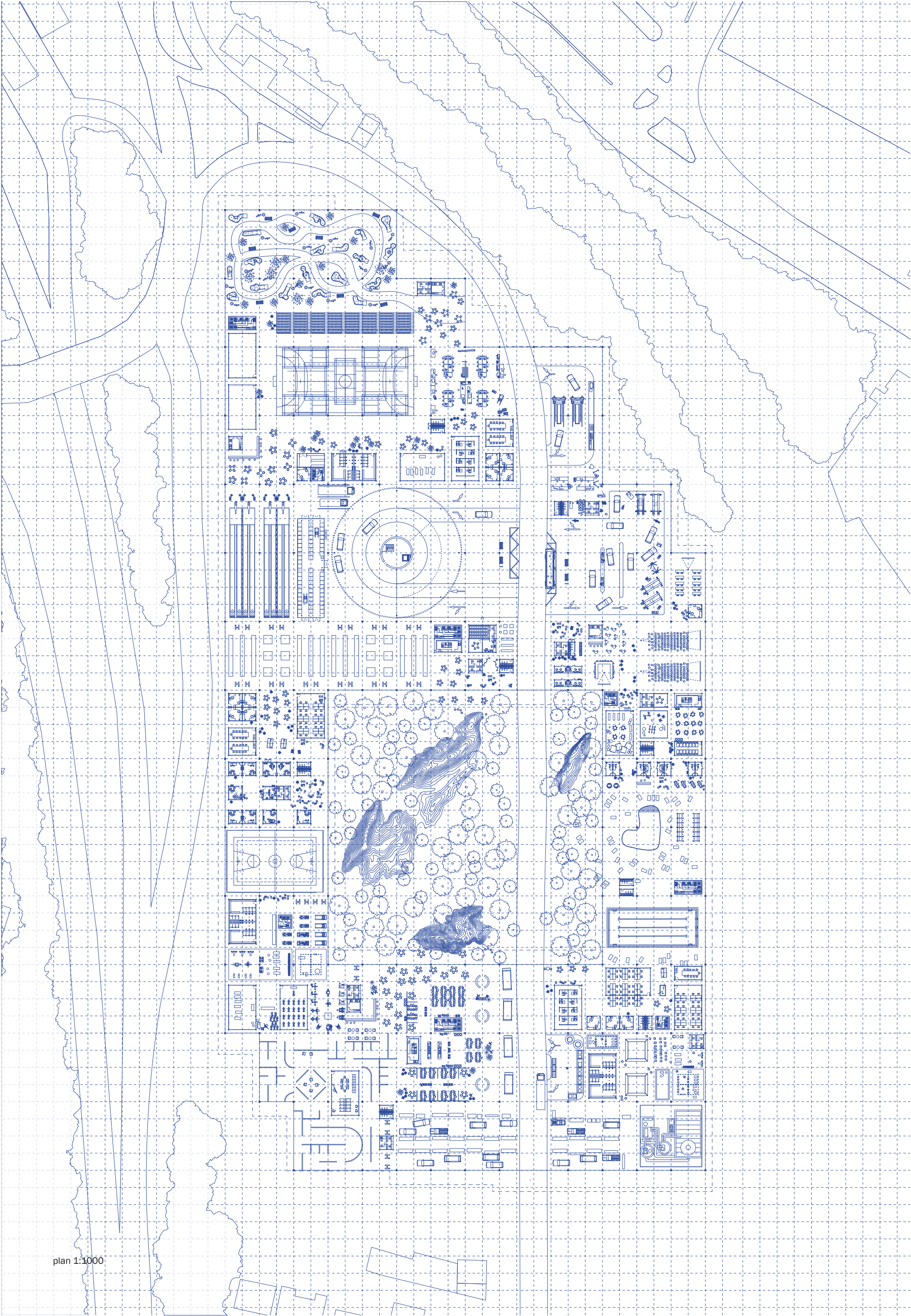


L'HYPHER EST MORT.
VIVE L'HYPHER.

Isabelle Cochevelou et Loris Vendrami
Juillet 2019

Groupe de suivi:
Directeur Pédagogique : Roberto Gargiani
Professeur : Kersten Geers
Maître EPFL : Beatrice Lampariello



plan 1:1000

Le tissu pavillonnaire s'étend et se répand. Continu. Homogène.

L'hypermarché s'annonce. Gigantesque, il s'affirme dans le paysage périurbain monotone et surpasse cette condition préexistante. Il attire les foules et leur offre les denrées nécessaires. On y trouve "tout sous le même toit". Un bâtiment banal, pourtant monumental, à l'image d'une société de consommation qui n'est aujourd'hui plus la nôtre. Sa fréquentation diminue. L'hypermarché suffoque.

Après avoir pu tout acheter sous le même toit, pouvons-nous tout y faire ?

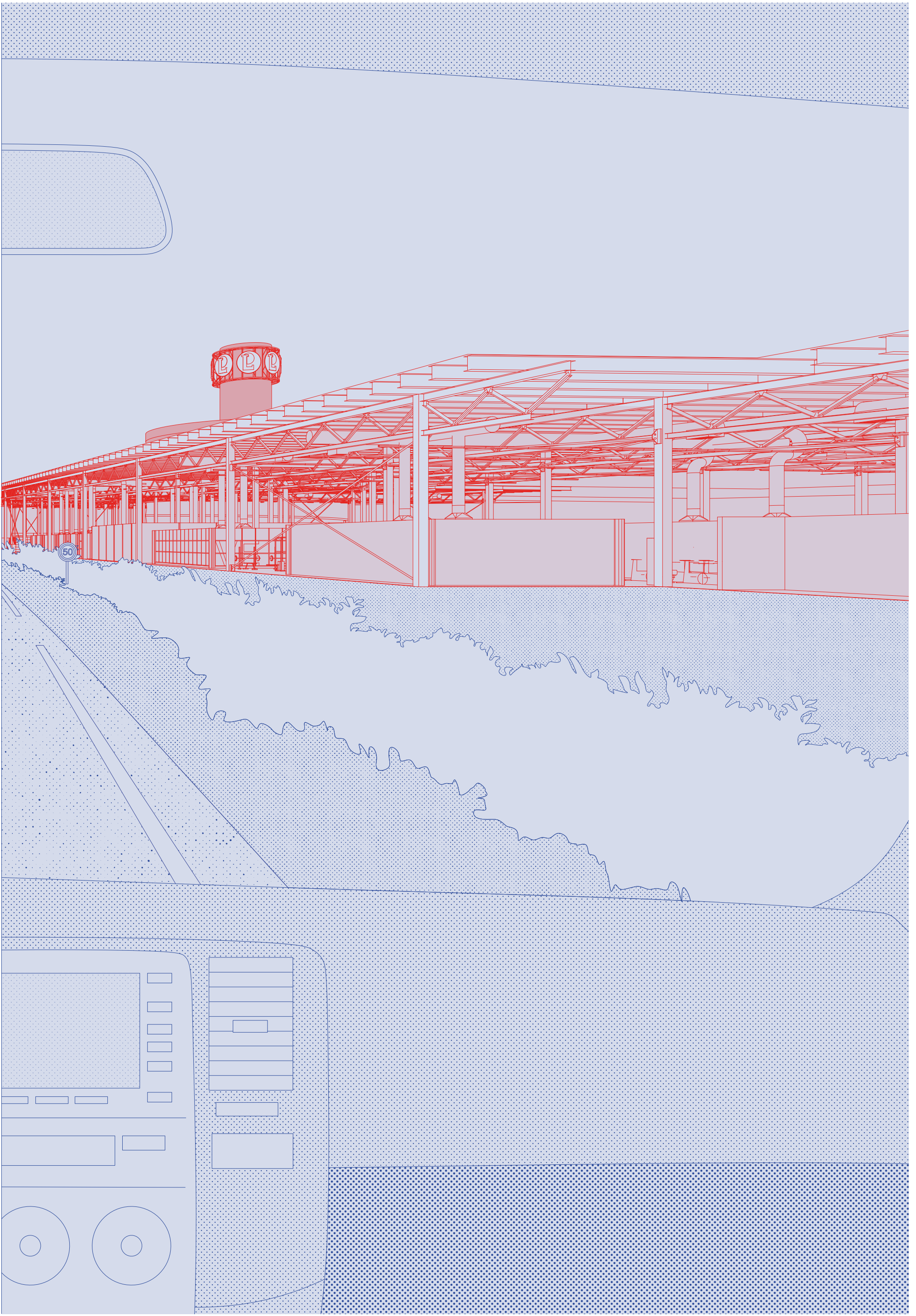
Au sud de Paris, le toit s'est libéré de ses murs qui le rendaient aveugle et flotte dorénavant à quelques mètres du sol. Seule la parcelle délimite ses contours et semble le couper brusquement dans son élan d'expansion. Il flirte avec l'infini.

Cette gigantesque toiture de verre et d'acier abrite un univers unifié et tempéré. Une ossature rythmée, contenant les programmes les plus divers et les plus diversement placés. Les événements s'y déroulent simultanément et s'enchaînent sans cesse. Ce n'est ni un hypermarché, ni un équipement sportif, ni des bureaux mais tout cela à la fois. L'hyper définit un nouveau champ des possibles.

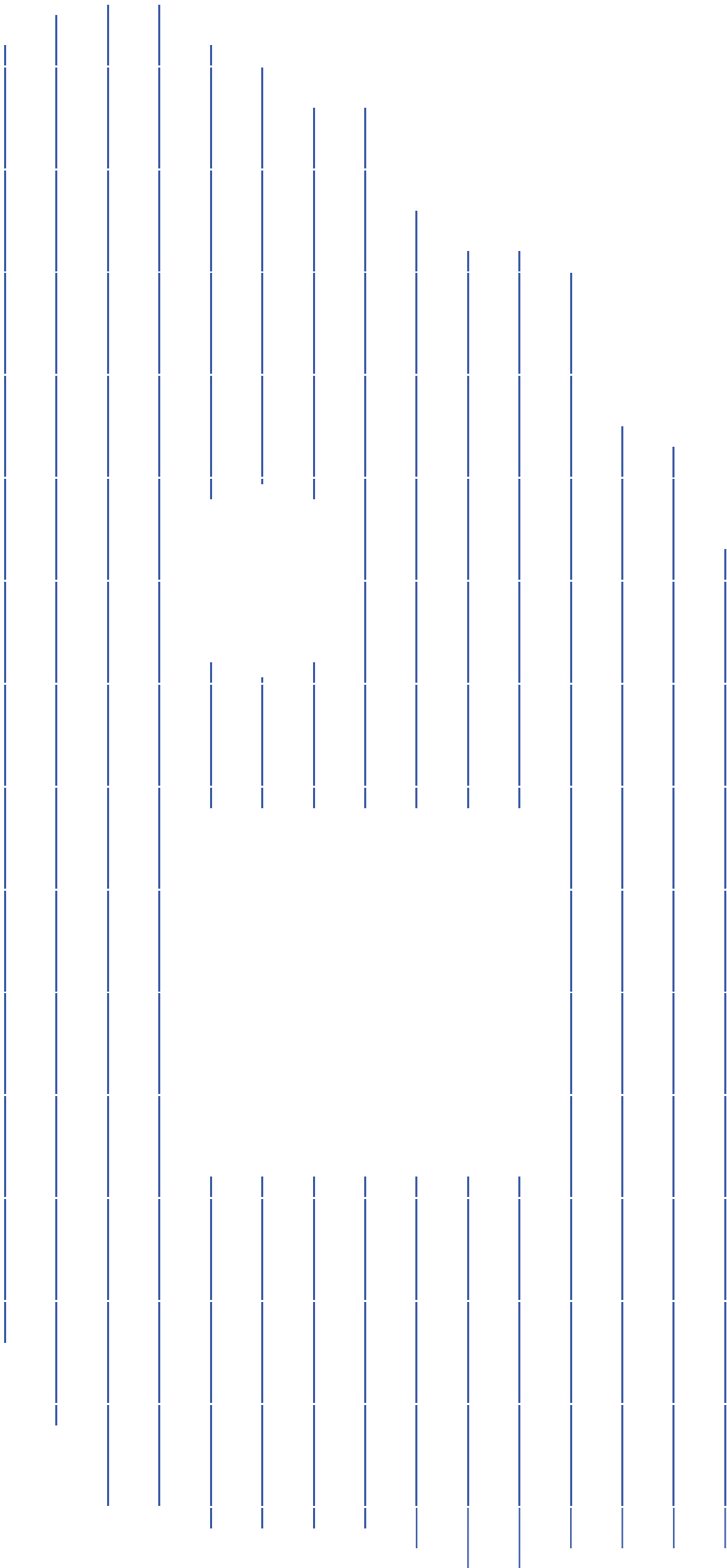
Le toit abrite les fonctions autant qu'il les alimente en énergie. L'énergie et les données sont récoltées, traitées et redistribuées pour la survie de l'hyper.

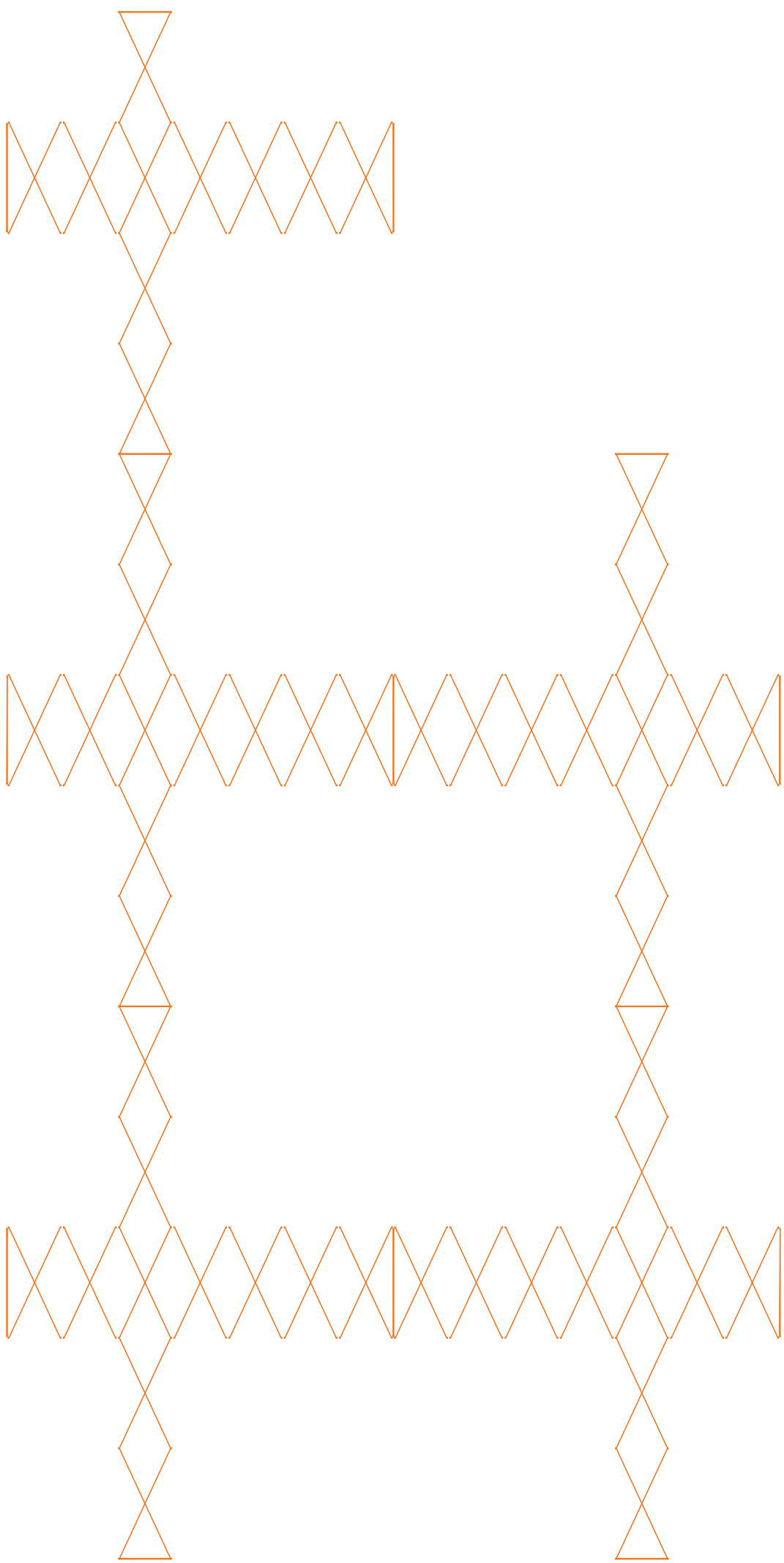
C'est un lieu suspendu dans le temps et l'espace. Un lieu de médiation face au quotidien bipolarisé par le domicile et le lieu de travail. L'hyper transcende son statu quo.





CHAPITRE UN. L'ABRI.





