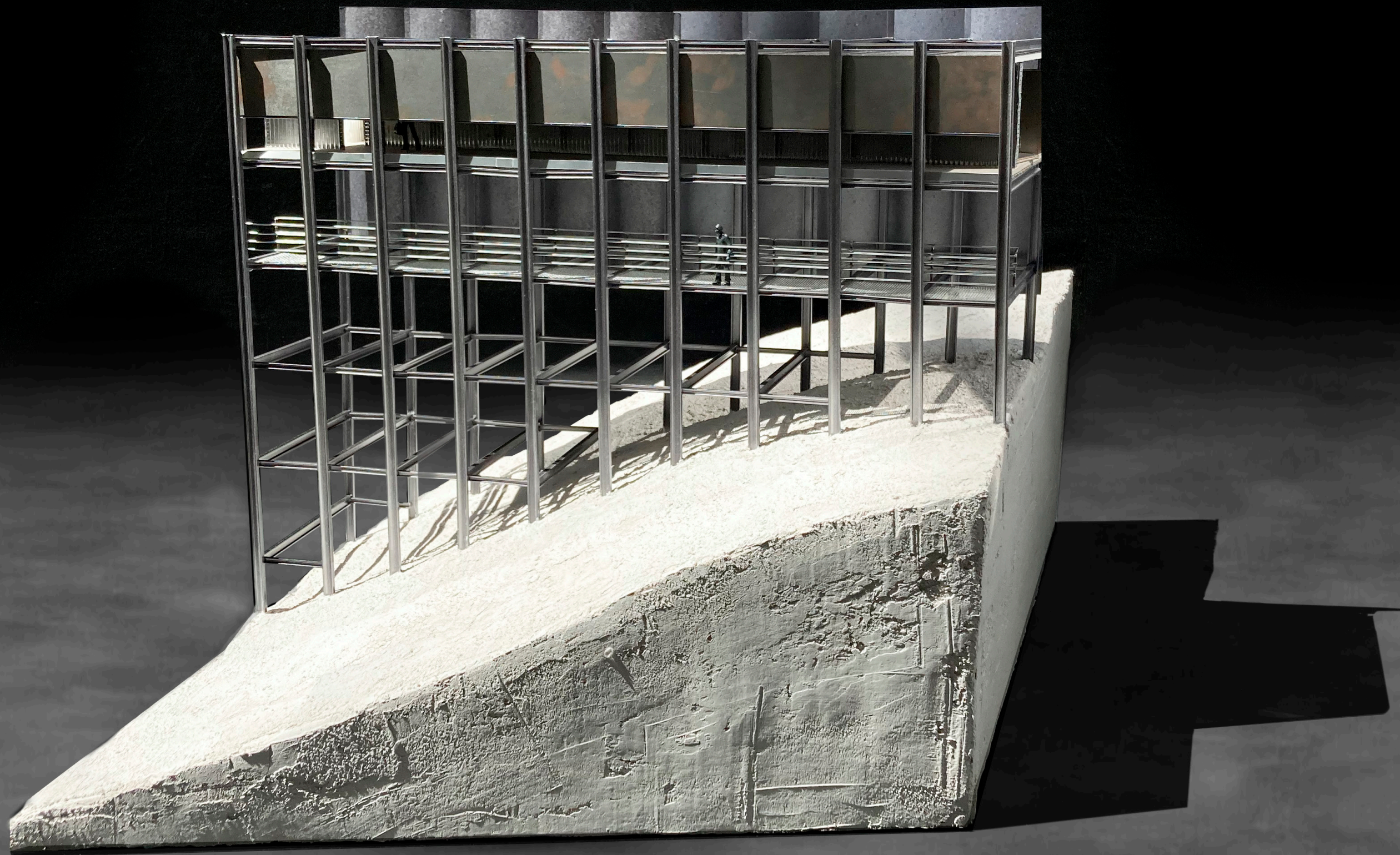
entrance fragment plan
1:100
-
south elevation





