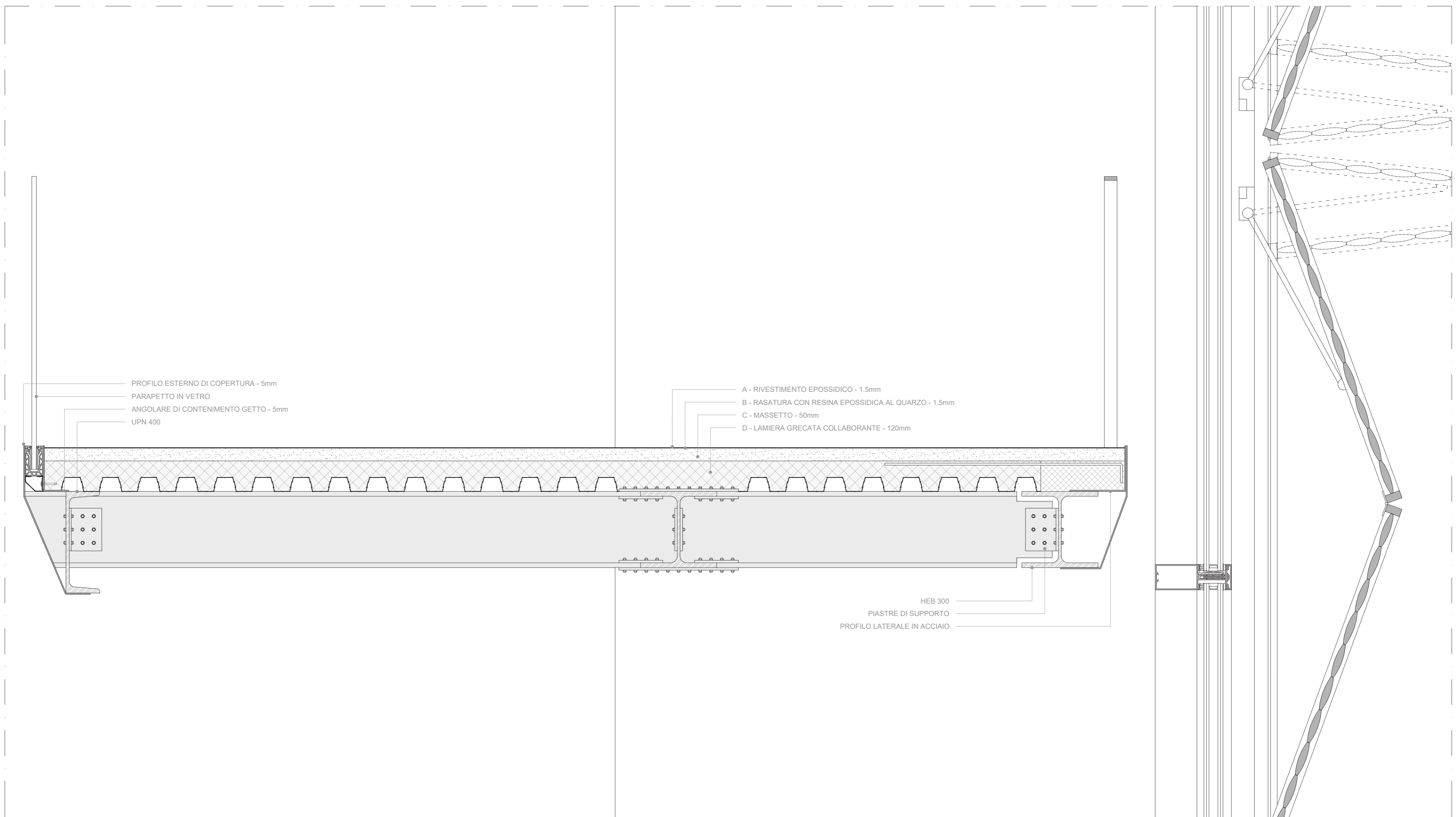
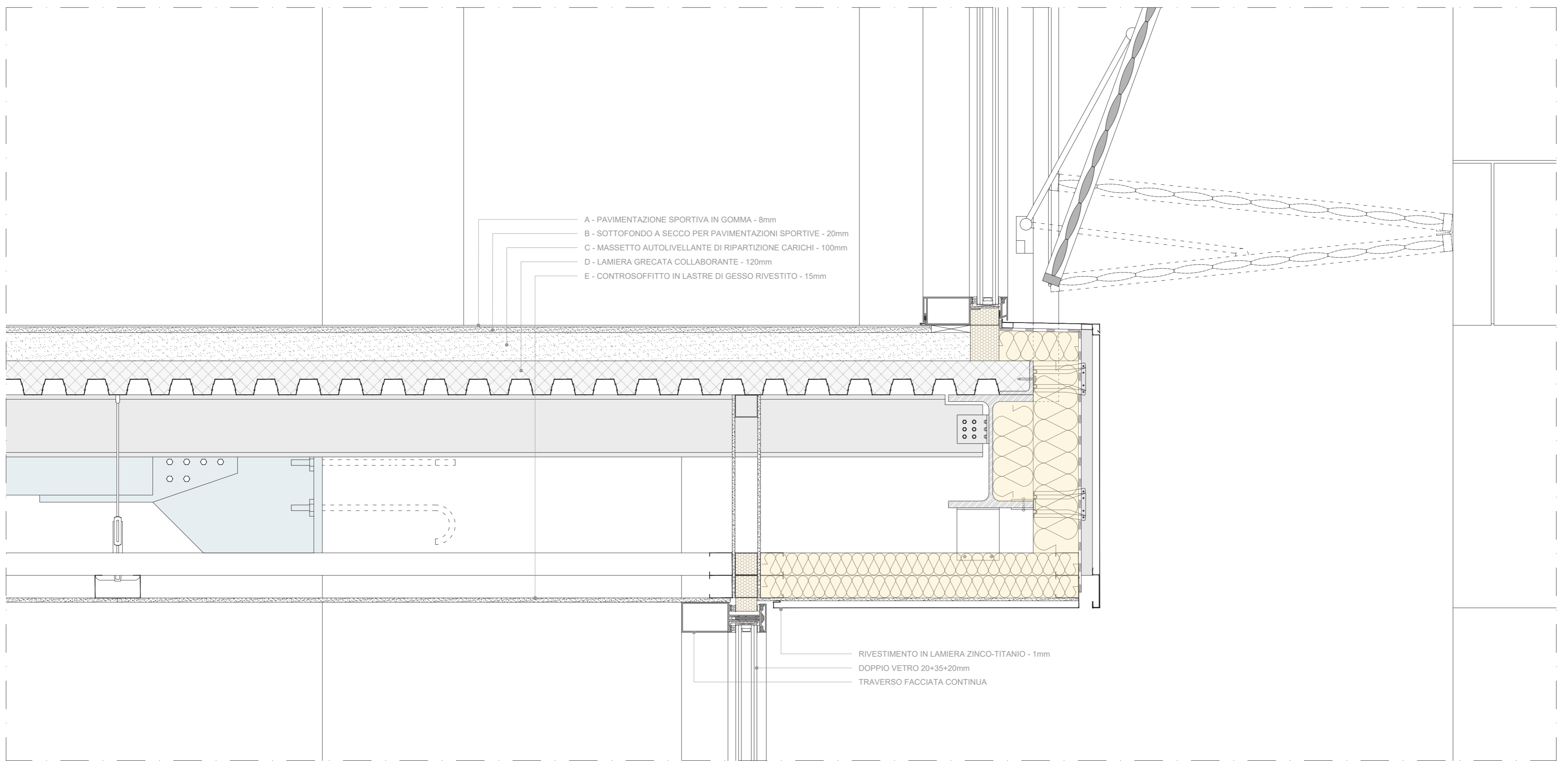