contreventement

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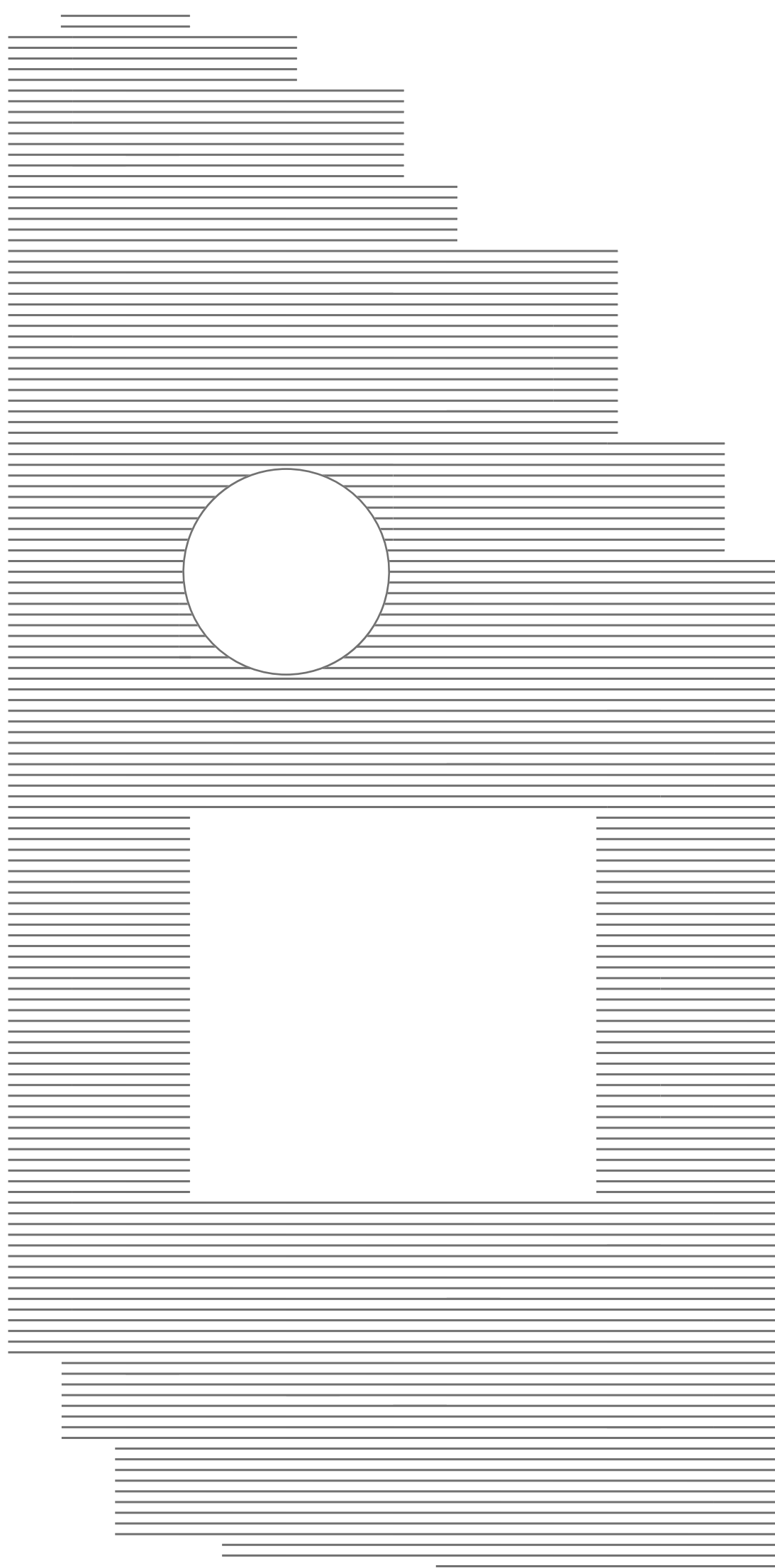
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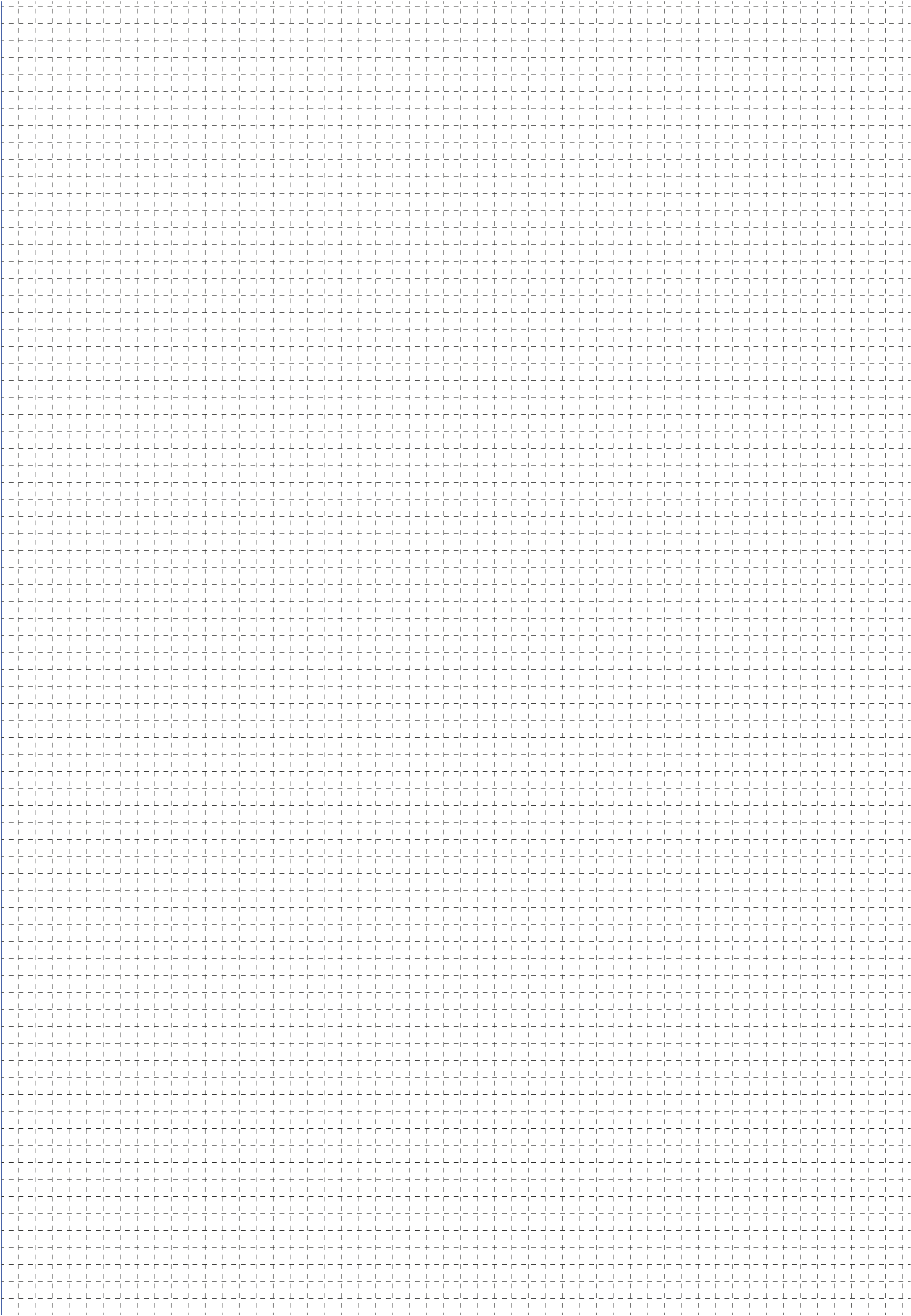
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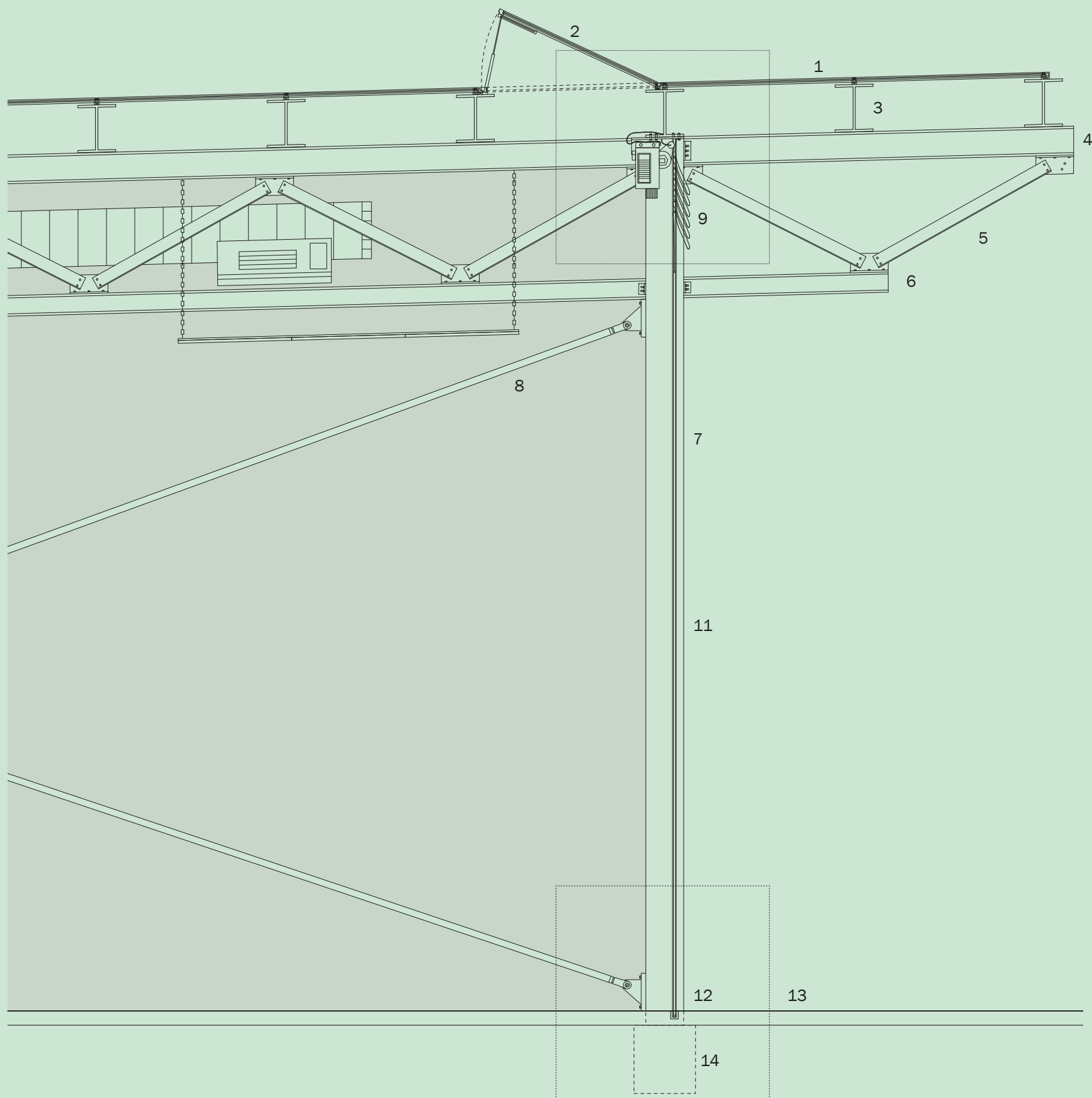
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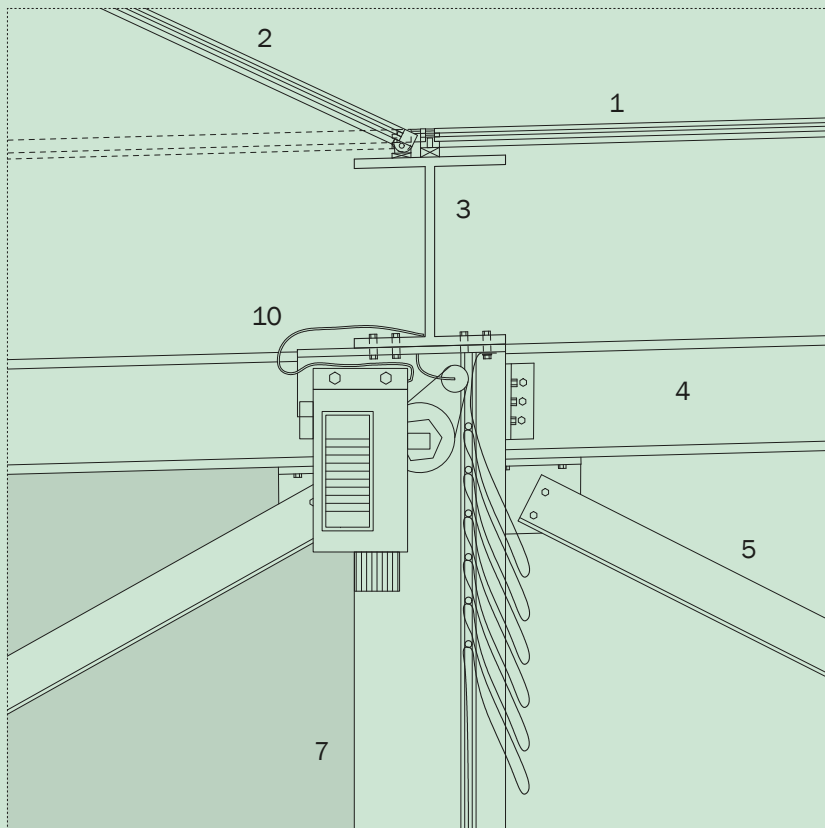
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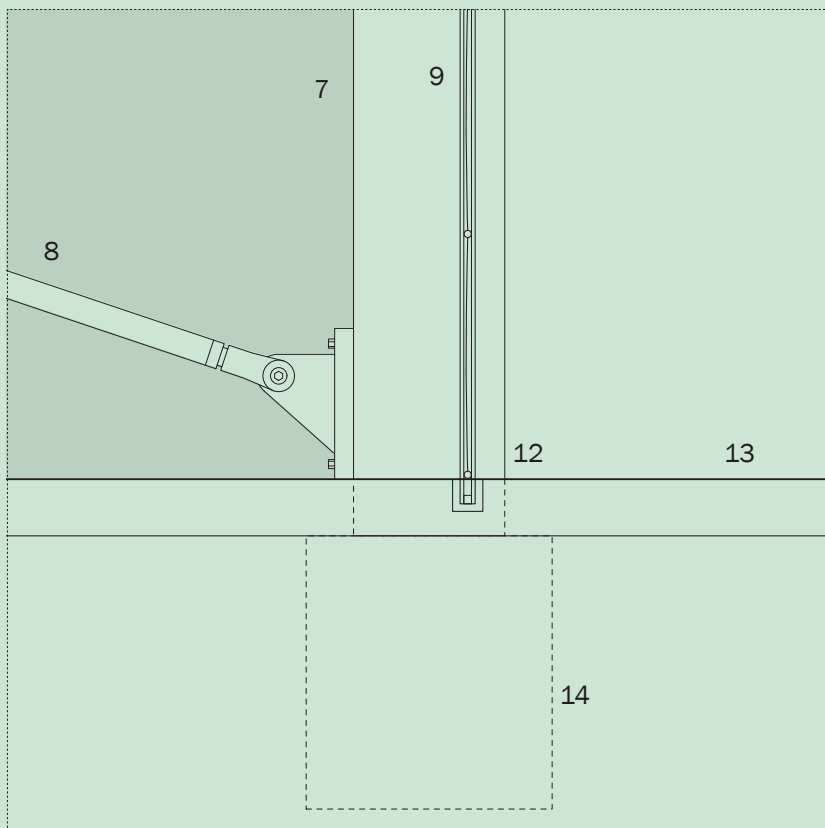


