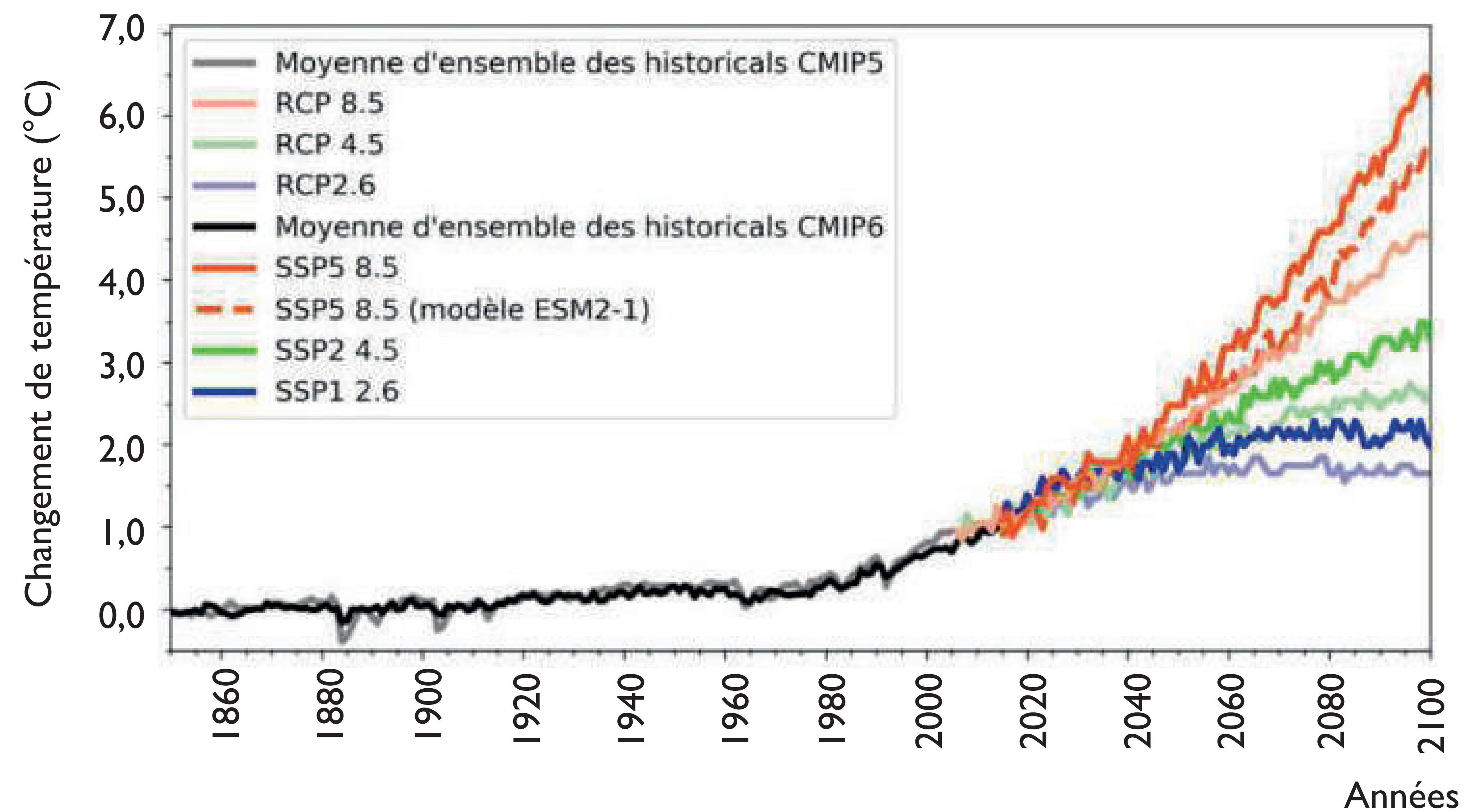


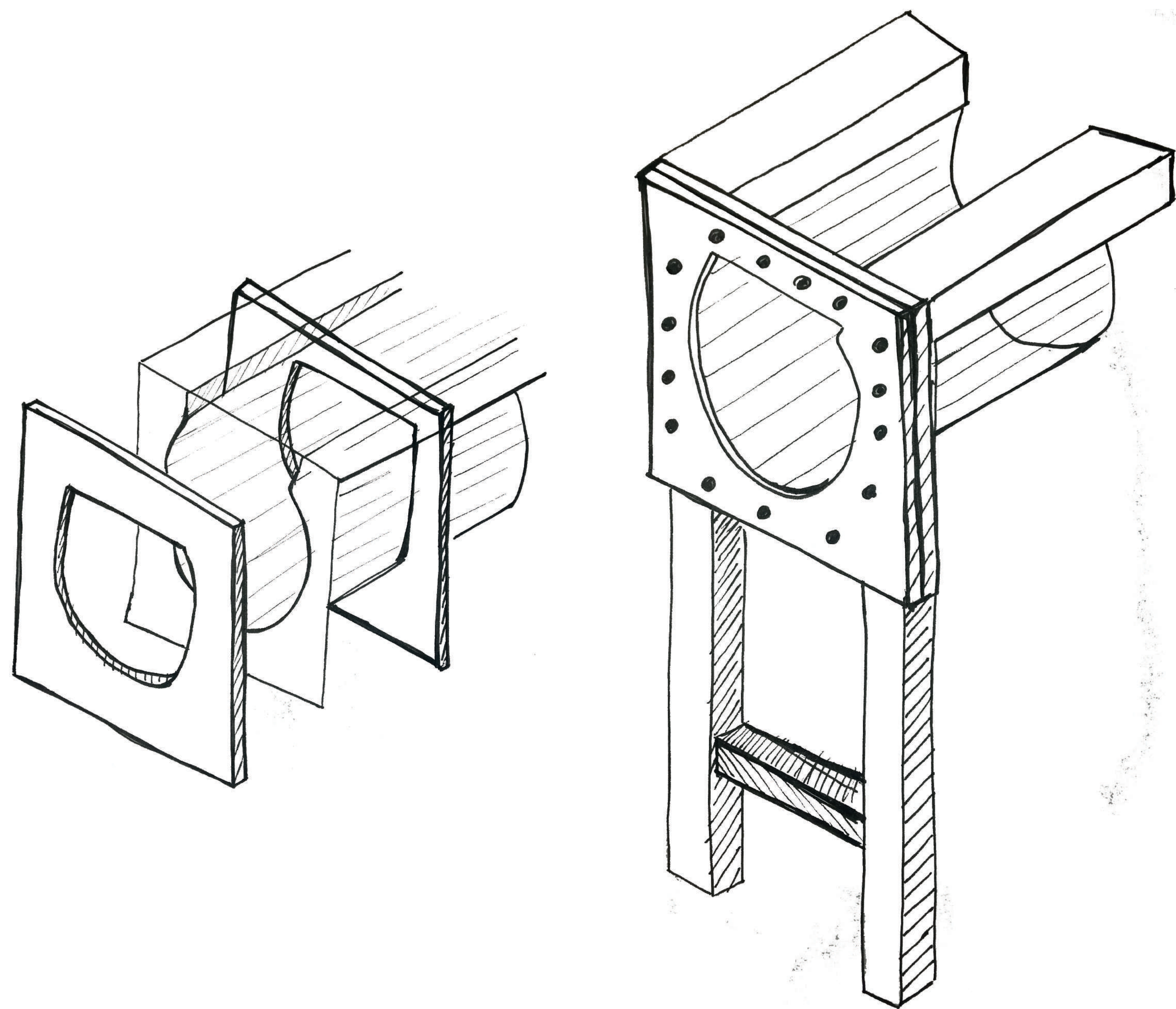
Construire en matière *grise*

La ligne directrice de l'architecte

Le besoin fort, les contraintes



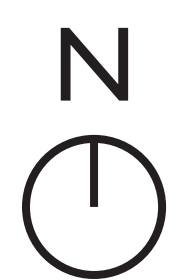
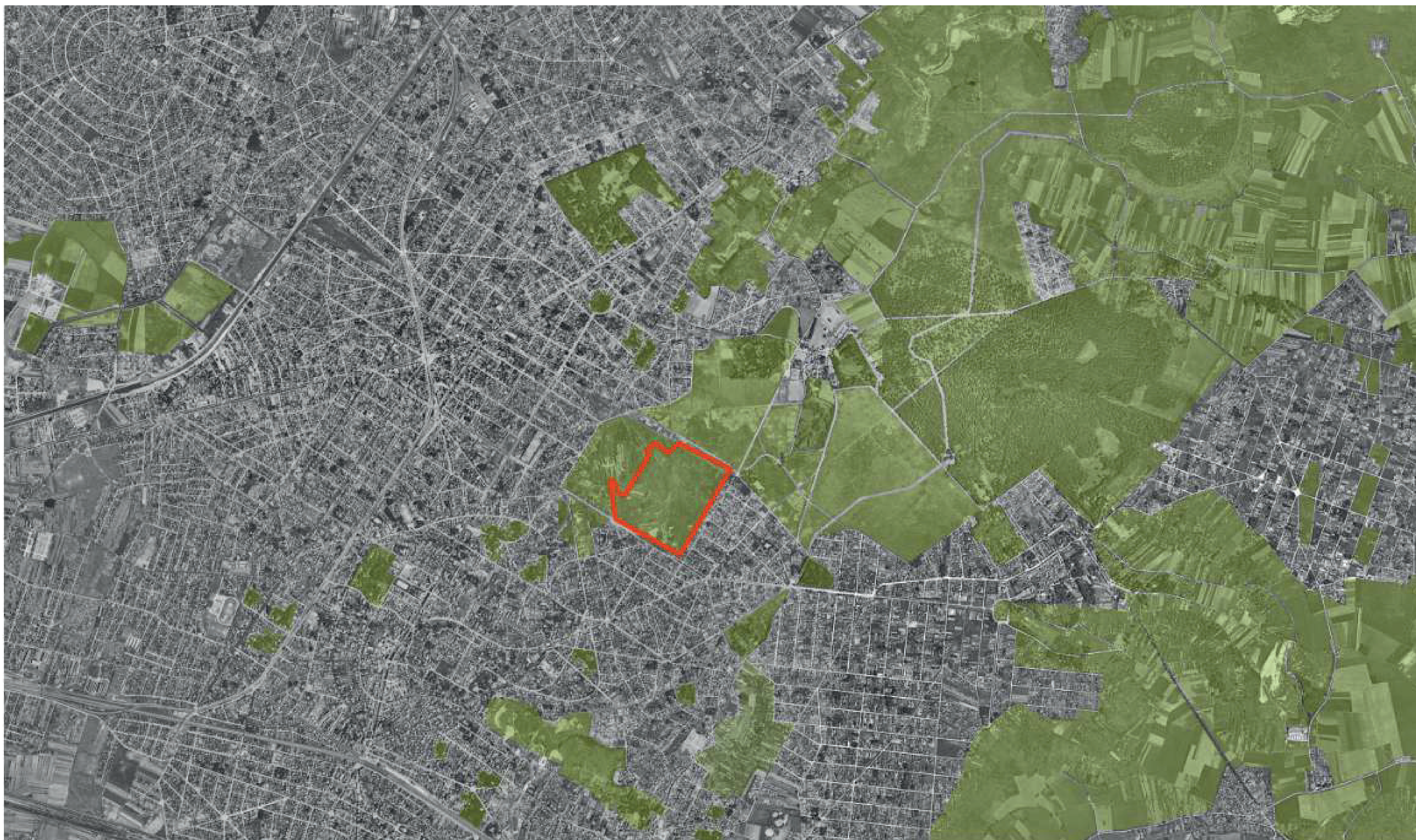
Moyenne globale de la température de surface. Historique 1850-2014. Scénario 2015-2100
 Source : Modèle IPSL-CM6I du Centre National des Recherches Météorologiques (CNRM)



Bomnong L'or (Cambodge), Orkistudio et Structure Mode.
Source : Lyndsey Perth

La ligne directrice de l'architecte

L'innovation sociale

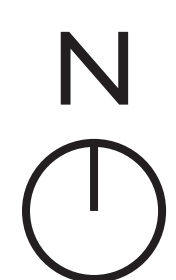
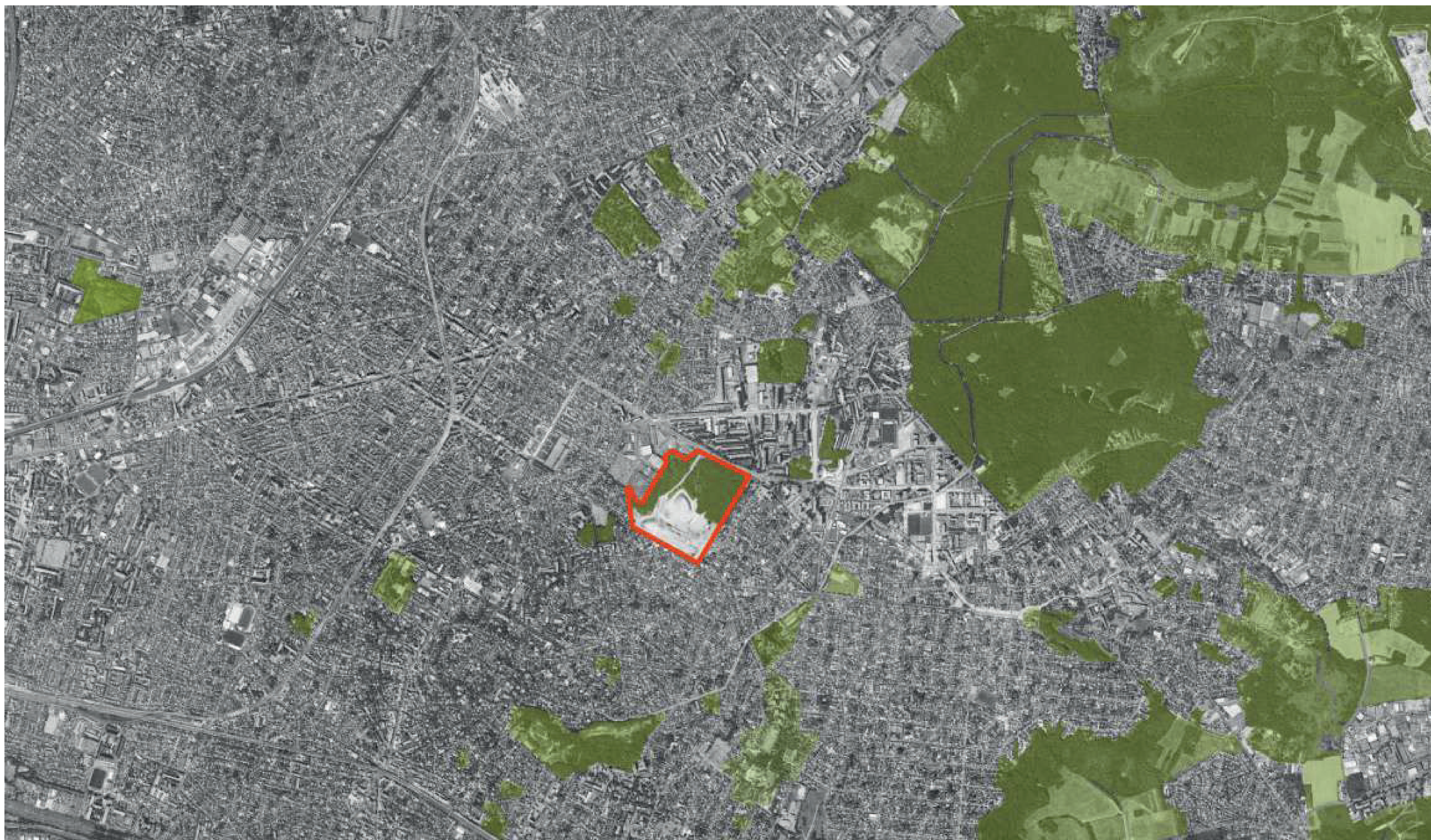


0



1km

Nord Est Ile de France, 1950. Source : geoportail.gouv.fr

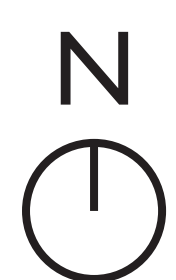
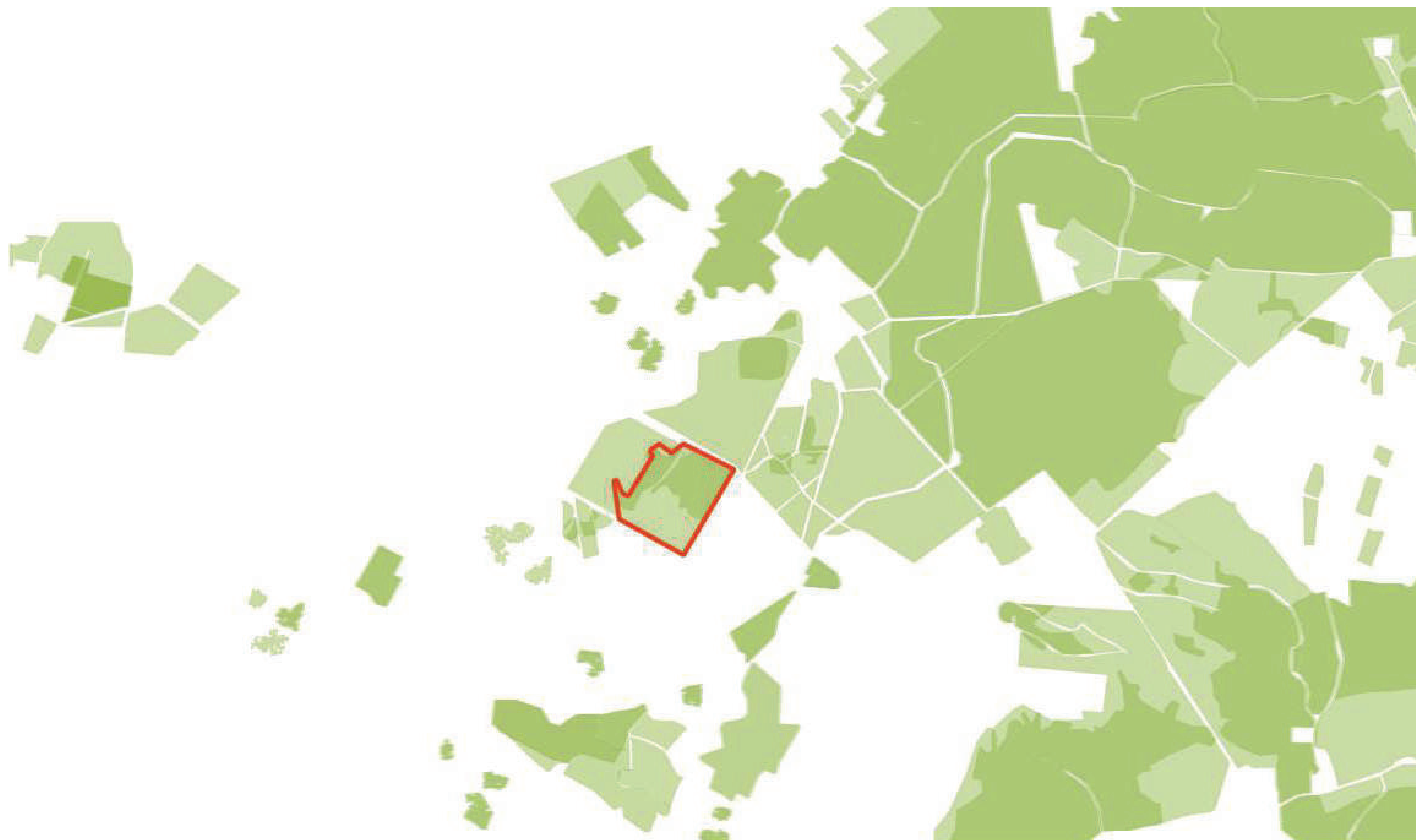


0



1km

Nord Est Ile de France, 2019. Source : geoportail.gouv.fr



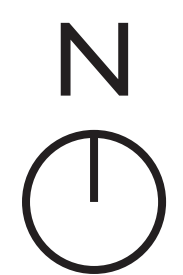
0

1km

Conséquence de l'expansion urbaine entre 1950 et aujourd'hui

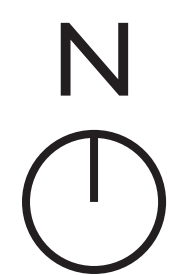
La Fosse-Maussoin

Clichy-sous-Bois (93)



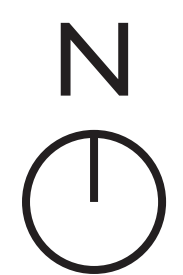
0 ————— 200 m

Fosse-Maussoin (Décembre 2011). Source : Google Earth



0 ————— 200 m

Fosse-Maussoin (Avril 2014). Source : Google Earth



0 ————— 200 m

Fosse-Maussoin (Juillet 2019). Source : Google Earth



Bondrée Apivore
Crédit photo : René Dumoulin



Pic Mar
Crédit photo : Loan Schwab



Salamandre
Crédit photo : Thinglink



Triton palmé
Crédit photo : Myrmeco



Sittelle torchepot
Crédit photo : Fresco



Murin de Daubenton
Crédit photo : G. San Martin



Murin de Natterer
Crédit photo : SNE



Écureuil roux
Crédit photo : O. Marie



Chêne Sessile (*Quercus petraea*)

Taille (HxL) : 30 x 25 m (au bout de 100-150 ans)

Longévité > 500 ans

Densité : 0,61-0.98

Remarques : souvent centenaires sur le site.

