

A ROOM WITH A VIEW

Spazi per la cultura nella città contemporanea



TESI DI LAUREA DI JULIEN BOLLARD

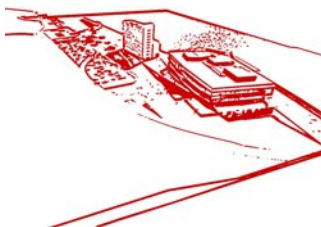


Relatore Prof. Arch. Massimo Tadi

1. CONTESTO DEL PROGETTO



2. MASTERPLAN



3. PERFORMING ART CENTER



4. RECUPERO DEL SILOS

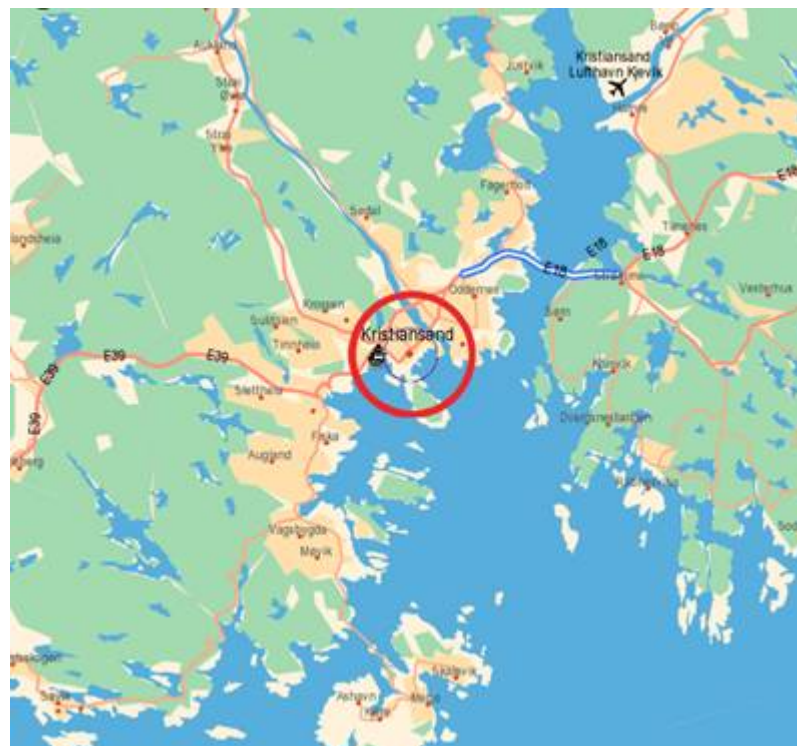




CONTESTO DEL PROGETTO



NORVEGIA, KRISTIANSAND





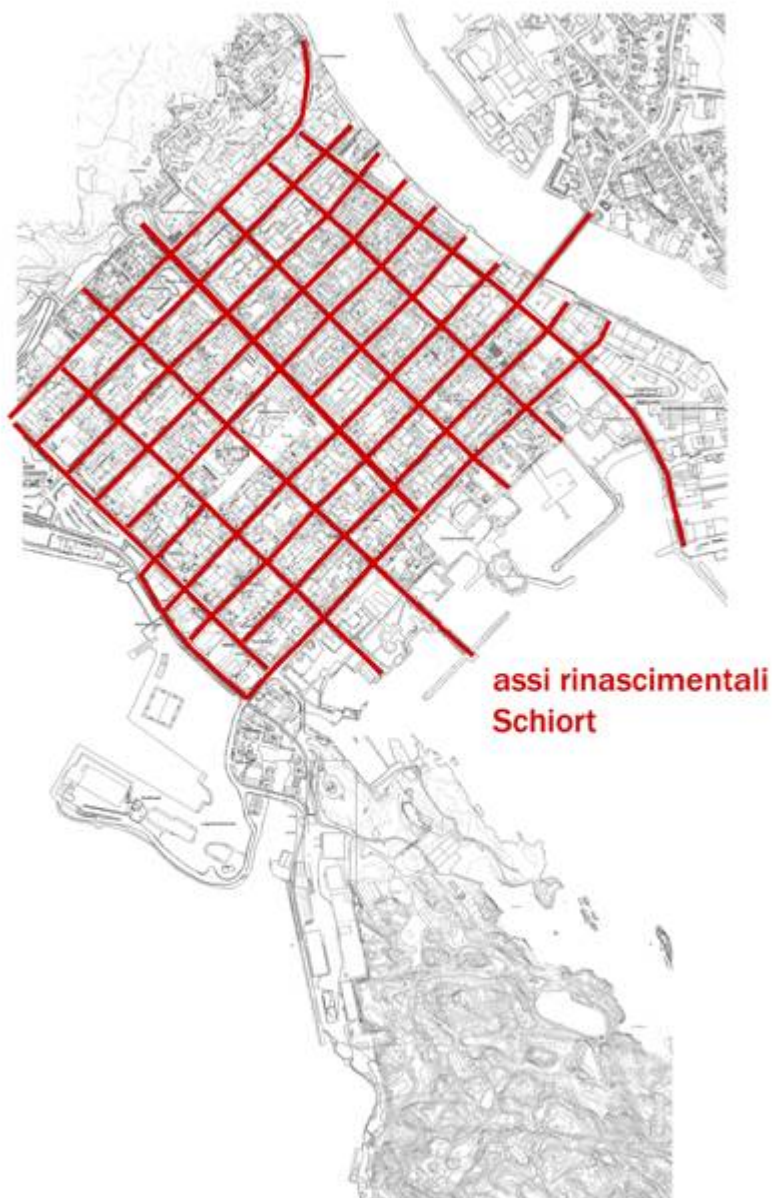
ZONA DI SILOKAIA,
ISOLA DI ODERROYA











ASSI RINASCIMENTALI

- 1641: Il re Christian IV fonda la città
- Ingegnere Hans Jacob Schiort
- Assi verticali e orizzontali iscritti in un quadrato
- Modulo rettangolo di 130 su 65 metri



SISTEMA EDIFICATO

- Maglia di Schiort.
- Fronte stradale continuo
- Larghezza media lotti: 15 – 20 metri; corti interne tortuose.



■ INDUSTRIE

■ CENTRI DI ATTIVITA'

— VIABILITA'

■ PORTI

■ VERDE



-  AREA DI PROGETTO
-  DOCK DI FISKERBRIGGA
-  VIABILITA'
-  PORTI
-  VERDE
-  AREA INDUSTRIALE DISMESSA NEL 2007



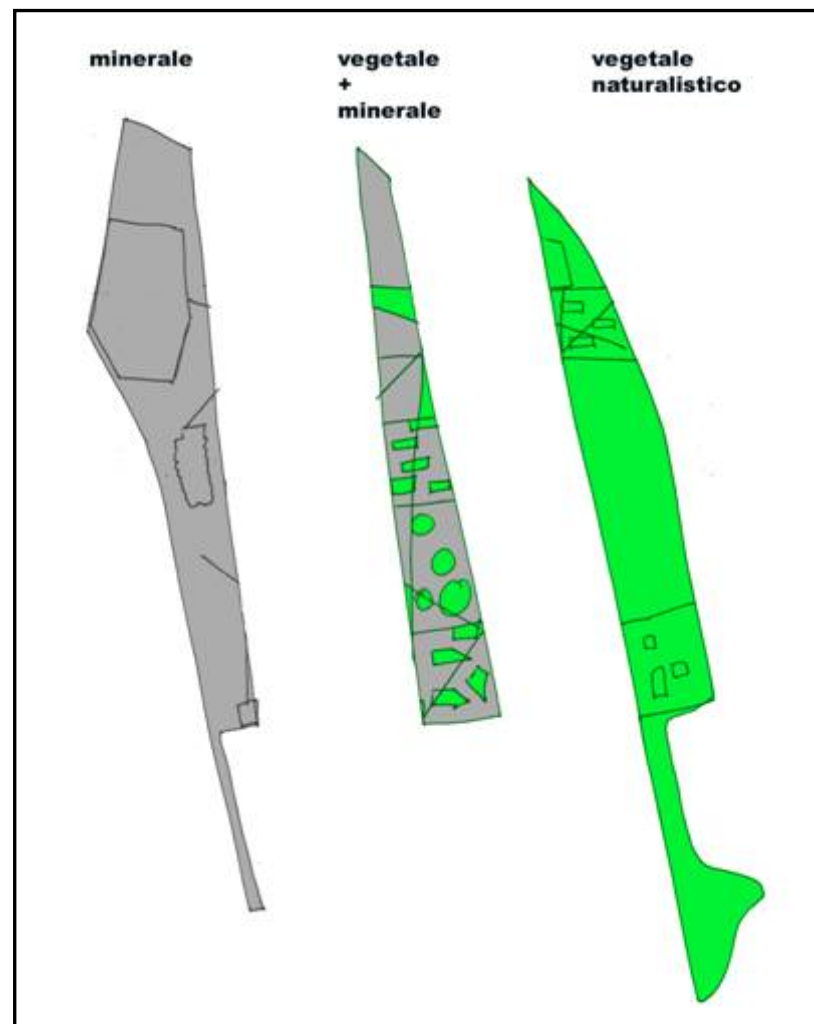
IL

MASTERPLAN



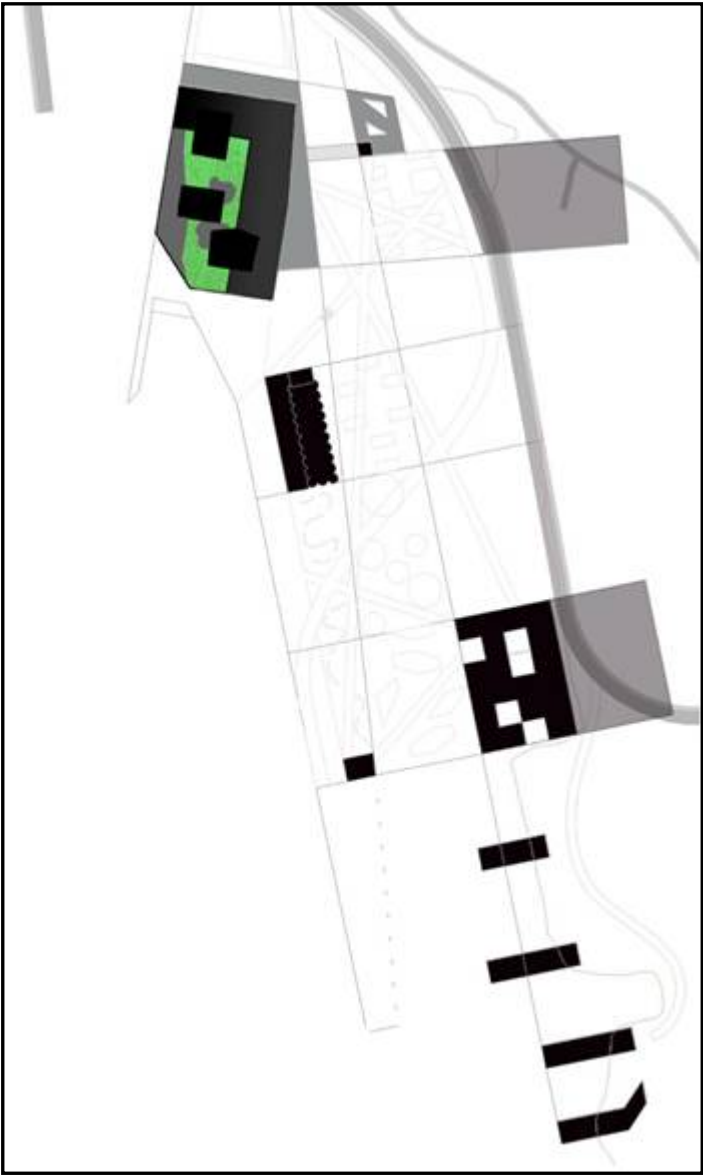


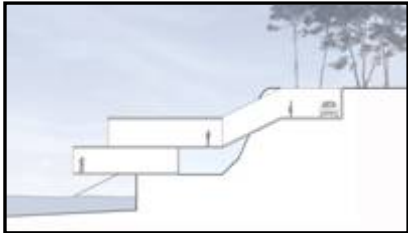
- Prima fascia: parco verde naturalistico, con vegetazione composta da conifere
A nord: scuola di ballet
Al centro: complesso di ristoranti e alberghi
A sud: residenze m&m
A est: rocce a scogliera come frontiera naturale
- Seconda fascia: piccoli giardini tematici
- Terza fascia: lungo mare, interamente pavimentata, in contrasto alle altre due strisce
A nord: Performing Art Center
Al centro: Silos



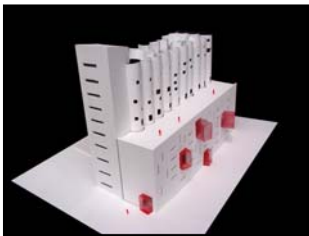
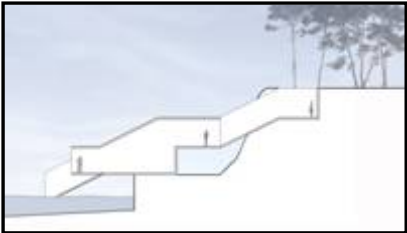


Performing Art Center	16 200 m ²	51.6%
Silos	5 100 m ²	16.3%
Mediateca	2 100 m ²	
Fondazion arte	2 000 m ²	
Locali accoglienza e sicurezza	1 000 m ²	
Scuola di ballet	1 300 m ²	4.2%
Residenze	1 000 m ²	3.2%
Case m&m		
Albergo - Ristoranti	3 000 m ²	9.5%
Parcheggi pubblici	4 800 m ²	15.2%
Totale	31 400 m ²	

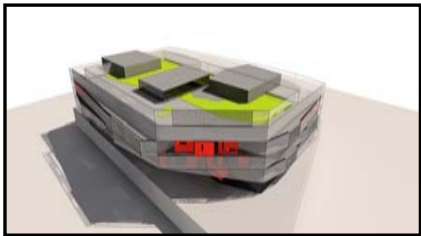
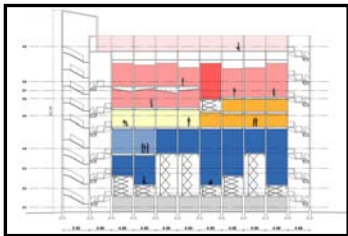