coupe détail 1:50

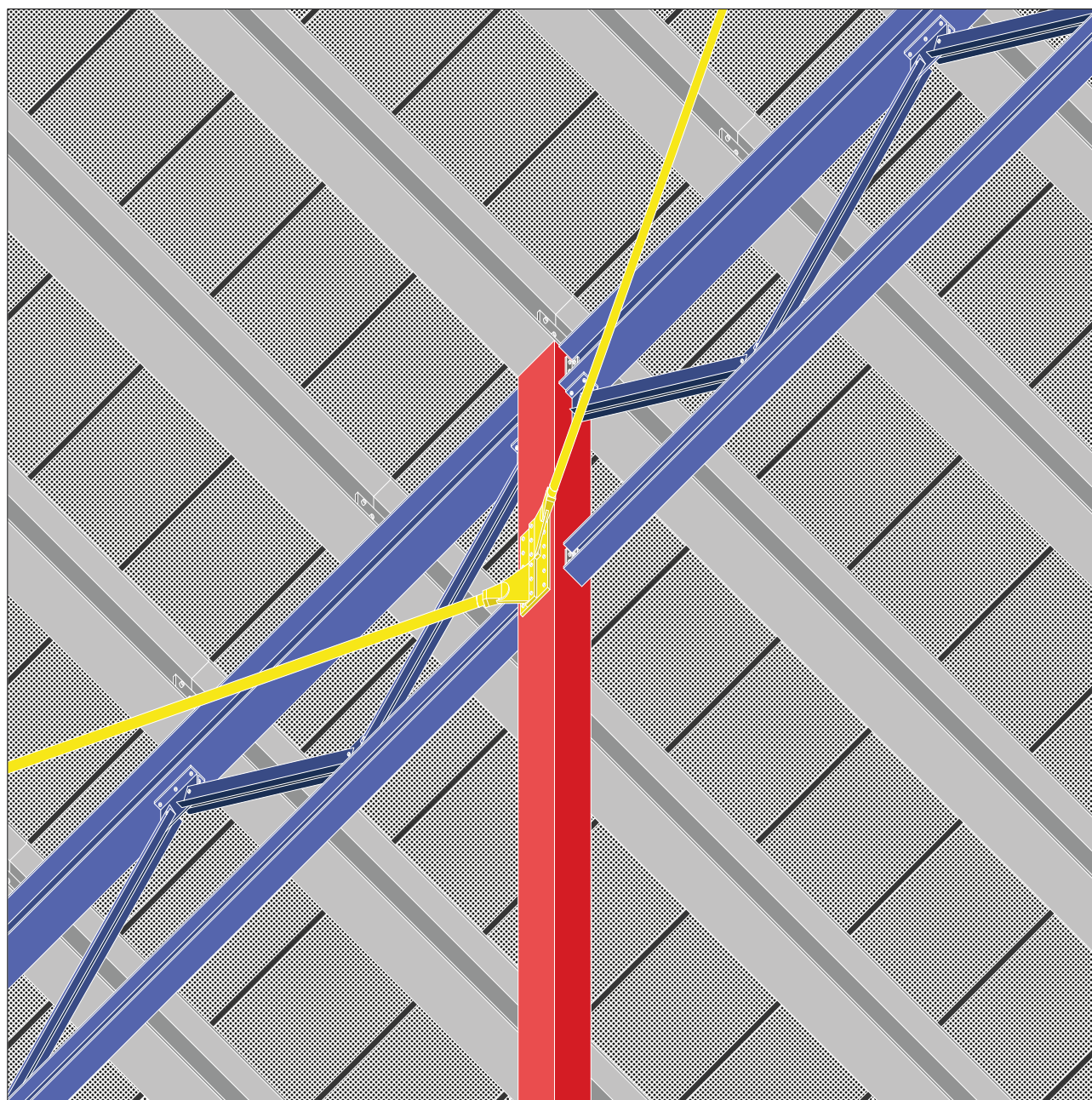


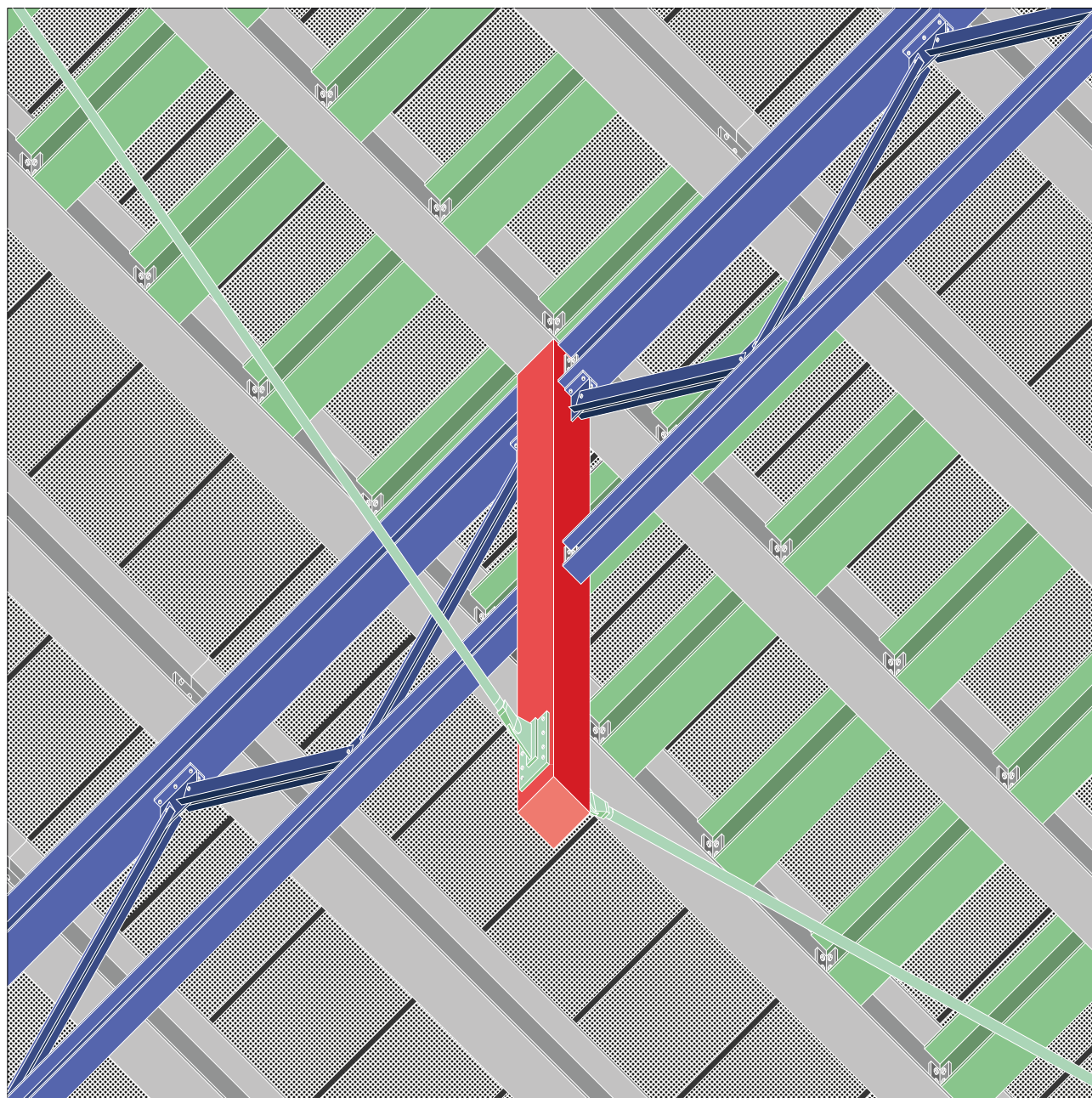
coupe détail 1:20

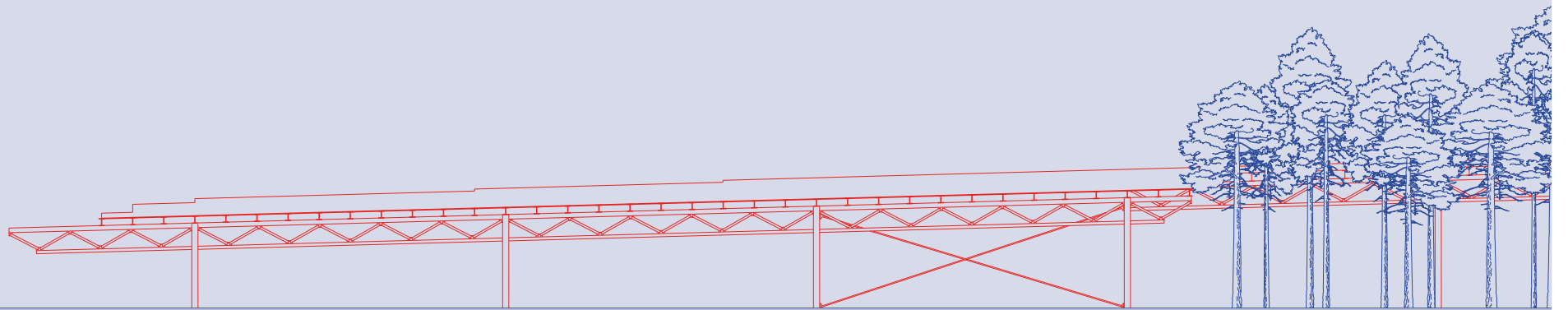
1. Panneau couche CIGS H30
1000x2000mm
2. Ouvrant de désenfumage et ventilation naturelle
1000x2000mm
3. Poutre secondaire
HEA 500
4. Treillis. Membrane supérieure
HEA 300
5. Treillis. Diagonales
Profilé en L 150x150mm
6. Treillis. Membrane inférieure
HEA 200
7. Poteau métallique creux section carrée
400x400mm
8. Croix de Saint André
Ø 70mm
9. Rideau PVC pliant
Portée de 10 à 20m
10. Moteur de repli du rideau
400V
11. Rail de guidage latéral du rideau
12. Rail d'encastrement inférieur du rideau
13. Tarmac
ep 150mm
14. Plot de fondation béton



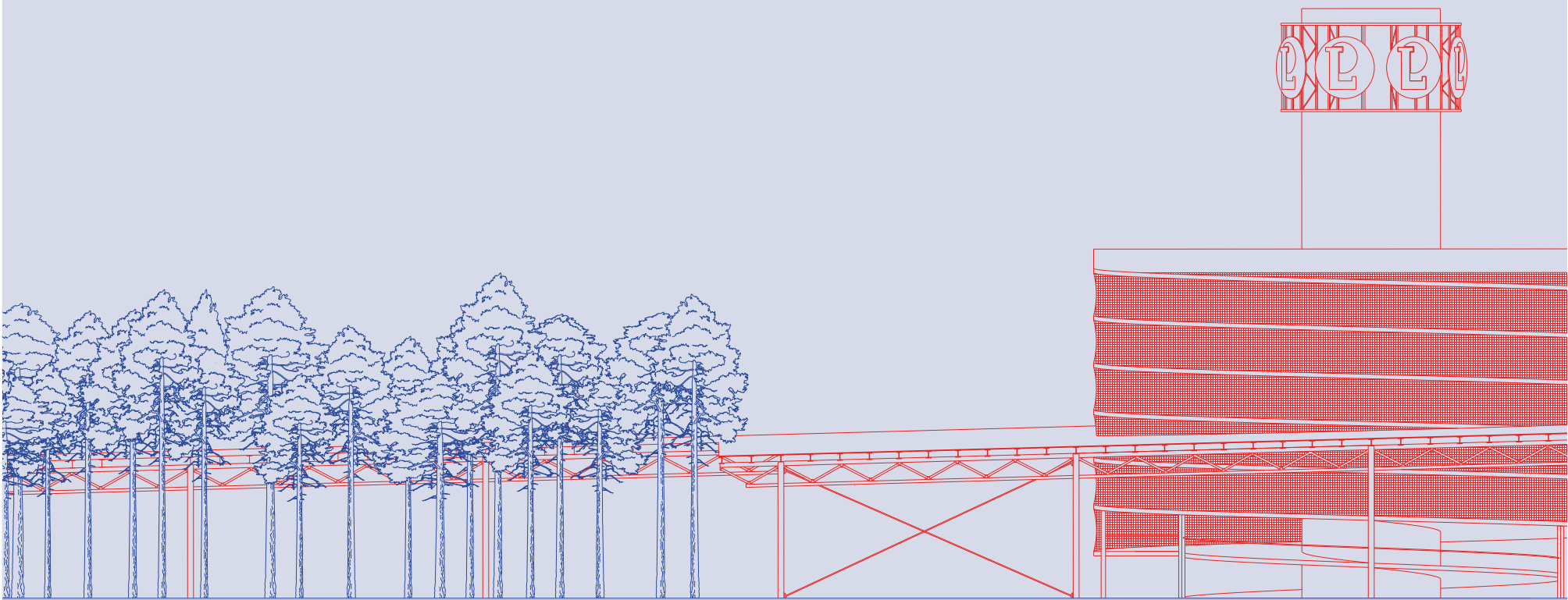
coupe détail 1:20



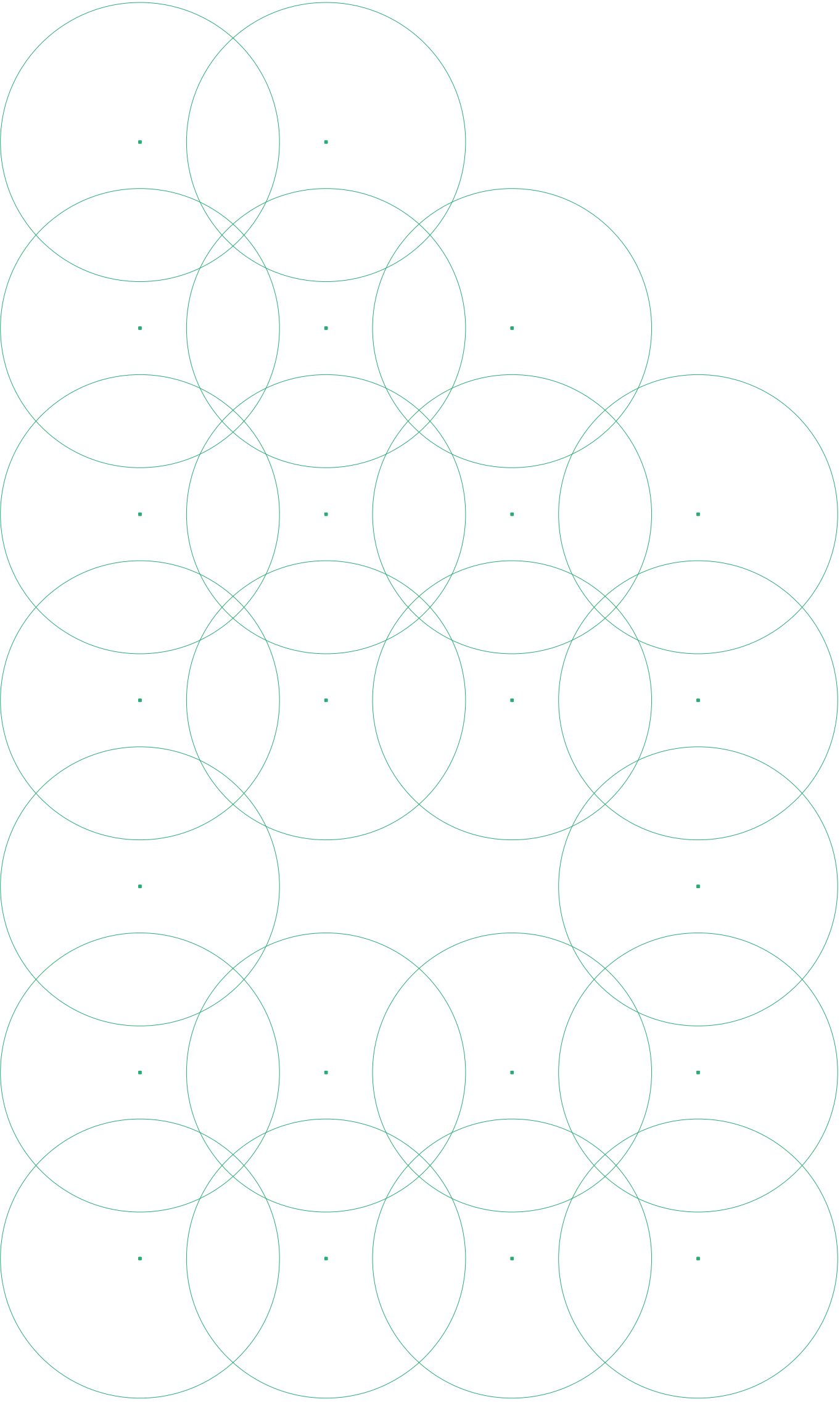


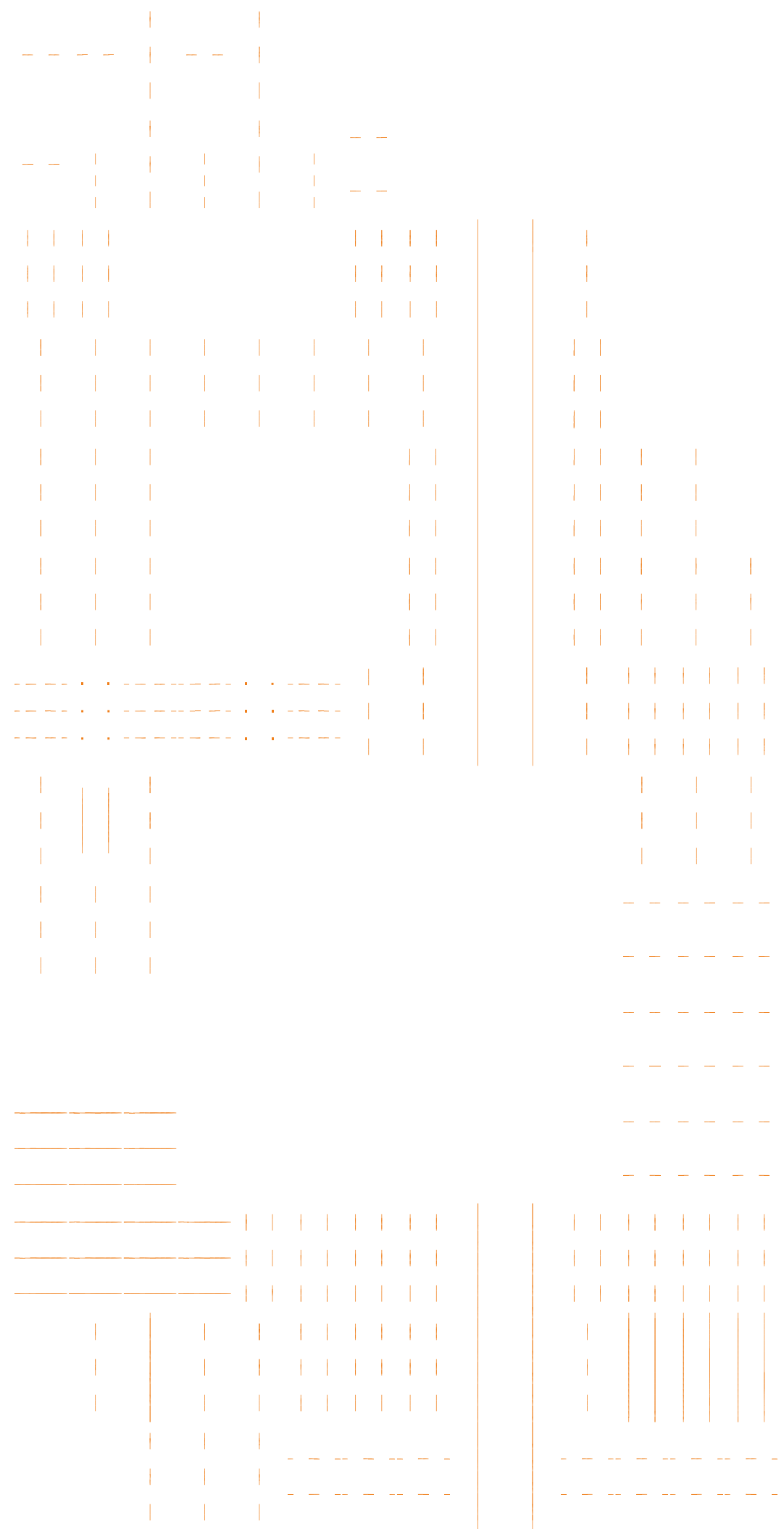


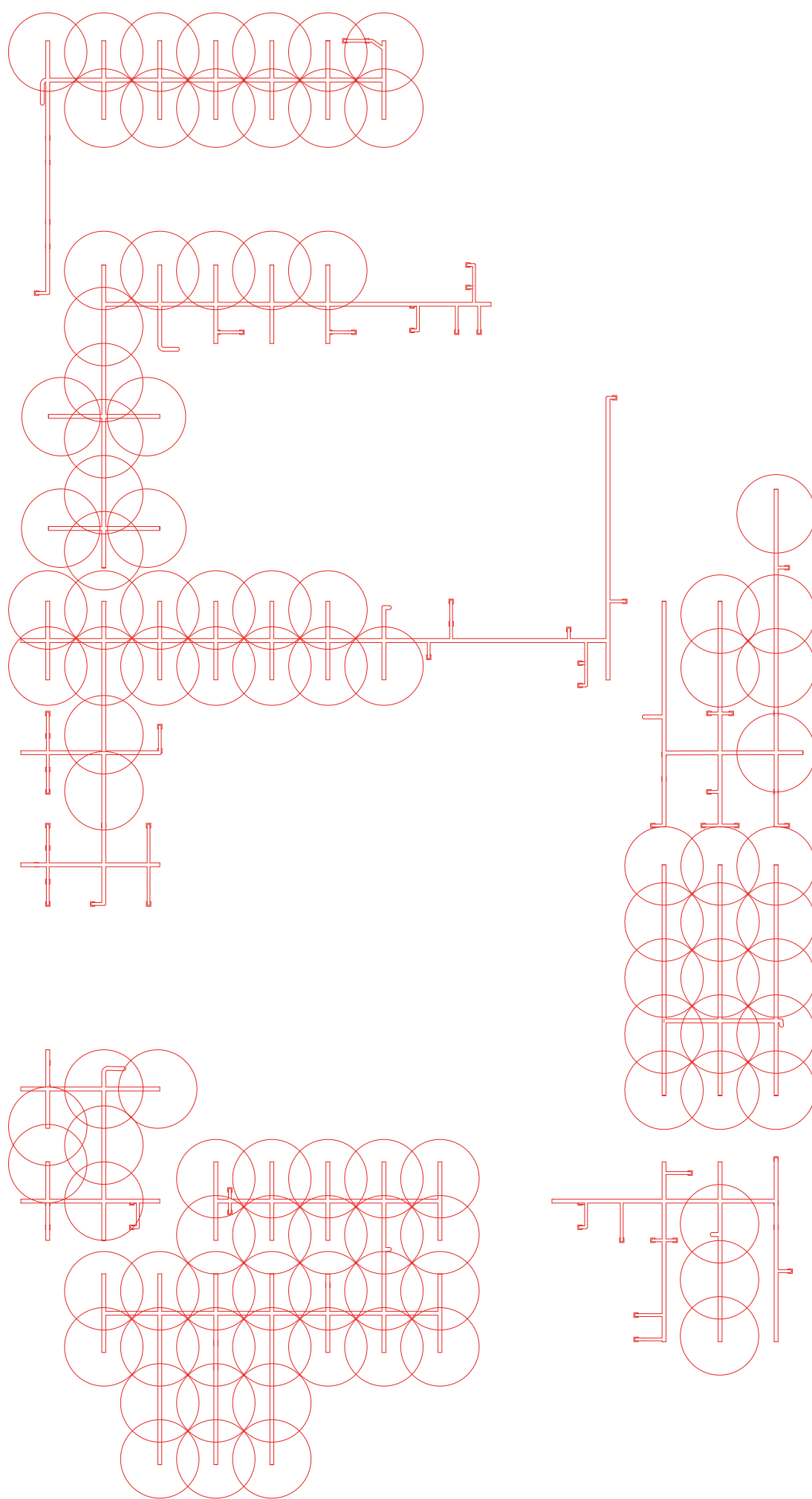
coupe longitudinale 1:400

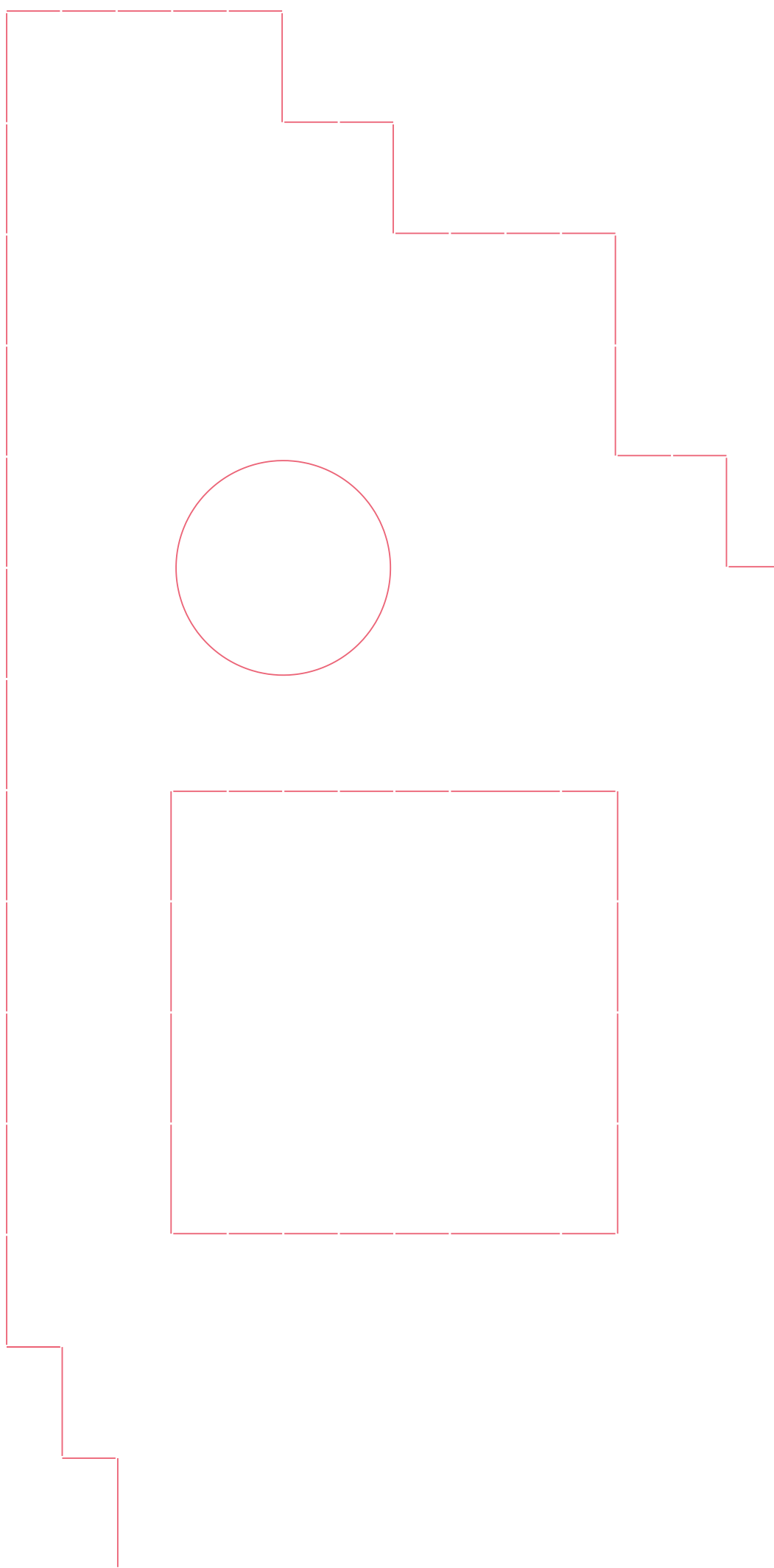


CHAPITRE DEUX.
UN MONDE EN SOI.