Crédit photo (de gauche à droite) : RPN.ch ; Menotti Specchia



Châtaignier (*Castanea saliva*)

Taille max (HxL) : 35 x 15 m (au bout de 100-150 ans)

Longévité > 500 ans

Densité : 0,62-1,05

Crédit photo (de gauche à droite) : Bower&Branch ; Thehomedepot



Érable plane (*Acer platanoides*)

Taille max (HxL) : 30 x 9 m (au bout de 15 ans)

Longévité < 200 ans

Densité : 0,63-0.68

Crédit photo (de gauche à droite) : RPN.ch ; Couleur Bois.fr



Aulnes glutineux (*Alnus glutinosa*)

Taille max (HxL) : 20 x 10 m (au bout de 20 ans)

Longévité < 150 ans

Densité : 0,44-0,66

Crédit photo (de gauche à droite) : ac-lille.fr ; Tyaz

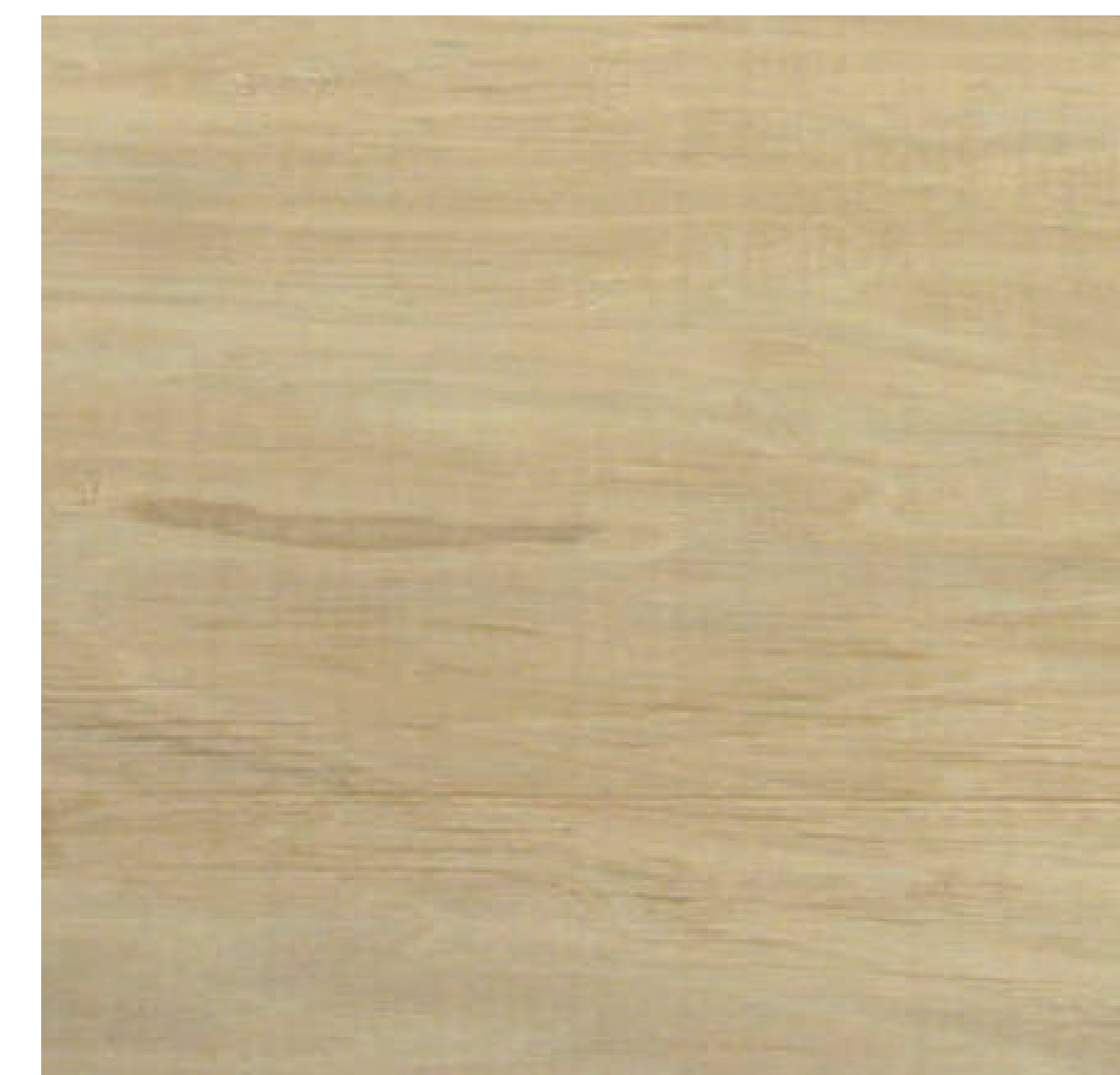


Frêne élevé (*Fraxinus excelsior*)

Taille max (HxL) : 40 x 20 m (au bout de 20 ans)

Densité : 0,69-0.9

Crédit photo (de gauche à droite) : RPN.ch ; Shadbolt



Charme commun (*Carpinus betulus*)

Taille max (HxL) : 25 x 20 m (au bout de 20 ans)