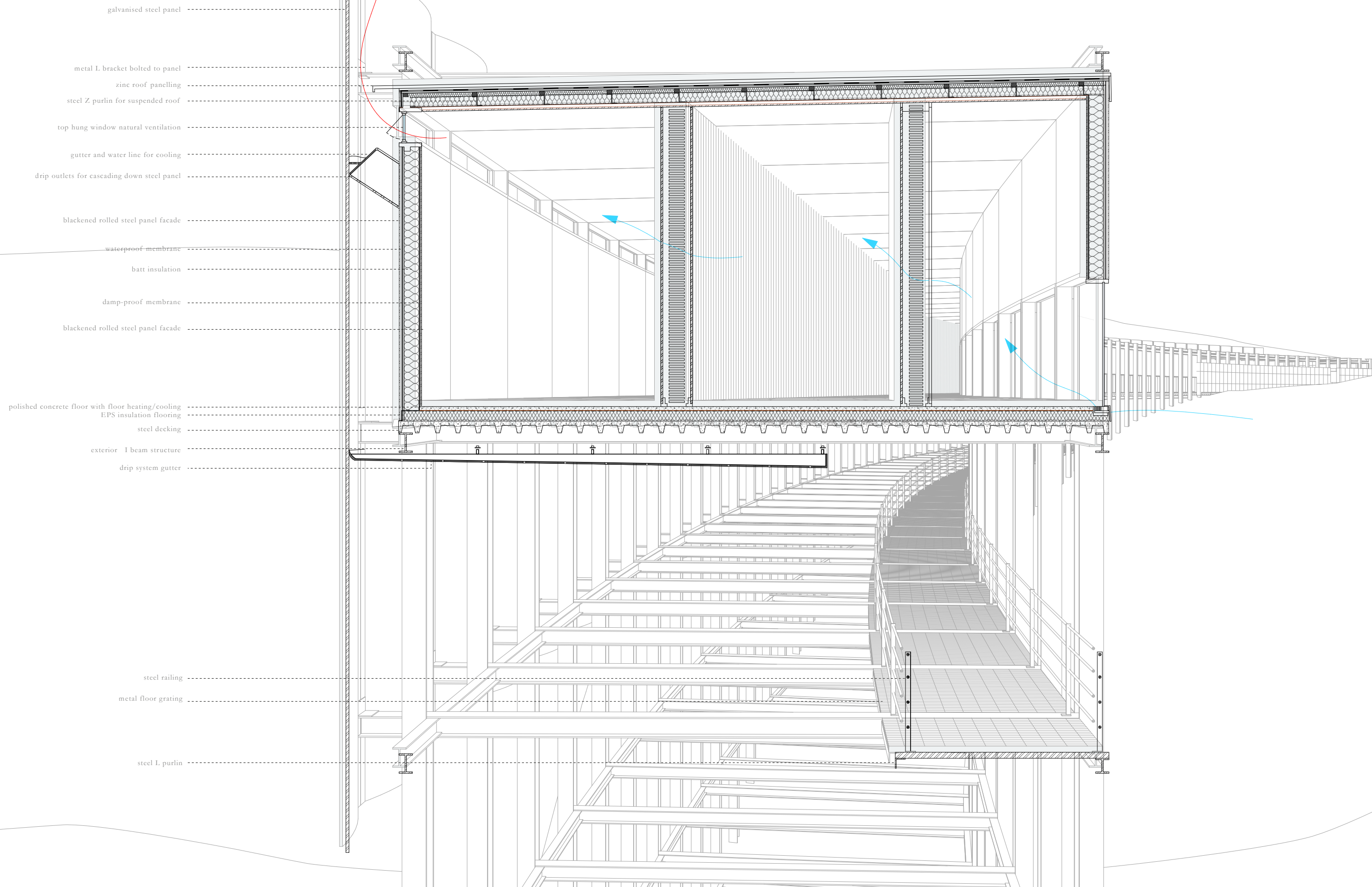


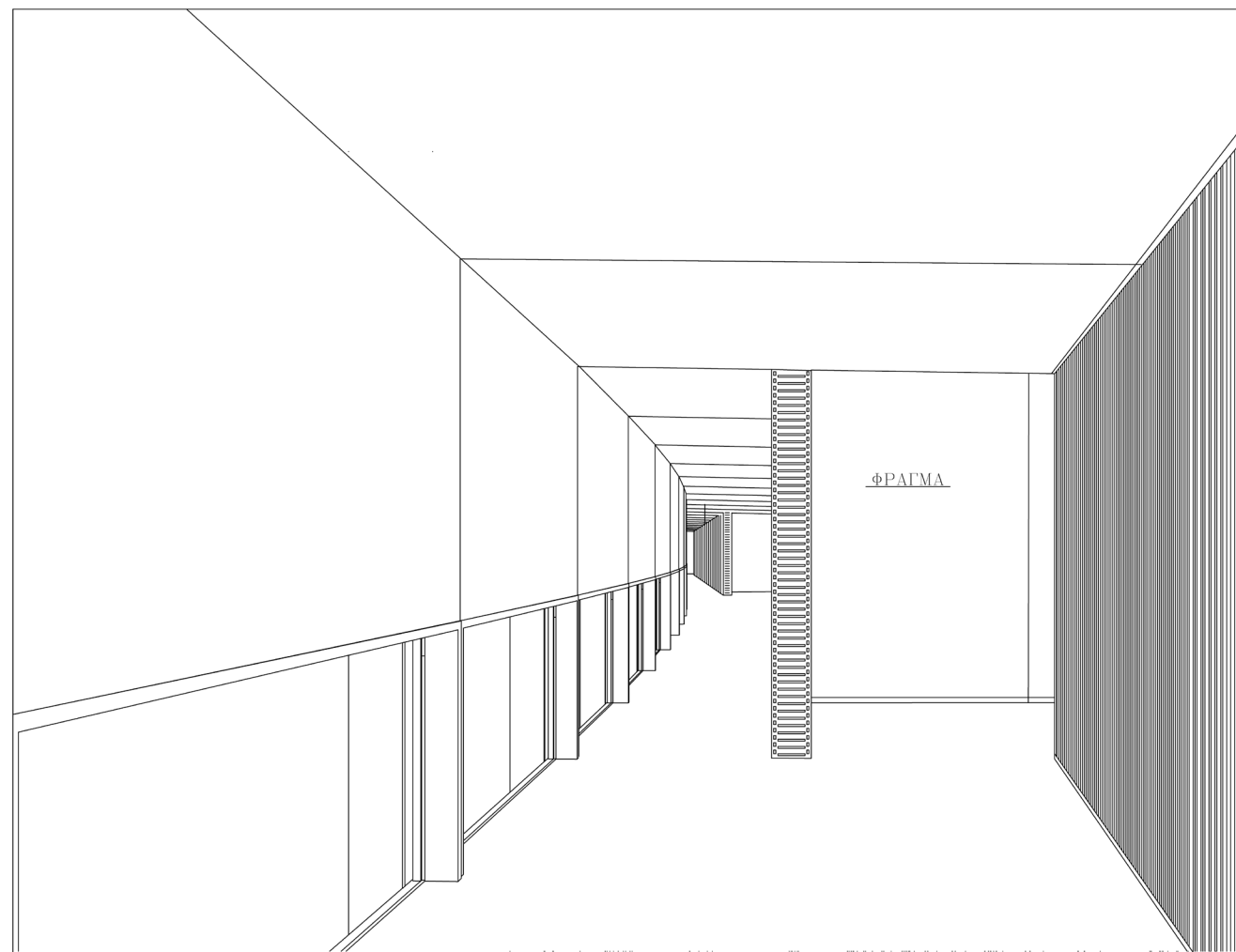




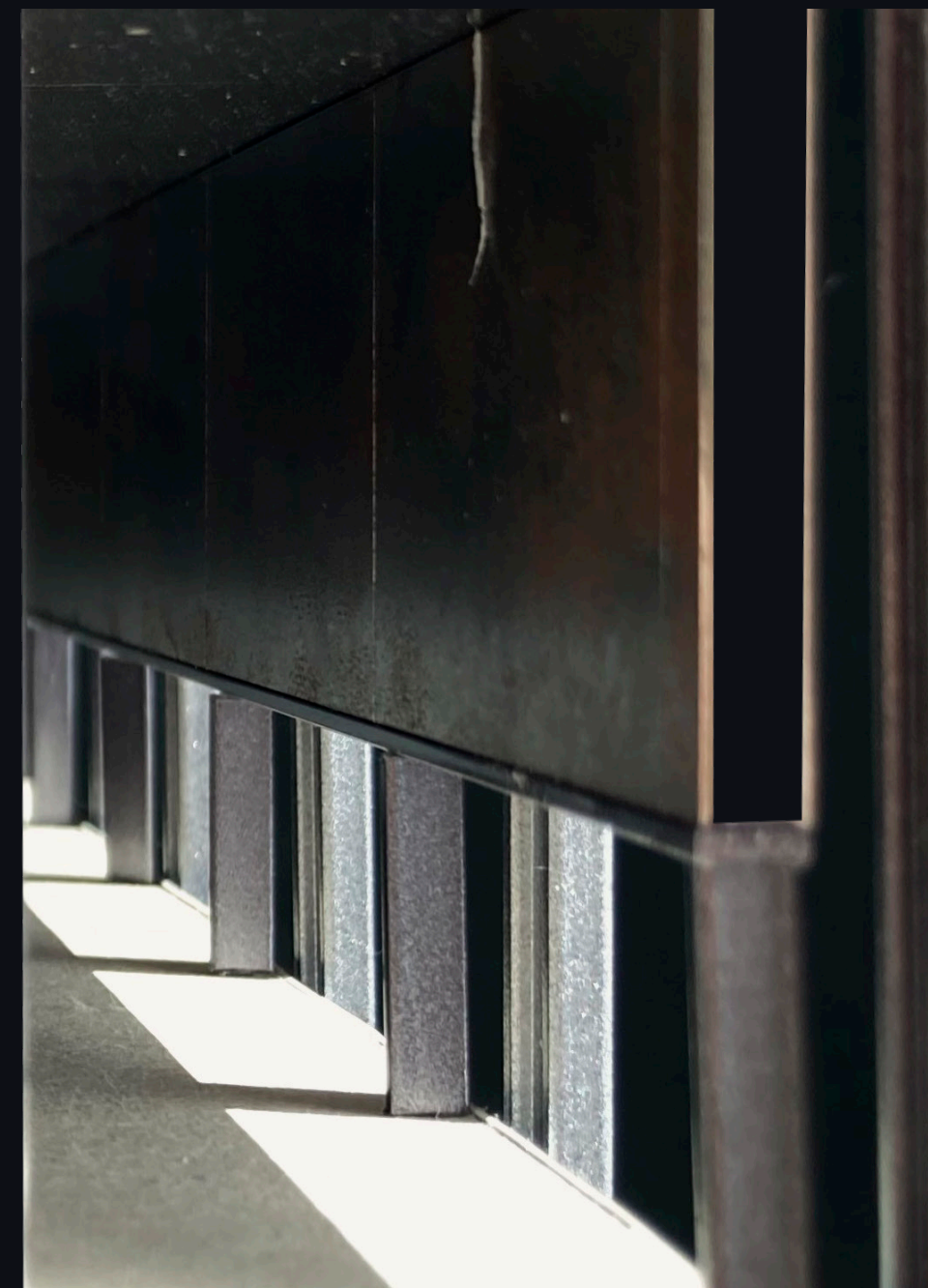
sectional climate detail

—
1:20