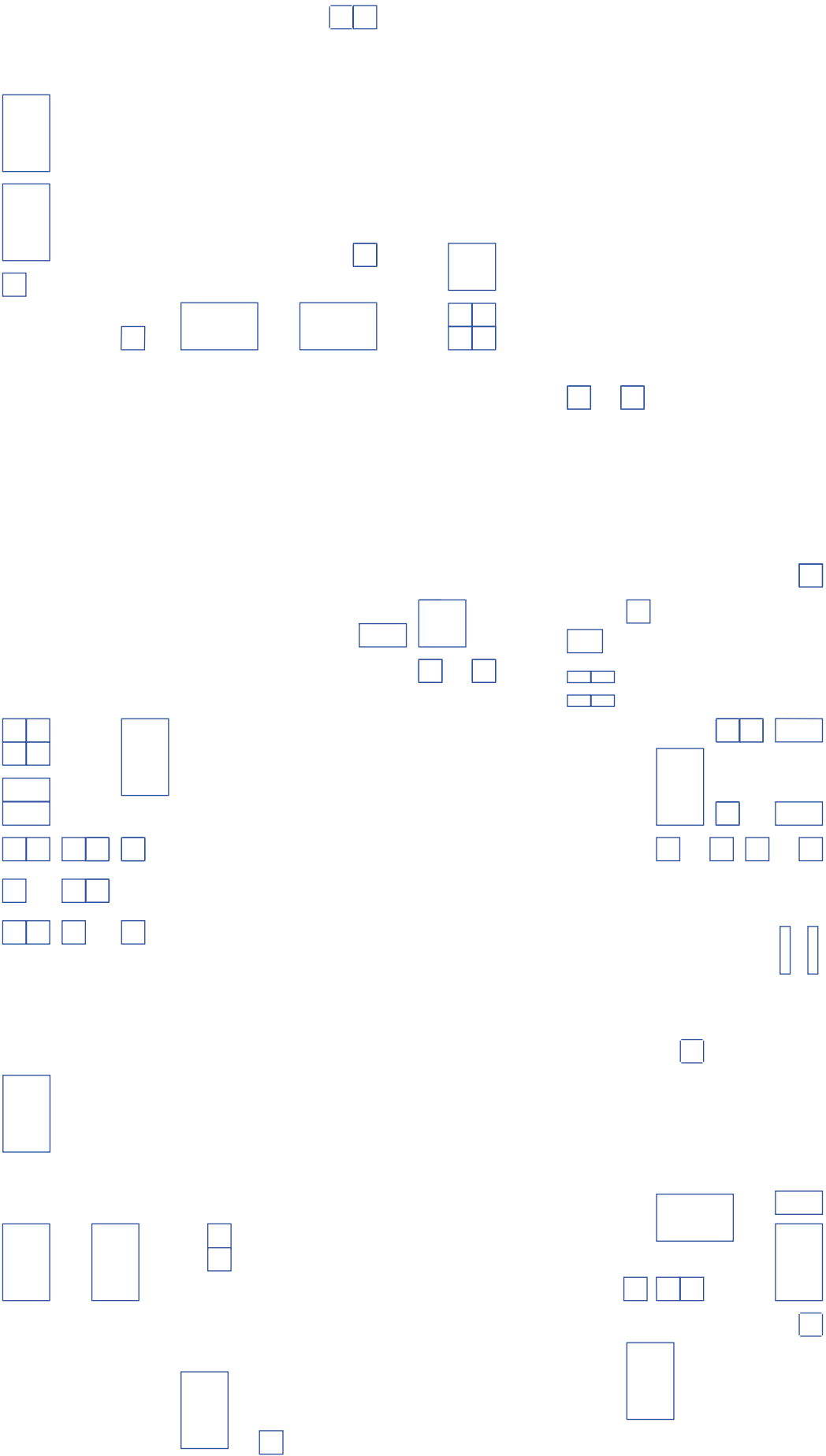


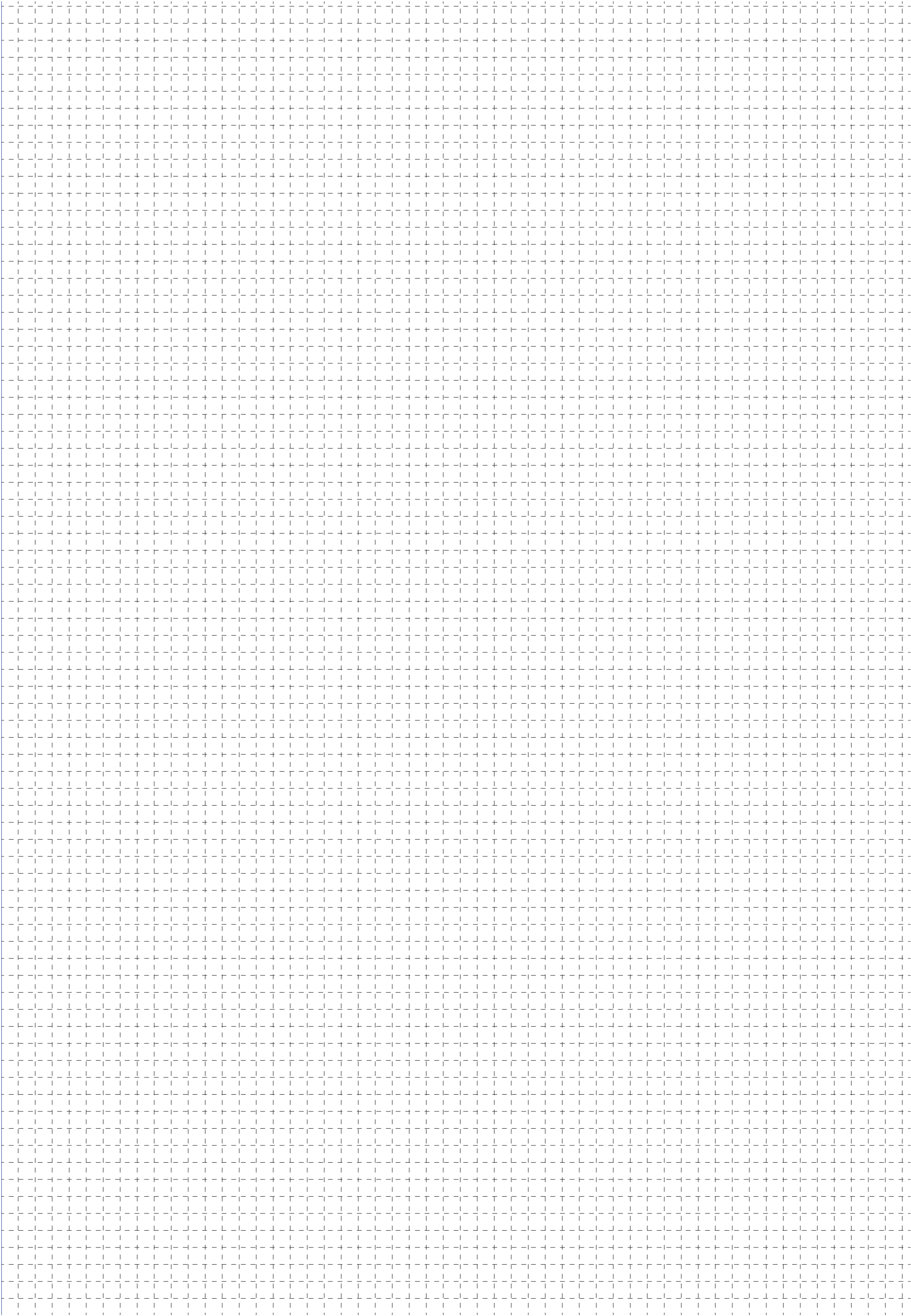


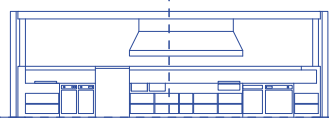




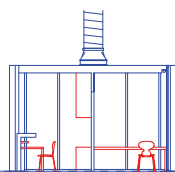




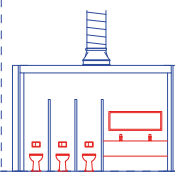




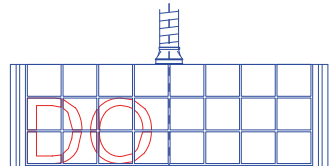
type 5 - 4x8



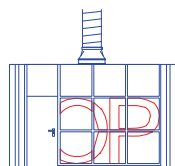
type 1 - 4x4



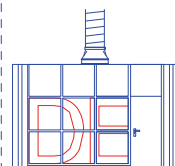
type 1 - 4x4



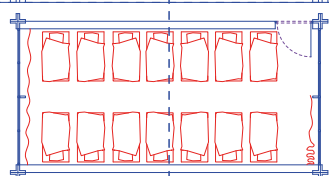
type 3 - 4x8



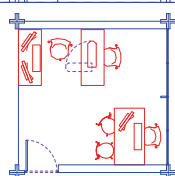
type 1 - 4x4



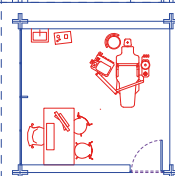
type 1 - 4x4



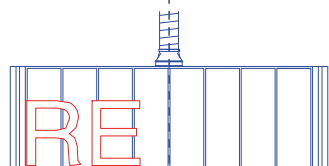
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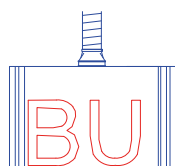
type 1 - 4x4



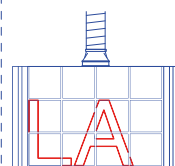
type 1 - 4x4



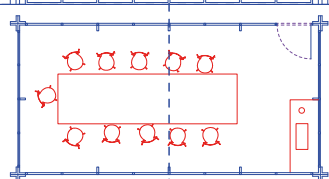
type 3 - 4x8



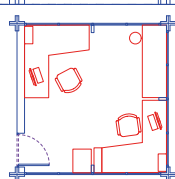
type 1 - 4x4



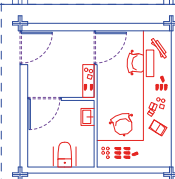
type 1 - 4x4



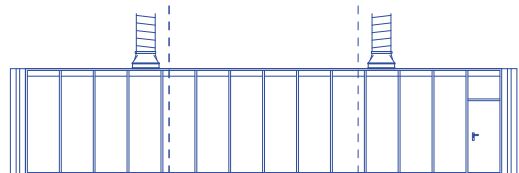
type 3 - 4x8



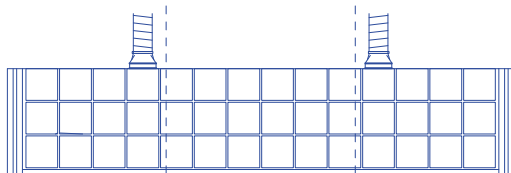
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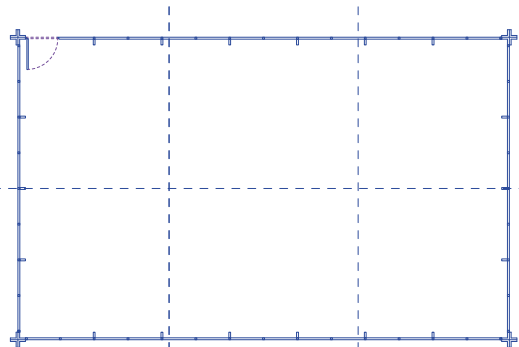
type 1 - 4x4



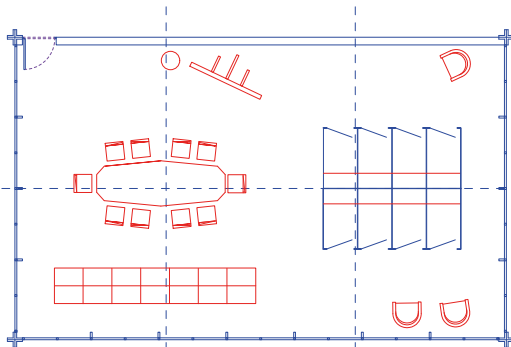
type 2 - 8x13



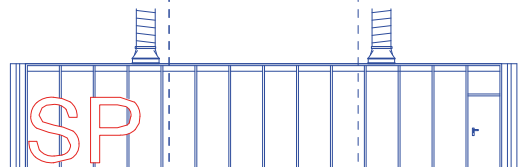
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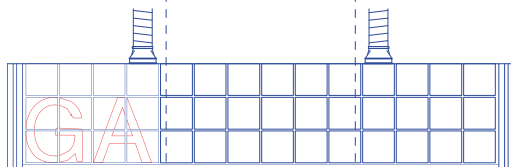
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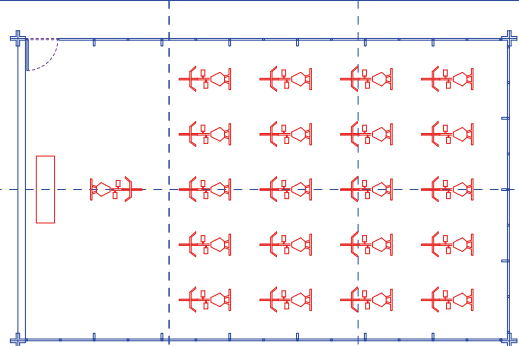
type 2 - 8x13



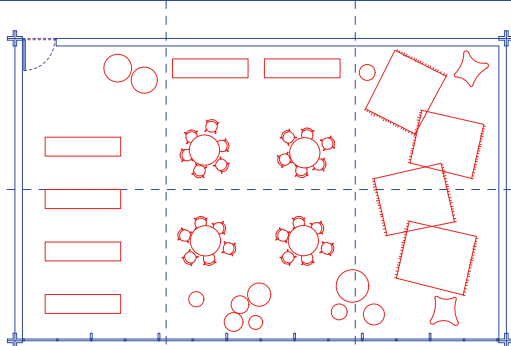
type 2 - 8x13



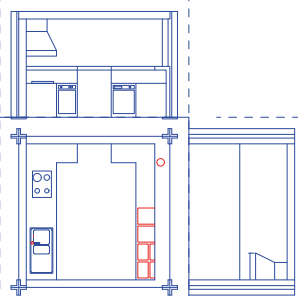
type 2 - 8x13



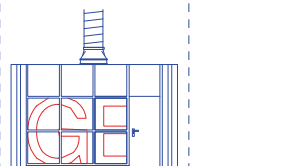
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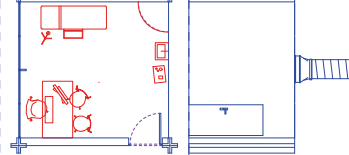
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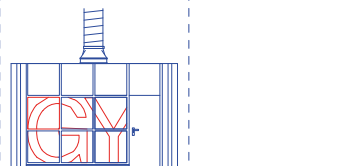
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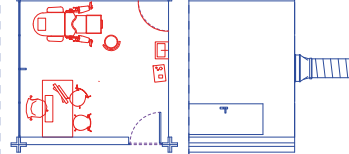
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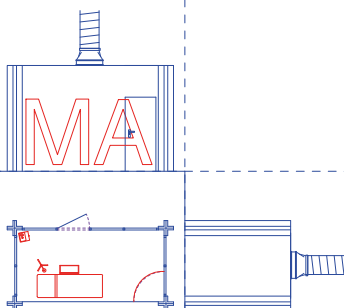
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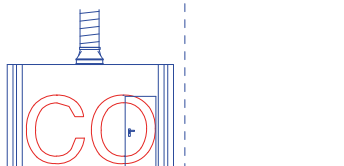
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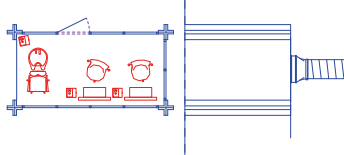
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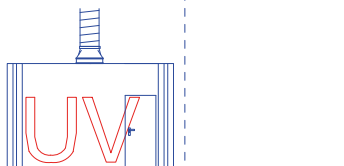
type 4 - 2x4



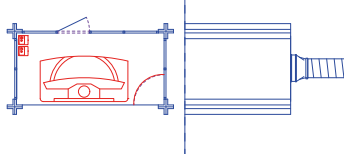
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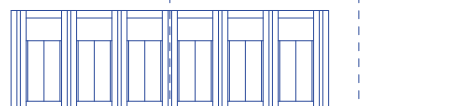
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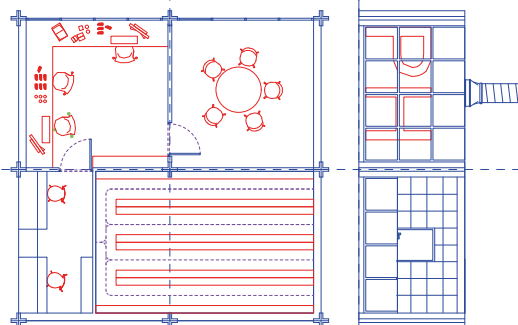
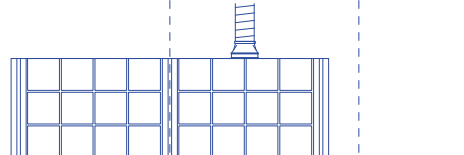
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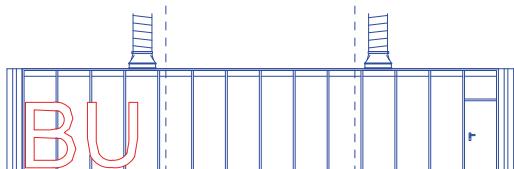
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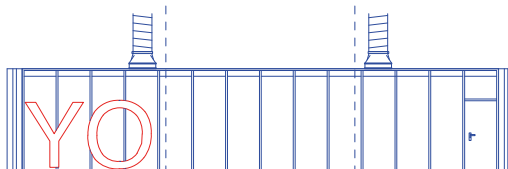
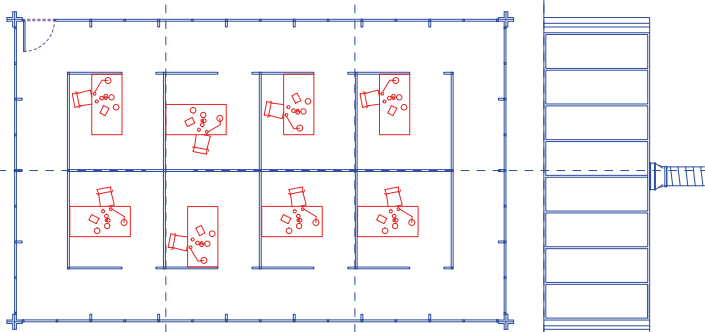
type 7 - 1.5x2