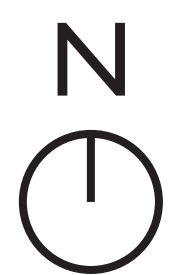
Longévité < 100 ans

Densité : 0,8-0.9

Crédit photo (de gauche à droite) : RPN.ch ; maderas chapar

Implantation

L'interface



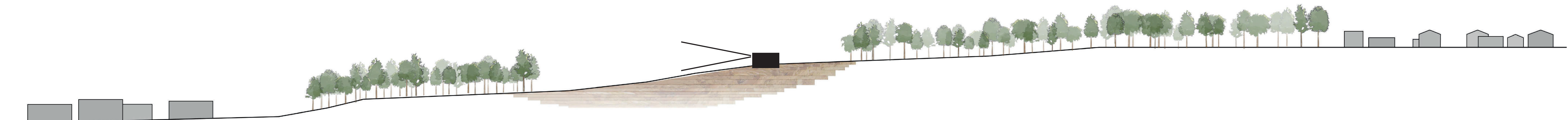
0



200 m



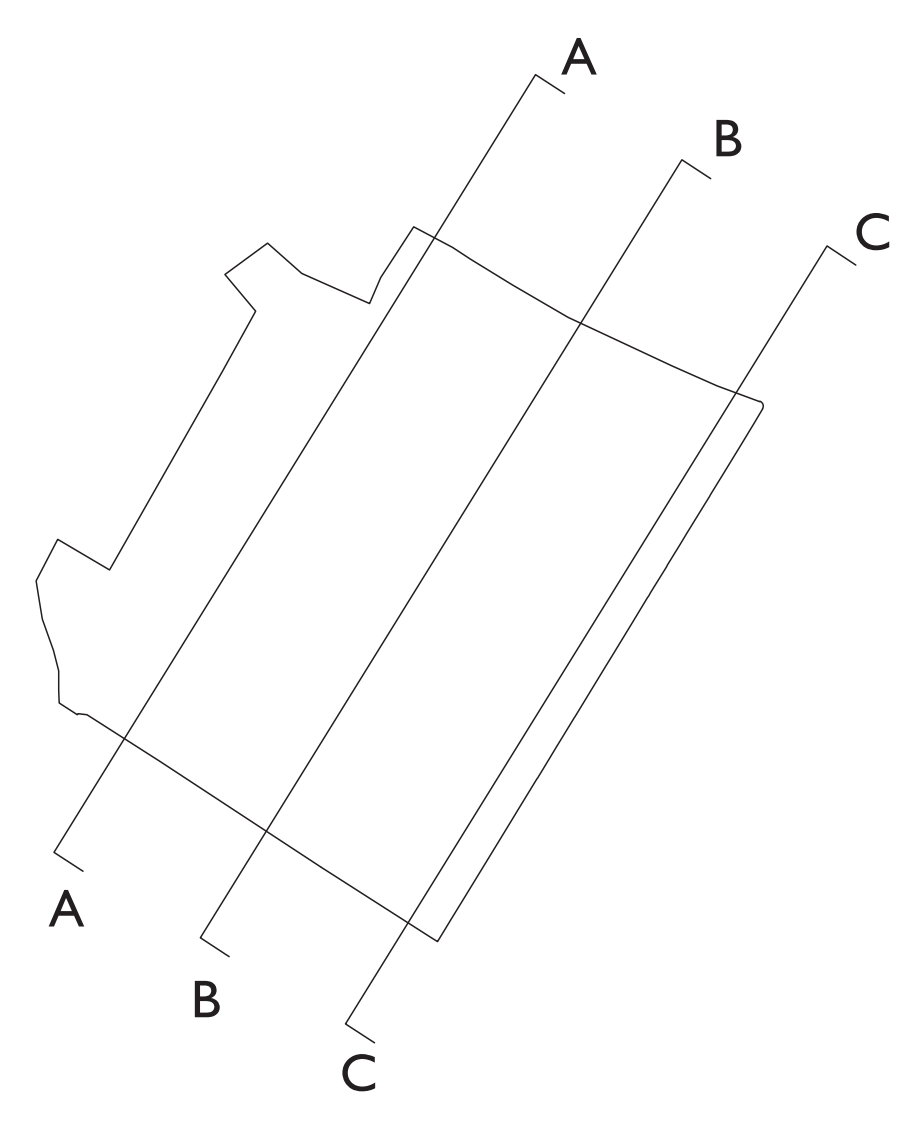
AA



BB



CC



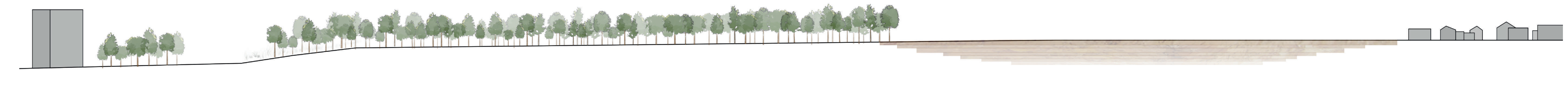
0 100 m



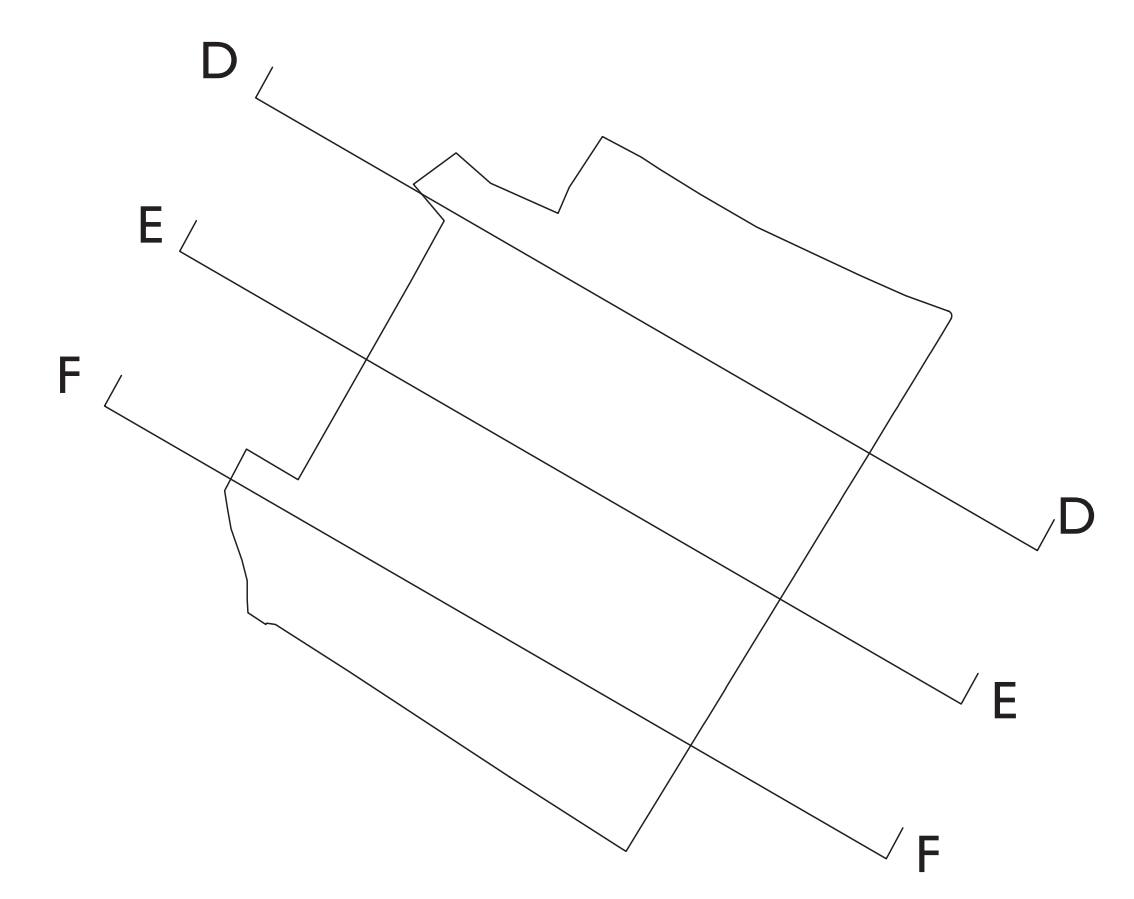
DD



EE



FF



0 ————— 100 m

La ligne directrice de l'architecte

L'innovation technique



Arches dans la vallée du Mزاب
Source : Manuelle Roche



Prototype de mur poreux
Source : IAAC



Argile



Limon



Cellulose



Tanin



Son de riz



Sisal



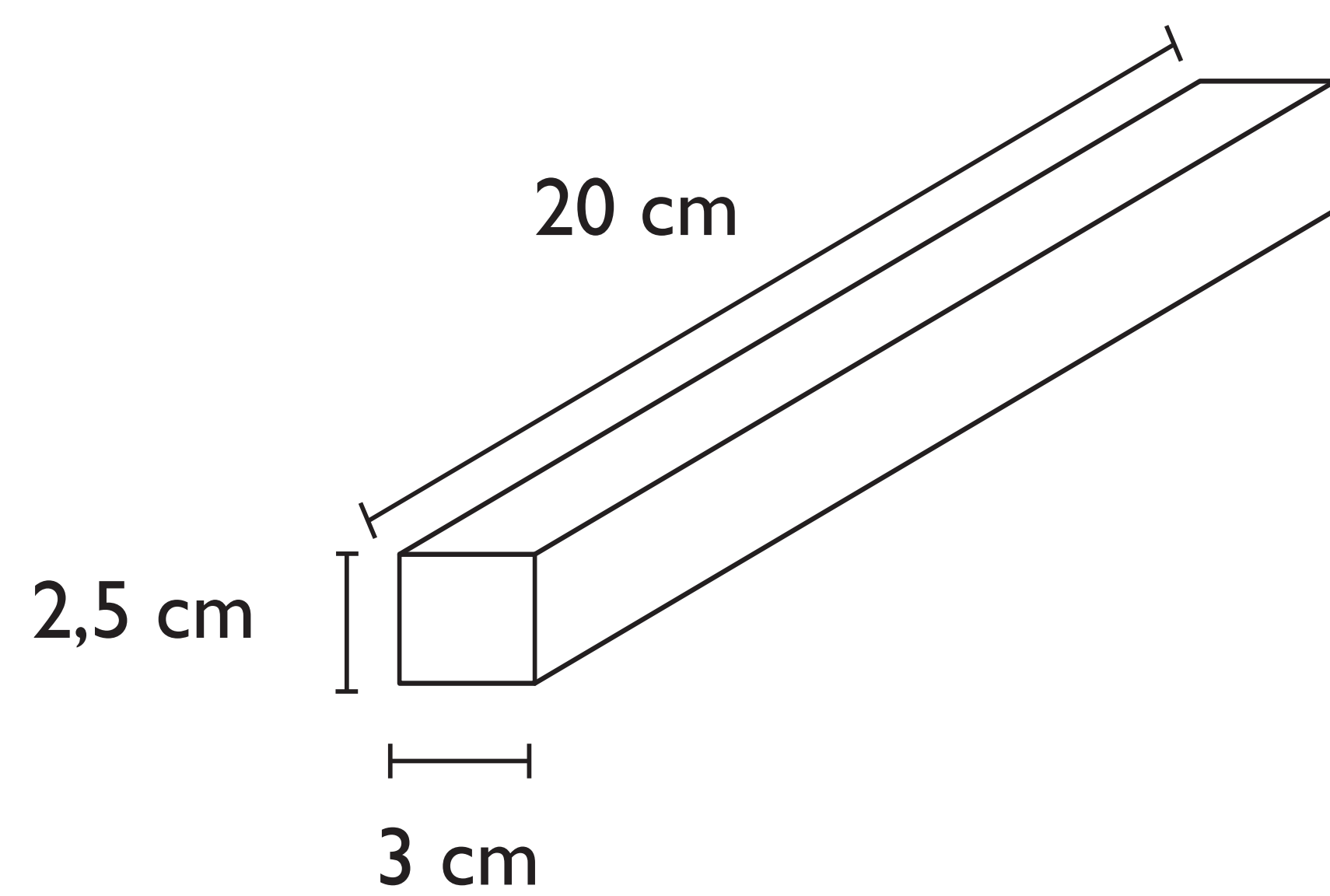
Chanvre



Cendre



HMP



Cendre



Sisal



Cellulose



Chanvre



Son de riz



La matérialité comme esquisse



Zone d'implantation



0 — 10 m

La matérialité comme esquisse

Soutenir la matière



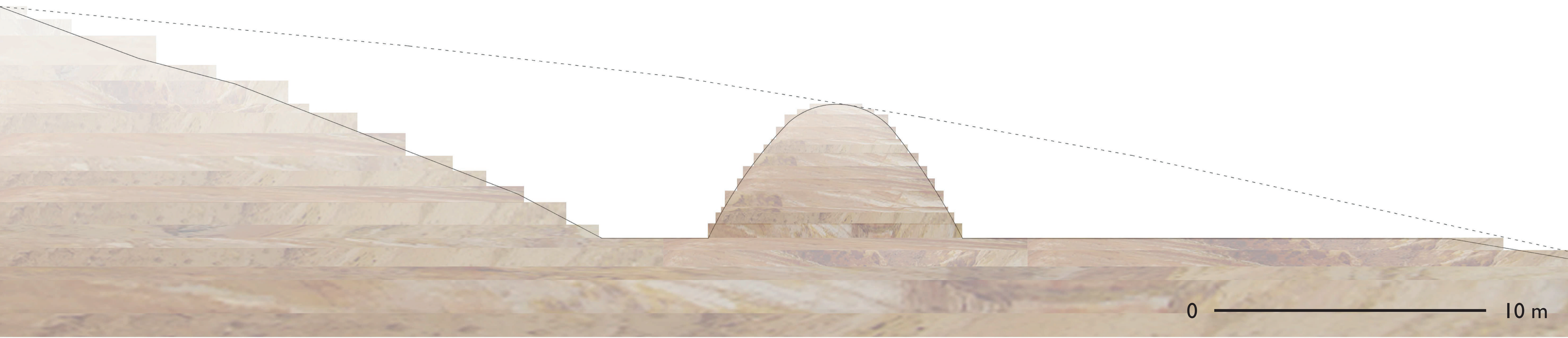
Ruine à l'impression
Source : IAAC



Création d'un talus

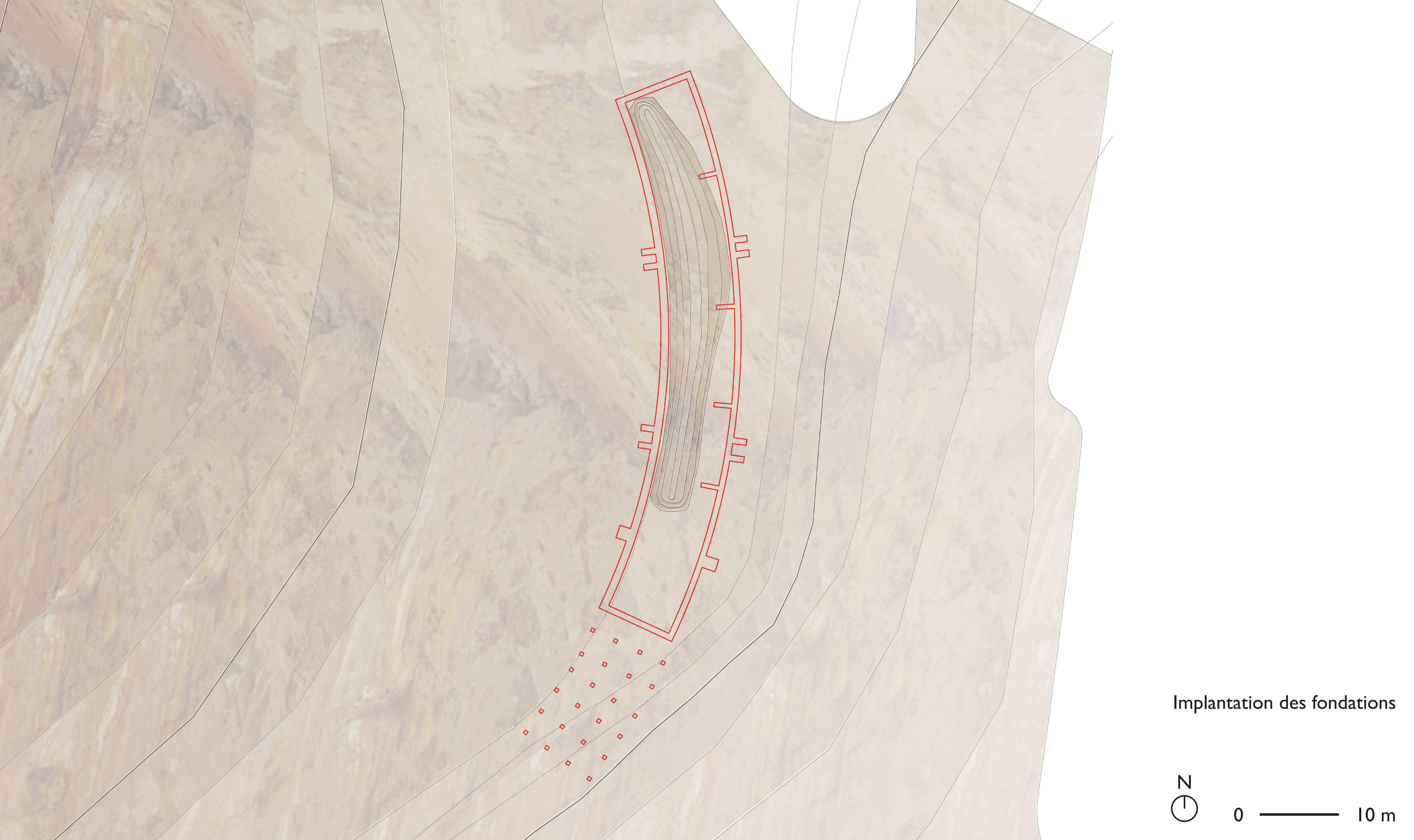


0 — 10 m



La matérialité comme esquisse

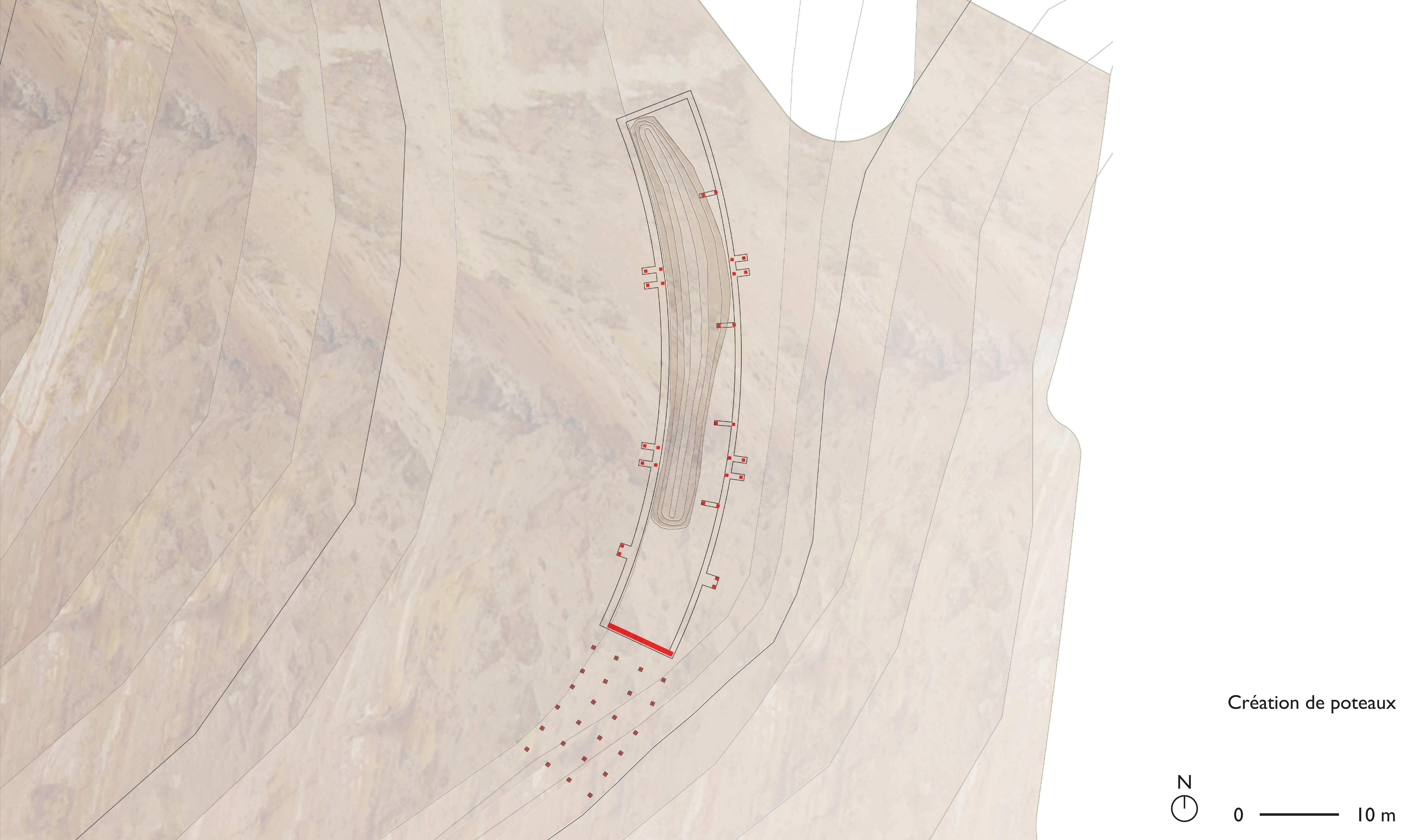
«Avoir des bonnes bottes...



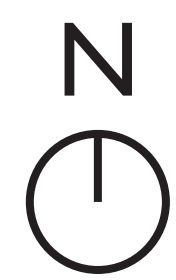
Implantation des fondations



0 — 10 m



Création de poteaux



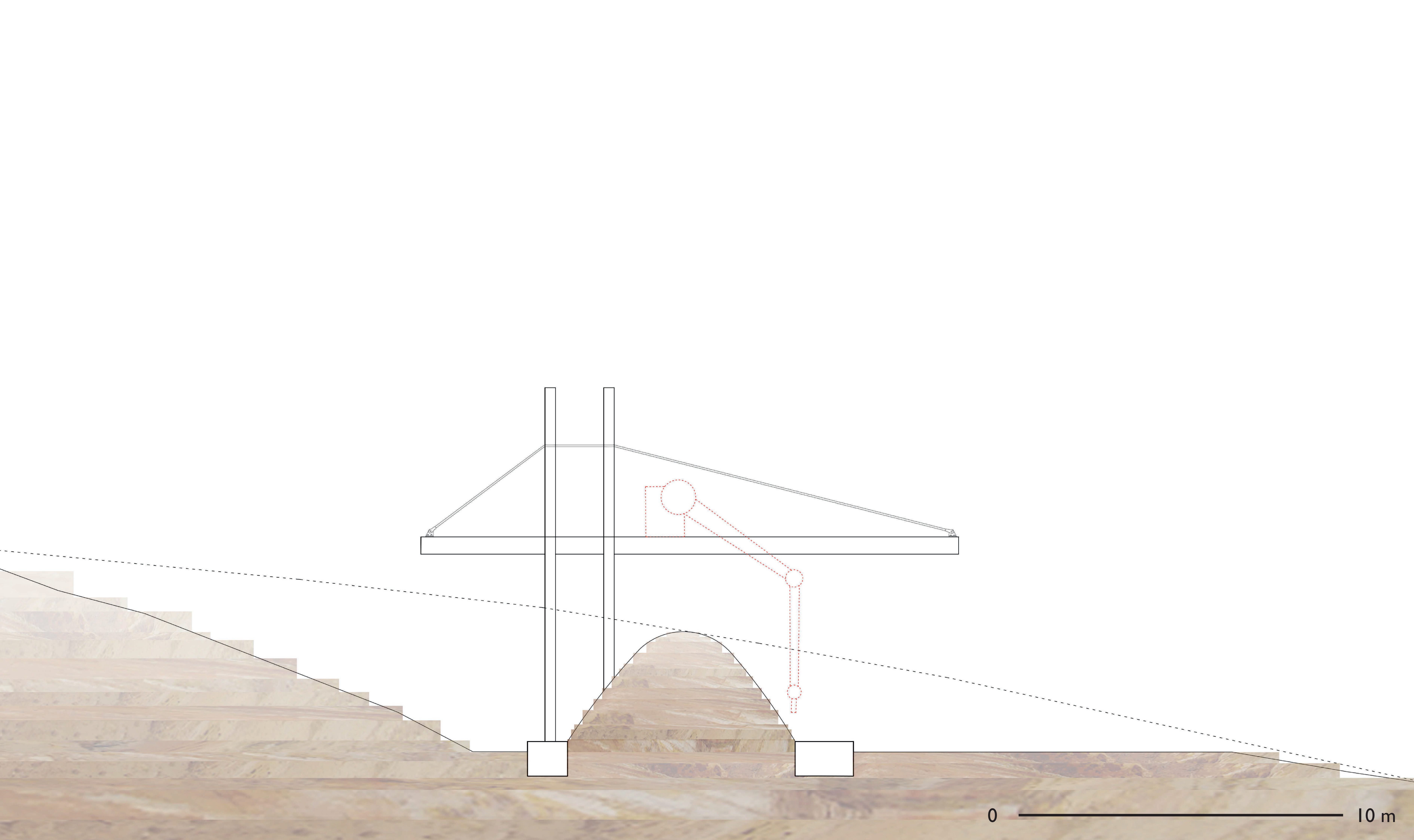
0 — 10 m



Installation des machines d'impression

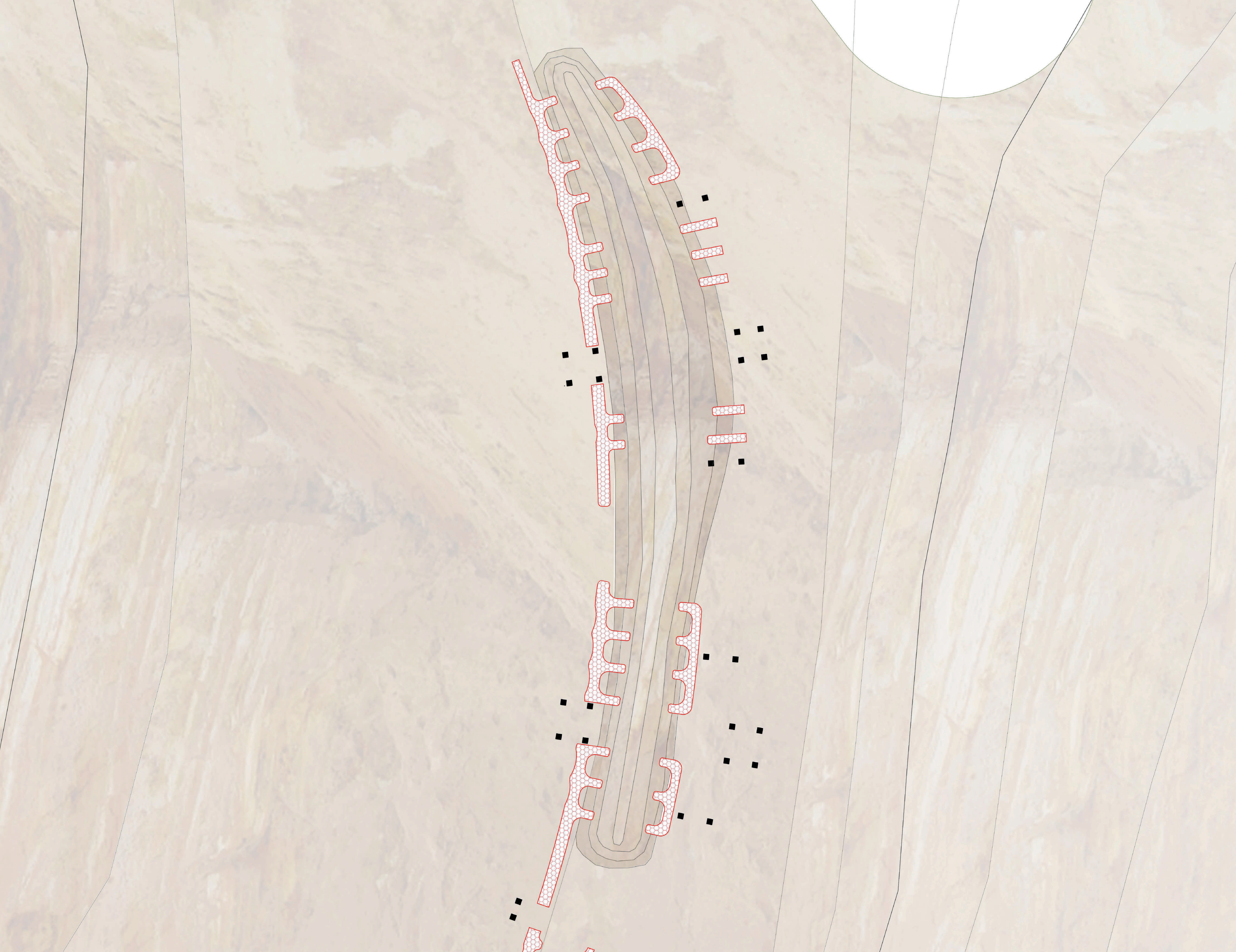


0 ——— 10 m



La matérialité comme esquisse

Fabrication additive



Impression du rez-de-chaussée
(étape I)



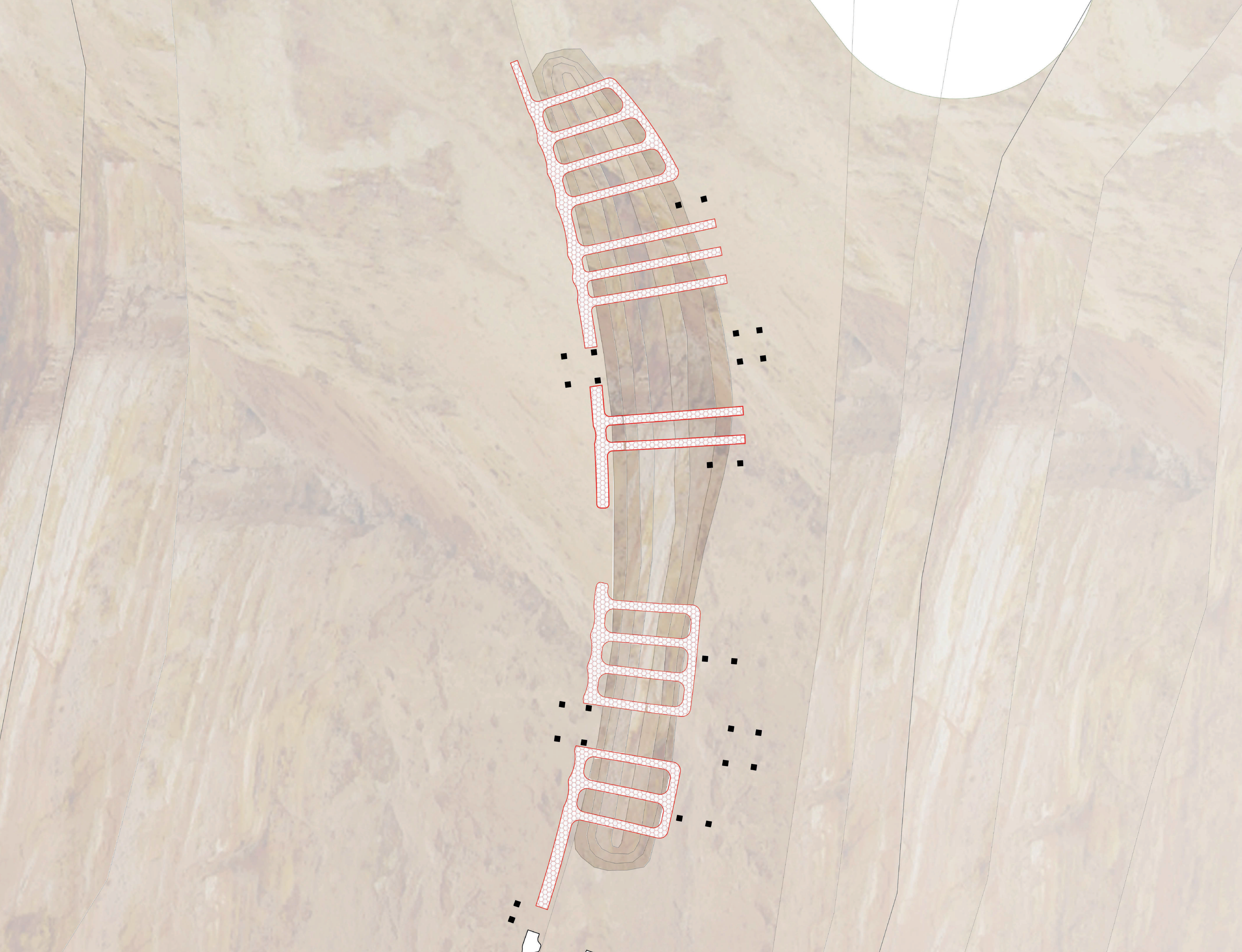
0 ——— 10 m



Impression du rez-de-chaussée
(étape 2)