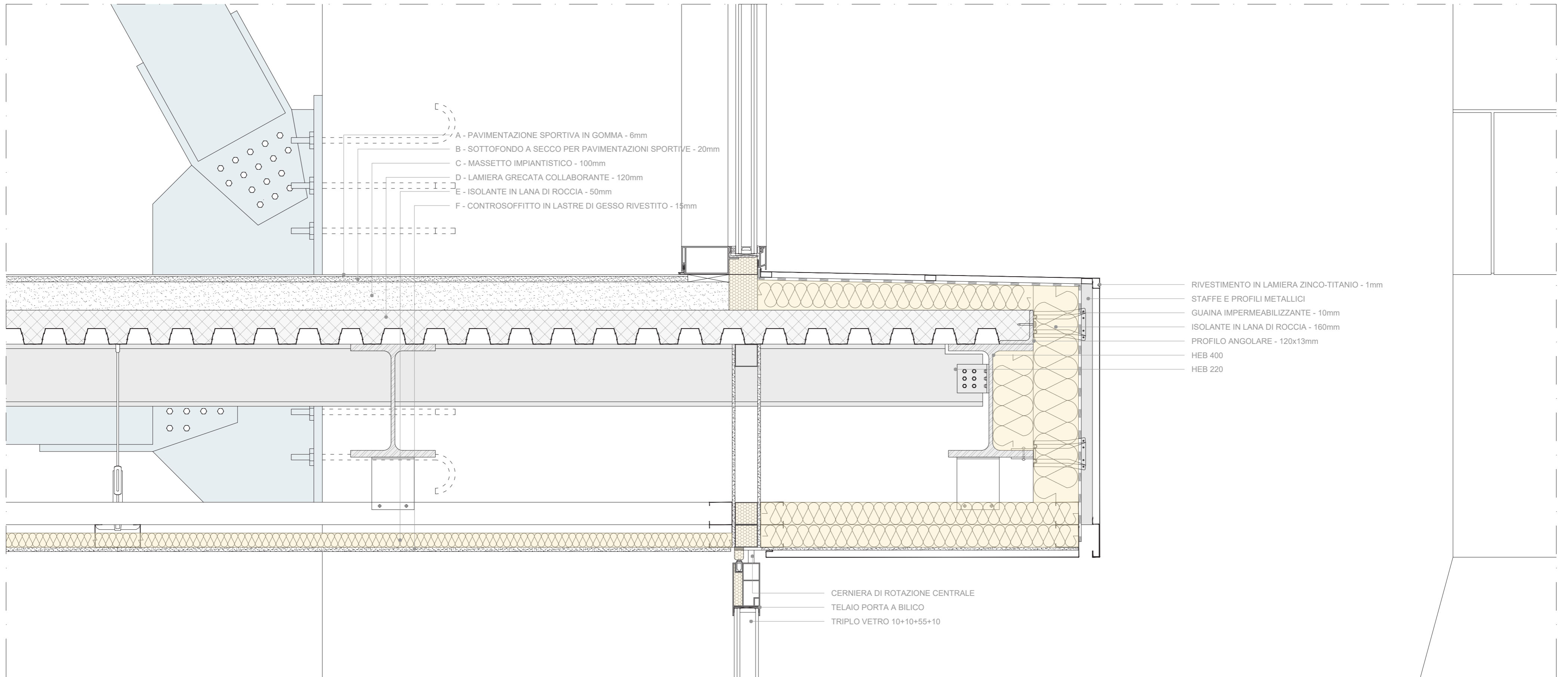
NODO A



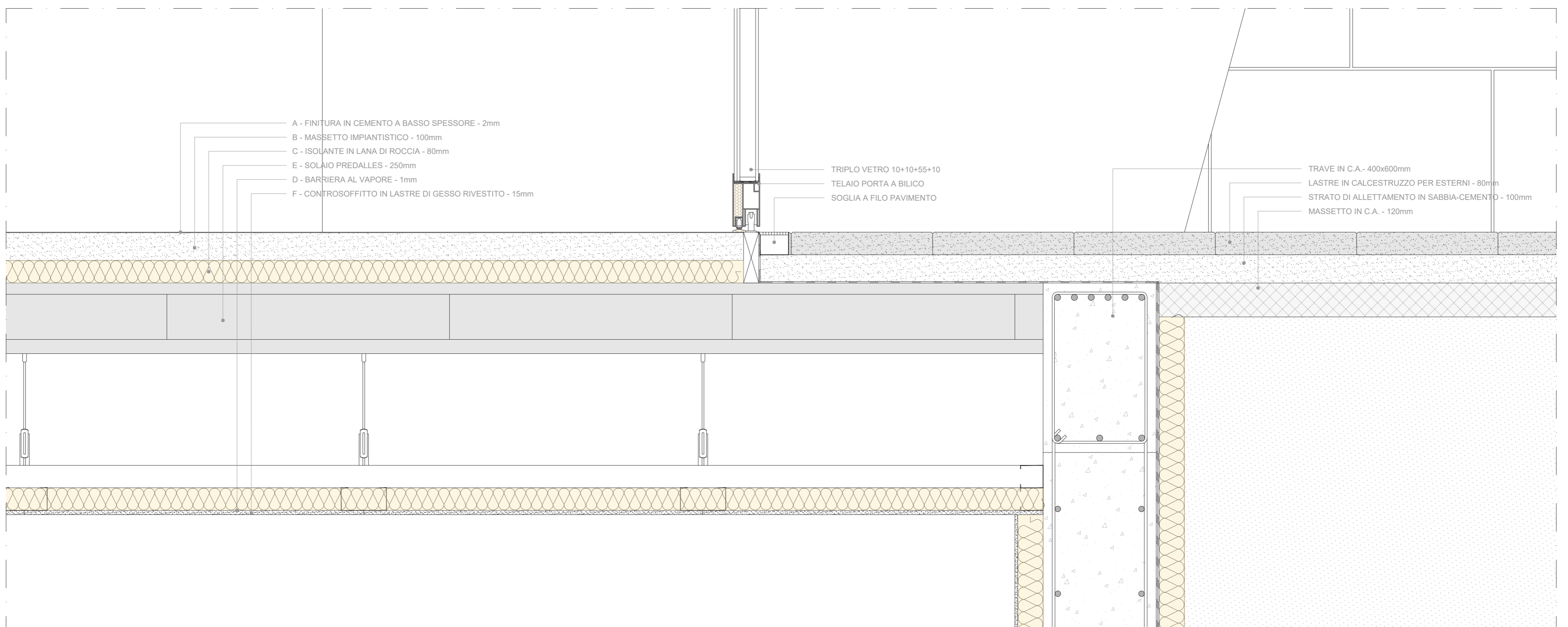
NODO B



NODO C

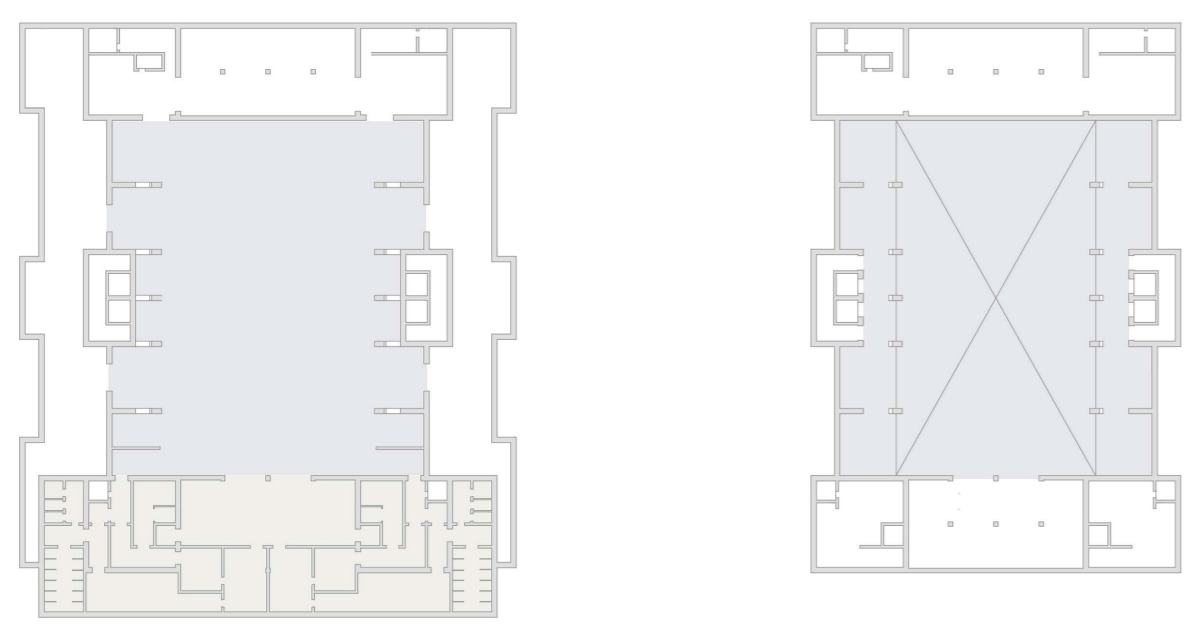


NODO D



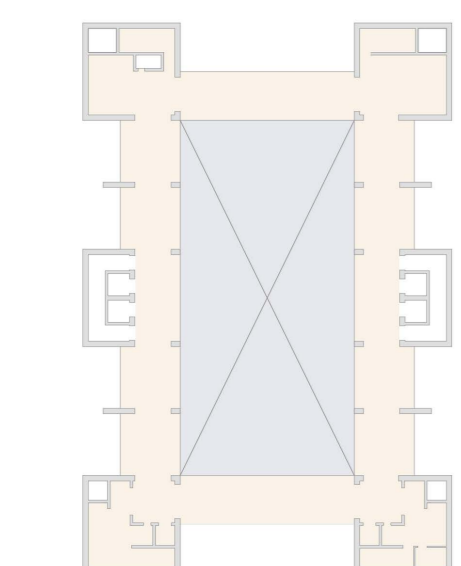
NODO E

DISTRIBUZIONE UTA

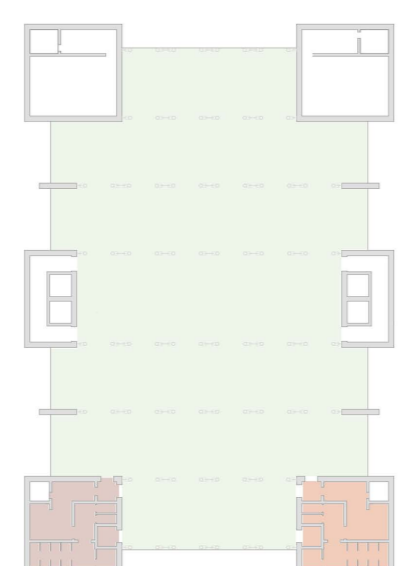


PIANO -2

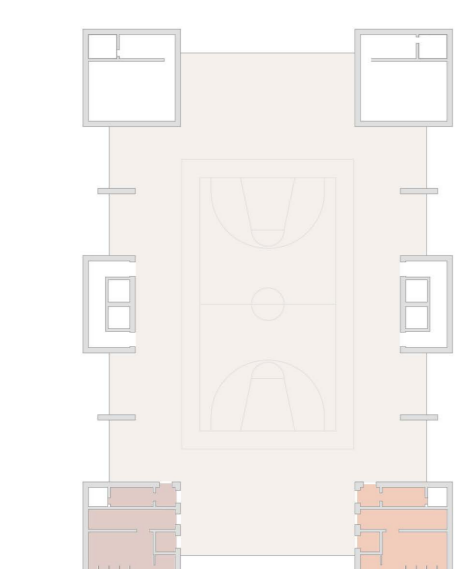
PIANO -1



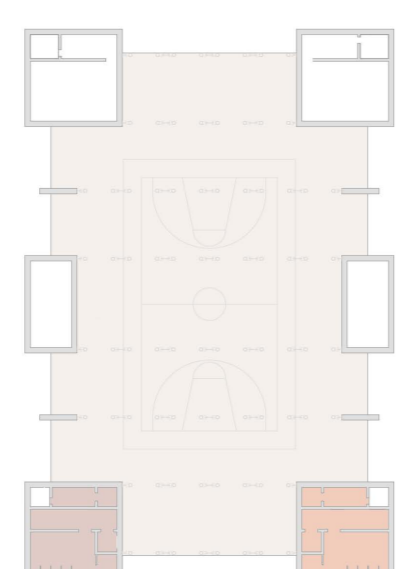
PIANO 0



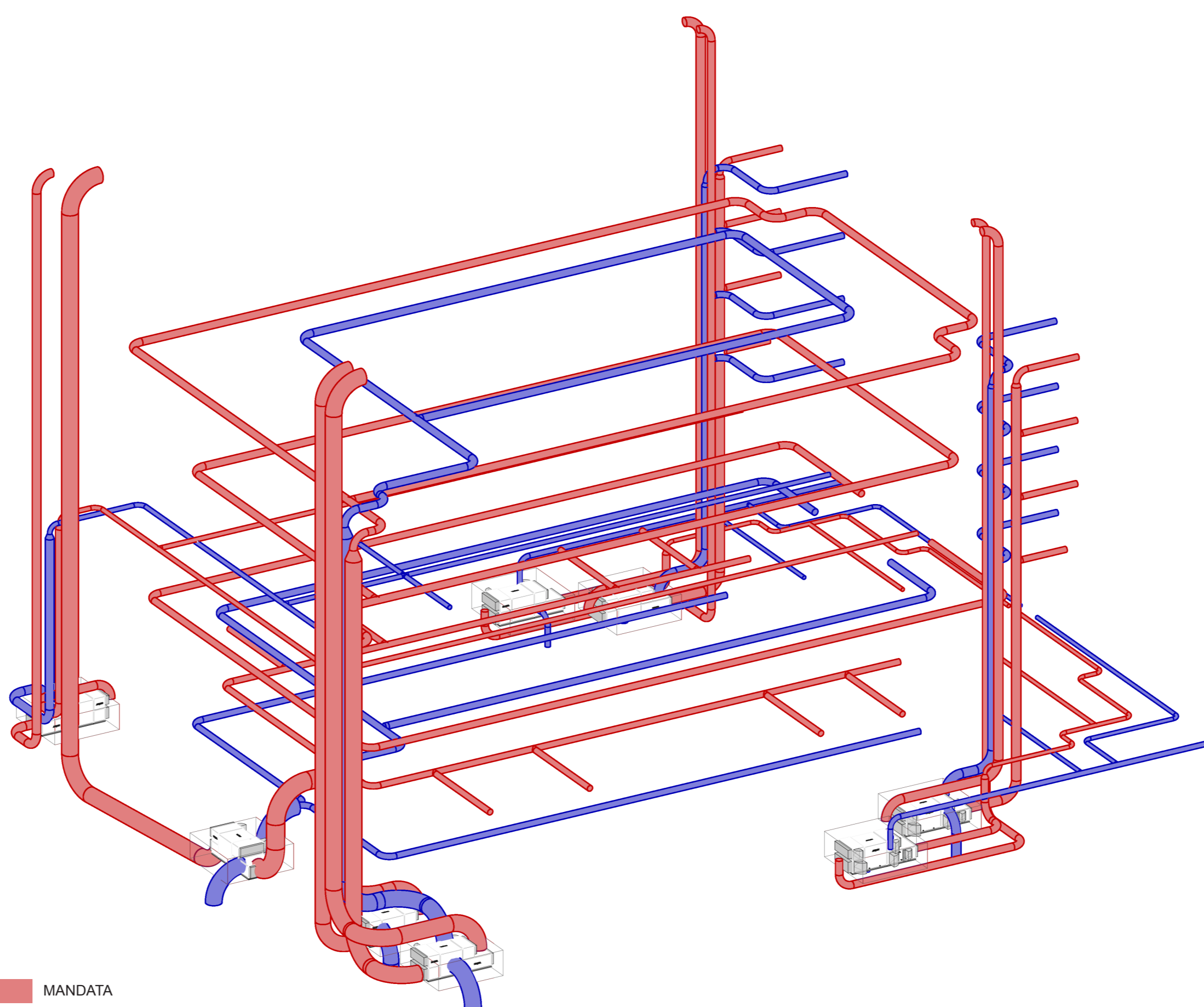
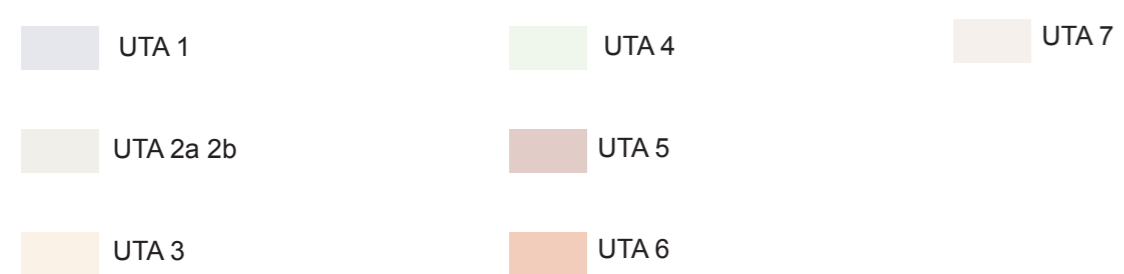
PIANO 1



PIANO 2



PIANO RETICOLARE



MANDATA
RIPRESA
DISTRIBUZIONE AERAUCA

DIMENSIONAMENTO CANALI UTA

UTA	Piano	Ambiente	Numero	Area m ²	Numero postazioni	Portata UTA m ³ /h	Area canale m ²	Diametro canale cm
UTA 1	VARI	Area piccola topa allezola	1	1364	300	12000	1.1111	118.9718
UTA 2A-2b	-2	Spogliatoi	2	293	25	1000	0.0926	34.3442
UTA 3	P.0	Bar Negozio - sigaretta Caffeteria	2	80	30	1200	0.1111	37.8222
UTA 4	VARI	Spogliatoi	4	240	80	3200	0.2963	61.4368
UTA 5	VARI	Spogliatoi	4	240	80	3200	0.2963	61.4368
UTA 6	1	Palestra open spazio	1	1725	70	2800	0.2593	57.4688
UTA 7	VARI	Palestra	1	1770	250	10000	0.9259	108.8059