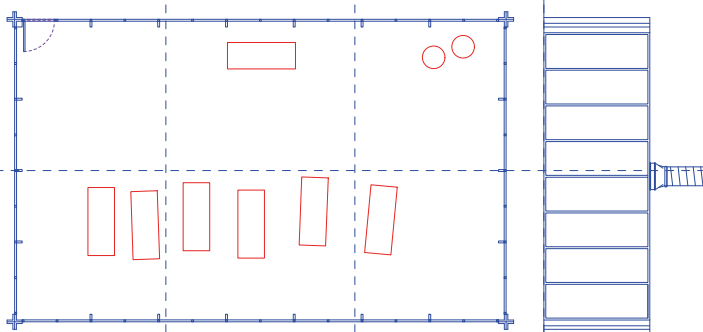
type 1 - 4x4



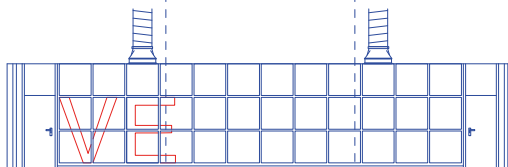
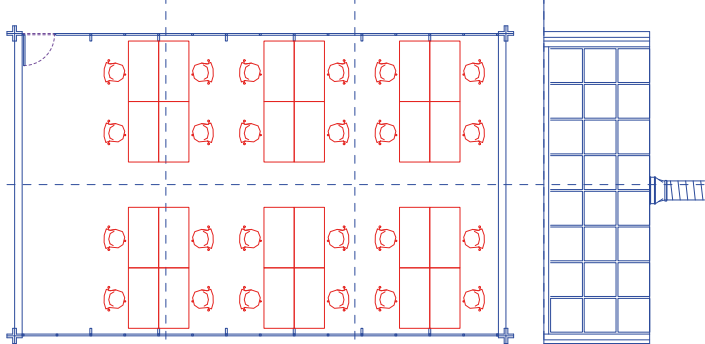
type 2 - 8x13



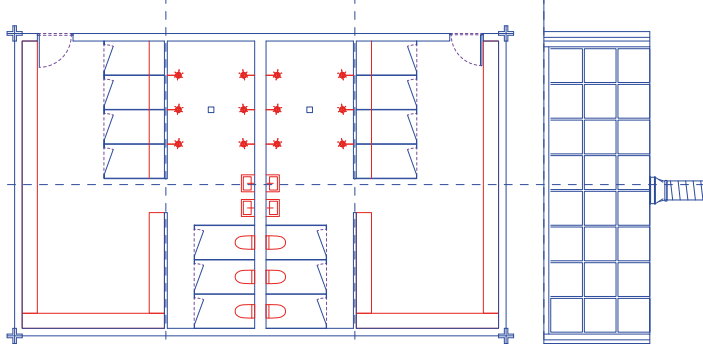
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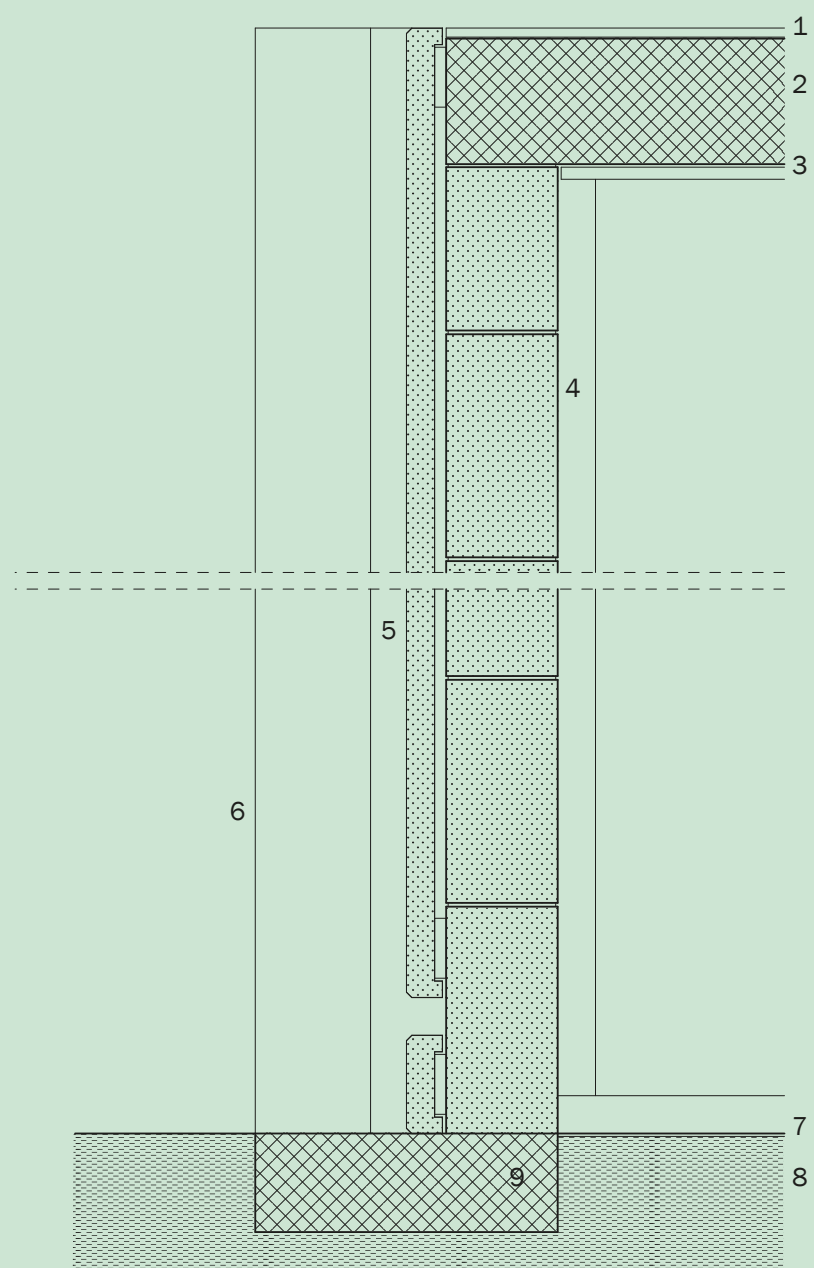


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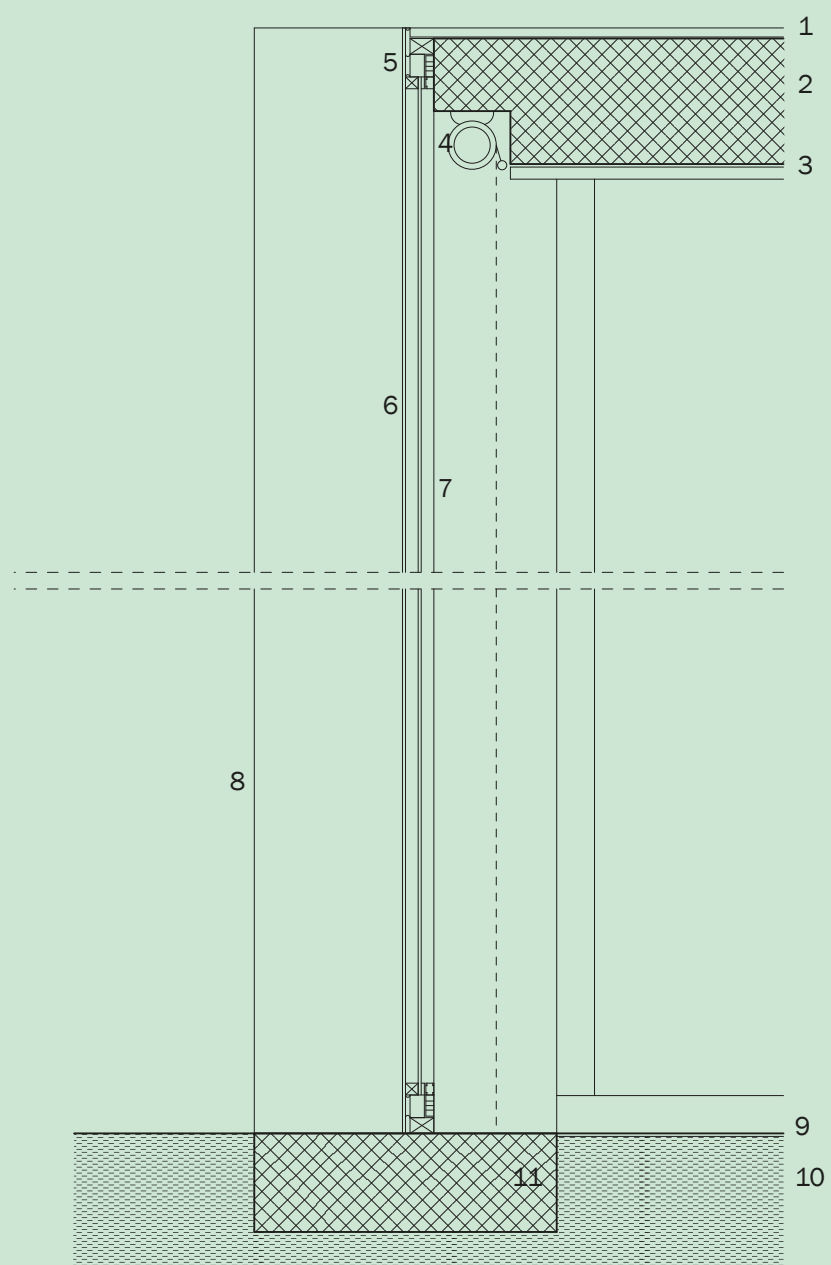
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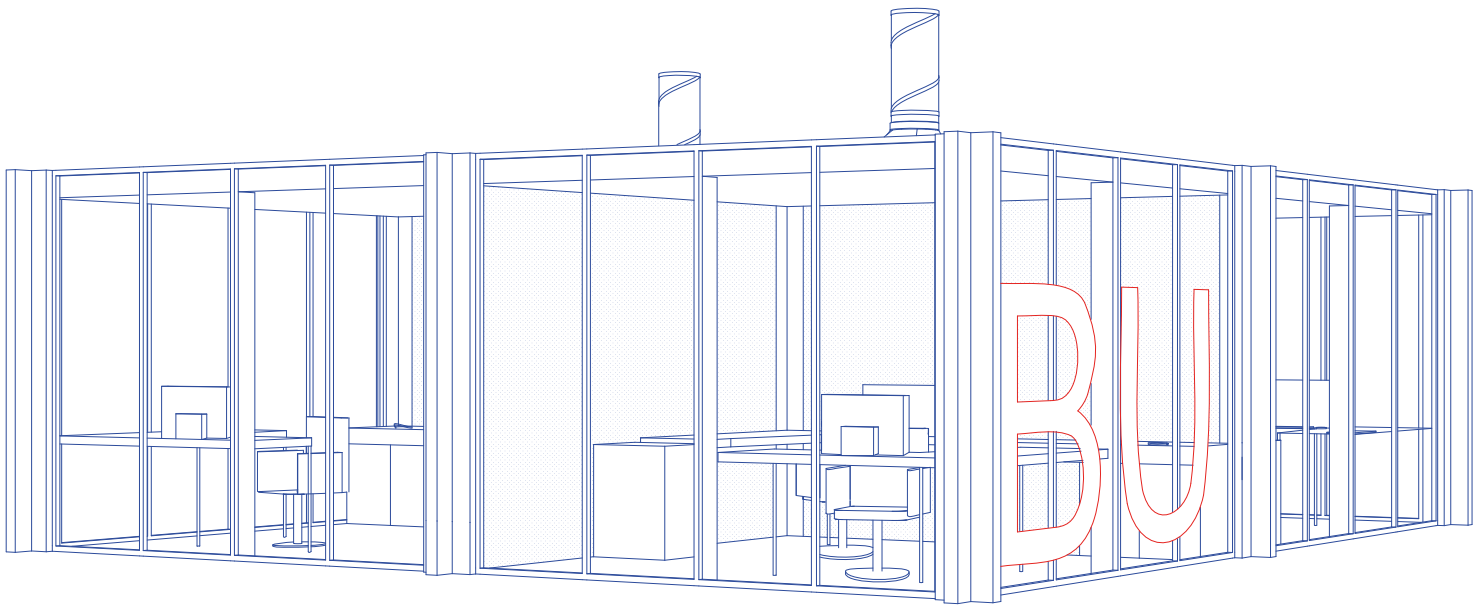
1. Revêtement bitumé
2. Dalle béton préfabriqué 170mm
3. Plafond acoustique 25mm
4. Brique béton cellulaire
5. Panneau acoustique en fibre de bois minéralisée
6. Profilé métallique en L
7. Linoleum coloré
8. Enrobé béton
9. Semelle béton

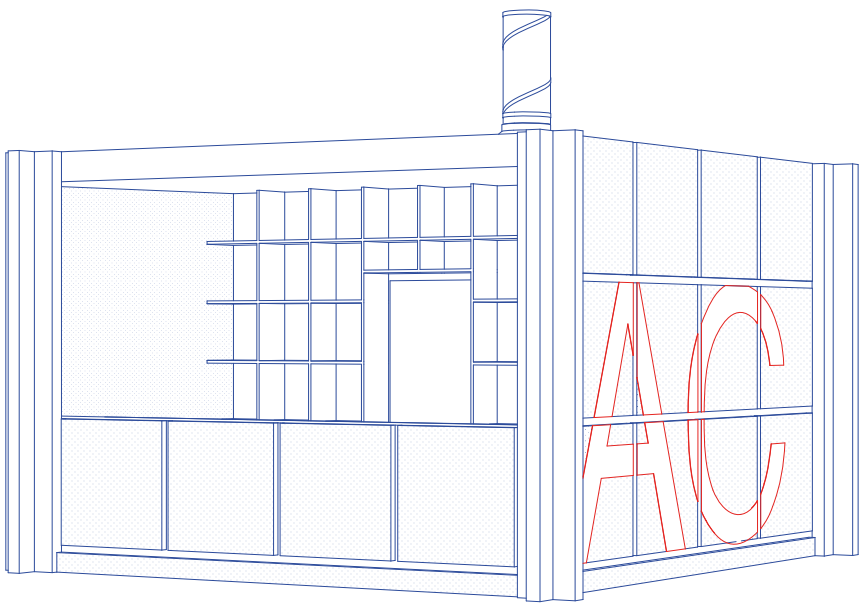
coupe détail 1:10

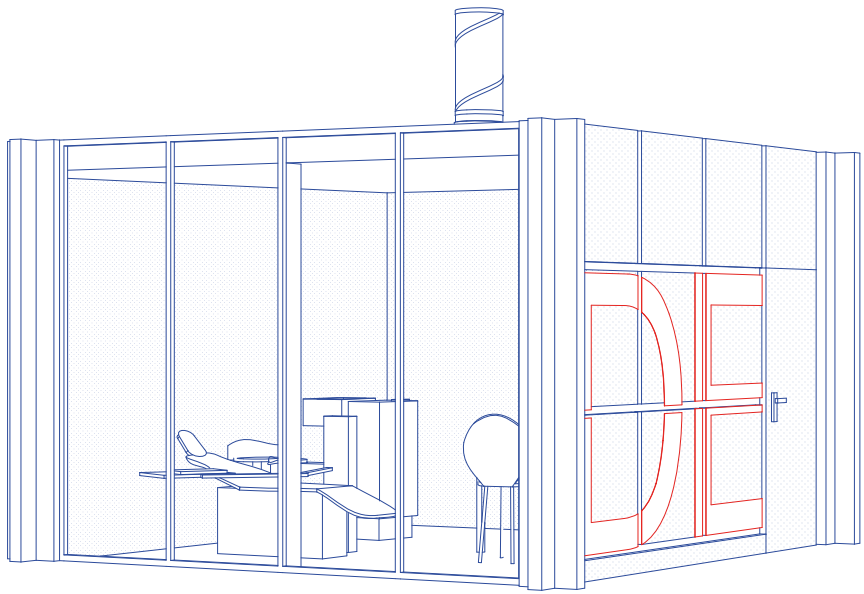


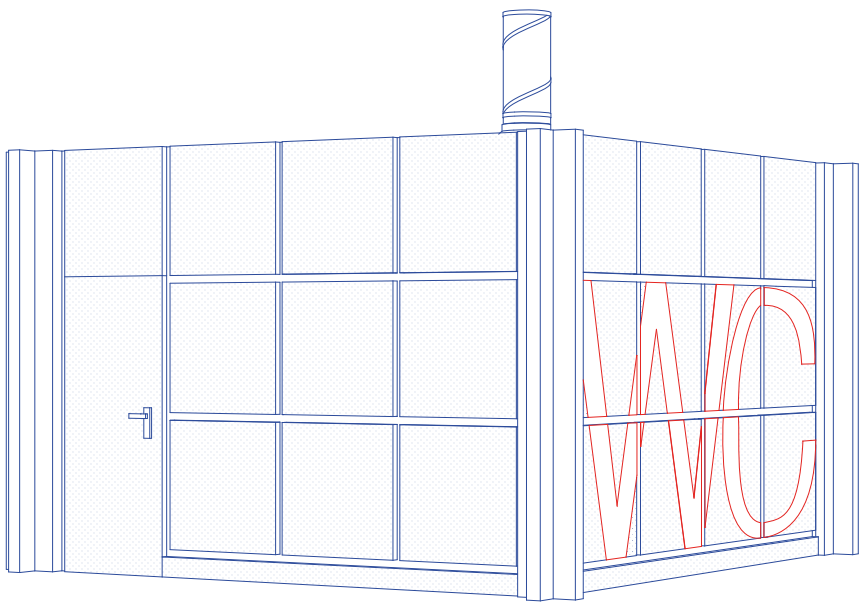
1. Revêtement bitumé
2. Dalle béton préfabriqué 170mm
3. Plafond acoustique 25mm
4. Rouleau de store
5. Cadre pour fenêtre en applique extérieure
6. Vitrage extérieur (verre ou miroir sans tain)
7. Vitrage intérieur (verre)
8. Profilé métallique en L
9. Linoleum coloré
10. Enrobé béton
11. Semelle béton