walking through the walkway
 —
 glass / steel / polycarbonate



Wall as a threshold

—

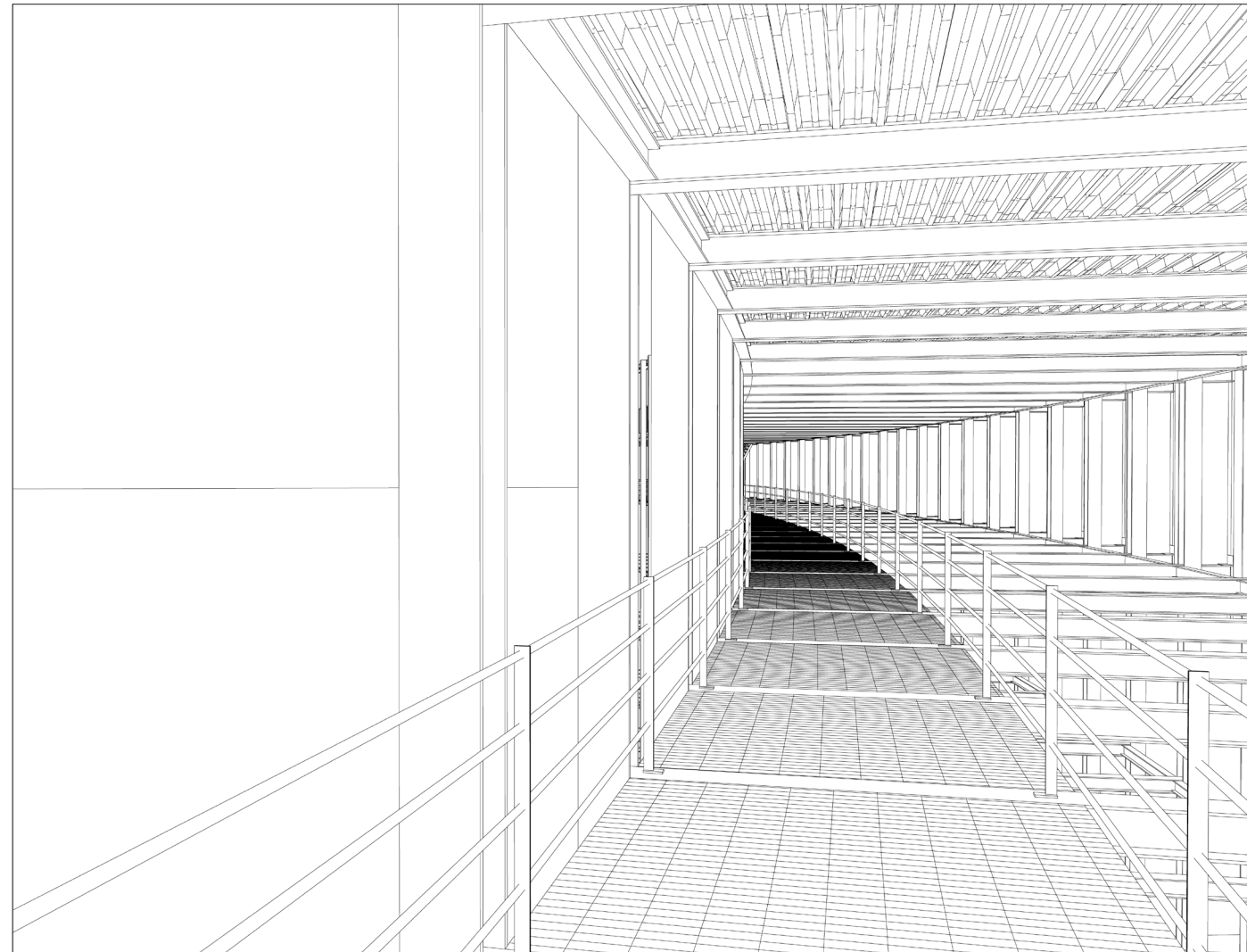
Spaces shrink and grow passing through