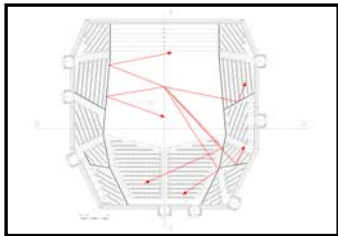
Case m&m



Silos

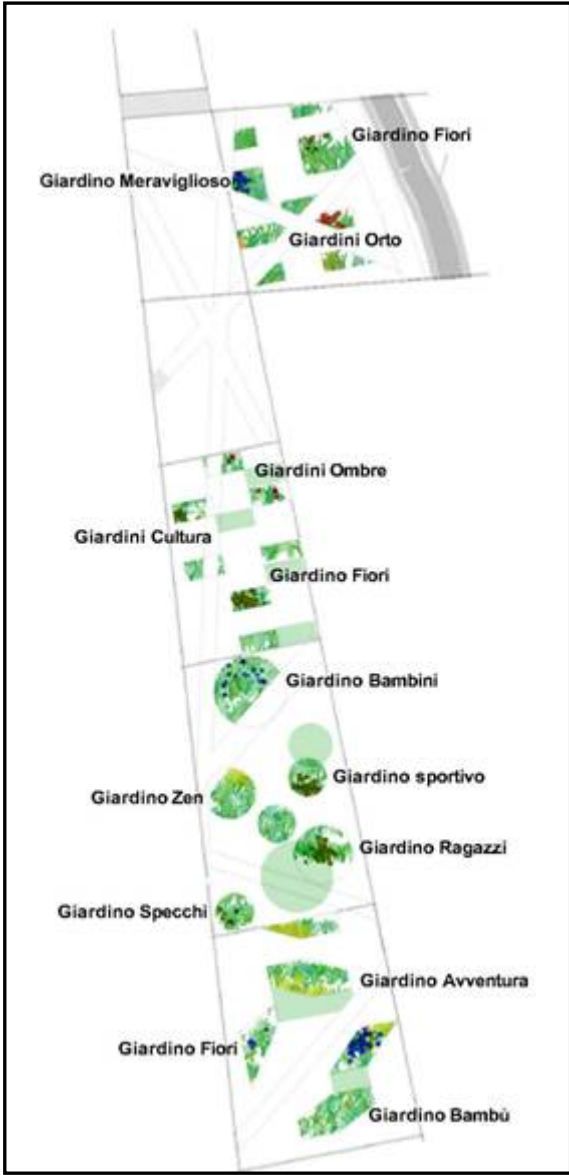


Performing Art Center

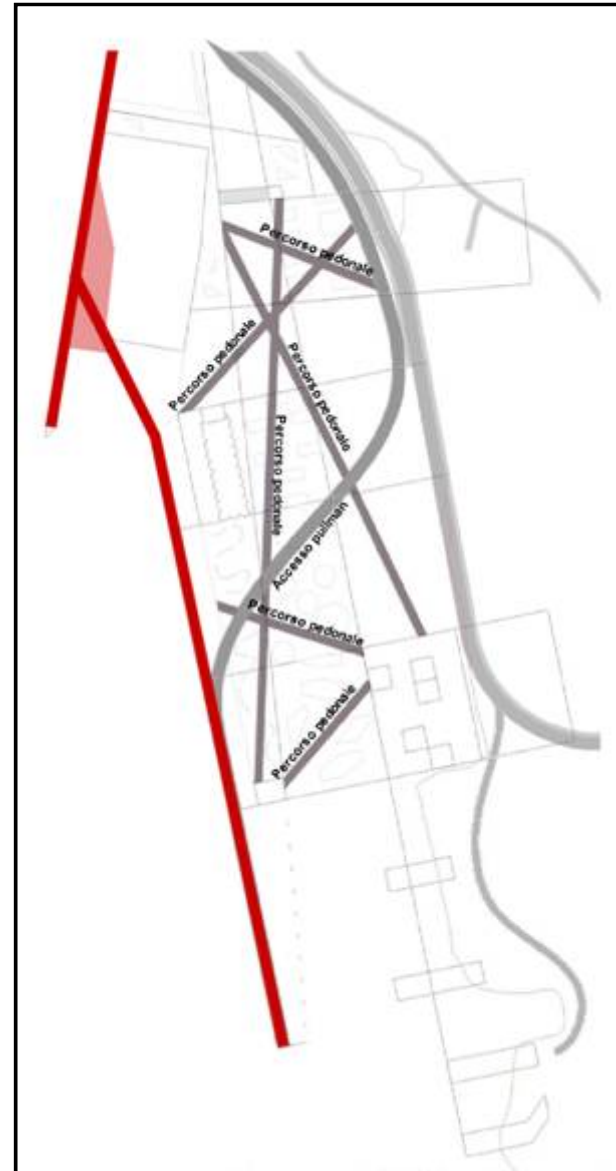




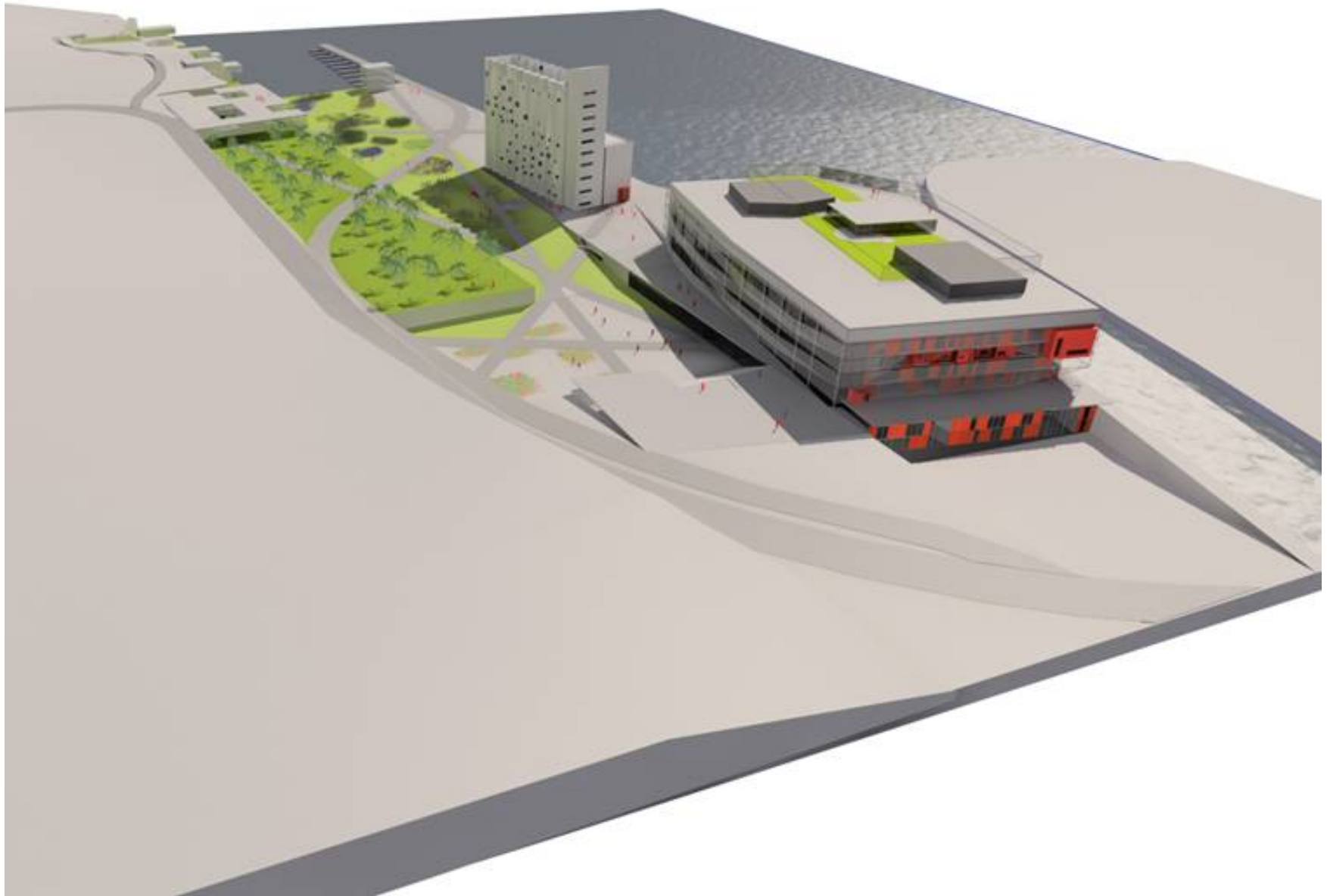
Sequenza di giardini tematici

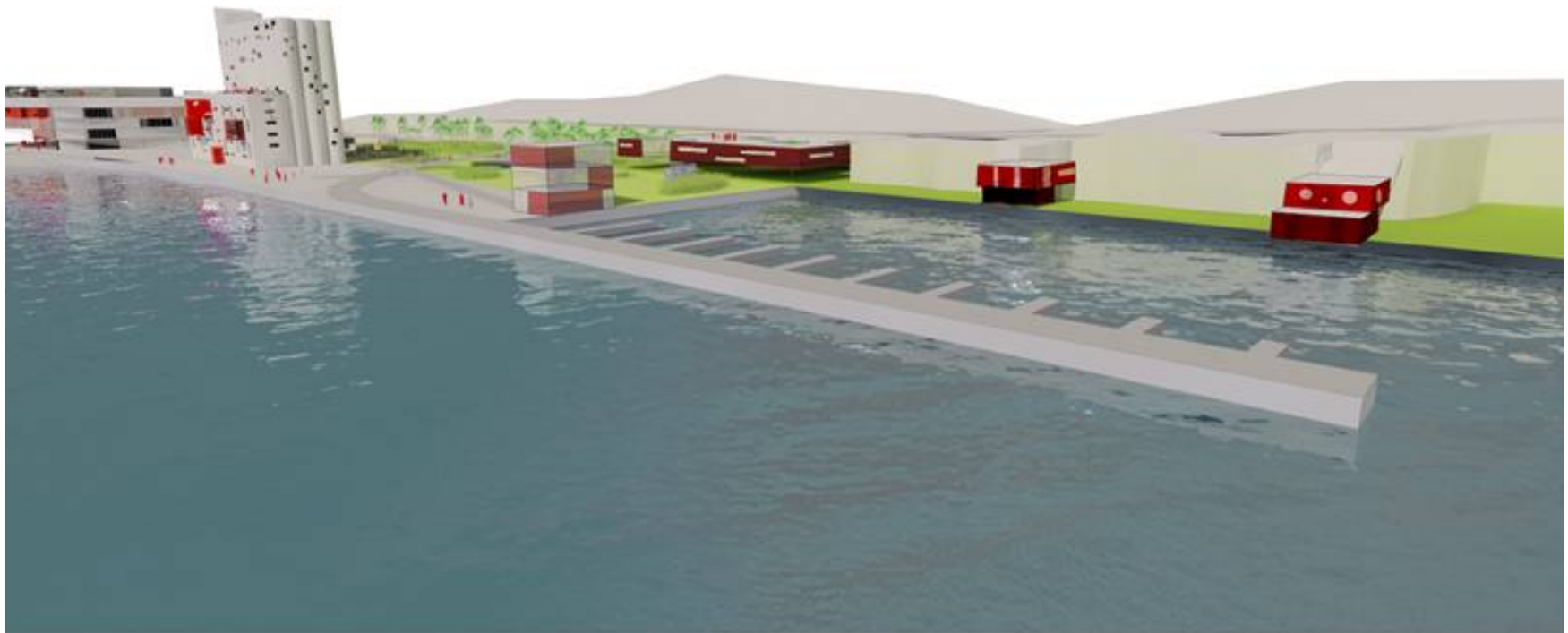


- Percorsi pedonali
- Percorsi carrabili
- Percorso lungo mare e piazza







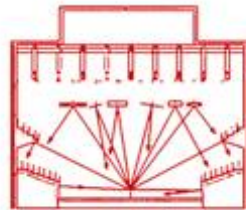
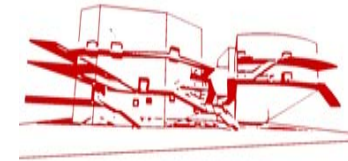




PERFORMING ART CENTER

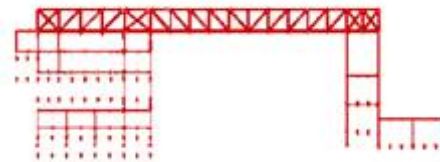


3.1 DESCRIZIONE E SCOPI ARCHITETTONICI



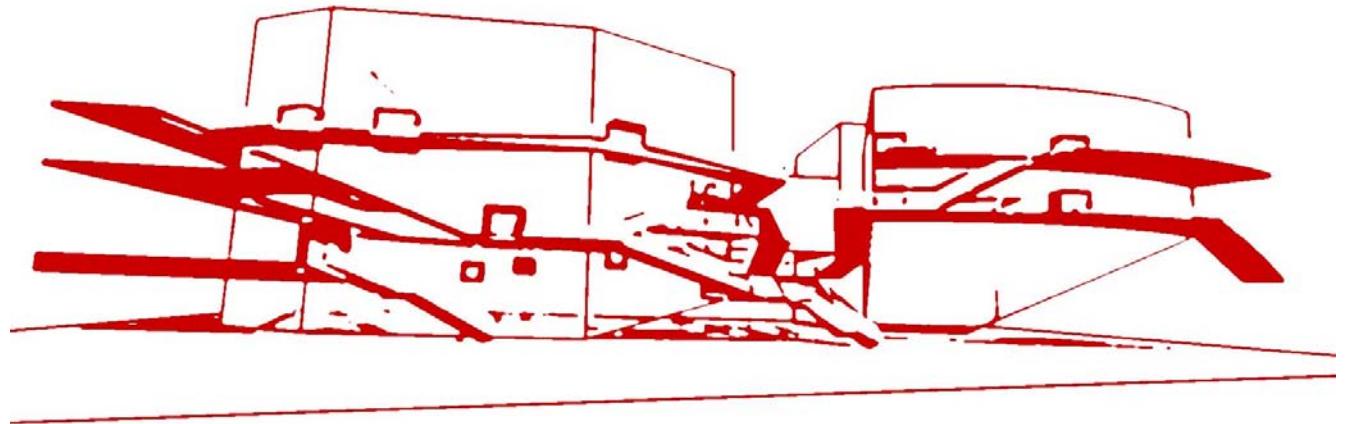
3.2 STUDIO ACUSTICO

3.3 ASPETTI STRUTTURALI



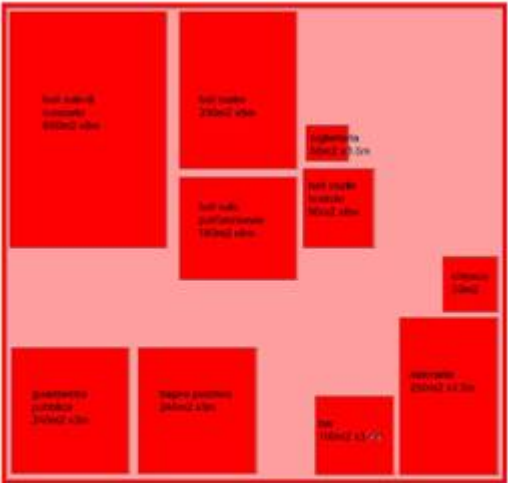


3.1 DESCRIZIONE E SCOPI ARCHITETTONICI

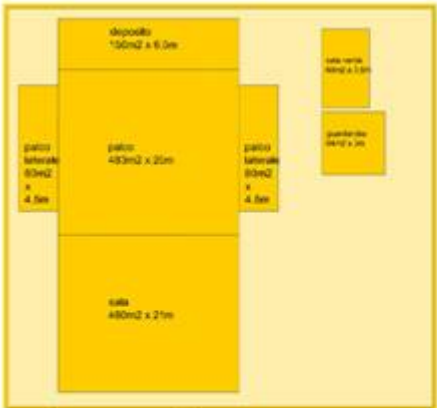


- # A ROOM WITH A VIEW

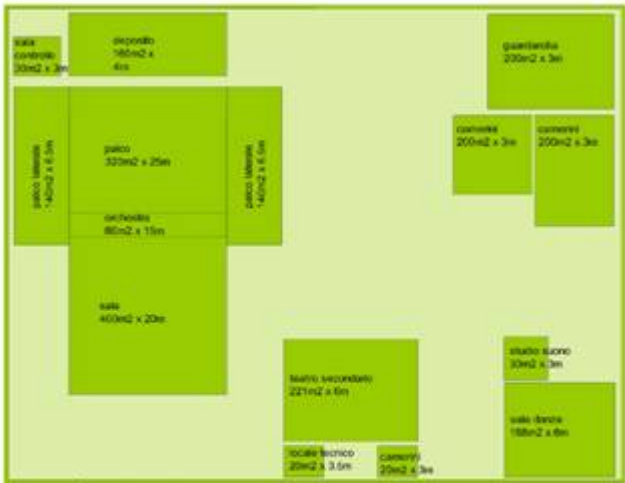
[illegible]