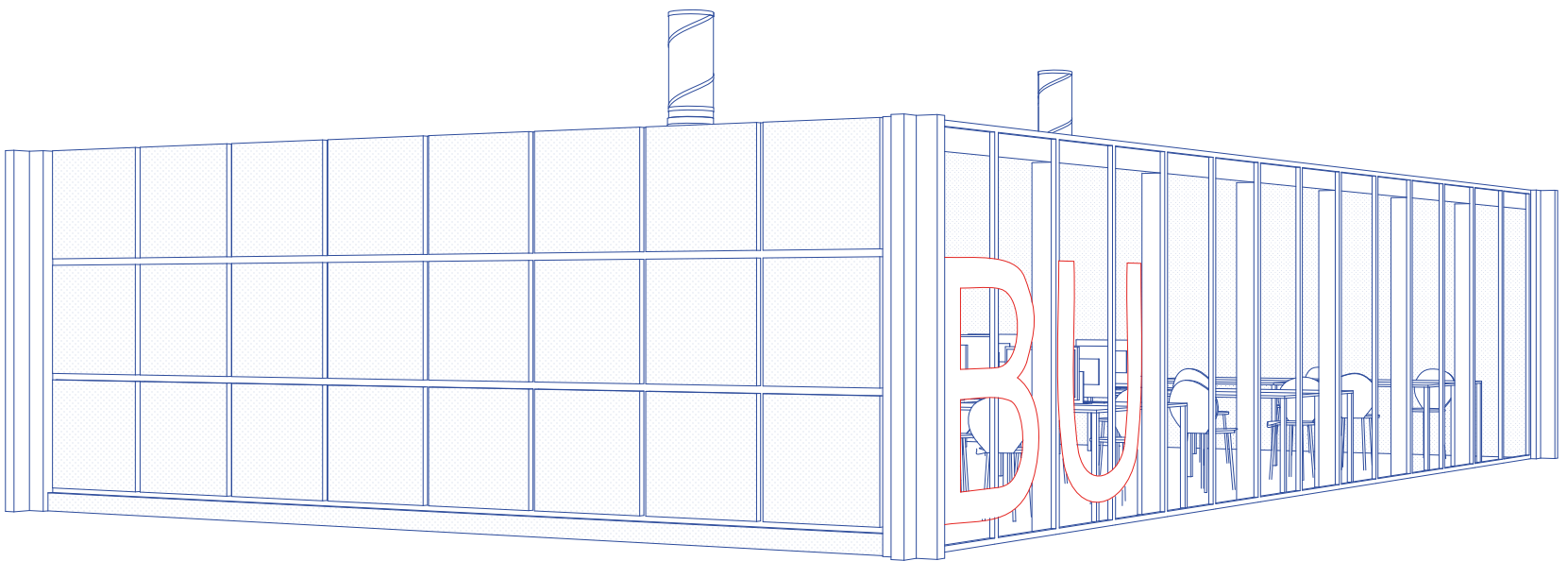
coupe détail 1:10

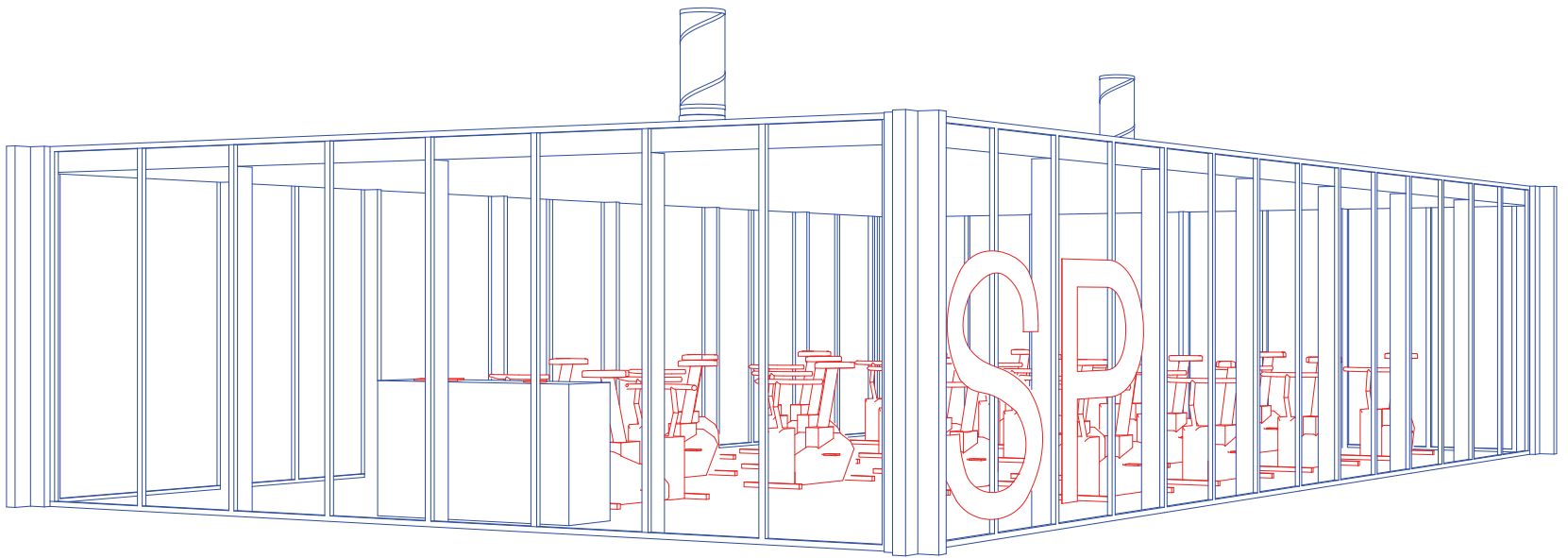


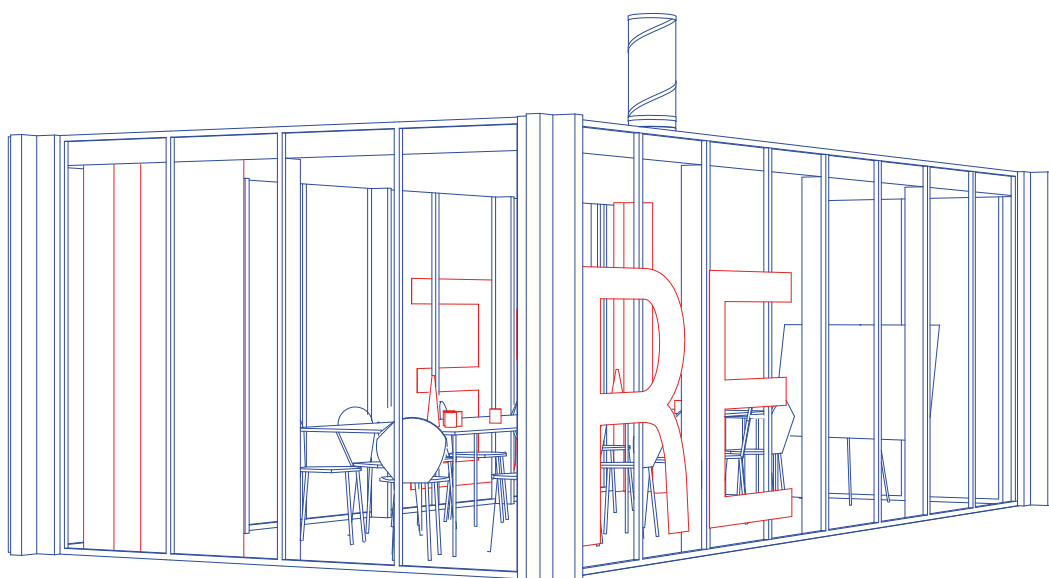


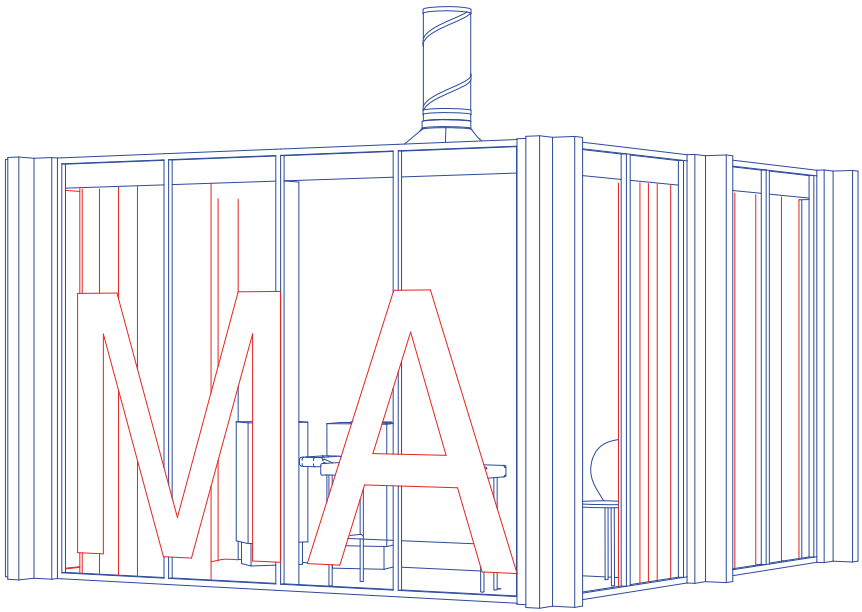


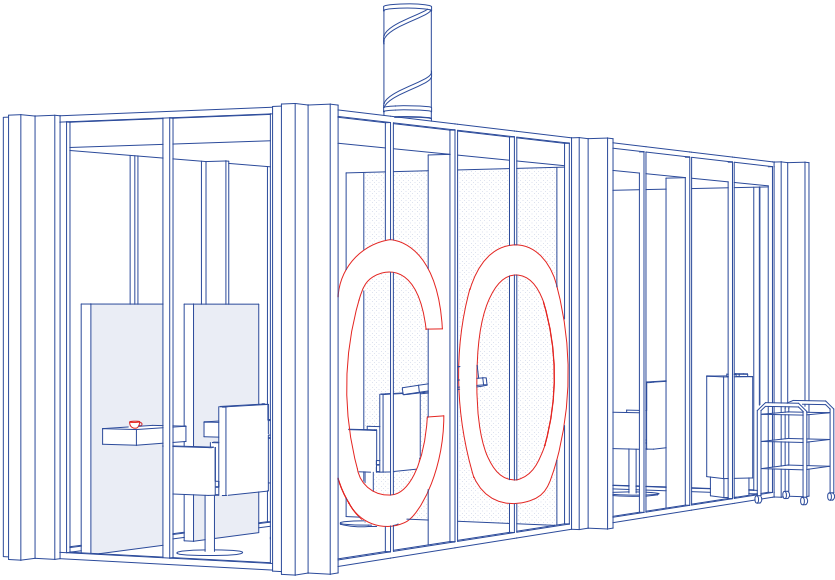


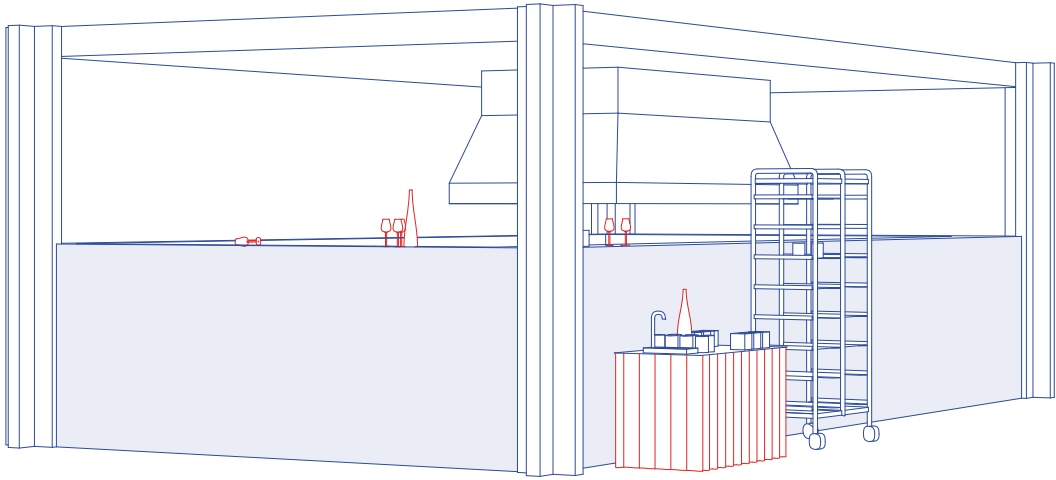


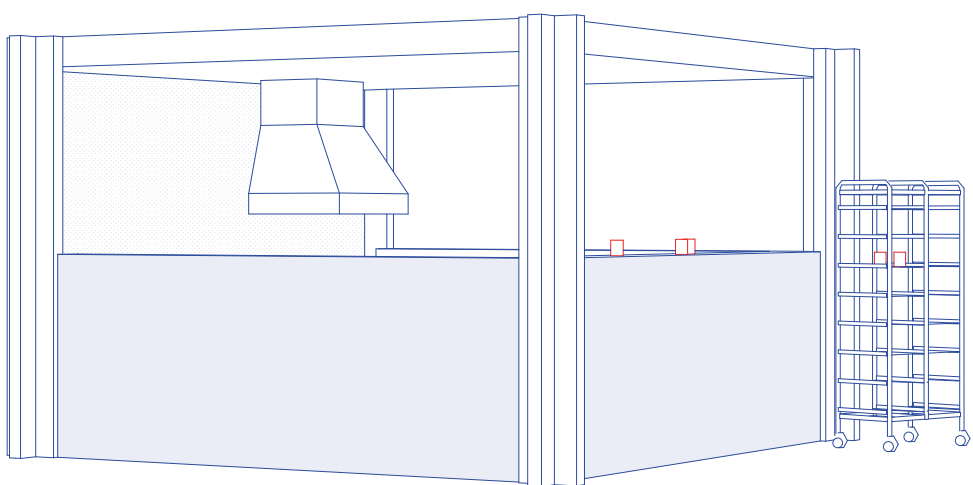


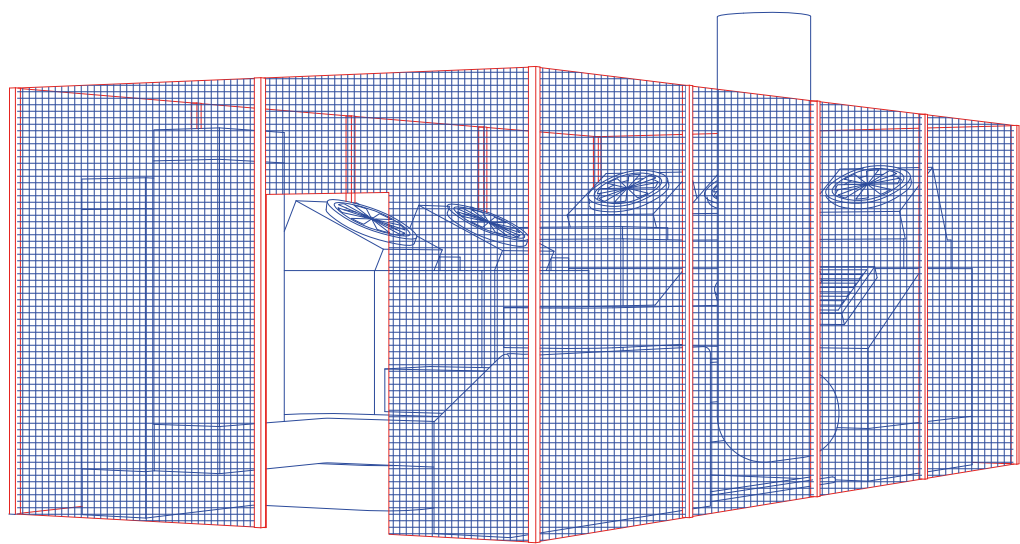