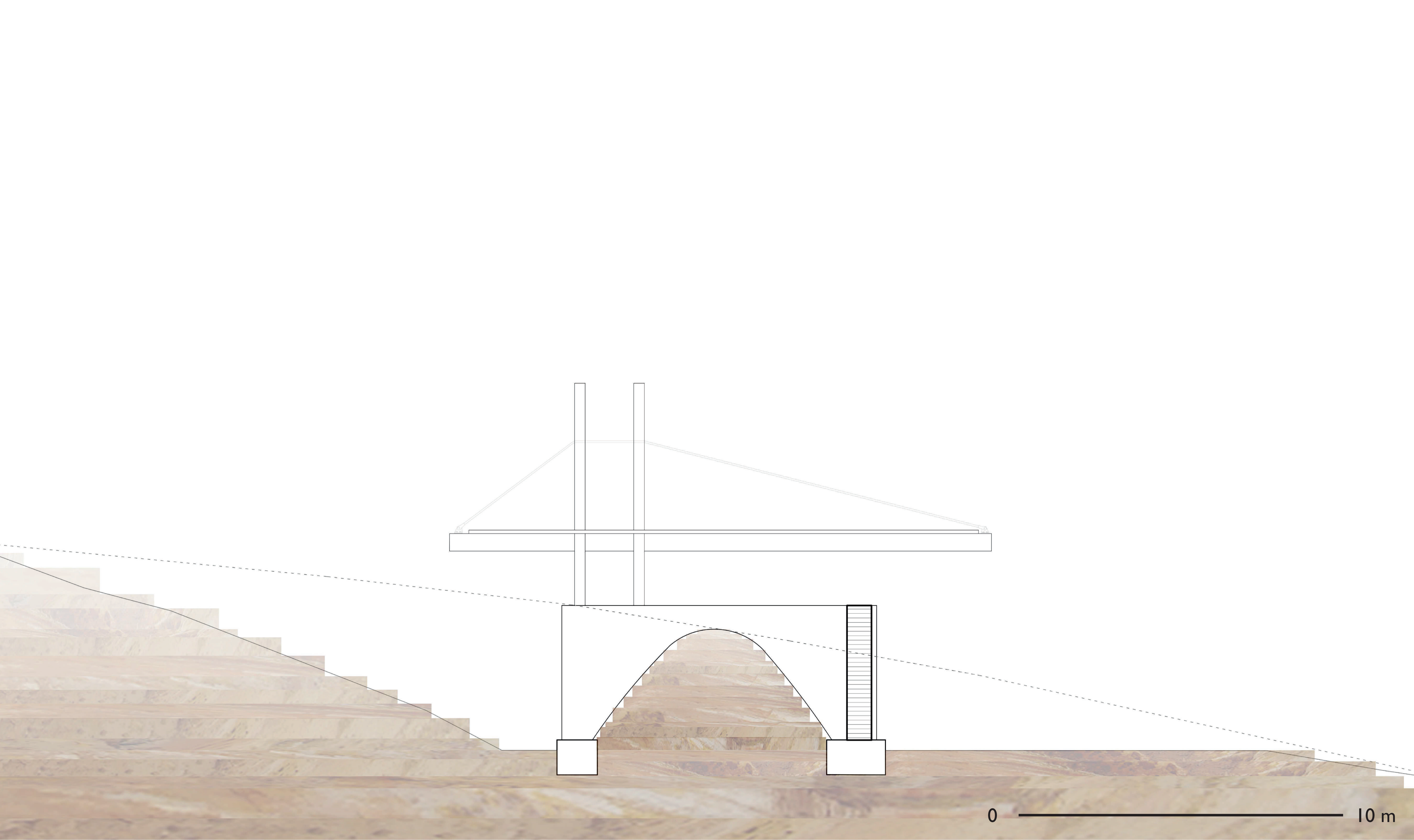
0 ——— 10 m

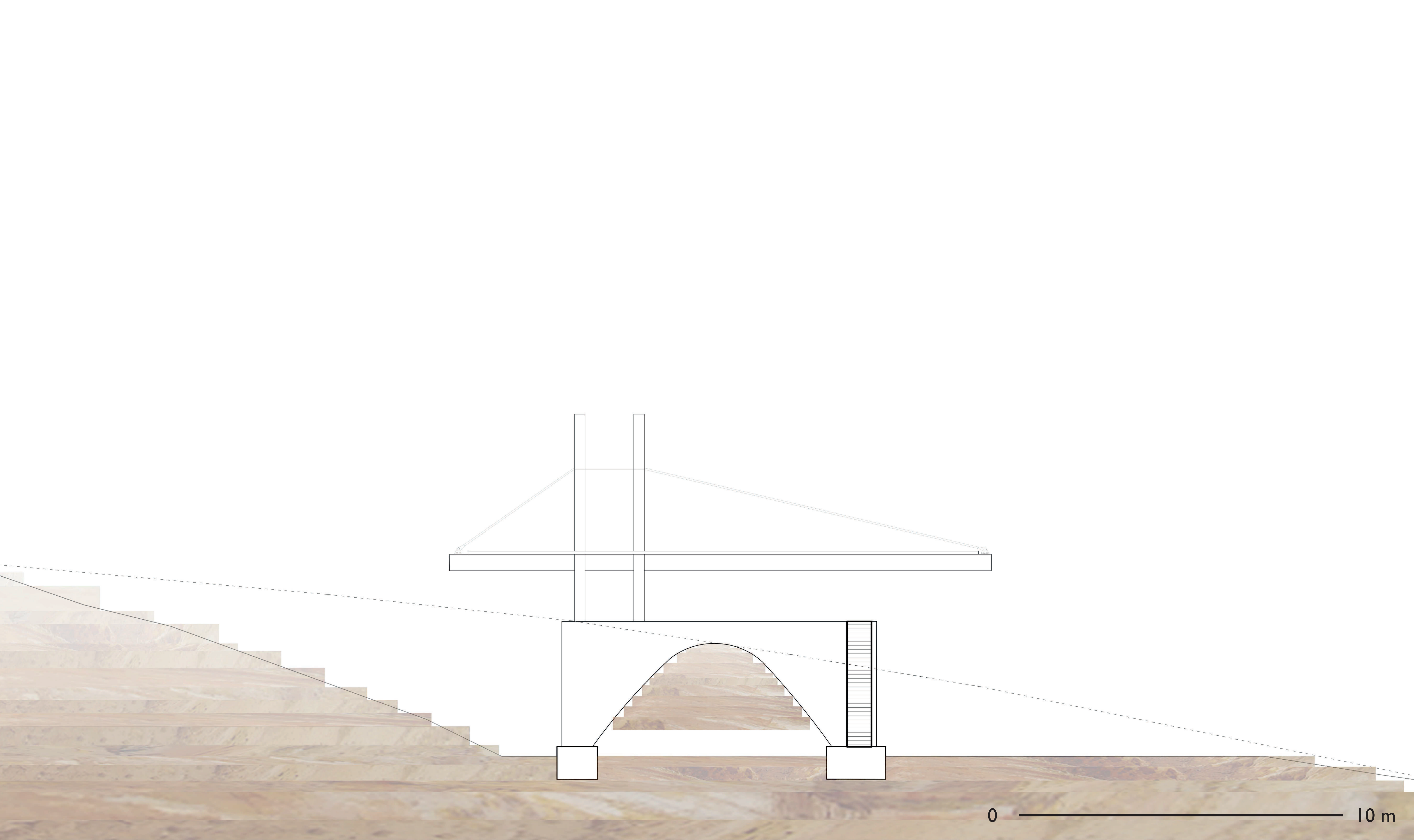


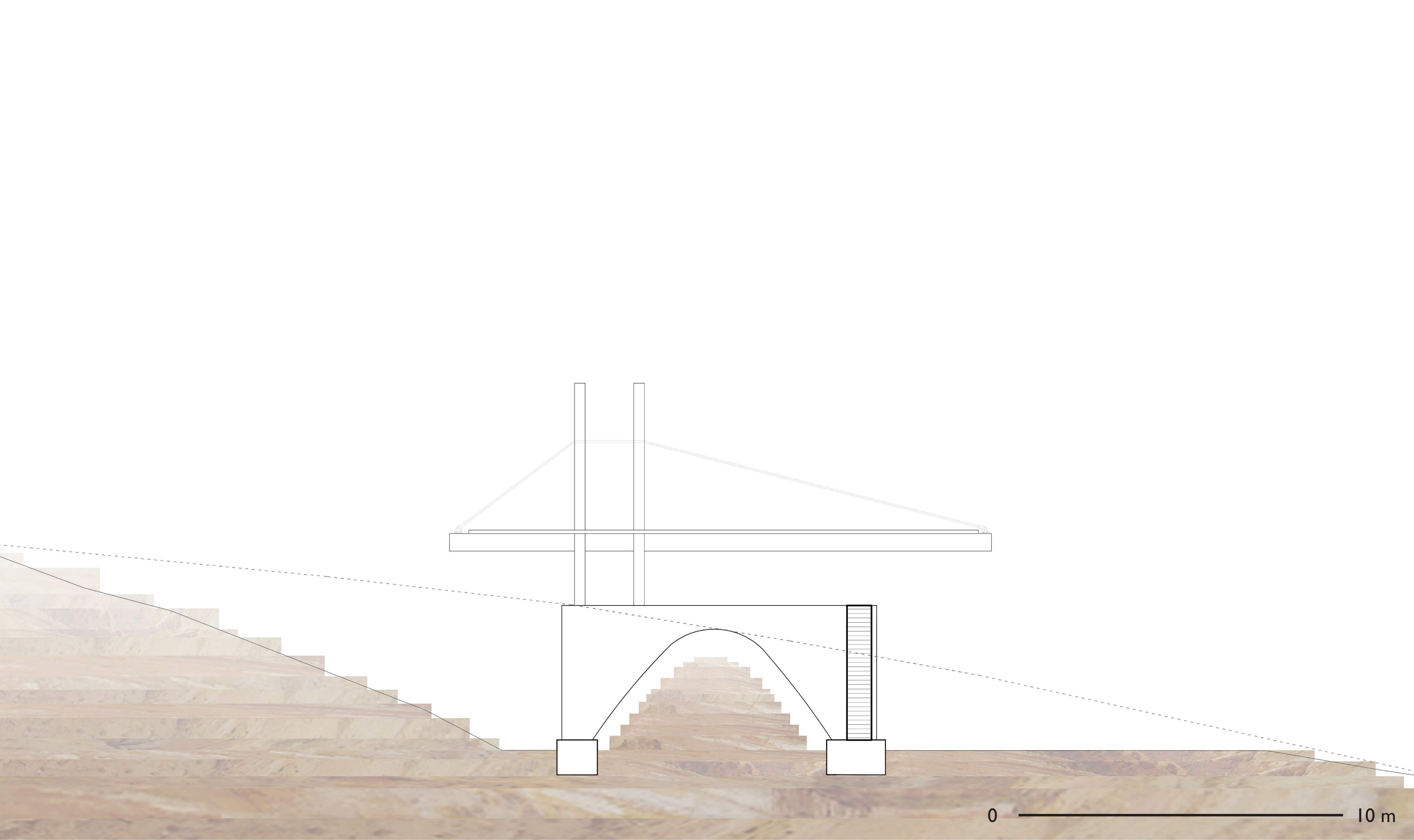
Impression du rez-de-chaussée
(étape 3)



0 ——— 10 m







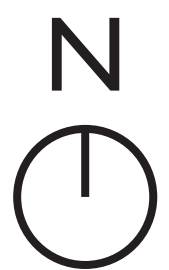


La matérialité comme esquisse

...et un bon chapeau»



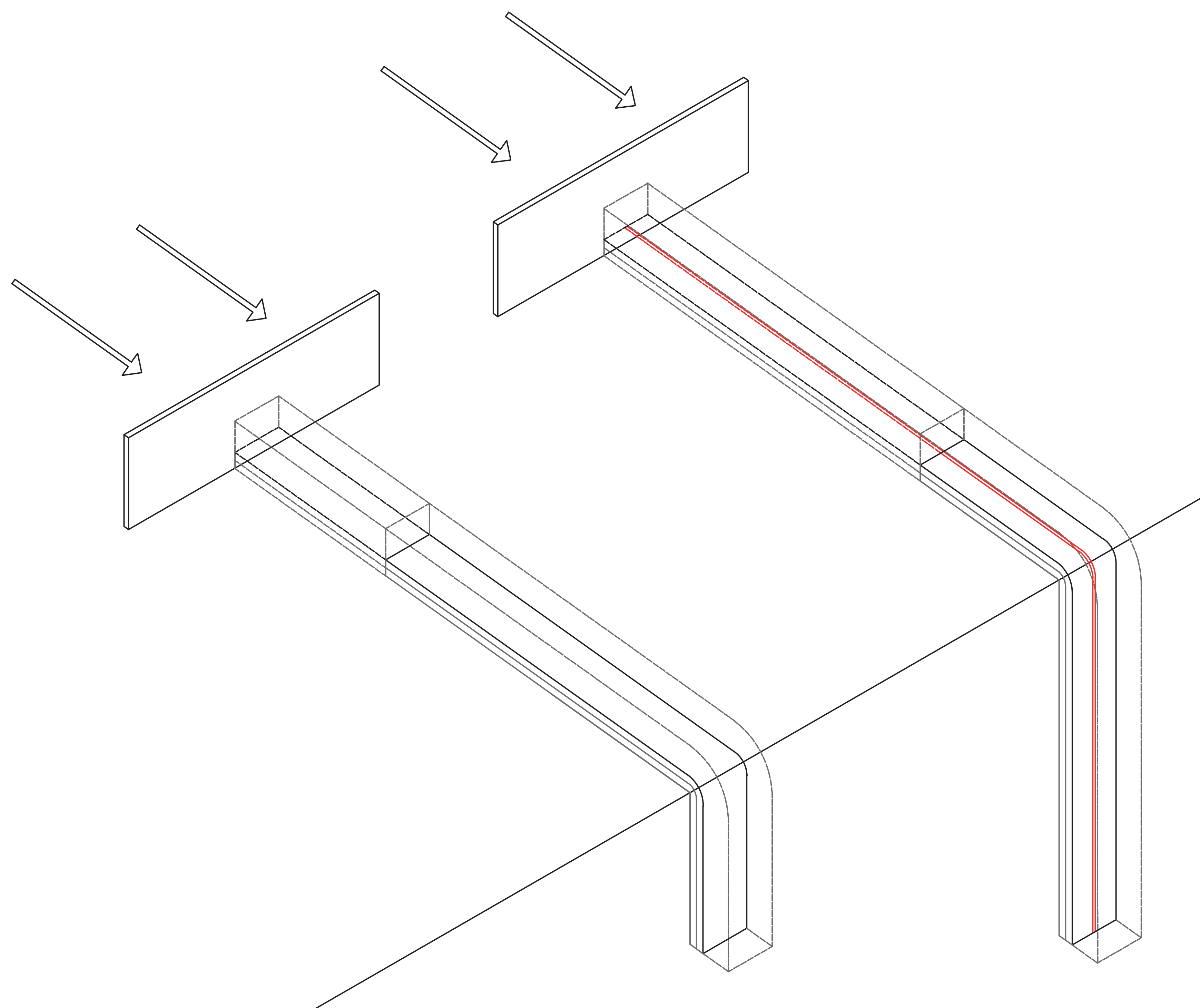
Installation des poutres pour
soutenir la toiture



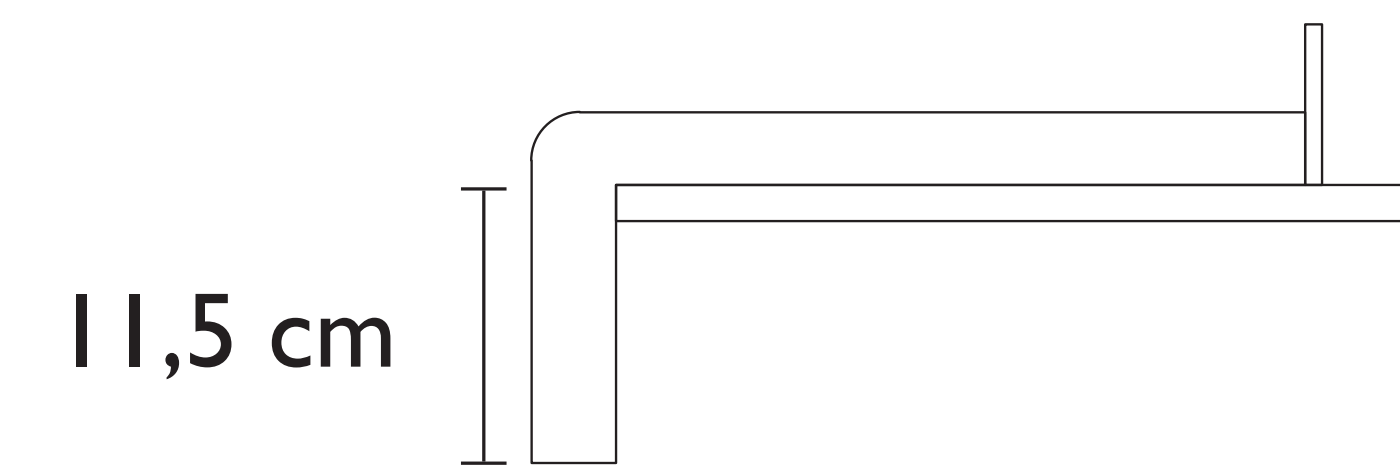
0 ————— 10 m

La matérialité comme esquisse

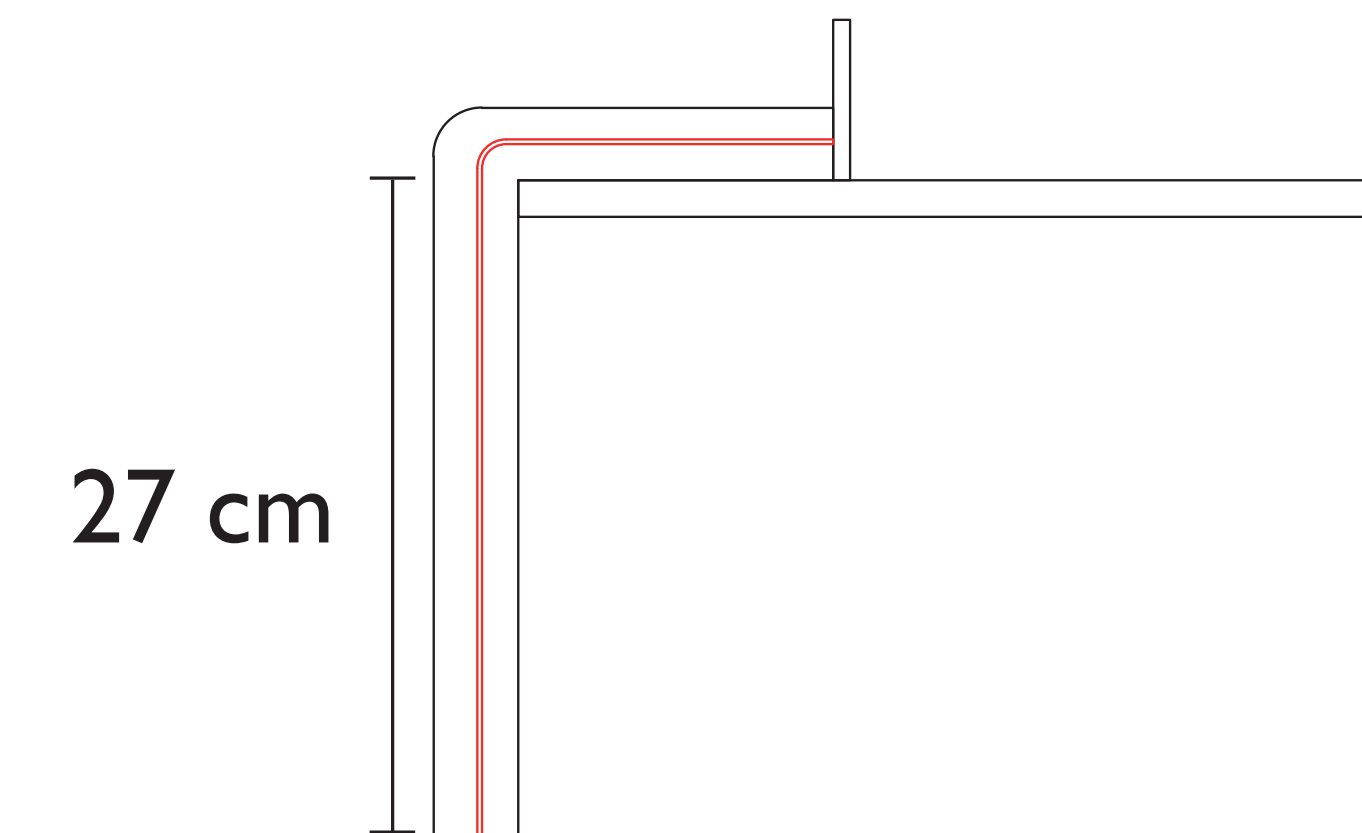
Béton d'argile précontraint



Essais de cohésion sous poids propres du matériaux

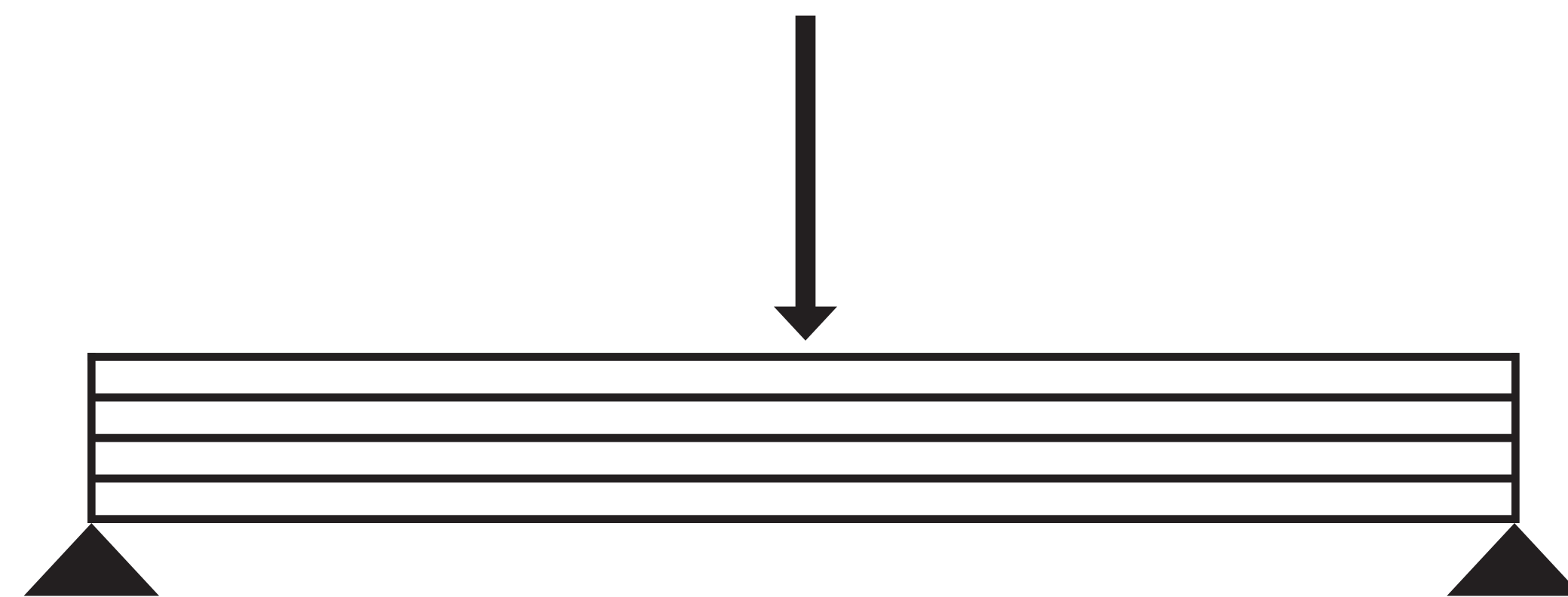
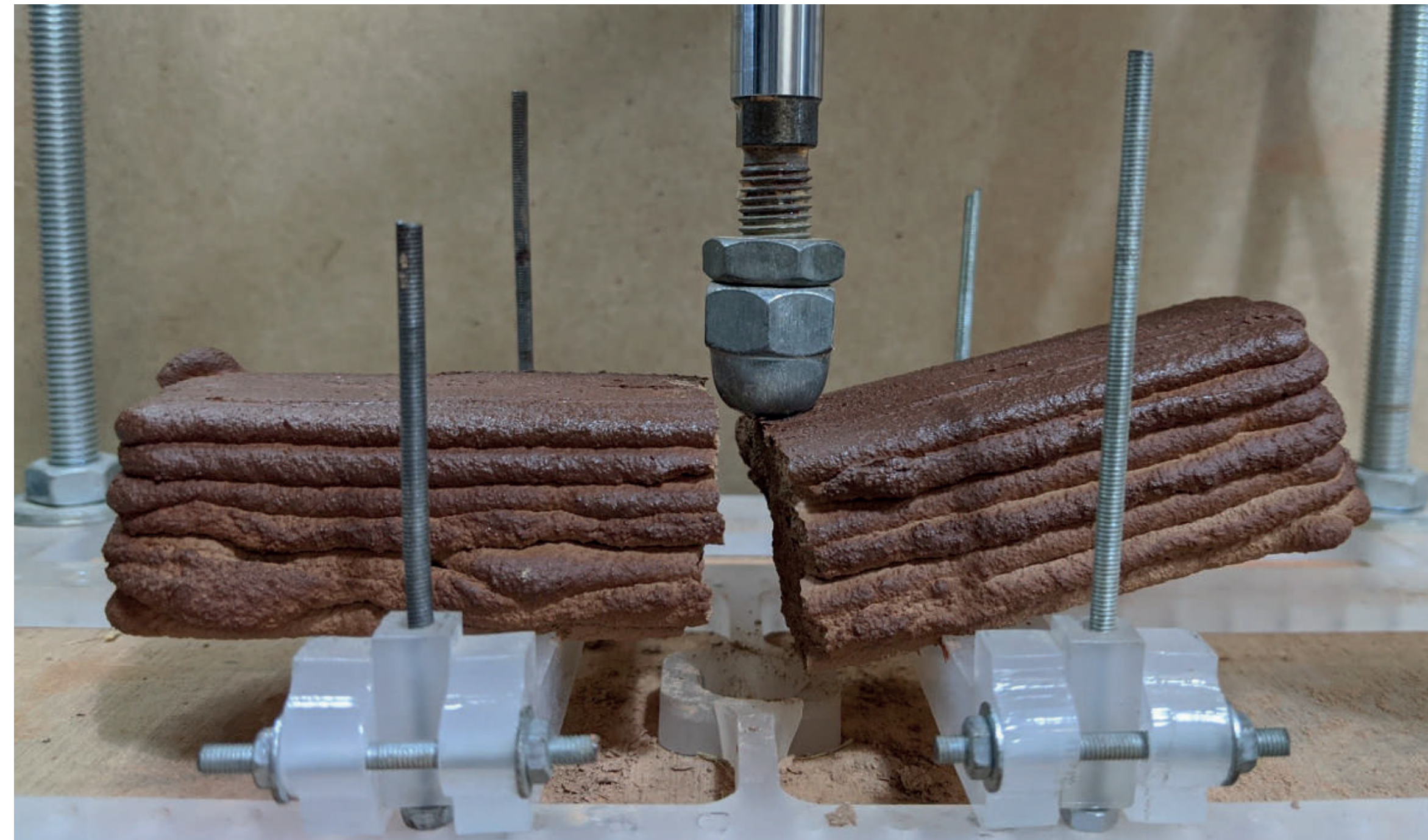