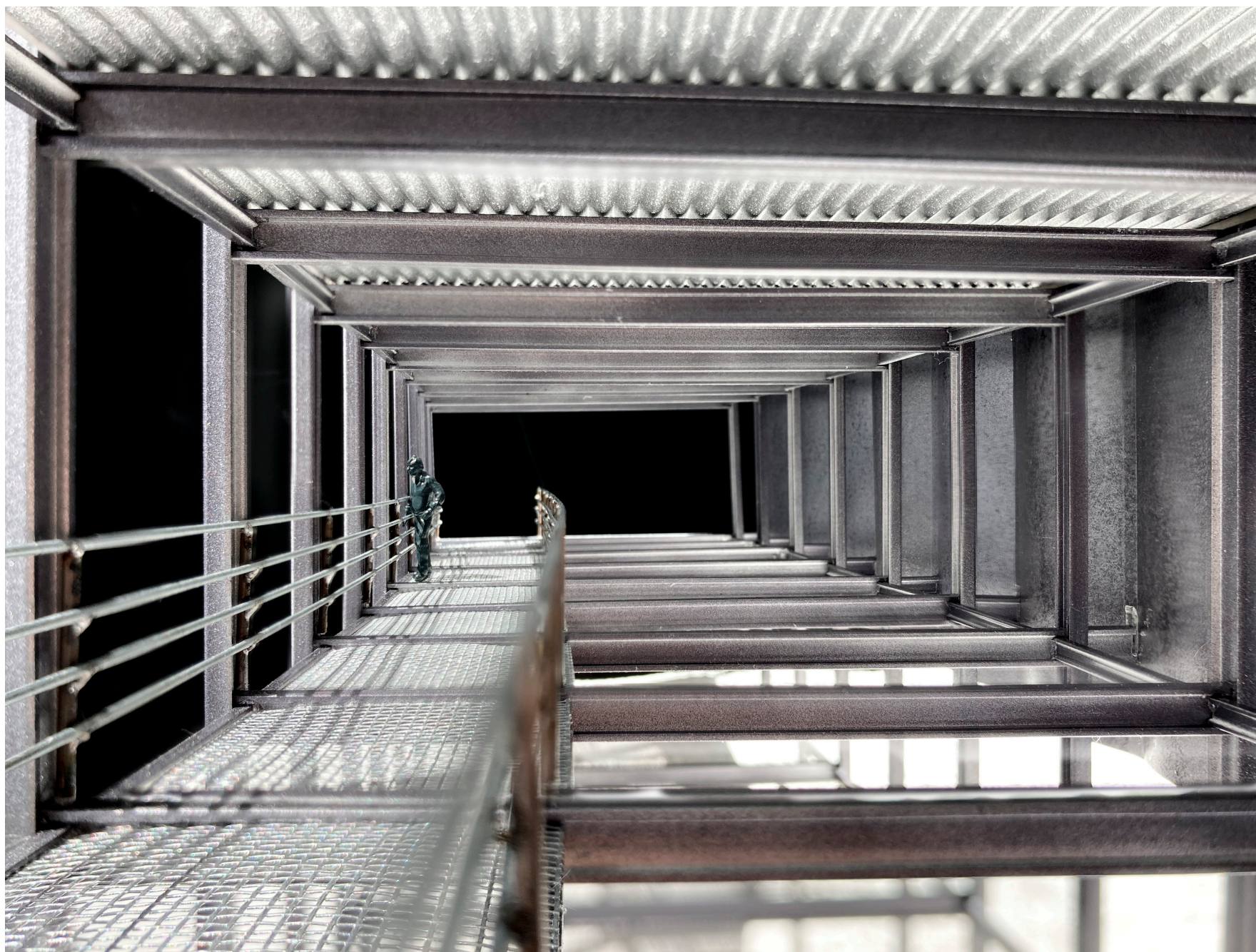
Light / Framing the ground



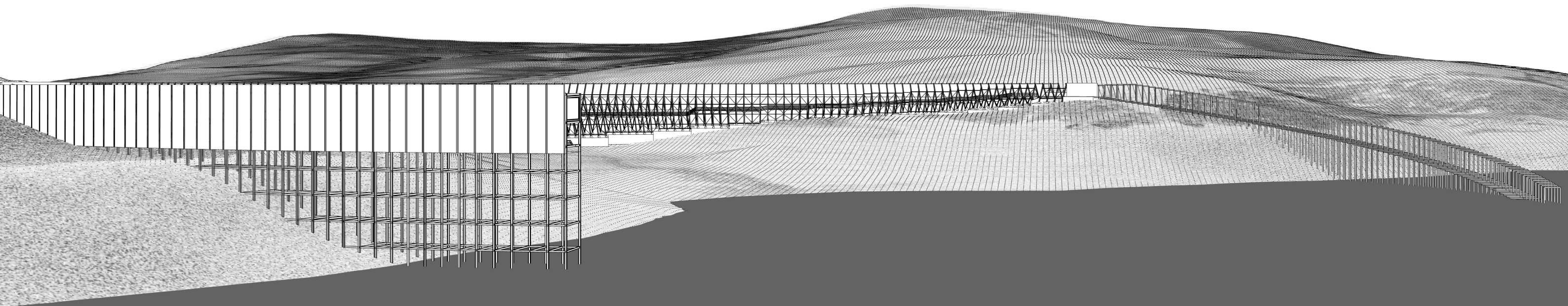
Light / Framing the Sky and dam panels



through the infrastructural