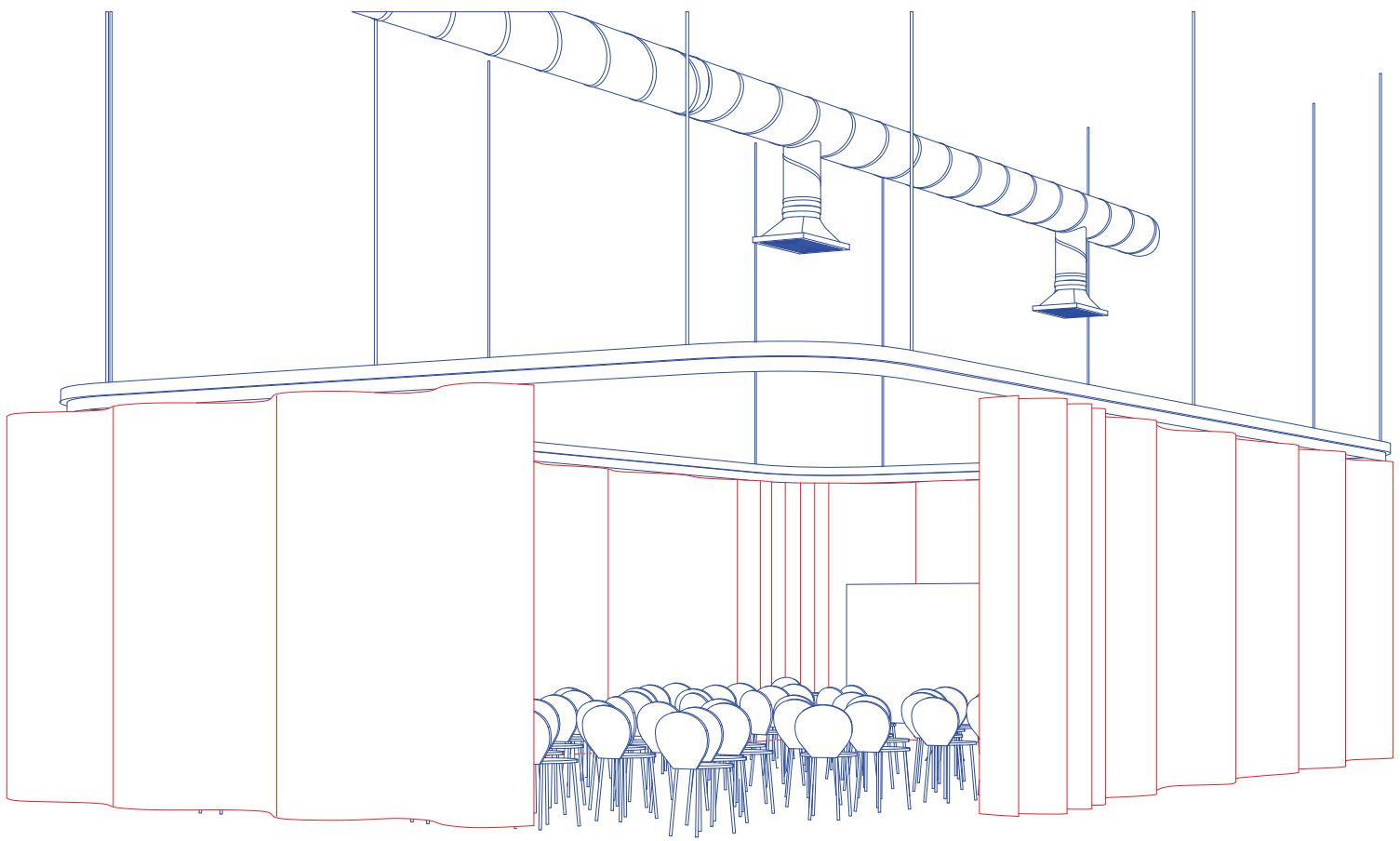


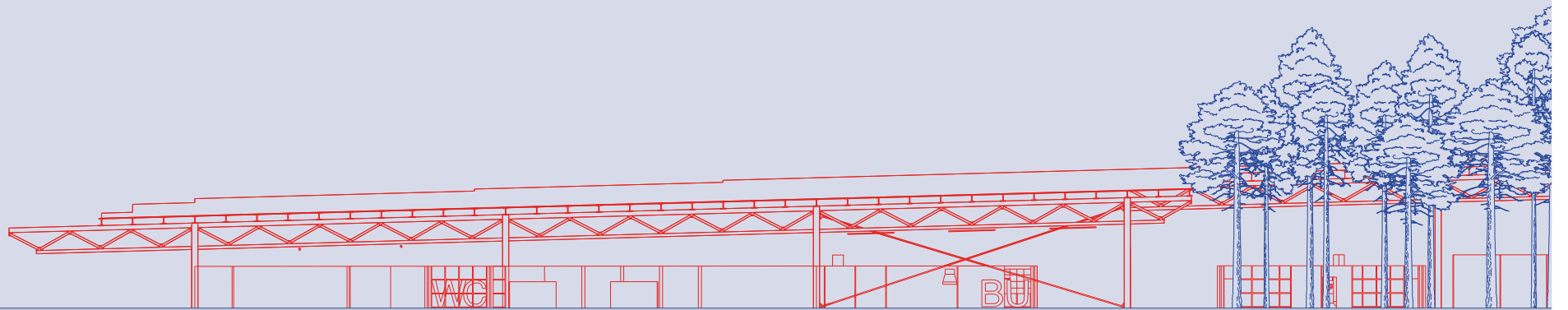




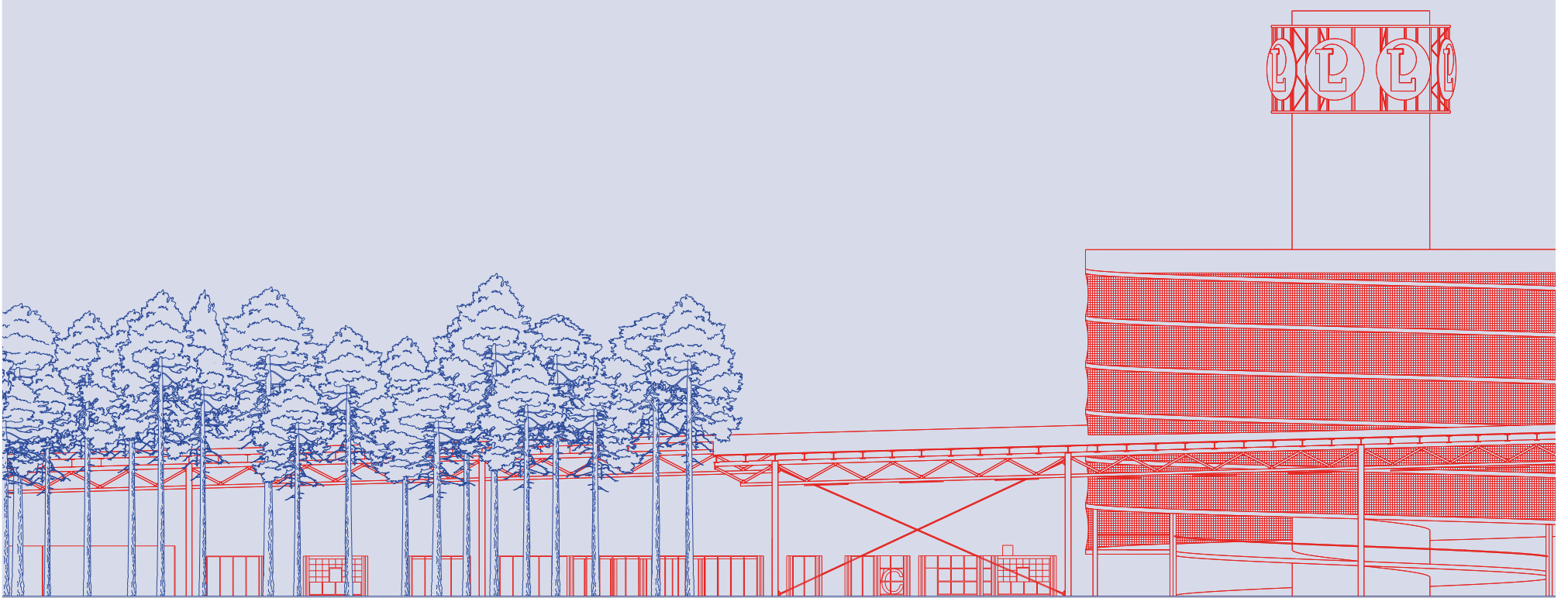




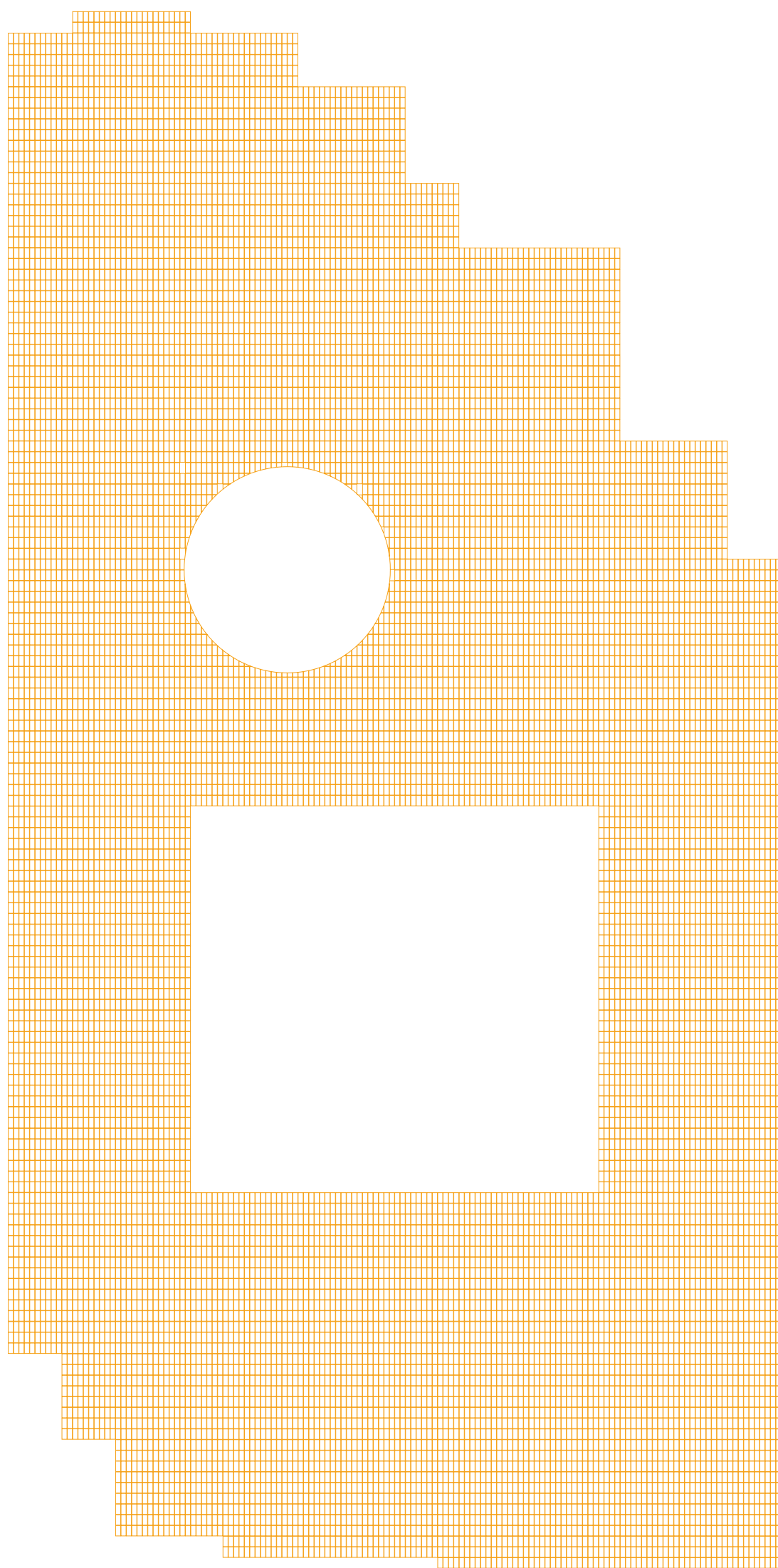


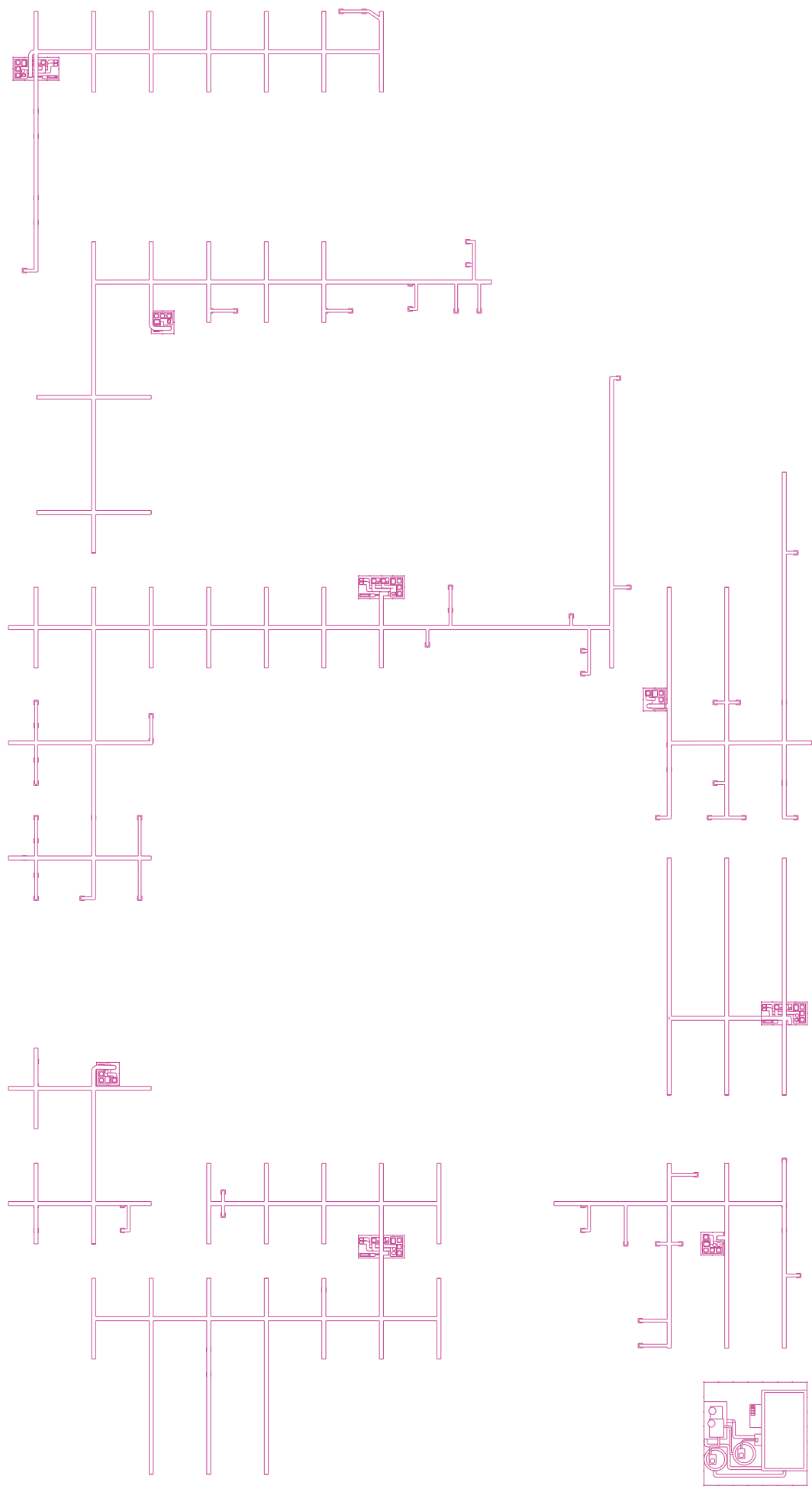


coupe longitudinale 1:400

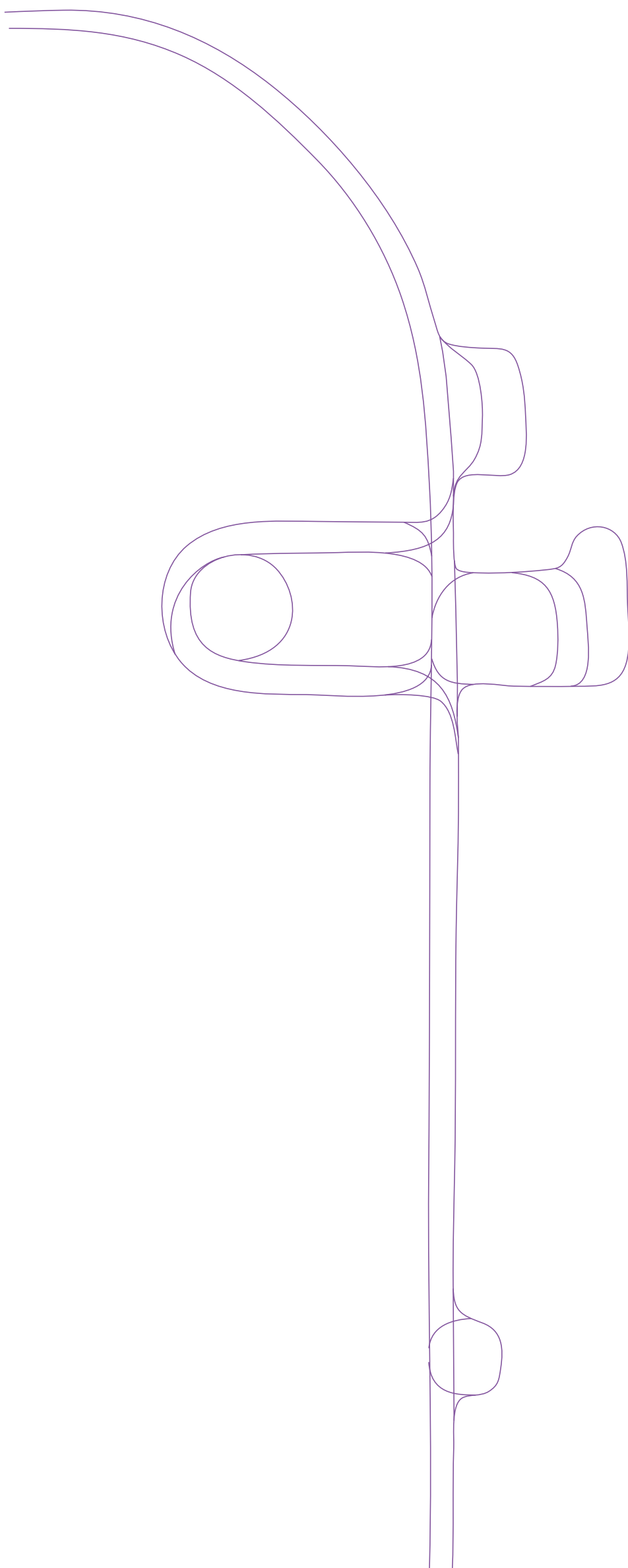


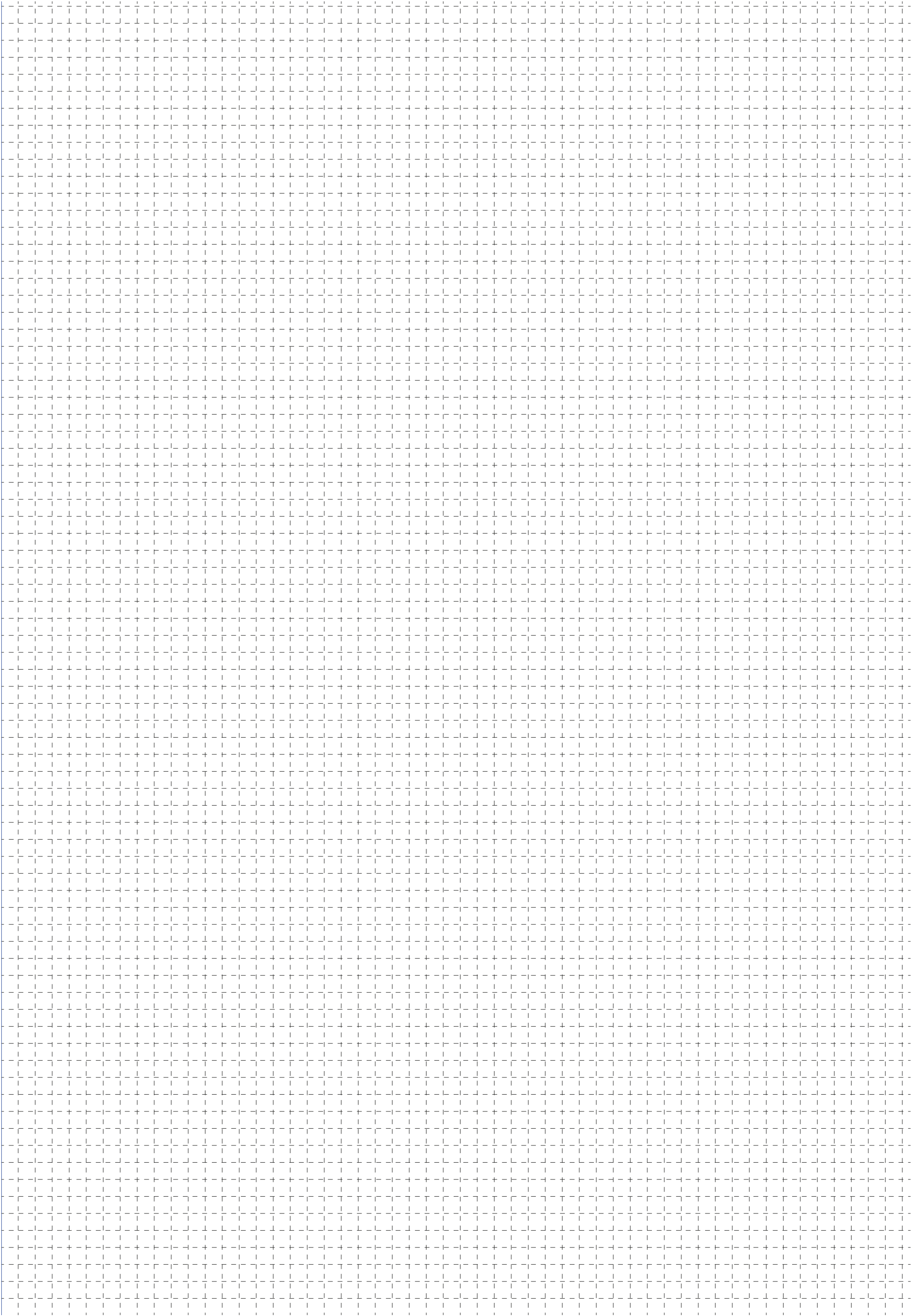
CHAPITRE TROIS.
FLUX.