Échantillon 1 : sans corde
Longueur en suspension : 11,5 cm
Source : IAAC



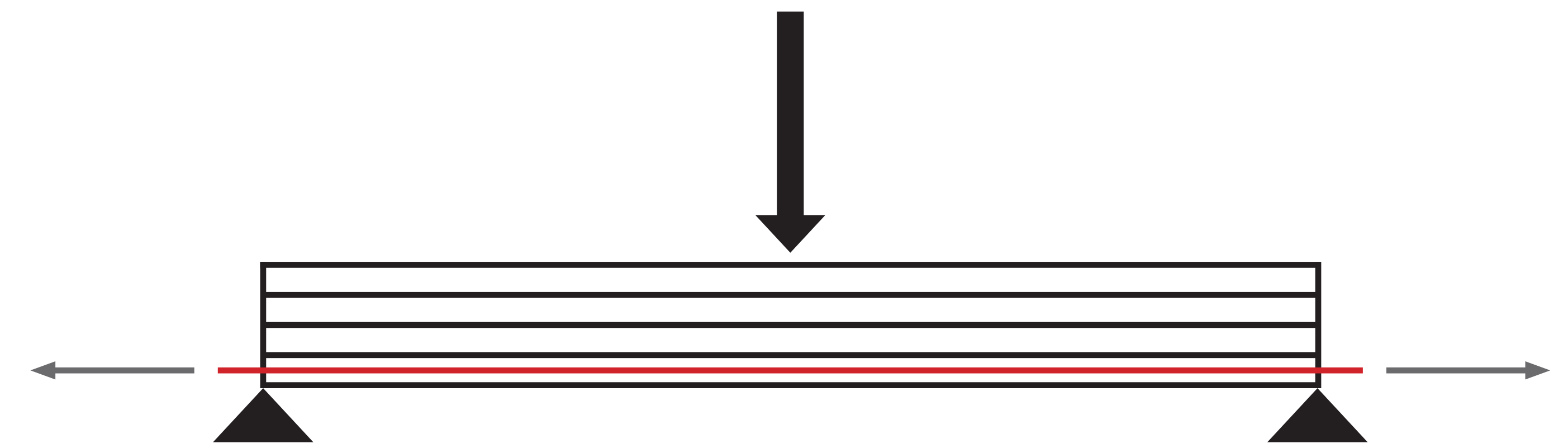
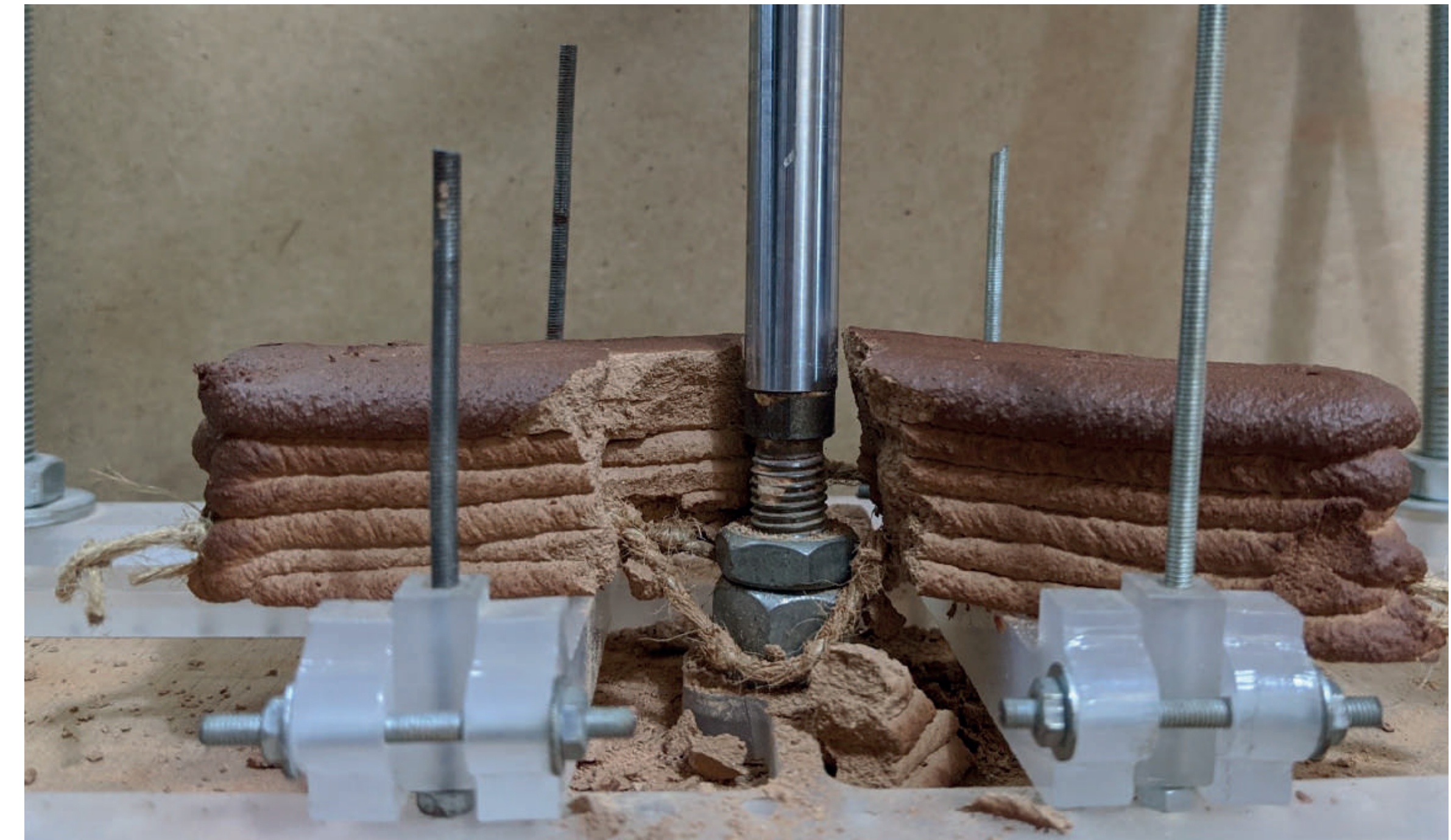
Échantillon 2 : corde lâche
Longueur en suspension : 27 cm
Source : IAAC

Essais en flexion du mélange père

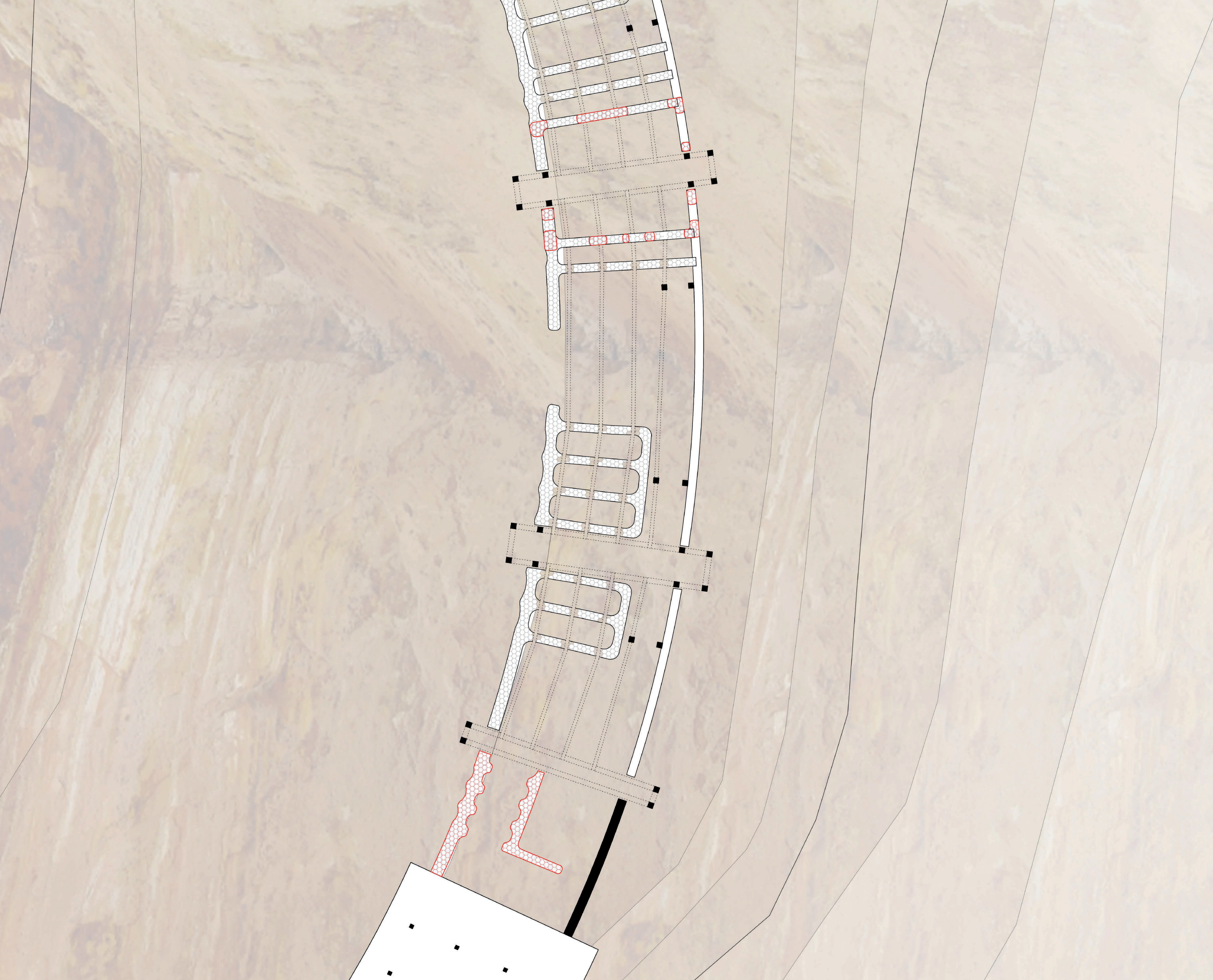


Pression à la rupture : 3,7 bars
Remarque : Rupture nette

Essais en flexion du mélange père + corde pré-tendue



Pression à la rupture : 5,2 bars
Remarque : Rupture graduelle

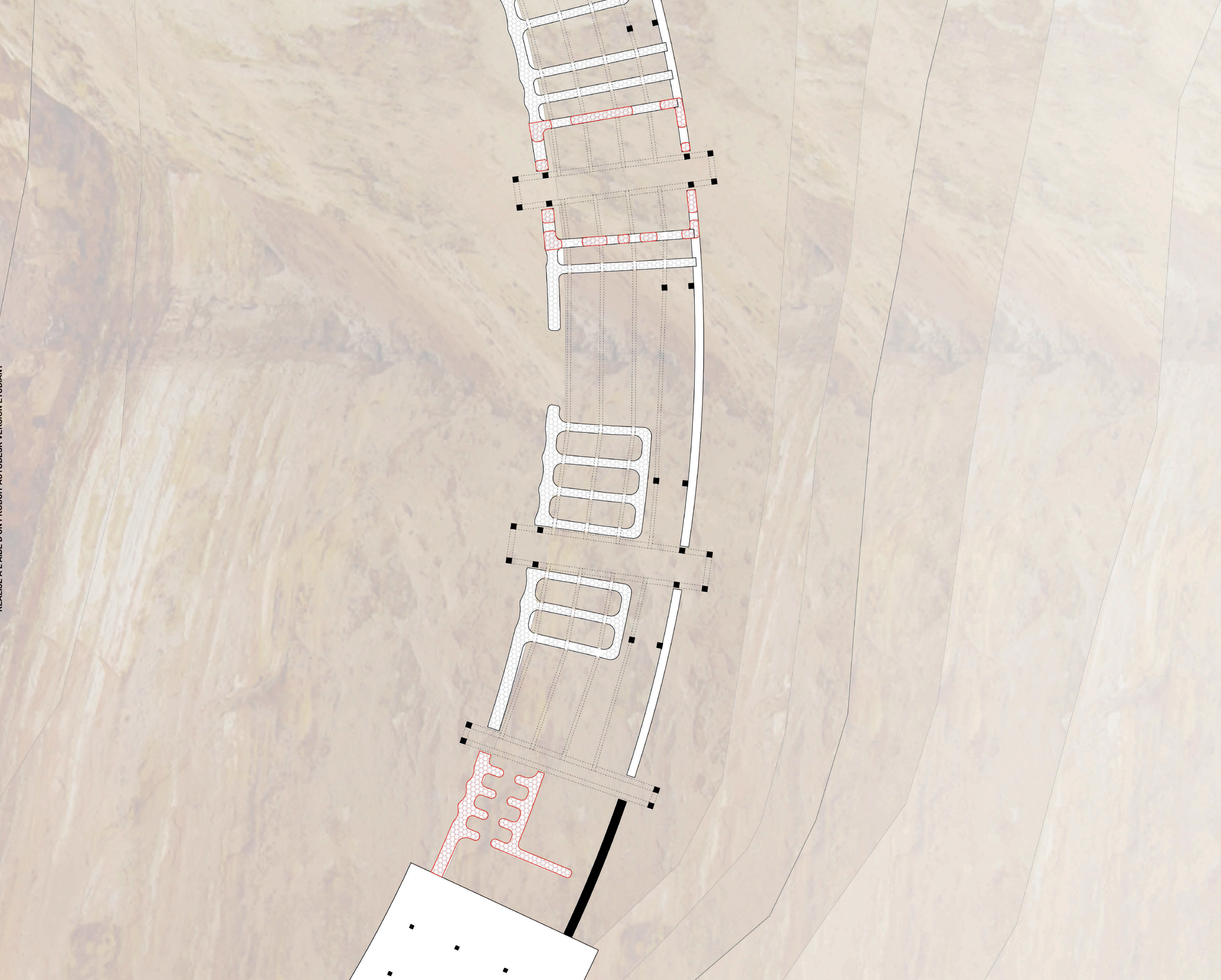


Impression de l'étage (étape I)



0 ——— 10 m

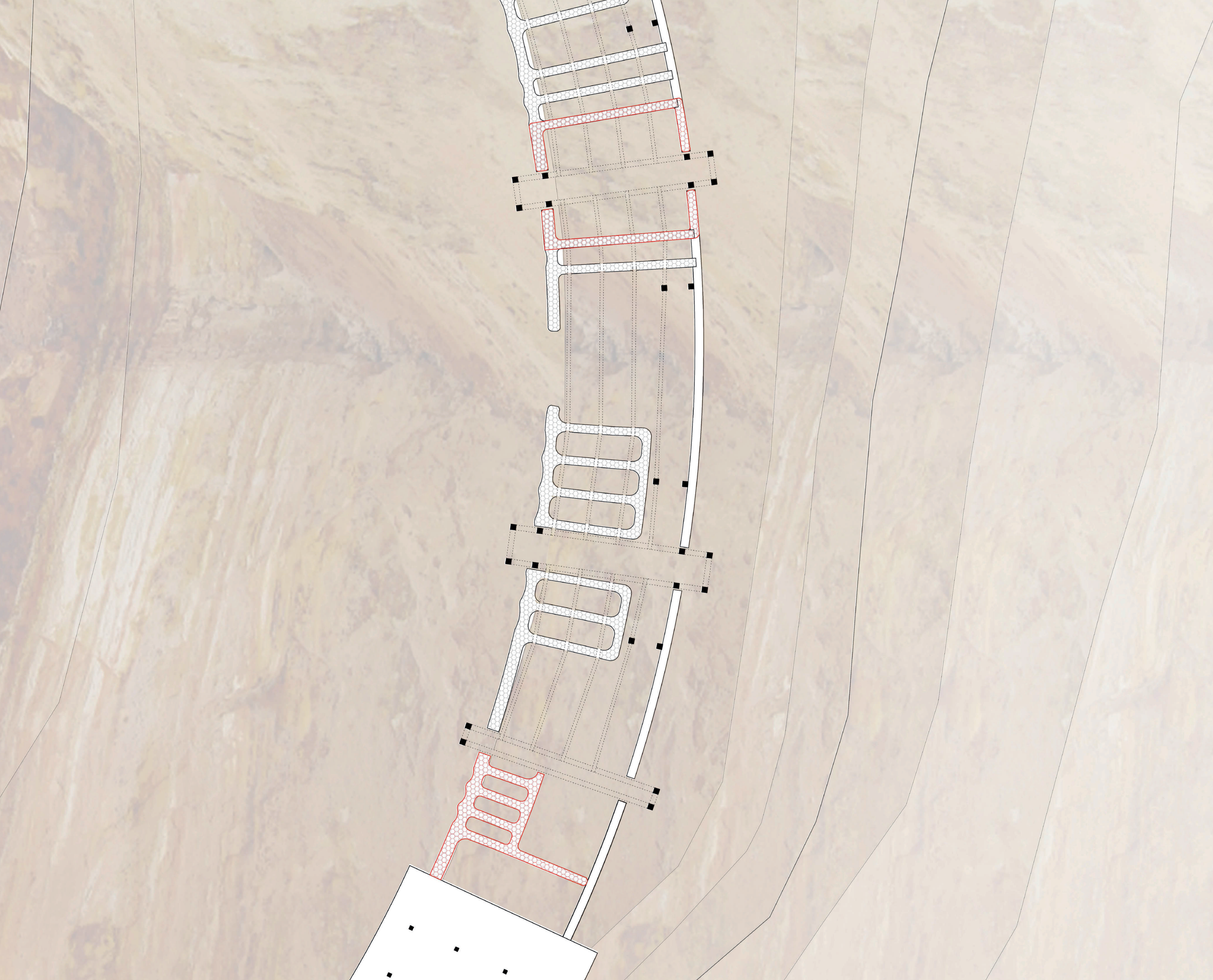
RENDU ALABE D'UN TROUET PAS TOUJOURS VISIBLE ET D'UN



Impression de l'étage (étape 2)



0 ——— 10 m



Impression de l'étage (étape 3)

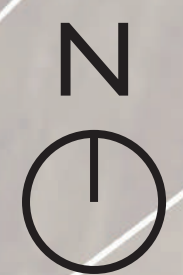
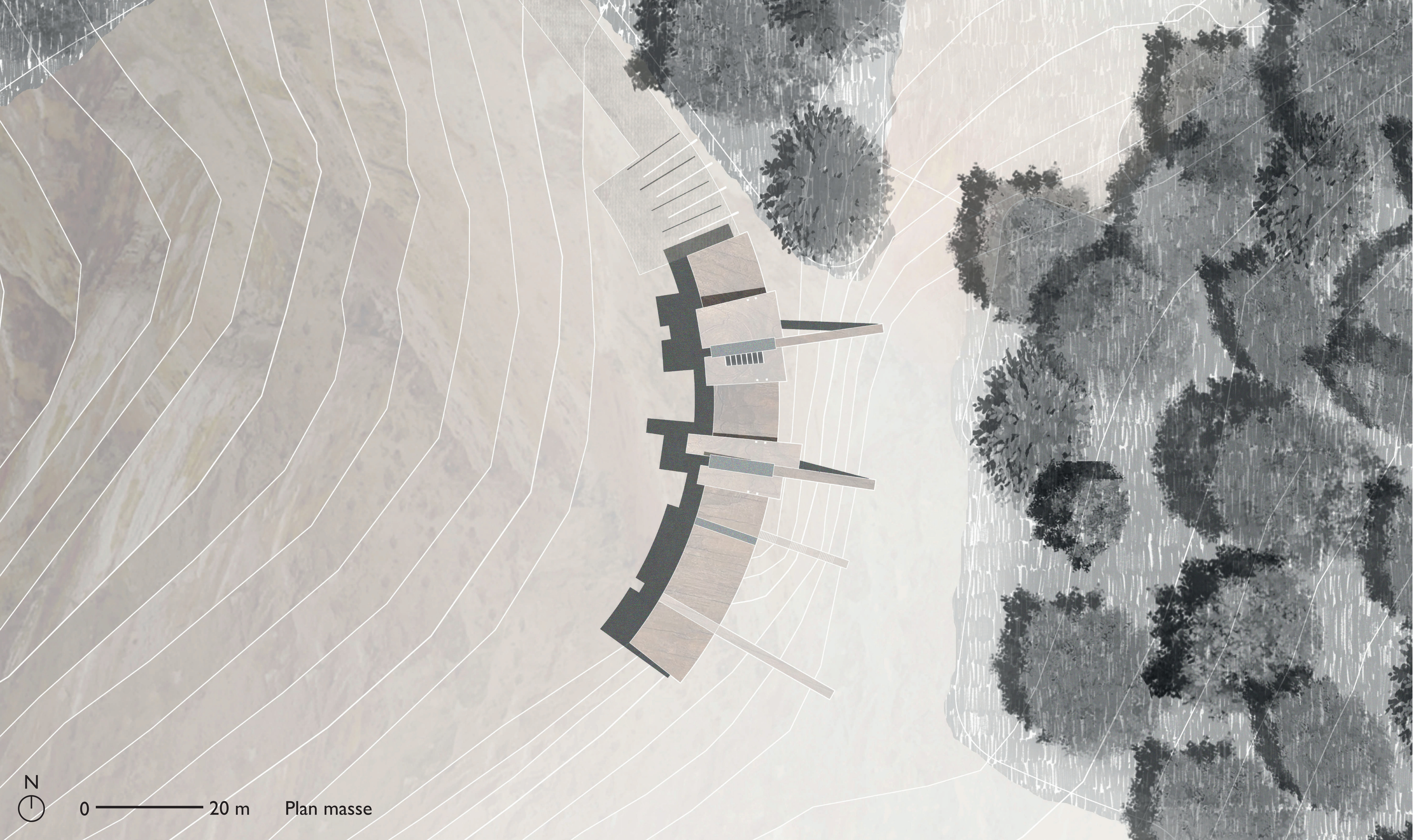