UTA	Portata m ³ /h	Modello UTA "ENERGY V DRY"	Altezza mm	Larghezza mm	Profondità mm	Peso a vuoto kg
1	12000	180	2450	2015	6270	2900
2a-2b	1000	40	1810	1055	4830	1400
3	8400	100	2130	1695	5630	2300
4	3200	40	1810	1055	4830	1400
5	3200	40	1810	1055	4830	1400
6	2800	40	1810	1055	4830	1400
7	10000	100	2130	1695	5630	2300

POMPE DI CALORE

Superficie	Q TRASMISSIONE			Q term		
	S	U	Δt	W	W	KW
Spacca	5379	0,2129	23	28829,728		
Intersala	1813	1,1	25	49897,500		
Intersala	4922	0,2129	8	8383,150		
Totale				88870,378		88,870

Q VENTILAZIONE Inv			
Qventilazione = ΔH Inv			
m ³ portata	ΔH	Q vent	W
14,15555556	31000	438822,222	438,822222
Q termico		W	KW
Q term = Q vent + Q tras		W	KW
		525692,6	525,6926

ACS

N. apparecchi	Apparecchio	Usi orari	Utilizzo	Consumo orario
78	Doccia	10	50	39000
18	Lavabo	20	10	3200
Consumo totale		litro/ora	litro/ora	litro/ora
		11	1	42200
		12	1	1
		13	1	1

Massimo consumo orario
Contemperaneo di acqua calda a
4PPC (P.2)

Q_h litri/ora **42.200**

CENTRALE FRIGORIFERA

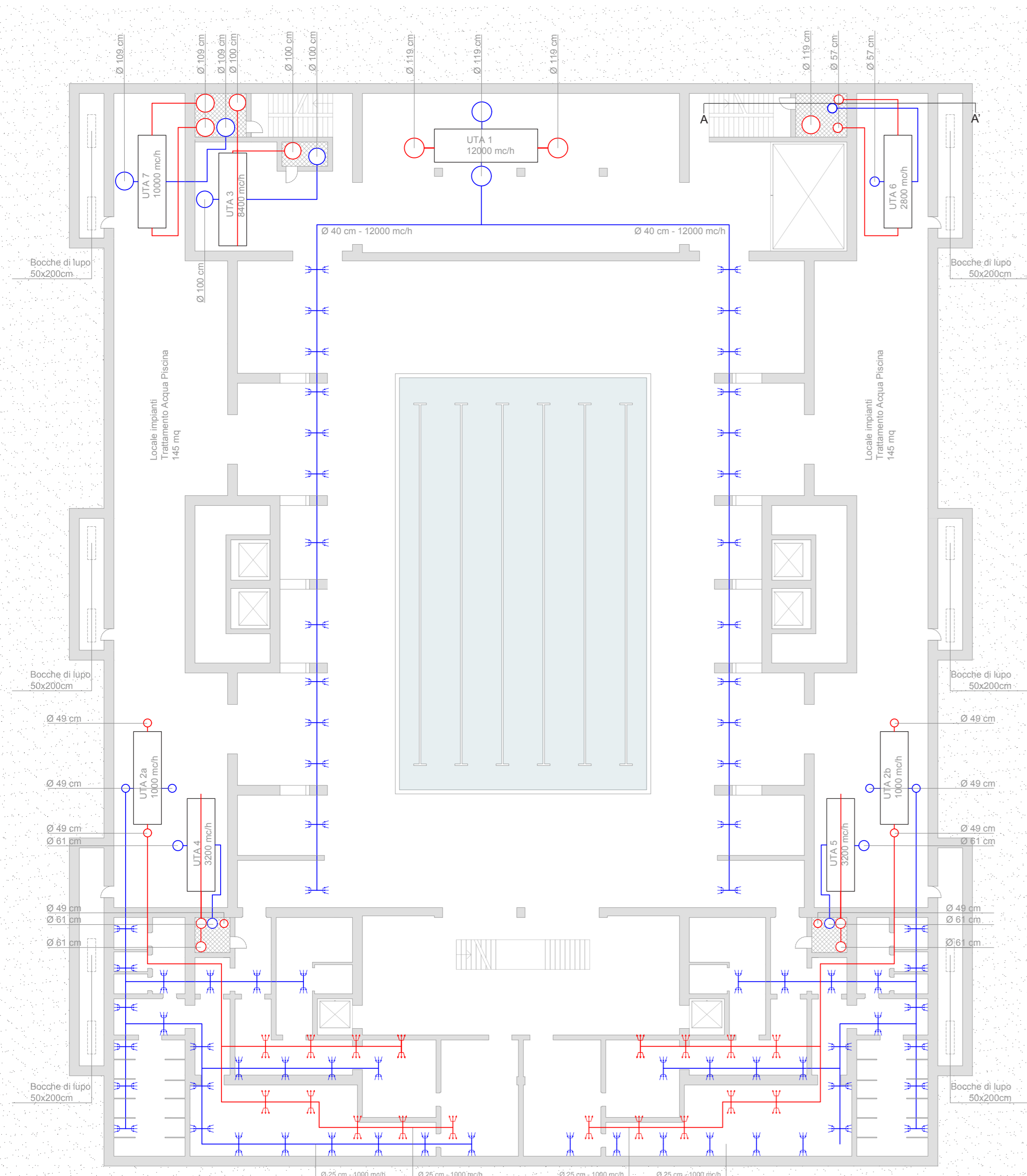
Q TRASMISSIONE			
Superficie	S	U	Δt
Spacca	5379	0,2129	23
Intersala	1813	1,1	25
Intersala	4922	0,2129	8
Totale	31451,6002		31,4150002