—
steel / steel / steel

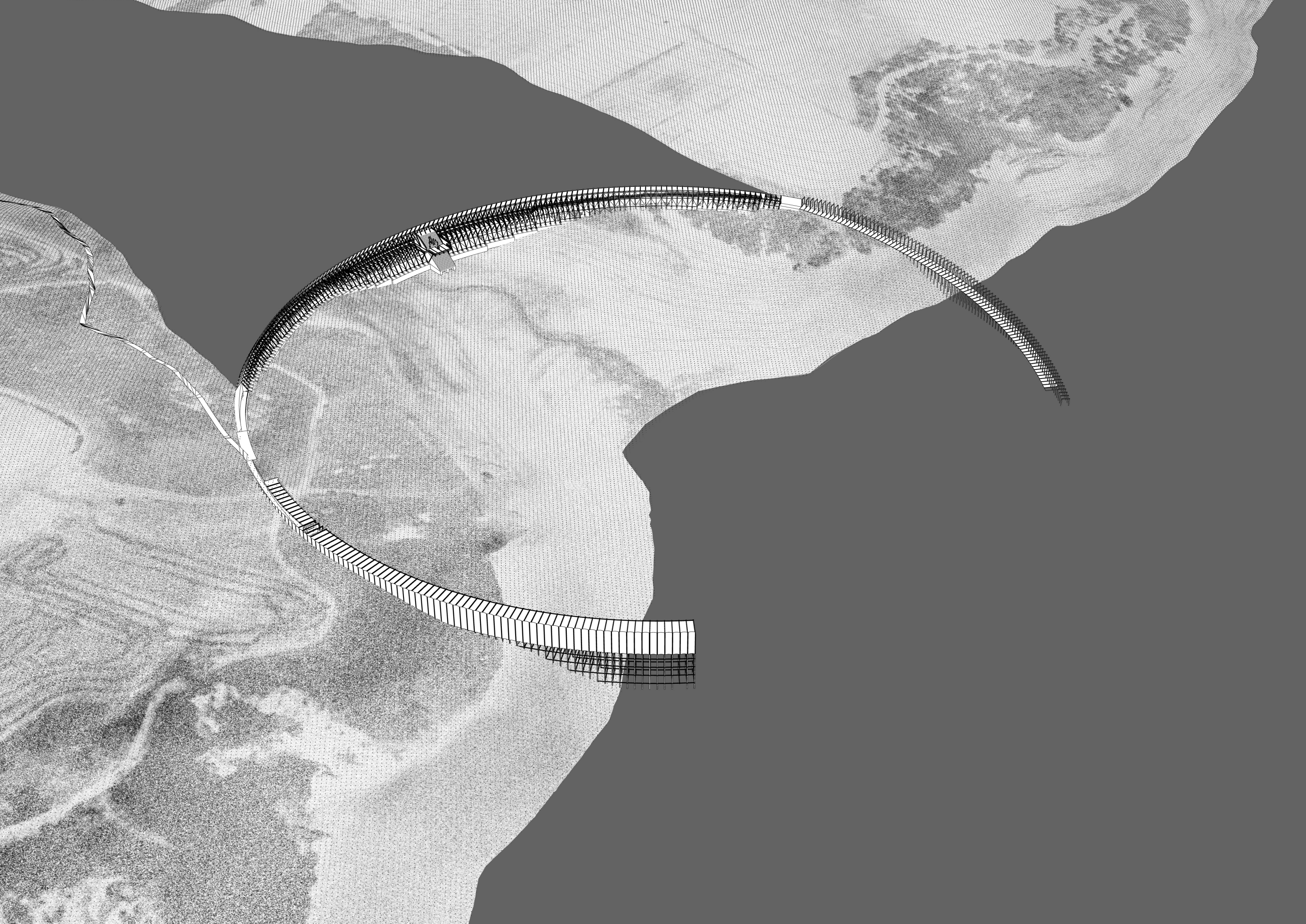


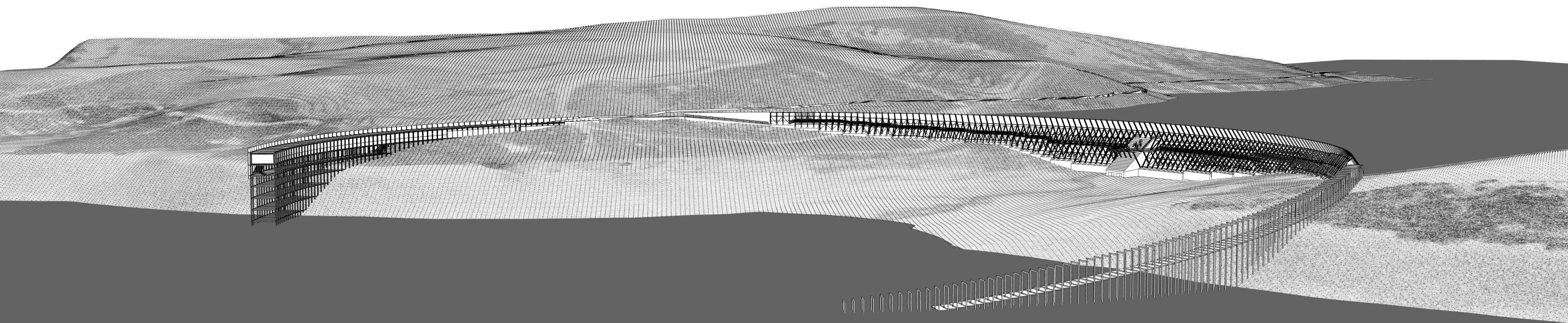
Curated outsidersness
—
choosing what not to view