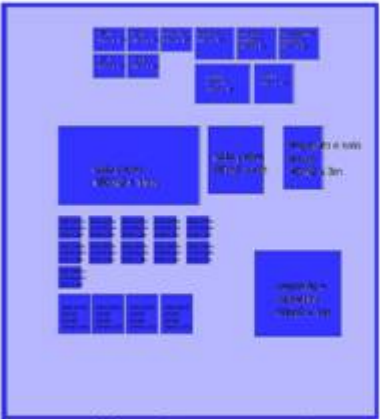
spazi pubblici



sala concerto



agder teatro



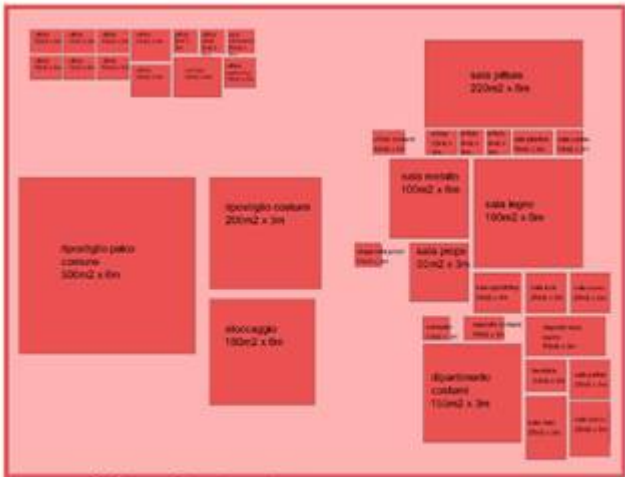
servizi sala concerto



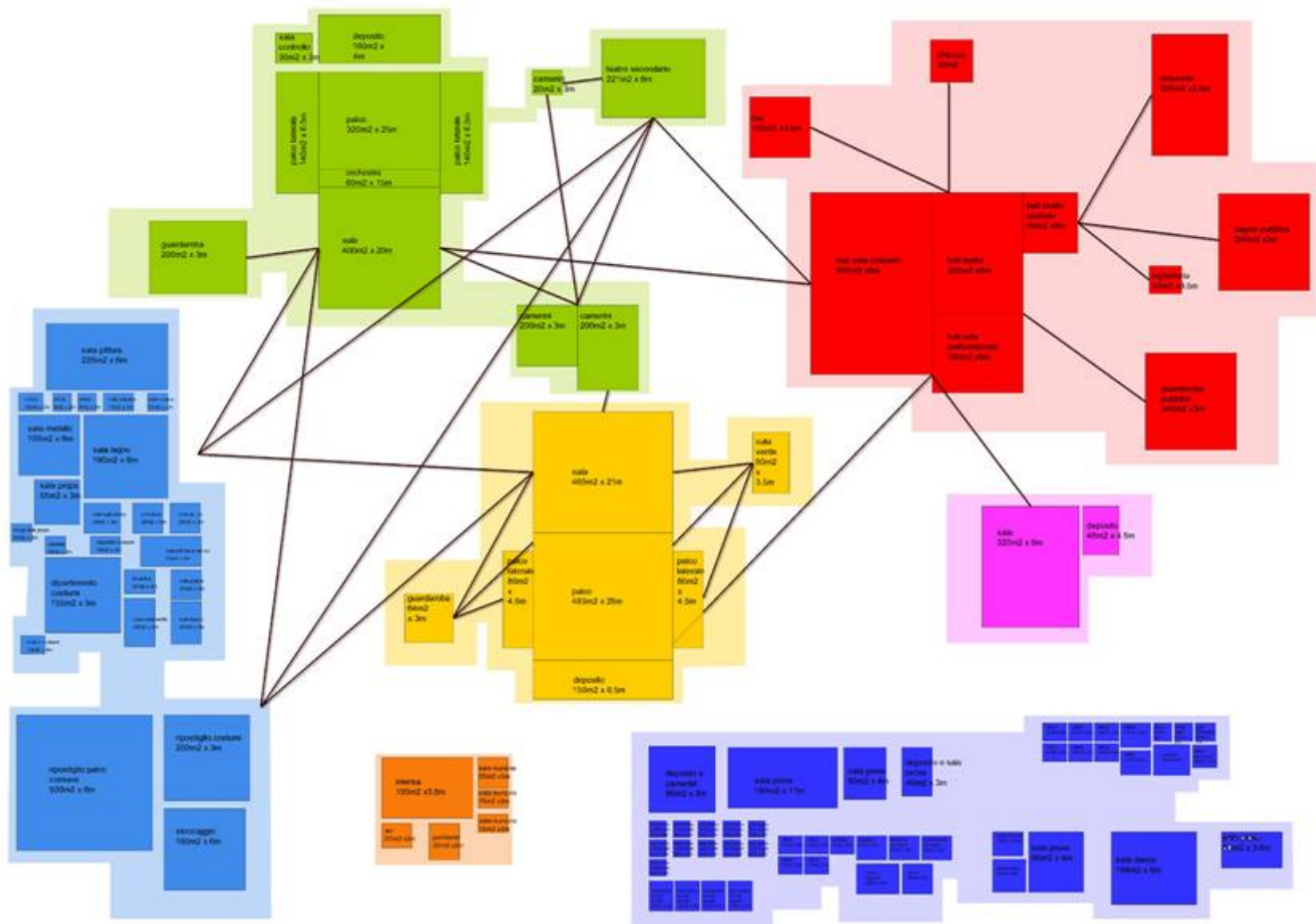
sala polifunzionale



servizi comuni



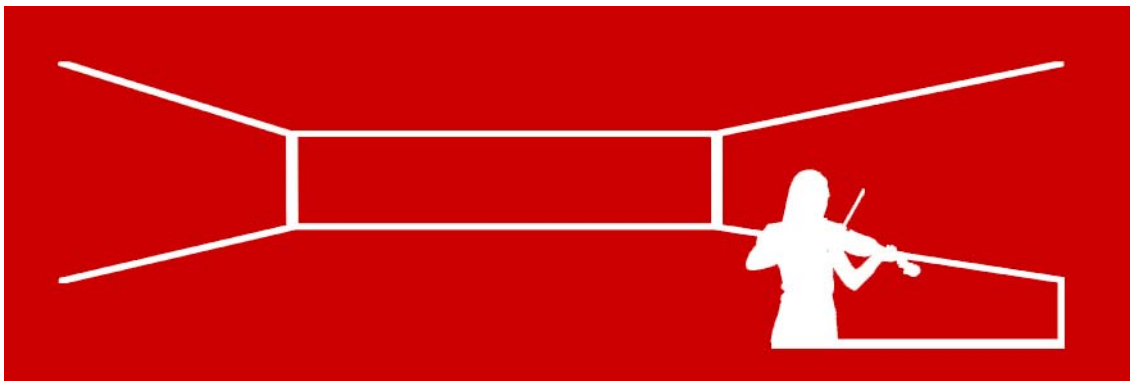
servizi agder teatro







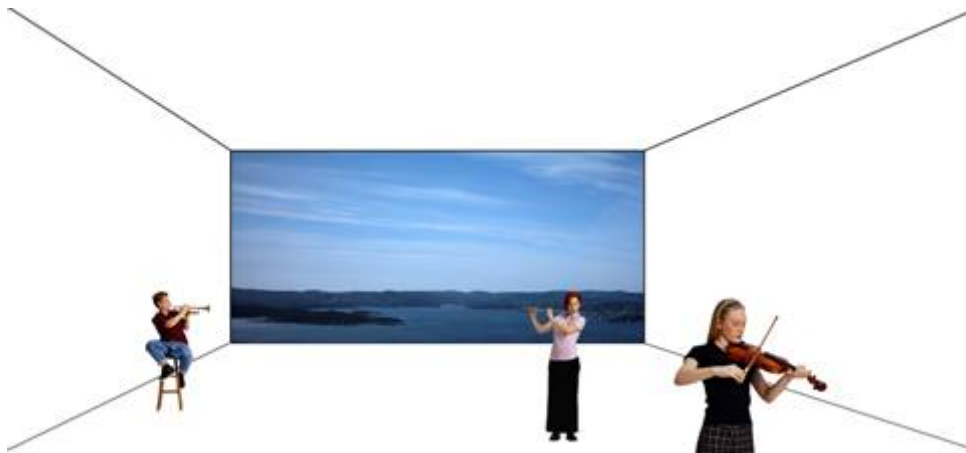
RAPPORTO CON IL PAESAGGIO



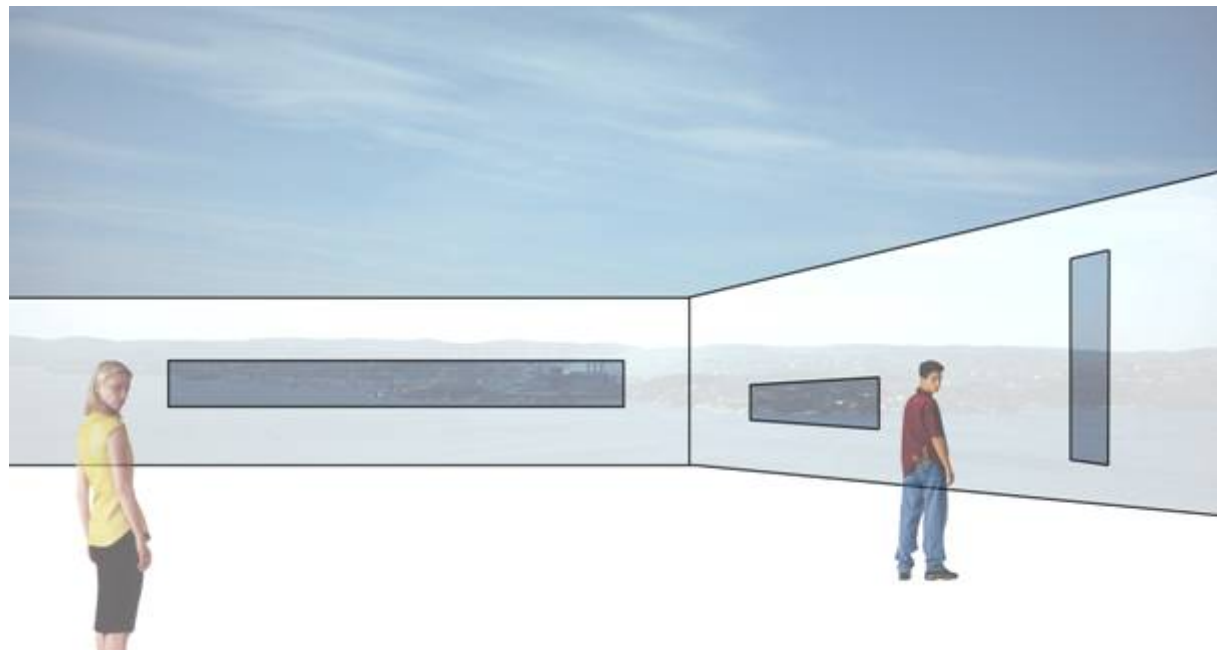
FINESTRA SUL MARE



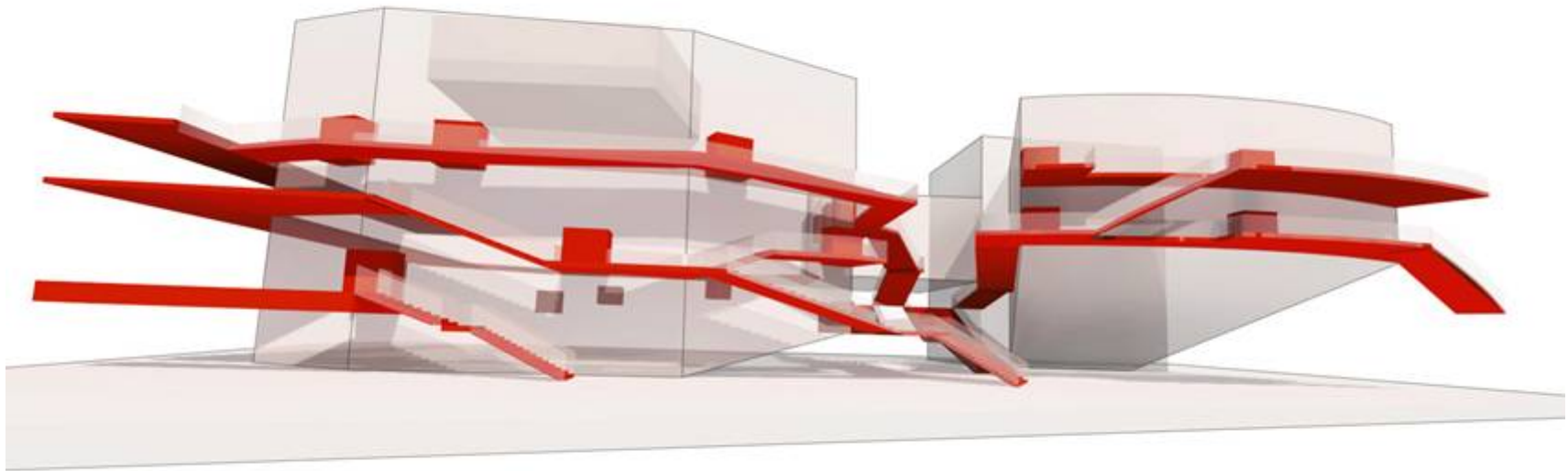
CAMERA CON VISTA



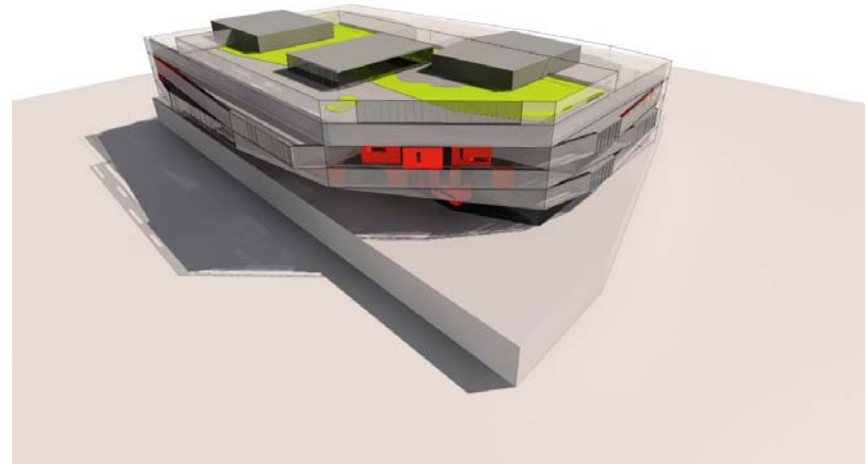
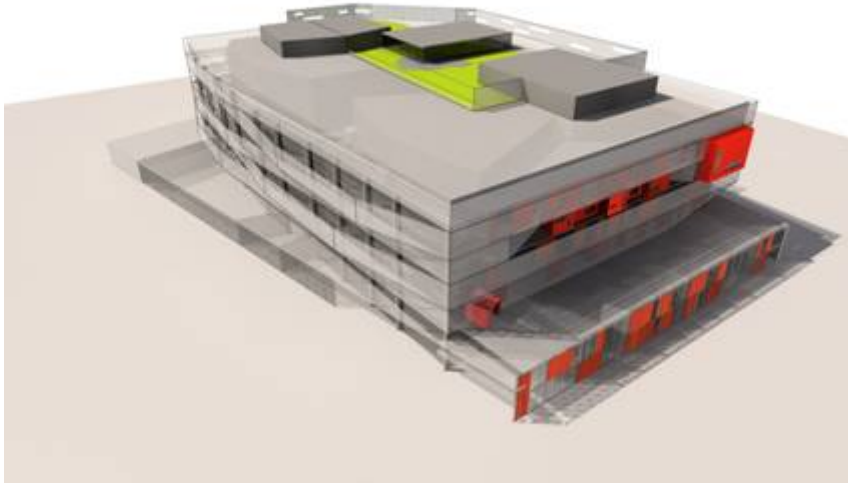
GIARDINO PENSILE