Q termico

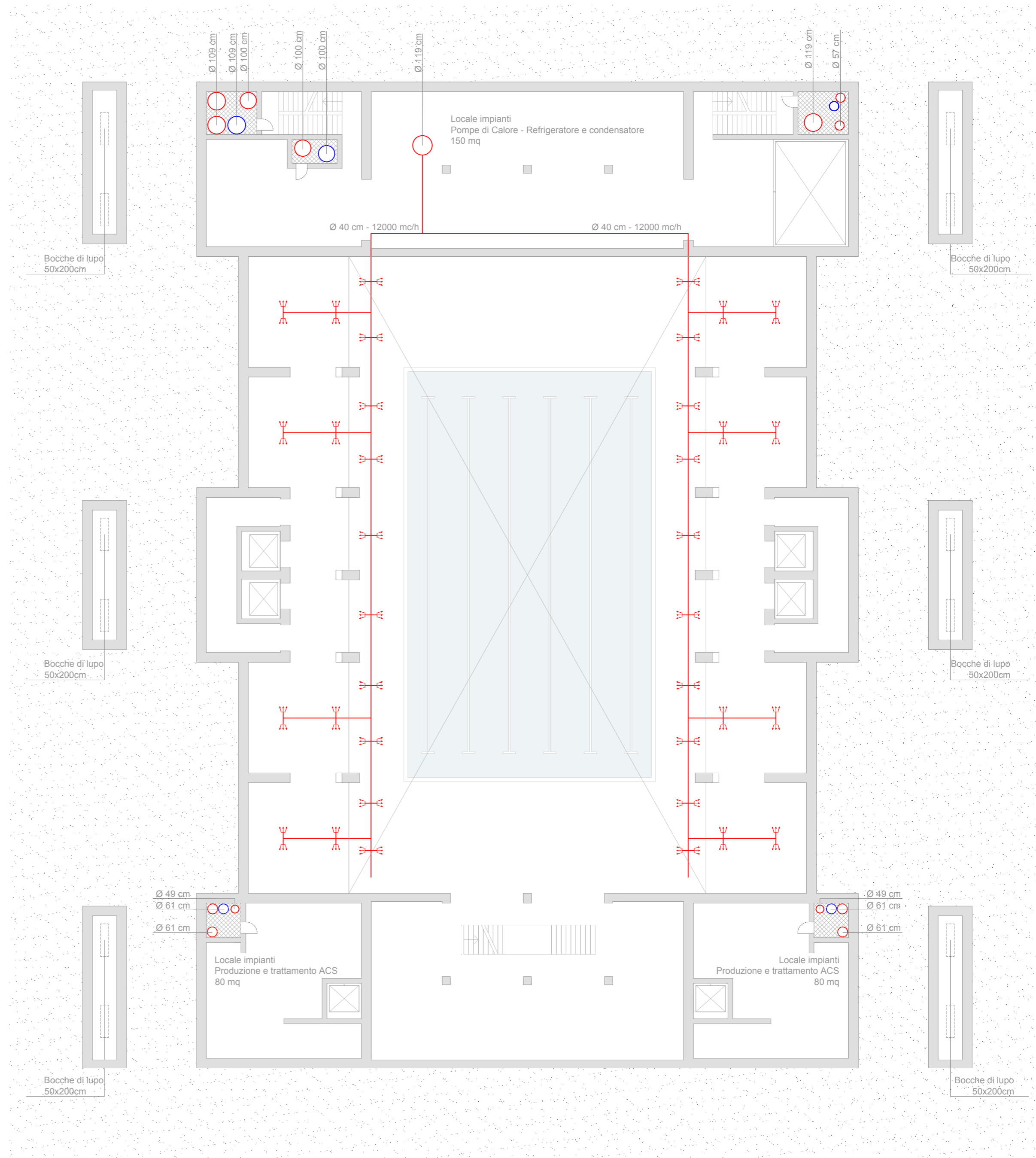
Q term = Q vent + Q tras + Q rad + Q cond

W

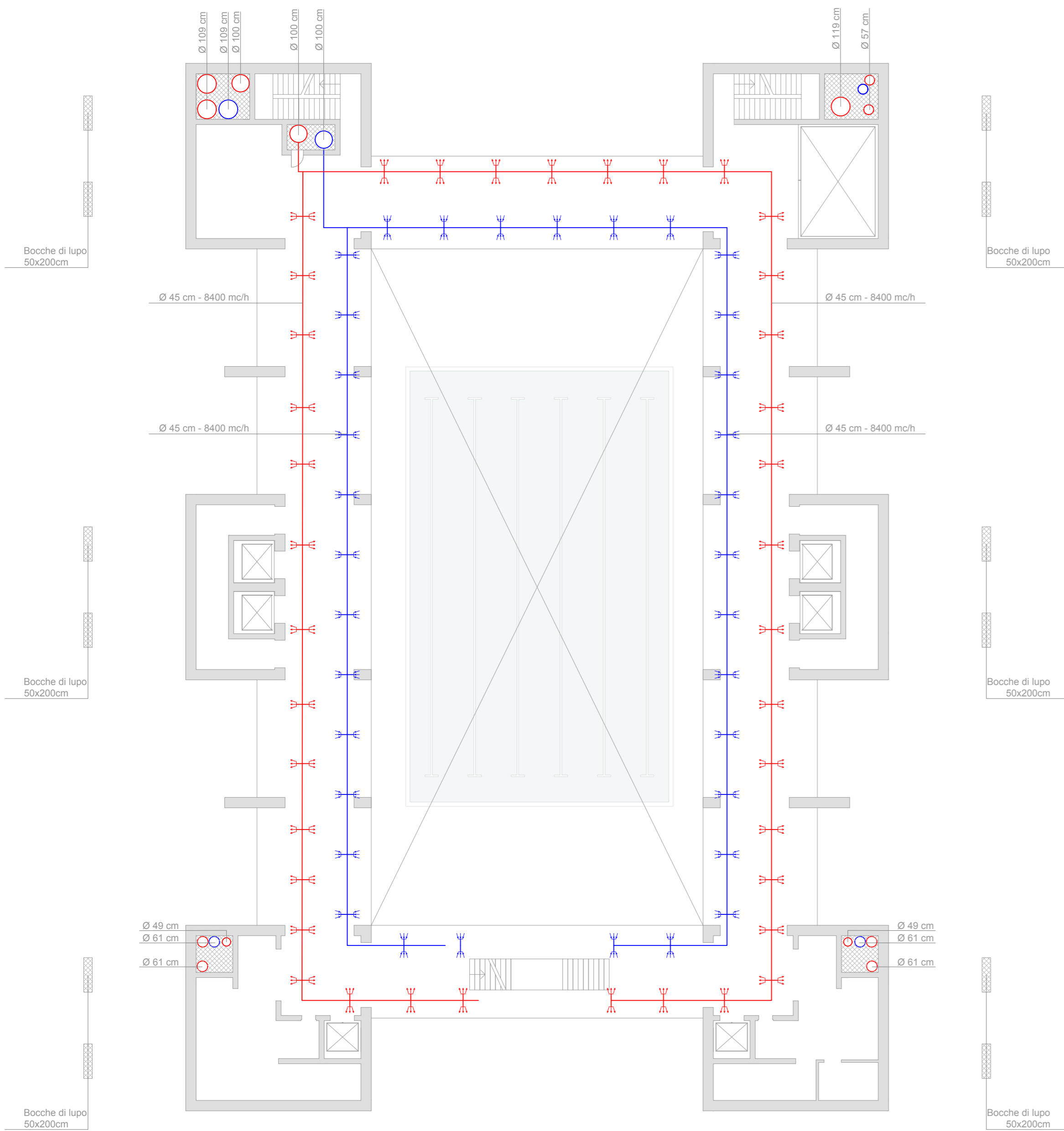
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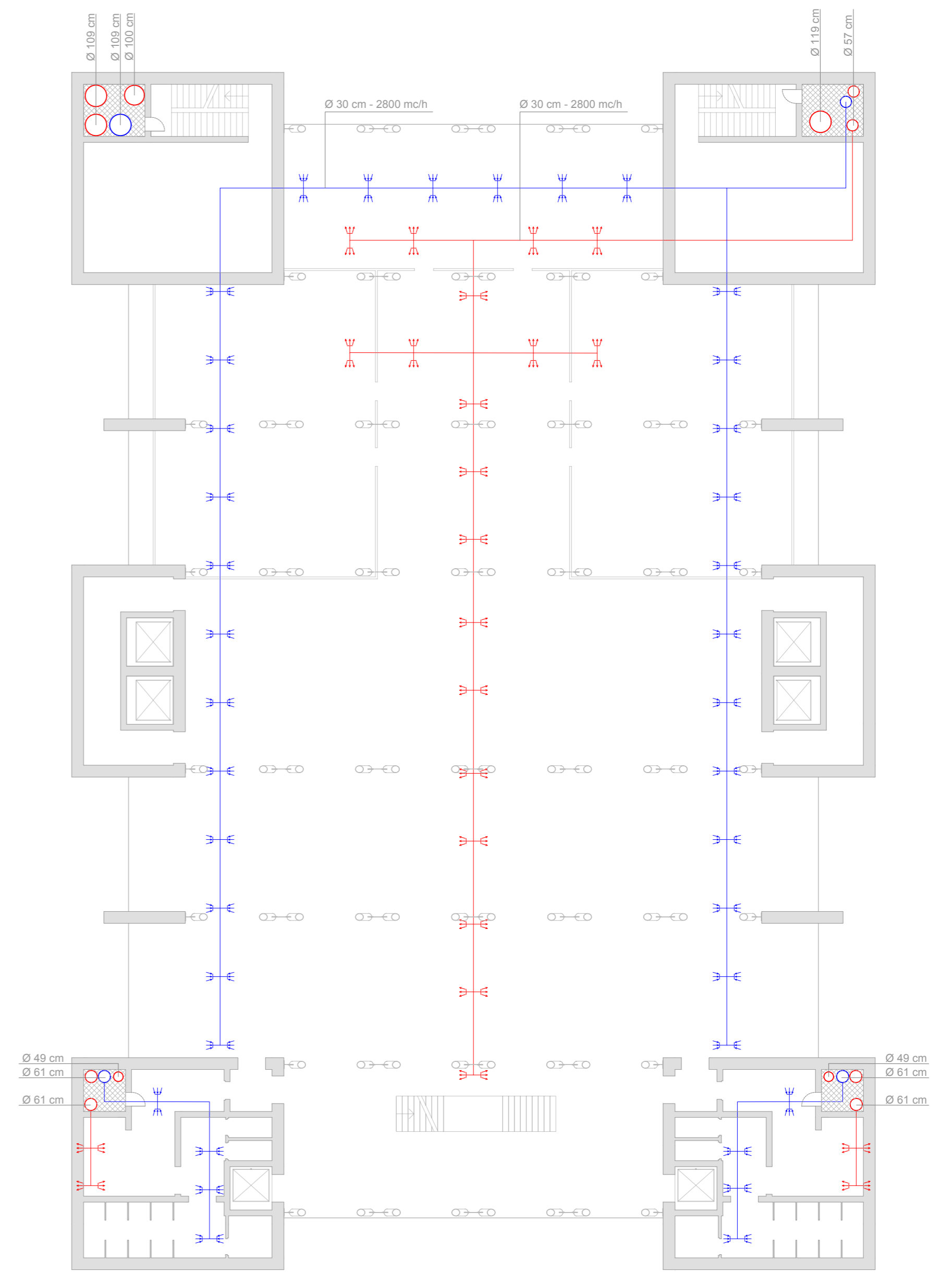
PIANTA PIANO -2 - Livello piscina