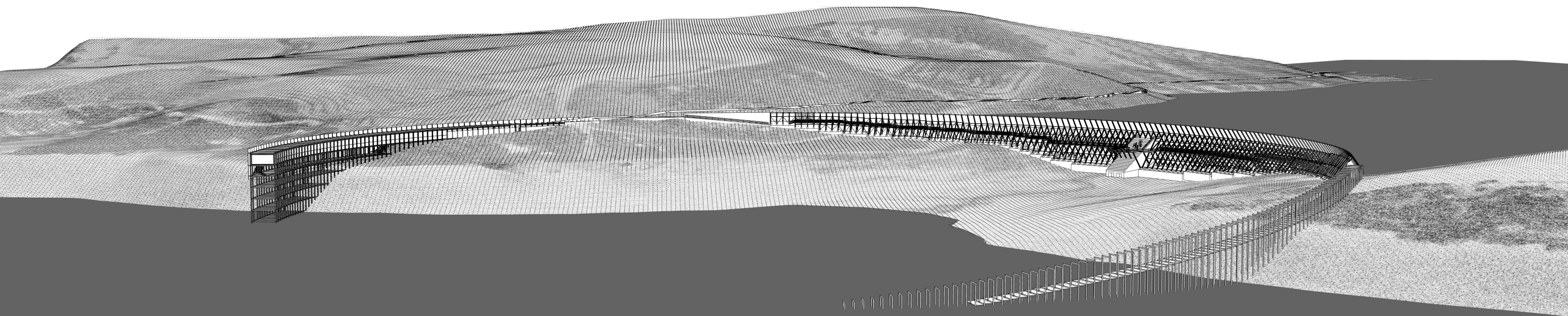


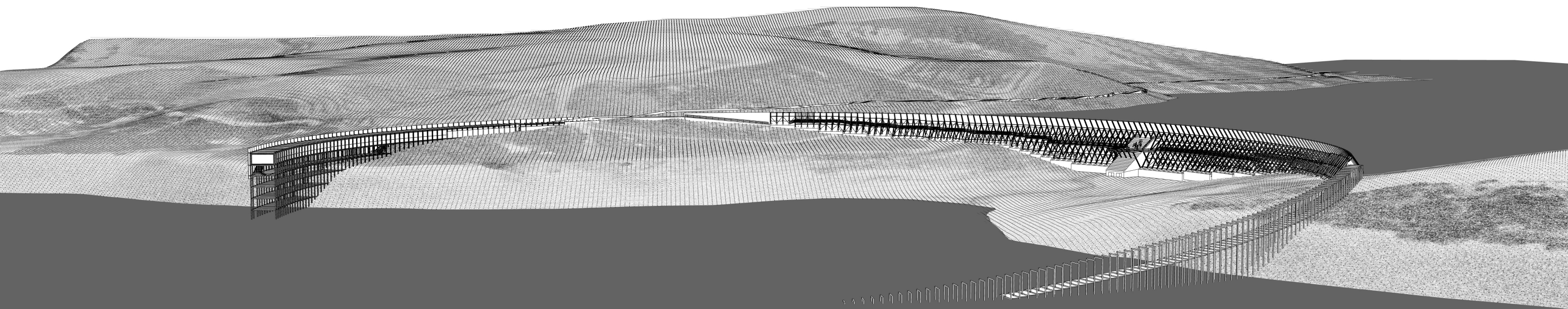
pier reaching into the reservoir
—
access and measure of a changing hydraulic landscape