PERCORSI INTERNI



SCATOLE CINESI

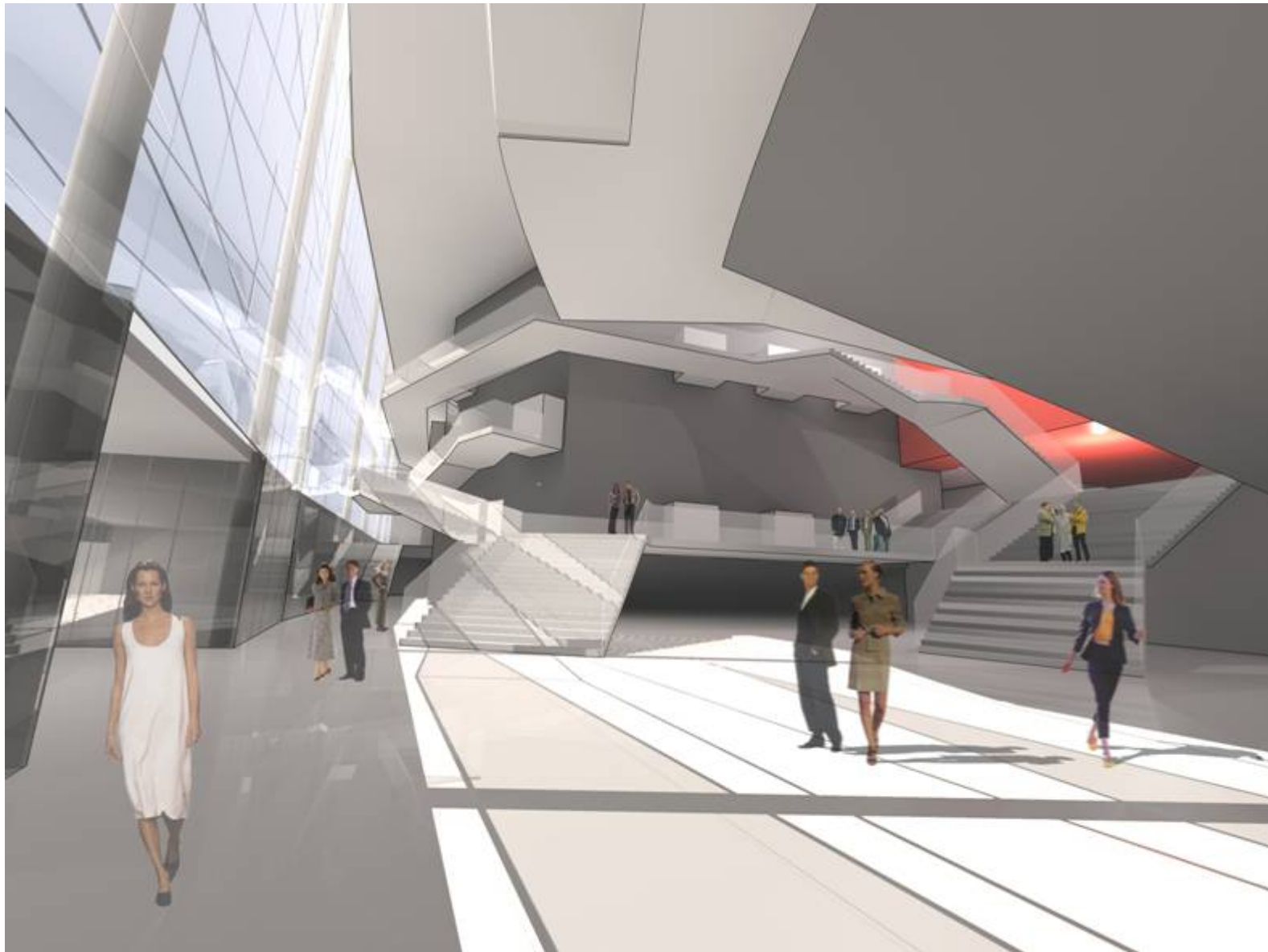








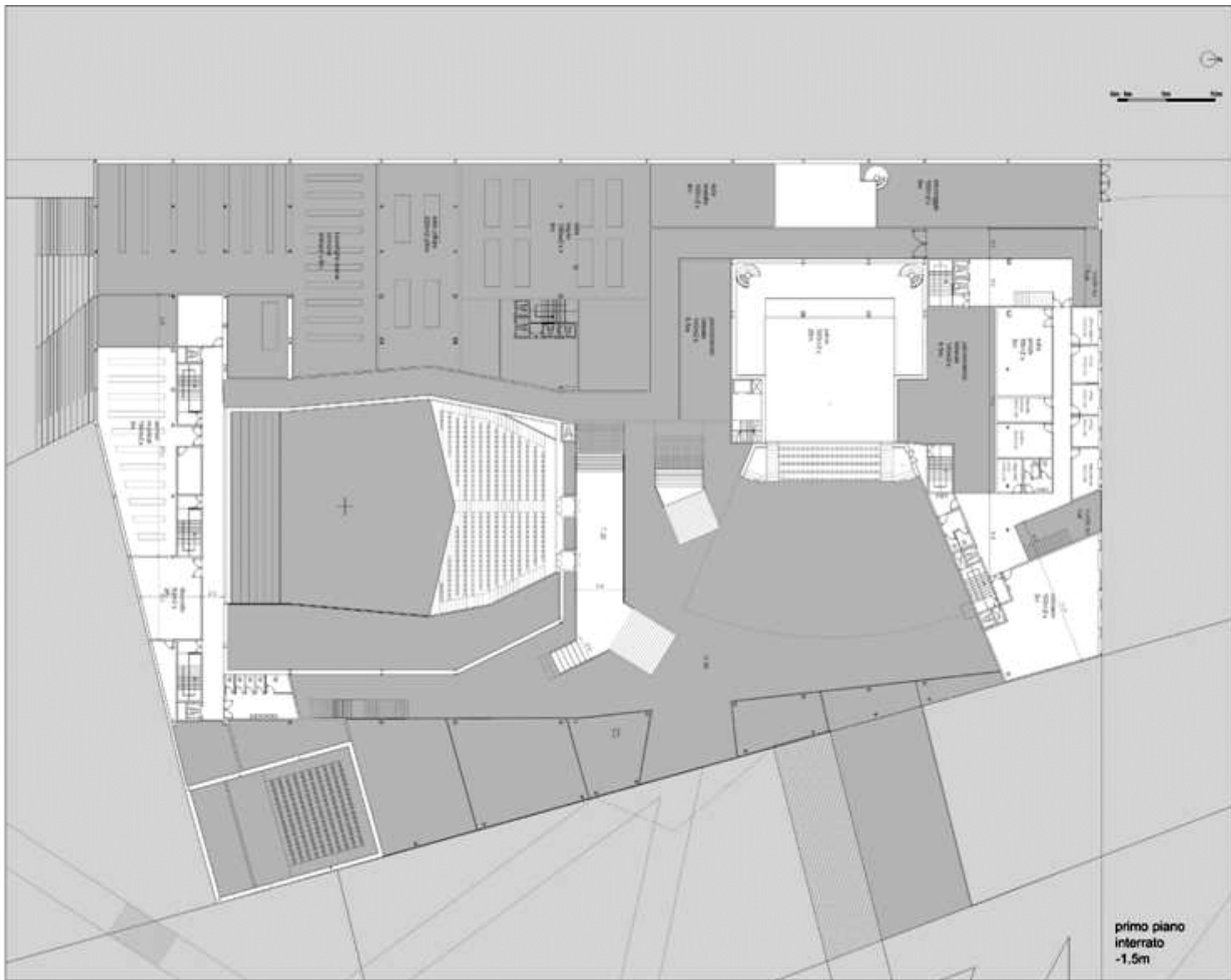




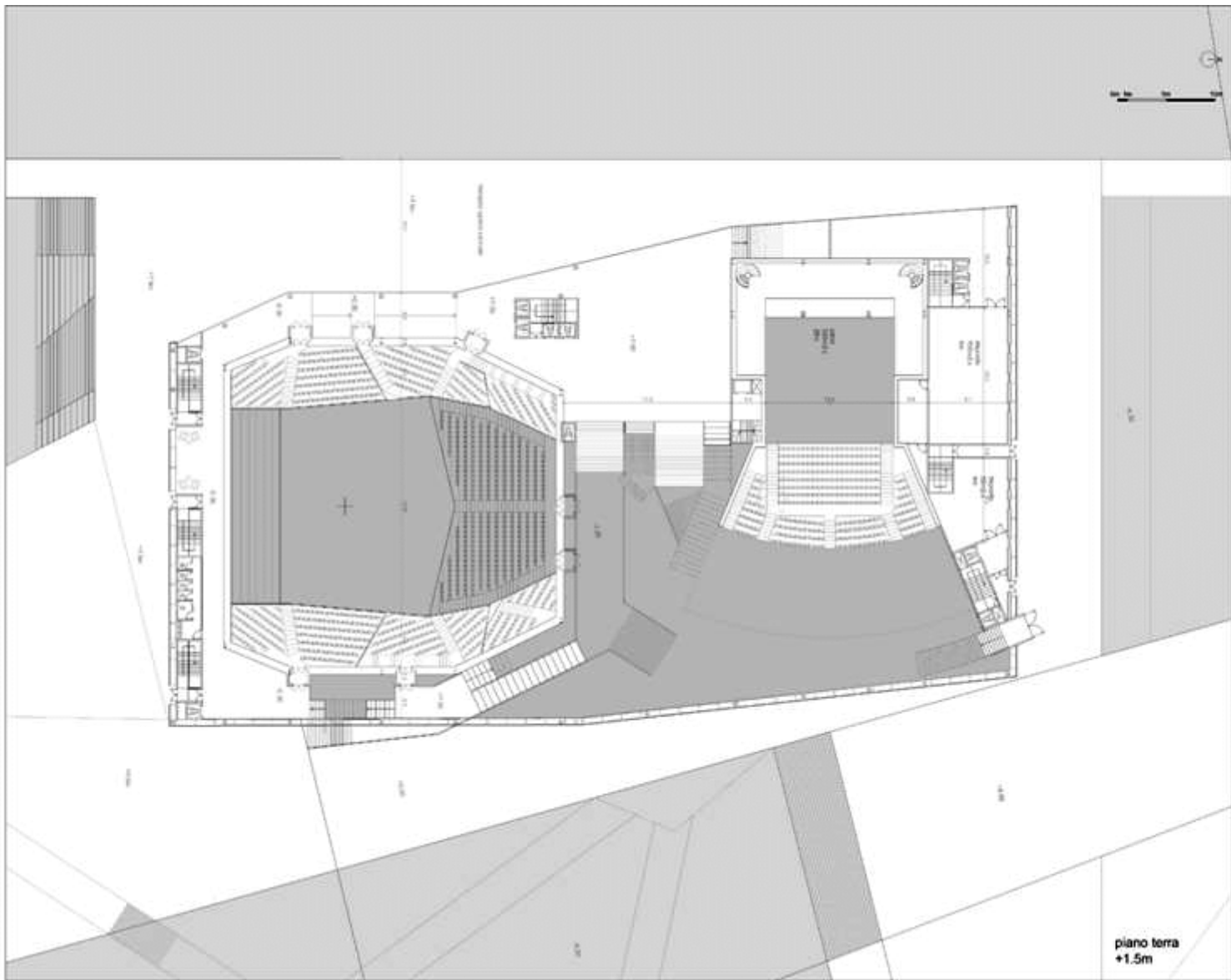




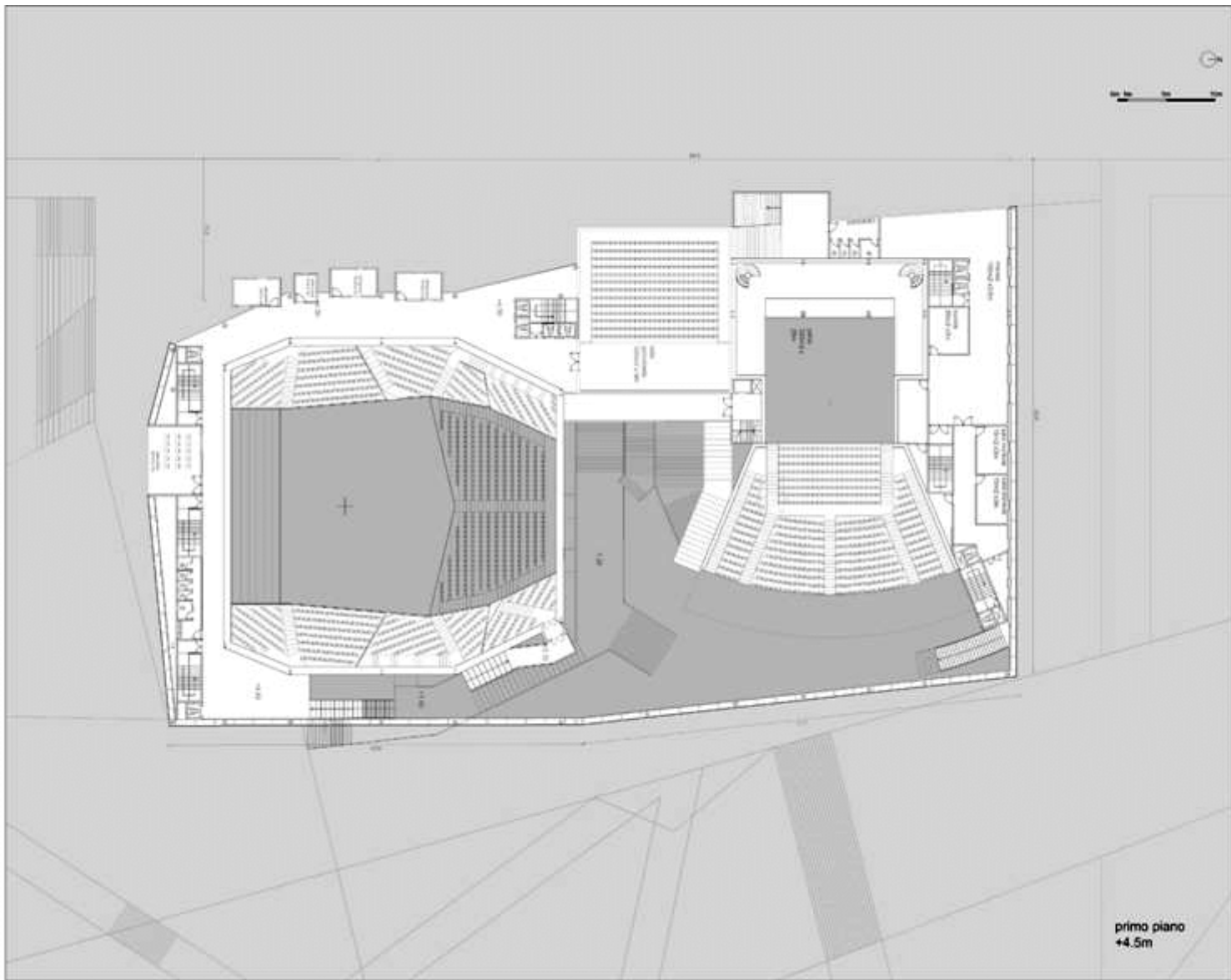
2° PIANO INTERRATO



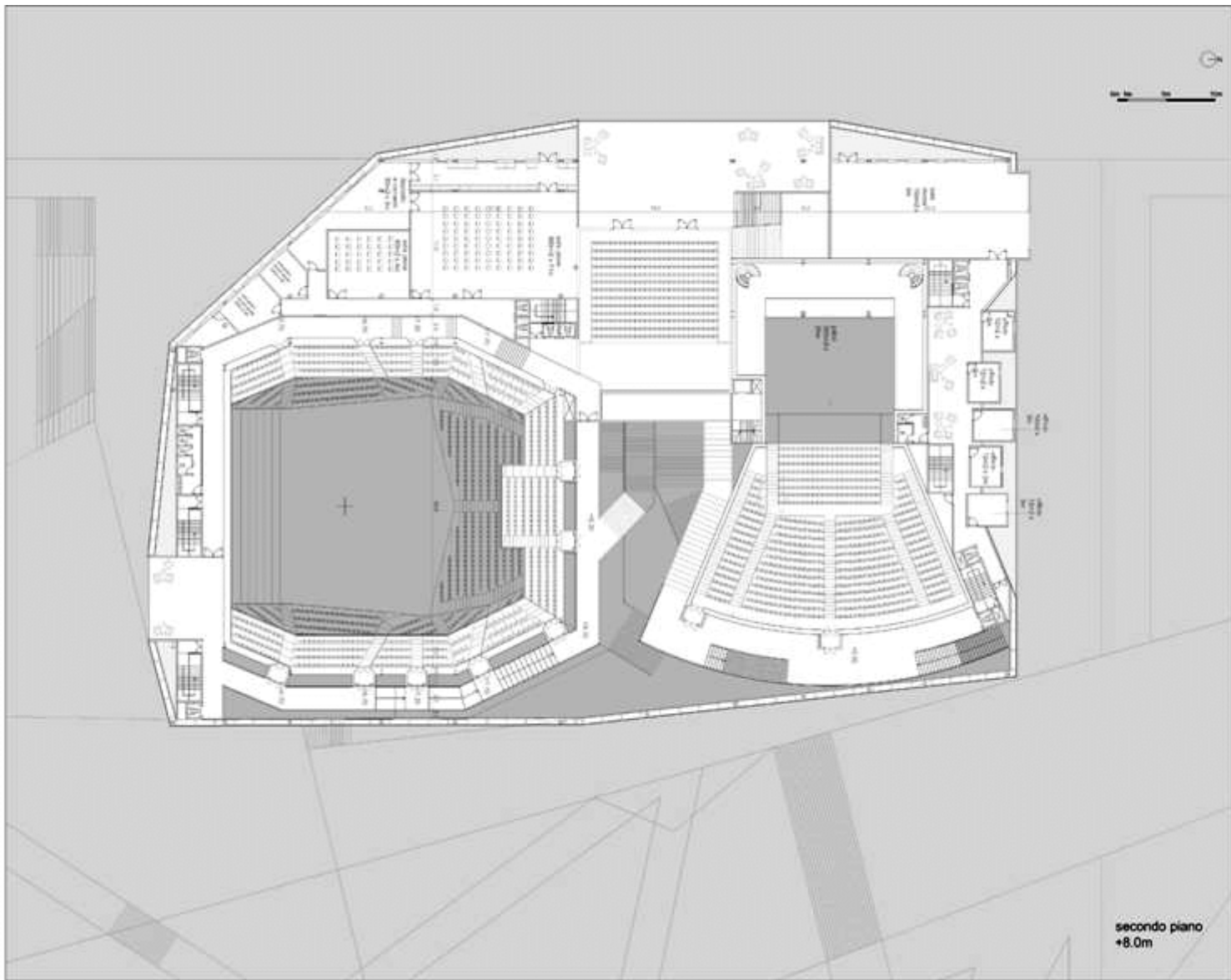
1° PIANO INTERRATO



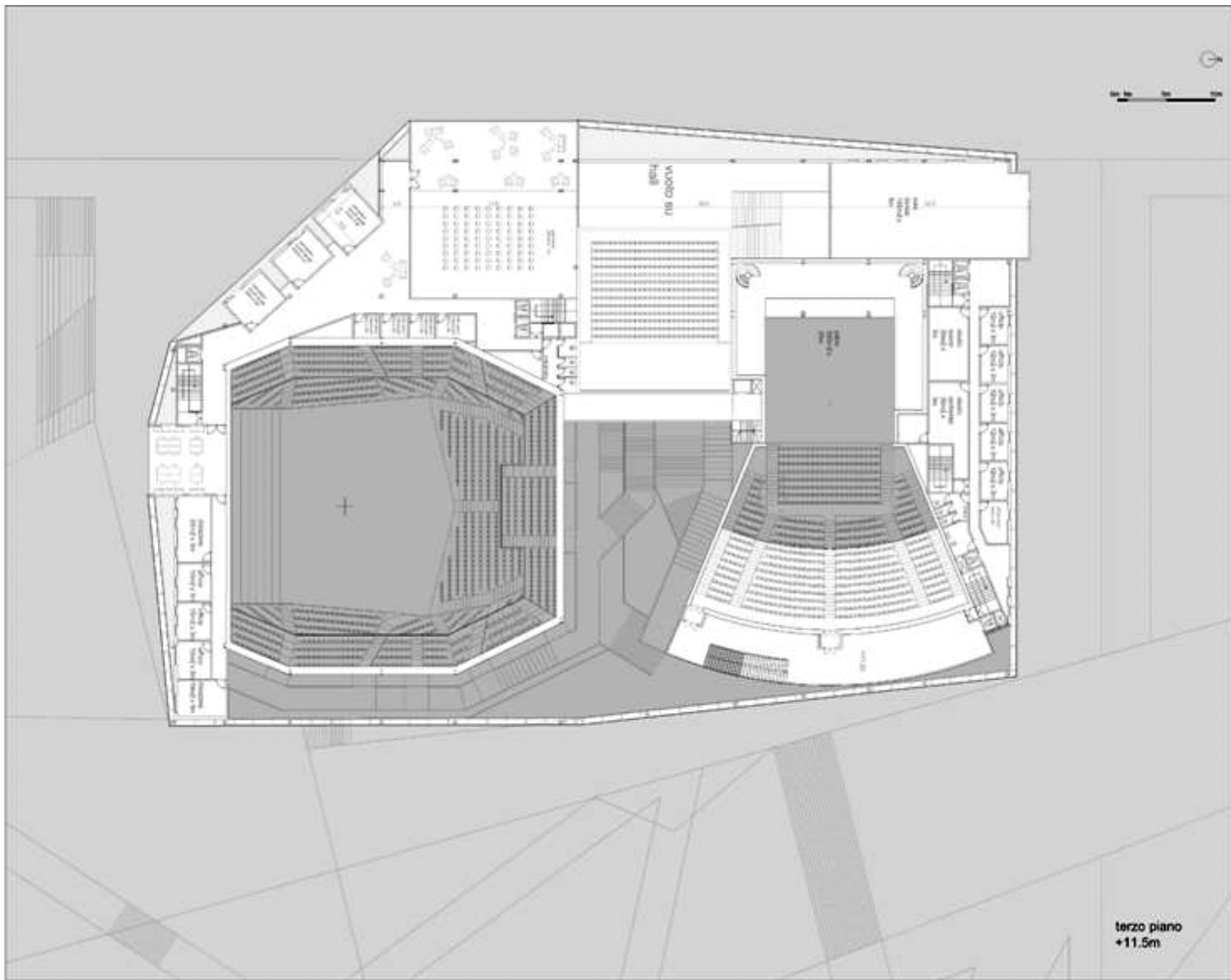
PIANO TERRA



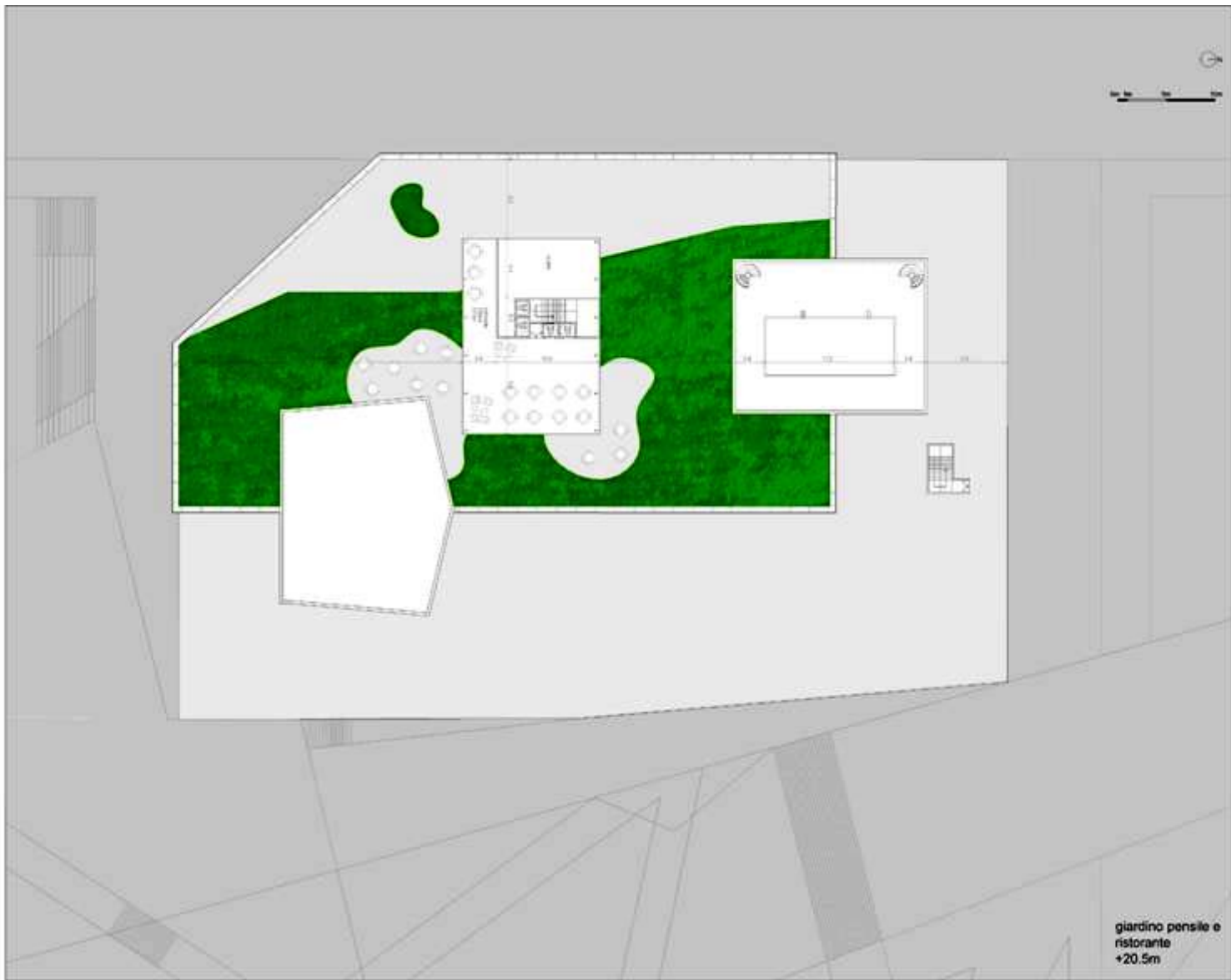
1° PIANO



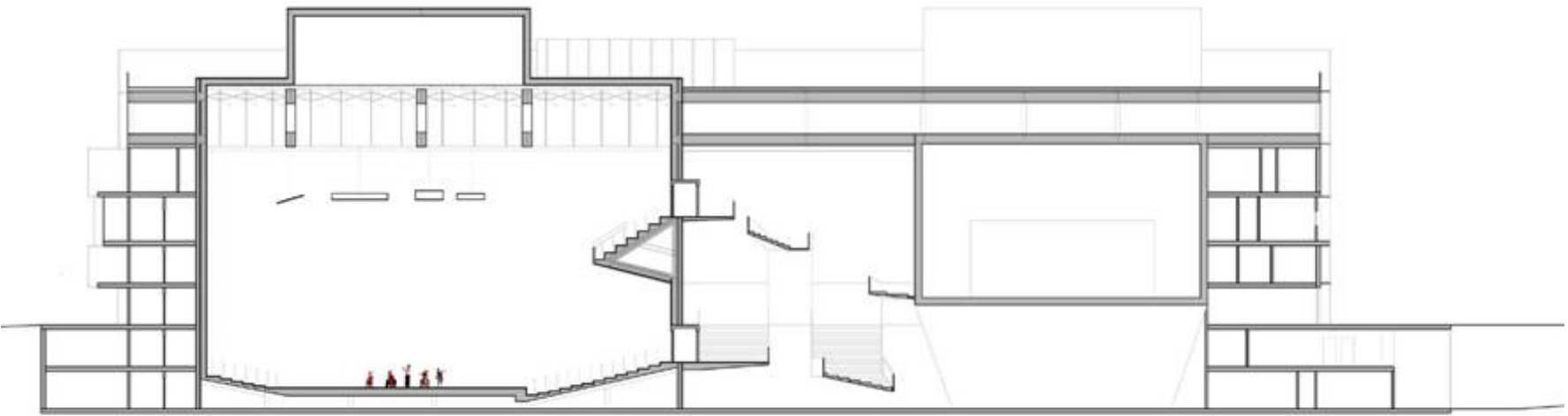
2° PIANO



3° PIANO



4° PIANO



SEZIONE A-A



BOITARD JULIEN



PROSPETTO EST



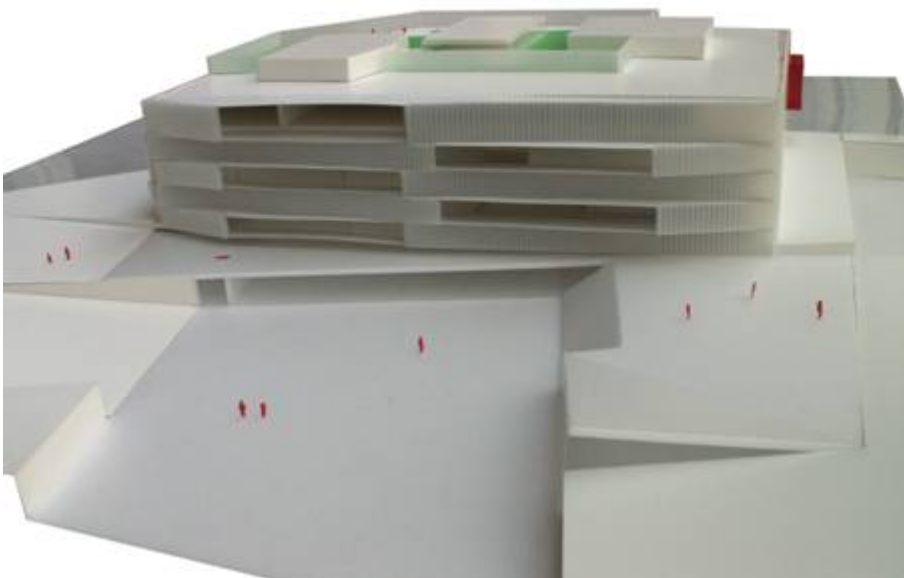
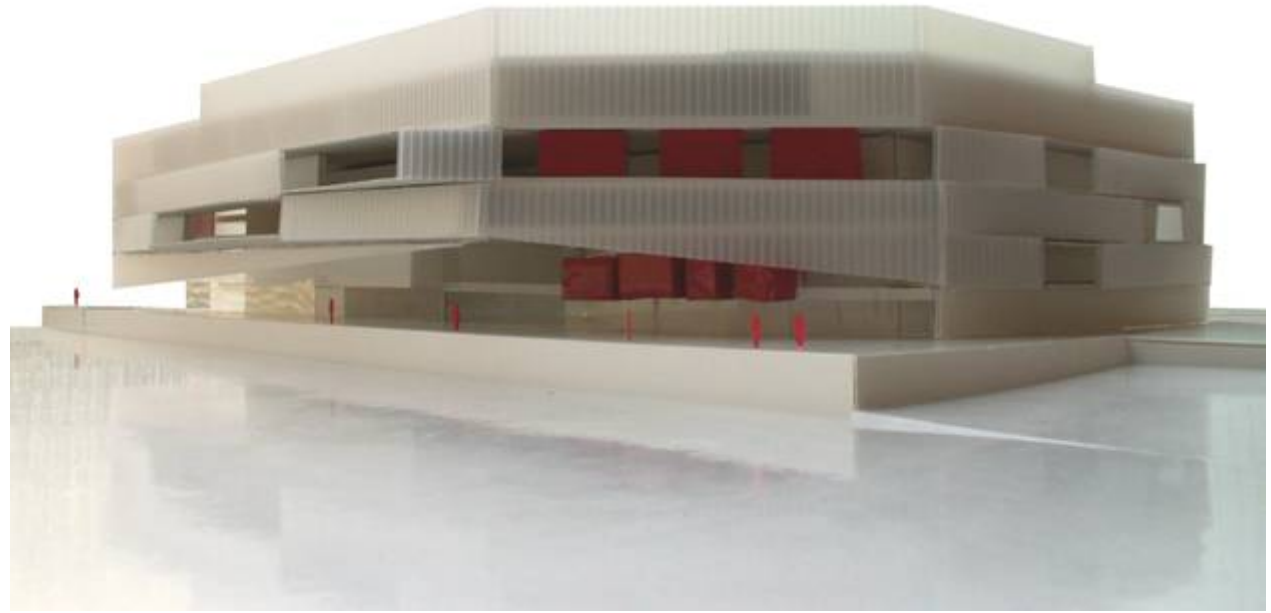
PROSPETTO NORD

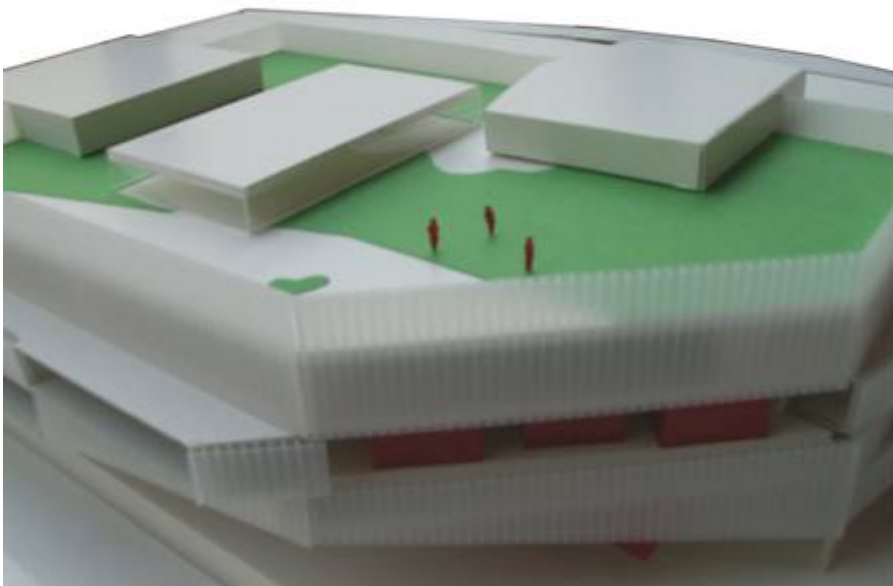
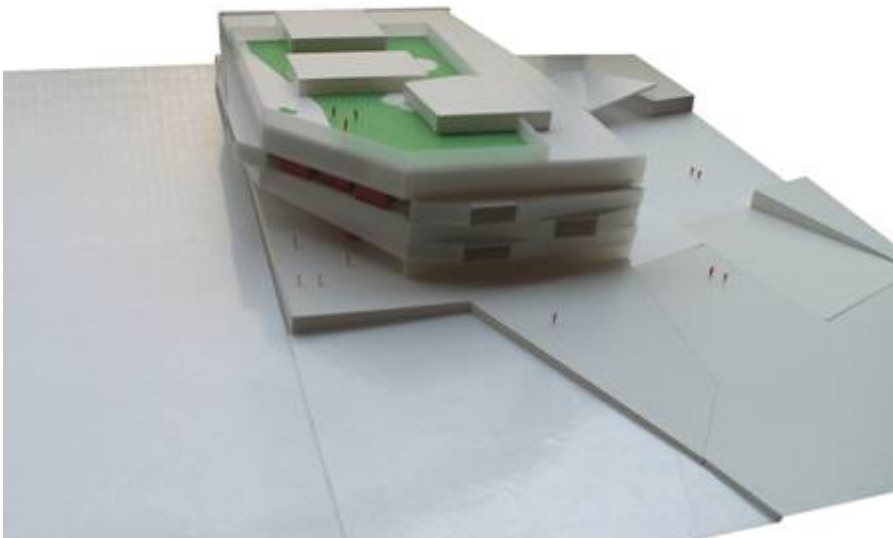