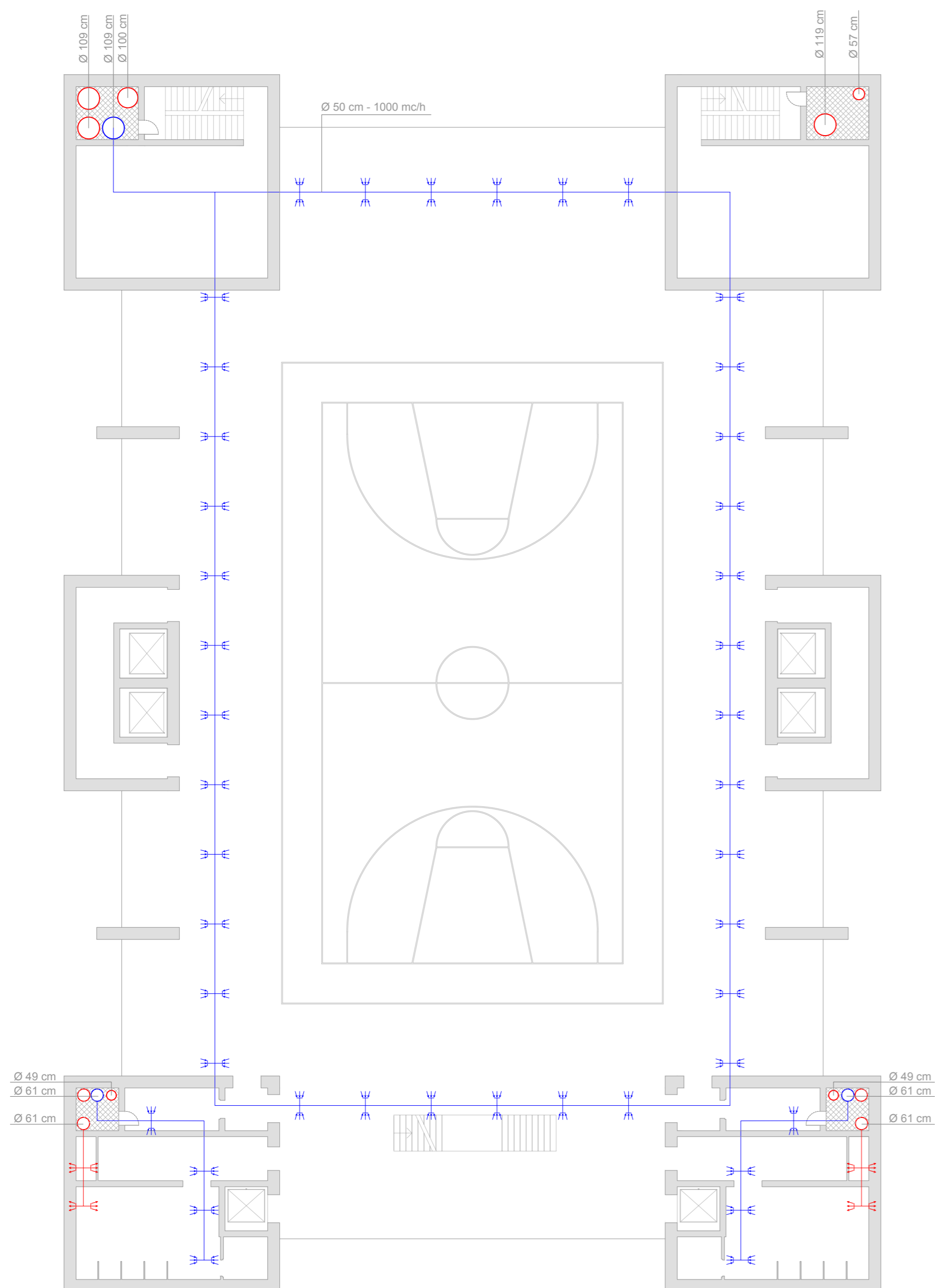
PIANTA PIANO -1 - Livello spalti



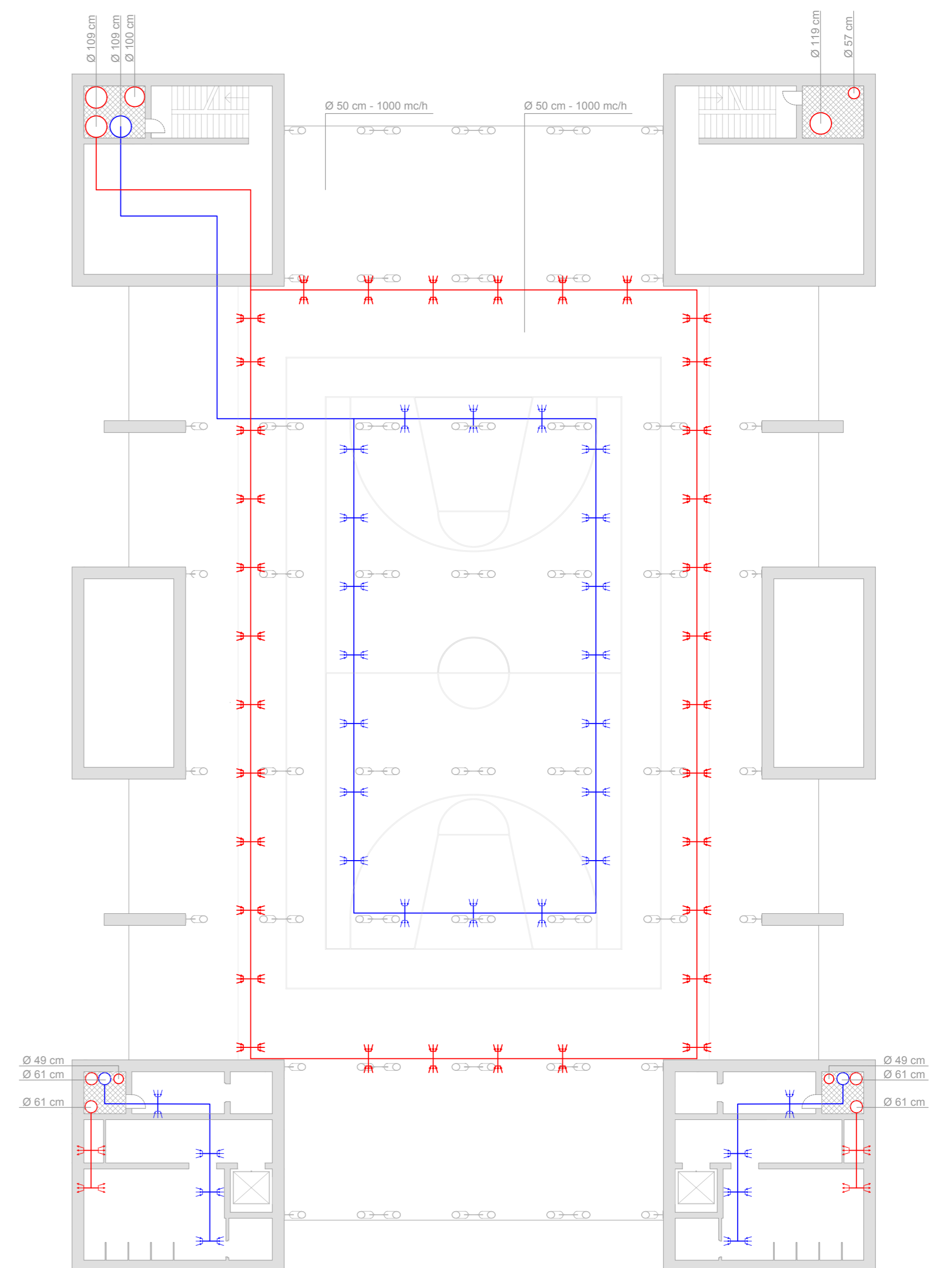
PIANTA PIANO 0 - Livello piano pubblico



PIANTA PIANO 1 - Livello palestra



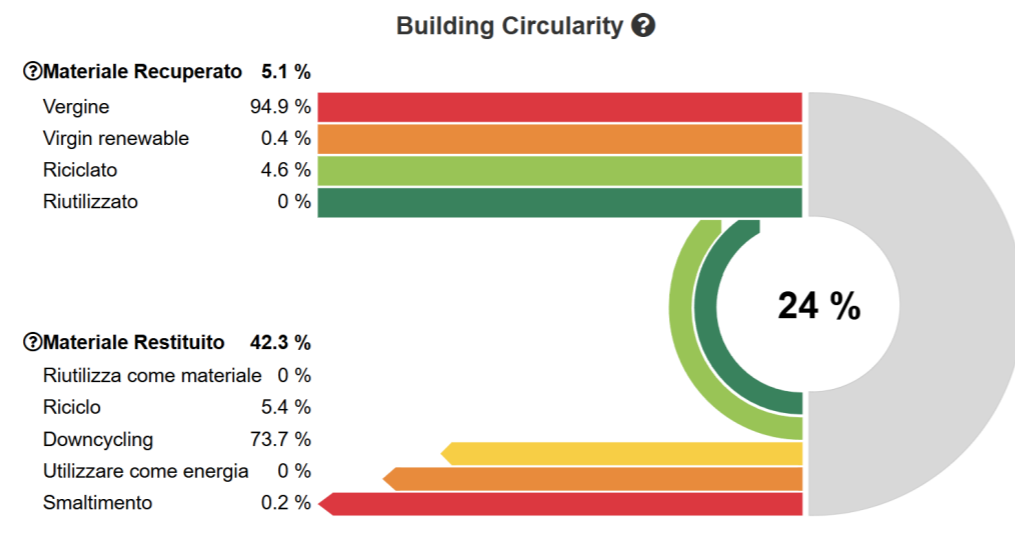
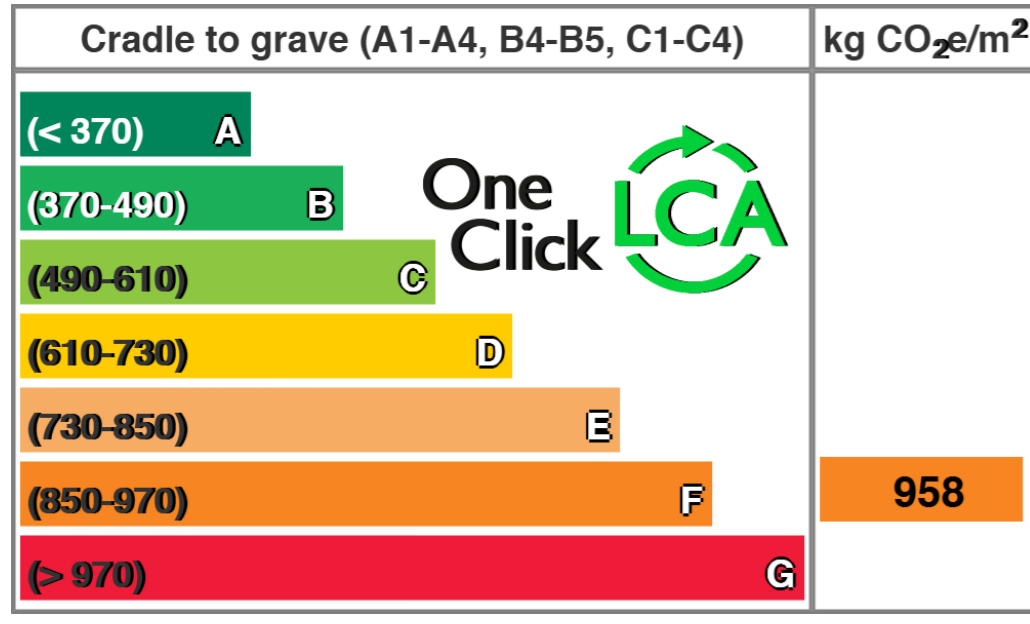
PIANTA PIANO 2 - Livello campo basket