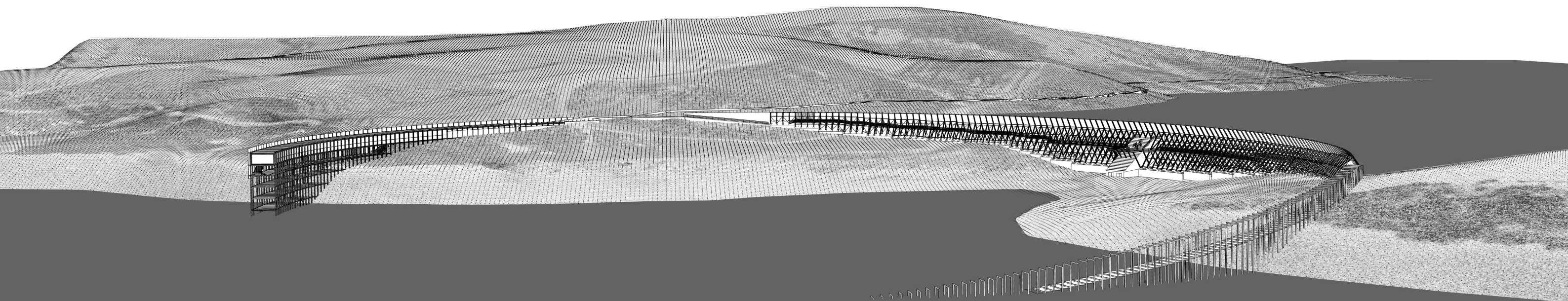


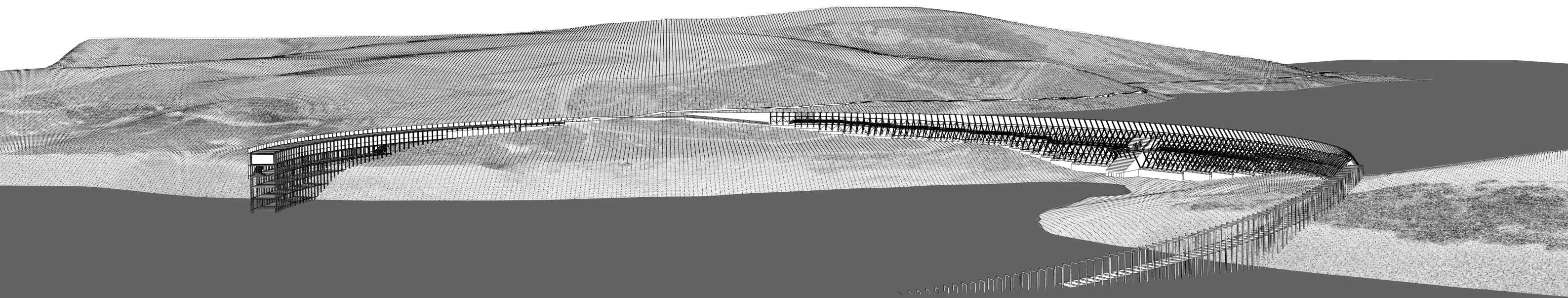


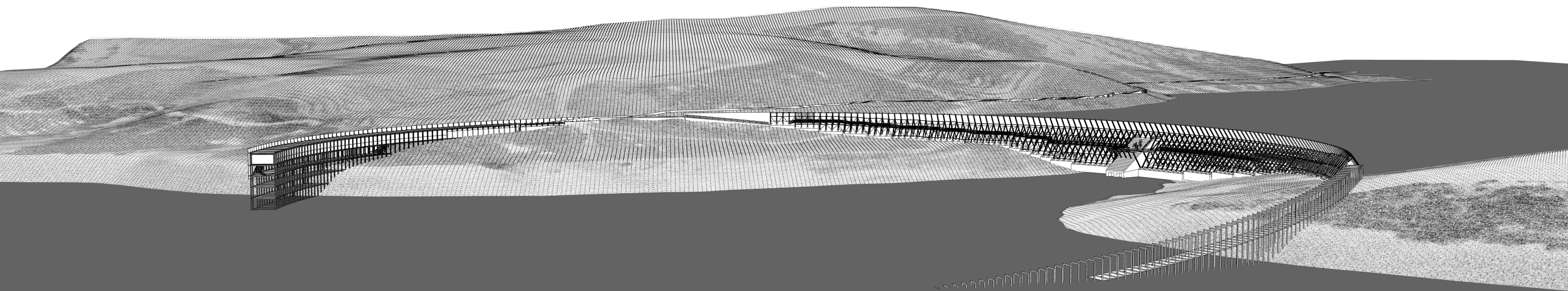


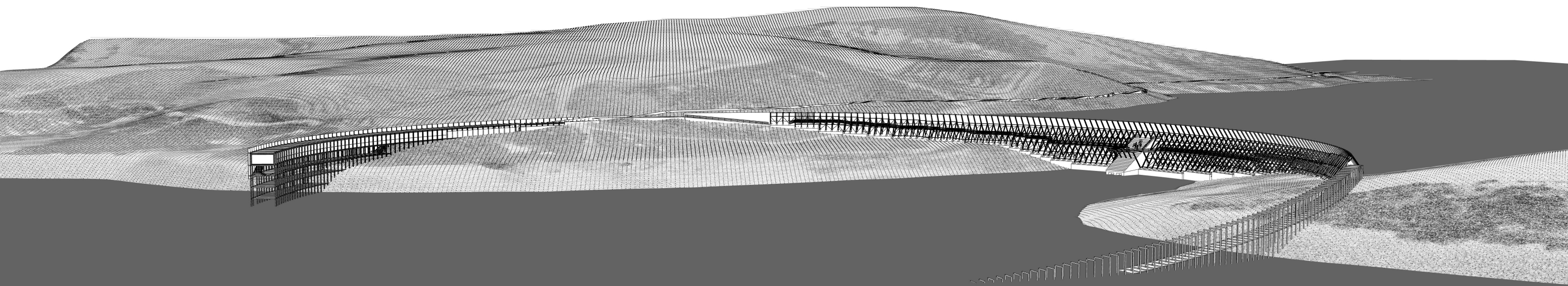


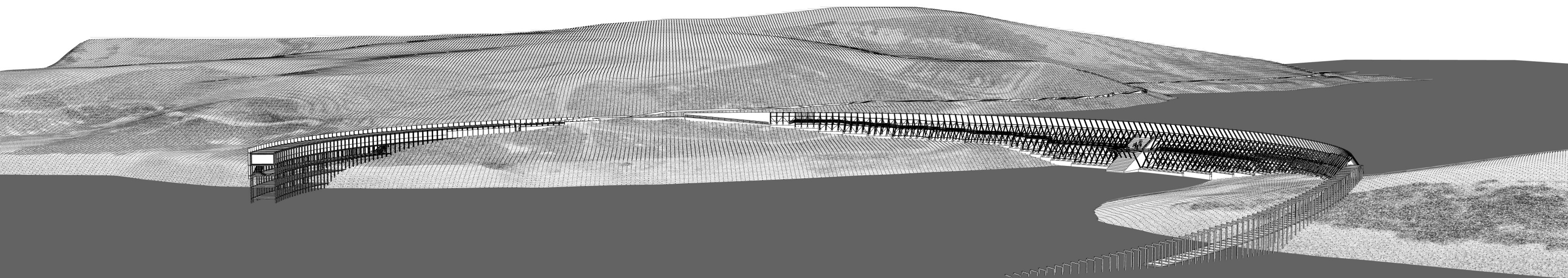


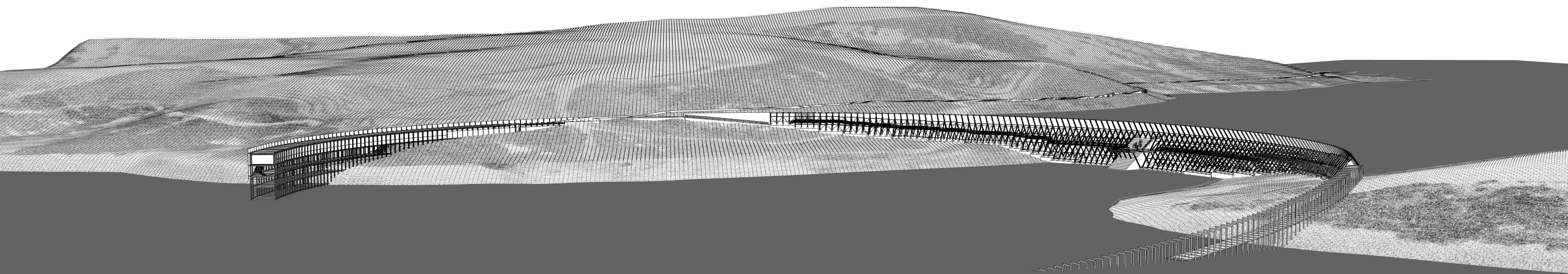


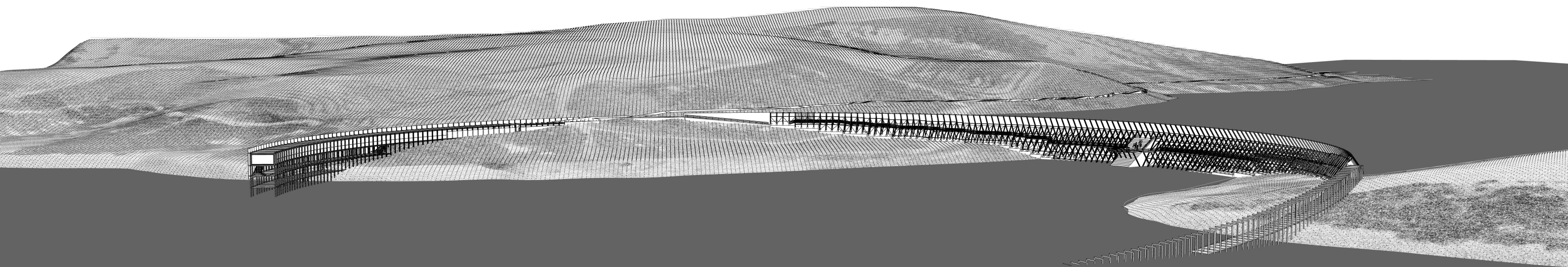