0 ——— 10 m



Le centre funéraire

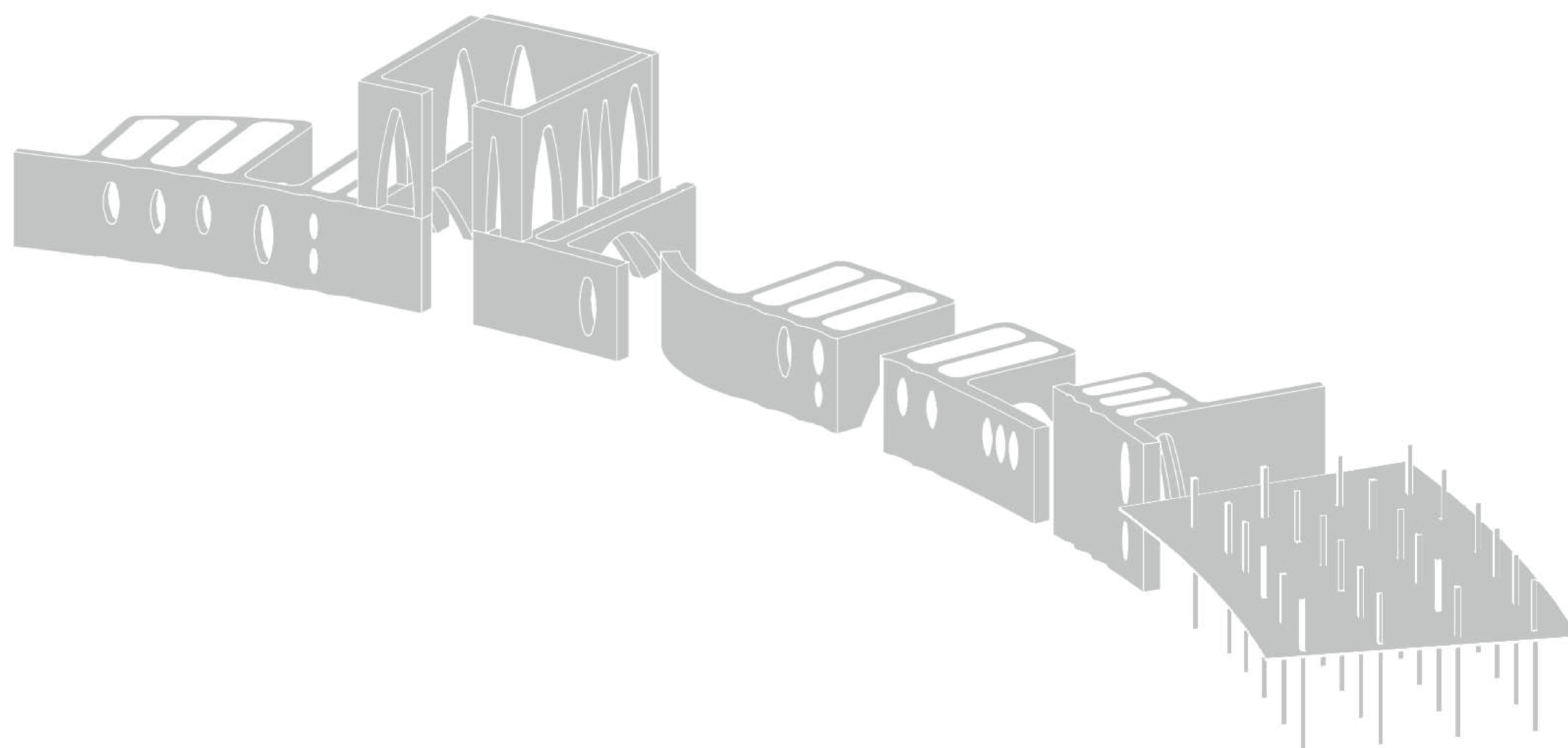
Faire de l'architecture un acte politique

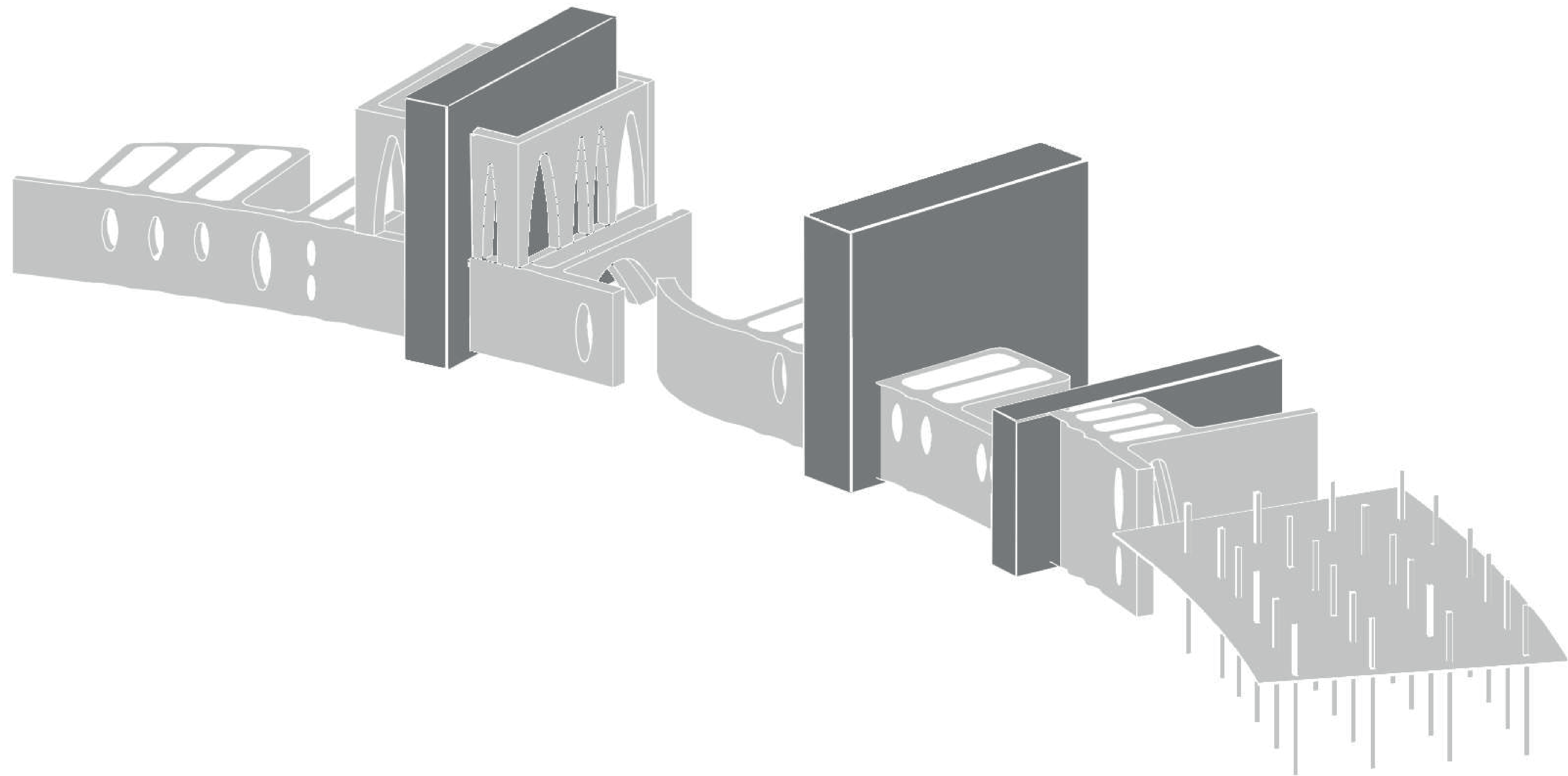


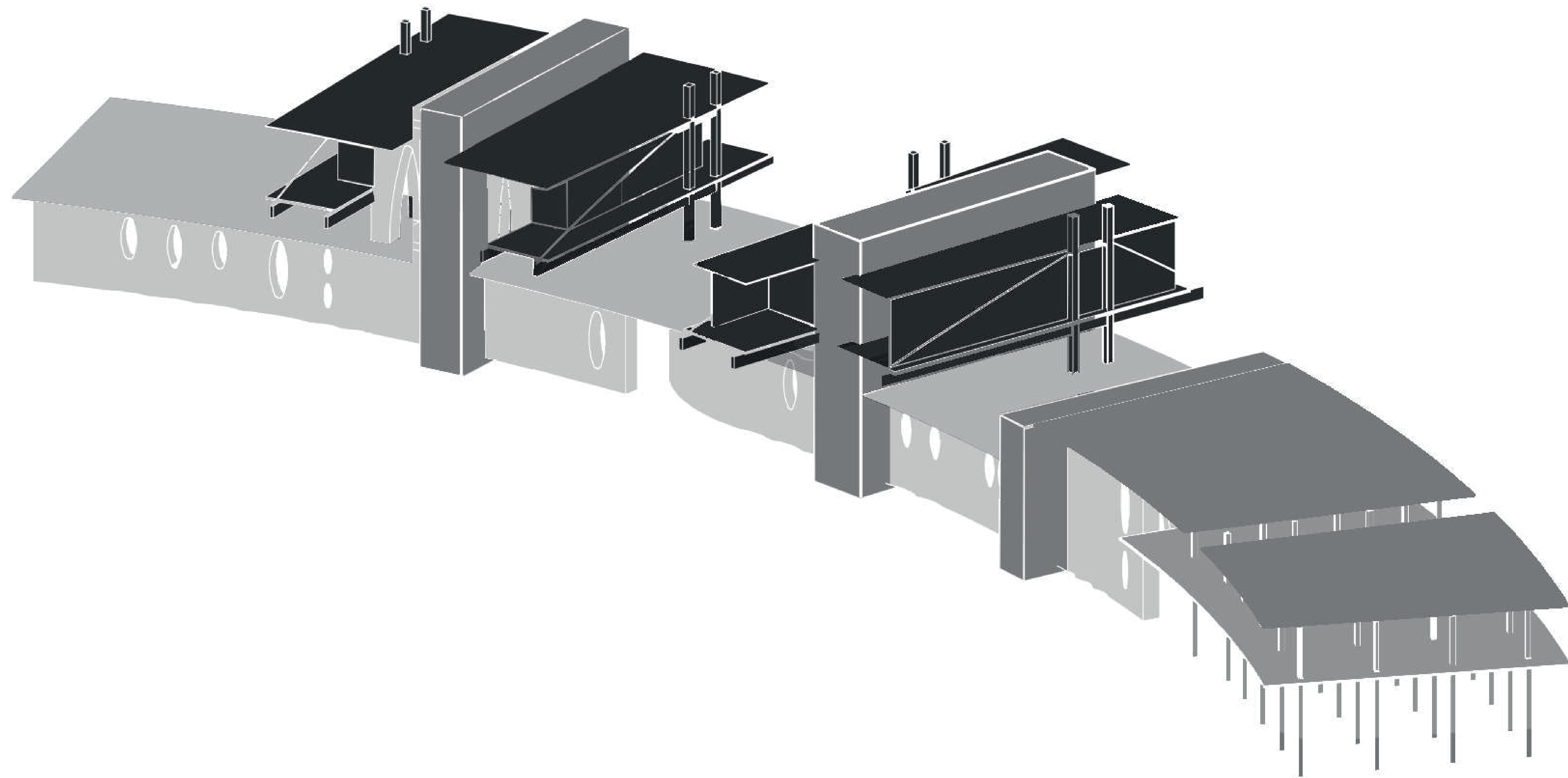
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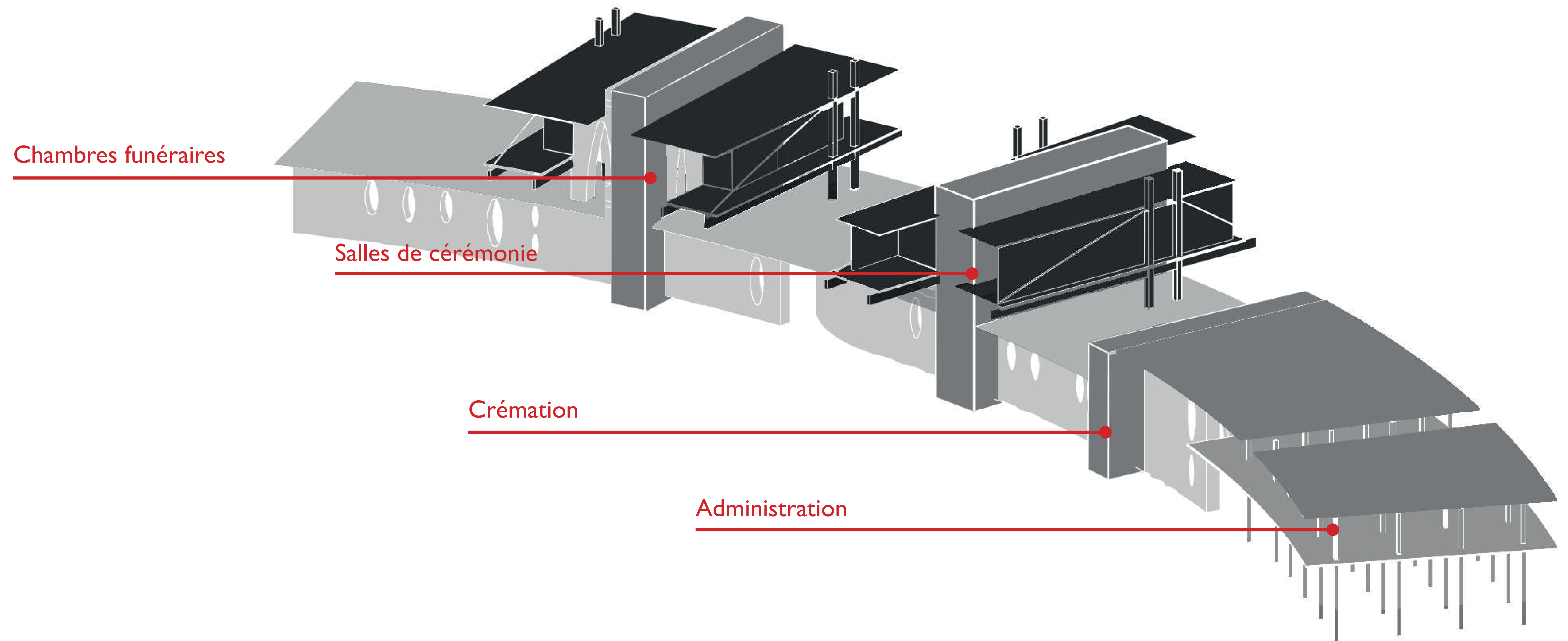
20 m

Plan masse









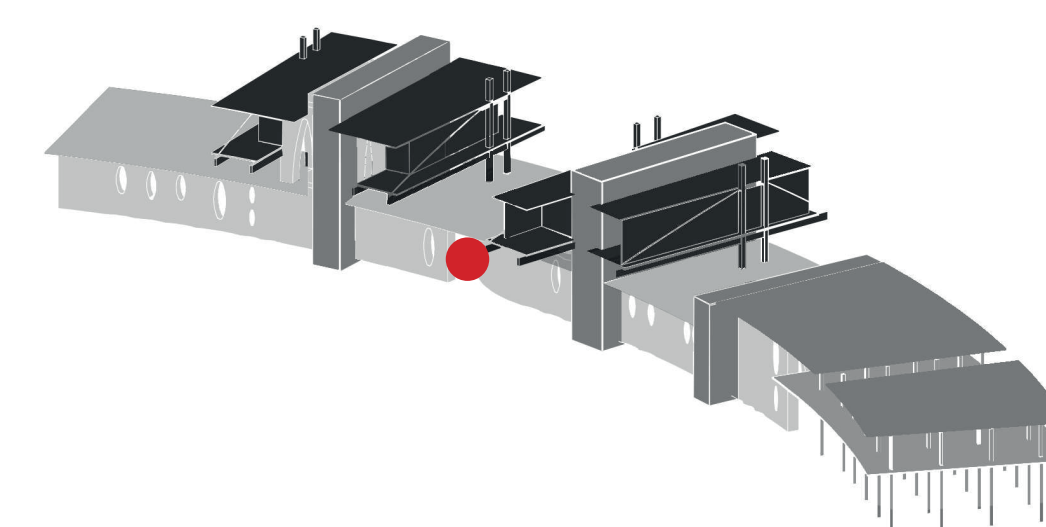


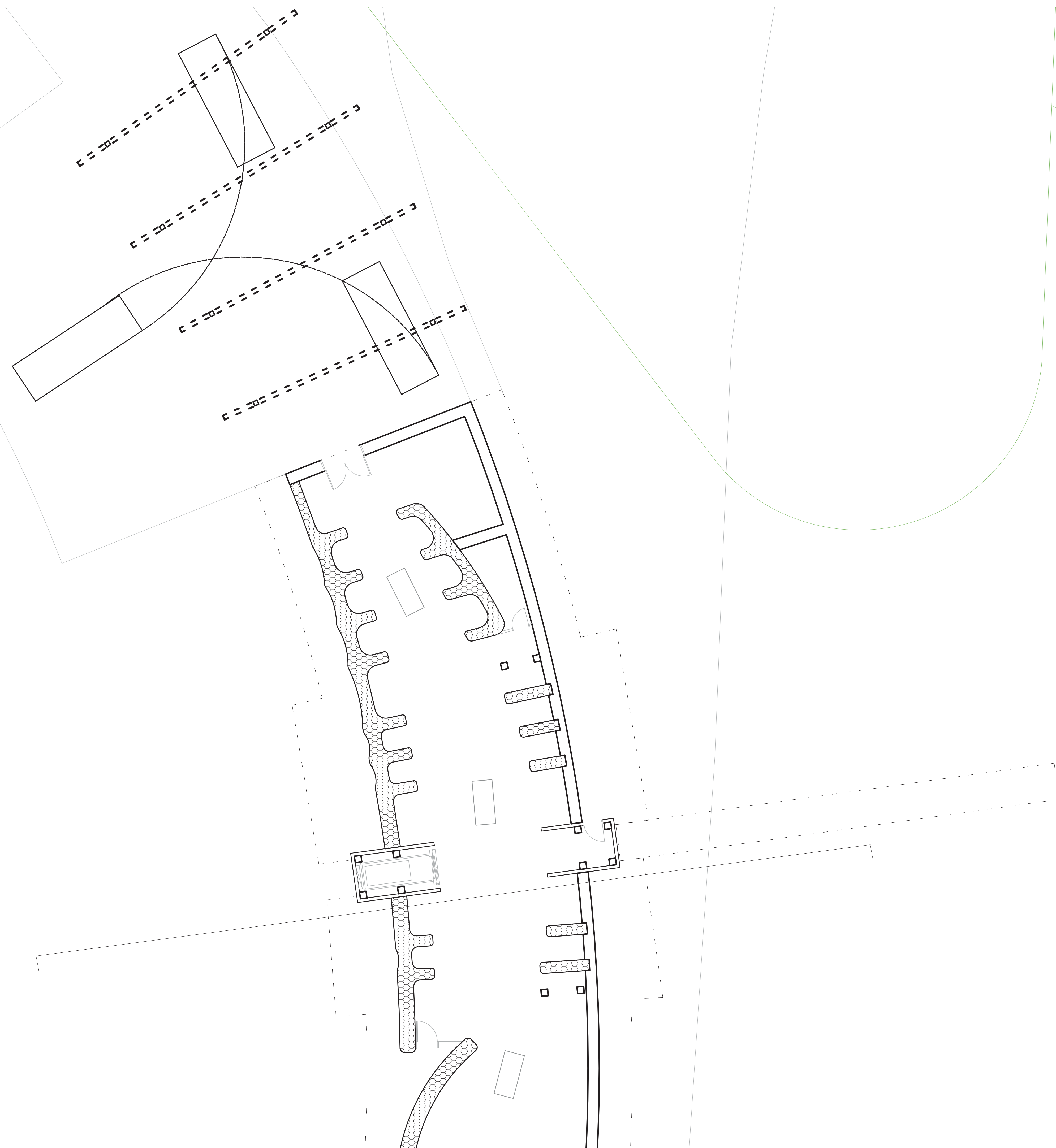
0



10 m

RDC Bas



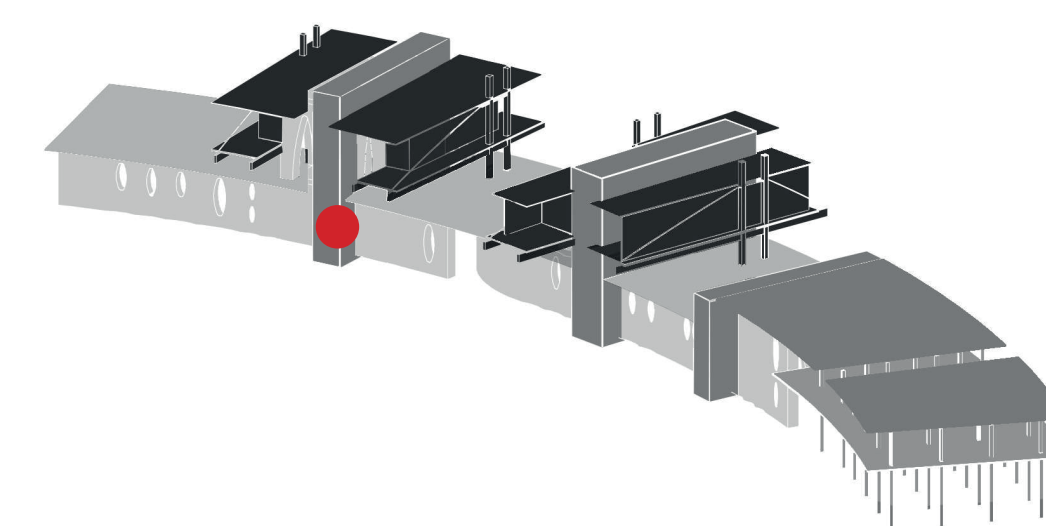


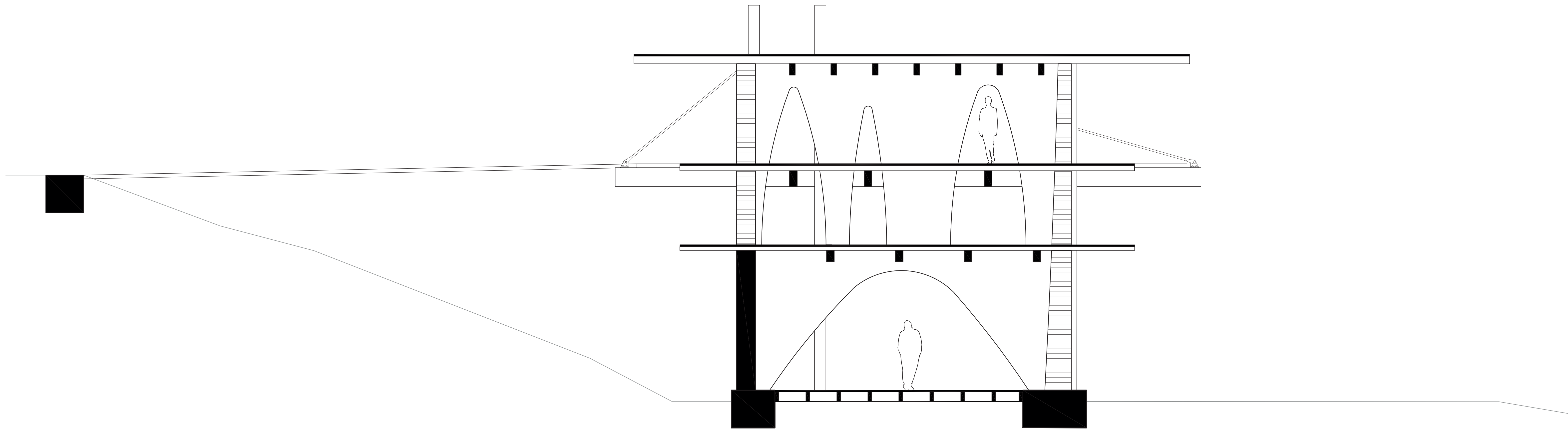
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10 m