PROSPETTO OVEST



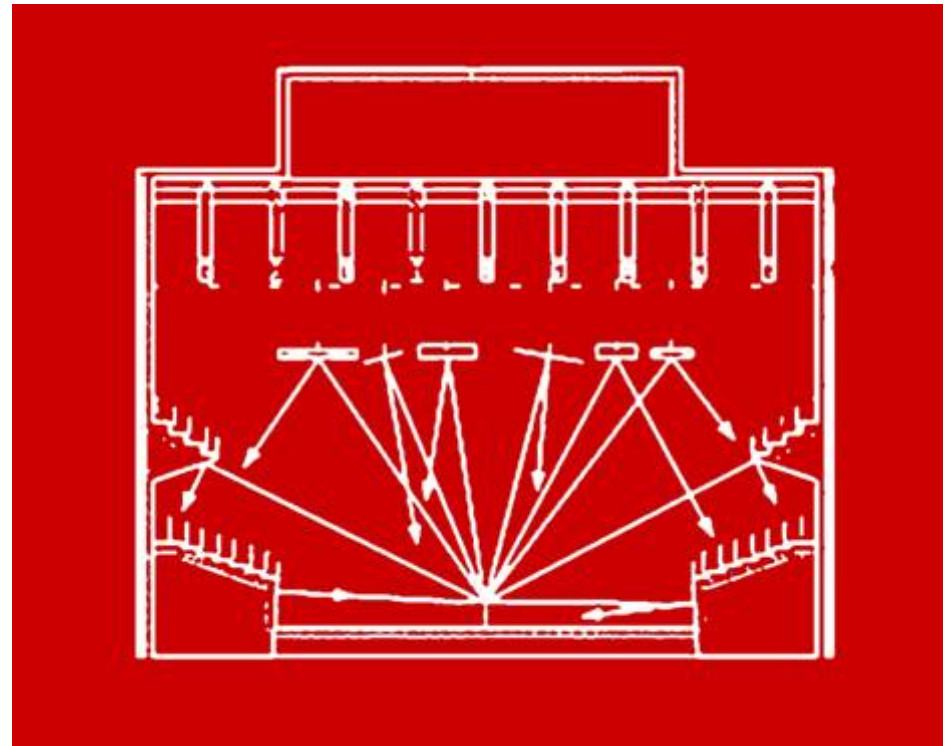
PROSPETTO SUD







3.2 SALA CONCERTO E ACUSTICA



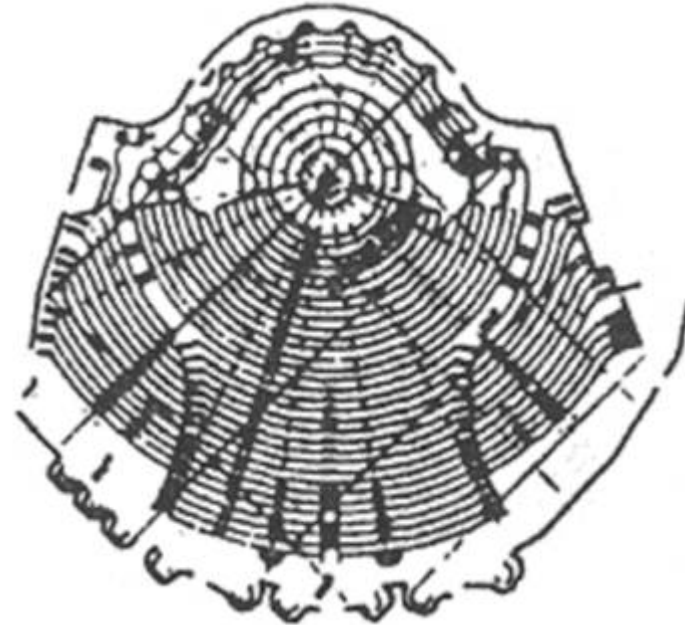


SHOE BOX



1869 WIEN

PIANTA CENTRALE



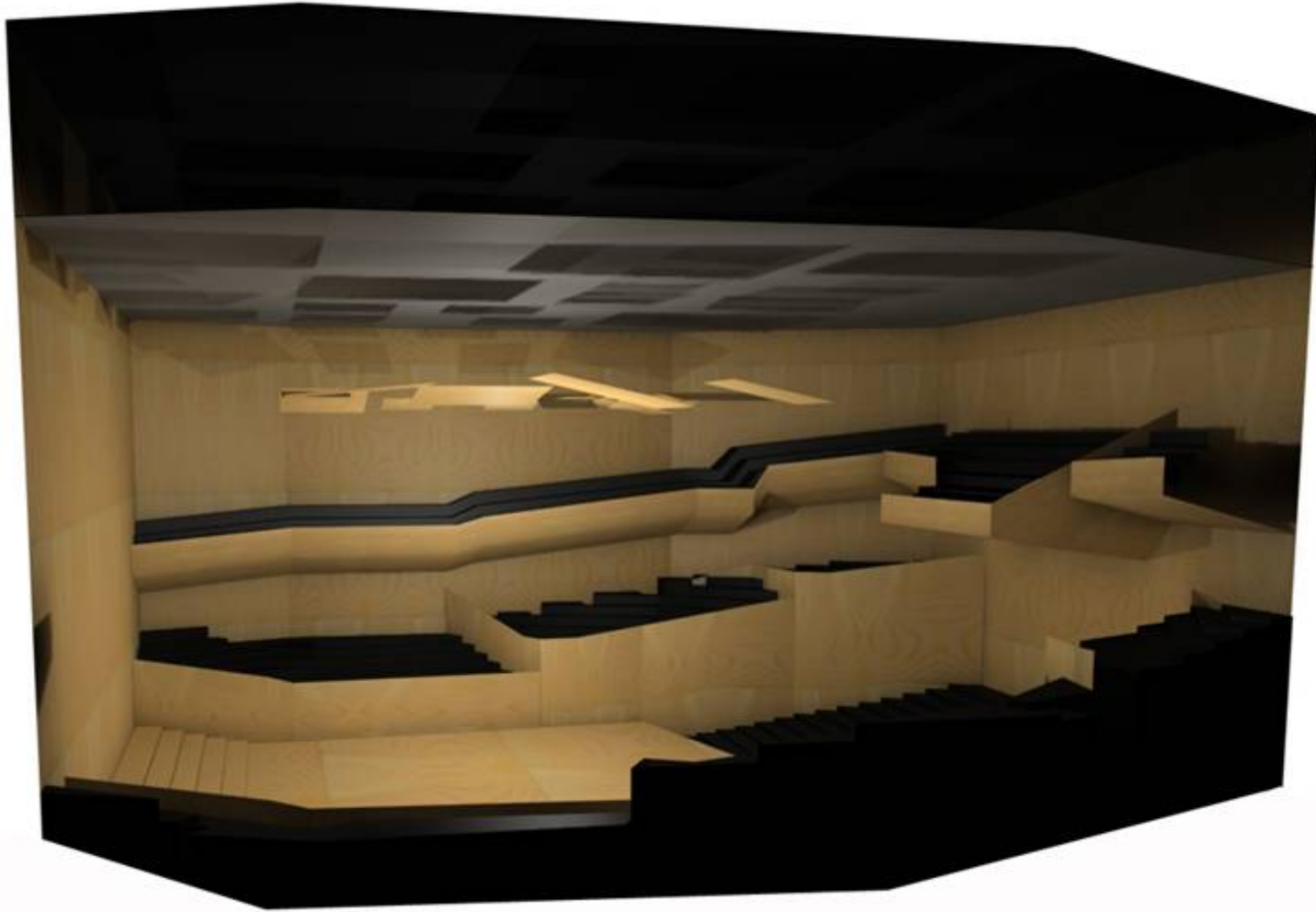
1986 KOLN

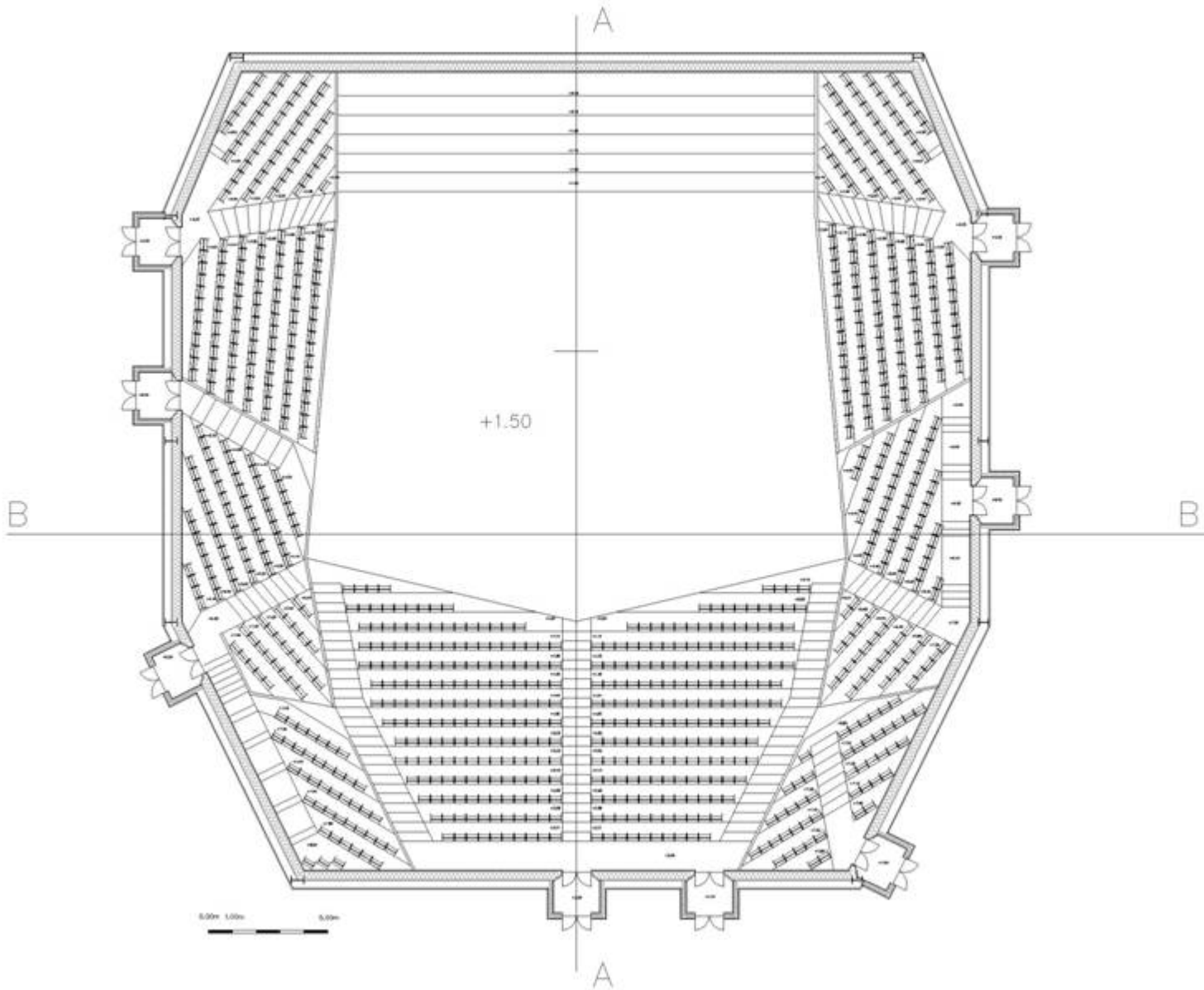


1963 BERLIN PHILARMONIE, HANS SCHAROUN









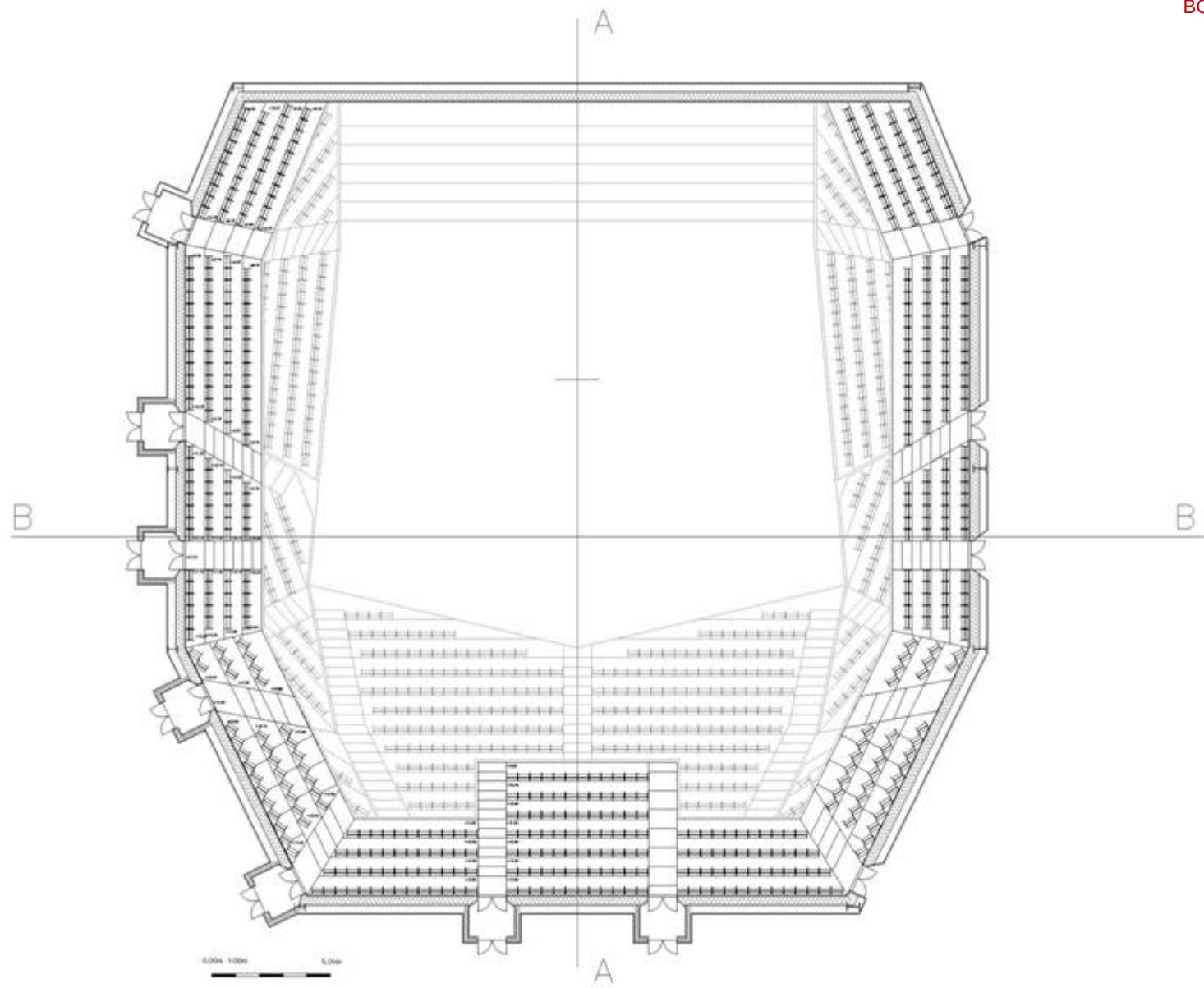
PIANTA PLATEA



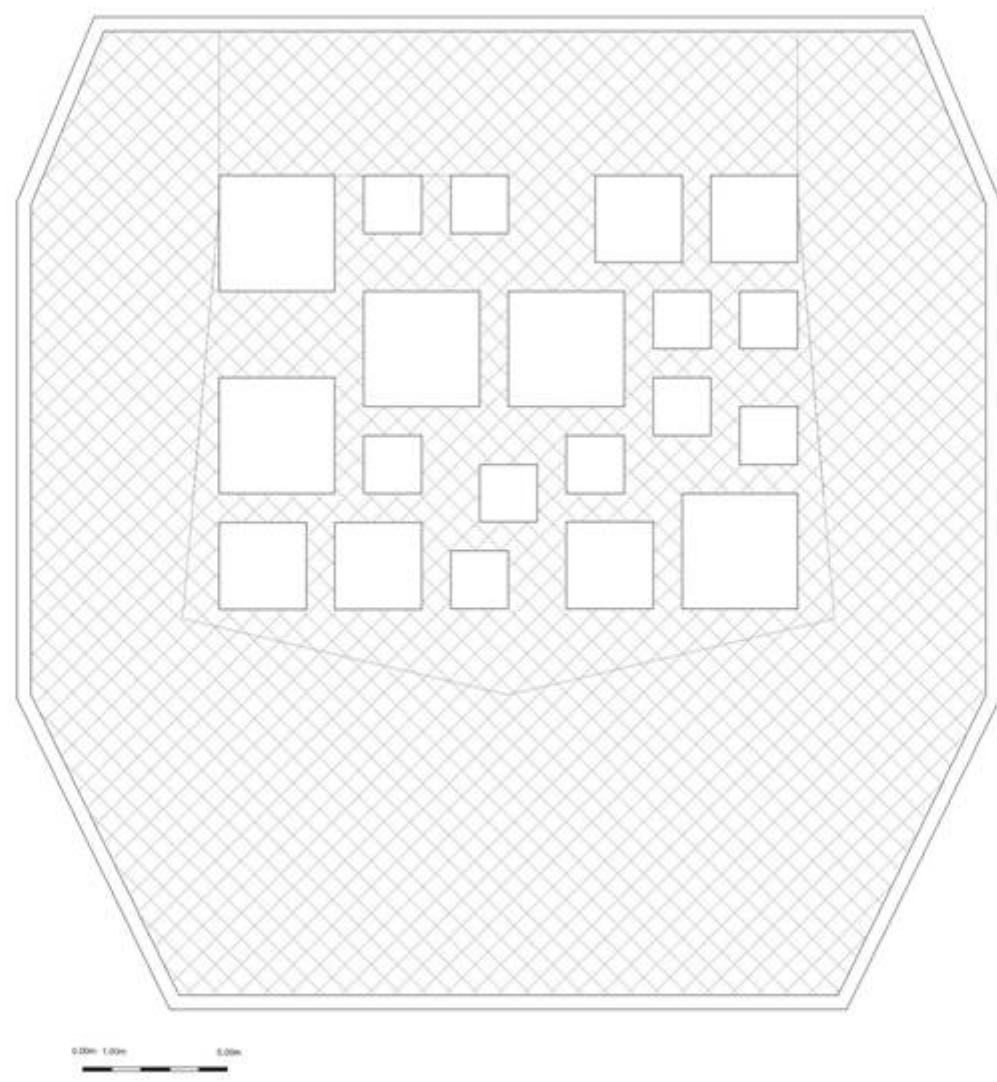
BOITARD JULIEN

PAC
3.2. SALA CONCERTO E ACUSTICA

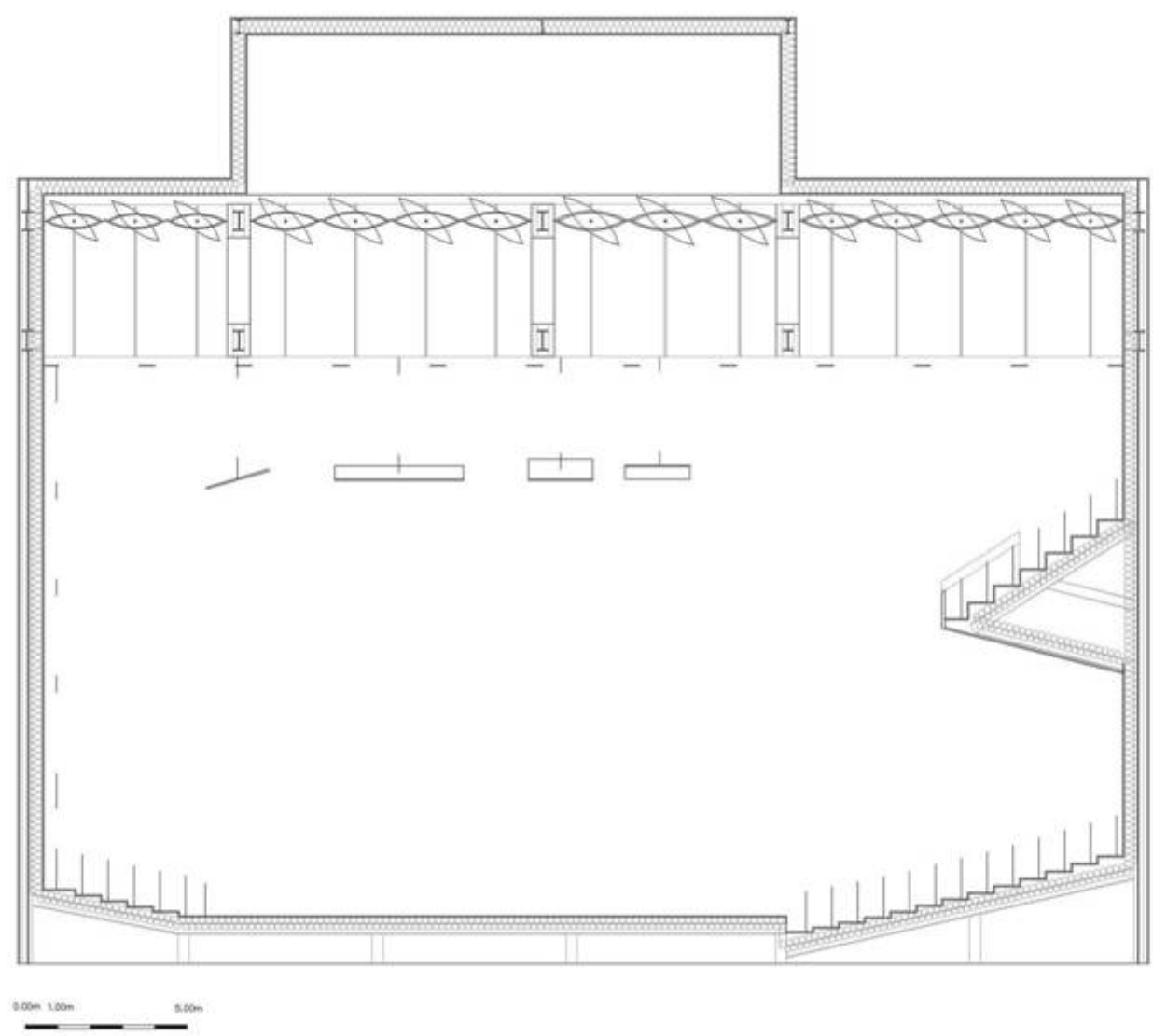
A ROOM WITH A VIEW



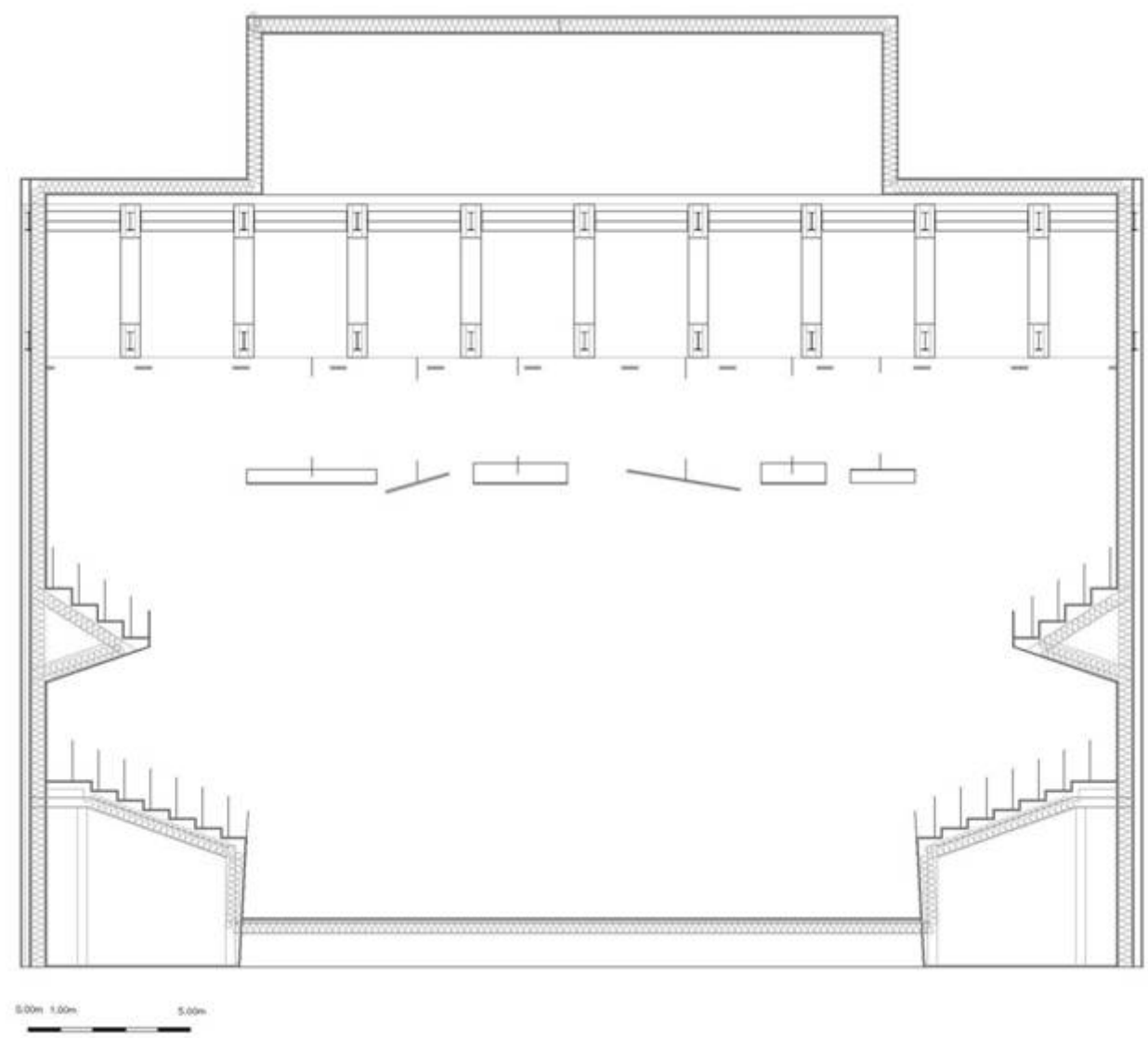
PIANTA BALCONATE



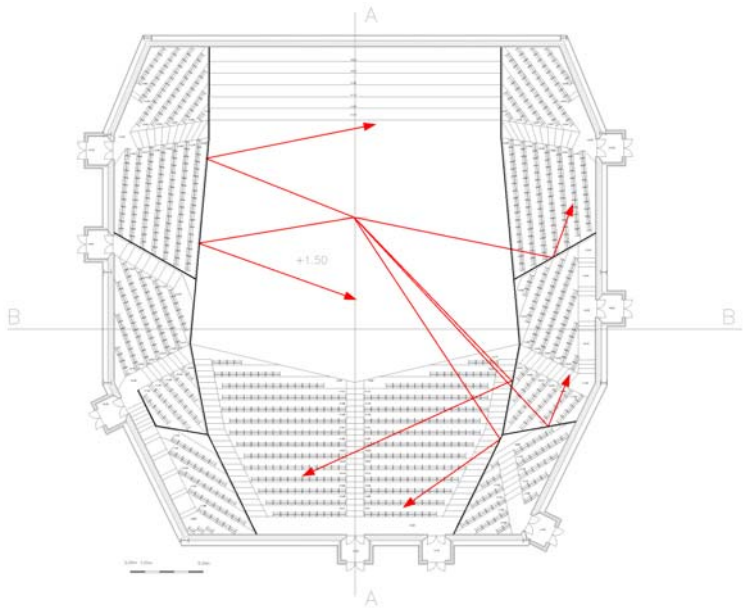
PIANTA RIFLETTORI SOFFITTO



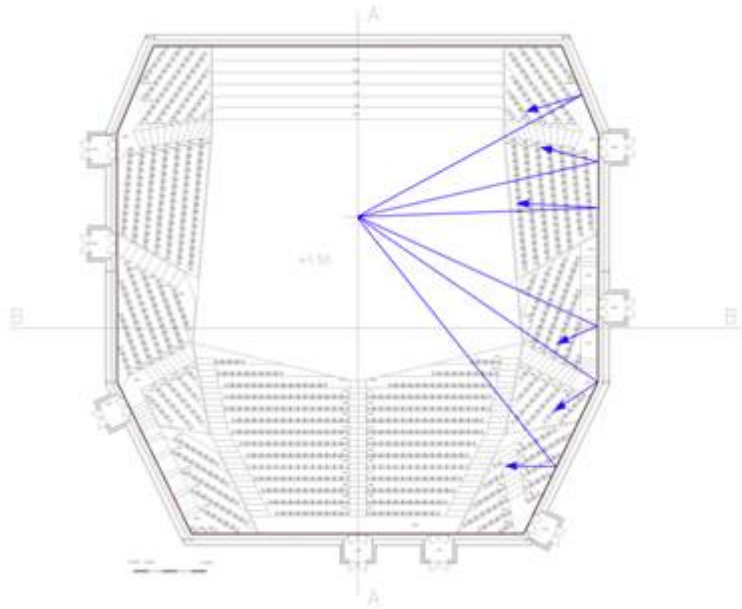
SEZIONE A-A



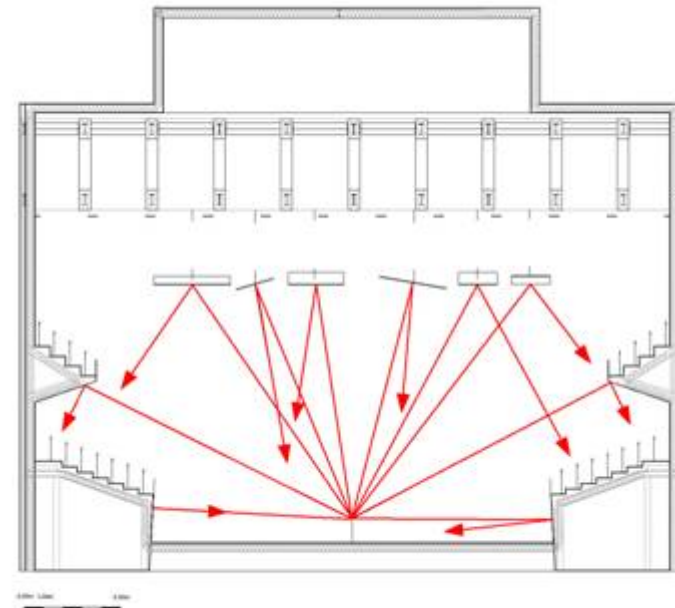
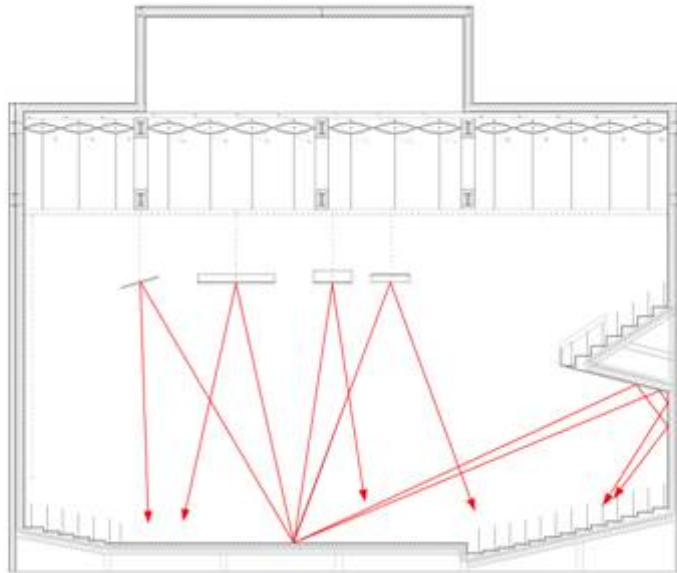
SEZIONE B-B



RIFLESSIONI SUI DIVISORI INTERNI



RIFLESSIONI SULLE PARETI PERIMETRALI



RIFLESSIONI SULLE PARETI VERTICALI E SUI RIFLETTORI



TEMPO DI RIVERBERAZIONE

RT ottimi a secondo dal tipo di musica:

Musica classica: $1,7 < RT < 2,5$

Musica rock: $0,5 < RT < 1,2$

Conferenze: $0,6 < RT < 1,2$

Dispositivi di variazione del RT:

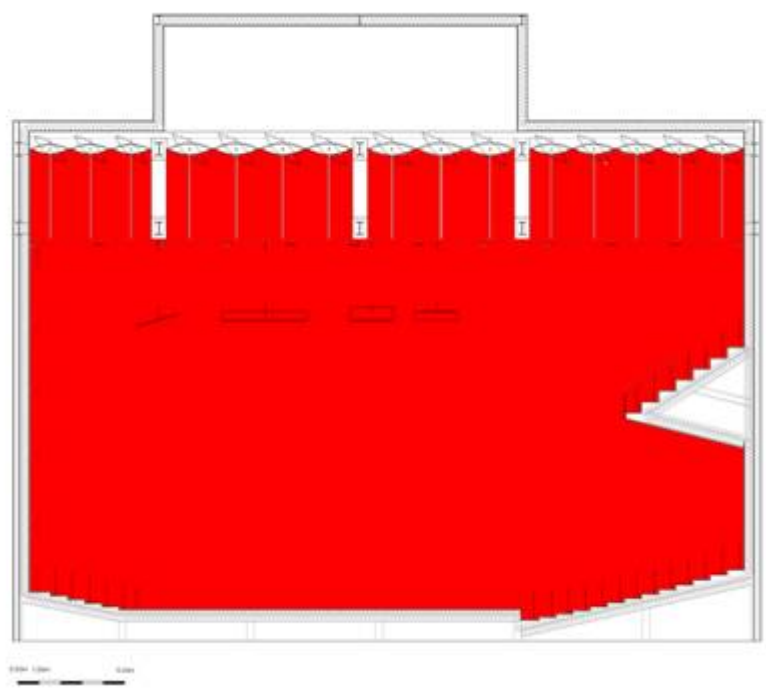
Spostamento del controsoffitto

Rotazione dei pannelli del controsoffitto