PIANTA PIANO 5 - Livello reticolare copertura

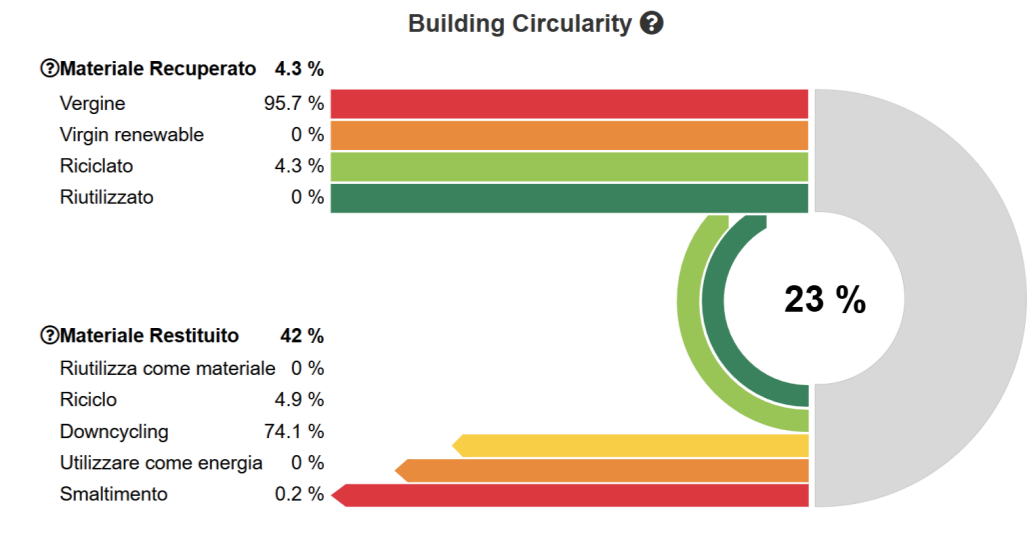
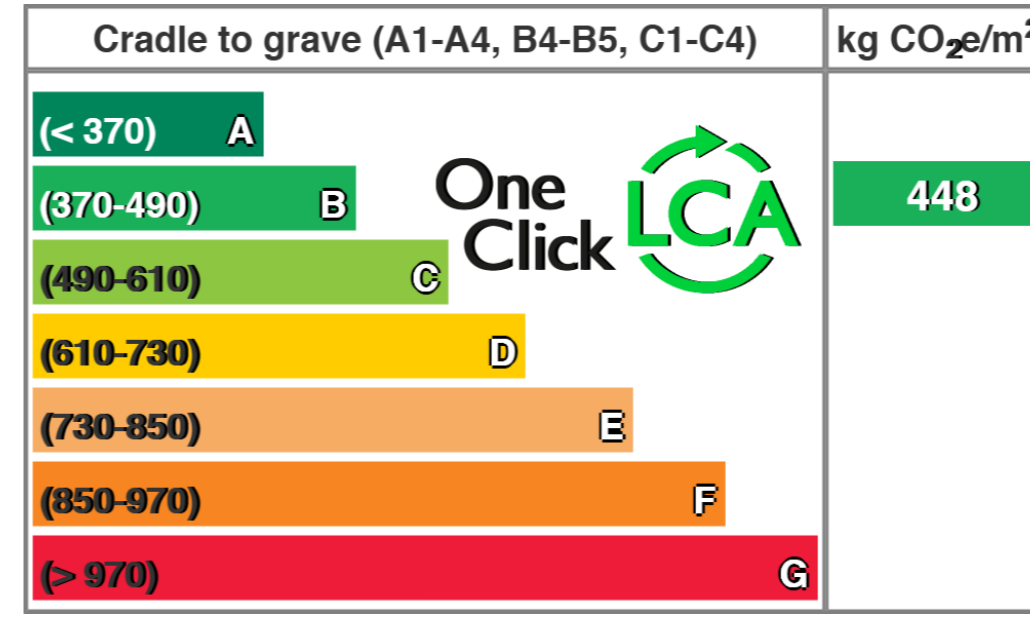
EDIFICIO BASE

Costo del ciclo di vita:	€	10'513'027
Analisi del ciclo di vita per Level(s) (EN15804 +A1)	kgCO ₂ e	24'920'467
Level(s) life-cycle assessment (EN15804 +A2)	kgCO ₂ e	35'368'066
Building Circularity	%	23.68

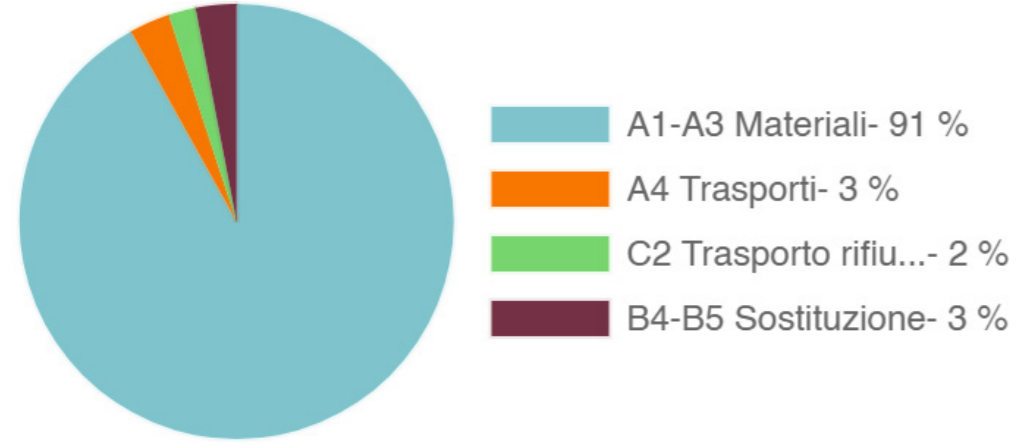


EDIFICIO OTTIMIZZATO

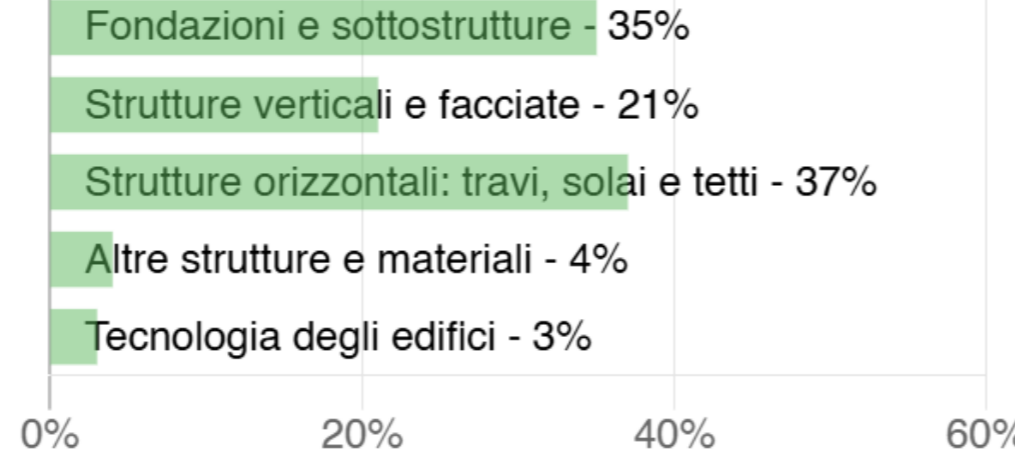
Costo del ciclo di vita:	€	10'467'289
Analisi del ciclo di vita per Level(s) (EN15804 +A1)	kgCO ₂ e	24'442'960
Level(s) life-cycle assessment (EN15804 +A2)	kgCO ₂ e	28'908'795
Building Circularity	%	23.15



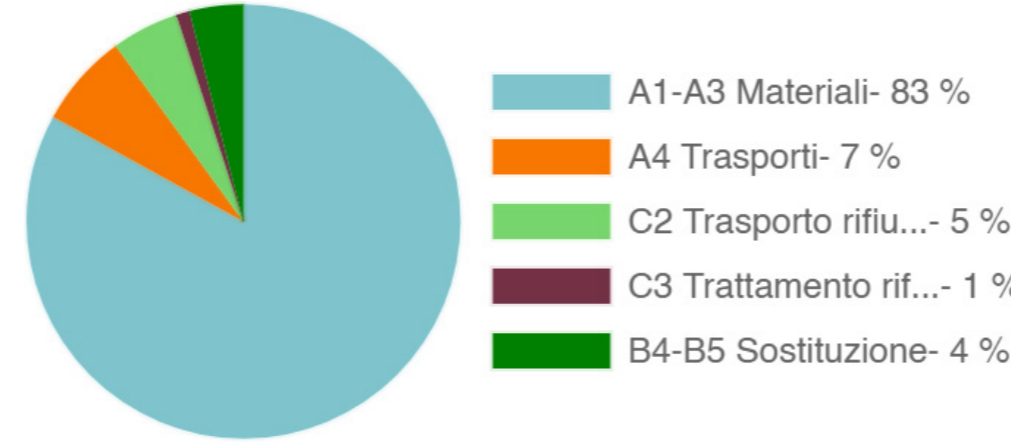
CARBON HEROES BENCHMARK



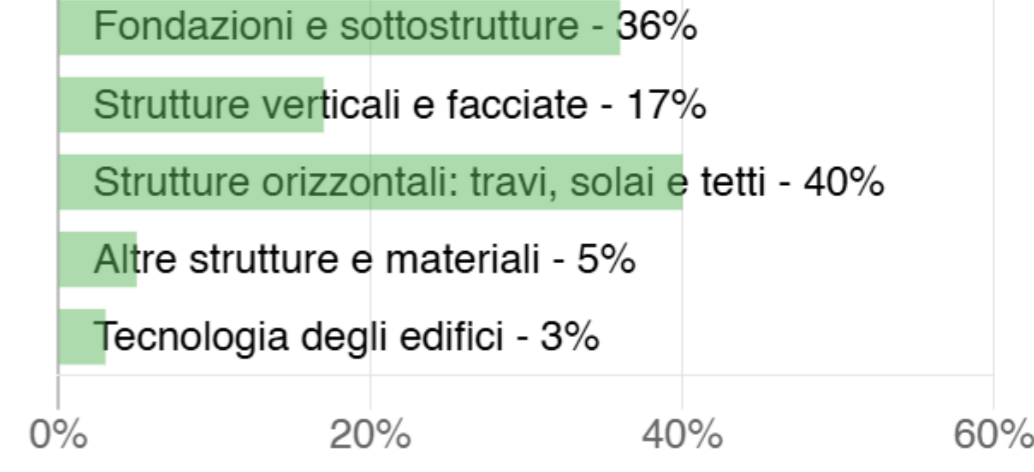
BUILDING CIRCULARITY



CARBON HEROES BENCHMARK



BUILDING CIRCULARITY



EMBODIED CARBON PER LA FASE LIFE-CYCLE

EMBODIED CARBON PER LA STRUTTURA (A1-A3)