RDC Bas



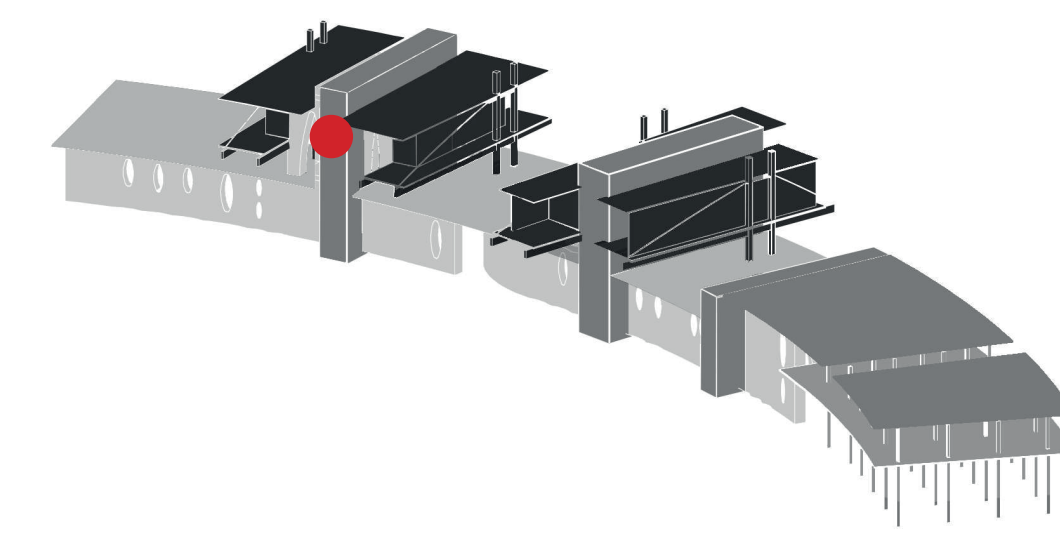
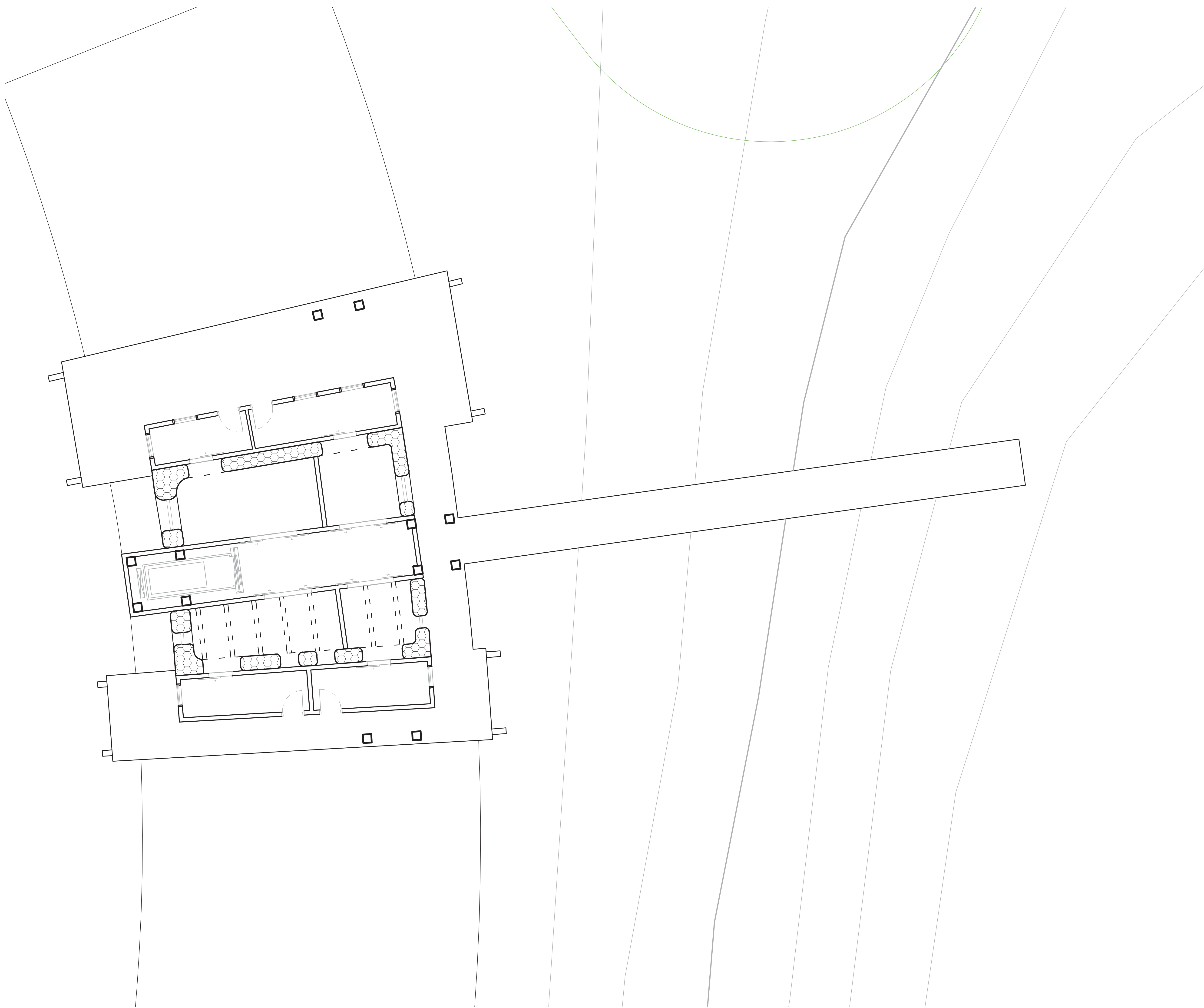


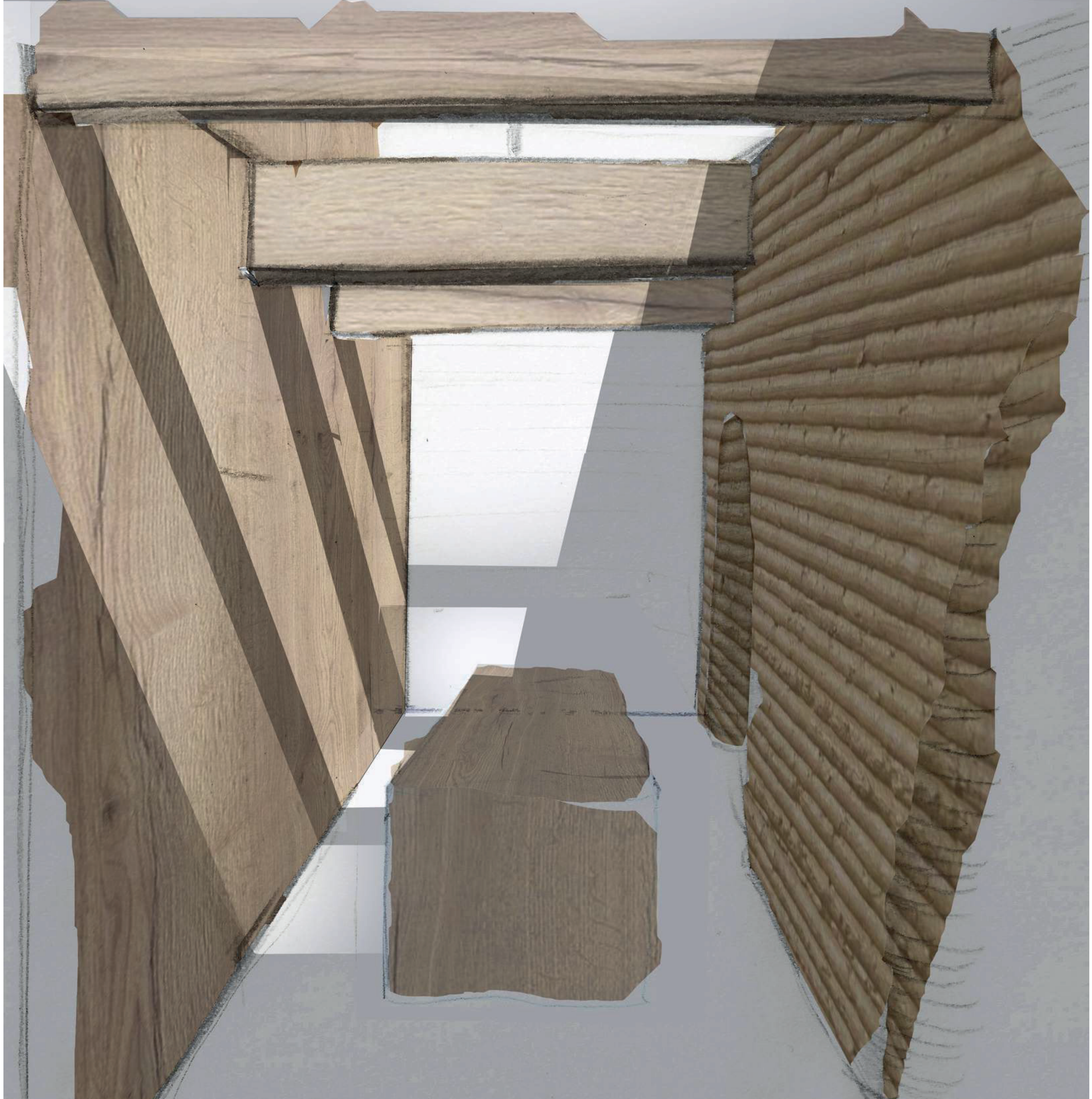
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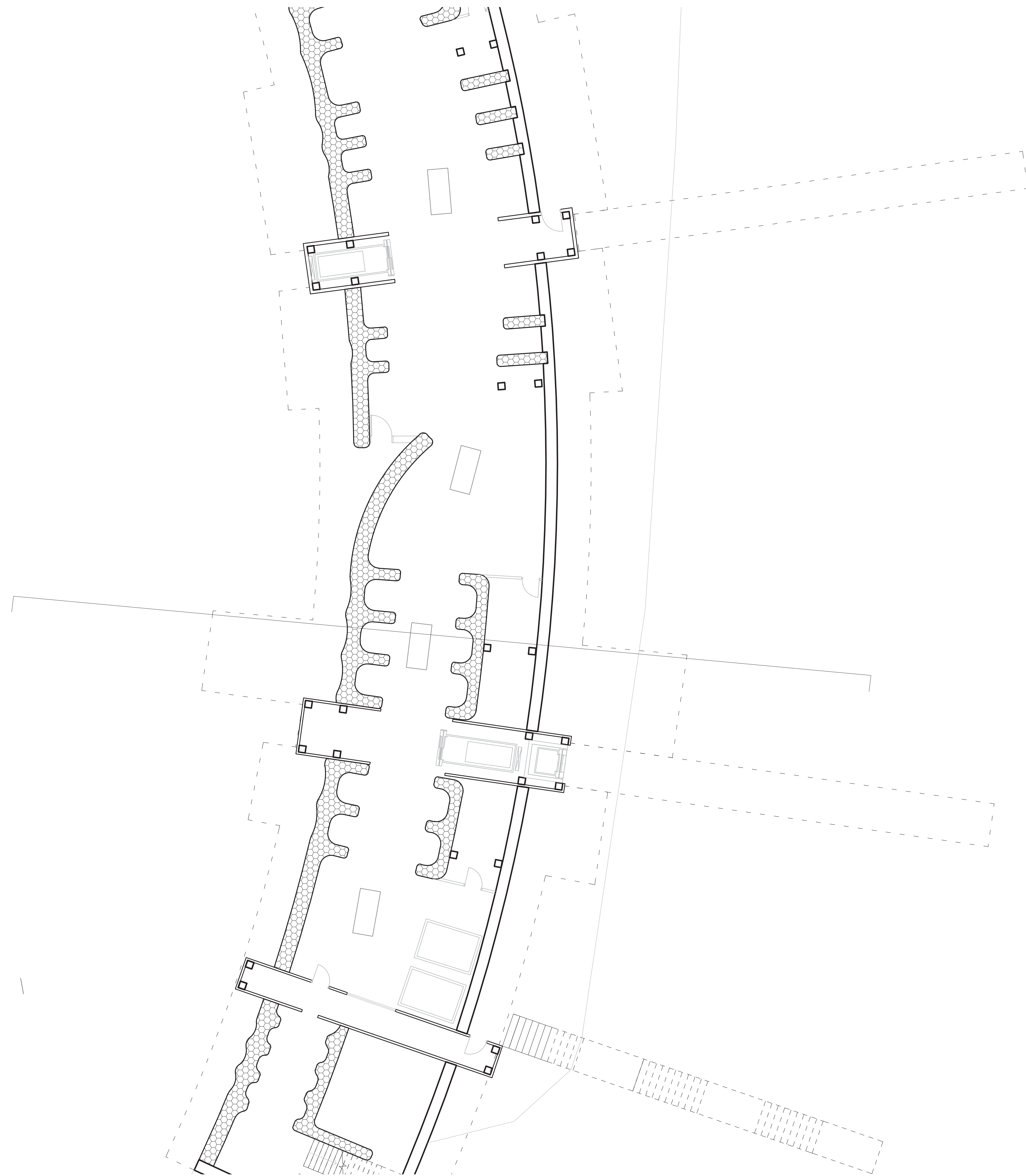


10 m

Coupe funéraire



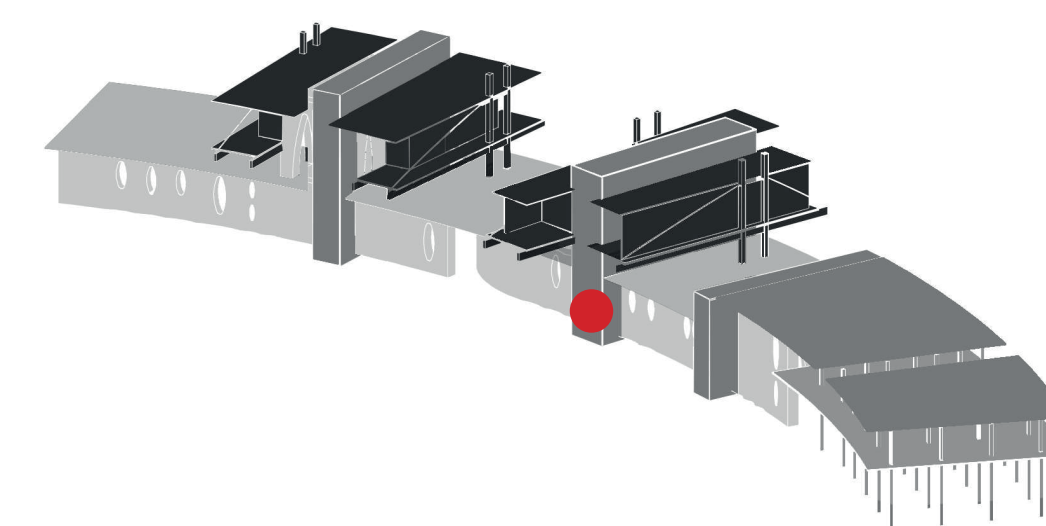




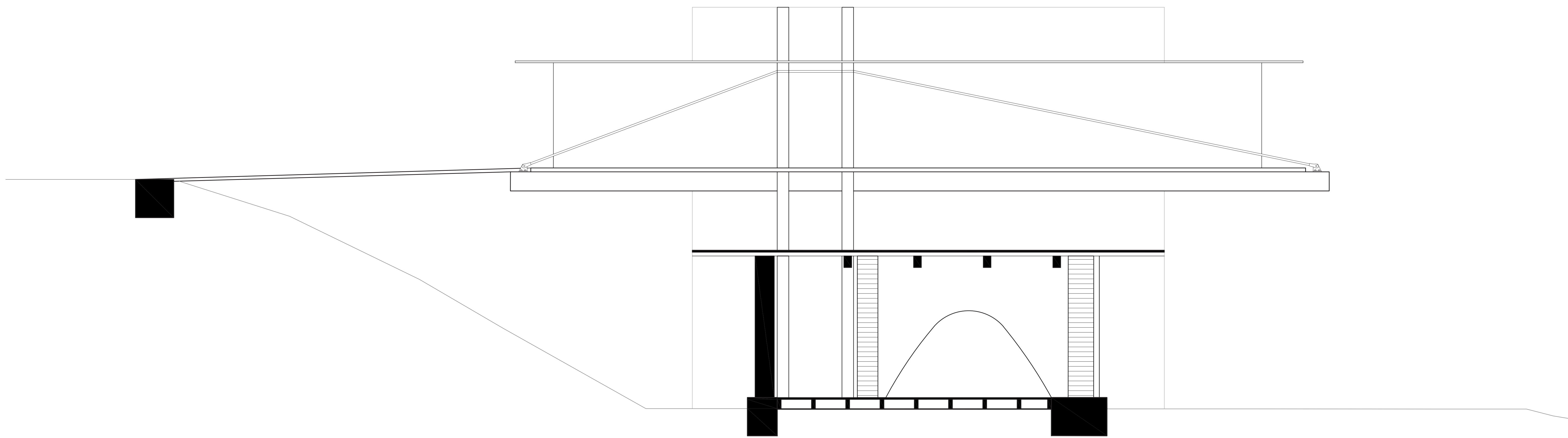
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10 m

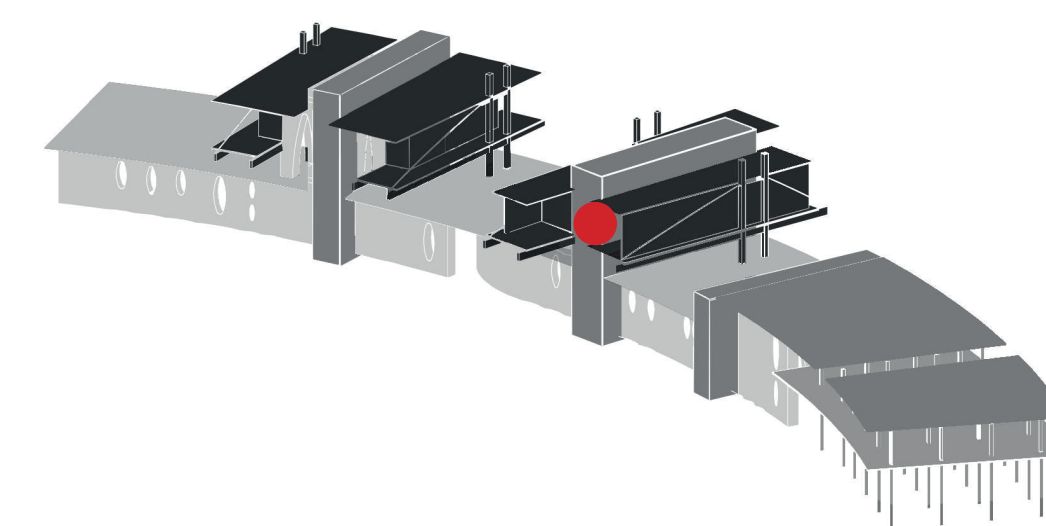
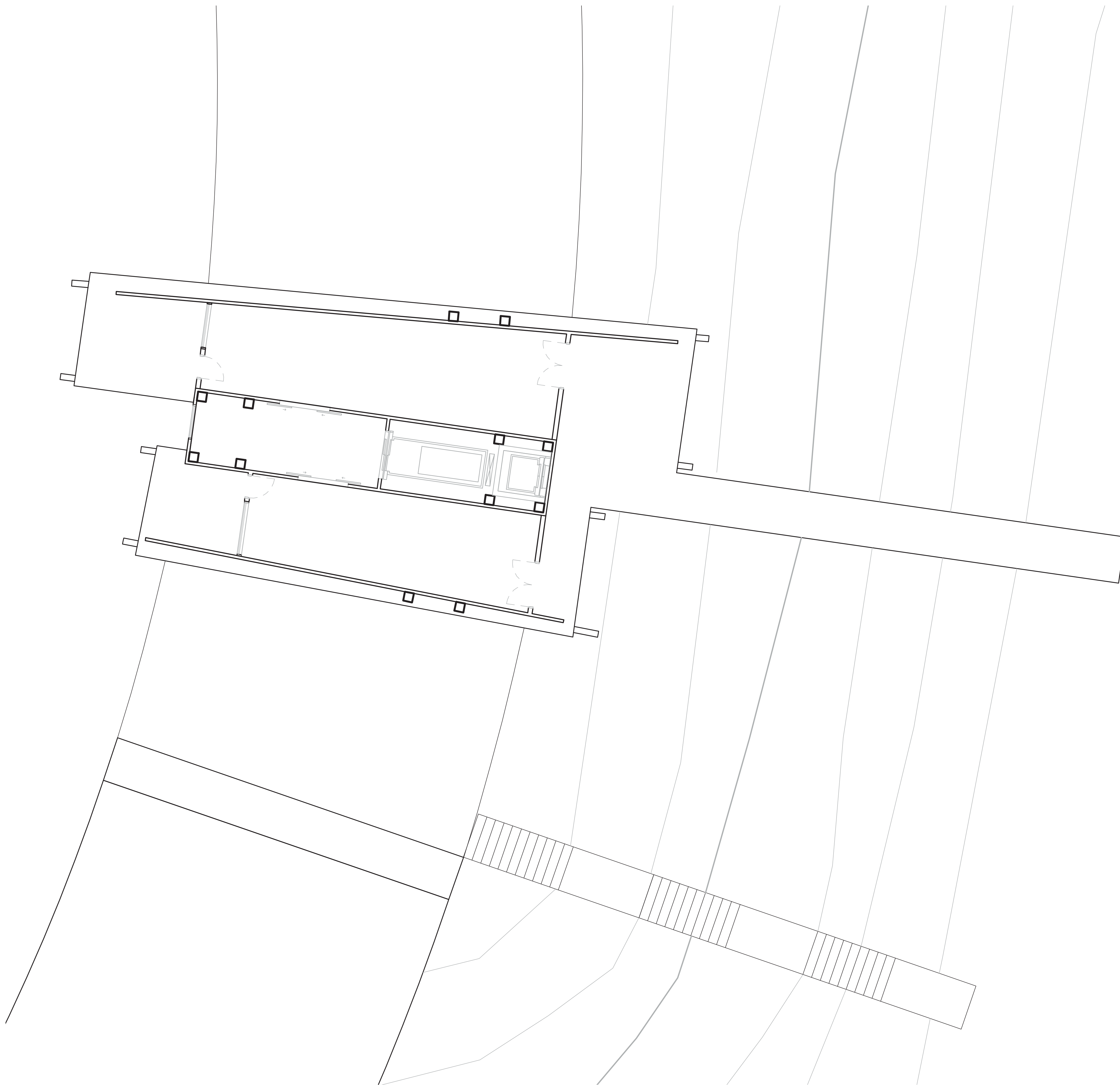