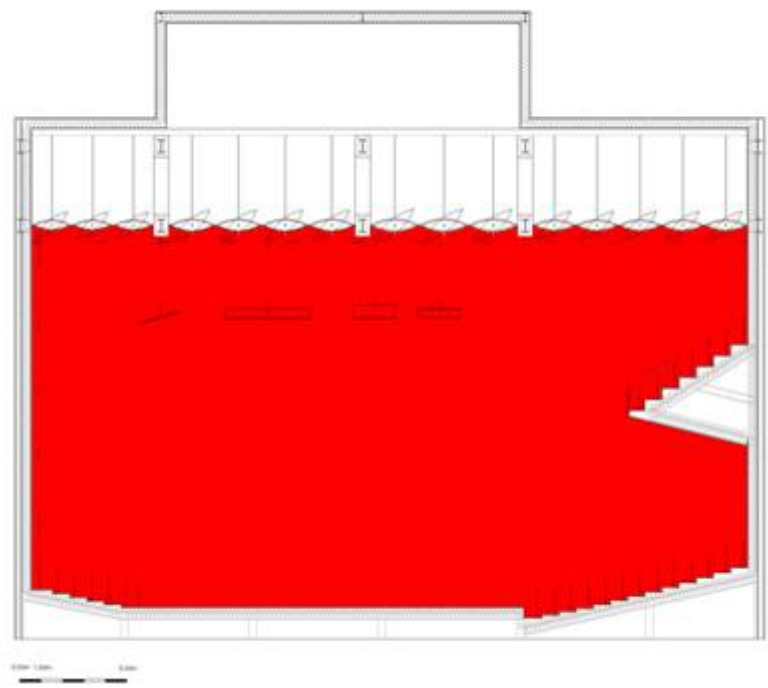
Aggiunta di una tenda in velluto



VOLUME DELLA SALA



Volume: 21 100 m³
Volume a spettatore: 14,1 m³

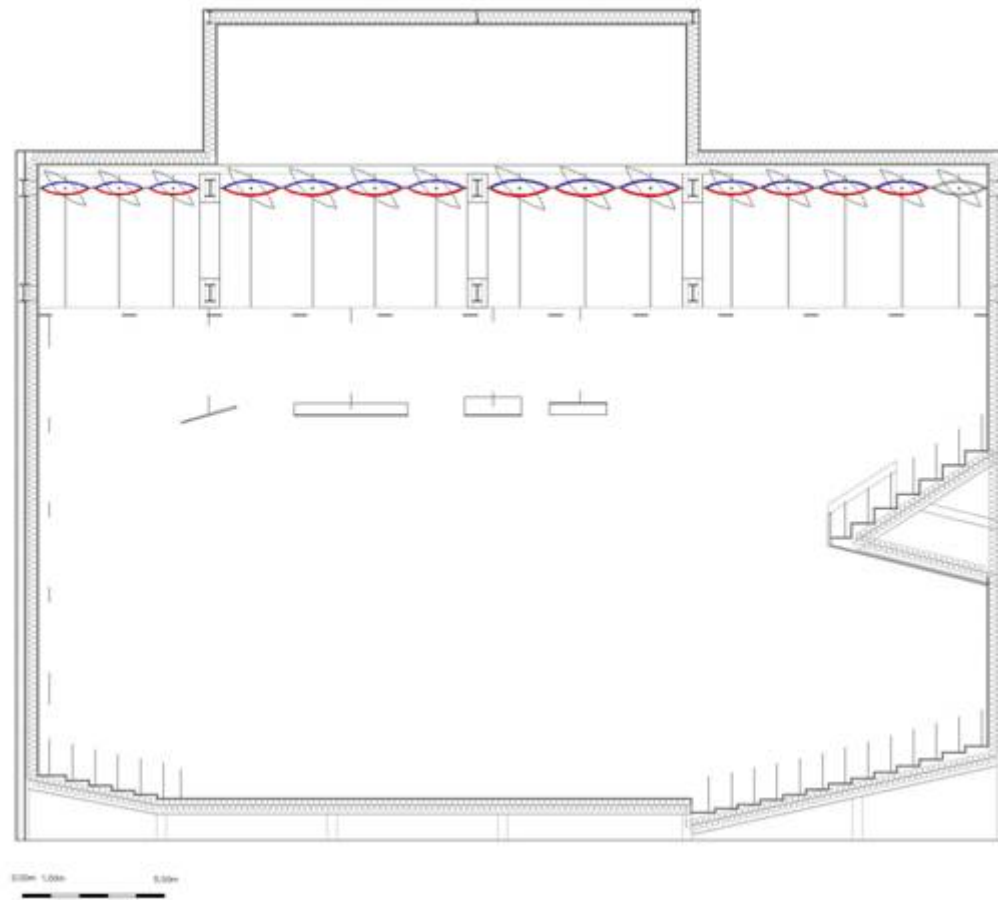


Volume: 16 100 m³
Volume a spettatore: 10,7 m³

NUMERO DI SPETTATORI

Platea: 962 Posti
Balconate: 546 Posti

SCENARIO 1: MUSICA CLASSICA



- Controsoffitto in posizione alta
- Pannelli in posizione riflettente
- Tenda alzata

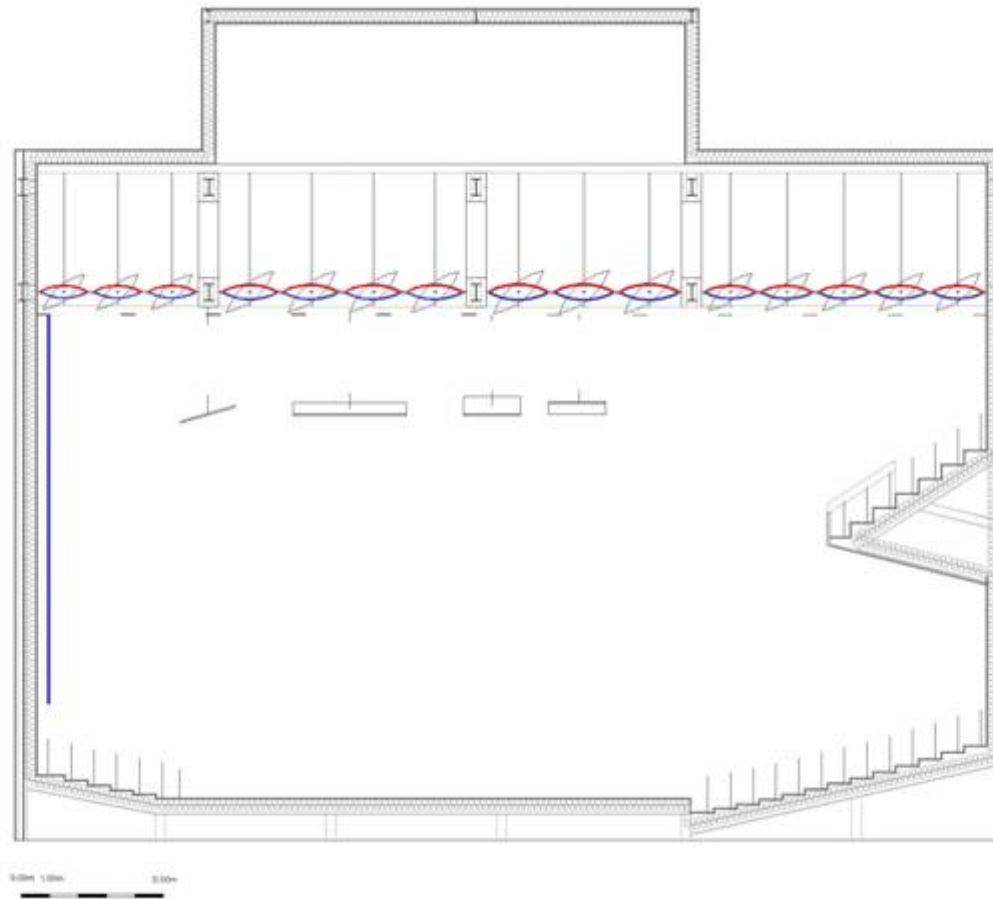


SCENARIO 1: MUSICA CLASSICA

Descrizione:	S [m²]	materiali:	α					
			125	250	500	1k	2k	4k
audience	789,00	audience	0,6	0,74	0,88	0,96	0,93	0,85
pannelli riflettenti	2316,00	Lauan Plywood	0,015	0,028	0,12	0,07	0,07	0,08
parapetti	0,00	vetro	0,35	0,25	0,18	0,12	0,07	0,04
soffitto assorbente	0,00	topakustik 5/3 M 11,8	0,13	0,61	1,06	1,04	0,85	0,8
pannelli assorbenti	160,00	topakustik 5/3 M 11,8	0,13	0,61	1,06	1,04	0,85	0,8
tela assorbente	0,00	velluto	0,14	0,35	0,55	0,72	0,70	0,65
soffitto riflettente	870,00	Lauan Plywood	0,015	0,028	0,12	0,07	0,07	0,08
palco	355,00		0,21	0,09	0,08	0,07	0,16	0,23
	S_{tot} [m²]		$(S \cdot \alpha)_{tot}$					
	4490,00		616,54	802,62	1274,64	1171,71	1149,59	1135,18
		media α	0,1	0,2	0,3	0,3	0,3	0,3
		RT sabine	5,48	4,21	2,65	2,88	2,94	2,97
		RT eyring	5,09	3,82	2,25	2,49	2,54	2,58