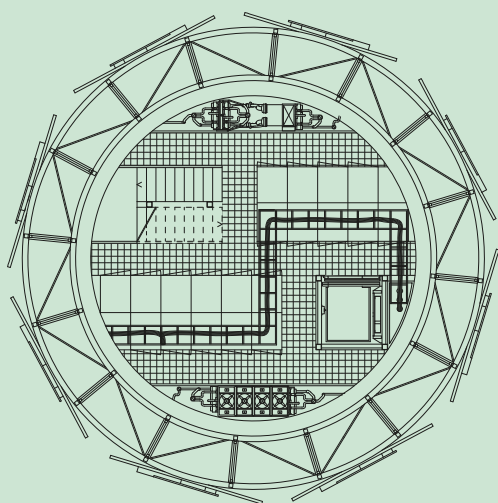




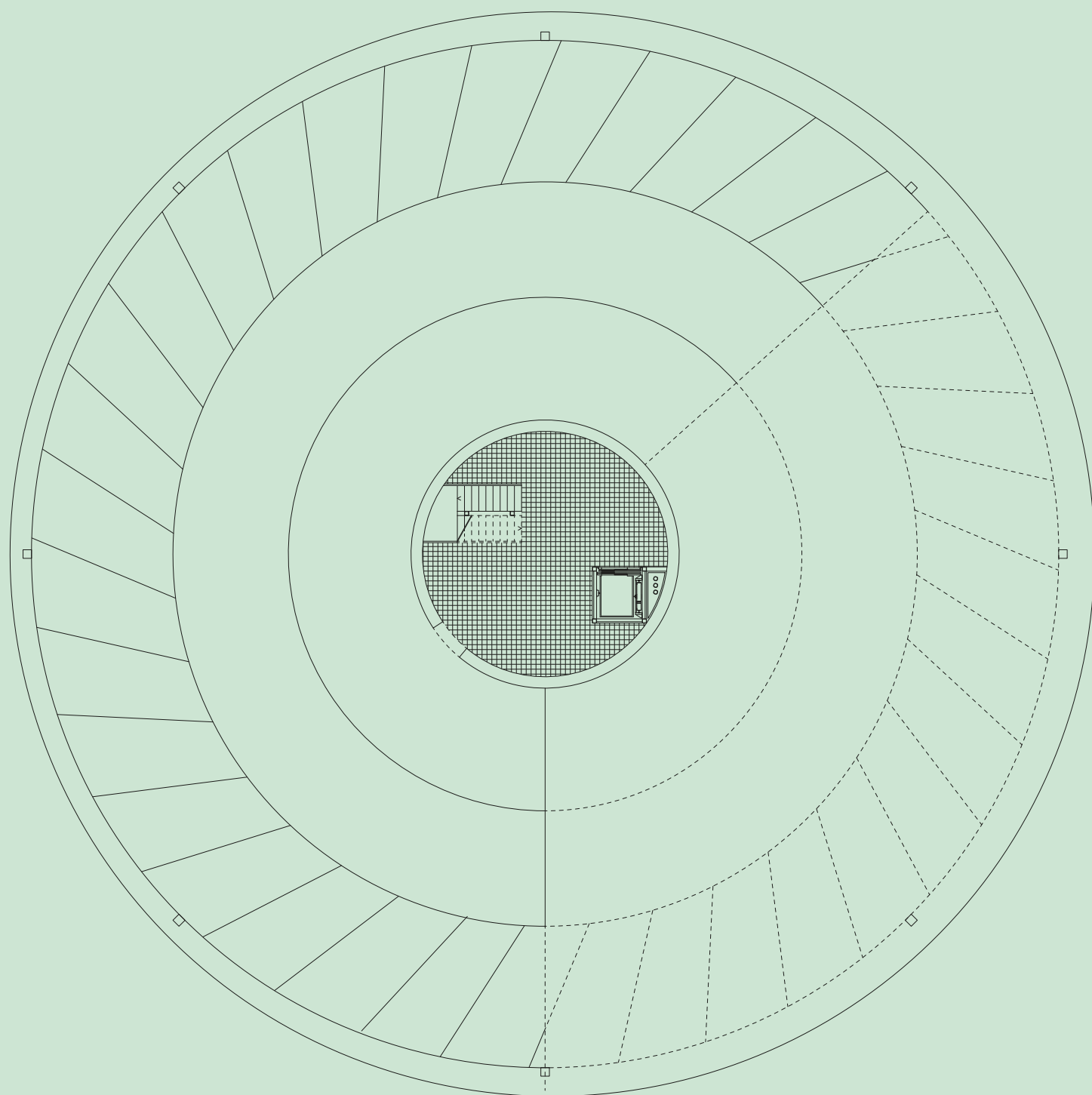




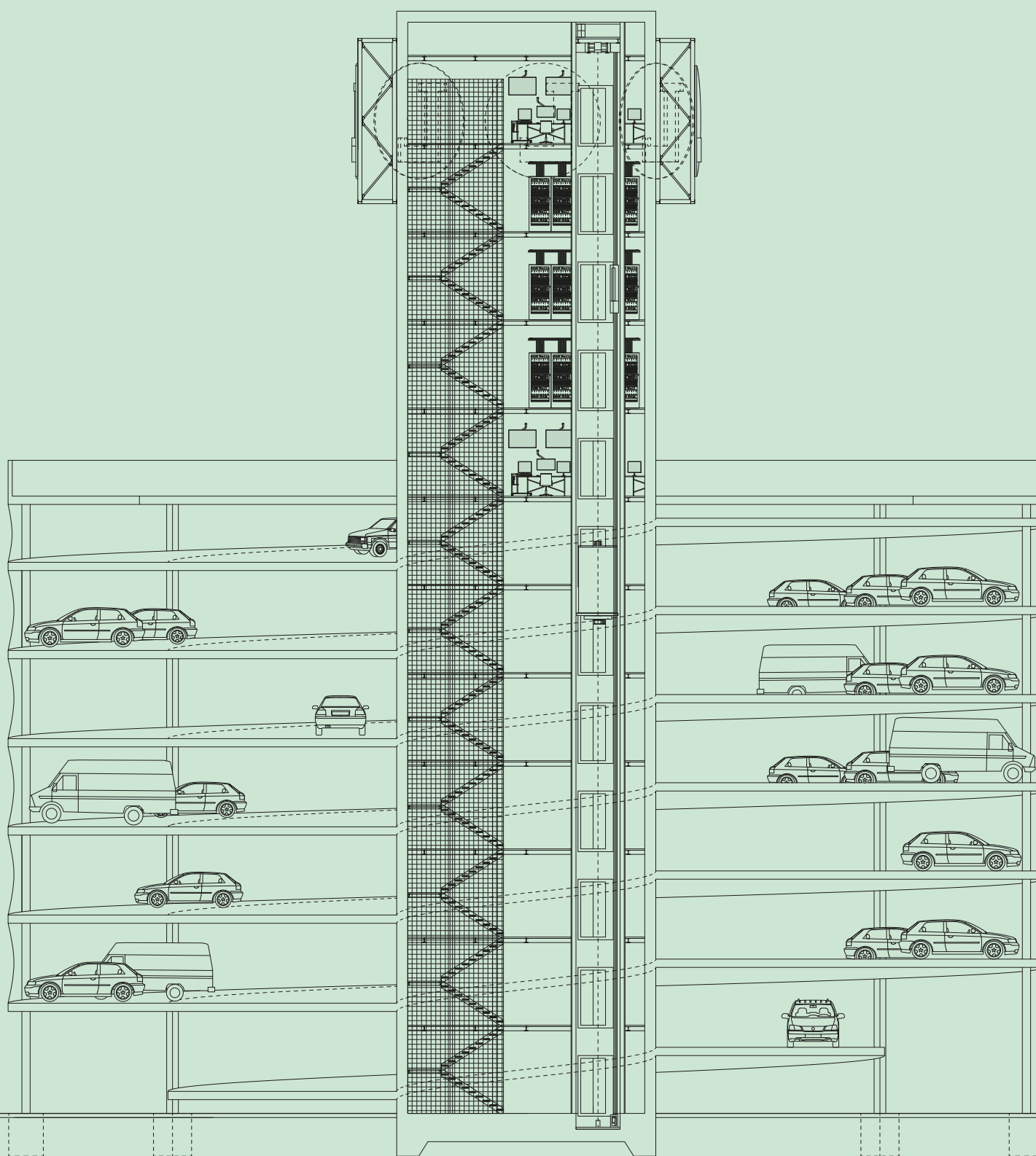




plan type data center 1:200



plan type parking 1:200



coupe 1:200

RECEPTION D’ENERGIE PAR LES PANNEAUX COUCHE MINCE

Irradiance (KwH/ m2)	Surface panneaux (m2)	Rendement panneaux	Puissance (KwH)	Différence consommation/ apport
1200	29717.43	0.07	2496264.12	148175.417

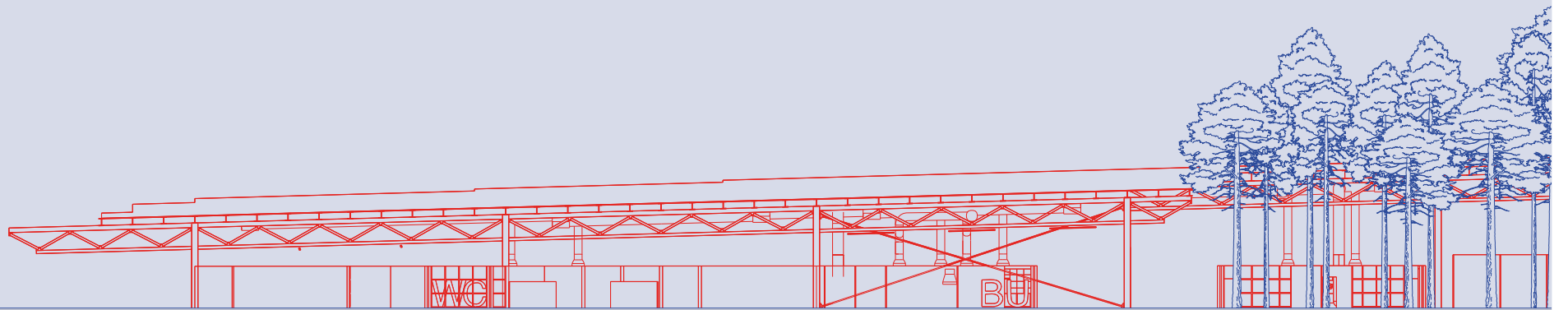
DEMANDE EN ENERGIE PAR SURFACE NETTE DE PLANCHER DU PROJET

Type de local	Surface nette de plancher (capsules)					Surface nette de plancher (climat ‘tempéré’)		
	Nombre	Surface (m2)	Nombre	Surface (m2)	Surface totale (m2)	Nombre	Surface (m2)	Surface totale
3.1 Bureau individuel, collectif	16	15.21	9	7.46	310.5			
3.2 Bureau paysagé	5	101.91			1084.55	1	575	
3.3 Salle de réunion	5	30.81	1	79.6	233.65			
3.4 Hall de guichets, zone clientèle	10	7.46			549.6	1	475	
4.1 Salle d'école	1	101.91	1	30.81	132.72			
4.4 Auditoire	2	169.83			339.66			
4.5 Locaux spéciaux (cantine)					1295	1	1295	
5.1 Magasin d'alimentation					1200	1	1200	
5.2 Magasin spécialisé (pharmacie)					50	1	50	
6.2 Restaurant self-service					745	1	745	
6.4 Cuisine de restaurant self-service	3	30.81			92.43			
7.2 Salle polyvalente	1	101.91			901.91	1	800	
8.3 Locaux médicaux	11	14.04	12	7.41	243.36			
9.2 Production (travail fin)					970	1	970	
11.1 Salle de gymnastique	4	101.91			932.64	1	525	
11.2 Salle de fitness	1	101.91			776.91	1	675	
11.3 Piscine couverte					1480	1	1480	
12.2 Surfaces de dégagement 24/24h					14437.72	1	14437.72	144
12.4 Locaux secondaires	1	21.60			246.6	1	225	
12.5 Cuisine d'étage	4	15.20			60.8			
12.7 WC	17	6.03			102.51			
12.8 Vestiaires, douches	6	46.74			280.44			
12.9 Garage collectif					6100	1	6100	
12.11 Salle de serveurs					416	1	416	
TOTAL (hors surface de dégagement, parking et data center)					12028.28			

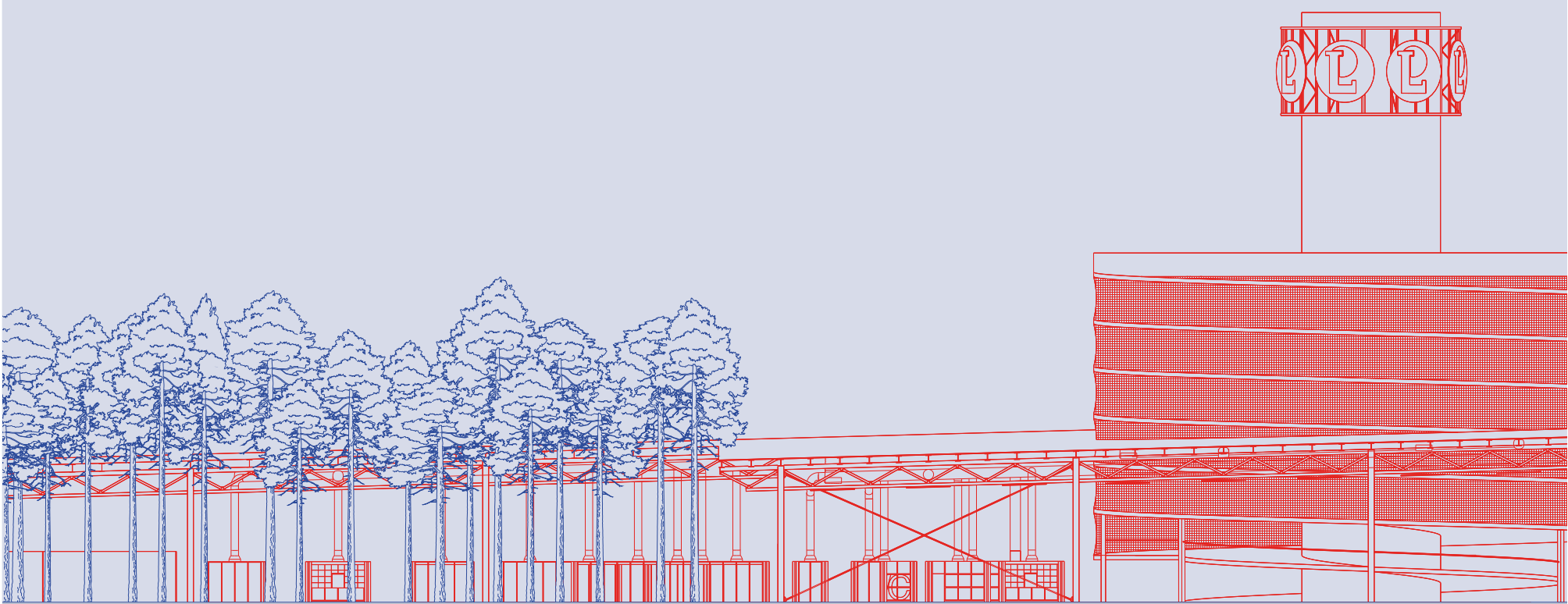
	Energie électrique			Energie thermique			Total énergie électrique	Total énergie thermique	TOTAL DE LA DEMANDE EN ENERGIE DU PROJET (KWH)
(m2)	Appareils Ea KWH/m2	Eclairage Ei KWH/m2	Ventilation Ea KWH/m2	Refroidissement Qc KWH/m2	Chauffage Qh KWH/m2	Eau chaude Qw KWH/m2			
0	5.8	5.5	1.4	10.8	17.5	2.6	3943.35	9594.45	13537.8
575	7.7	11.8	2.0	12.3	6.9	3.6	23317.825	24727.74	48045.565
0	1.4	2.9	3.8	12.9	13.2	0	1892.565	6098.265	7990.83
475	2.9	5.7	1.4	10.4	9.0	0	5496	10662.24	16158.24
0	3.5	5.7	2.5	16.9	15.4	5.3	1552.824	4990.272	6543.096
0	3.5	10.3	6.8	29.8	6.7	7.9	6996.996	15080.904	22077.9
1295	2.7	5.7	1.8	11.2	17.5	3.2	13209	41310.5	54519.5
1200	320.8	34.7	1.9	11.1	0	2.7	428880	16560	445440
50	3.6	54.3	1.9	51.9	1.9	2.7	2990	2825	5815
745	1.8	4.2	4.7	12.2	5.3	108.9	7971.5	94168	102139.5
0	259.5	14.4	8.4	223.1	0.4	0	26092.989	20658.105	46751.094
800	5.8	15.5	10.5	32.4	19.2	7.3	28680.738	53122.499	81803.237
0	21.8	8.1	4.4	24.1	0.9	0.0	8347.248	6084	14431.248
970	12.2	9.8	5.0	8.8	14.6	2.4	26190	25026	51216
525	0	8.5	2.5	0	11.1	52.9	10259.04	59688.96	69948
675	5.7	14.3	8.6	13	7.4	87.1	22219.626	83517.825	105737.451
1480	5.7	12.5	4.1	4.1	21.3	174.3	33004	295556	328560
37.72	0	40.8	1.2	0	0.1	0	606384.24	1443.772	607828.012
225	0	1.0	0.1	0	8.8	0	271.26	2170.08	2441.34
0	42.9	0.8	7.0	0	1.8	0	3082.56	109.44	3192
0	0	5.4	1.5	0	29.7	0	707.319	3044.547	3751.866
0	0	1.0	3.9	0	24.7	0	1374.156	6926.868	8301.024
6100	1.1	1.2	0.3	0	0	0	15860	0	15860
416	350.5	0.0	1.4	335.6	0.0	0.0	146390.4	139609.6	286000
									2348088.703

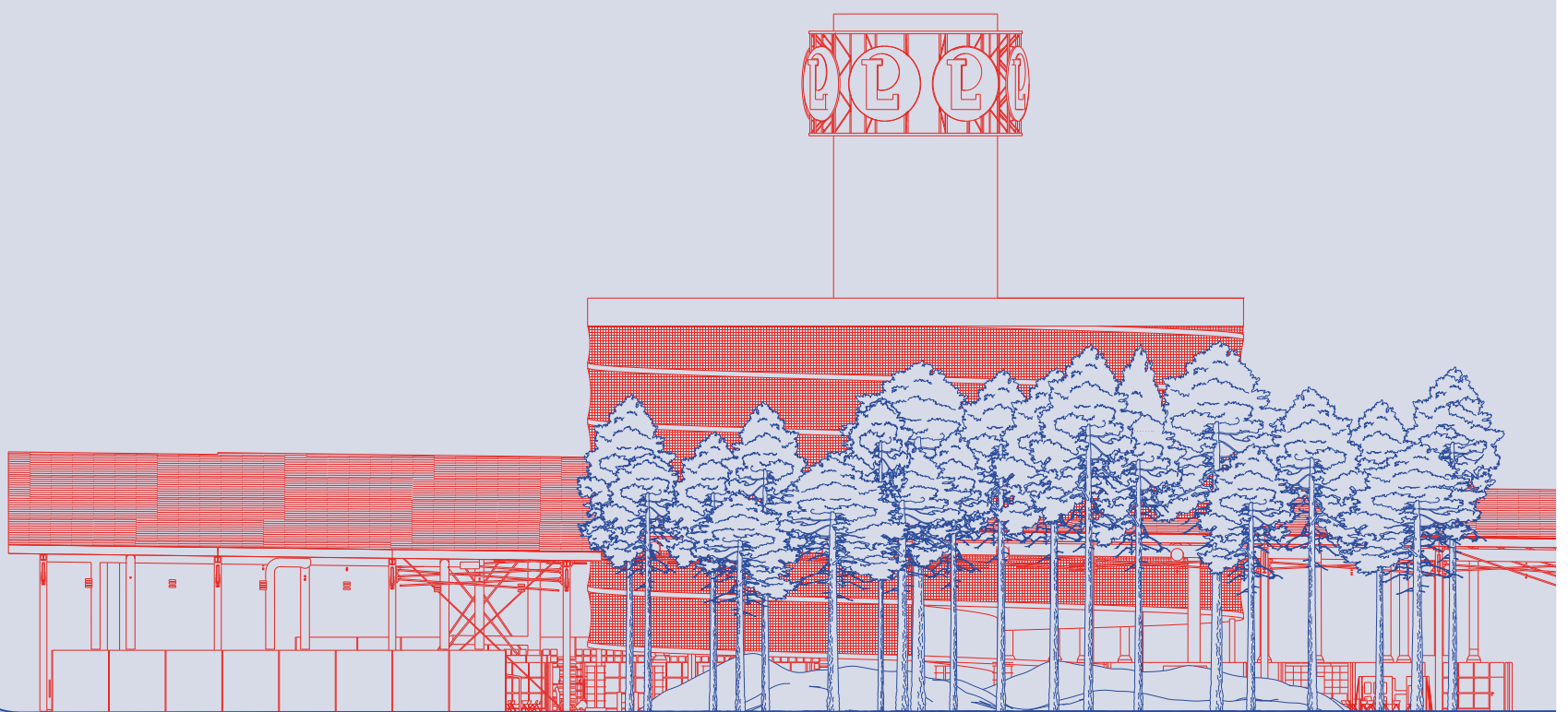
REDISTRIBUTION AU RESEAU

Energie restante	Demande en énergie standard (kWh/m2)	Surface Moyenne	Demandé énergie d'un foyer (kWh)	Nombre de foyers desservis
148175.417	67.1	91	6106.1	24



coupe longitudinale 1:400





coupe transversale 1:400