RDC Bas



Coupe cérémonie

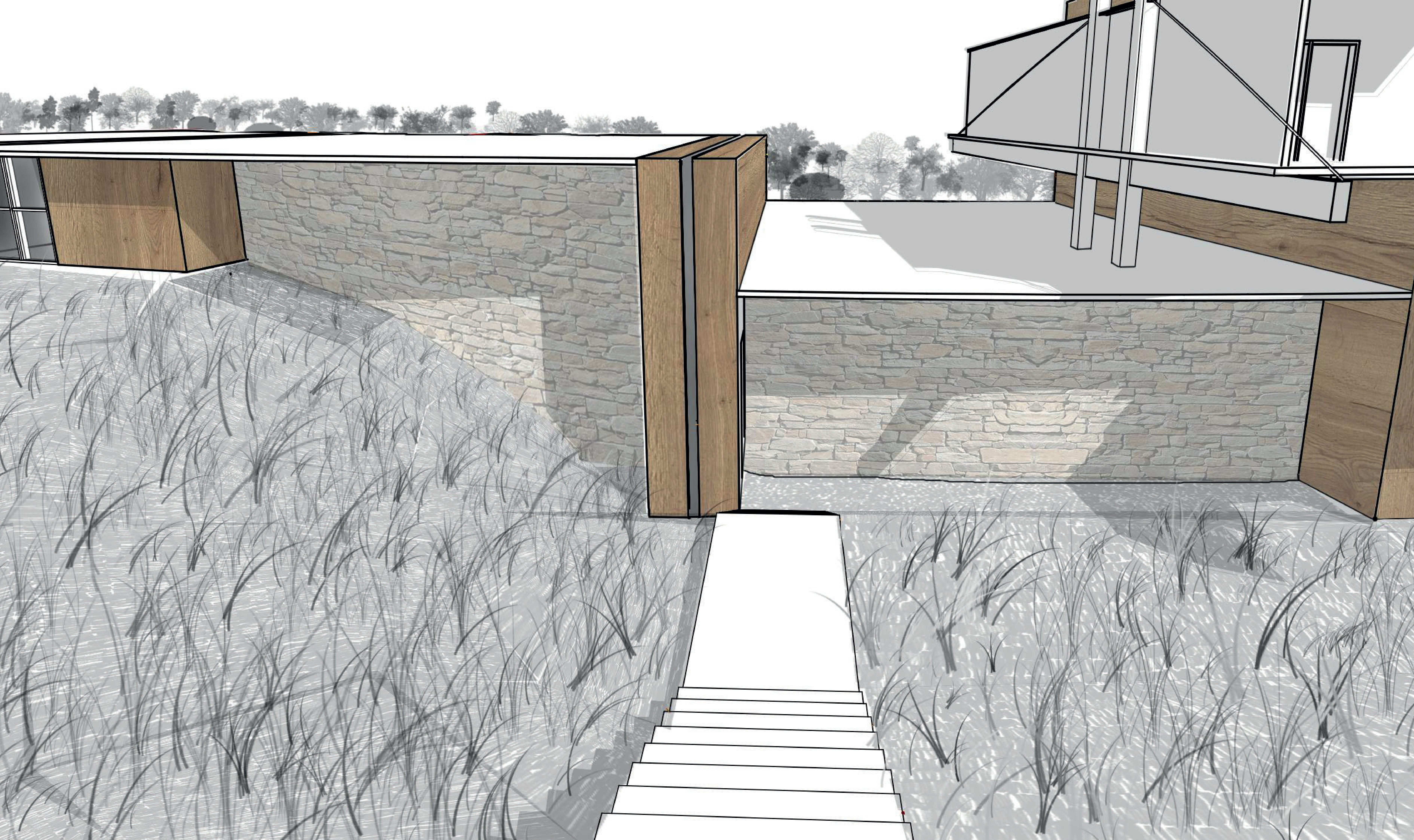
0 10 m

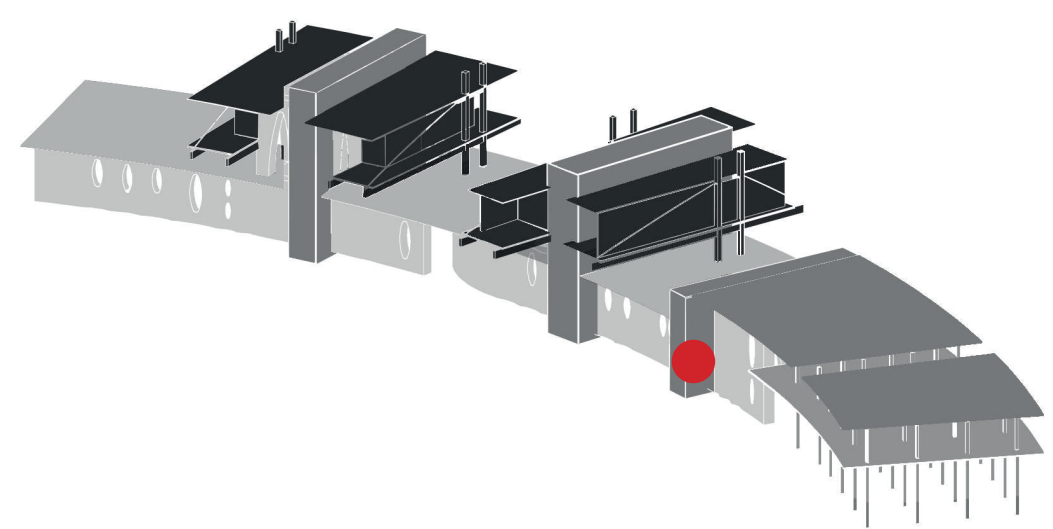
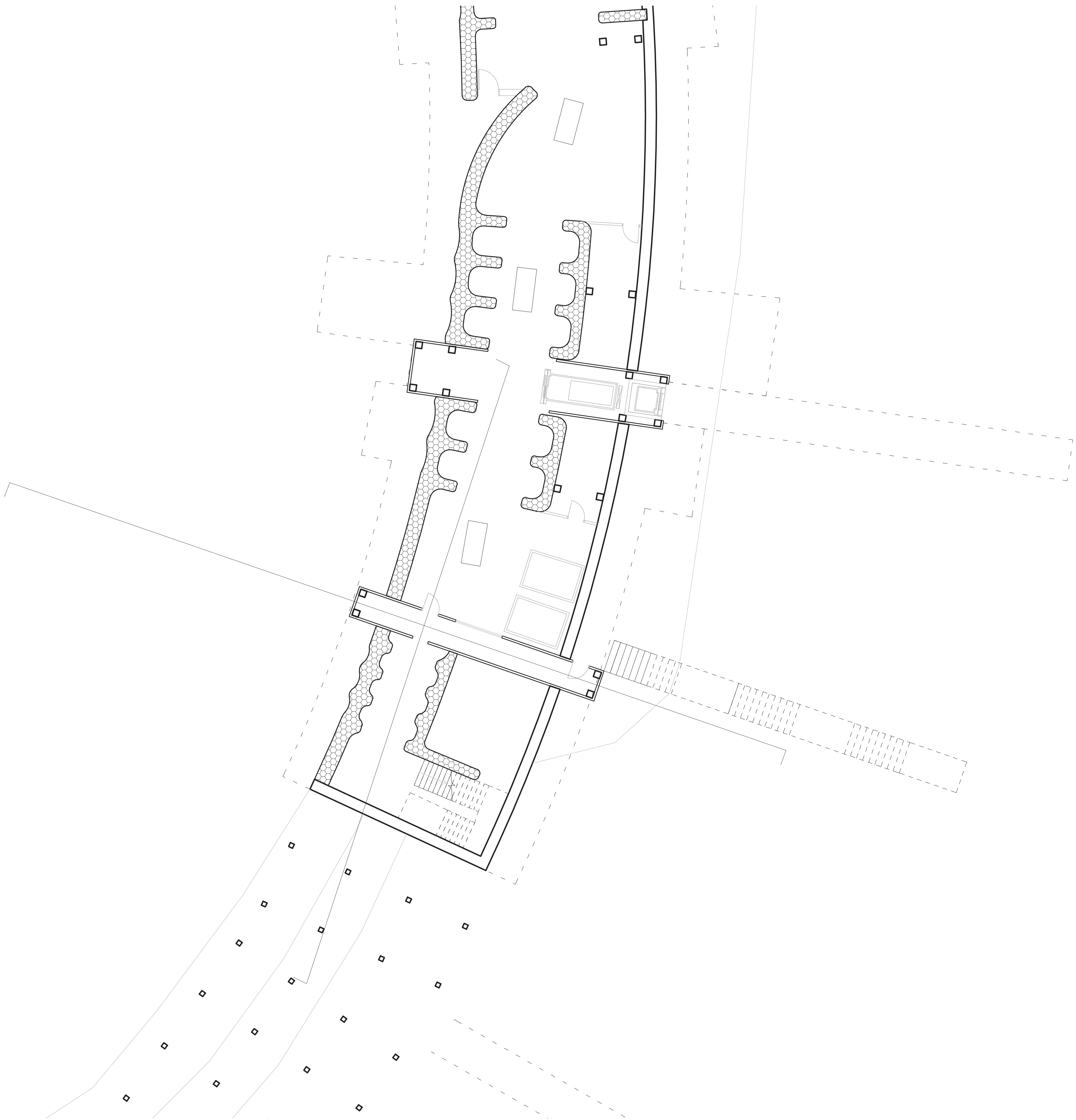


0

Etage - Salles de cérémonie

10 m



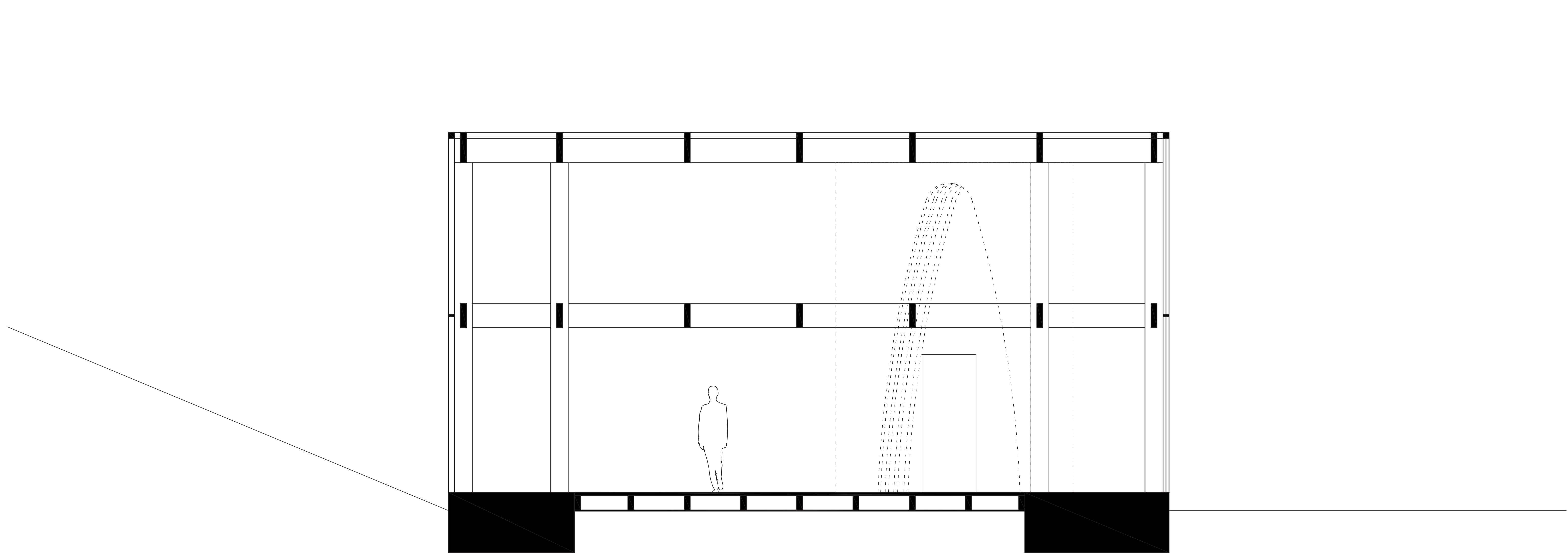


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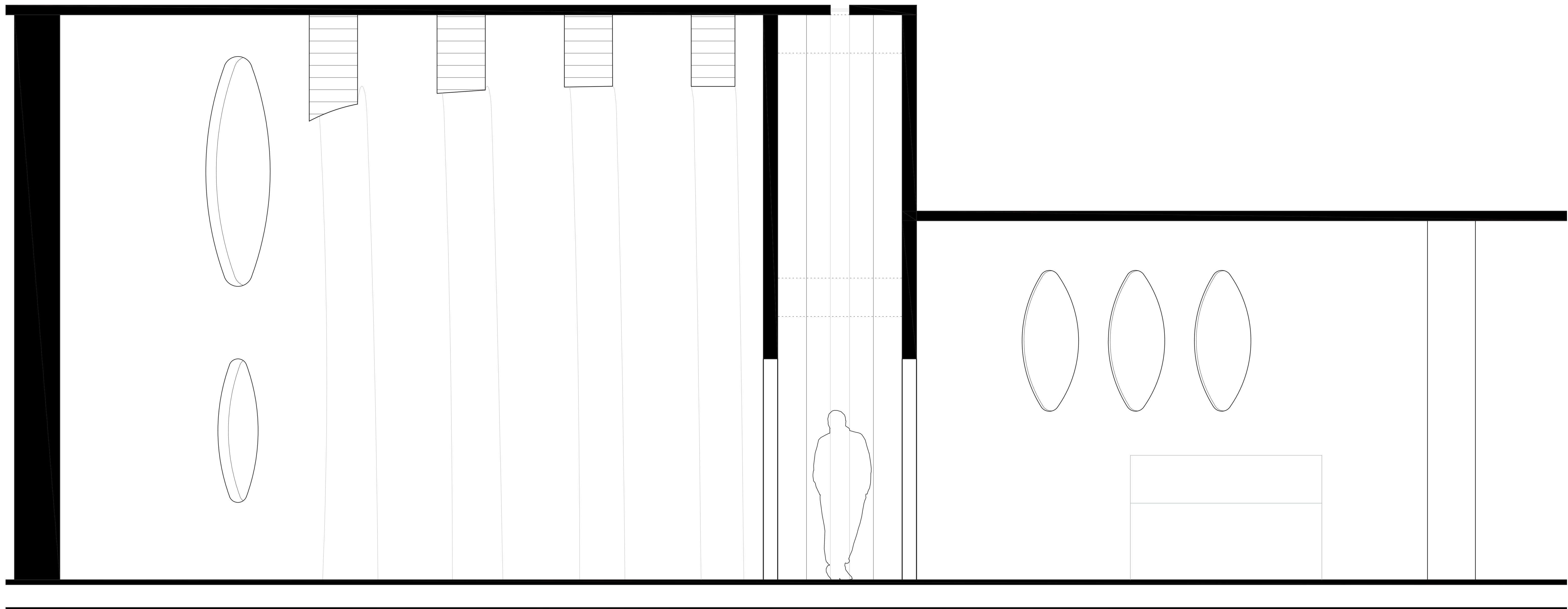
RDC Bas

10 m



Salle de visualisation

0  10 m

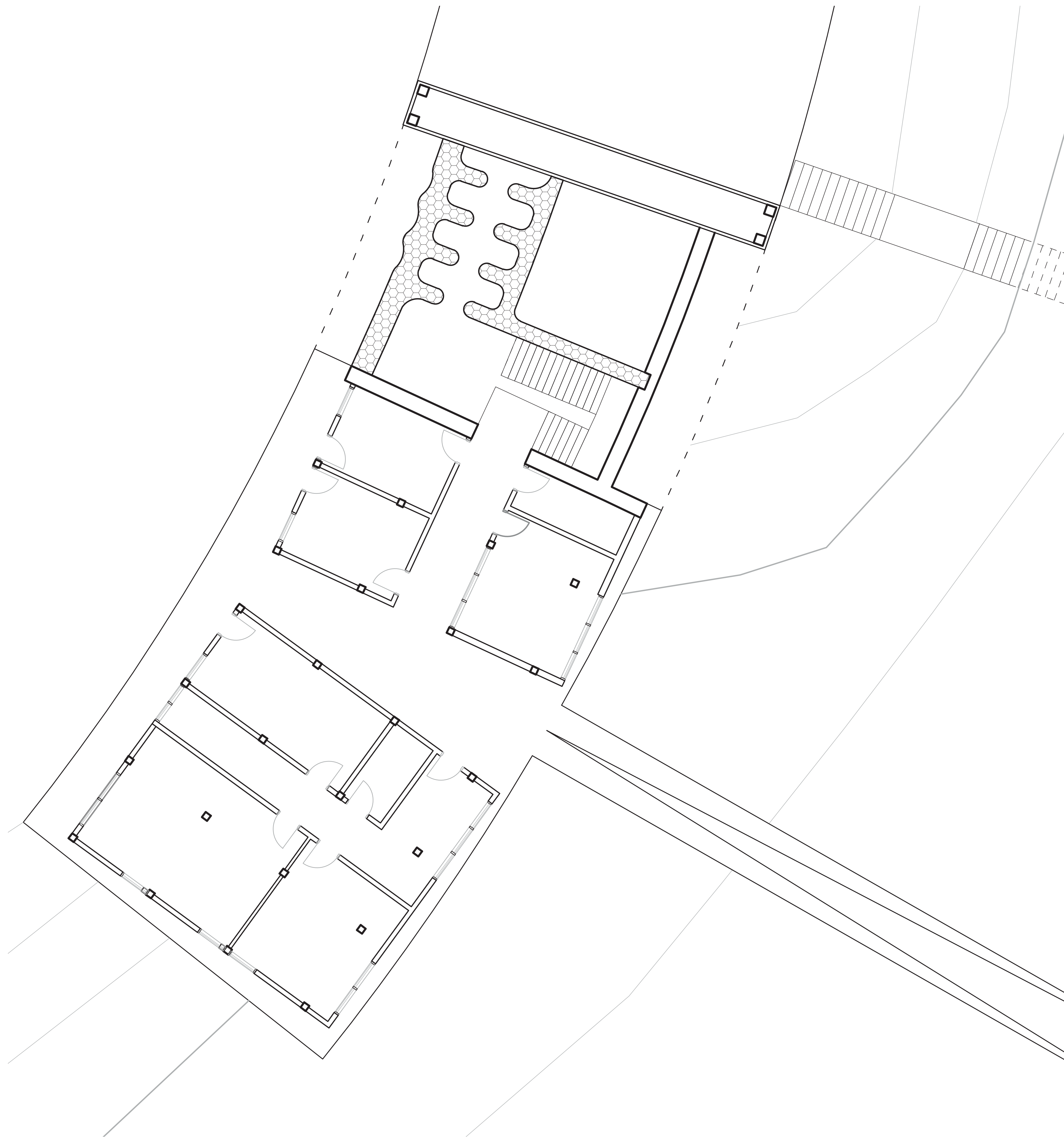


Salle de visualisation

0



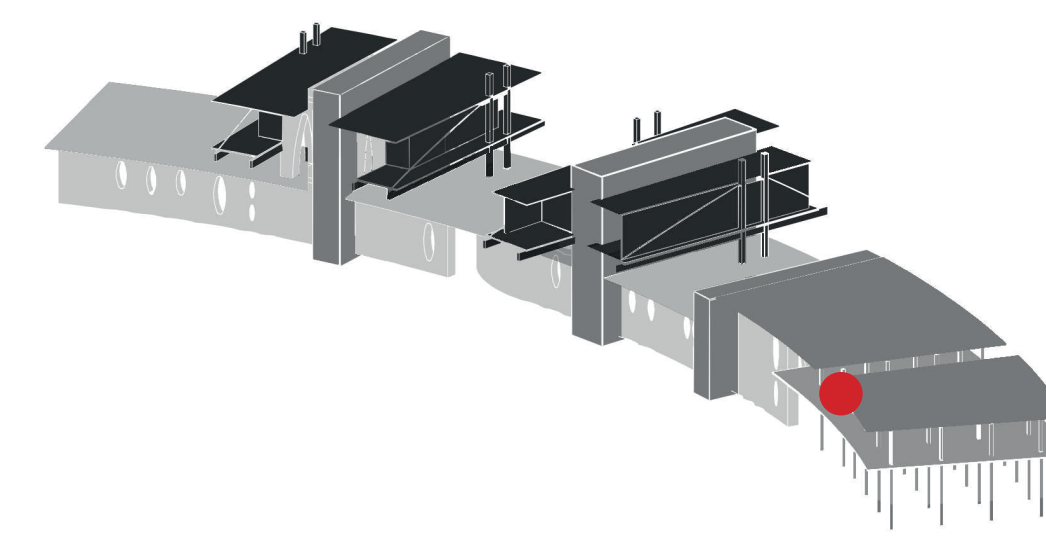
20 m



0



10 m



Etage - Salles de cérémonie