RT = 2,25 s

SCENARIO 2: MUSICA ROCK



- Controsoffitto in posizione bassa
- Pannelli in posizione assorbente
- Tenda abbassata



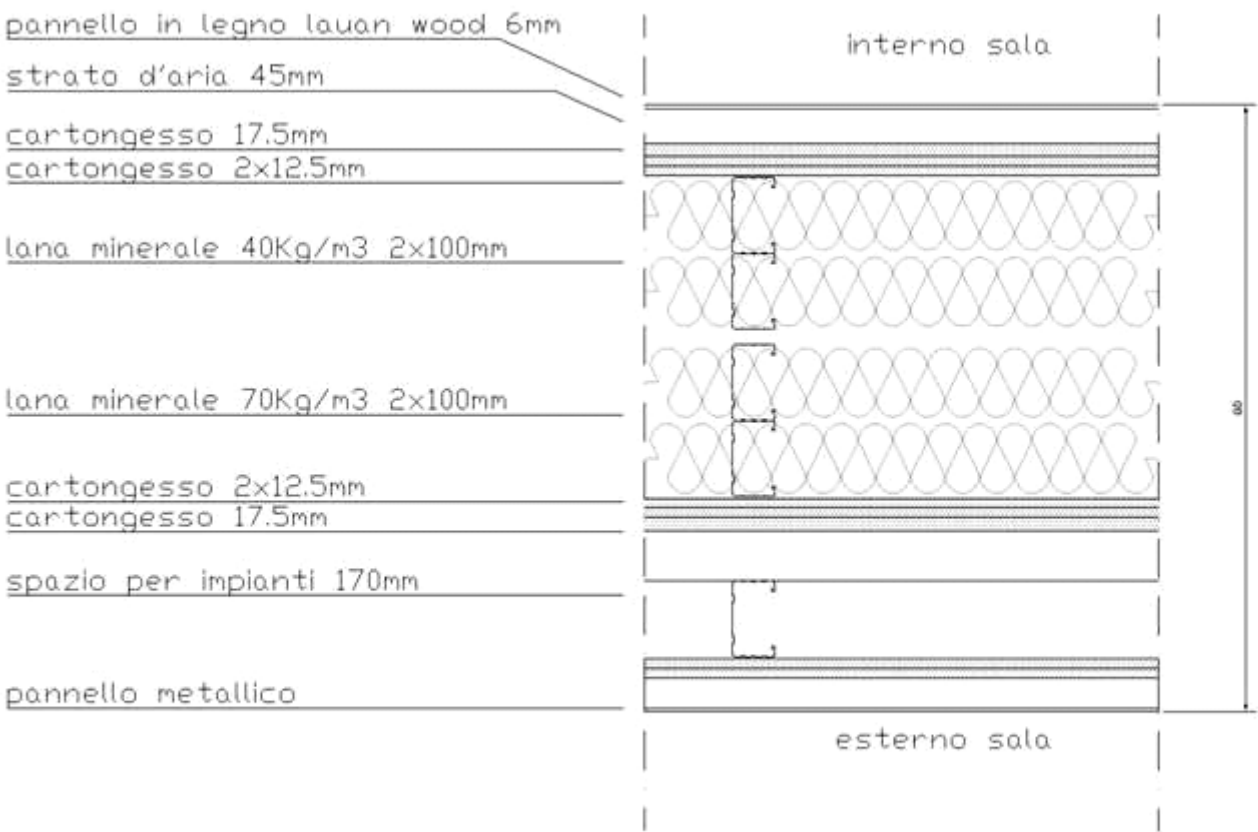
SCENARIO 2: MUSICA ROCK

Descrizione:	S [m²]	materiali:	α					
			125	250	500	1k	2k	4k
audience	789,00	audience	0,6	0,74	0,88	0,96	0,93	0,85
pannelli riflettenti	2316,00	Lauan Plywood	0,015	0,028	0,12	0,07	0,07	0,08
parapetti	0,00	vetro	0,35	0,25	0,18	0,12	0,07	0,04
soffitto assorbente	870,00	topakustik 5/3 M 11,8	0,13	0,61	1,06	1,04	0,85	0,8
pannelli assorbenti	160,00	topakustik 5/3 M 11,8	0,13	0,61	1,06	1,04	0,85	0,8
tela assorbente	384,00	velluto	0,14	0,35	0,55	0,72	0,70	0,65
soffitto riflettente	0,00	Lauan Plywood	0,015	0,028	0,12	0,07	0,07	0,08
palco	355,00		0,21	0,09	0,08	0,07	0,16	0,23
	S _{tot} [m²]		(S*α) _{tot}					
	4874,00		770,35	1443,36	2303,64	2292,09	2096,99	2011,18
		media α	0,2	0,3	0,5	0,5	0,4	0,4
		RT sabine	3,34	1,78	1,12	1,12	1,23	1,28
		RT eyring	3,07	1,51	0,83	0,83	0,94	0,99

RT = 0,83 s

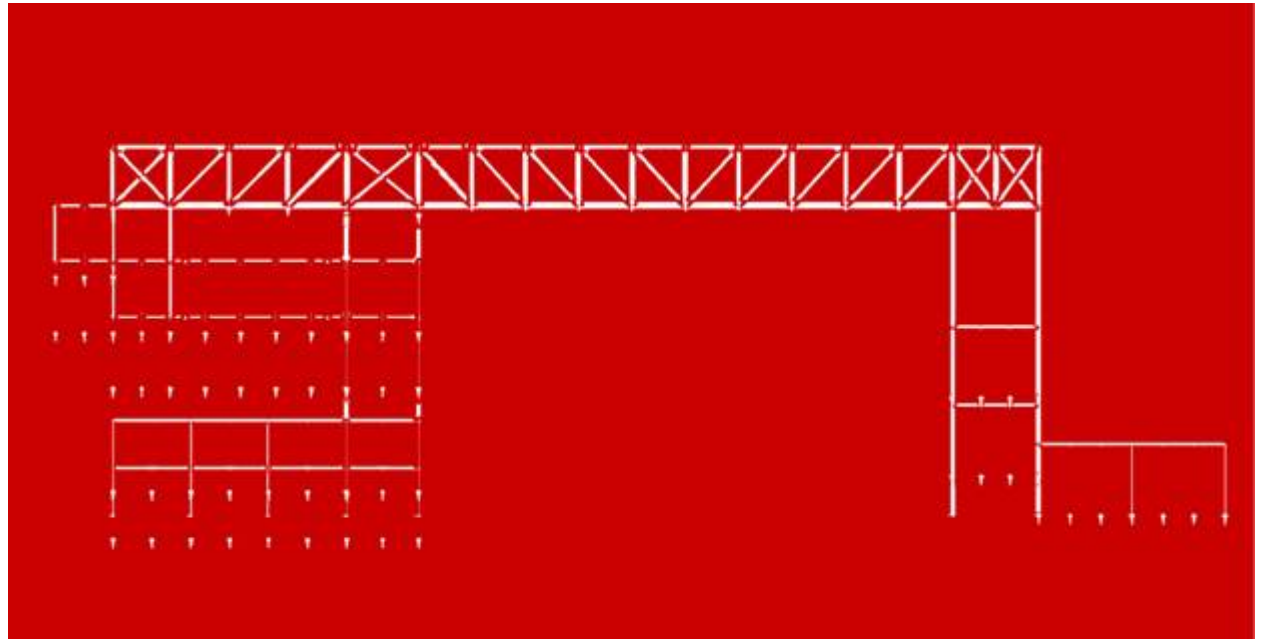


STRATIGRAFIA





3.3 ASPETTI STRUTTURALI



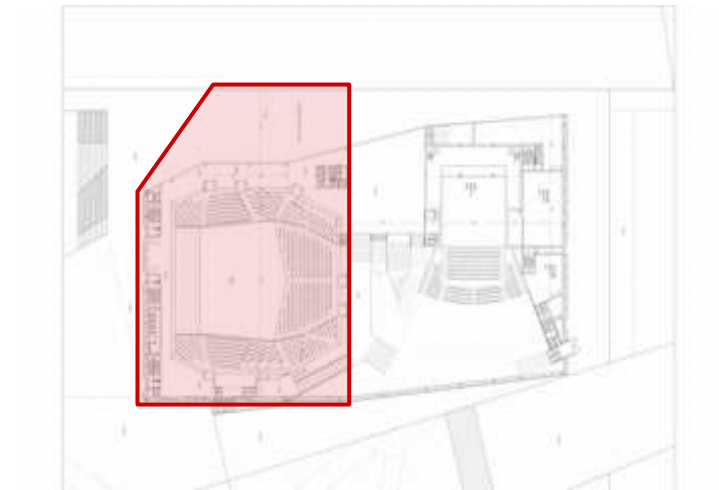
Lunghezza dell' edificio: 85 metri => giunto di dilatazione

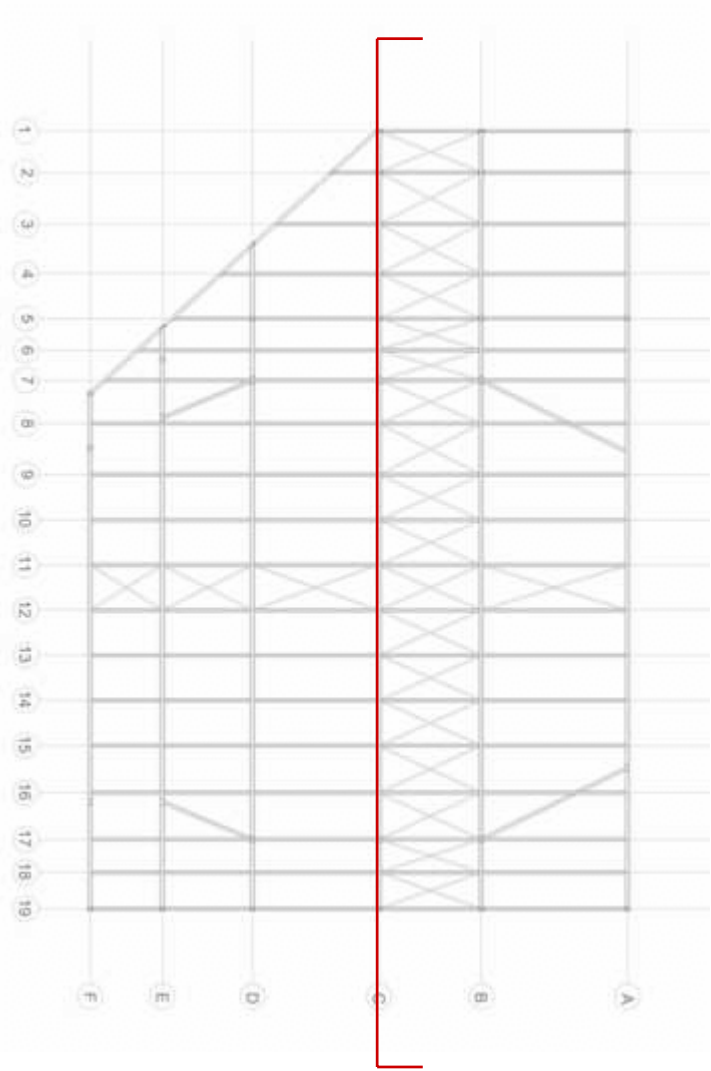
Studio dettagliato della parte strutturale sud che comprende:

- La luce della sala concerti (34 metri)
- Lo sbalzo della piazza coperta

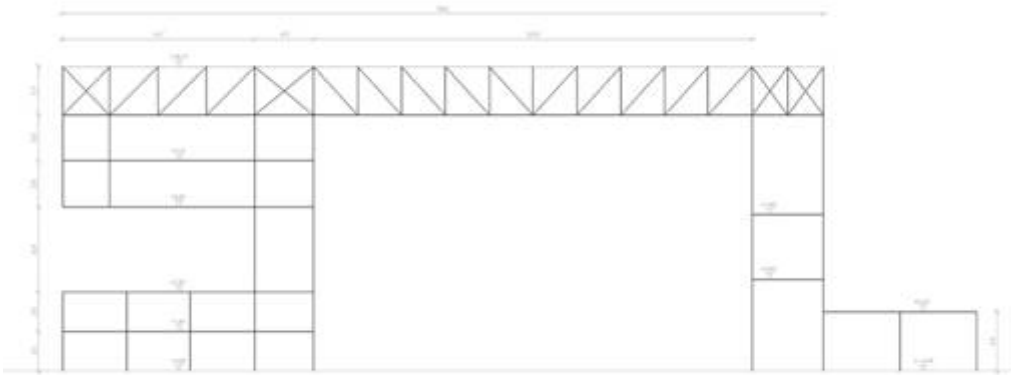
Procedimento:

- Analisi dei pesi
- Predimensionamento degli elementi strutturali principali
- Simulazione informatica con il software Strauss





Pianta



Sezione



Peso della copertura (tetto verde):

	Kg/m ³	m	peso kg\m ²
Terra vegetale (umida)	2600	0.2	520
Lava	2200	0,1	220
Daku Stabilfilter		0.002	0.2
Daku FSD 20		0.065	17.1
Impermeabilizzazione con PVC in fogli	1400	0.002	2.8
Getto	2400	0.125	300
Cartongesso	750	0.0125	9.375
			1069.58Kg/m² = 10.69kN/m²



Predimensionamento della struttura terziaria:

- Calcolo agli stati limiti di esercizio
- Calcolo agli stati limiti ultimi
=> IPE 220

Predimensionamento della struttura secondaria:

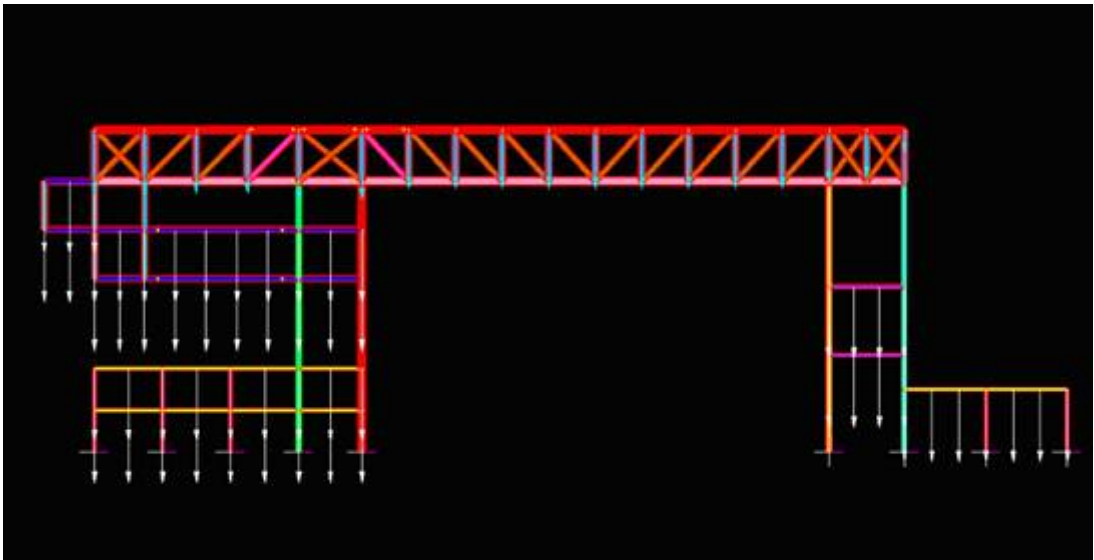
- Calcolo agli stati limiti di esercizio
- Calcolo agli stati limiti ultimi
=> IPE 550

Predimensionamento della trave reticolare:

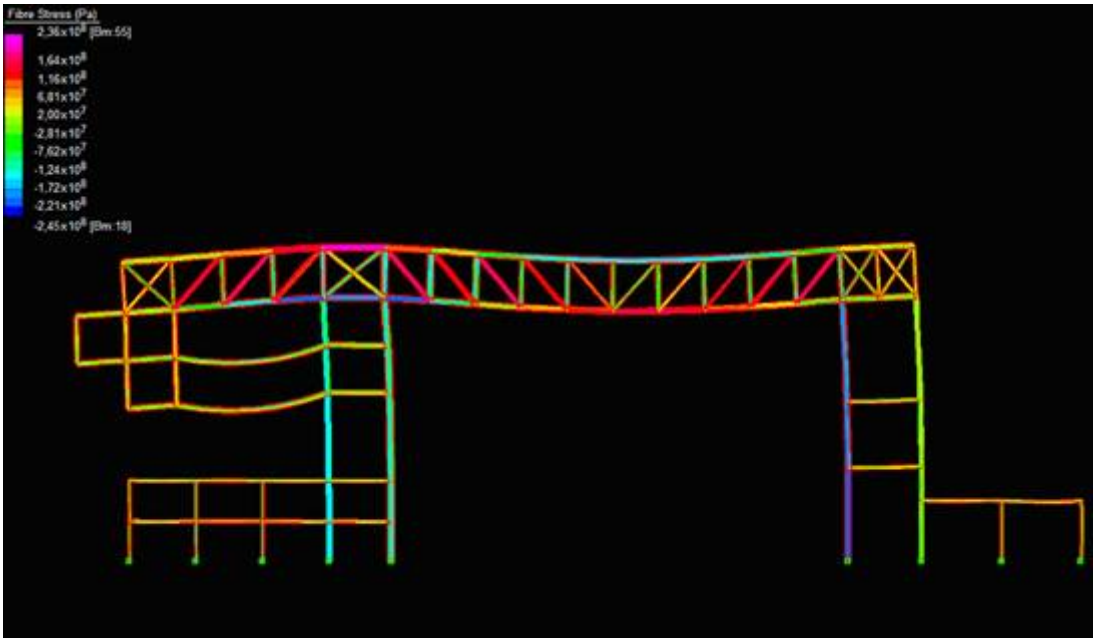
- Briglia superiore => HEM 550
- Briglia inferiore => HEM 550
- Aste diagonali => HEB 450



Primo step:

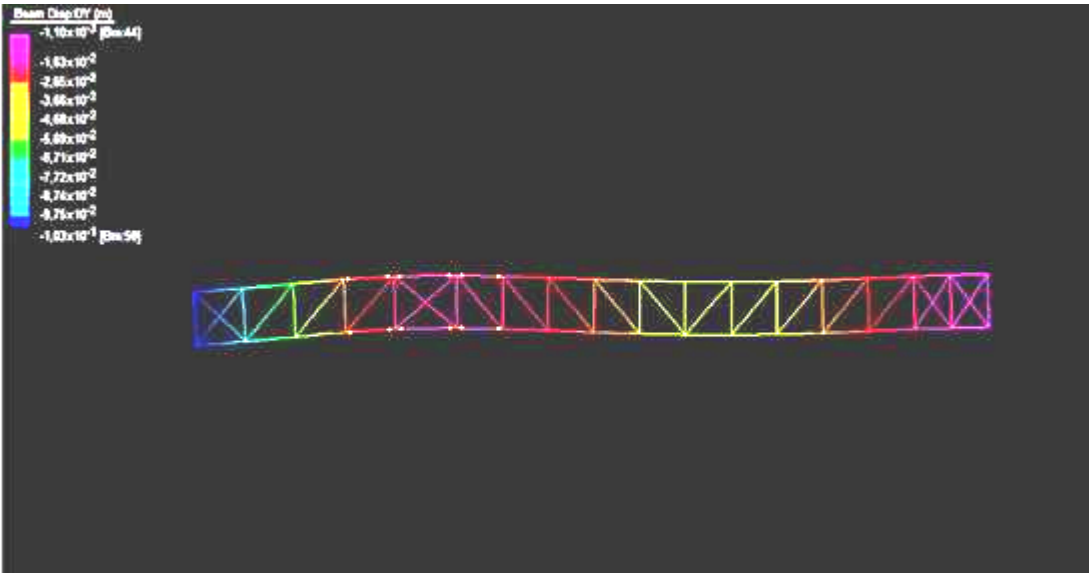


Secondo step:

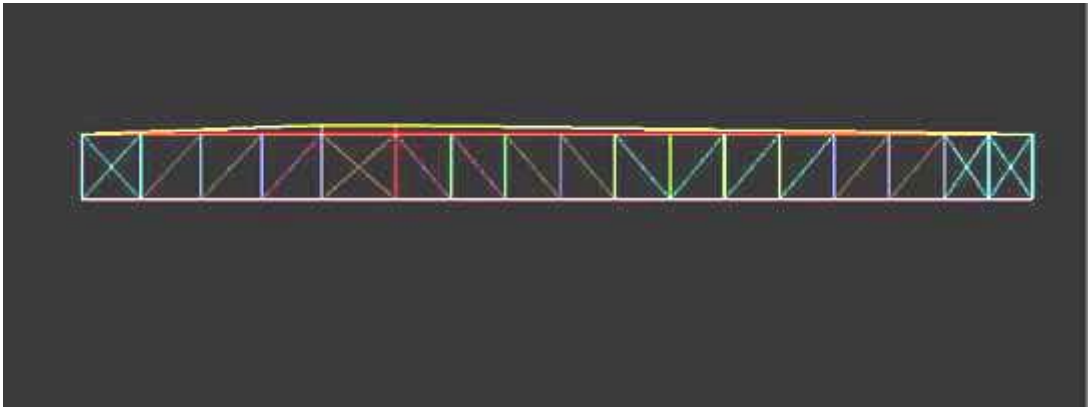


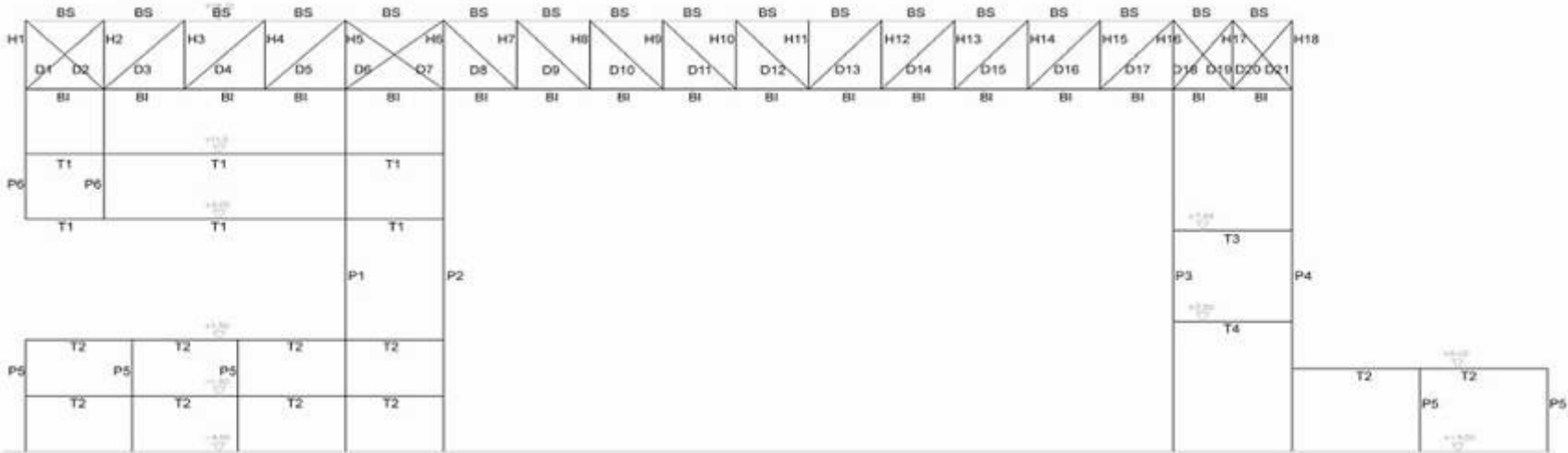


Calcolo della freccia:



Sistema con tirante





BS	HEM600	D1	HEB 260	T1	HEM 400
BI	HEM600	D2	HEB 260	T2	HEA 480
H1	HEB 260	D3	HEB 340	T3	HEA 300
H2	HEB 260	D4	HEB 340	T4	HEA 300
H3	HEB 260	D5	HEM 360	P1	Profilo tondo 457 mm
H4	HEM 340	D6	HEB 340	P2	HEM 550
H5	HEM 340	D7	HEB 340	P3	HEB 450
H6	HEM 500	D8	HEM 360	P4	Profilo tondo 406 mm
H7	HEM 500	D9	HEM 360	P5	HEA 240
H8	HEM 500	D10	HEB 340	P6	HEM 340
H9	HEM 340	D11	HEB 340		
H10	HEB 360	D12	HEB 260		
H11	HEB 360	D13	HEB 260		
H12	HEB 360	D14	HEB 260		
H13	HEB 360	D15	HEB 260		
H14	HEM 340	D16	HEB 340		
H15	HEM 340	D17	HEB 340		
H16	HEM 340	D18	HEB 260		
H17	HEB 260	D19	HEB 260		
H18	HEB 260	D20	HEB 260		
		D21	HEB 260		



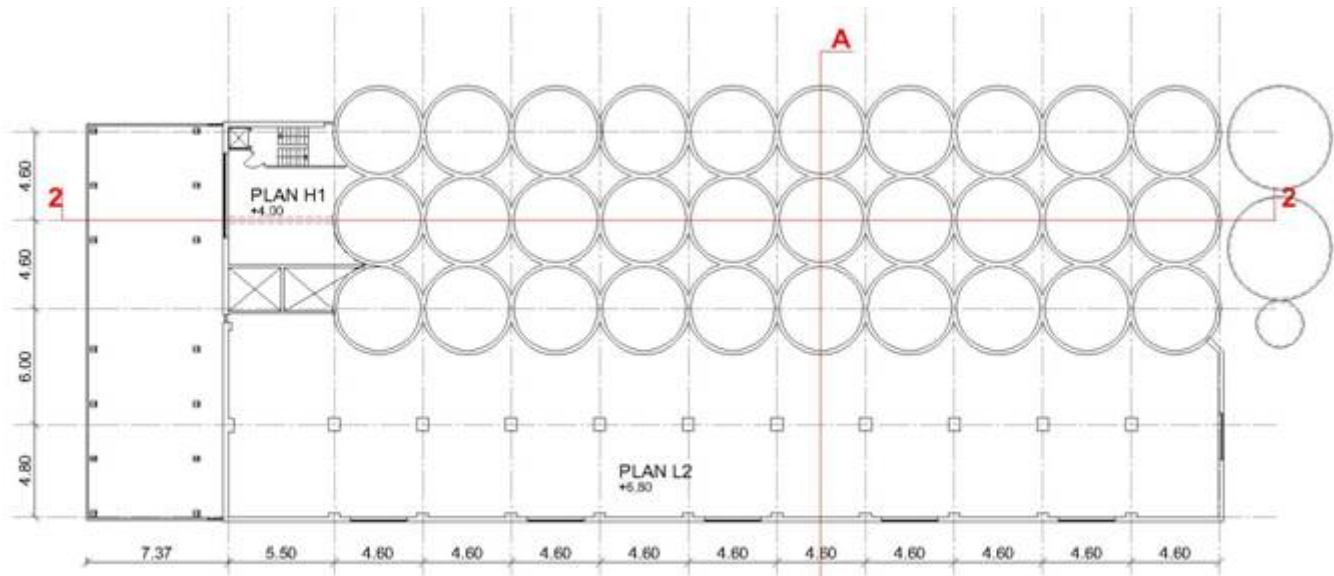
RECUPERO DEL SILOS



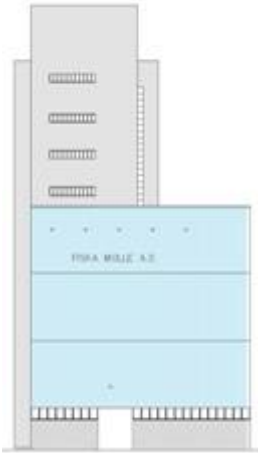
A ROOM WITH A VIEW

- Edificio costruito nel 1935 dagli architetti Arne Korsmo e Sverre Aasland
- Premiato dalla Houens Foundation per la sua architettura

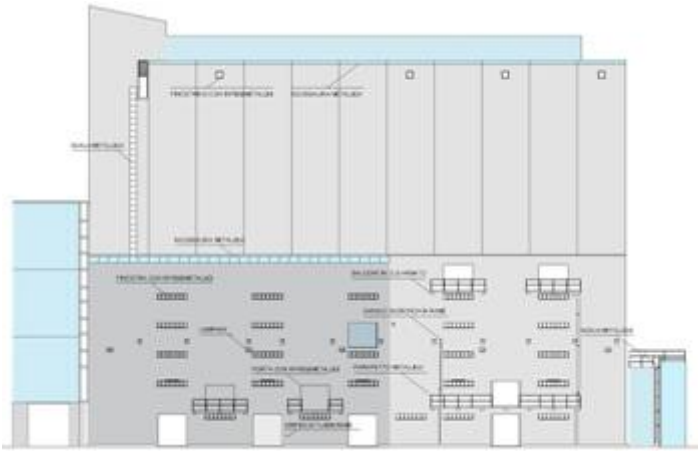




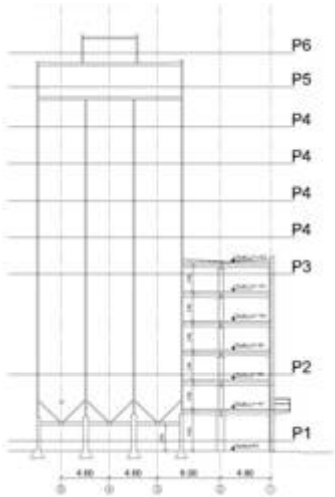
Rilievo primo piano



Facciata nord



Facciata ovest



Sezione AA



A. MURATURE

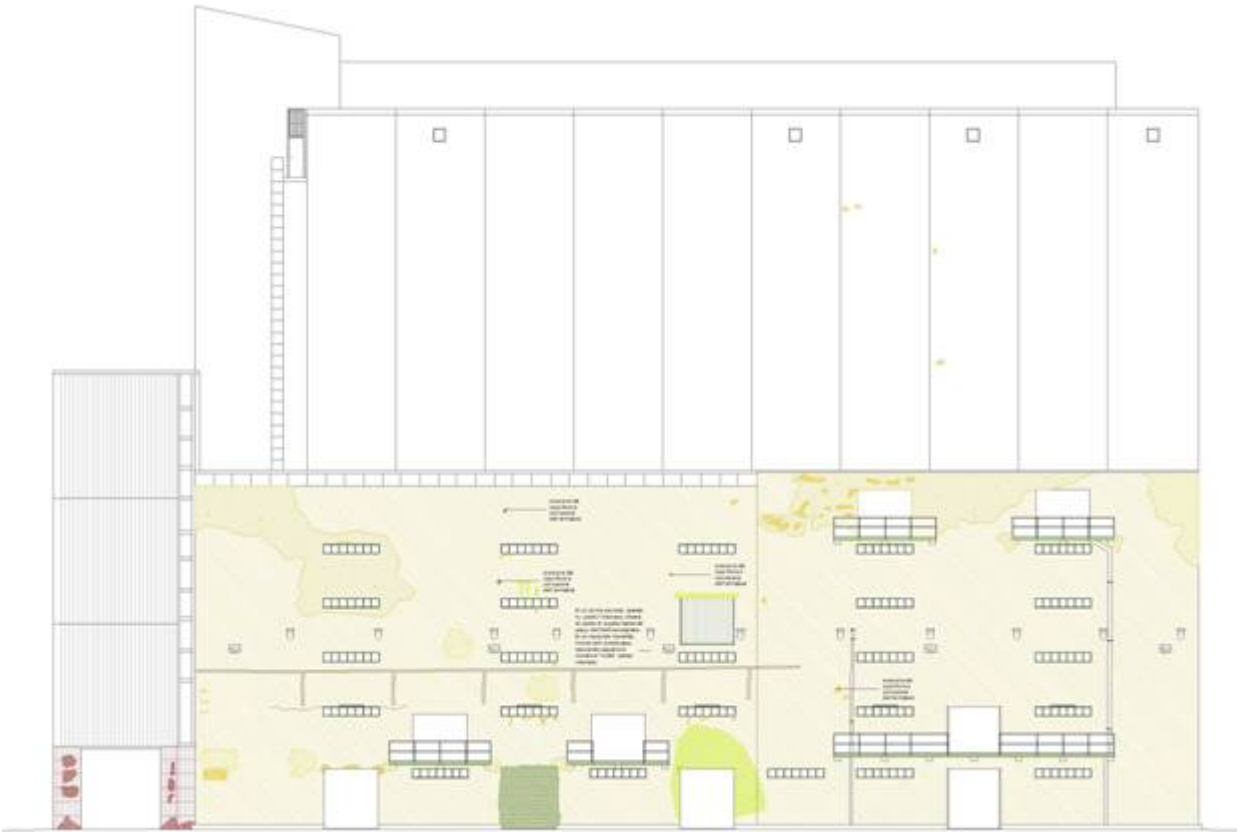
- Fattori meccanici**
- M.1. erosione del copriferro e corrosione del ferro
 - M.2. alta porosità del cemento
 - M.3. disgregazione del cemento
- Fattori chimici**
- M.4. dilavamento
 - M.5. macchie di umidità

B. INTONACO _ STRATO DI FINITURA

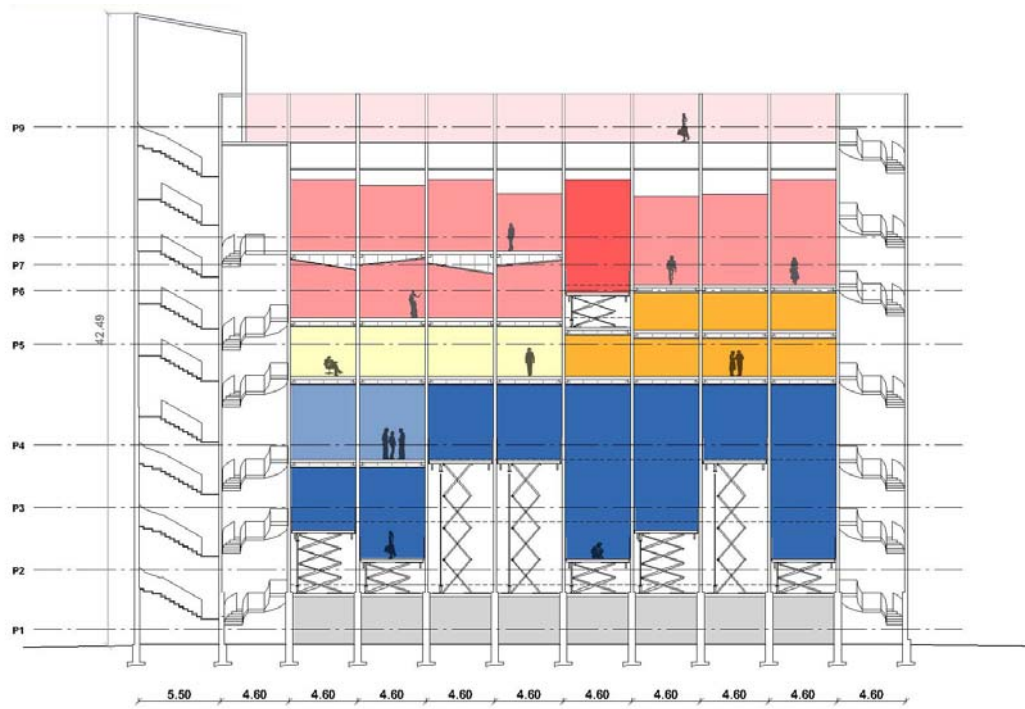
- Fattori meccanici**
- I.1. fessurazioni
 - I.2. sgretolamento
 - I.3. distacco
 - I.4. assenza
- Fattori chimici**
- I.5. alterazione cromatica
 - I.6. macchie di umidità
 - I.7. patine nere
 - I.8. dilavamento

C. Serramenti

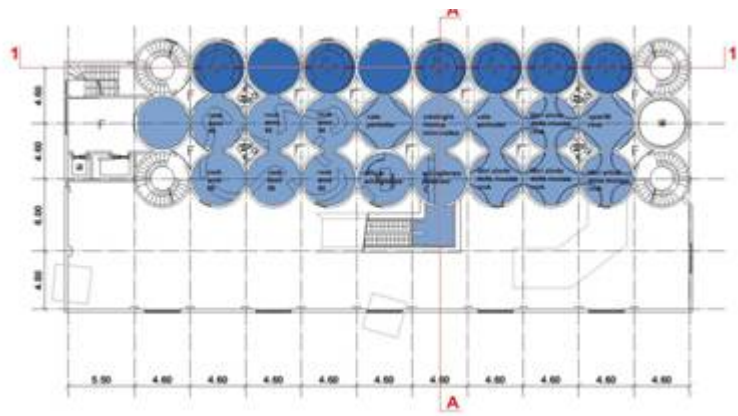
- Fattori meccanici**
- S.1. tamponamento
- Fattori chimici**
- S.2. corrosione



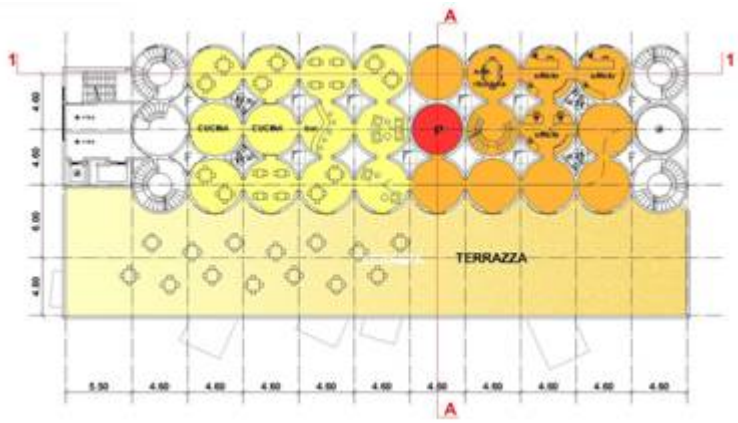
Degrado Facciata ovest



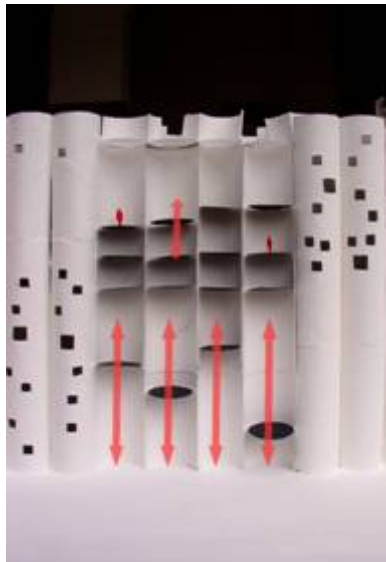
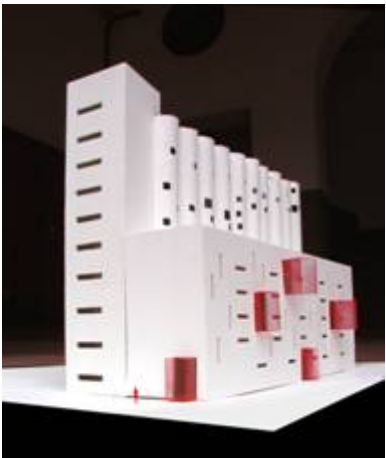
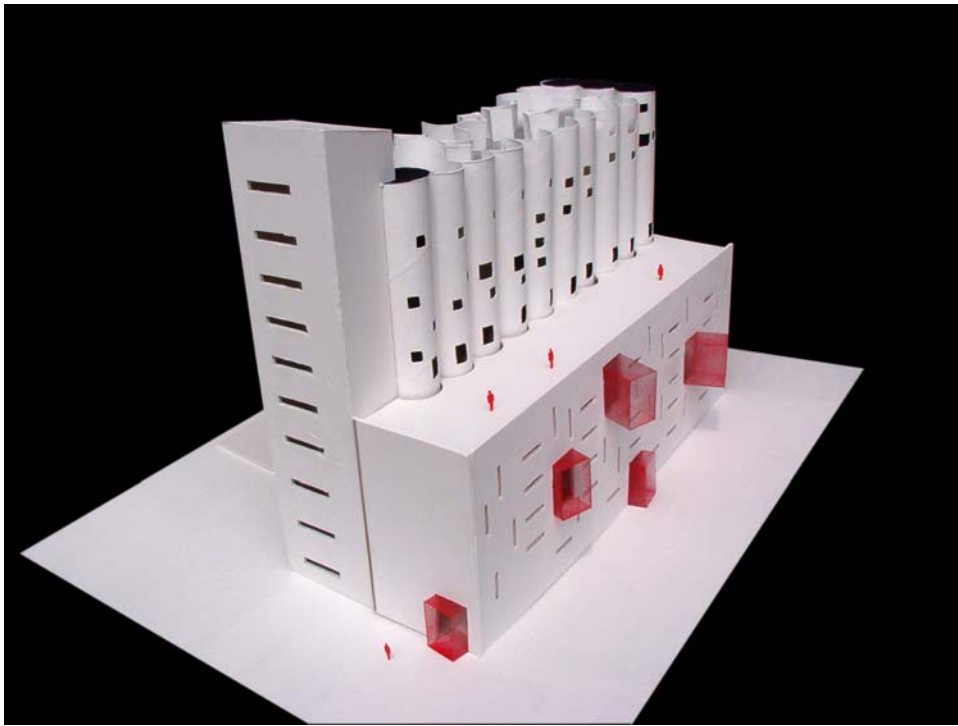
Sezione AA



Primo piano



Quarto piano















*Ganimede e l'aquila di Zeus, Roma,
Museo Vaticani, Villa Adriana*

“Tout batiment s'élève sur les plans d'un reve...”

Mémoires d'Hadrien, Marguerite Yourcenar



BOITARD JULIEN

Grazie per l'attenzione

Fine

A VIEW WITHOUT A ROOM