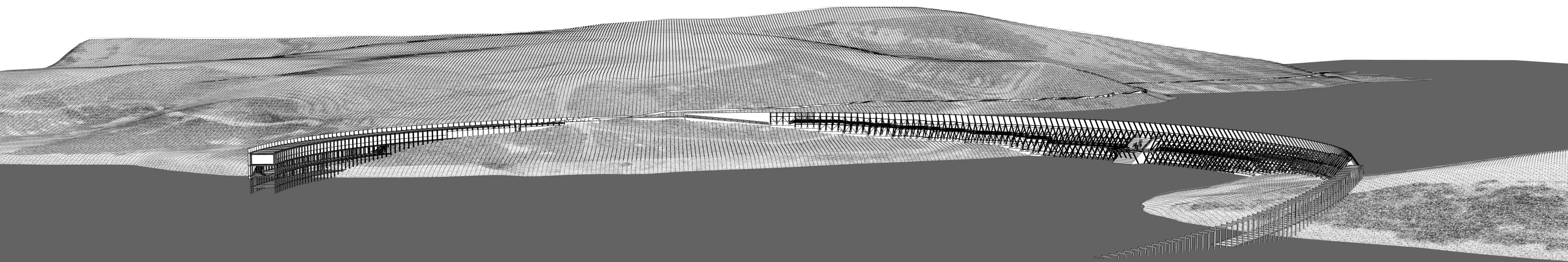


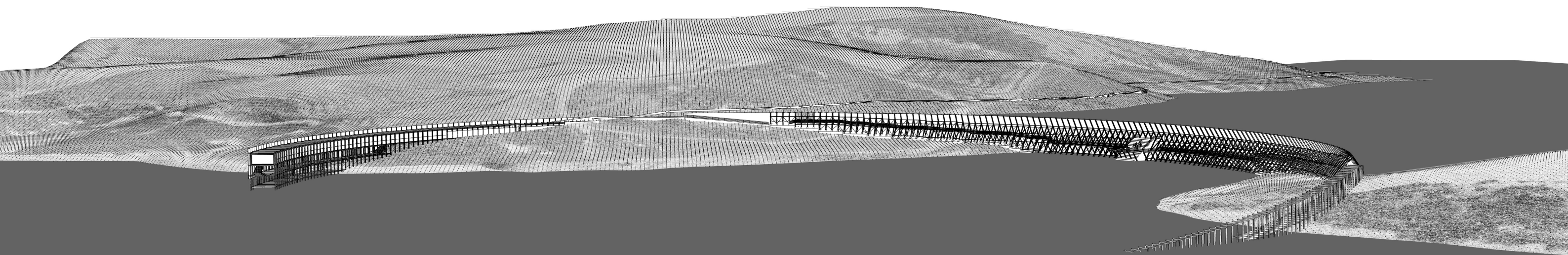


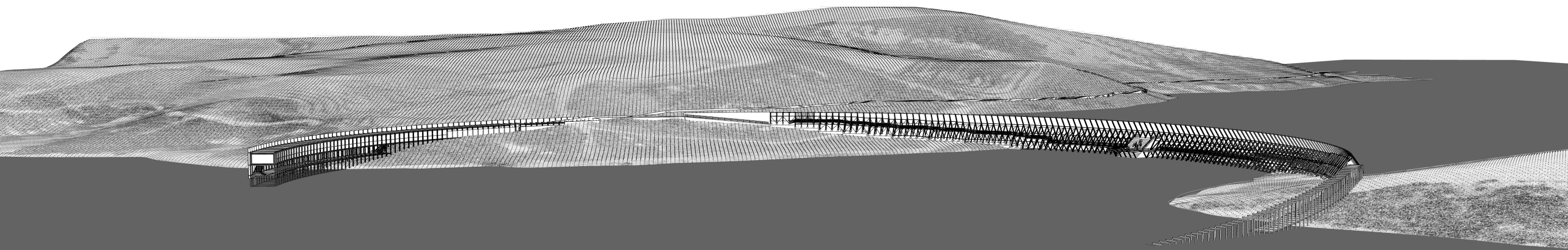


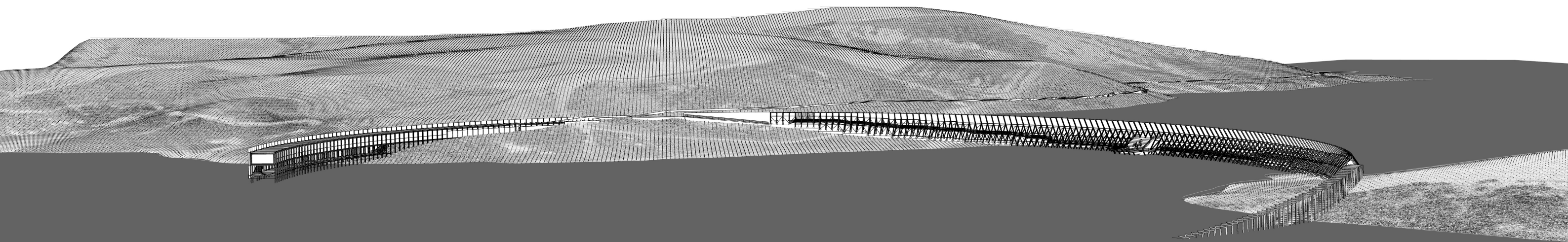


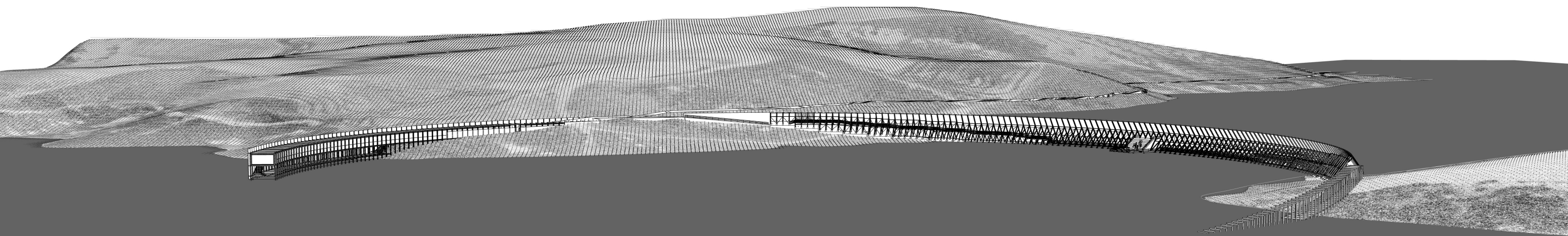














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