EMBODIED CARBON PER LA FASE LIFE-CYCLE

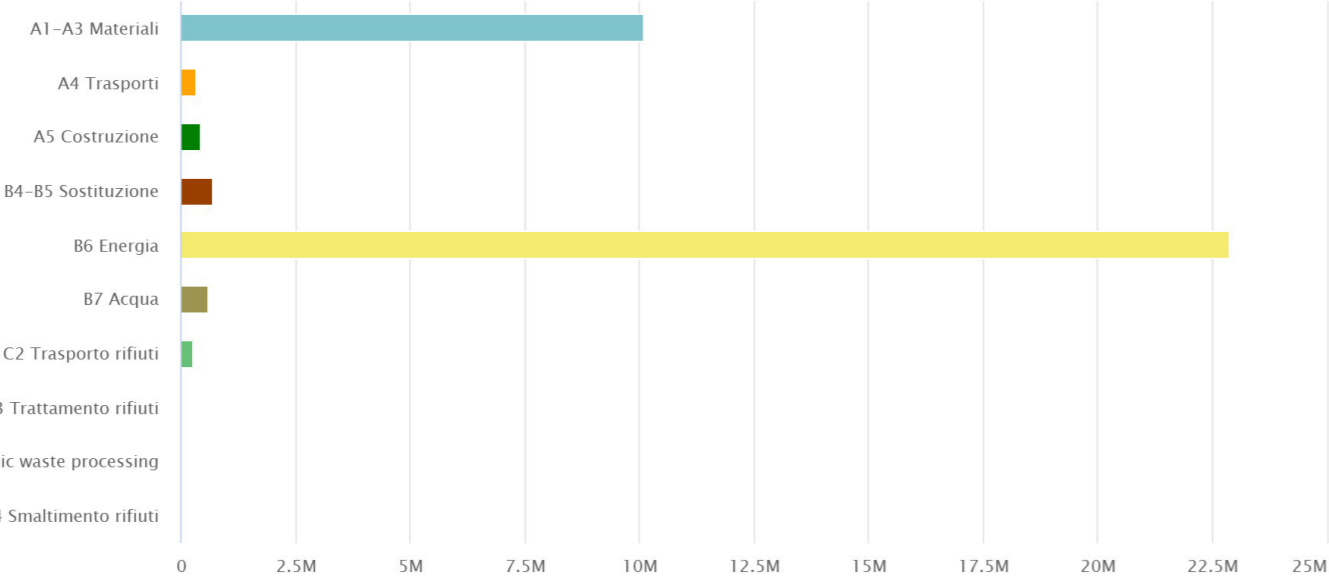
EMBODIED CARBON PER LA STRUTTURA (A1-A3)

I materiali più contribuenti (Potenziale di riscaldamento globale fossile)

No.	Risorsa	Cradle to gate impacts (A1-A3)	Cradle to gate (A1-A3)	Alternative sostenibili	
1.	Ready-mix concrete, C32/40, 2329 kg/m3	6 213 tonnellate CO ₂ e	64.9 %	Mostra alternative sostenibili	Aggiungi per confrontare
2.	Hot rolled reinforcing steel bars, 8-40 mm dia, 7850 kg/m3	2 039 tonnellate CO ₂ e	21.3 %	Mostra alternative sostenibili	Aggiungi per confrontare
3.	Steel square, rectangular or circular tube used as structural element	595 tonnellate CO ₂ e	6.2 %	Mostra alternative sostenibili	Aggiungi per confrontare
4.	Curtain wall system, 55.25 kg/m2	358 tonnellate CO ₂ e	3.7 %	Mostra alternative sostenibili	Aggiungi per confrontare
5.	Electric operated passenger elevator, 33726 tkm life cycle, 42220 kg/unit, rated load 1000-2000 kg	130 tonnellate CO ₂ e	1.4 %	Mostra alternative sostenibili	Aggiungi per confrontare
6.	Semi-flexible solar photovoltaic module, 2.37 kg/m2	65 tonnellate CO ₂ e	0.7 %	Mostra alternative sostenibili	Aggiungi per confrontare
7.	High performance elevator, 2206 kg/unit	54 tonnellate CO ₂ e	0.6 %	Mostra alternative sostenibili	Aggiungi per confrontare
8.	Pannello di cartongesso, normale, generico, 90% recycled gypsum, 6.5-25 mm (0.25-0.98 in), 10.725 kg/m2 (2.20 lbs/ft2) (for 12.5 mm/0.49 in), 858 kg/m3 (53.6 lbs/ft3)	23 tonnellate CO ₂ e	0.2 %	Mostra alternative sostenibili	Aggiungi per confrontare

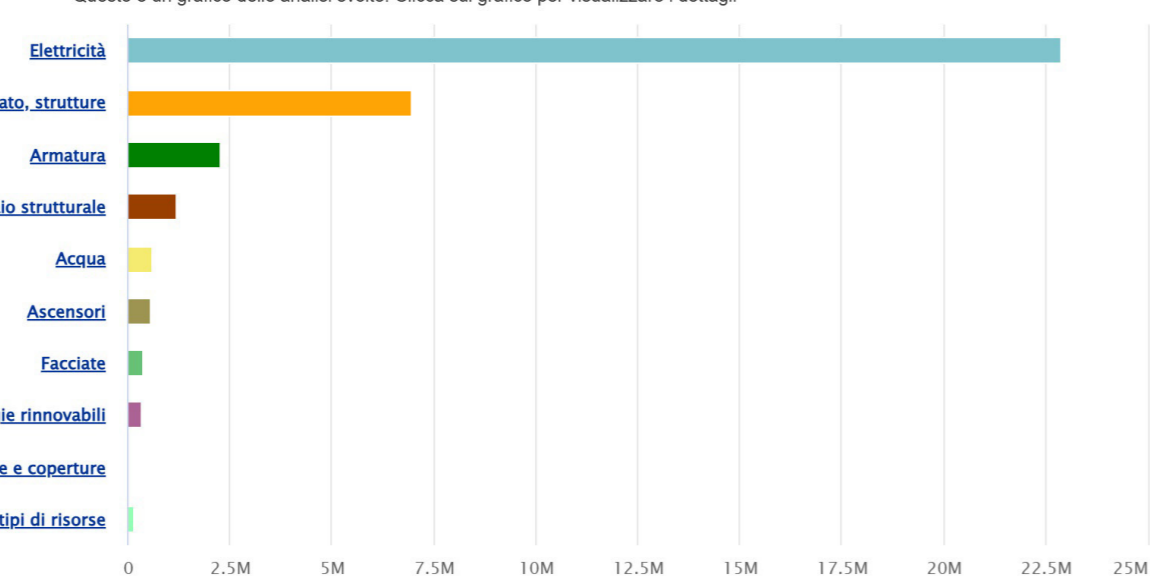
MATERIALI PIU' CONTRIBUENTI

Potenziale di riscaldamento globale totale kg CO2e - Fasi del Life-Cycle



GWP - CICLO DI VITA

Potenziale di riscaldamento globale totale kg CO2e - Tipi di risorsa



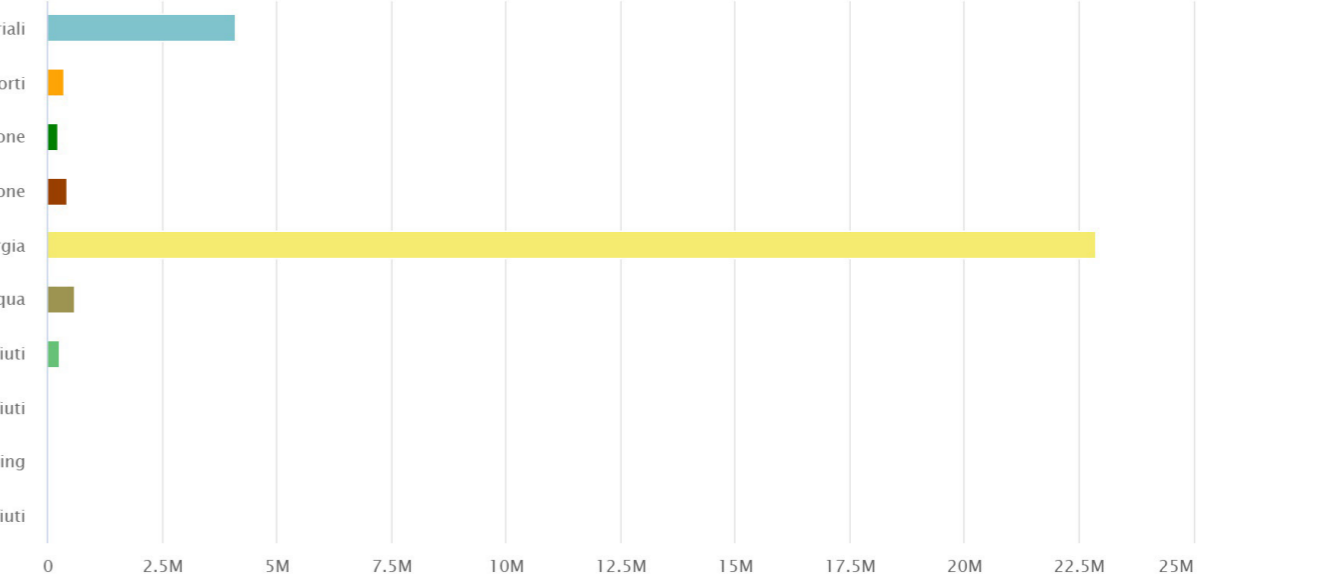
GWP - RISORSE

I materiali più contribuenti (Potenziale di riscaldamento globale fossile)

No.	Risorsa	Cradle to gate impacts (A1-A3)	Cradle to gate (A1-A3)	Alternative sostenibili	
1.	Ready-mix concrete, C30/37 XA2, 2380 kg/m3	2 794 tonnellate CO ₂ e	68.0 %	Mostra alternative sostenibili	Aggiungi per confrontare
2.	Reinforcement steel bar, 500 MPa, dia = 10-50mm	881 tonnellate CO ₂ e	21.4 %	Mostra alternative sostenibili	Aggiungi per confrontare
3.	Exterior window frame, adjustable, 9.409 kg/m2	153 tonnellate CO ₂ e	3.7 %	Mostra alternative sostenibili	Aggiungi per confrontare
4.	Semi-flexible solar photovoltaic module, 2.37 kg/m2	65 tonnellate CO ₂ e	1.6 %	Mostra alternative sostenibili	Aggiungi per confrontare
5.	Hot rolled structural steel beams and merchant bars, thickness: 80-600 mm (beams), 3-40 mm (merchants), produced with 100% renewable electricity	57 tonnellate CO ₂ e	1.4 %	Mostra alternative sostenibili	Aggiungi per confrontare
6.	High performance elevator, 2206 kg/unit	54 tonnellate CO ₂ e	1.3 %	Mostra alternative sostenibili	Aggiungi per confrontare
7.	Cement-free mortar, for render work, Packaging included	22 tonnellate CO ₂ e	0.5 %	Mostra alternative sostenibili	Aggiungi per confrontare
8.	XPS insulation panels, L = 0.033-0.039 W/mK, 20-400 mm, 35 kg/m3, Lambda=0.033 W/(m.K)	20 tonnellate CO ₂ e	0.5 %	Mostra alternative sostenibili	Aggiungi per confrontare

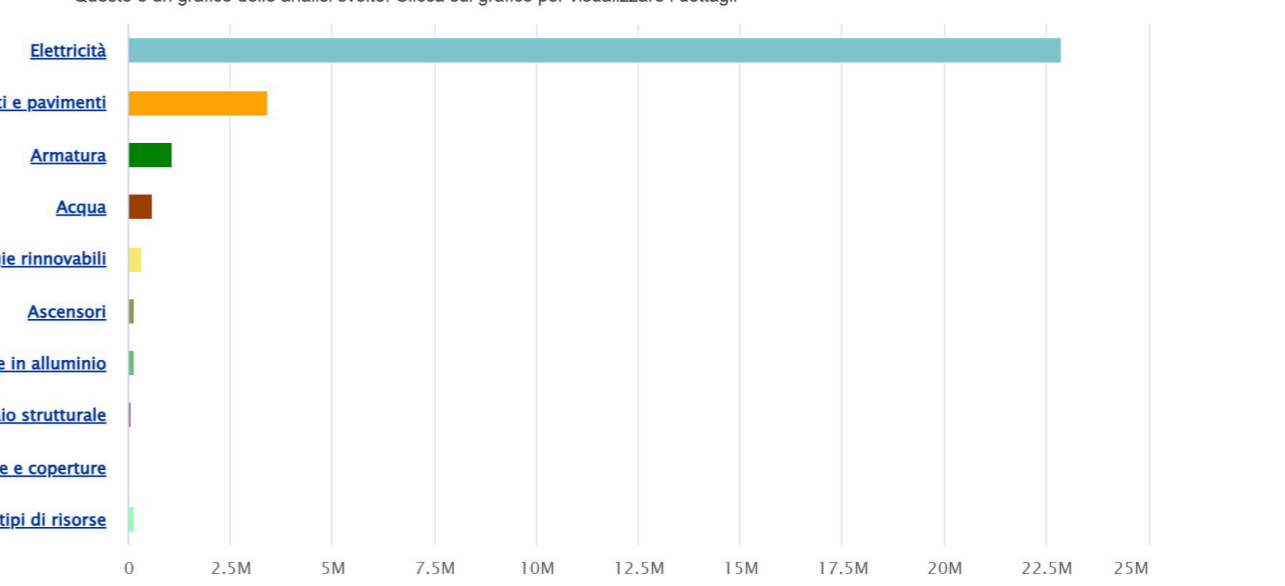
MATERIALI PIU' CONTRIBUENTI

Potenziale di riscaldamento globale totale kg CO2e - Fasi del Life-Cycle

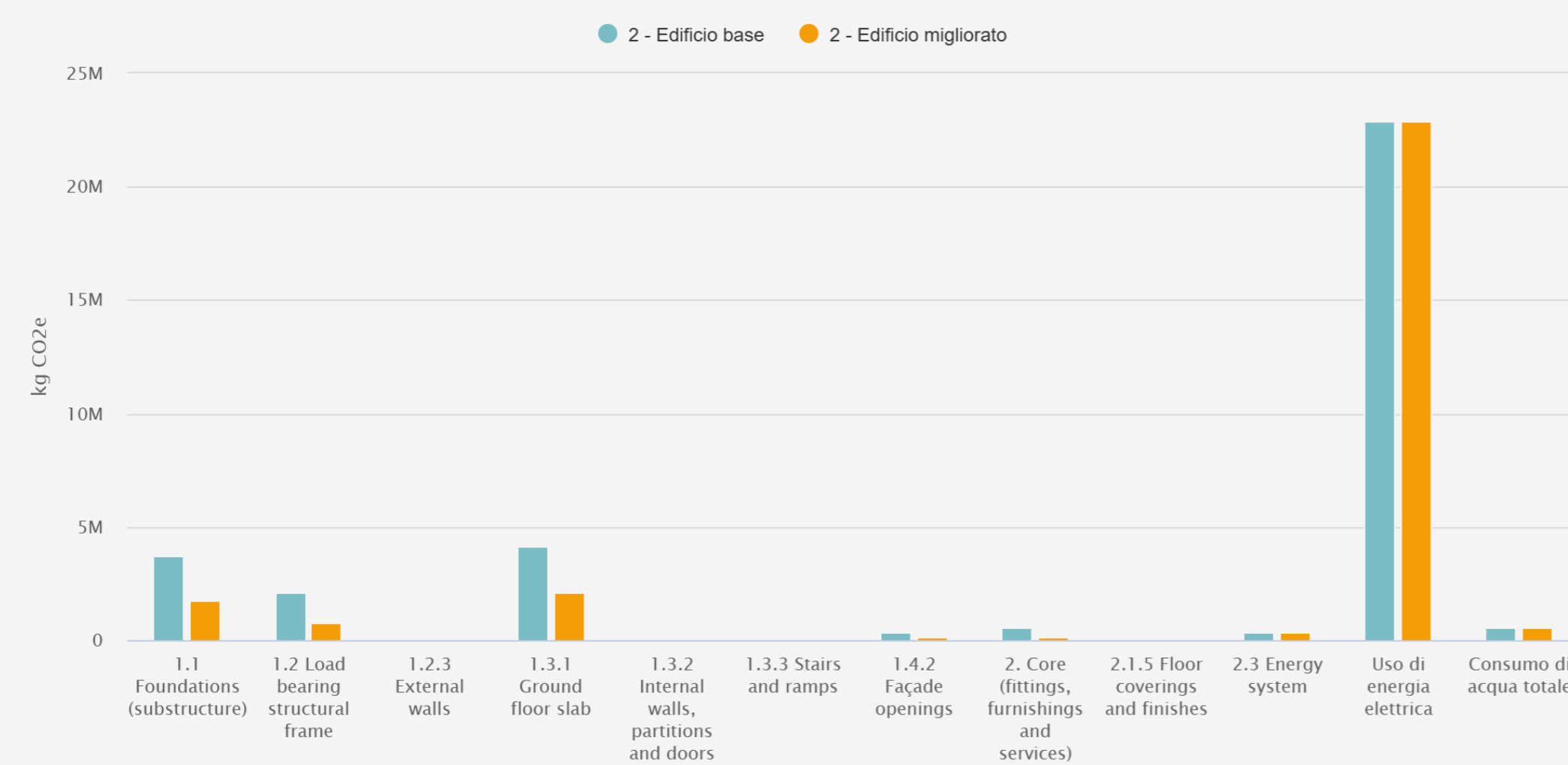


GWP - CICLO DI VITA

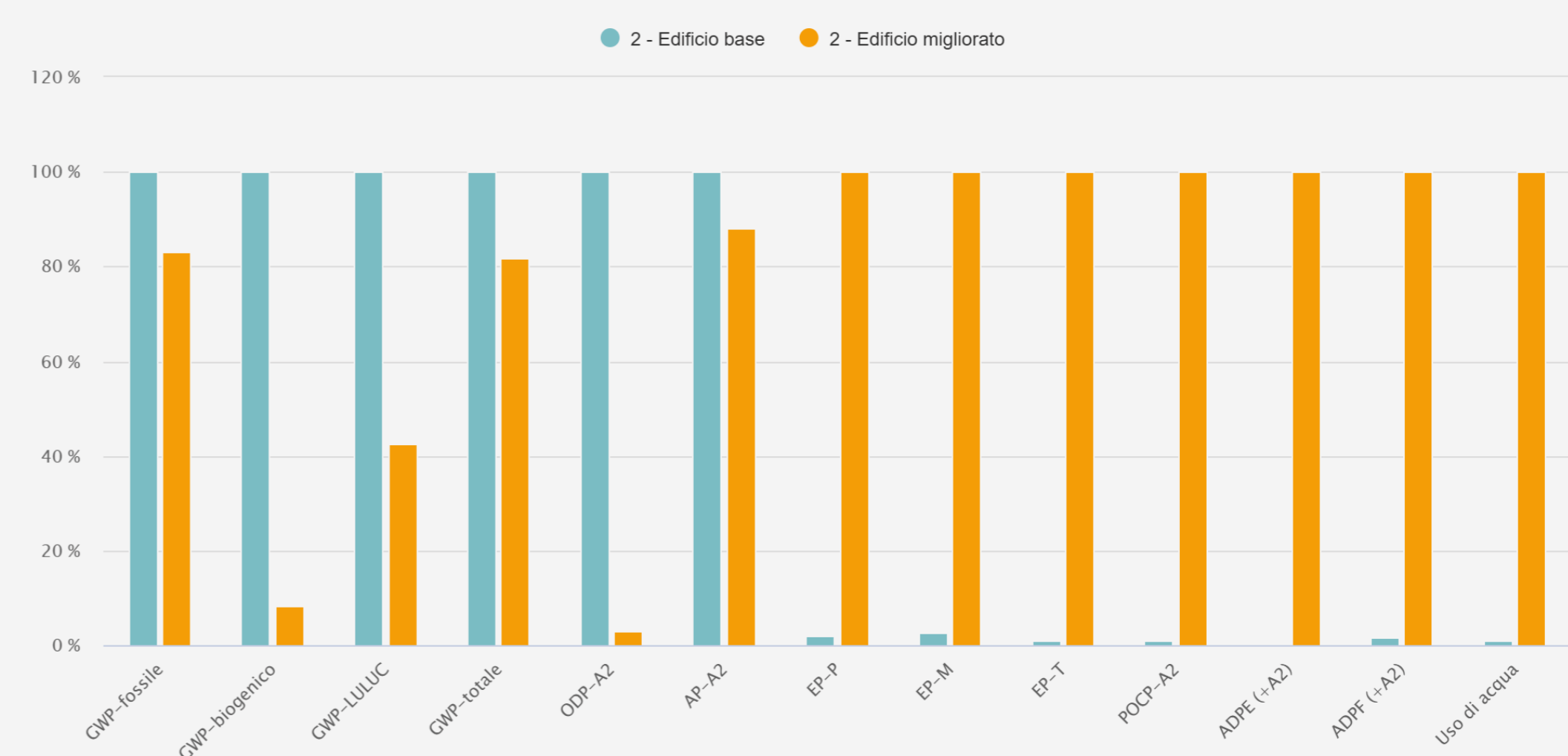
Potenziale di riscaldamento globale totale kg CO2e - Tipi di risorsa



GWP - RISORSE



GWP - CONFRONTO ELEMENTI



GWP - CONFRONTO CATEGORIE D'IMPATTO